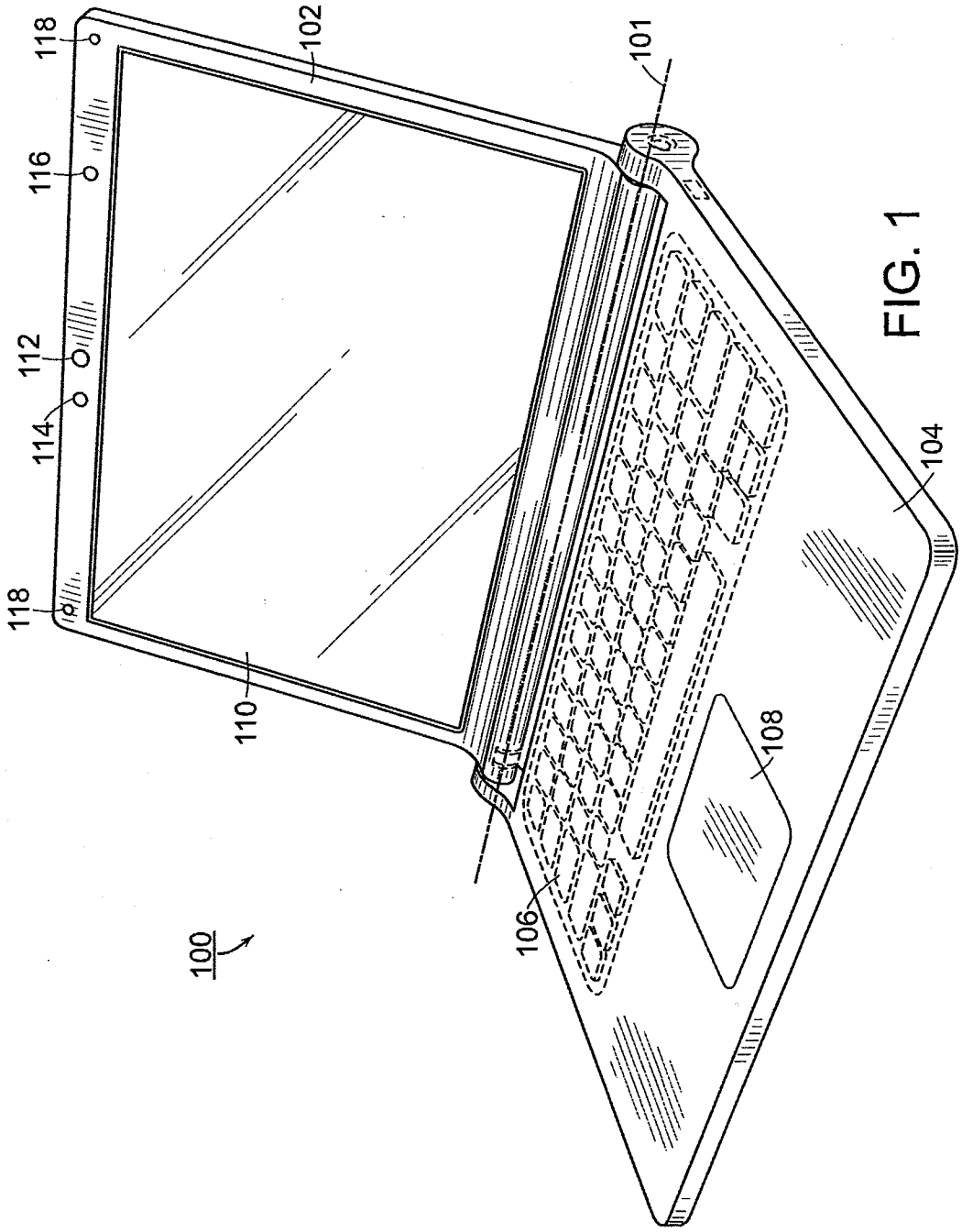


FIG. 1

MICROSOFT-1002
Microsoft Inc. v. LiTL LLC

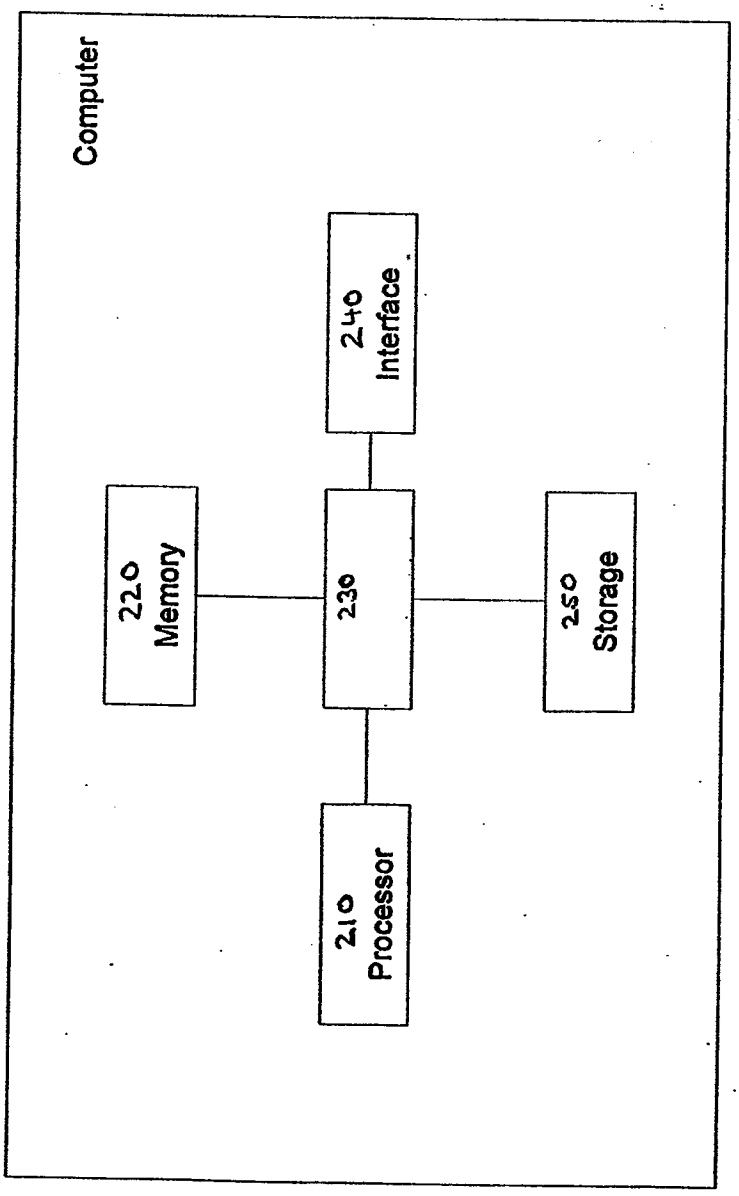

Computer
240
Interface
220
Memory
230
250
Storage
210
Processor

FIG. 2

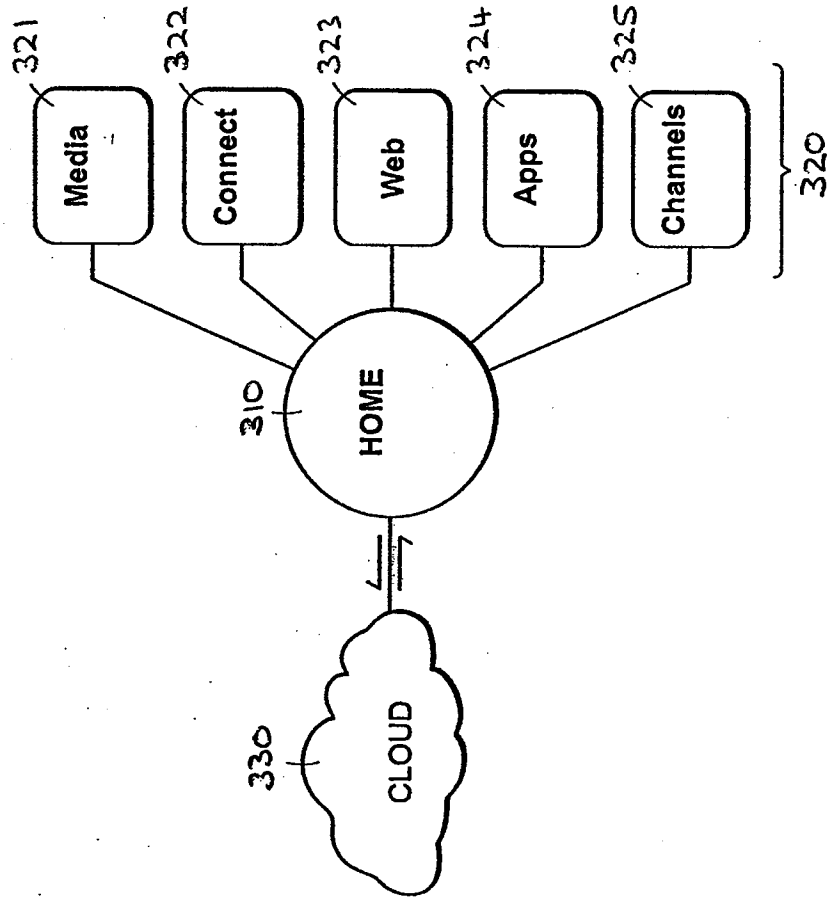

321
Media
322
Connect
323
Web
324
Apps
325
Channels
320
310
HOME
330
CLOUD

FIG. 3

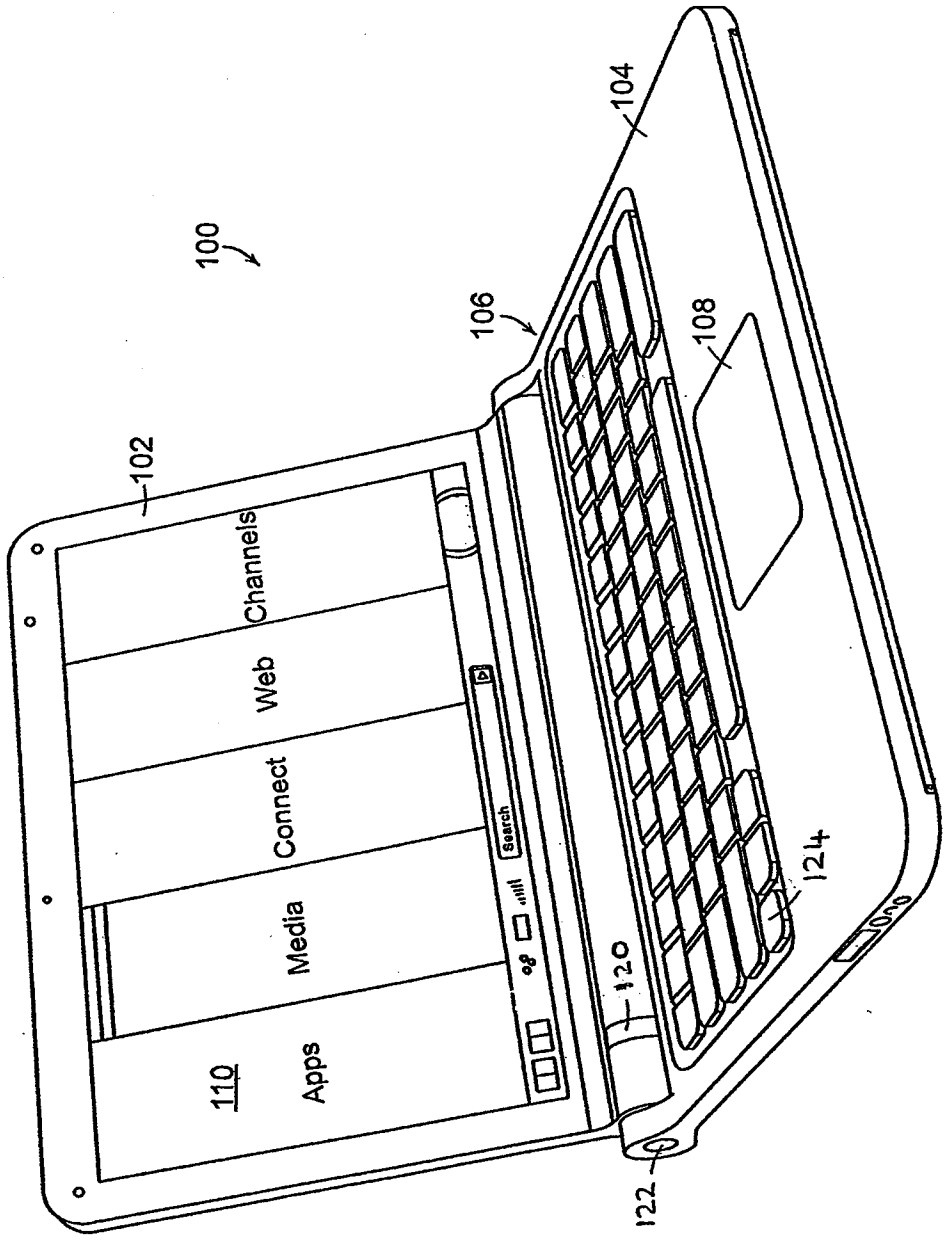

100
102
104
106
108
110
Apps
Media
Connect
Web
Channels
Search
120
122
124

FIG. 4

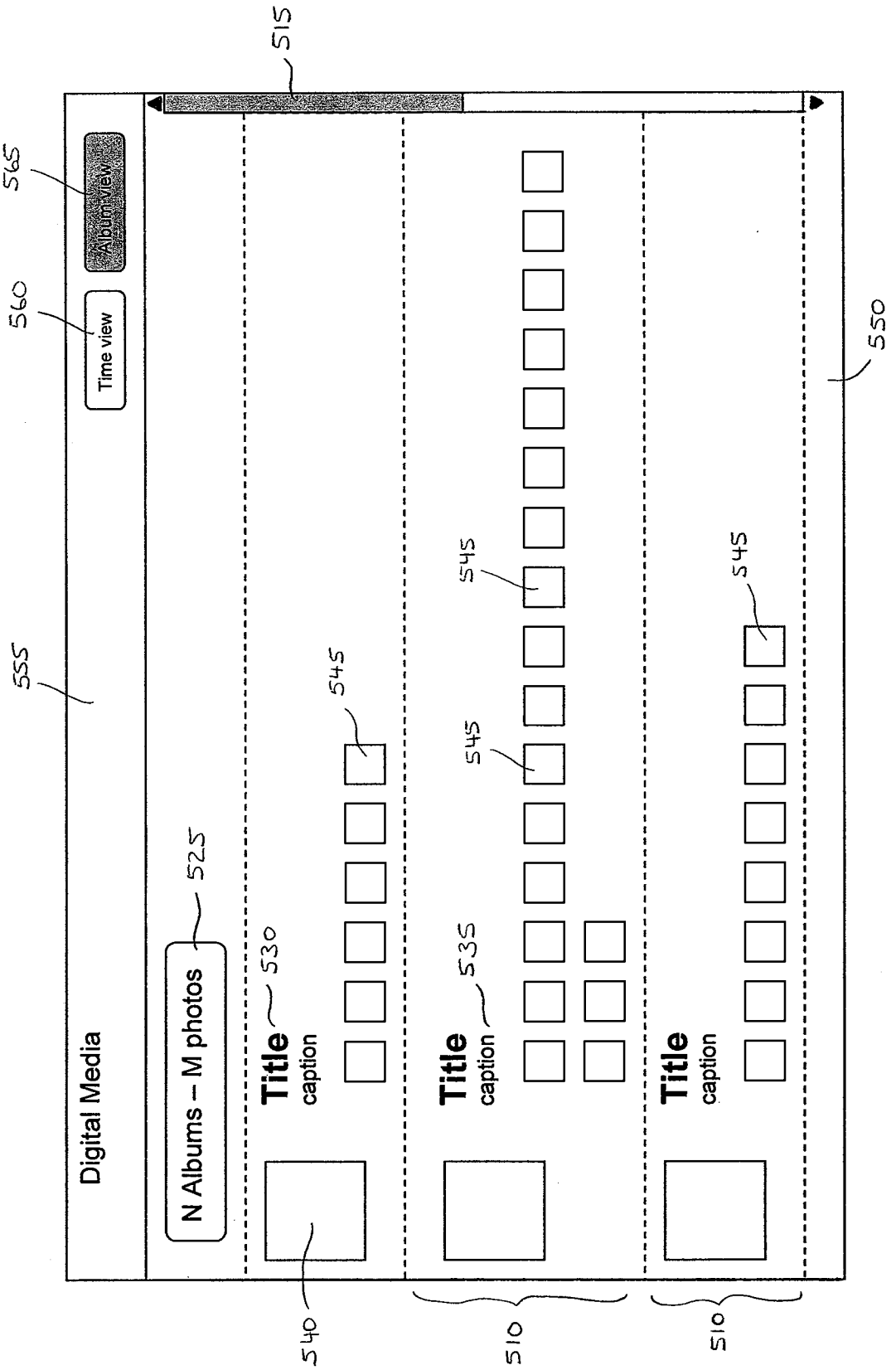

515
565
Album view
560
Time view
550
555
Digital Media
525
N Albums – M photos
530
Title
caption
545
535
Title
caption
545
545
Title
caption
540
510
510

FIG. 5

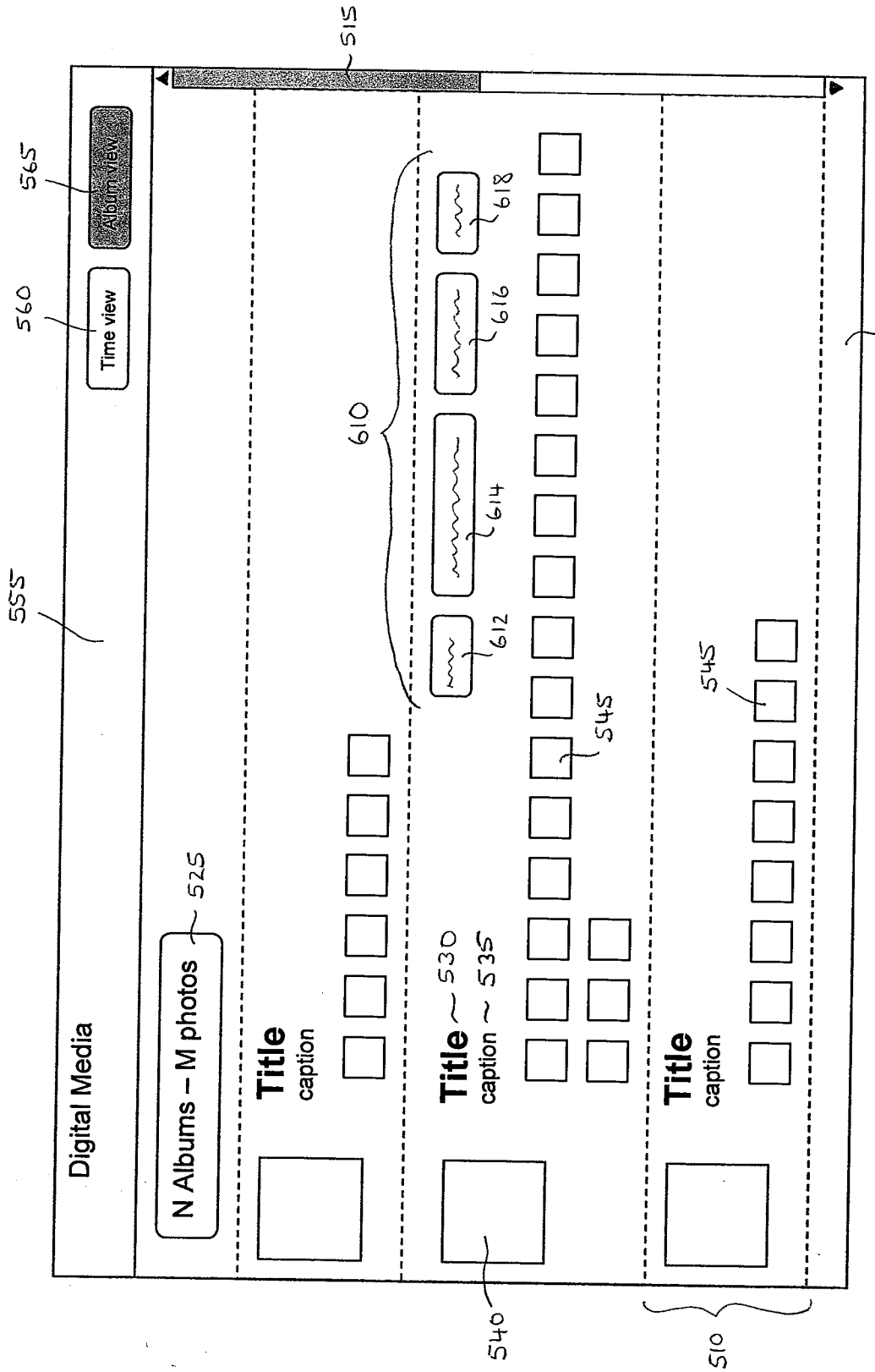

515
565
560
555
Digital Media
Album view
Time view
N Albums – M photos
525
Title
caption
610
612
614
616
618
545
Title
caption
530
535
540
545
Title
caption
510
550

FIG. 6

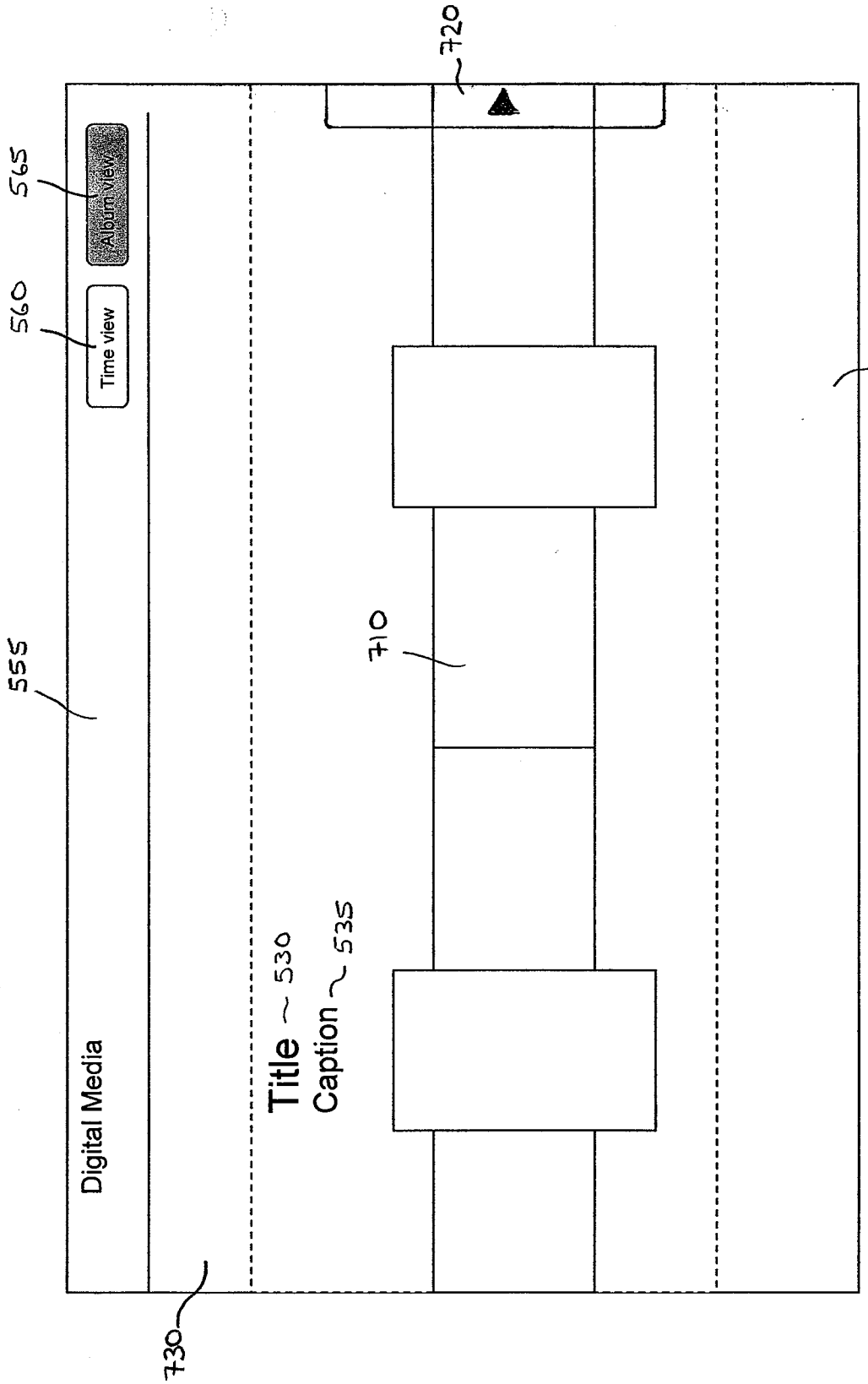

720
565
Album view
560
Time view
730
555
710
Digital Media
Title ~ 530
Caption ~ 535
730

FIG. 7A

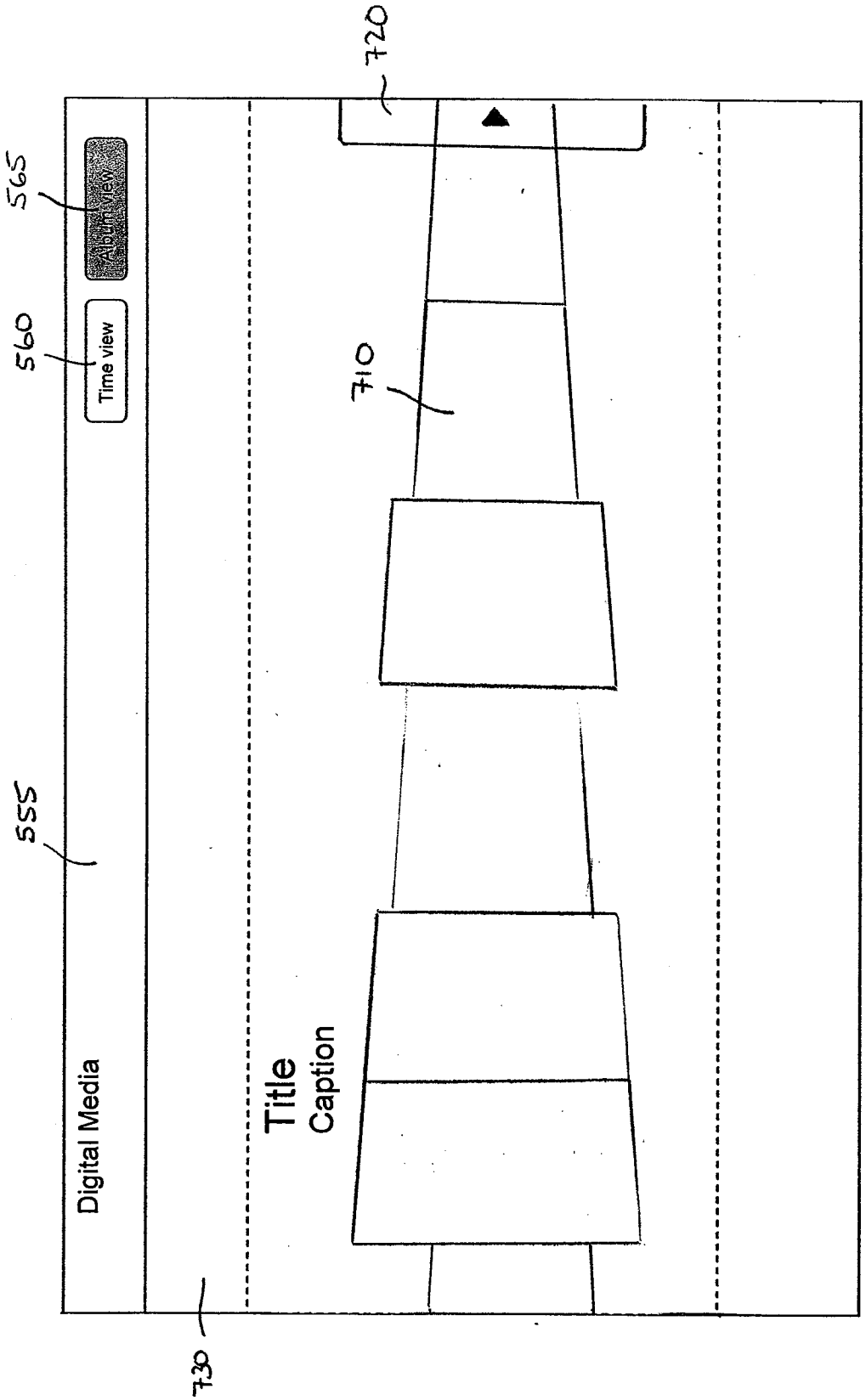

720
565
Album view
560
Time view
710
555
Digital Media
Title
Caption
730

FIG. 7B

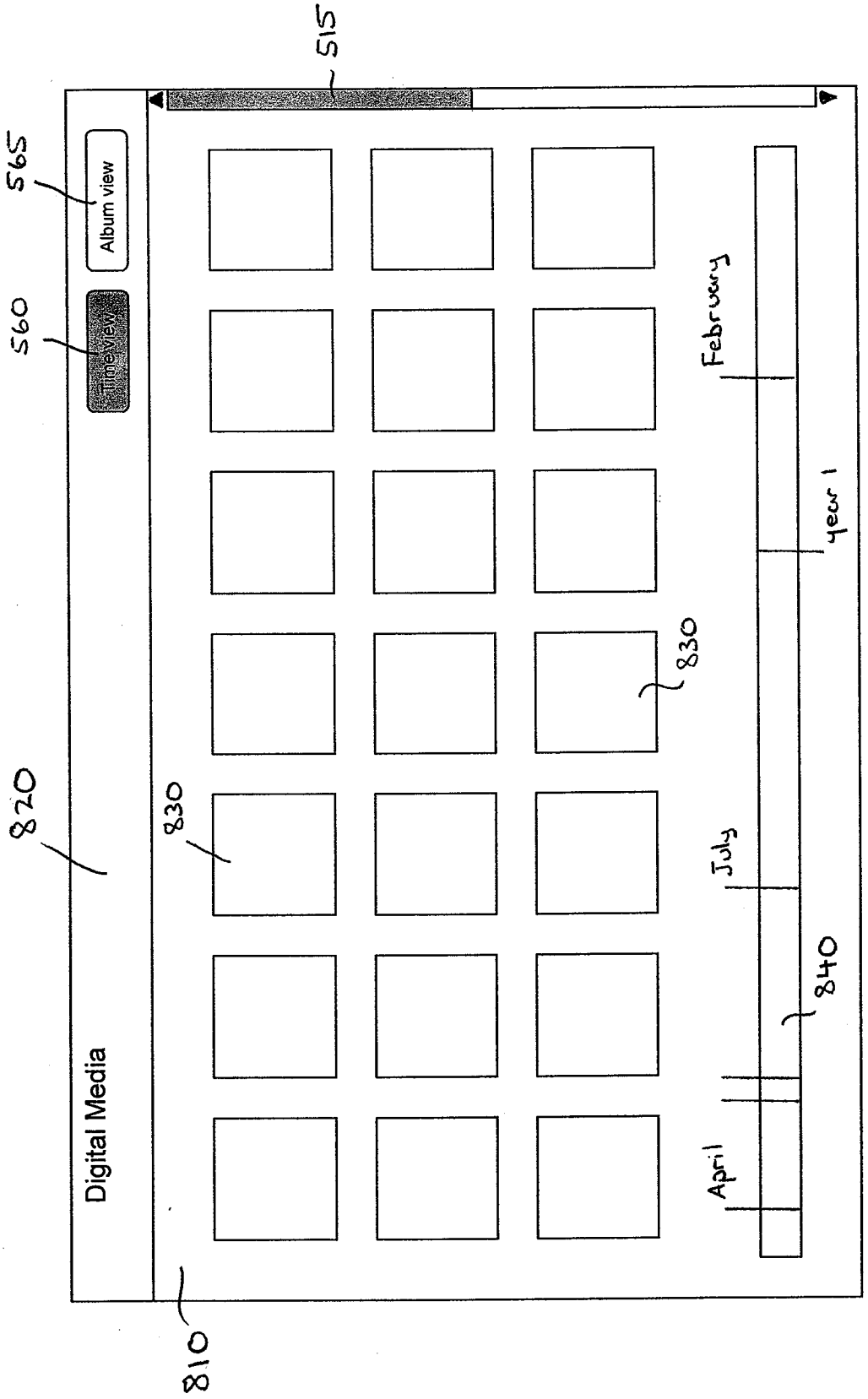

515
565
Album view
560
Time view
820
Digital Media
830
830
810
February
year 1
July
840
April

FIG. 8

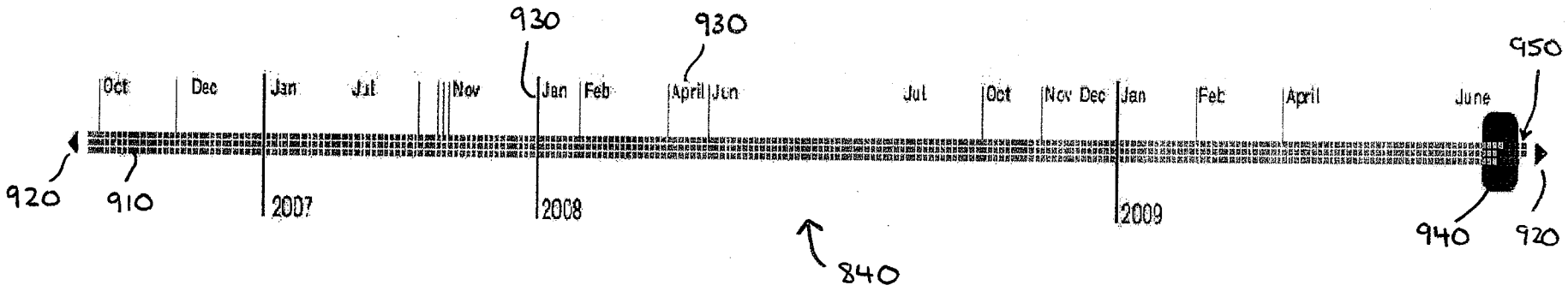

930
930
950
Oct
Dec
Jan
Jul
Nov
Jan
Feb
April
Jun
Jul
Oct
Nov Dec
Jan
Feb
April
June
920
910
2007
2008
2009
940
920
840

FIG. 9

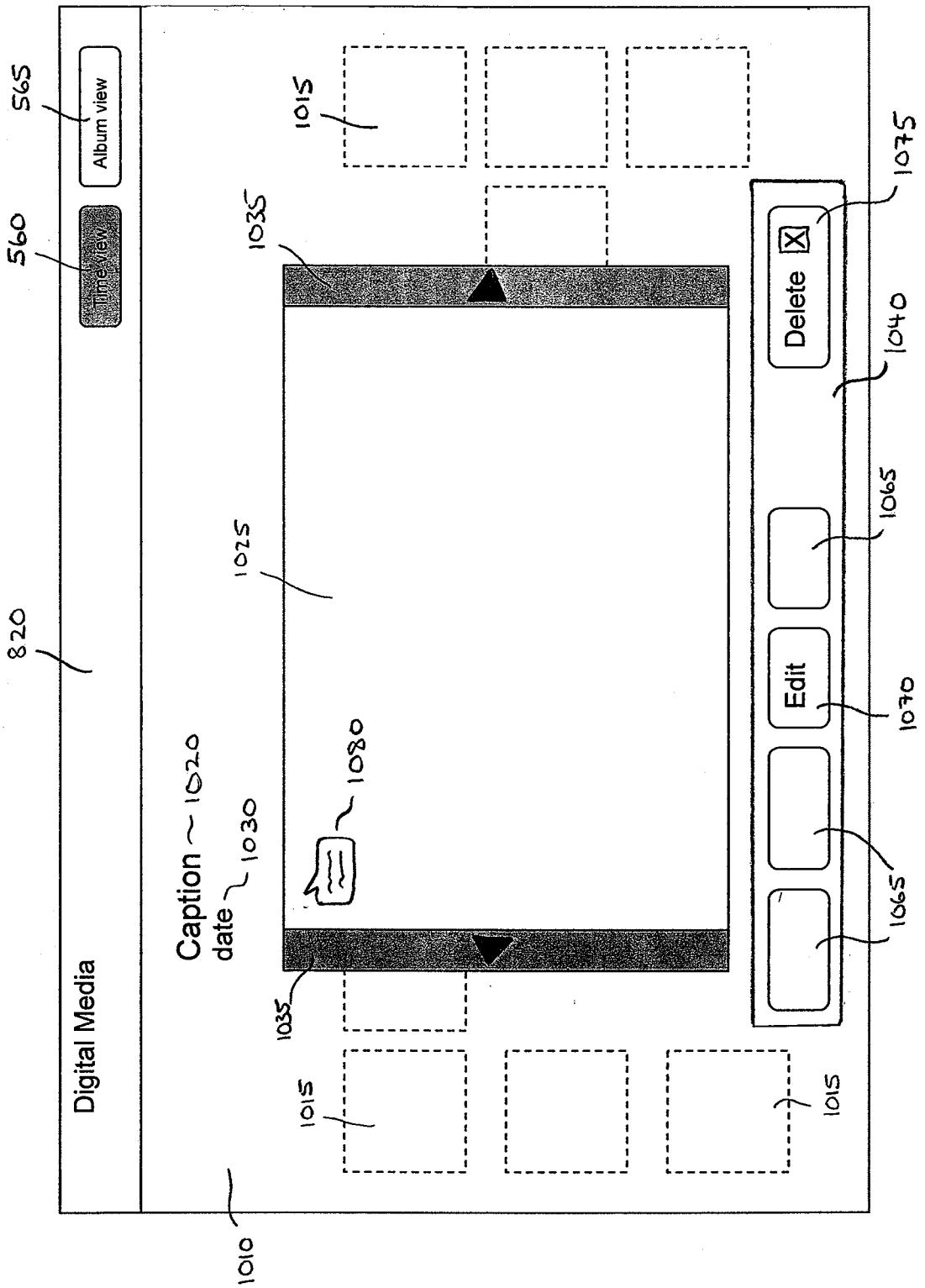

565
Album view
560
Time view
820
Digital Media
1010
1015
1035
1025
Caption ~ 1020
date
1030
1080
1035
1015
1015
1075
Delete
1040
1065
Edit
1070
1065

FIG. 10

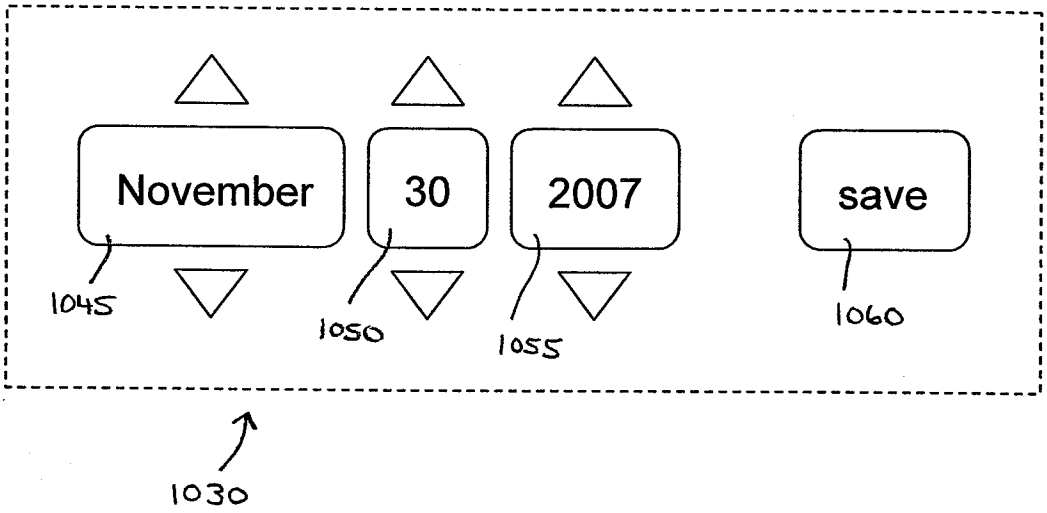


FIG. 11

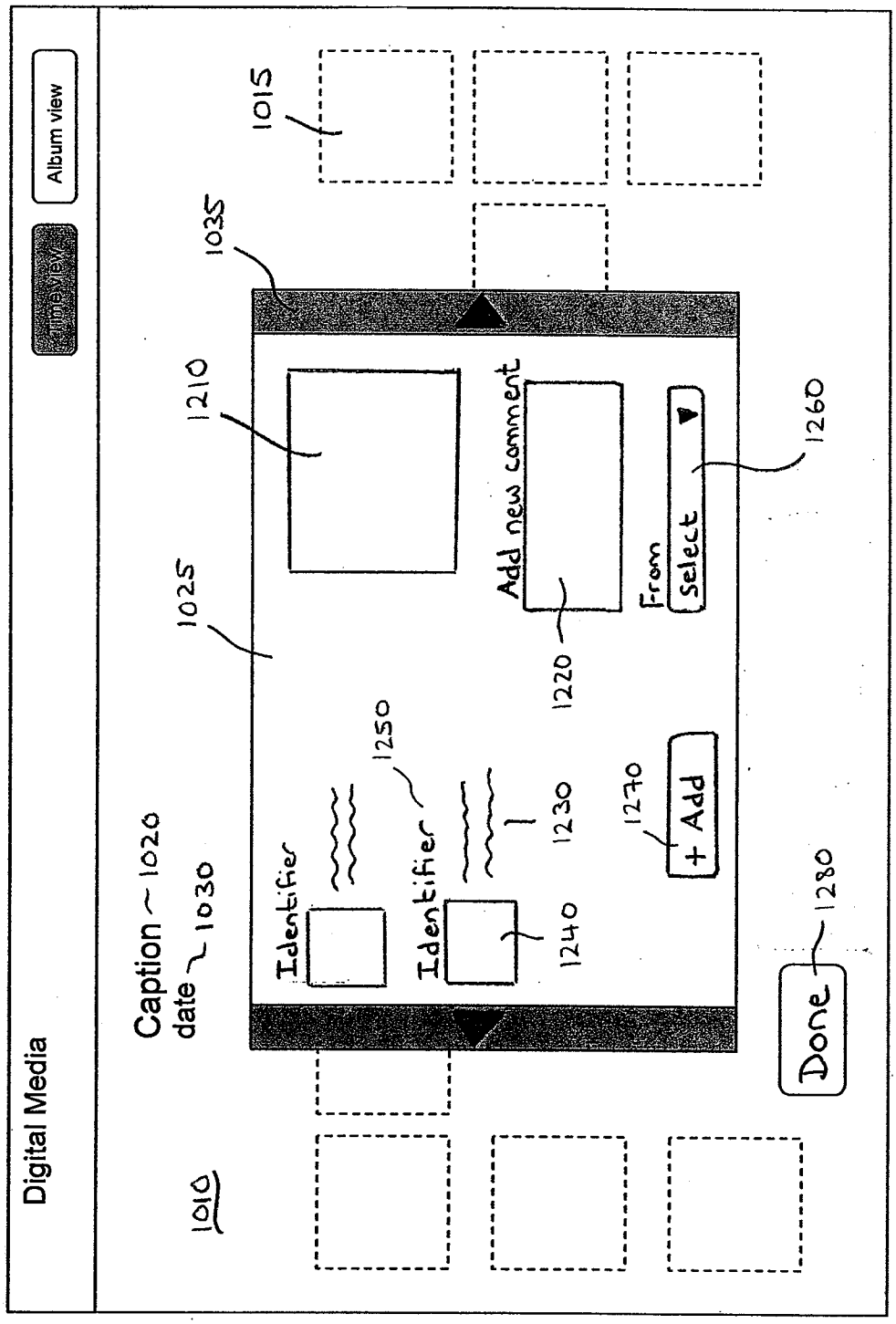

Digital Media
Timeline
Album view
1010
1015
1035
1210
1025
Caption
1020
date
1030
Identifier
1250
Identifier
1230
1240
Add new comment
1220
From
Select
1260
1270
+ Add
Done
1280

FIG. 12

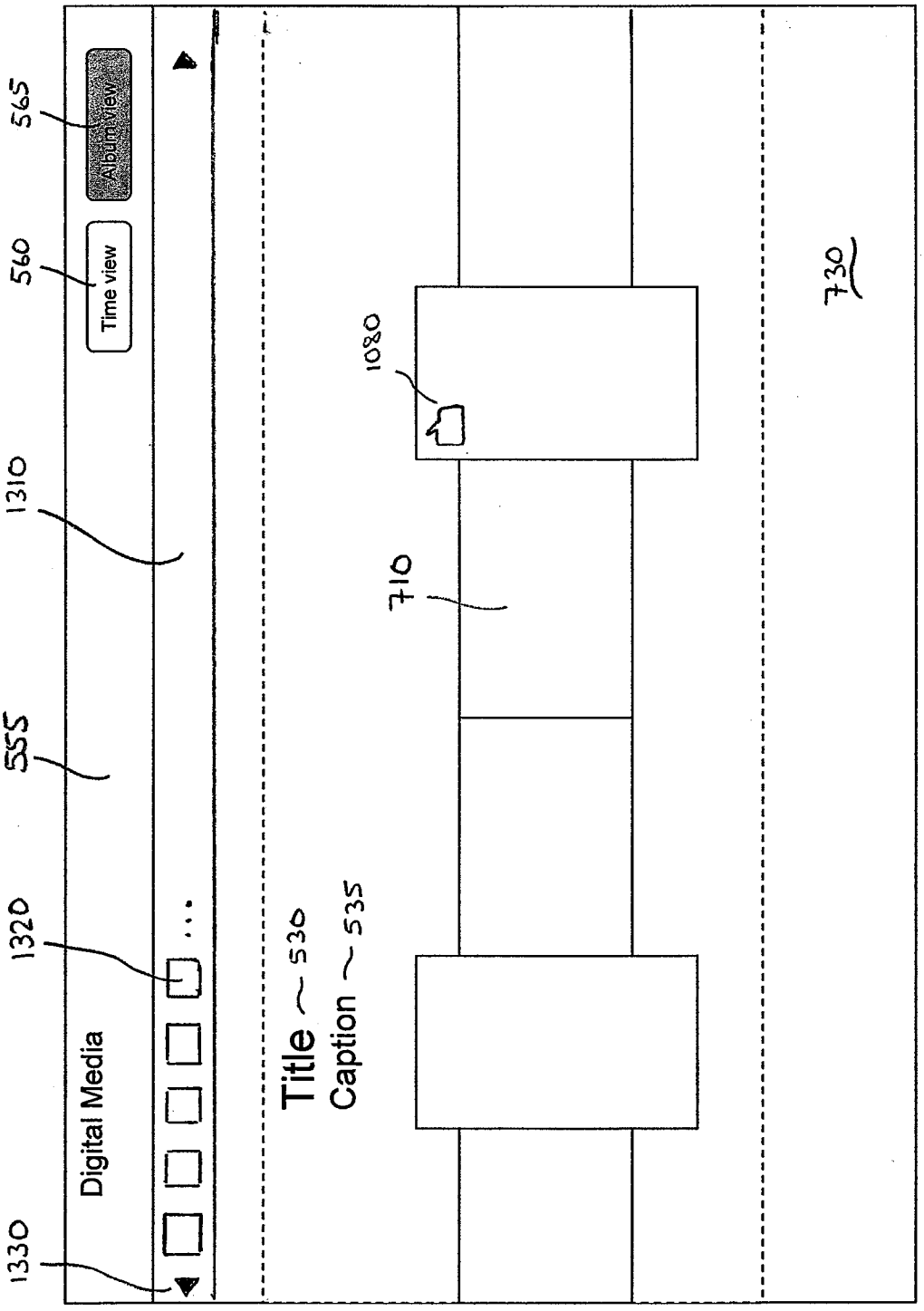

565
Album view
560
Time view
1310
555
1320
1330
Digital Media
Title ~ 530
Caption ~ 535
1080
710
730

FIG. 13A

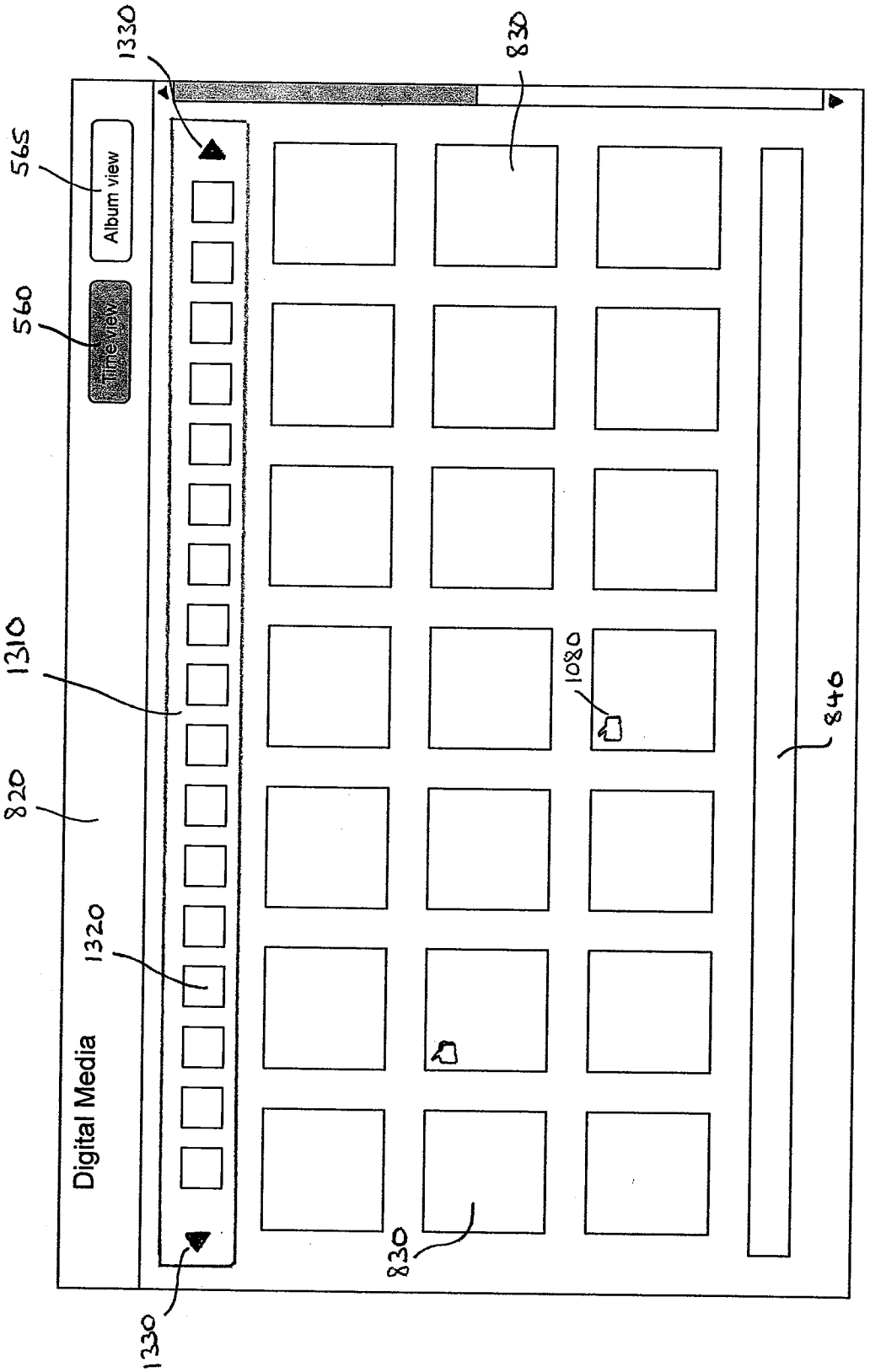

1330
830
565
Album view
560
Time view
1310
820
1320
Digital Media
1080
840
830
1330

FIG. 13B

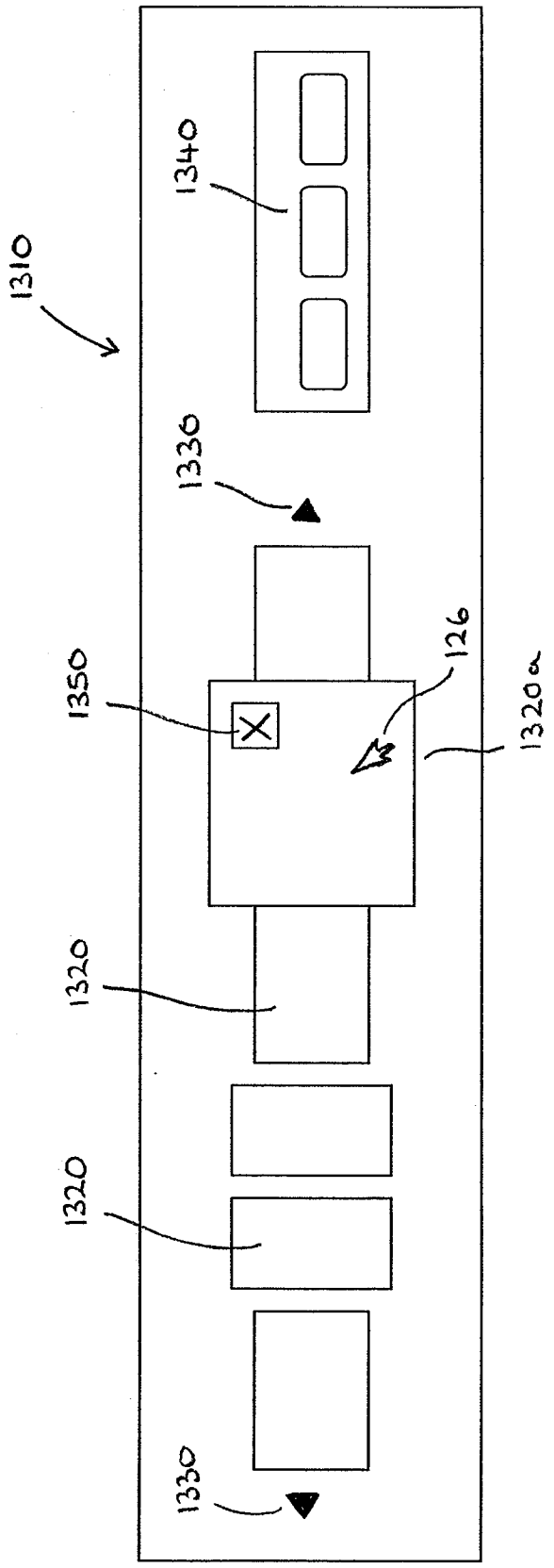


FIG. 13C

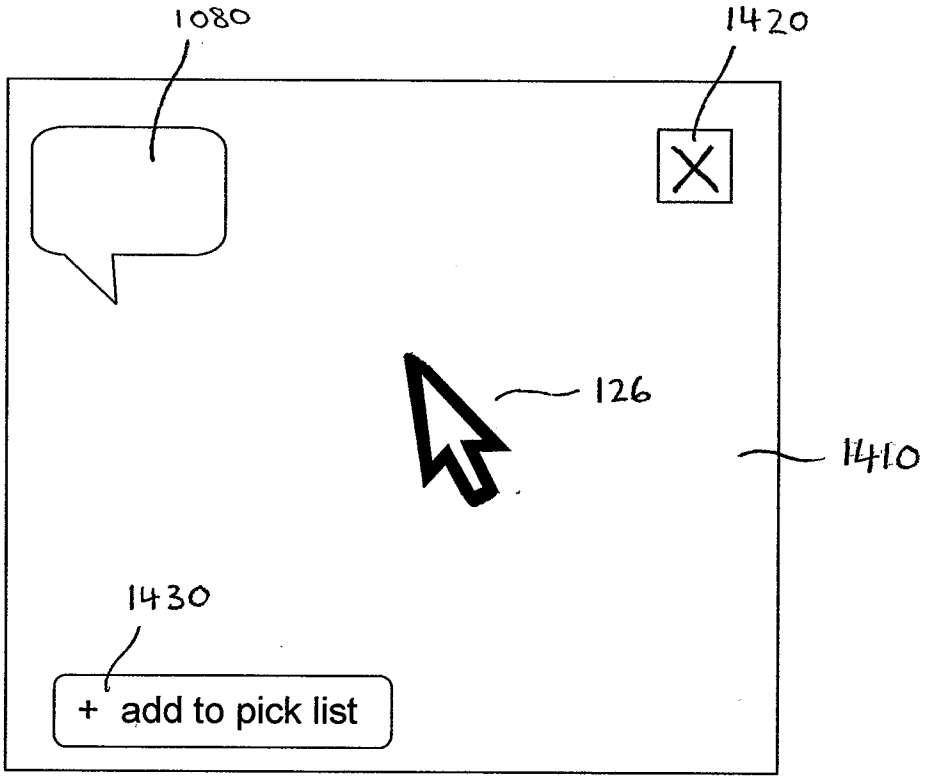


FIG. 14

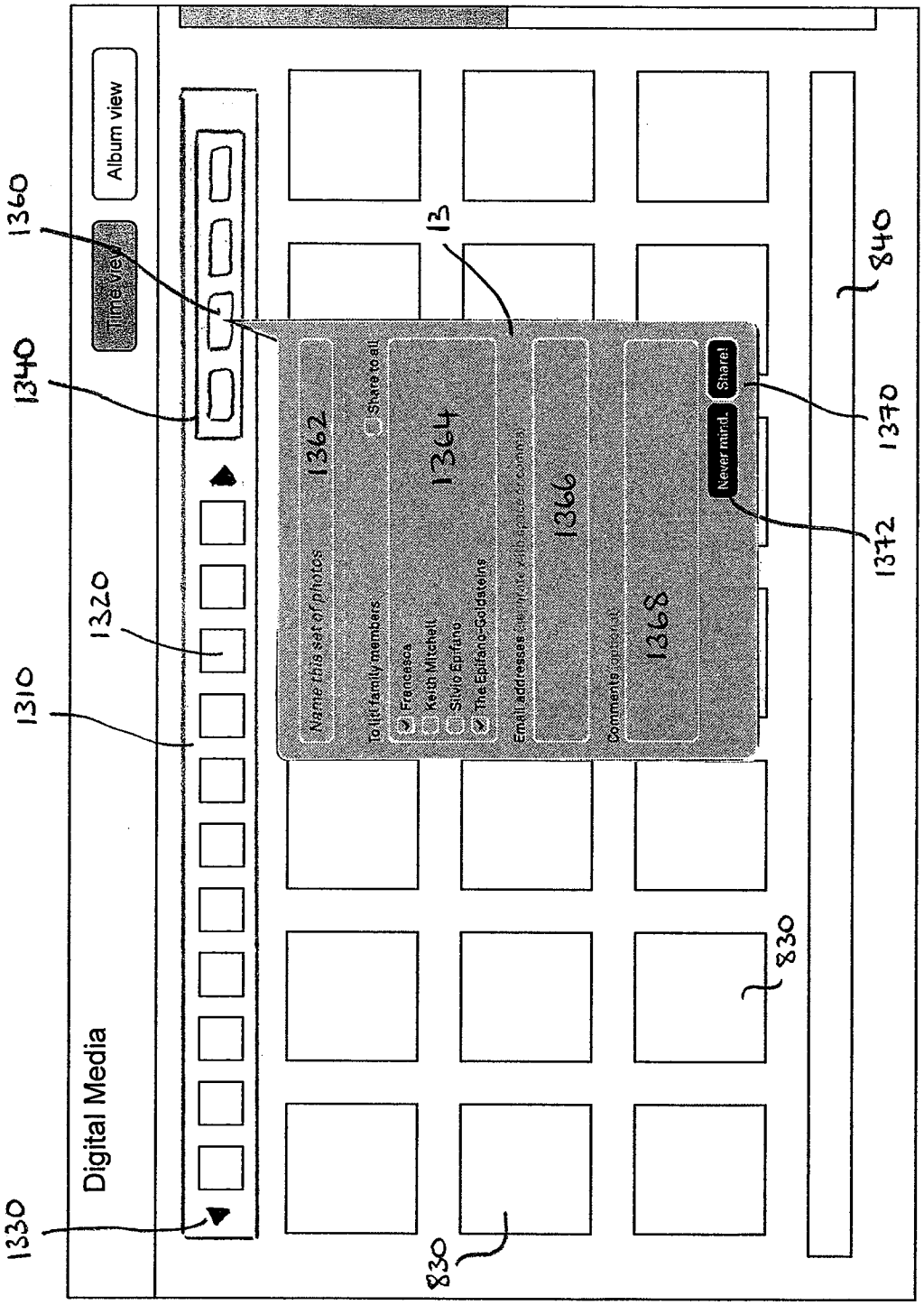

Digital Media
Timeline view
Album view
1330
1310
1320
1340
1360
830
830
840
13
1362
1364
1366
1368
1370
1372
Share!
Never mind.
Share to all
To (if family members)
Francesca
Keith Mitchell
Silvio Epifano
The Epifano-Goldsteins
Email addresses
Comments

FIG. 15

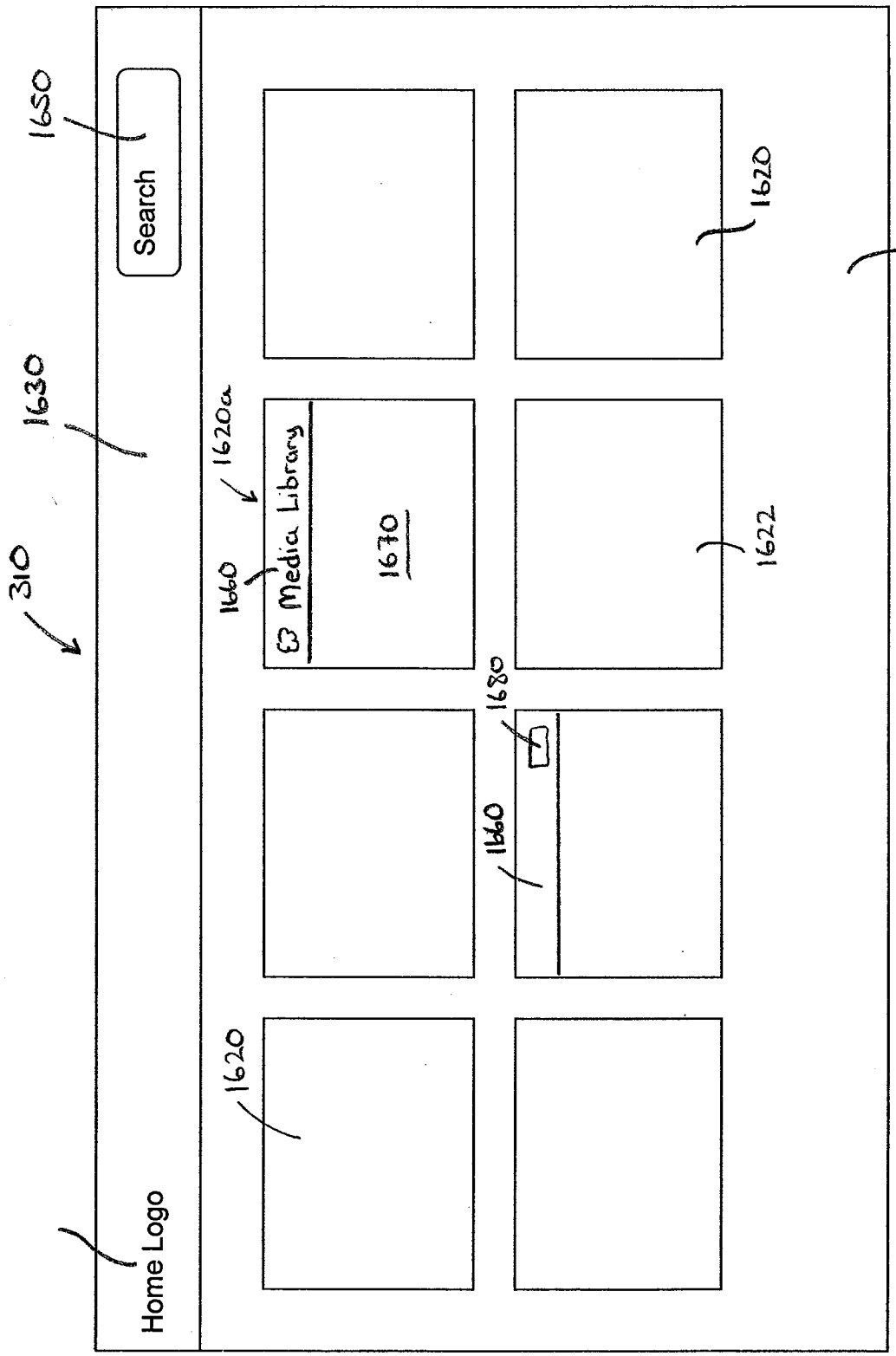

310
1630
1650
Search
1620a
1660
Media Library
1670
1620
1610
1622
1680
1660
1620
Home Logo

FIG. 16

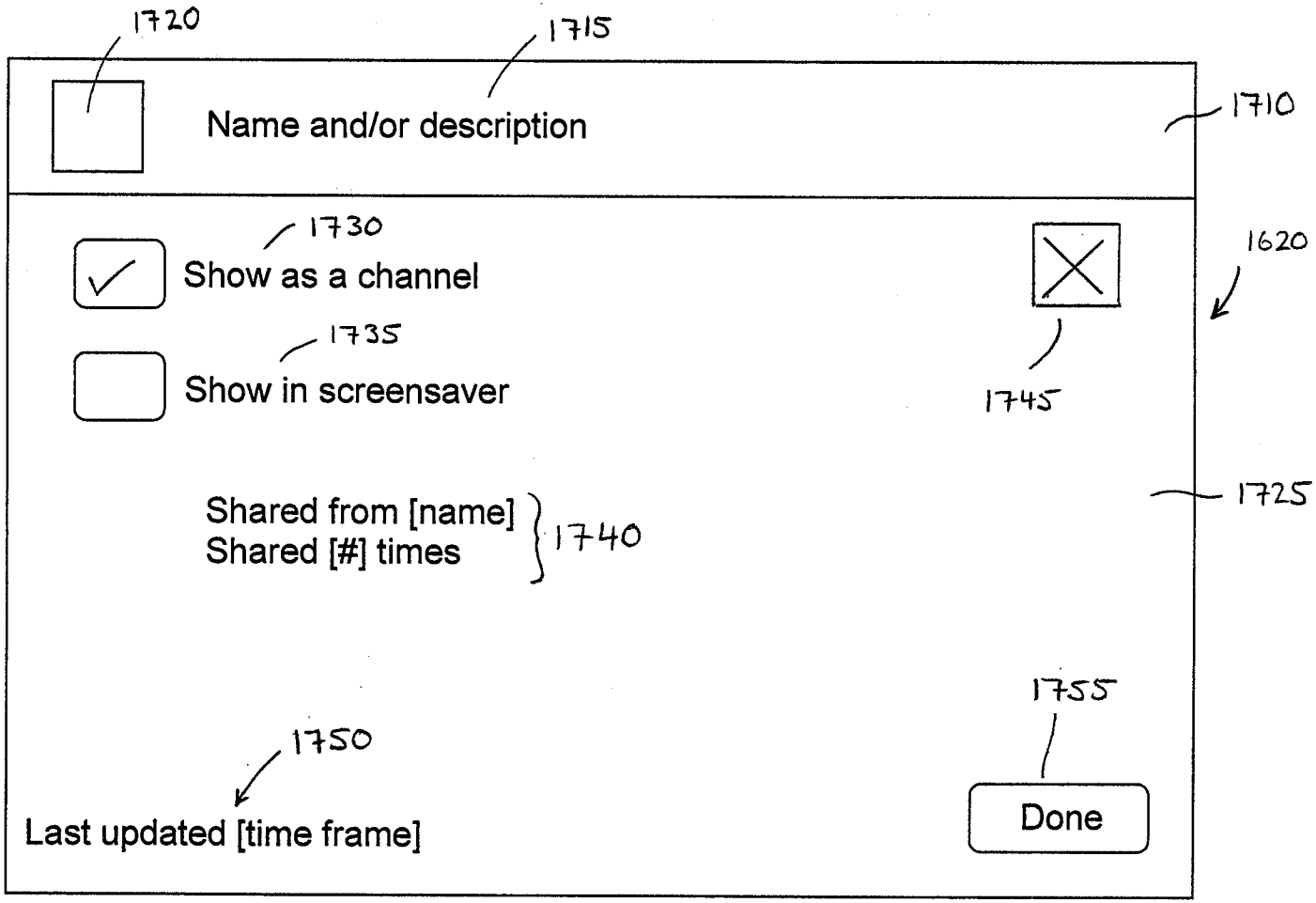

1720
1715
Name and/or description
1710
1730
Show as a channel
1620
1735
Show in screensaver
1745
1725
Shared from [name]
Shared [#] times
1740
1755
1750
Last updated [time frame]
Done

FIG. 17A

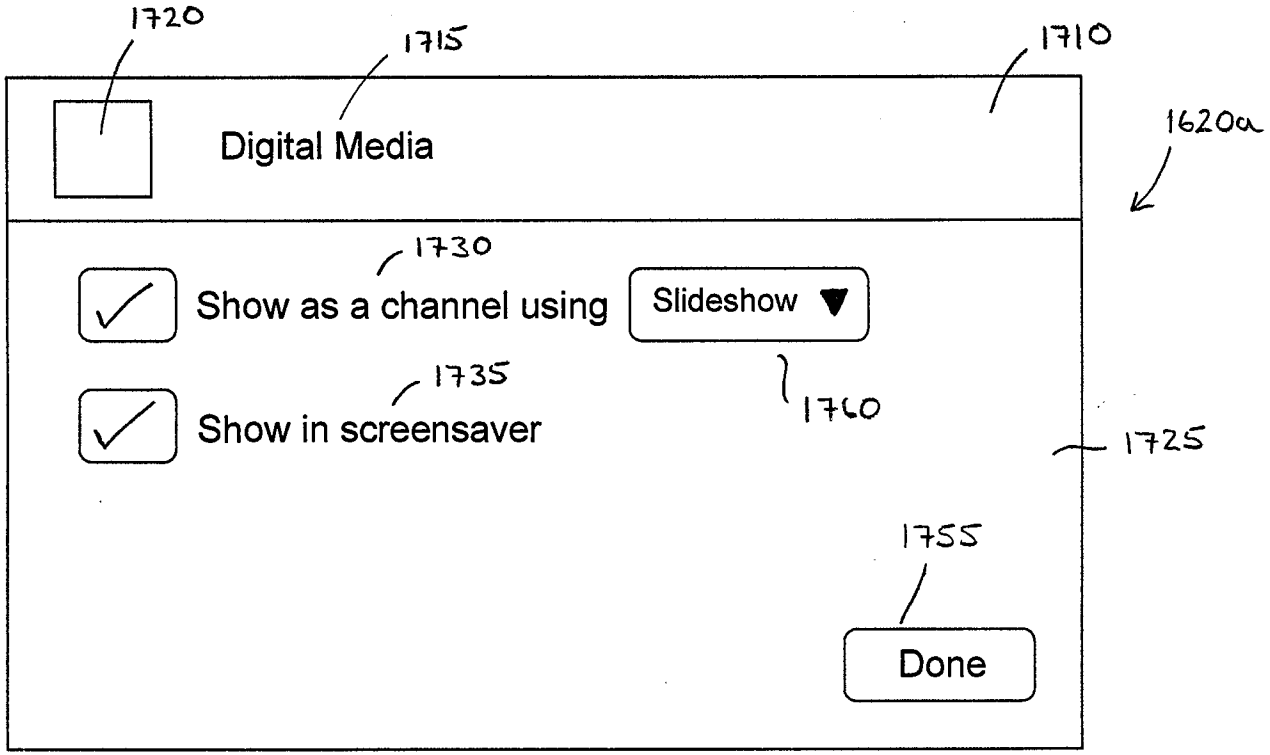

1720
1715
1710
1620a
Digital Media
1730
Show as a channel using
Slideshow
1735
Show in screensaver
1760
1725
1755
Done

FIG. 17B

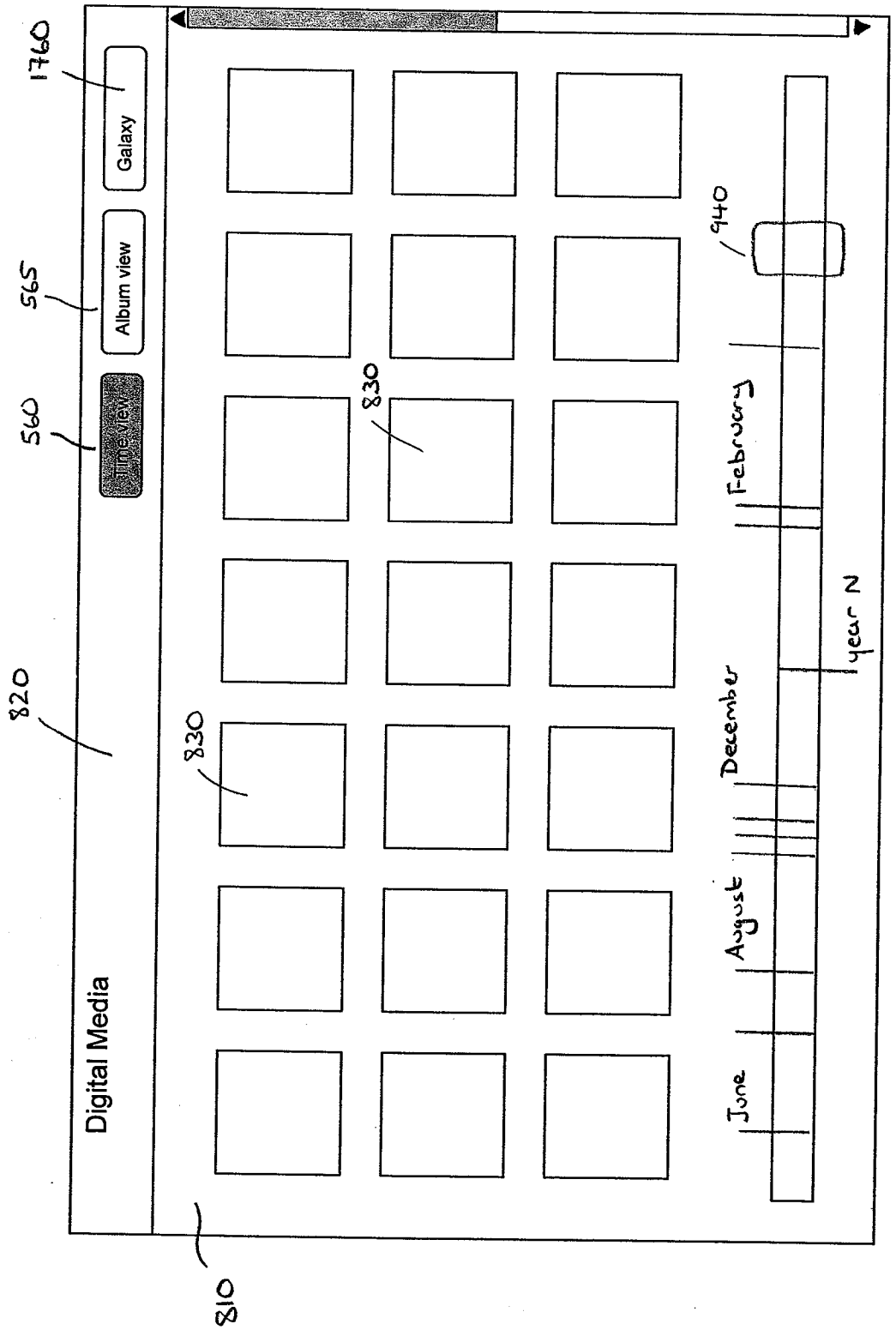

1760
Galaxy
565
Album view
560
Time view
820
Digital Media
830
830
940
February
December
year N
August
June
810

FIG. 18A

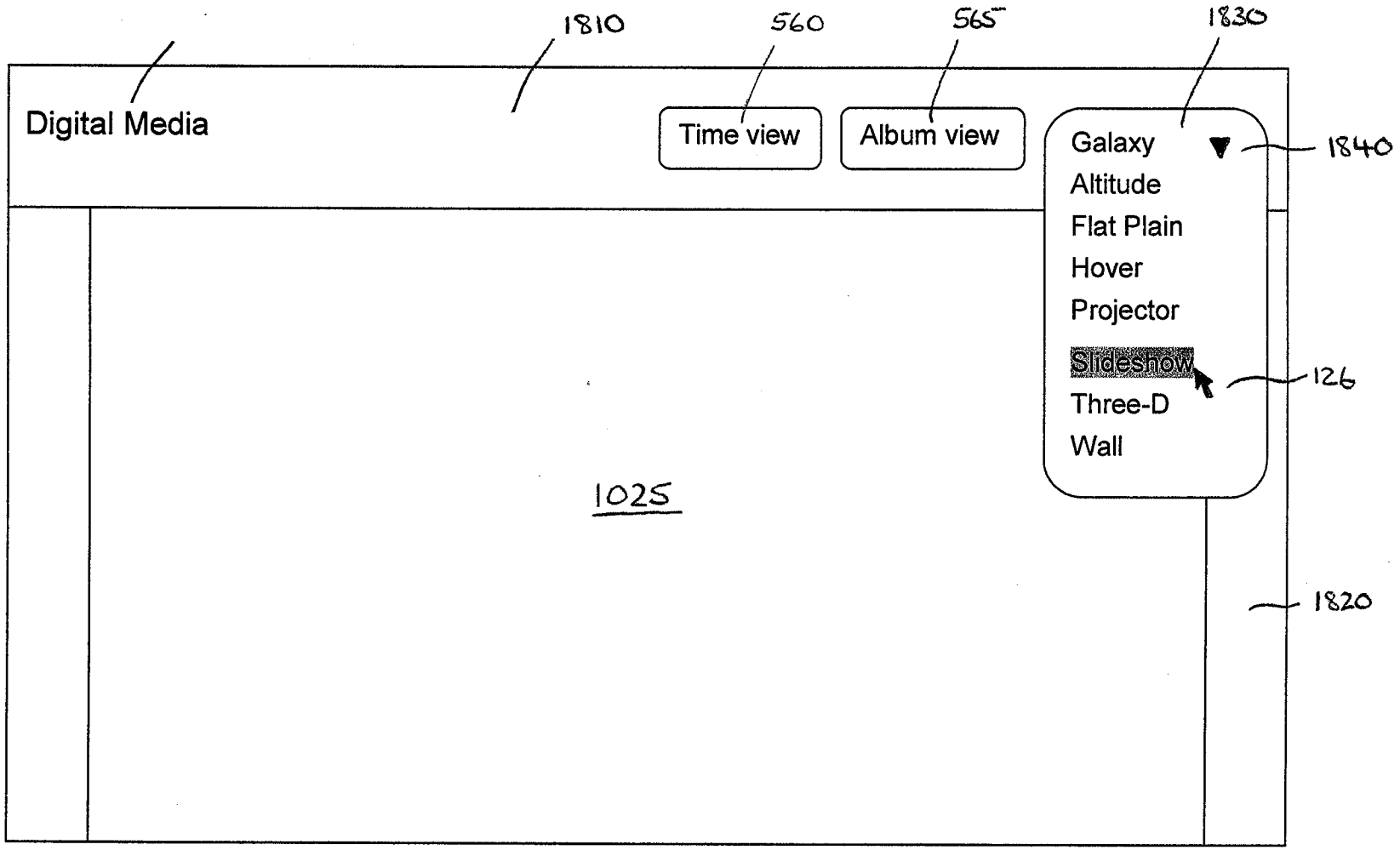

1810
560
565
1830
Digital Media
Time view
Album view
Galaxy
Altitude
Flat Plain
Hover
Projector
Slideshow
Three-D
Wall
1840
126
1025
1820

FIG. 18B

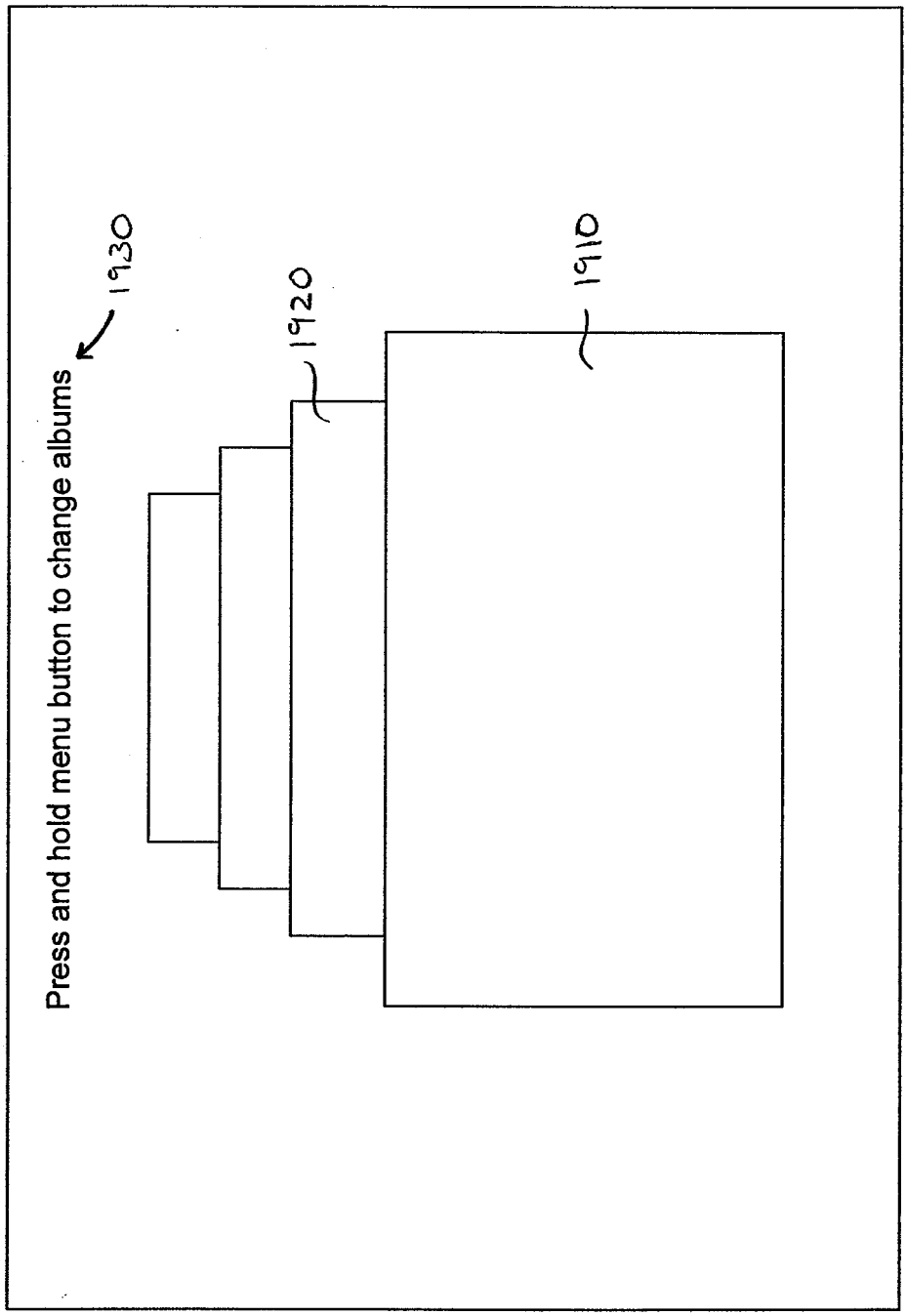


FIG. 19

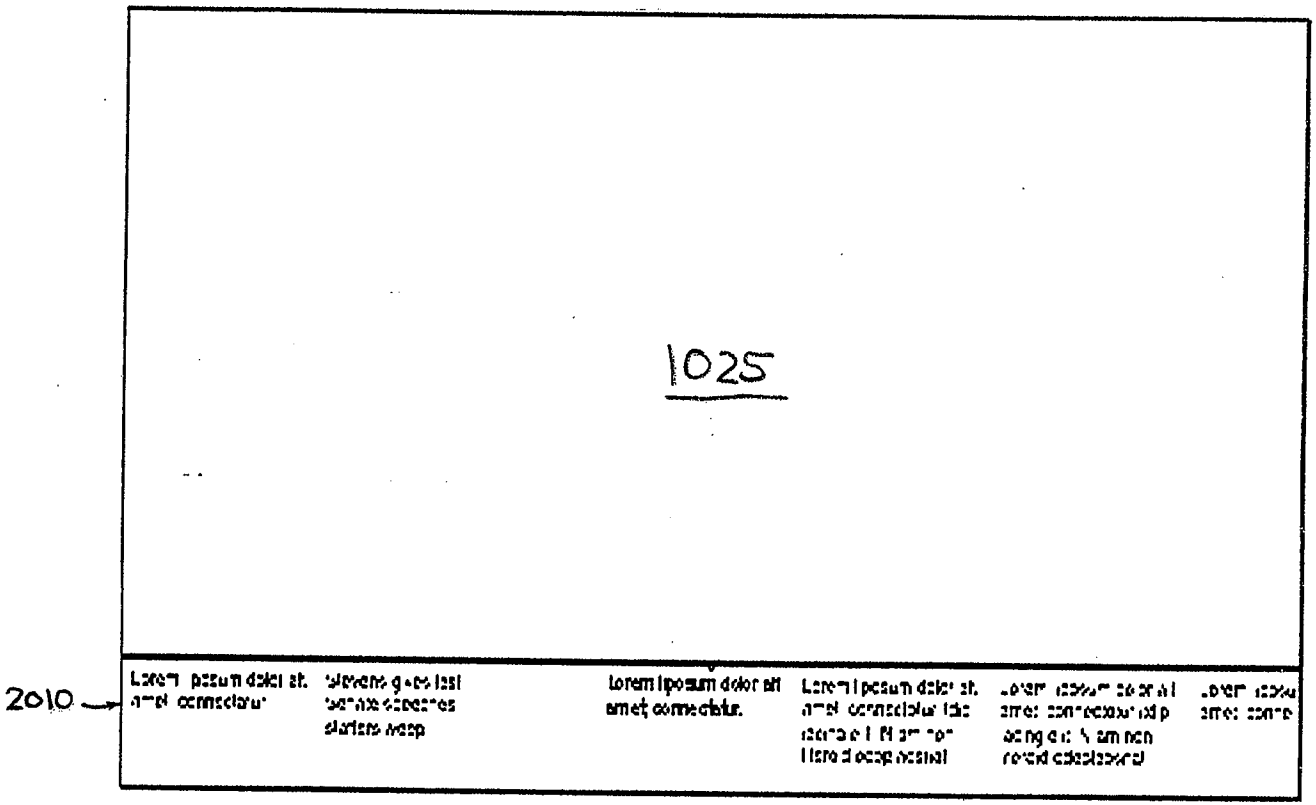


FIG. 20A

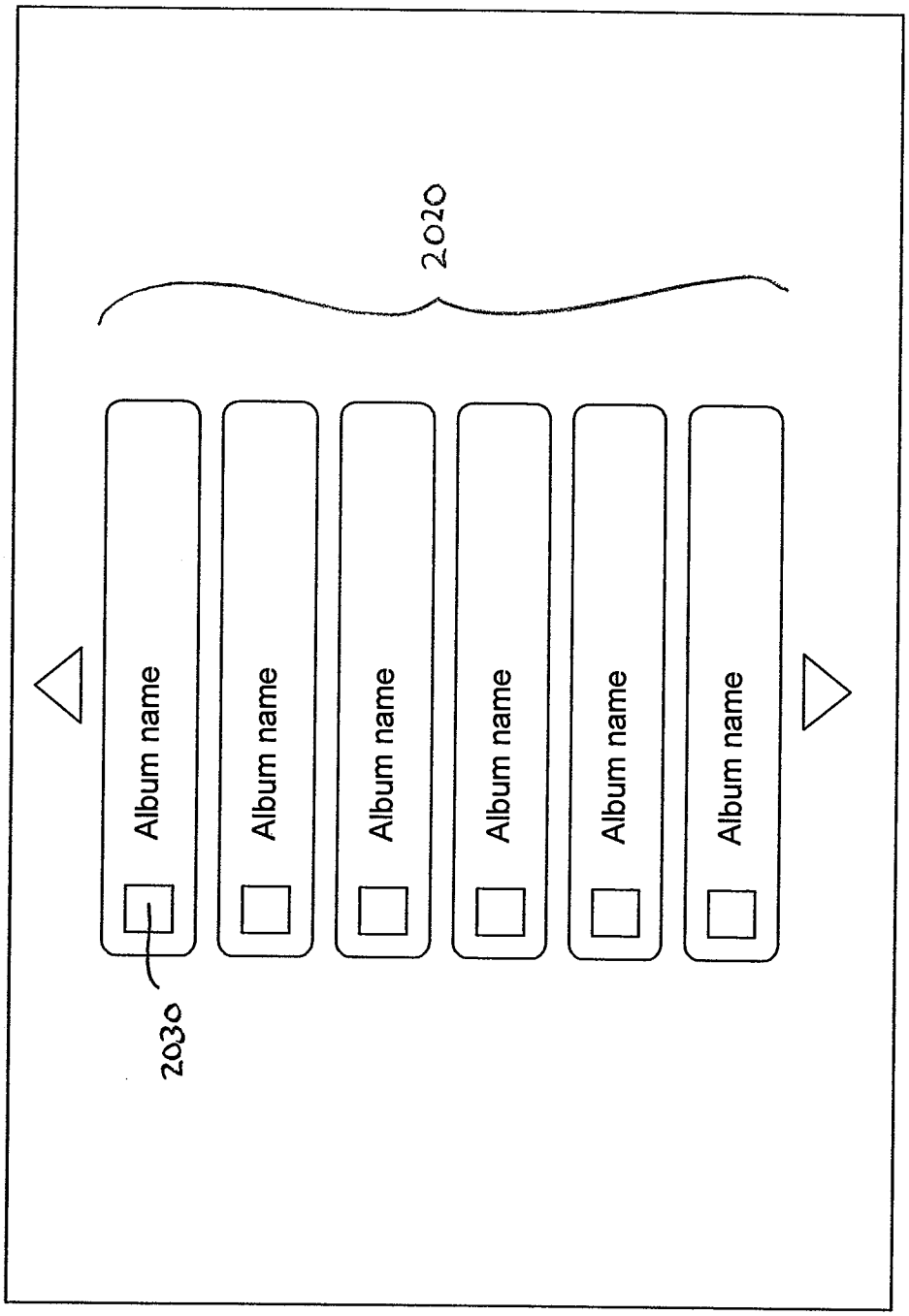

2020
Album name
Album name
Album name
Album name
Album name
Album name
2030

FIG. 20B

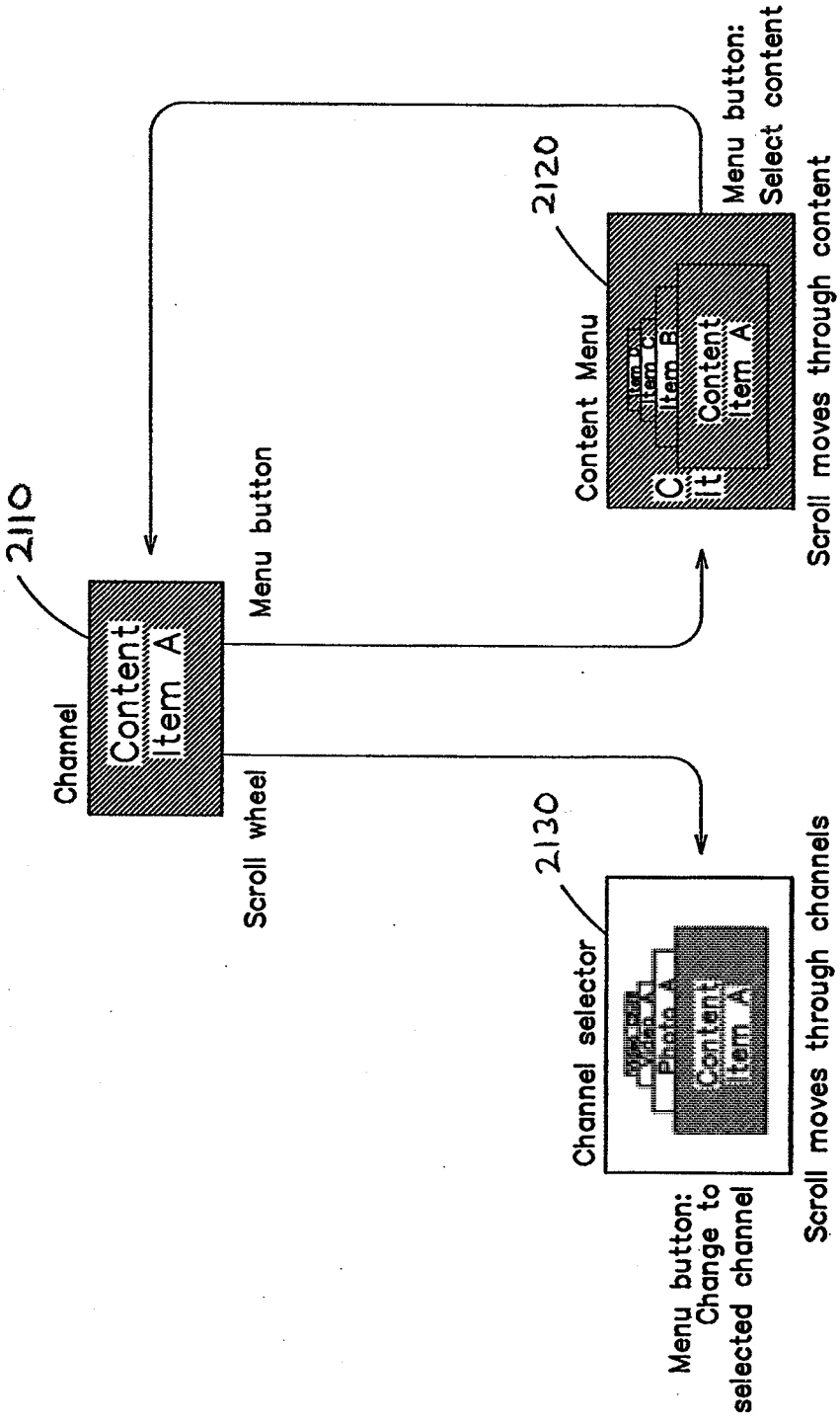

2110
Channel
Content Item A
Menu button
Scroll wheel
2120
Content Menu
Item D
Item C
Item B
Content Item A
Menu button: Select content
Scroll moves through content
2130
Channel selector
Photo A
Content Item A
Menu button: Change to selected channel
Scroll moves through channels

FIG. 21A

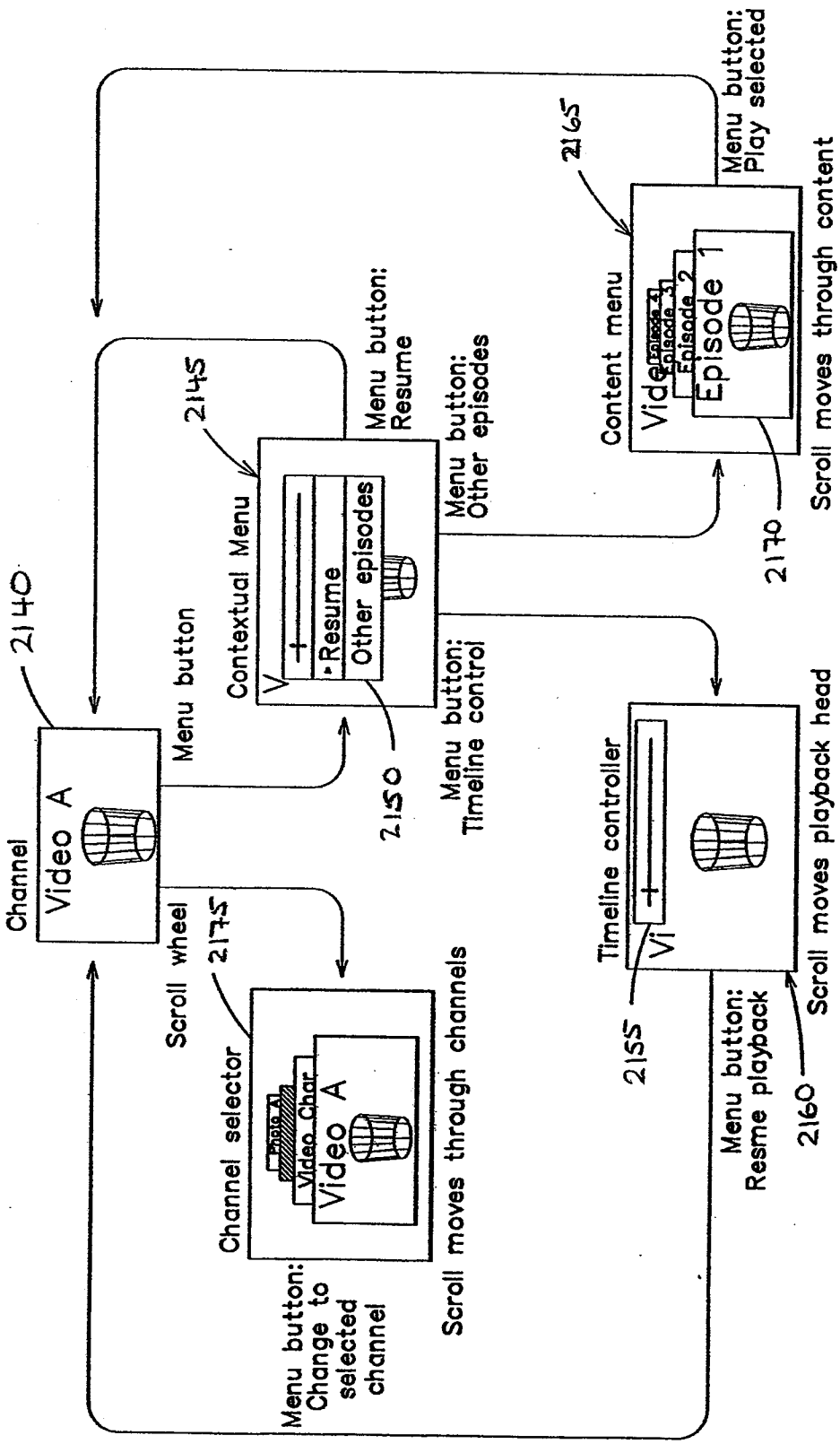

Channel
Video A
2140
Menu button
Scroll wheel
2175
Contextual Menu
Resume
Other episodes
2145
2150
Menu button:
Resume
Menu button:
Other episodes
Menu button:
Timeline control
Channel selector
Video A
Video Char
Menu button:
Change to
selected
channel
Scroll moves through channels
Timeline controller
2155
Menu button:
Resme playback
2160
Scroll moves playback head
Content menu
Episode 1
2165
2170
Menu button:
Play selected
Scroll moves through content

FIG. 21B

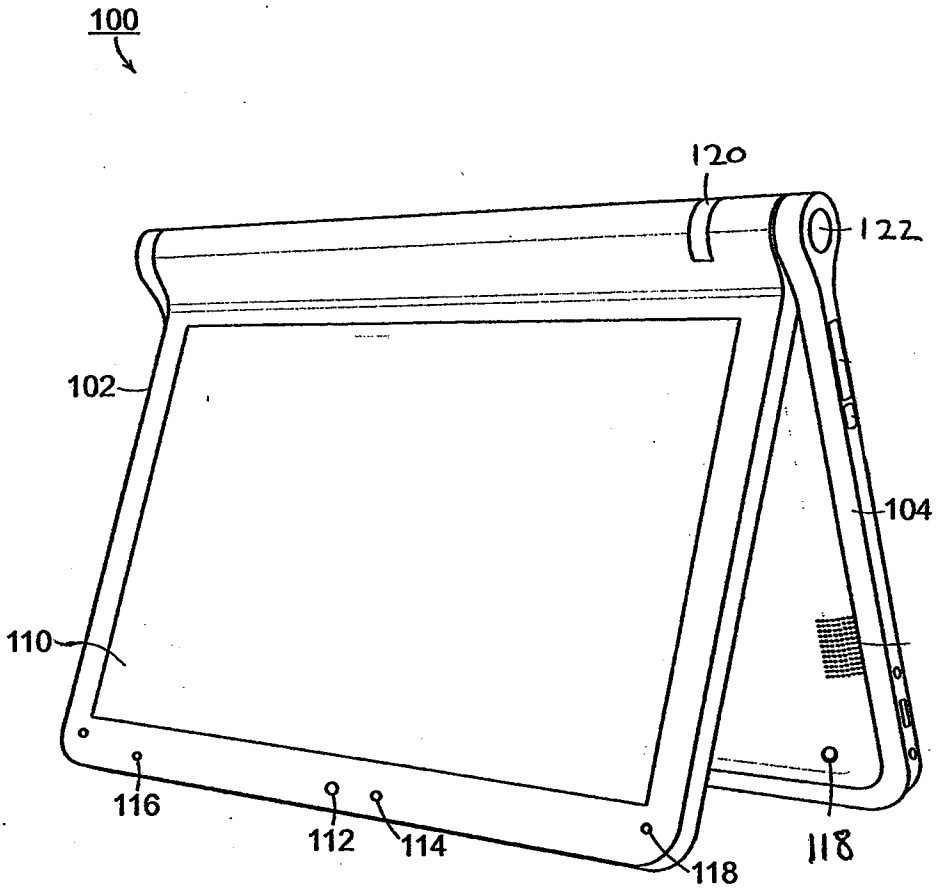


FIG. 22

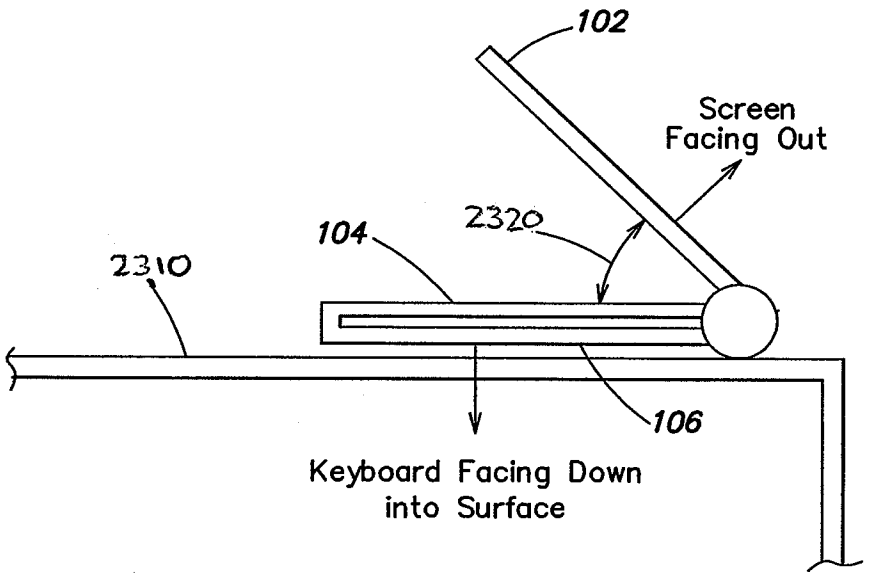

102
Screen
Facing Out
2320
104
2310
106
Keyboard Facing Down
into Surface

FIG. 23

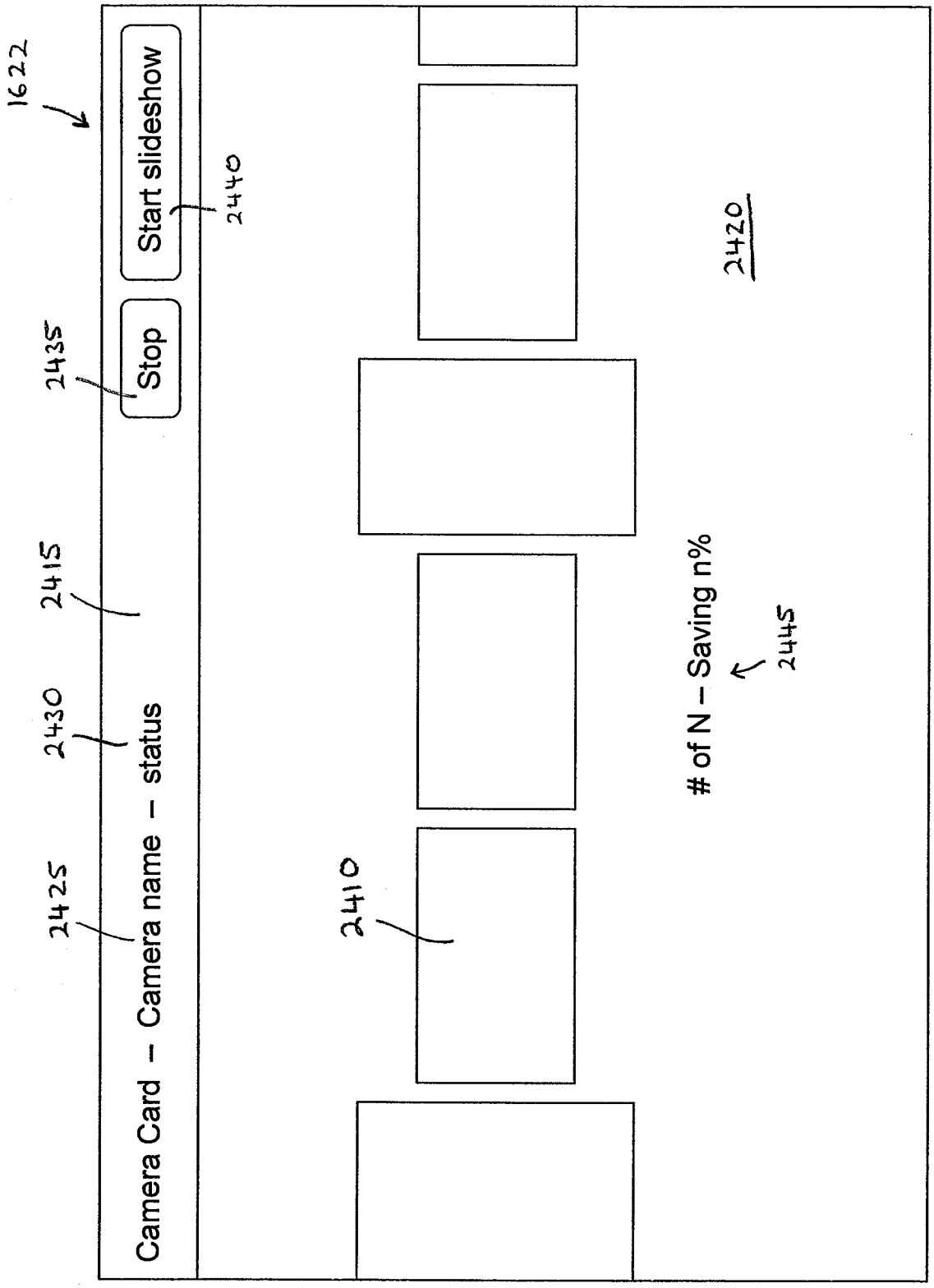

1622
Start slideshow
2440
2435
Stop
2415
2430
Camera Card – Camera name – status
2425
2410
2420
of N – Saving n%
2445

FIG. 24

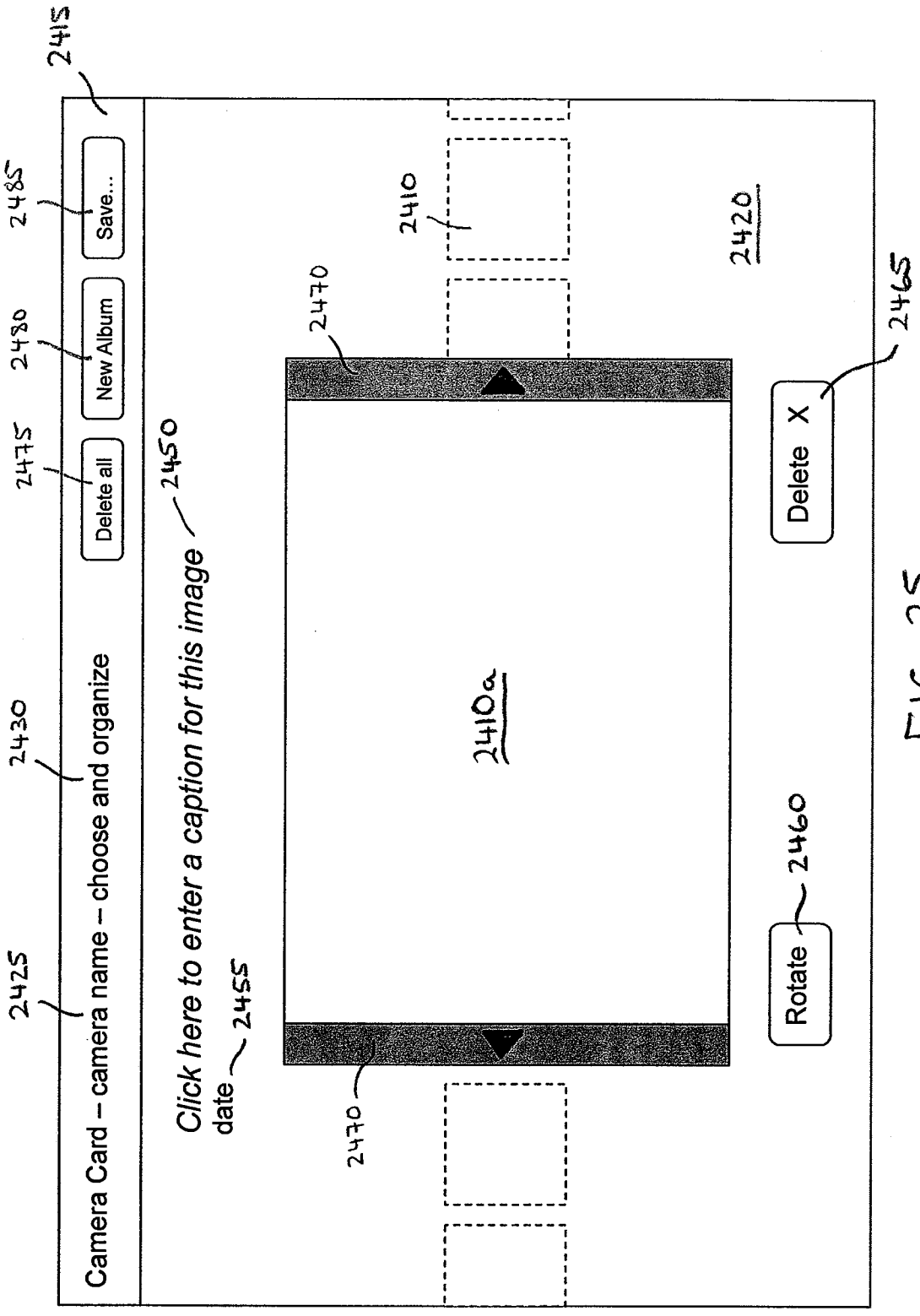

2415
2485
Save...
2480
New Album
2475
Delete all
2450
2430
Camera Card – camera name – choose and organize
2425
Click here to enter a caption for this image
date
2455
2470
2410
2420
2470
2410a
2465
Delete X
2460
Rotate

FIG. 25

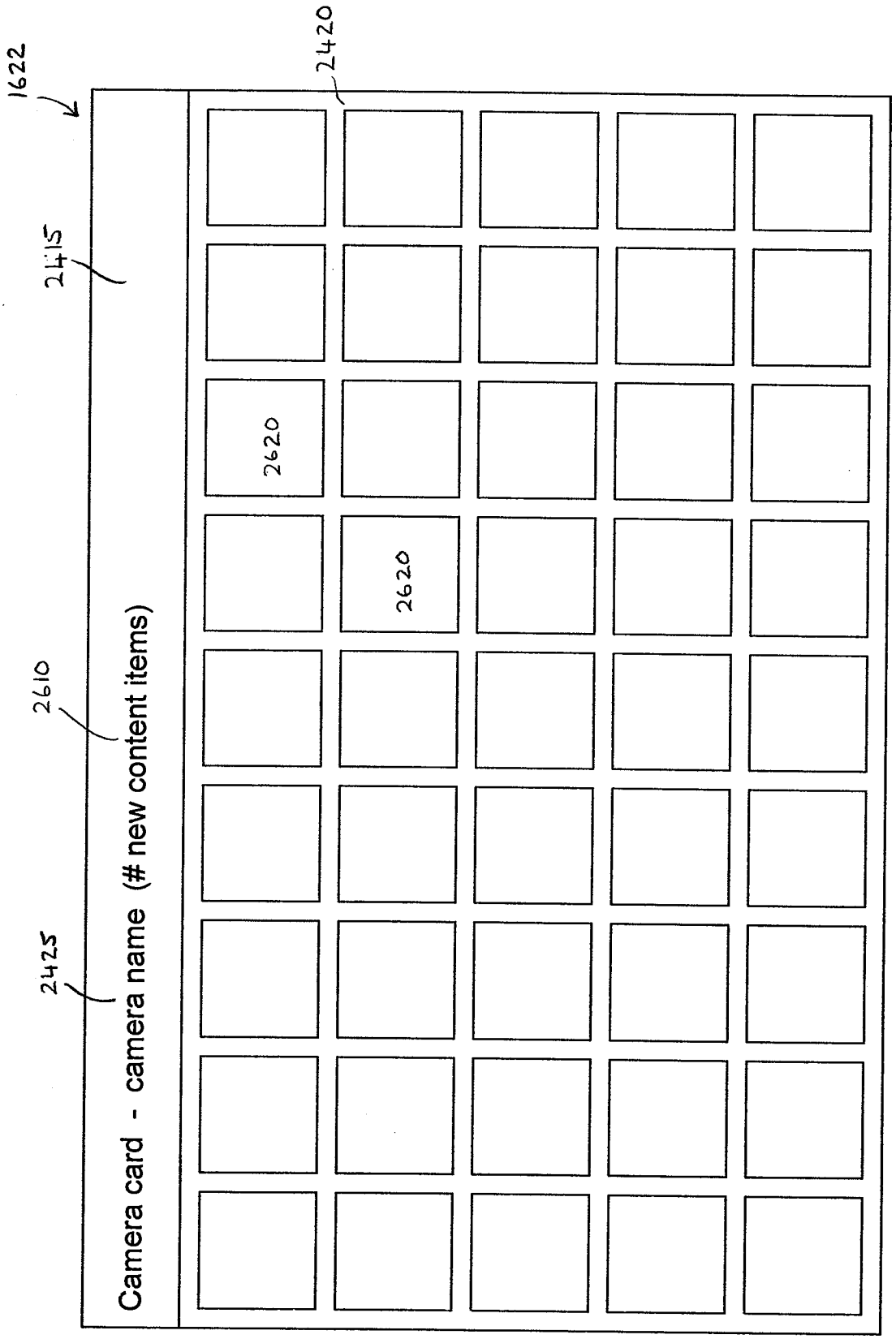

1622
2420
2415
2620
2620
2610
Camera card - camera name (# new content items)
2425

FIG. 26

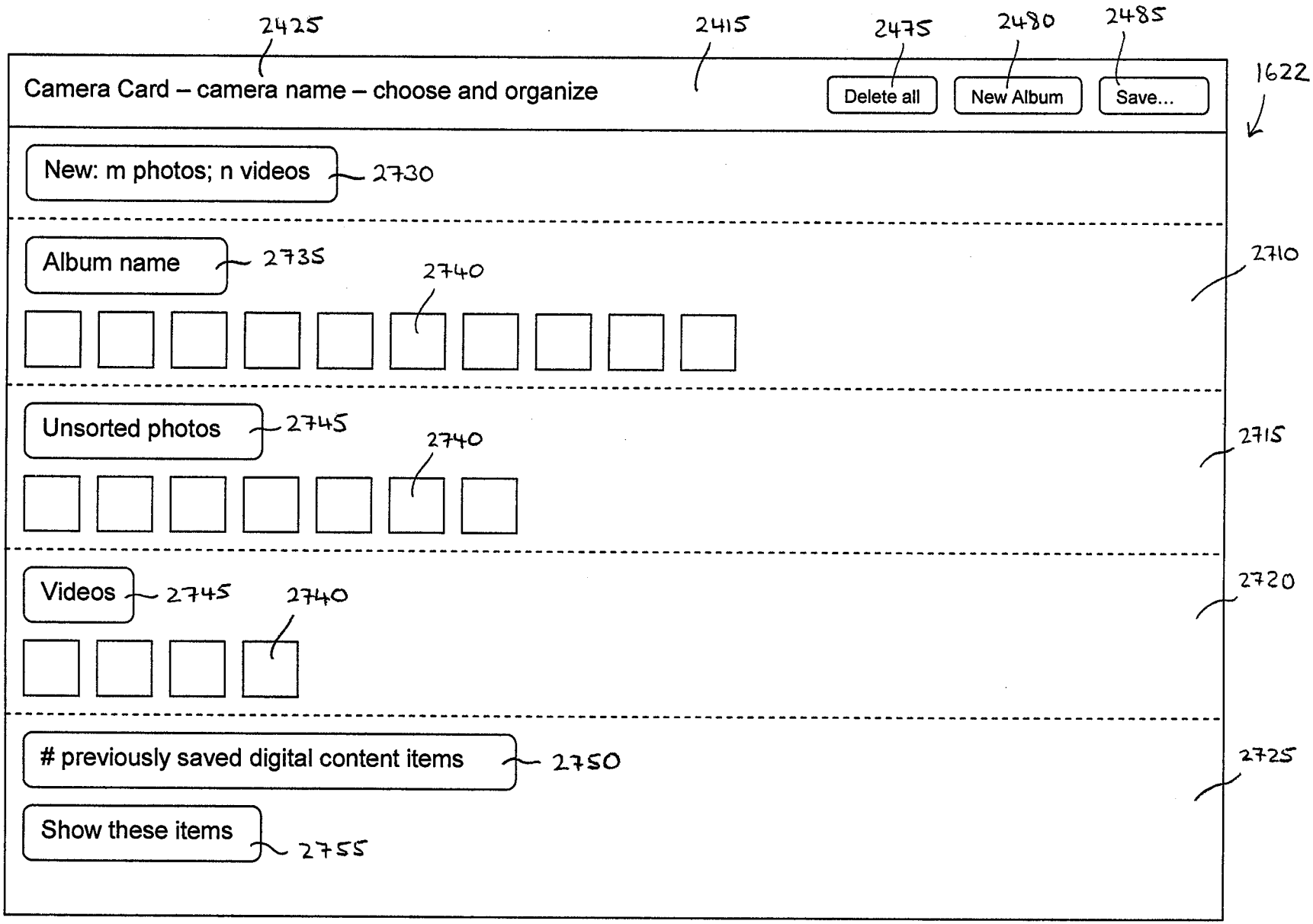

2425
2415
2475
2480
2485
Camera Card – camera name – choose and organize
Delete all
New Album
Save...
1622
New: m photos; n videos
2730
Album name
2735
2740
2710
Unsorted photos
2745
2740
2715
Videos
2745
2740
2720
previously saved digital content items
2750
2725
Show these items
2755

FIG. 27

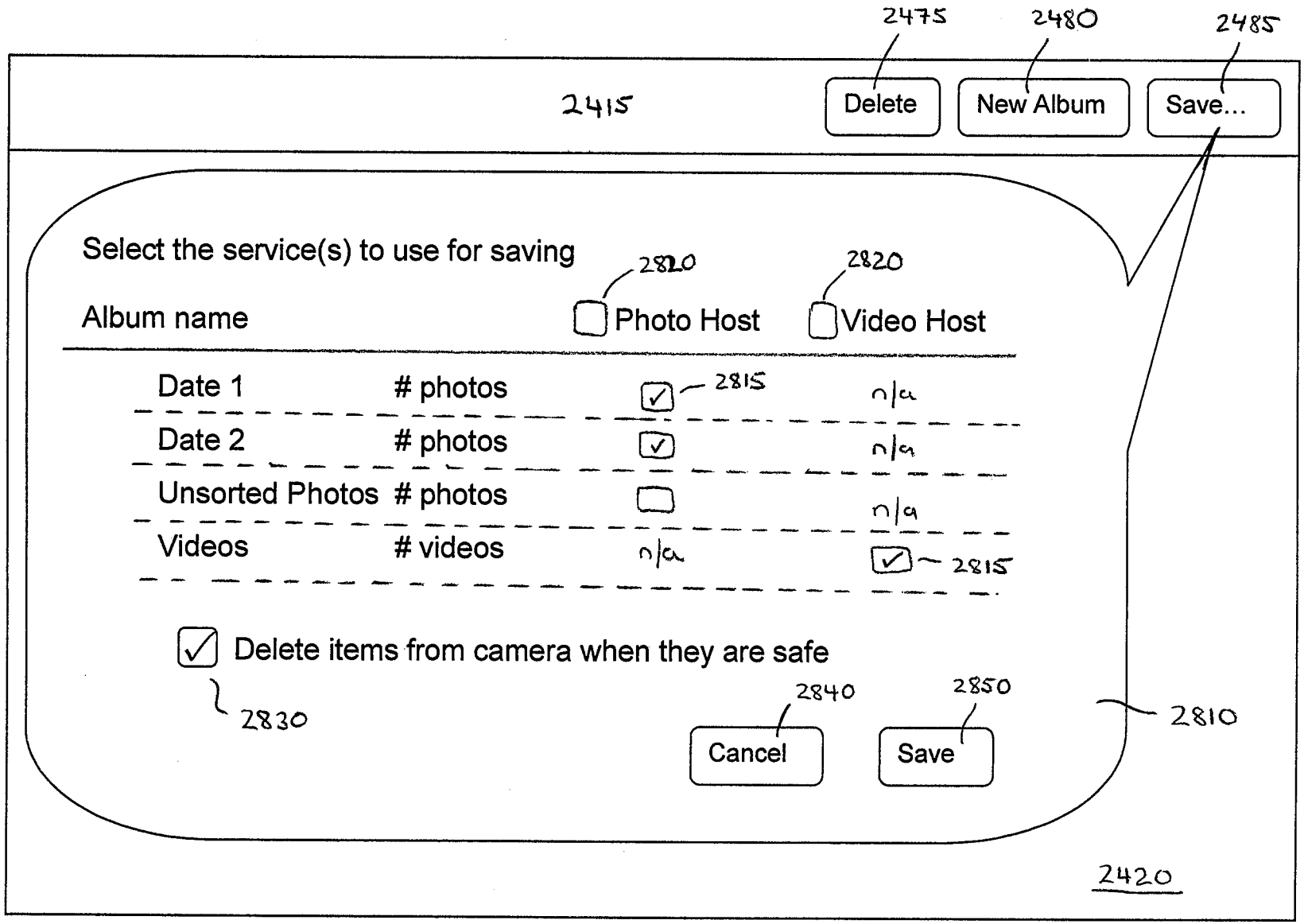

2475
2480
2485
2415
Delete
New Album
Save...
Select the service(s) to use for saving
2810
2820
2820
Album name
Photo Host
Video Host
Date 1
photos
2815
n/a
Date 2
photos
n/a
Unsorted Photos
photos
n/a
Videos
videos
n/a
2815
Delete items from camera when they are safe
2830
2840
2850
Cancel
Save
2810
2420

FIG. 28

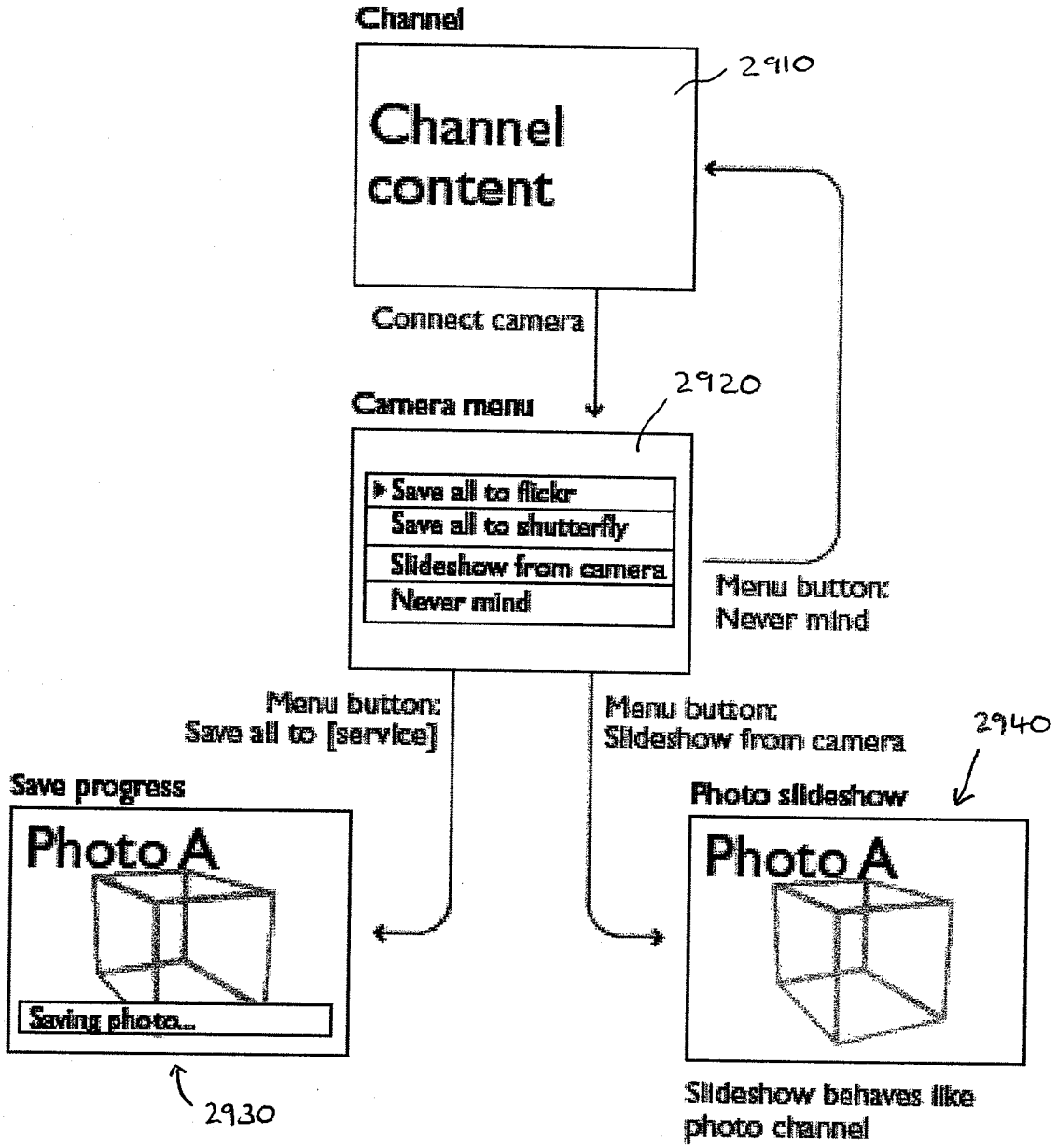

Channel
Channel content
2910
Connect camera
Camera menu
2920
Save all to flickr
Save all to shutterfly
Slideshow from camera
Never mind
Menu button:
Never mind
Menu button:
Save all to [service]
Menu button:
Slideshow from camera
2940
Save progress
Photo A
Saving photo...
2930
Photo slideshow
Photo A
Slideshow behaves like photo channel

FIG. 29

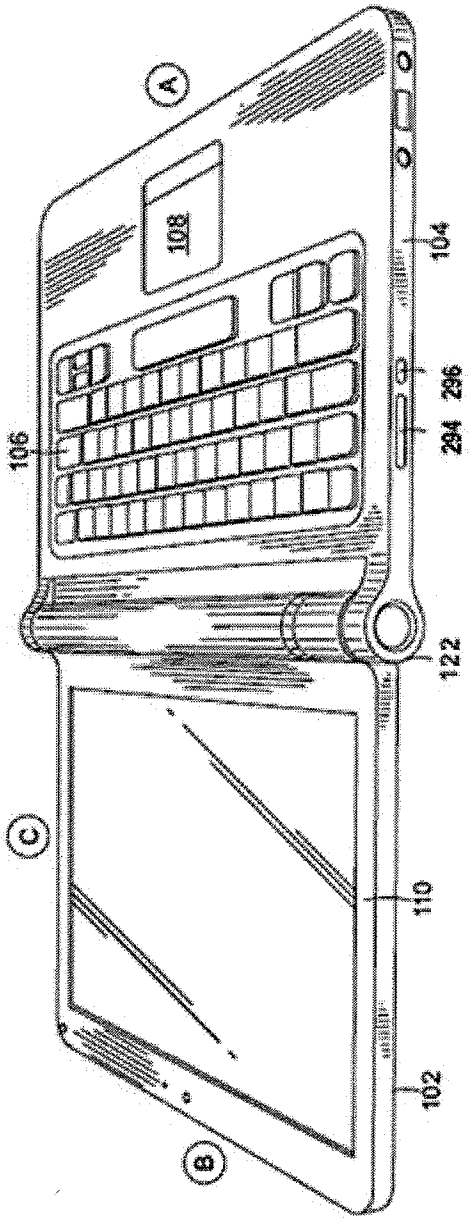


FIG. 30

PTO/SB/14 (07-07)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	A2029-700719
	Application Number	
Title of Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Applicant Information:

Applicant 1 Remove

Applicant Authority ◉ Inventor ○ Legal Representative under 35 U.S.C. 117 ○ Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Robert	Sanford Havoc	Pennington	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Asheville	State/Province	NC	Country of Residence[i]	US

Citizenship under 37 CFR 1.41(b)[i] US

Mailing Address of Applicant:

Address 1	1304 Asheville Springs Cir		
Address 2			
City	Asheville	State/Province	NC
Postal Code	28806	Country[i]	US

Applicant 2 Remove

Applicant Authority ◉ Inventor ○ Legal Representative under 35 U.S.C. 117 ○ Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Noah	Bruce	Guyot	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Mill Valley	State/Province	CA	Country of Residence[i]	US

Citizenship under 37 CFR 1.41(b)[i] US

Mailing Address of Applicant:

Address 1	4 Longfellow Road		
Address 2			
City	Mill Valley	State/Province	CA
Postal Code	94941	Country[i]	US

Applicant 3 Remove

Applicant Authority ◉ Inventor ○ Legal Representative under 35 U.S.C. 117 ○ Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Daniel		Kuo	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	San Francisco	State/Province	CA	Country of Residence[i]	US

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	A2029-700719
	Application Number	
Title of Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT	

Citizenship under 37 CFR 1.41(b) i	US				
Mailing Address of Applicant:					
Address 1	1916 Page Street, Apt. 1				
Address 2					
City	San Francisco	**State/Province**	CA		
Postal Code	94117	**Country**i	US		
Applicant 4				Remove	
Applicant Authority ◉ Inventor	○ Legal Representative under 35 U.S.C. 117	○ Party of Interest under 35 U.S.C. 118			
Prefix	**Given Name**	**Middle Name**	**Family Name**	**Suffix**	
	Jenea	Boshart	Hayes		
Residence Information (Select One) ◉ US Residency	○ Non US Residency	○ Active US Military Service			
City	Castro Valley	**State/Province**	CA	**Country of Residence** i	US
Citizenship under 37 CFR 1.41(b) i	US				
Mailing Address of Applicant:					
Address 1	18379 Plymouth Drive				
Address 2					
City	Castro Valley	**State/Province**	CA		
Postal Code	94546	**Country**i	US		
Applicant 5				Remove	
Applicant Authority ◉ Inventor	○ Legal Representative under 35 U.S.C. 117	○ Party of Interest under 35 U.S.C. 118			
Prefix	**Given Name**	**Middle Name**	**Family Name**	**Suffix**	
	Aaron		Tang		
Residence Information (Select One) ◉ US Residency	○ Non US Residency	○ Active US Military Service			
City	Somerville	**State/Province**	MA	**Country of Residence** i	US
Citizenship under 37 CFR 1.41(b) i	US				
Mailing Address of Applicant:					
Address 1	28 Dickinson Street, Apt. B				
Address 2					
City	Somerville	**State/Province**	MA		
Postal Code	02143	**Country**i	US		
Applicant 6				Remove	
Applicant Authority ◉ Inventor	○ Legal Representative under 35 U.S.C. 117	○ Party of Interest under 35 U.S.C. 118			
Prefix	**Given Name**	**Middle Name**	**Family Name**	**Suffix**	
	David	Livingstone	Fore		
Residence Information (Select One) ◉ US Residency	○ Non US Residency	○ Active US Military Service			
City	Oakland	**State/Province**	CA	**Country of Residence** i	US
Citizenship under 37 CFR 1.41(b) i	US				

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	A2029-700719
	Application Number	
Title of Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT	

Mailing Address of Applicant:			
Address 1	1 Lakeside Drive, #602		
Address 2			
City	Oakland	State/Province	CA
Postal Code	96412	Country[i]	

Applicant 7 — Remove

Applicant Authority (•) Inventor ( ) Legal Representative under 35 U.S.C. 117 ( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	John		Chuang	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Brookline	State/Province	MA	Country of Residence[i]	US

Citizenship under 37 CFR 1.41(b)[i]: US

Mailing Address of Applicant:			
Address 1	185 Buckminster Road		
Address 2			
City	Brookline	State/Province	MA
Postal Code	02445	Country[i]	US

Applicant 8 — Remove

Applicant Authority (•) Inventor ( ) Legal Representative under 35 U.S.C. 117 ( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Chris		Bambacus	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Framingham	State/Province	MA	Country of Residence[i]	US

Citizenship under 37 CFR 1.41(b)[i]: US

Mailing Address of Applicant:			
Address 1	19 Burdette Ave		
Address 2			
City	Framingham	State/Province	MA
Postal Code	01702	Country[i]	US

Applicant 9 — Remove

Applicant Authority (•) Inventor ( ) Legal Representative under 35 U.S.C. 117 ( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Eben		Eliason	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Providence	State/Province	RI	Country of Residence[i]	US

Citizenship under 37 CFR 1.41(b)[i]: US

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	A2029-700719
	Application Number	
Title of Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT	

Mailing Address of Applicant:					
Address 1	392 S. Main Street, Apt. 67				
Address 2					
City	Providence	State/Province	RI		
Postal Code	02903	Country[i]	US		

Applicant 10 — Remove

Applicant Authority: (•) Inventor ( ) Legal Representative under 35 U.S.C. 117 ( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Chris		Moody	

Residence Information (Select One): (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Boulder	State/Province	CO	Country of Residence[i]	US

Citizenship under 37 CFR 1.41(b)[i]: US

Mailing Address of Applicant:					
Address 1	429 Marine Street				
Address 2					
City	Boulder	State/Province	CO		
Postal Code	80302	Country[i]	US		

Applicant 11 — Remove

Applicant Authority: (•) Inventor ( ) Legal Representative under 35 U.S.C. 117 ( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Yves		Behar	

Residence Information (Select One): (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Oakland	State/Province	CA	Country of Residence[i]	US

Citizenship under 37 CFR 1.41(b)[i]: US

Mailing Address of Applicant:					
Address 1	5741 Scarborough Drive				
Address 2					
City	Oakland	State/Province	CA		
Postal Code	94611	Country[i]	US		

Applicant 12 — Remove

Applicant Authority: (•) Inventor ( ) Legal Representative under 35 U.S.C. 117 ( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Joshua		Morenstein	

Residence Information (Select One): (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	San Francisco	State/Province	CA	Country of Residence[i]	US

Citizenship under 37 CFR 1.41(b)[i]: US

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	A2029-700719
	Application Number	
Title of Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT	

Mailing Address of Applicant:					
Address 1	124 Downey Street				
Address 2					
City	San Francisco	State/Province	CA		
Postal Code	94117	Country[i]	US		

Applicant 13 — Remove

Applicant Authority (•) Inventor ( ) Legal Representative under 35 U.S.C. 117 ( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Christopher		Hibmacronan	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Oakland	State/Province	CA	Country of Residence[i]	US

Citizenship under 37 CFR 1.41(b)[i]: US

Mailing Address of Applicant:					
Address 1	2429 Damuth Street				
Address 2					
City	Oakland	State/Province	CA		
Postal Code	94602	Country[i]	US		

Applicant 14 — Remove

Applicant Authority (•) Inventor ( ) Legal Representative under 35 U.S.C. 117 ( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Naoya		Edahiro	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	San Francisco	State/Province	CA	Country of Residence[i]	US

Citizenship under 37 CFR 1.41(b)[i]: JP

Mailing Address of Applicant:					
Address 1	375 Bartlett Street				
Address 2					
City	San Francisco	State/Province	CA		
Postal Code	94110	Country[i]	US		

Applicant 15 — Remove

Applicant Authority (•) Inventor ( ) Legal Representative under 35 U.S.C. 117 ( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Matthew	David	Day	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	San Francisco	State/Province	CA	Country of Residence[i]	US

Citizenship under 37 CFR 1.41(b)[i]: US

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	A2029-700719
	Application Number	
Title of Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT	

Mailing Address of Applicant:			
Address 1	425 2nd Street, #301		
Address 2			
City	San Francisco	State/Province	CA
Postal Code	94107	Country[i]	US

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	37462		
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Application Information:

Title of the Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT		
Attorney Docket Number	A2029-700719	Small Entity Status Claimed	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Suggested Class (if any)		Sub Class (if any)	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)	37	Suggested Figure for Publication (if any)	7B

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Enter either Customer Number or complete the Representative Name section below. If both sections are completed the Customer Number will be used for the Representative Information during processing.

Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	37462		

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	A2029-700719
	Application Number	
Title of Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT	

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78(a)(2) or CFR 1.78(a)(4), and need not otherwise be made part of the specification.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Continuation in part of	12170951	2008-07-10
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
12170951	non provisional of	61041365	2008-04-01
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Continuation in part of	12170939	2008-07-10
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
12170939	non provisional of	61041365	2008-04-01
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Continuation in part of	12416479	2009-04-01
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
12416479	non provisional of	61041365	2008-04-01

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button. Add

Foreign Priority Information:

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).

Remove

Application Number	Country [i]	Parent Filing Date (YYYY-MM-DD)	Priority Claimed
			◉ Yes ○ No

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button. Add

Assignee Information:

Providing this information in the application data sheet does not substitute for compliance with any requirement of part 3 of Title 37 of the CFR to have an assignment recorded in the Office.

Assignee 1 Remove

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	A2029-700719
	Application Number	
Title of Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT	

If the Assignee is an Organization check here. ☐				
Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information:			
Address 1			
Address 2			
City		**State/Province**	
Country [i]		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee Data may be generated within this form by selecting the **Add** button. Add

Signature:

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 10.18. Please see 37 CFR 1.4(d) for the form of the signature.

Signature	/Matthew H. Grady/			Date (YYYY-MM-DD)	2009-11-03
First Name	Matthew	Last Name	Grady	Registration Number	52957

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

METHODS AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a continuation-in-part of, and claims priority under 35 U.S.C. § 120 to, U.S. Patent Application Serial Number 12/170,951 entitled "PORTABLE COMPUTER WITH MULTIPLE DISPLAY CONFIGURATIONS," filed on July 10, 2008; which claims priority under 35 U.S.C. § 119(e) to U.S. Provisional Application Serial No. 61/041,365, entitled "PORTABLE COMPUTER WITH MULTIPLE DISPLAY CONFIGURATIONS," filed April 1, 2008, both of which are herein incorporated by reference in their entirety. Furthermore, this application is a continuation-in-part of, and claims priority under 35 U.S.C. § 120 to U.S. Patent Application Serial Number 12/170,939, entitled "PORTABLE COMPUTER WITH MULTIPLE DISPLAY CONFIGURATIONS," filed on July 10, 2008; which claims priority under 35 U.S.C. 119(e) to U.S. Provisional Application Serial No. 61/041,365, entitled "PORTABLE COMPUTER WITH MULTIPLE DISPLAY CONFIGURATIONS," filed April 1, 2008, both of which applications are herein incorporated by reference in their entirety. Furthermore, this application is a continuation-in-part of, and claims priority under 35 U.S.C. §120 to U.S. Patent Application No. 12/416,479, filed on April 1, 2009 and entitled "SYSTEM AND METHOD FOR STREAMLINING USER INTERACTION WITH ELECTRONIC CONTENT," which claims priority under 35 U.S.C. 119(e) to U.S. Provisional Application Serial No. 61/041,365, entitled "PORTABLE COMPUTER WITH MULTIPLE DISPLAY CONFIGURATIONS," filed April 1, 2008, both of which applications are herein incorporated by reference in their entirety.

BACKGROUND

Field of Invention

The present invention is in the field of computer systems and, more particularly, is directed to methods and apparatus for managing computer-based digital media libraries.

Discussion of Related Art

Much of the advancement in contemporary computer systems and services stems from the significant increases in computing power. Hand in hand with those increases, enhanced features sets have developed designed to utilize that computing power. Conventional wisdom suggests that the more features that can be provided to a particular computer user, the better the user's experience will be. As computers have become more powerful and capable of providing

more and more features, however, ordinary/typical computer users have not been able to keep up with availability of features and services. Users may become frustrated by the inability to navigate the myriad (sometime unending) configurations and options provided in order to achieve something useful and/or workable to their ordinary use. Many users simply don't take advantage of provided features. Some outright ignore options and features that would simplify the use of their computer system; in some instances because the user lacks experience with new features and doesn't know the feature can be useful.

User frustration is felt not only with respect to the newer more powerful computer systems being offered today, but also frustration abounds with respect to their computer's interaction with the Internet. The present movement on the Internet, often referred to as Web 2.0, also subscribes to conventional thinking in that more and more features are being packed into each and every aspect of the web experience. Often, these on-line services provide very useful opportunities for the users who know how to take advantage of them - online photo management/sharing, online financial services, online marketplaces, online exchanges, web hosting, web development, dating services, social networking to name only a few. However, computer users often simply can't take advantage of all the functionality offered, either the services and features offered by their own computer, or the services and features offered by online providers. The complexity of the interface (both hardware and software) hampers adoption, as does the volume of features offered.

With the proliferation of digital cameras, digital music players and digital video players, more and more people are turning to digital audio and video media. For example, many people have replaced, or at least greatly supplemented, printed photograph albums with digital photos stored on their computer and/or using an online photo service. Similarly, many people use digitally stored music and videos rather than, or in addition to, traditional media such as records, compact discs, video cassettes, etc. However, due to the complexity and volume of digital photography features, services, etc., many users are not taking full advantage of the capabilities and services available to them.

SUMMARY OF INVENTION

Accordingly, aspects and embodiments are directed to methods and apparatus for managing digital media content that may provide a user-friendly, streamlined user experience.

Various aspects and embodiments are directed to a streamlined computer device and a graphical user interface that organizes interface elements into views of computer content for

presentation to a user. Various views of digital media content permits users to easily and efficiently access various digital media content. Different views are used to provide an interface that is responsive to configurations of the device and responsive to activity being performed by the user. Aspects include permitting the user to maintain and manage digital media content libraries. According to some embodiments, the libraries comprise user digital media content and references digital media content. Functionality provided to a user can be tailored to the type of content displayed, accessed and/or managed. According to various aspects, methods and systems are provided for accessing and managing digital media libraries on a streamlined computing device with a plurality selectable I/O profiles. According to some embodiments, the methods may include displaying a GUI on a device, wherein the GUI comprises at least a plurality of views of digital media content, providing for transition between the plurality of views in response to selection of an I/O profile and in response to activation of a view selector component by a user, executing an association with the at least one of the plurality of visual representations with digital media content in response to selection, transitioning a display on the computing device to a view of the digital media content, and providing for display of user digital media content and referenced digital media content in the view of the digital media content.

According to one aspect of the present invention, a method for accessing and managing digital media libraries on a streamlined computing device with a plurality selectable I/O profiles is provided. The method comprises displaying a graphical user interface on a computing device, wherein the graphical user interface comprises at least a plurality of views of digital media content, providing for transition between the plurality of views in response to selection of an I/O profile, providing for transition between the plurality of views in response to activation of a view selector component configured to permit a user to select one of the plurality of views, associating at least one of a plurality of visual representations with digital media content, executing the association with the at least one of the plurality of visual representations with digital media content in response to selection, transitioning a display on the computing device to a view of the digital media content in response to the act of executing the association, and providing for display of user digital media content and referenced digital media content in the view of the digital media content. According to one embodiment of the present invention, the method further comprises an act of displaying in the view user digital media content and referenced digital media content in response to the act of executing the association with the at least one of the plurality of visual representations. According to another

embodiment of the invention, the act of displaying in the view user digital media content and referenced digital media content includes an act of accessing a reference to remote digital content not controlled by the user in order to display referenced digital content. According to another embodiment of the invention, the method further comprises an act of associating the at least one of the plurality of visual representations with a remote service provider. According to another embodiment of the invention, the method further comprises an act storing the association between the at least one visual representation with the remote service provider in at least one of a device profile and a user profile.

According to one embodiment of the present invention, the method further comprises acts of configuring access to a remote service, and integrating operations provided by the remote service provider into the view of the digital media content. According to another embodiment of the invention, the view comprises at least one of an album view and a timeline view. According to another embodiment of the invention, the method further comprises an act of displaying digital media content in a body portion of the view. According to another embodiment of the invention, the method further comprises an act of displaying a toggle element in a header portion of the view, wherein the toggle element transitions the computing device display between the album view and the timeline view upon selection by a user. According to another embodiment of the invention, the method further comprises acts of displaying emulation controls responsive to selection by the user, and emulating standard computer operations for referenced digital media content displayed in the view, wherein the act of emulating standard computer operations includes an act of determining if the user has authority to perform the standard computer operations, determining the user does not have the authority to perform the standard computer operation on a source of the referenced digital media content, and wherein the act of displaying the emulation controls occurs in response to the determination that the user does not have the authority. According to another embodiment of the invention, the standard computer operation includes an act of deleting digital media content, and the method further comprises an act of altering the view of the digital media content so the digital media content marked for deletion is not displayed within the view.

According to one embodiment of the present invention, the method further comprises an act of generating a state entry, associated with at least one of the view and the source of the referenced digital media content. According to another embodiment of the invention, the method further comprises acts of accessing any state entry for at least one of the view and the source of referenced digital media content, and displaying referenced digital media content

according to any state entry requirement. According to another embodiment of the invention, the standard computer operation includes an act of editing referenced digital media content, and the method further comprises an act of generating a state entry reflecting any edits made to the referenced digital media content. According to another embodiment of the invention, the method further comprises acts of providing an aggregation component configured to permit the user to select a plurality of digital media content, displaying the plurality of digital media content in the body of the view, and permitting the user to perform operations on the plurality of digital media content. According to another embodiment of the invention, the act of permitting the user to perform operations on the plurality of digital media content includes at least one of a share operation, a create channel operation, and an order prints operation. According to another embodiment of the invention the at least one operation is a share operation, and the method further comprises acts of identifying any state entries for the plurality of digital media content, identifying any remote service settings for the plurality of digital media content, and transmitting a visual representation associated with the plurality of digital media content, any state settings, and any remote service settings to another streamlined device user.

According to one embodiment of the present invention, the method further comprising acts of permitting the user to share the at least one visual representation, including any associated digital media content with another user, storing shared information in response to an act of sharing by the user, and updating any associated digital media automatically for the another user, wherein the act of updating any associated digital media includes acts of identifying any changes in shared digital media content, wherein changes include at least one of addition of digital media content associated with the at least one visual representation, deletion of digital media content associated with the at least one visual representation, edits of digital media content associated with the at least one visual representation, and updates of information associated with digital media content associated with the at least one visual representation. According to another embodiment of the invention, the method further comprising acts of permitting the user to share the at least one visual representation, including any associated digital media content with another user, transmitting the at least one visual representation associated with the digital media content, any state settings, and any remote service settings to another streamlined device user. According to another embodiment of the invention, he method further comprises an act of permitting the user to update date information associated with the digital media content. According to another embodiment of the invention,

the method further comprises acts of generating an offset for the updated date information associated with the digital media content, and applying the offset to similar digital media content.

According to one embodiment of the present invention, the view is a time view and the method further comprises displaying a timeline navigation control in the body of the view, wherein the timeline navigation control is configured to provide organization segments, the organization segments providing a visual indication of a number of digital media content items in each segment. According to another embodiment of the invention, the timeline navigation control further comprises a handle responsive to a pointer displayed on the computer device, wherein the handle is further responsive to select and drag operations. According to another embodiment of the invention, the act of displaying the user interface includes providing a plurality of views of the plurality of visual representations of computer content, and associating the plurality of visual representations of computer content with at least one of the plurality of views, and wherein the each of the plurality of visual representations is responsive to focus and execution, wherein execution includes selection of the visual representation. According to another embodiment of the invention, the act of providing for transition between the plurality of views in response to selection of an I/O profile includes permitting the user to rotate a display element about a longitudinal axis running along an interface between the display component and a base of the streamlined computing device, wherein rotating the display component about the longitudinal axis up to approximately 180 degrees from the closed mode configures the portable computer into a laptop mode with one of the plurality of views as a default display, and wherein rotating the display component about the longitudinal axis beyond approximately 180 degrees from the closed mode configures the portable computer into an easel mode with another one of the plurality of views as a default display.

According to one aspect of the present invention, a computer-readable medium having computer-readable instructions stored thereon that as a result of being executed by a computer, instruct the computer to perform the method for accessing and managing digital media libraries on a streamlined computing device with a plurality selectable I/O profiles, wherein the method comprises displaying a graphical user interface on a computing device, wherein the graphical user interface comprises at least a plurality of views of digital media content, providing for transition between the plurality of views in response to selection of an I/O profile, providing for transition between the plurality of views in response to activation of a view selector component configured to permit a user to select one of the plurality of views, associating at

least one of a plurality of visual representations with digital media content, executing the association with the at least one of the plurality of visual representations with digital media content in response to selection, transitioning a display on the computing device to a view of the digital media content in response to the act of executing the association, and providing for display of user digital media content and referenced digital media content in the view of the digital media content. According to another embodiment of the invention, the method further comprises an act of displaying in the view user digital media content and referenced digital media content in response to the act of executing the association with the at least one of the plurality of visual representations. According to another embodiment of the invention, the act of displaying in the view user digital media content and referenced digital media content includes an act of accessing a reference to remote digital content not controlled by the user in order to display referenced digital content.

According to one embodiment of the present invention, the method further comprises an act of associating the at least one of the plurality of visual representations with a remote service provider. According to another embodiment of the invention, the method further comprises an act storing the association between the at least one visual representation with the remote service provider in at least one of a device profile and a user profile. According to another embodiment of the invention, the method further comprises acts of configuring access to a remote service, and integrating operations provided by the remote service provider into the view of the digital media content. According to another embodiment of the invention, the view comprises at least one of an album view and a timeline view. According to another embodiment of the invention, the method further comprises an act of displaying digital media content in a body portion of the view. According to another embodiment of the invention, the method further comprises an act of displaying a toggle element in a header portion of the view, wherein the toggle element transitions the computing device display between the album view and the timeline view upon selection by a user. According to another embodiment of the invention, the method further comprises acts of displaying emulation controls responsive to selection by the user, and emulating standard computer operations for referenced digital media content displayed in the view, wherein the act of emulating standard computer operations includes an act of determining if the user has authority to perform the standard computer operations, determining the user does not have the authority to perform the standard computer operation on a source of the referenced digital media content, and wherein the act of displaying

the emulation controls occurs in response to the determination that the user does not have the authority.

According to one embodiment of the invention, the standard computer operation includes an act of deleting digital media content, and the method further comprises an act of altering the view of the digital media content so the digital media content marked for deletion is not displayed within the view. According to another embodiment of the invention, the method further comprises an act of generating a state entry, associated with at least one of the view and the source of the referenced digital media content. According to another embodiment of the invention, the method further comprises an acts of accessing any state entry for at least one of the view and the source of referenced digital media content, and displaying referenced digital media content according to any state entry requirement. According to another embodiment of the invention, the standard computer operation includes an act of editing referenced digital media content, and the method further comprises an act of generating a state entry reflecting any edits made to the referenced digital media content. According to another embodiment of the invention, the method further comprises acts of providing an aggregation component configured to permit the user to select a plurality of digital media content, displaying the plurality of digital media content in the body of the view, and permitting the user to perform operations on the plurality of digital media content. According to another embodiment of the invention, the act of permitting the user to perform operations on the plurality of digital media content includes at least one of a share operation, a create channel operation, and an order prints operation. According to another embodiment of the invention, the at least one operation is a share operation, and the method further comprises acts of identifying any state entries for the plurality of digital media content, identifying any remote service settings for the plurality of digital media content, and transmitting a visual representation associated with the plurality of digital media content, any state settings, and any remote service settings to another streamlined device user.

According to one embodiment of the present invention, the method further comprises acts of permitting the user to share the at least one visual representation, including any associated digital media content with another user, storing shared information in response to an act of sharing by the user, and updating any associated digital media automatically for the another user, wherein the act of updating any associated digital media includes acts of identifying any changes in shared digital media content, wherein changes include at least one of addition of digital media content associated with the at least one visual representation,

deletion of digital media content associated with the at least one visual representation, edits of digital media content associated with the at least one visual representation, and updates of information associated with digital media content associated with the at least one visual representation. According to another embodiment of the invention, the method further comprises acts of permitting the user to share the at least one visual representation, including any associated digital media content with another user, transmitting the at least one visual representation associated with the digital media content, any state settings, and any remote service settings to another streamlined device user. According to another embodiment of the invention, the method further comprises an act of permitting the user to update date information associated with the digital media content. According to another embodiment of the invention, the method further comprises an acts of generating an offset for the updated date information associated with the digital media content, and applying the offset to similar digital media content.

According to one embodiment of the present invention, the view is a time view and the method further comprises displaying a timeline navigation control in the body of the view, wherein the timeline navigation control is configured to provide organization segments, the organization segments providing a visual indication of a number of digital media content items in each segment. According to another embodiment of the invention, the timeline navigation control further comprises a handle responsive to a pointer displayed on the computer device, wherein the handle is further responsive to select and drag operations. According to another embodiment of the invention, the act of displaying the user interface includes providing a plurality of views of the plurality of visual representations of computer content, and associating the plurality of visual representations of computer content with at least one of the plurality of views, and wherein the each of the plurality of visual representations is responsive to focus and execution, wherein execution includes selection of the visual representation. According to another embodiment of the invention, the act of providing for transition between the plurality of views in response to selection of an I/O profile includes permitting the user to rotate a display element about a longitudinal axis running along an interface between the display component and a base of the streamlined computing device wherein rotating the display component about the longitudinal axis up to approximately 180 degrees from the closed mode configures the portable computer into a laptop mode with one of the plurality of views as a default display, and wherein rotating the display component about the longitudinal axis beyond

approximately 180 degrees from the closed mode configures the portable computer into an easel mode with another one of the plurality of views as a default display.

According to one aspect of the present invention, a system for accessing and managing digital media libraries with a plurality selectable I/O profiles is provided. The system comprises a display component configured to display a graphical user interface, wherein the graphical user interface comprises at least a plurality of views of digital media content, wherein the plurality of views include at least one of a plurality of visual representations, an execution component configured to transition the graphical user interface between the plurality of views in response to selection of an I/O profile, a view selector component configured to transition between the plurality of views in response to activation, a storage component configured to store an association between at least one of a plurality of visual representations and digital media content, wherein the execution component is further configured to execute the association with the at least one of the plurality of visual representations with digital media content in response to selection and transition the display to a view of the digital media content in response to the act of executing the association, and wherein the display component is configured to display user digital media content and referenced digital media content in the view of the digital media content. According to one embodiment of the present invention, the display component is further configured to display in the view user digital media content and referenced digital media content in response to the act of execution of the association with the at least one of the plurality of visual representations. According to another embodiment of the invention, the execution component is further configured access a reference to remote digital content not controlled by the user in order to permit display of referenced digital content. According to another embodiment of the invention, the storage component further comprises an association between the at least one of the plurality of visual representations and a remote service provider. According to another embodiment of the invention, the storage component includes the association in at least one of a device profile and a user profile. According to another embodiment of the invention, the storage component is further configured to store access information for a remote service and wherein the execution component if further configured to integrate operations provided by the remote service provider into the view of the digital media content.

According to one embodiment of the present invention, the view comprises at least one of an album view and a timeline view. According to another embodiment of the invention, the display component is further configured to display digital media content in a body portion of

the view. According to another embodiment of the invention, the display component is further configured to display a toggle element in a header portion of the view, wherein the toggle element transitions the computing device display between the album view and the timeline view upon selection by a user. According to another embodiment of the invention, the execution component is further configured determine if the user has authority to perform a set of standard computer operations, and wherein the displaying component is further configured to display emulation controls configured to emulate the set of standard computer operations upon a determination that the user does not have the authority to perform the set of standard operations. According to another embodiment of the invention, the standard computer operation includes an act of deleting digital media content, and the method further comprises an act of altering the view of the digital media content so the digital media content marked for deletion is not displayed within the view. According to another embodiment of the invention, the storage component is further configured to store a state entry associated with at least one of the view and the source of the referenced digital media content. According to another embodiment of the invention, the execution component is further configured to access any state entry for at least one of the view and the source of referenced digital media content, and wherein the display component is configured to display referenced digital media content according to any state entry requirement. According to another embodiment of the invention, the standard computer operation includes an editing operation for referenced digital media content, and the storage component is further configured to store a state entry reflecting any edits made to the referenced digital media content. According to another embodiment of the invention, the display component is further configured to display an aggregation element configured to permit the user to select a plurality of digital media content, display the plurality of digital media content in the body of the view, and permit the user to perform operations on the plurality of digital media content.

According to one embodiment of the present invention, the display component is further configured to permit at least one of a share operation, a create channel operation, and an order prints operation. According to another embodiment of the invention, the execution component is further configured to identify any state entries for the plurality of digital media content, identifying any remote service settings for the plurality of digital media content, and transmit a visual representation associated with the plurality of digital media content, any state settings, and any remote service settings to another streamlined device user. According to another embodiment of the invention, the system further comprises a share component

configured to permit the user to share the at least one visual representation, including any associated digital media content with another user, and an update component update any digital media associated with the shared at least one visual representation automatically for the another user. According to another embodiment of the invention, the execution component is further configured to transmit at least one visual representation associated with the digital media content, any state settings, and any remote service settings to another streamlined device user. According to another embodiment of the invention, the execution component is further configured to permit the user to update date information associated with the digital media content. According to another embodiment of the invention, the execution component is further configured to generate an offset for the updated date information associated with the digital media content, and apply the offset to similar digital media content. According to another embodiment of the invention, the view is a time view and the display component is further configured to display a timeline navigation control in the body of the view, wherein the timeline navigation control is configured to provide organization segments, the organization segments providing a visual indication of a number of digital media content items in each segment. According to another embodiment of the invention, the timeline navigation control further comprises a handle responsive to a pointer displayed on the computer device, wherein the handle is further responsive to select and drag operations.

According to one embodiment of the present invention, the display component is further configured to provide a plurality of views of the plurality of visual representations of computer content and the storage components is configured to store an association between the plurality of visual representations of computer content and at least one of the plurality of views, wherein the each of the plurality of visual representations is responsive to focus and execution, and wherein execution includes selection of the visual representation. According to another embodiment of the invention, the system comprises a portable computer system and the portable computer system further comprises a display component including a display screen, a base, a hinge assembly at least partially housed within the base and configured to pivotably couple the display component to the base, wherein the display component is rotatable about a longitudinal axis running along an interface between the display component and the base, wherein, in the closed mode, the display screen is disposed substantially against the base, wherein rotating the display component about the longitudinal axis up to approximately 180 degrees from the closed mode configures the portable computer into the laptop mode, and wherein rotating the display component about the longitudinal axis beyond approximately 180

degrees from the closed mode configures the portable computer into the easel mode. According to another embodiment of the invention, the single axis is a longitudinal axis running along an interface between the display component and the base; and wherein the display component is rotatable about the longitudinal axis. According to another embodiment of the invention, the system further comprises a display orientation module configured to control an orientation of the content displayed on the display screen, wherein the orientation of the content displayed on the display screen is configurable among a plurality of orientations relative to the longitudinal axis.

According to one embodiment of the present invention, the plurality of orientations comprises a first orientation relative to the longitudinal axis and a second orientation relative to the longitudinal axis, and wherein when display orientation module is configured to automatically display the content in the first orientation when the portable computer is configured into the laptop mode and in the second orientation when the portable computer is configured into the easel mode. According to another embodiment of the invention, the plurality of display modes further comprises a flat mode in which the display component is disposed at an angle of approximately 180 degrees, measured about the longitudinal axis, relative to the base. According to another embodiment of the invention, the plurality of orientations comprises a first orientation relative to the longitudinal axis, a second orientation relative to the longitudinal axis, and a third orientation relative to the longitudinal axis, and wherein, in the flat mode, the orientation of the content displayed on the display screen is configurable among the first, second and third orientations responsive to a user input. According to another embodiment of the invention, the second orientation is 90 degrees relative to the first orientation, and wherein the third orientation is 180 degrees relative to the first orientation. According to another embodiment of the invention, the system further comprises a mode sensor configured to detect a degree of rotation of the display component relative to the base and to provide information representative of the degree of rotation, and wherein the display orientation module is configured to automatically adjust the orientation of the content displayed on the display screen responsive to the information from the mode sensor.

According to one embodiment of the invention, the display orientation module is configured to automatically display the content in a first orientation relative to the longitudinal axis responsive to the information indicating that the degree of rotation of the display component is less than approximately 180 degrees relative to the base, and automatically

display the content in a second orientation relative to the longitudinal axis responsive to the information indicating that the degree of rotation of the display component is greater than approximately 180 degrees relative to the base, wherein the second orientation is at approximately 180 degrees relative to the first orientation. According to another embodiment of the invention, the system further comprises a mode sensor configured to detect a current display mode of the portable computer; and wherein the display orientation module selects the orientation of the content displayed on the display screen from one of the plurality of orientations relative to the longitudinal axis responsive to the current display mode detected by the mode sensor. According to another embodiment of the invention, wherein the plurality of display modes further comprises a closed mode, and wherein, in the closed mode, the display screen is disposed substantially against the base. According to another embodiment of the invention, rotating the display component about the longitudinal axis up to approximately 180 degrees from the closed mode configures the portable computer into the laptop model, and wherein rotating the display component about the longitudinal axis beyond approximately 180 degrees from the closed mode configures the portable computer into the easel mode.

According to one embodiment of the present invention, the display component is rotatable about the longitudinal axis up to approximately 320 degrees from the closed mode. According to another embodiment of the present invention, the longitudinal axis comprises multiple parallel axes, and wherein the hinge assembly is configured to permit rotation of the display component about any of the multiple parallel axes to configure the portable computer between the plurality of display modes. According to another embodiment of the present invention, the system further comprises a scroll wheel disposed at least partially within the base and rotatable about the longitudinal axis, the scroll wheel configured to permit a user to control at least one of operating parameters of the portable computer and the content displayed on the display screen. According to another embodiment of the present invention, the system further comprises a first navigation button disposed on one of the base and the display component and configured to permit the user to manipulate selected content displayed on the display screen. According to another embodiment of the present invention, the display screen is configured to display at least one of a plurality of modes of content, and wherein the navigation button is configured to permit the user to select for display one of the plurality of modes of content.

According to one embodiment of the invention, the first navigation button is user-accessible in each of the laptop mode and the easel mode. According to another embodiment

of the present invention, the system further comprises a second navigation button, wherein the first navigation button is disposed on a major surface of the base, and wherein the second navigation button is disposed on a minor surface of the base. According to another embodiment of the invention, the scroll wheel is configured to permit the user to select a mode of content for display on the display screen. According to another embodiment of the invention, the scroll wheel is configured to permit the user to control a volume of sound played by the portable computer. According to another embodiment of the invention, the system further comprises a hinge assembly at least partially housed within the base and configured to rotatably couple the display component to the base. According to another embodiment of the invention, the scroll wheel is disposed at least partially within the hinge assembly. According to another embodiment of the invention, the system further comprises a foot disposed along at least a portion of the base and configured to support the portable computer when in the easel mode.

Still other aspects, embodiments, and advantages of these exemplary aspects and embodiments, are discussed in detail below. Moreover, it is to be understood that both the foregoing information and the following detailed description are merely illustrative examples of various aspects and embodiments, and are intended to provide an overview or framework for understanding the nature and character of the claimed aspects and embodiments. Any embodiment disclosed herein may be combined with any other embodiment in any manner consistent with at least one of the objects, aims, and needs disclosed herein, and references to "an embodiment," "some embodiments," "an alternate embodiment," "various embodiments," "one embodiment" or the like are not necessarily mutually exclusive and are intended to indicate that a particular feature, structure, or characteristic described in connection with the embodiment may be included in at least one embodiment. The appearances of such terms herein are not necessarily all referring to the same embodiment.

BRIEF DESCRIPTION OF THE DRAWINGS

Various aspects of at least one embodiment are discussed below with reference to the accompanying figures, which are not intended to be drawn to scale. The figures are included to provide illustration and a further understanding of the various aspects and embodiments, and are incorporated in and constitute a part of this specification, but are not intended as a definition of the limits of the invention. Where technical features in the figures, detailed description or any claim are followed by references signs, the reference signs have been

included for the sole purpose of increasing the intelligibility of the figures, detailed description, and/or claims. Accordingly, neither the reference signs nor their absence are intended to have any limiting effect on the scope of any claim elements. In the figures, each identical or nearly identical component that is illustrated in various figures is represented by a like numeral. For purposes of clarity, not every component may be labeled in every figure. In the figures:

FIG. 1 is an illustration of one example of a portable computer, according to aspects of the invention, in a "laptop" configuration;

FIG. 2 is a block diagram of one example of a computer system;

FIG. 3 is a block diagram of one example of a computer user interface architecture, according to aspects of the invention;

FIG. 4 is an illustration of another example of a portable computer, according to aspects of the invention;

FIG. 5 is a block diagram of one example of a view of digital media content, according to aspects of the invention;

FIG. 6 is a block diagram of another example view of digital media content with responsive controls, according to aspects of the invention;

FIGS. 7A-B are block diagrams of examples of single album views of digital media content, according to aspects of the invention;

FIG. 8 is a block diagram of one example of a view of digital media content, according to aspects of the invention;

FIG. 9 is an illustration of an example component of a view of digital media content, according to aspects of the present invention;

FIG. 10 is a block diagram of one example of a view of digital media content, according to aspects of the invention;

FIG. 11 is an illustration of an example responsive component of a view of digital media content, according to aspects of the present invention;

FIG. 12 is a block diagram of one example of a view of digital media content, according to aspects of the invention;

FIGS. 13A-C are illustrations of examples of a control element displayed in embodiments of views of digital media content, according to aspects of the invention;

FIG. 14 is an illustration of an example responsive component of a view of digital media content, according to aspects of the present invention;

FIG. 15 is an illustration of an example of a control element displayed in an embodiment of a view of digital media content, according to aspects of the invention;

FIG. 16 is a block diagram of one example of a view including cards associated with digital media content, according to aspects of the invention;

FIGS. 17A-B are illustrations of examples of views of the back side of a card and associated controls, according to aspects of the invention;

FIG. 18A is a block diagram of one example view of digital media content including a lens control, according to aspects of the invention;

FIG. 18B is a block diagram of one example view of digital media content including an example lens selection control, according to aspects of the invention;

FIG. 19 is a block diagram of one example of a view of digital media content, according to aspects of the invention;

FIG. 20A is a block diagram of one example of a view of digital media content including an example content control, according to aspects of the invention;

FIG. 20B is a block diagram of one example of a view of digital media content including a contextual control, according to aspects of the invention;

FIGS. 21A-B are examples of logical diagrams of the behavior for an example view of digital media content, according to aspects of the invention;

FIG. 22 is a perspective view of the portable computer of FIG. 1 in the easel mode, according to aspects of the invention;

FIG. 23 is an illustration of the portable computer configured into a "frame" mode, according to aspects of the invention;

FIG. 24 is a block diagram of an example of a page view of a camera card including a progress indicator of an upload in progress, according to aspects of the invention;

FIG. 25 is a block diagram of an example an intermediate view of a camera card, according to aspects of the invention;

FIG. 26 is a block diagram of a thumbnail view of a camera card, according to aspects of the invention;

FIG. 27 is a block diagram of a organizational view of digital media content, according to aspects of the invention;

FIG. 28 is an illustration of an example view of user controls for digital media content, according to aspects of the invention;

FIG. 29 is an example of a logical diagram of the behavior for an example view of digital media content, according to aspects of the invention; and

FIG. 30 is an illustration of the portable computer configured into a "flat" mode, according to aspects of the invention

DETAILED DESCRIPTION

Synergy between services providers can be found and exploited by even the most novice user through streamlined computer systems and user interface presentation. According to one aspect, the interplay between various third party services and computer features can be readily appreciated by even a novice user because the various functionality and features sets are easily accessible through the streamlined access controls and consistent user interfaces. In particular, methods and apparatus are provided to facilitate users leveraging online digital media services offered by third party service providers, as discussed in detail below. For example, aspects and embodiments may allow users to create and manage a digital photography library by providing tools to upload content to an Internet "cloud" and to consume aggregated content from the cloud on their computing device, as discussed further below.

It is to be appreciated that embodiments of the methods and apparatus discussed herein are not limited in application to the details of construction and the arrangement of components set forth in the following description or illustrated in the accompanying figures. The methods and apparatus are capable of implementation in other embodiments and of being practiced or of being carried out in various ways. Examples of specific implementations are provided herein for illustrative purposes only and are not intended to be limiting. In particular, acts, elements and features discussed in connection with any one or more embodiments are not intended to be excluded from a similar role in any other embodiments.

Also, the phraseology and terminology used herein is for the purpose of description and should not be regarded as limiting. Any references to embodiments or elements or acts of the systems and methods herein referred to in the singular may also embrace embodiments including a plurality of these elements, and any references in plural to any embodiment or element or act herein may also embrace embodiments including only a single element. References in the singular or plural form are not intended to limit the presently disclosed systems or methods, their components, acts, or elements. The use herein of "including," "comprising," "having," "containing," "involving," and variations thereof is meant to encompass the items listed thereafter and equivalents thereof as well as additional items.

References to "or" may be construed as inclusive so that any terms described using "or" may indicate any of a single, more than one, and all of the described terms. Any references to front and back, left and right, top and bottom, and upper and lower are intended for convenience of description, not to limit the present systems and methods or their components to any one positional or spatial orientation.

According to one embodiment, methods and apparatus are provided for creating and managing digital media libraries and, in particular, online digital media libraries. The digital media libraries may include, for example, digital photograph collections, digital video collections, digital music collections, etc. The tools and capability for creating and managing these digital media libraries are provided via a computing device, for example, a streamlined device, having a graphical user interface, as discussed below. For example, various aspects may be implemented as specialized software executing in one or more computer systems. In one embodiment, the digital media content (e.g., the photographs, videos and/or audio files) are stored online, and the graphical user interface provides the user with access to services, including online storage of digital media, and features offered by third party service providers, as discussed below.

One example of a streamlined device includes a portable computer that is configurable between a laptop mode (in which the portable computer has a conventional laptop appearance) and an easel mode in which the base of the computer and its display component stand upright forming an inverted "V," as discussed further herein. Certain aspects and embodiments are directed to a portable computer that is configurable between different operating modes, including a laptop mode (in which the portable computer has a conventional laptop appearance), a flat mode, a frame mode, and an easel mode in which the base of the computer and its display component stand vertically forming an inverted "V," as discussed further herein. Reference to modes of the computer, modes of the device and intended to include the physical configuration of the portable computer/device. The portable computer is capable of different display formats and functionality in the different modes, and includes a graphical user interface that may work seamlessly with the computer hardware to provide a unified, comfortable, holistic user experience.

Referring to FIG. 1, there is illustrated one example of a portable computer according to aspects of the invention upon and using which methods and apparatus for managing digital media content may be implemented. In FIG. 1, the portable computer 100 is illustrated in the "laptop" mode, with the display component 102 inclined at a viewing angle from the base 104.

The display component 102 is pivotably coupled to the base 104 by a hinge assembly (not shown) that allows the display component to be rotated with respect to the base. The hinge assembly may include a single or multiple hinges, which may be any of a variety of hinge types, including, but not limited, to single-axis hinges, multiple-axis hinges, geared hinges, etc. In one example, the hinge assembly allows the display component 102 to be rotated (or tilted) about a longitudinal axis 101 running along an interface between the display component 102 and the base 104, as illustrated in FIG. 1 and discussed further below. The base 104 includes a keyboard 106 and internal electronic components (not shown), such as a central processing unit, memory, and other components necessary to operate the portable computer, as known to those skilled in the art. In some embodiments, the base 104 may also include a touch pad 108 or trackball (not shown) for receiving user commands, as known to those skilled in the art.

In one embodiment, the display component 102 includes a display screen 110, and may also include a camera 112, microphone 114, and infrared receiver 116, as discussed further below. It is to be appreciated that the locations of the camera 112, microphone 114 and infrared receiver 114 are not limited to the example illustrated in FIG. 1, and may be placed in other locations on the display component 102 and/or base 104, as would be recognized by those skilled in the art. The display component 102 may also include cushions 118 that provide soft contact points between the base 104 and the display component 102 when the portable computer is closed. In one example, the cushions 118 are made of rubber. However, it is to be appreciated that the invention is not so limited, and the cushions 118 may comprise materials other than rubber, including, for example, a polymer, felt, or other suitable materials as would be recognized by those skilled in the art.

FIG. 2 illustrates a block diagram of some components of an example of the portable computer 100, in which various aspects of the present invention may be practiced. For example, various aspects of the invention may be implemented as specialized software executing in one or more computer systems including multiple computer systems communicating over network. As depicted in FIG. 2, the computer 100 includes a processor 210, a memory 220, an interface 240 and a storage system 250. Components of the portable computer 100 may be coupled by an interconnection element 230. The interconnection mechanism 230 enables communications (e.g., data, instructions) to be exchanged between system components of the computer system 100. The interconnection mechanism 230 may include one or more physical busses (for example, busses between components that are integrated within a same machine), or may include any communication coupling between

system elements including specialized or standard computing bus technologies such as IDE, SCSI, PCI and InfiniBand. In one example, computer system 100 is implemented without hard drive devices.

The processor 210, which may include one or more microprocessors or other types of controllers, can perform a series of instructions that result in manipulated data. The processor 210 may be a commercially available processor such as an Intel PENTIUM, Motorola PowerPC, SGI MIPS, Sun UltraSPARC, or Hewlett-Packard PA-RISC processor, but may be any type of processor or controller as many other processors and controllers are available. The processor may also execute an operating system that manages at least a portion of the hardware elements included in computer 100. The operating system may be, among others, a Windows-based operating system (for example, Windows NT, Windows 2000 (Windows ME), Windows XP, or Windows Vista) available from the Microsoft Corporation, a MAC OS System X operating system available from Apple Computer, one of many Linux-based operating system distributions (for example, the Enterprise Linux operating system available from Red Hat Inc.), a Solaris operating system available from Sun Microsystems, or a UNIX operating systems available from various sources. Many other operating systems may be used, and embodiments are not limited to any particular operating system. As shown, the processor 210 is connected to other system elements, including a memory 220, by the interconnection mechanism 230.

The memory 220 may be used for storing programs and data during operation of the computer system 200. Thus, the memory 220 may be a relatively high performance, volatile, random access memory such as a dynamic random access memory (DRAM) static memory (SRAM), or Flash memory; however, the memory 220 may include any device for storing data, including a non-volatile storage device. Various embodiments in accord with the present invention can organize the memory 220 into particularized and, in some cases, unique structures to perform the aspects and functions disclosed herein.

Still referring to FIG. 2, the computer 100 also includes one or more interface devices 240 such as input devices, output devices and combination input/output devices. The interface devices 240 may receive input and/or provide output. More particularly, output devices may render information for external presentation. Input devices may accept information from external sources. Examples of interface devices include, among others, the keyboard 106, mouse devices, trackballs, microphone 114, touch screens, printing devices, display screen 110, speakers, network interface cards, etc. The interface devices 240 allow the computer

system 200 to exchange information and communicate with external entities, such as users and other systems.

The storage system 250 may include a computer readable and writeable nonvolatile storage medium in which instructions are stored that define a program to be executed by the processor. The storage system 250 also may include information that is recorded, on or in, the medium, and this information may be processed by the program. The instructions may be persistently stored as encoded signals, and the instructions may cause a processor to perform any of the functions described herein. The medium may, for example, be a flash memory. Typically, in operation, the processor causes data to be read from the nonvolatile recording medium into another memory that allows for faster access to the information by the processor than does the medium. This memory is typically a volatile, random access memory such as a dynamic random access memory (DRAM) or static memory (SRAM). The memory may be located in storage 250 as shown, or in memory system 220. The processor 210 generally manipulates the data within the memory 220, and then copies the data to the medium associated with storage 250 after processing is completed. A variety of mechanisms are known for managing data movement between the medium and integrated circuit memory element and the invention is not limited thereto. The invention is not limited to a particular memory system or storage system.

In one embodiment, the computer system does not incorporate mass storage (i.e. a hard drives), instead the system is configured to employ RAM and Flash memory storage. The capacity of the flash memory may be significantly less than traditional mass storage options. Thus in some embodiments, traditional features such a download, have been configured to operate differently for the computer 100. According to another aspect, various operations provides on conventional systems are adapted for streamlined processing. In on example, operations that require large amounts of computer storage are transformed into remote storage requests. In one embodiment, a streamlined device is configured to identify local storage request and transform them into a storage request to an on-line service provider identified in a user and/or device profile. In another embodiment, the system prompts a user to identify a service provider in response to a local request. Various operations may be transformed, including download and print operations, among others.

The computer system may include specially-programmed, special-purpose hardware, for example, an application-specific integrated circuit (ASIC). Aspects of the invention may be implemented in software executing on hardware, hardware or firmware, or any combination

thereof. Further, such methods, acts, systems, system elements and components thereof may be implemented as part of the computer system described above or as an independent component.

Although the portable computer 100 is shown by way of example as one type of computer system upon which various aspects and functions may be practiced, aspects of the invention are not limited to being implemented on the computer system as shown in FIGS. 1 and 2. Various aspects and functions in accord with the present invention may be practiced on one or more computers having a different architectures or components than those shown in FIG. 2.

Computer system 100 may programmable using a high-level computer programming language. Computer system 100 may be also implemented using specially programmed, special purpose hardware. The processor 210 and operating system together define a computer platform for which application programs in high-level programming languages are written. It should be understood that the invention is not limited to a particular computer system platform, processor, operating system, or network. Also, it should be apparent to those skilled in the art that the present invention is not limited to a specific programming language or computer system. Further, it should be appreciated that other appropriate programming languages and other appropriate computer systems could also be used.

One or more portions of the computer system may be distributed across one or more computer systems coupled to a communications network. For example, various aspects of the invention may be distributed among one or more computer systems (e.g., servers) configured to provide a service to one or more client computers, or to perform an overall task as part of a distributed system. For example, various aspects of the invention may be performed on a client-server or multi-tier system that includes components distributed among one or more server systems that perform various functions according to various embodiments of the invention. In one embodiment, an Internet cloud is maintained on server systems accessible from a plurality of devices. These components may be executable, intermediate (e.g., IL) or interpreted (e.g., Java) code which communicate over a communication network (e.g., the Internet) using a communication protocol (e.g., TCP/IP). It should be appreciated that the invention is not limited to executing on any particular system or group of systems. Also, it should be appreciated that the invention is not limited to any particular distributed architecture, network, or communication protocol.

According to one embodiment, streamlining user interactions with the computer system/device includes representing computer based content in visual representations that render computer operations/behavior in a consistent manner. These visual representations may be rendered as cards, as discussed in more detail below. Different types of cards may be employed to render different types of available content. For example, web based content, may be rendered as a web card that is associated with a mapping to web content. Some web cards map directly to web pages and in response to selection of the web card the computer device executes the mapping and displays a web view of the content. Other cards may be used to provide interactive displays selectable by a user. In another example, system operations are displayed as system cards, which are associated with mappings to system operations, for example communications configurations, and may comprise a settings card, among other system options. Another type of card includes a channel card configured to stream web based content in a manner that allows for summarization of content, while still providing the ability to fully appreciate the summarized content.

Using channel cards according to aspects and embodiments, summarized content may be presented in a manner that permits appreciation and interaction with the summarized content itself. In another example, channel card are configured to present a streamlined view that cannot only be appreciated and interacted, but may be transitioned from one mode of viewing to another without loss of the ability to appreciate and interact with the streamlined view. A more detailed discussion of embodiments and examples of a card-based system for rendering computer based content in visual representations is discussed in U.S. Patent Application No. 12/416,479, filed on April 1, 2009 and entitled "SYSTEM AND METHOD FOR STREAMLINING USER INTERACTION WITH ELECTRONIC CONTENT," which is incorporated herein by reference in its entirety.

As discussed above, according to one embodiment, methods and apparatus are provided for managing digital media libraries via, for example, the computer 100. In one example, the computer 100 includes a streamlined graphical user interface that provides access to the digital media libraries. According to another embodiment, there is a community aspect to the digital media libraries, which includes sharing of digital content, configurations and customizations between users. In particular, sharing may involve the transmission of user interface elements to other users. In one example, a user may share a card and any of its configurations with another user. Access to the shared user interface elements, in some embodiments, facilitates communal computer usage. Content and context retention by user interface elements that can

be shared provides unique advantages to the users of the streamlined devices, as discussed further below.

Referring to FIG. 3, there is illustrated a block diagram of one example of an architecture of the portable computer 100 including a streamlined user interface. The user interface includes a "home" screen 310 that displays a plurality of modes of content 320. In the illustrated example, the home screen 310 contains five modes of content 320; however, it is to be appreciated that the home screen may include more or fewer than five modes of content and that the modes of content may differ from the examples discussed below. According to one example, the modes of content 320 accessible via the home screen 310 may include "media" 321, "connect" 322, "web" 323, "applications" 324, and "channels" 325. Using the streamlined user interface, also referred to as a "map" interface, information, programs, features and applications may be grouped into the various modes of content 320. By selecting any mode of content 320, the user may access the content organized within that mode. For example, the media mode 321 may provide access to a media player to play, view, search and organize digital media such as music, video, photos, etc. The web mode 323 may provide access to internet browsing and searching. The channels mode 325 may provide access to different functionality of the portable computer, with the different functions or features defined as different channels. For example, a channel may include a "photo frame" channel in which the portable computer may be configured to display a pre-selected image or set of images, etc. from a digital media library. Some or all of the modes of content 320 may access, retrieve and/or store information on an Internet cloud 330.

From the home screen 310, the user may navigate among the different modes of content 320 and, once a particular mode of content is selected, may navigate within that mode of content. In one example, the home view 310 is comprised of various cards, each card providing access to computer based content. According to one aspect, cards can be thought of as the building blocks of the user interface, providing access to a plurality of views and/or content. Indeed, cards as elements of the graphical user interface, are configured to be shared across users and across other streamlined devices. The ability to employ the features and functions of card based elements may be limited to streamlined devices, although cards and settings may be shared with traditional devices.

Navigation from the home view in and among different modes of content may be accomplished using traditional interfaces, such as the keyboard 106, touchpad 108, a mouse, trackball, joystick, or other interface device. In one embodiment, the portable computer 100

may include additional navigation devices, including a scroll wheel and one or more navigation buttons, as shown, for example, in FIG. 4. In the example illustrated in FIG. 4, the portable computer 100 includes a scroll wheel 120 and two navigation buttons 122, 124. In one example, the scroll wheel 120 is positioned, as shown in FIG. 4, such that it is rotatable about the longitudinal axis 101 (see FIG. 1) running along the interface between the display component 102 and the base 104. According to one embodiment, the portable computer 100 is configurable into various different configuration modes including the laptop mode shown in FIGS. 1 and 4, and an "easel" mode in which the base 104 and the display component 102 stand upright forming an inverted "V," as discussed further below. Accordingly, positioning the scroll wheel 120 on the longitudinal axis 101 may have certain advantages, including providing accessibility to the scroll wheel in the different configuration modes of the portable computer; however, it is to be appreciated that the scroll wheel may be placed in any convenient or suitable location on the portable computer, not limited to the position shown in FIG. 4. Similarly, positioning the navigation button 122 on the side of the base 104, as shown in FIG. 4, may also provide accessibility in the different configuration modes of the portable computer 100; however it is to be appreciated that the navigation button 122 may be placed in a variety of locations, not limited to the location illustrated in FIG. 4.

As discussed above, in one example, the media mode of content 321 may provide access to a media player to play, view, search and organize digital media such as music, video, photos, etc. Thus, a user may use the media mode of content 321 to create and manage digital media libraries including, for example, collections of digital photographs. According to one embodiment, methods, tools and interfaces are provided to allow users to store, organize, edit, view and share digital photograph collections, as well as video and/or audio collections. These collections may be presented to the user as if stored on local storage associated with the portable computer 100; however, as discussed above, in at least some examples, the digital media content is stored remotely in the cloud 330 (see FIG. 3). Therefore, the portable computer software may include the ability to interact with third party online service providers, as discussed further below. In addition, as discussed above, in one example, the portable computer 100 includes a camera 112 and therefore, methods, tools and interfaces may be provided to allow the user to take and manage photographs and/or video using the camera 112. The portable computer 100 may also be configured to allow an external digital camera (not shown) to be connected to the computer, such that the user may extract photographs and/or

videos from the external camera, to store, manage and share using the computer, as discussed further below.

According to one embodiment, the computer 100 is integrated with remote content storage and/or access in the cloud 330. The integration may be provided through third party service providers, in one example photo service FLICKR is integrated with various aspects of the device and/or the device's user interface to provide seamless access to photo content stored by the third party provider. Thus, digital content items, such as photographs, videos, etc. may be displayed on the portable computer, as discussed below, but stored remotely. The integration with remote storage services permits reduced storage capacity on the user device, for example, a portable computer. Reducing and/or eliminating the need for non volatile memory in the computer system is advantageous in that the device itself may be reduced in complexity and any associated cost. In some embodiments, a streamlined device do not incorporate a hard disk drive for storage, providing for any local storage requirement through RAM and Flash memory.

Content may be added to the user's digital medial library in a variety of different ways. For example, digital content items added to the user's account with any online hosting service (e.g., FLICKR, SHUTTERFLY, etc.) the user has registered with the portable computer 100 may be automatically added to the user's digital media library. If a person shares an album with the user via a registered online hosting service, and subsequently updates the shared album to include new items, the new items may be automatically added to the user's digital media library. The user may add content items, such as photographs, directly from web pages using, for example, a "save image" control in the web browser toolbar. In one example, clicking and holding on a particular image on a web page opens a contextual menu providing options for the user to save one or more photographs. For example, clicking a "save multiple photos" option in the contextual menu may prompt the user to click on all displayed images that he/she wishes to save and then click a "done" or "save" control to complete the action. The user may similarly save photographs from an email. As discussed above, in one embodiment, the portable computer 100 does not include local mass storage; instead the digital media content items are stored by an online hosting service. Accordingly, saving of photos from a web page or email may be implemented through the hosting service. The user may also add content items by uploading them from a camera, card reader or USB device, as discussed further below. In one example, the portable computer 100 may be pre-loaded with a selection of stock images that automatically appear in the user's digital media library. The user may

delete these stock images; however, if the user's digital media library eve becomes empty, the stock images may be automatically re-added to the library.

According to one embodiment, collections of digital content items, including photographs and videos, may be displayed in any of a plurality of different views. These views may include a time view, an album view, a page view, an intermediate view, and a lens view, each of which is discussed further below. Each view may offer the user particular interaction options, features and benefits, as also discussed below. In the time view, an entire digital media library may be displayed with content items arranged chronologically, regardless of whether or not the content items (e.g., individual photographs or videos) have been assigned to an album. In the album view, individual albums of content items may be displayed. In the album view, those content items not assigned to an album are not displayed. The time view and the album view may be considered the "workhorses" of the digital media aspect of the portable computer 100, allowing a user to quickly and easily locate individual content items and perform actions, such as, share content with others, create channels, and order photograph prints from online service providers. The lens view may offer the user a variety of interactions with the digital media content, as discussed further below. In one example, for some photograph editing functions, such as correcting red-eye, cropping, adjusting contrast, etc., interfaces to online service providers may be supplied, allowing the user to leverage existing features of their online photograph service provider.

Referring to FIG. 5, there is illustrated a block diagram of one example of an album view. In the album view, the screen may include a body portion 550 in which the albums are displayed, and a header 555. In the illustrated example, in the album view, the albums 510 are displayed as a list in the body portion 550, with a scroll bar 515 that allows the user to scroll down to see additional albums that do not fit within the page view. In one example, the list of albums may be sorted by earliest photograph creation date, with the newest on top; however, it will be readily appreciated that numerous other organizations of the albums 510 are possible. A header caption 525 identifies the number of albums present and the total number of photographs contained within the albums. In one example, each album 510 includes a title 530 that identifies the album. The title 530 may be created by the user and may be descriptive of the photographs contained within the album. Each album 510 may also include a caption 535 that identifies information about the album. For example, the caption 535 may indicate the number of photographs in the album as well as the date range of the photographs in the album. For each album 510 there may be displayed a preview photograph 540, which may be, for

example, a photograph selected by the user (e.g., a representative or favorite photograph), or a default selected photograph, for example, the first photograph in the album. Each photograph in the album may be displayed as a thumbnail 545. In the header 555, there may be displayed user-selectable "buttons" 560, 565 which allow the user to select between the time view and the album view, for example, by clicking (e.g., using a mouse, the touchpad, the scroll wheel, or a navigation button) on the button corresponding to the desired view.

According to one embodiment, the album view allows the user to access and view albums of their own photographs, as well as albums shared with them by other users, for example, through an online photo-sharing service. As discussed above, in one embodiment, only photographs (or other digital content items) that have been assigned an album by the user will be displayed in the album view. The computer 100 may include software that automatically creates a default album for any unsorted/unassigned photographs found on the computer. In one example, this default album is not displayed in the album view. Many online photo hosting services require the use of albums and do not allow a photo to be saved to the service without being assigned to an album. However, this requirement may not be meaningful to users who are used to having many photographs in the real world which are not associated with an album. Accordingly, the digital media system may automatically create the default album to store otherwise unsorted content items.

Still referring to FIG. 5, the thumbnails 545 provide the user with a preview of the individual photographs contained in the album. In one embodiment, when the user "hovers" over a particular thumbnail 545, the preview photograph 540 changes to display that thumbnail. The thumbnail may also increase slightly. Hover indicates the movement of a pointer, typically represented by a white arrow on the computer system display, over a particular item on the display screen, such as a thumbnail 545.

In one example, when the user hovers over a thumbnail, album controls may appear, as shown in FIG. 6. Referring to FIG. 6, the album controls 610 may include options to share an album (e.g., control 612), and to edit the album using a third party service provider (e.g., control 614). In one example, albums that are shared from within the album view may be shared as channel cards, but may also appear in the recipient's album view. As discussed above, in one example in which the photographs are stored on the cloud 330 (see FIG. 3), using a third party service provider website (for example, FLICKR; SHUTTERFLY; SNAPFISH, etc.), the control 614 for editing the album may automatically display the name of the service provider. If selected (e.g., clicked on) by the user, the edit control 614 may automatically open

a web card to the album on the service where it is stored. In one example, the edit control 614 may only appear for albums of the users own photographs, and not for albums that have been shared with the user by another user, for which the user may not have editing privileges. The album controls 610 may also include a control 616 for "dissolving" the album and a control 618 for deleting the album. Selecting the dissolve control 616 may remove the album, but retain the album contents in the user's digital media library. If the user selects the delete album control 618, the album and its contents may be deleted from the user's digital media library, after a warning/confirmation message is displayed to the user. In one example, if the user selects the share control 612 to share an album with another person, any changes the user has made to the album (e.g., removing a content item) are retained when the other person views the shared album.

According to one embodiment, when the user clicks on (or otherwise selects) an individual photograph thumbnail 545, or on the preview photograph 540 in a particular album 510, a single album view may be displayed. In one example of the single album view, the album thumbnails 545 in the selected album 510 grow larger and arrange themselves in a horizontal list, as shown in FIG. 7A. In the single album view illustrated in FIG. 7A, the user sees larger previews 710 of the photographs in the selected album. The user may navigate back and forth among the items in the album by hovering over the left or right edges of the list, optionally over a scroll indicator 720, to scroll the list of preview images 710. In one example, the speed of the scrolling depends on where the cursor is in the active area. For example, the closer the cursor is to the edge of the screen, the faster the scroll. In one embodiment, when the user is scrolling left or right through the album, the horizontal list of previews 710 tilts to show perspective, as shown in FIG. 7B. In one example, in the tilted view, the images scroll automatically and the speed of the scrolling action corresponds to the maximum scrolling speed that would be available manually, e.g., if the cursor were as close to the edge of the screen as possible. In another example, the degree of tilt corresponds to the scrolling speed. For example, the more tilted the view, the faster the scroll. A scroll indicator 720 may indicate the direction of the scroll. Clicking on an individual item in the single album view may zoom that item into an intermediate view, as discussed further below. In the intermediate view, the user may still see hints of the other images in the album in the background, thus providing context for the zoomed-in item. Clicking on the item in the intermediate view may enlarge the item into a full screen view, as discussed further below.

In one embodiment, clicking on the background 730 returns the user to the album view shown in FIG. 5. In one example, the background 730 includes the users other albums. Thus, clicking on the background may mean clicking on another album; however, even in this case, clicking on the other album in the background 730 may still return the user to the album view, rather than to a single album view of the clicked-on album in the background. This may simply navigation for the user, particularly where the majority of the background belongs to other albums, such that if clicking on one of the background albums jumped to that album, the user would find it difficult to return to the overall album view of FIG. 5.

As discussed above, an alternative to the album view is the time view. According to one embodiment, in the time view, the entire contents of the user's digital media library is displayed, even if items are not organized into albums. The digital content items in the digital media library may be arranged chronologically (e.g., in the order they were taken for photos and videos) in columns from top to bottom, left to right, or in rows from left to right, top to bottom. It is to be appreciated that other arrangements of the digital content items may also be implemented. An example of the time view is illustrated in FIG. 8. Similar to the album view, the time view may comprise a body portion 810 and a header 820. As shown in FIG. 8, in the body portion 810 of the time view, preview images 830 of each item in the digital media library is displayed. As discussed above, the preview images are arranged in columns and rows. A timeline 840 may supply a navigation control that allows the user quick access to the content in the digital media library and a visual indication of the number of items in the library. In one embodiment, the digital content items in the user's digital media library are stored, using a service offered by a third party service provider (e.g., FLICKR, SHUTTERFLY, SNAPFISH, etc.) in the cloud 330 (see FIG. 3). Thus, the preview images displayed in the time view may be visual representations of remotely stored content.

Referring to Fig. 9, there is illustrated an example of the timeline 840 that may be displayed in the time view. In the illustrated example, the timeline includes three rows of tick marks 910 that correspond to the three rows of preview images 830 displayed in the body portion 810 of the time view illustrated in FIG. 8. It is to be appreciated, however, that the preview images 830 may be displayed in any number of rows, not limited to three rows, and therefore, the timeline 840 may include any corresponding number of rows of tick marks 910, not limited to three rows. Scroll controls 920 may be provided to allow the user to scroll through the timeline using a cursor. In one example, superimposed over the timeline 840 are markers 930 for individual months and years, as shown in FIG. 9. In addition, the timeline

may include a "handle" 940 which indicates the section of timeline that corresponds to the preview images 830 displayed in the body portion 810. In one example, clicking anywhere on the timeline 840 moves the handle 940 to that point in time and changes the display of preview images 830 accordingly. According to one embodiment, the timeline 840 is not linear. Instead, the length between tick marks 910 on the timeline corresponds to the number of digital content items in the digital media library for that period of time. Thus, the spacing between markers 930 for different months or years may provide a visual indication of the number of content items in that month or year. For example, if the media library contains 300 content items (e.g. photographs and/or videos) for March 2007 and 100 content items for April 2007, the space allocated to March 2007 on the timeline 840 may be three times greater than the space allocated to April 2007.

The timeline 840 may also provide a visual indication of new content recently added to the digital media library. For example, when another person shares an album with the user, or when the user uploads new photographs and/or videos from a camera, a new content indicator 950 may be displayed in the timeline 840. In one example, the new content indicator 950 includes highlighting or changing the color of the tick marks 910 corresponding to the newly added content items. The new content indicator 950 may persist for a predetermined time period, or until the user acknowledges the new content. For example, when an album is shared with the user, the new content indicator 950 may persist until the user acknowledges the shared card notification, as discussed further below. In another example, when the user uploads new content to the library, the new content indicator 950 may persist until the user closes/cancels an "upload complete" notification, as also discussed further below.

There may be multiple ways in which a user can navigate in the time view. For example, if the user hovers over the left or right edge of the timeline 840, the timeline may scroll to reveal more of the timeline. In one example, if this scrolling causes the handle 940 to bump against the edge of the visible timeline, the handle remains on the edge and the content in the body 810 displayed changes accordingly. In this manner, the handle 940 is always visible. As discussed above, clicking on the timeline 840 may bring the user directly to the corresponding time frame. In one example, if the user clicks on the timeline 840, thereby jumping to a new point in time, a brief animation, such as the "wall" of preview images 830 in the body 810 tilting and scrolling, may be displayed. The user may also click on and drag the handle 940 to scroll through the preview images 830. In one example, clicking and dragging the handle 940 will similarly cause the wall of preview images 830 to tilt and scroll. As

discussed above with reference to the album view, the degree of tilt may correspond to the speed of the scroll, and the direction of the tilt may correspond to the direction of the scroll.

As discussed above with reference to the single album view, clicking on a particular preview image 710 or 830 may cause the display to navigate to the intermediate view. In one example, in the intermediate view, the selected image is enlarged and comes to the foreground of the screen, while the remaining preview images 710, 830, recede into the background. Referring to FIG. 10, in one example, the unselected preview images slide left and right so that a few may be seen at the edges of the screen, providing context for the selected image, as discussed above. The enlarging of the selected image and receding of the remaining images may be animated, providing the user with a visual experience as the view changes to the intermediate view. To return to the previous view, i.e., either time view or single album view, the user may click anywhere on the background 1010, even on one of the receded images 1015.

Referring to FIG. 10, in one example, the intermediate view includes a caption area that displays a caption 1020 for the item 1025. The caption 1020 may be editable if the item 1025 belongs to the user. If the user has not yet entered a caption for the item, a message, such as "click here to enter a caption for this photo/video," may be displayed in the caption area. If the item belongs to another person, i.e., is in an album that has been shared with the user, the caption 1020 may be set by the other person and therefore may not be editable by the user. The date the item was taken may also be displayed in a date area 1030. The intermediate view may include navigation controls 1035 which allow the user to step through items in the digital media library or album, for example, depending on whether the user entered the intermediate view from the time view or single album view, while remaining in the intermediate view. The intermediate view may also include a toolbar 1040 that provides access to a number of actions that may be performed on the item 1025. In one example, the contents of the toolbar 1040 depends on whether the item belongs to the user or is an item that has been shared with the user, and on the type of item (e.g., whether the item is a photograph or video).

In one embodiment, clicking on the item 1025 in the intermediate view further zooms into the image, presenting it a full-screen view. If the item 1025 is a video, the video may start playing automatically. Moving the cursor may cause a control bar to be displayed, as discussed above, to allow the user to stop and start the video, and to navigate forwards and backwards within the video. The control bar may disappear if the cursor remains still for a predetermined period of time, for example, a few seconds. In one example, in the full screen view, only the image (photo or video) is shown; that is, the view does not include a header or

other information which may distract the user from the image itself. If the item 1025 is a photograph, by default, the full screen view may include no controls, and no indication whether comments are available. In one example, if the user moves the pointer (e.g., using a mouse) to the edge of the screen, the left/right navigation control indicators appear as in other views. The user may also use the arrow keys or other keyboard keys or other input devices to cycle through images in the full screen view. In one example, clicking anywhere on the photo or video (or using another input mechanism, for example, pressing the Escape key) will return to the intermediate view.

Historically and to present, the interface on digital cameras can be difficult to set or change and thus it is not uncommon for the date stamp of photographs and/or videos taken with the camera to appear incorrectly in the user's digital media library. Correct dates, however, may be critical to the success of time view and potentially also to many features of the digital media functionality of the portable computer 100. Therefore, in one example, the date setting may be adjustable for items in the digital media library. In one example, if the user hovers over the date area 1030 for an item in the intermediate view, an indication may be provided that the date is editable. For example, the color of the date may change, and/or the date area may be highlighted. Clicking the date may cause controls for editing the date to become available. For example, as shown in FIG. 11, the date area may display scrollable fields for the month (1045), day (1050), and year (1055), along with a save button 1060. The user may change the date by clicking the scroll arrows for each field, selecting a desired date for the item 1025. According to one embodiment, once the user makes the correction, the user may be prompted to adjust the dates for all items that were taken with the same camera and uploaded in the same session. Thus, the digital media program may identify all the items that are likely to have dates offset by the same amount as the item just corrected, and offer to correct the date(s) of these item(s) by the same offset. For example, a prompt to the user may read: "I have identified [#] other items taken with the same camera and saved at the same time as this [photo/video]. Would you like me to correct the date for these items as well?" with the options "Yes, please" and "No, thanks" for the user to select. In one example, "No, thanks" is the default.

According to one embodiment, for content items that belong to the user, date corrections may propagate throughout their computer network. Thus, if the user corrects the date on a content item that has previously been shared with another user, the corrected date is reflected on the other user's display. This propagation of corrections may be effected because

the digital content items, and associated data, such as date, caption, etc., may be stored in the cloud 330, as discussed above. Thus, when the other user views the shared content item, they are viewing a visual representation of digital content stored in the cloud, rather than a locally stored digital content item. Some online digital photograph and/or video services do not permit editing of dates associated with the stored photographs and/or videos. In addition, a user may wish to edit the date associated with a shared item, for which they may not have editing privileges. Thus, although in some instances it may be preferable to save date corrections to the hosting photo/video service, if this is not possible, date corrections may be locally stored on the portable computer 100 for display purposes. In this instance, date corrections will be reflected when the user views the digital content item on the portable computer 100, but will not propagate to other users viewing shared items.

Referring again to FIG. 10, as discussed above, the intermediate view includes a toolbar 1040 that includes one or more controls 1065 that may be used to manipulate the item 1025. In one embodiment, the toolbar 1040 contains controls 1065 including "add to pick list," "add/view comments," and "rotate." The "add to pick list" and "add/view comments" controls are discussed below. The rotate control rotates the item 1025 90 degrees, either clockwise or anti-clockwise. The direction of rotation may be pre-set (i.e., rotation is always in the same direction) or may be user-selectable. If possible, the rotation may be stored with the item 1025 on the appropriate online photo/video hosting service, bur if not, the change may be stored locally and affects only the user's view of the item 1025. If the item 1025 belongs to the user, the toolbar may further include an edit control 1070 and a delete control 1075.

In general, photo editing can be grouped into two broad categories, namely editing that alters the content of an image (such as cropping, red-eye, removal, and adjusting the contrast), and editing that alters the display of an image (such as rotation, creation date, and view/hide). In one embodiment, the digital media aspect of the portable computer 100 may encourage users to leverage existing services (offered by their online photo hosting service) for the former, via the edit control 1070, while supplying tools for the latter. In one example, the edit control 1070 may display a message similar to "edit on [service]," where the [service] is the name of the third party hosting service that stores the user's digital media library in the cloud 330 (for example, FLICKR). Clicking on the edit control 1070 may open a web card for the item 1025 on the user's hosting service, allowing the user to edit the item, as discussed further below. In some instances, the user will not have the appropriate access to perform either type of editing operations on many of the images in their media library, either because the particular

image does not belong to the user, or because the photo hosting service does not support the particular editing action. According to one embodiment, the digital media aspect of the portable computer 100 allows the user to perform display edits on any digital content item in their digital media library regardless of whether or not that edit function is available via the library hosting service. For example, the user may rotate any photo or video in their digital media library, using the rotate control discussed above, even if this rotation is only available on the user's display on the portable computer 100 and does not affect the underlying data stored in the cloud 330.

Similarly, the function of the delete control 1075 may vary depending on various factors. If the item 1025 belongs to the user, the delete control 1075 may allow the user to delete the item from their digital media library. If the item 1025 does not belong to the user, the delete control 1075 may be replaced in the toolbar 1040 by a "remove" control (not shown). The remove control allows the user to remove items from their digital media library that do not belong to them, without affecting the underlying data in the cloud. Thus, the underlying data may remain in the cloud, since the user does not have permission to actually delete the item), but the item is removed from the user's view on the portable computer 100. Thus, the user may make local changes to their own data that are not reflected on the underlying media library hosting service, thus allowing the user to customize and enhance their own viewing experience.

Still referring to FIG. 10, if the item 1025 is a video, the toolbar 1040 may include additional video controls (not shown), such as "play" and "stop" or "pause." The video controls may also include a video play timeline with a click-and-drag "scrubber" that identifies the current playpoint in the video in relation to the length of the view, and also allows the user to navigate through the video.

As discussed above, in one embodiment, one of the controls 1065 in the toolbar 1040 is a "comments" control, that allows the user to add and/or view comments associated with the item 1025. If comments are available for the item 1025, a comments icon 1080 may be displayed on the item, for example, in an upper corner of the item. In one example, in the intermediate view, the comments icon 1080 shows the number of comments available for the item 1025. If the user clicks the comments control in the toolbar 1040 of the intermediate view, the item 1025 turns over to reveal a "back side" showing existing comments and allowing the user to add/edit comments. In one example, an animation of the item 1025 turning over is provided.

Referring to FIG. 12 there is illustrated one example, of a "back view" of the item 1025. The back view includes a preview image 1210 of the item 1025, along with an "add comments" area 1220 where the user can type a new comment. Comments may also be added by persons with whom the user (or someone else) has shared the item 1025. Thus, existing comments 1230 may be displayed, along with a user image 1240 selected by the person leaving the comment and an identifier 1250 which provides identifying information for the comment, such as the name of the person who left the comment and the date and time the comment was left. In one example, the back view includes a "from" selector 1260 which allows the user to select to display only comments from a particular person or group of persons. If the user types a comment into the add comments area 1220, an "add comment" button 1270 may be displayed. Clicking the add comment button 1270 may add the user's comment to the item 1025. Clicking a "done" button 1280 may turn the item 1025 back over, returning the user to the intermediate view. In one example, the navigation controls 1035 remain available in the back side view, allowing the user to navigate backwards and forwards through the digital medial library, displaying the back side (comments) view for each item. In one example, clicking in the background 1010 turns the item 1025 back over and then exits the intermediate view, returning the user to either the single album view or time view. An animation of these steps occurring may be displayed during the transition from the comments view, through the intermediate view, to the single album or time view.

In one example, a small comments icon 1080 is also displayed in the corner of those preview images 710 (in the single album view) or 810 (in the time view) for which comments are available. Clicking on the comments icon 1080 may bring up the comments view for the associated content item. In one example, clicking on the comments icon 1080 in one of these views causes an animation to be displayed, the animation including zooming into the intermediate view for the selected preview image 710, 810, and turning the item 1025 over, as discussed above.

As discussed above, in one embodiment, one of the controls 1065 in the toolbar 1040 is an "add to pick list" control. The pick list is an organization tool that allows the user to gather together a group of digital content items for a particular action. For example, in the pick list, the user may collect content items to be shared with another user, used to create a custom channel, as discussed further below, or for which the user wishes to buy prints or access some other service provided by the online library hosting service. According to one embodiment, the pick list appears when the user adds a content item to the pick list, and may remain visible

until the user clears the list. For example, FIG. 13A illustrates an example of the single album view, with the pick list 1310 displayed across the top of the view. Similarly, FIG. 13B illustrates an example of the time view displaying the pick list 1310. It is to be appreciated that although the pick list 1310 is shown in FIGS. 13A and 13B located near the top of the screen, below the header 555, 820, its location is not limited to the illustrated example, and the pick list may be displayed elsewhere on the screen, for example, along the bottom of the screen, or vertically along one side of the screen.

According to one embodiment, the pick list 1310 comprises one or more thumbnails 1320 corresponding to the content items added to the pick list, as shown in FIGS. 13A and 13B. The thumbnails 1320 may be arranged in the order in which the content items were added to the pick list 1310. In one example, the thumbnails 1320 cannot be re-ordered by the user. Navigation controls 1330 allow the user to scroll through the pick list 1310. Referring to FIG. 13C, there is illustrated one example of a pick list 1310 including pick list controls 1340. The pick list controls 1340 may allow the user to perform any of a number of actions on the pick list 1310 and on the content items contained in the pick list. For example, the pick list controls 1340 may include options to order prints, to share the items in the pick list, to add a channel, and/or to clear and close the pick list. In one example, selecting the clear and close control empties the pick list 1310 and removes it from display; however, the content items in the pick list may not be deleted from the digital content library. Hovering over a particular thumbnail 1320a (as indicated by pointer 126) may increase the size of that thumbnail, as shown in FIG. 13C, and reveal a delete icon 1350. In one example, hovering on the delete item causes a tip to be displayed, indicating that clicking the delete icon 1350 will cause the content item to be deleted from the pick list. In one example, clicking on the delete icon 1350 deletes the content item from the pick list 1310, but not from the user's digital media library. Clicking elsewhere (i.e., not on the delete icon 1350) on the thumbnail 1320a may cause the associated content item to open in the intermediate view. If the user was in the time view (FIG. 13B), the timeline 840 may scroll in the background and the handle 940 moves as appropriate. If the user was in the album view and clicks a thumbnail 1320 in the pick list 1310, the background of the intermediate view may reflect the appropriate album. In one example, if the user is in the album view and clicks on a thumbnail 1320 in the pick list 1310 that happens to be unsorted (i.e., not associated with an album), the display may switch to the time view.

According to one embodiment, hovering on a preview image 710 (in the single album view) or 830 (in the time view) will cause the preview image to enlarge slightly and two

controls to appear, as shown in FIG. 14. The pointer 126 indicates the user hovering on the preview image 1410. These controls may include a delete icon 1420 and an "add to pick list" button 1430. If comments are available for the content item associated with the preview image 1410, the comments icon 1080 may also be displayed. Clicking on the "add to pick list" button 1430 adds the content item to the user's pick list 1310. Clicking on the delete icon 1420 deletes the content item from the user's digital media library. In one example, clicking the delete icon 1420 also causes an informational "bubble" (not shown) to appear, letting the user know that the content item has been deleted. The bubble may remain on the screen for certain time period, for example, a few seconds, and may include an undelete button, giving the user the ability to undo the deletion of the content item. Conventional "undo" actions, such as pressing "CTRL-z" may also undo the deletion of the content item. The effect of deleting a content item on the underlying data in the cloud 330 may depend on whether the content item belongs to the user, or is an item that has been shared with the user by someone else. For example, if the content item belongs to the user, then deleting it may also delete the content item from the library stored by the online hosting service. If the content item belongs to someone else, deleting it in the user's digital medial library may remove the "map" or reference to that item, such that it is no longer displayed in the user's media library, but does not affect the underlying data in the cloud 330.

Referring again to FIG. 13C, in one example, clicking a "share" button in the pick list controls 1340 Clicking the Share button in the Pick List launches a share bubble 1360, as shown in FIG. 15. The share bubble 1360 may include several fields, including a name field 1362 where the user may name the content item or group of content items to be shared, and fields where the user may either select from the pre-set list of persons (field 1364) those persons with whom the user wishes to share the items, or enter one or email addresses (field 1366) of persons with whom the items are to be shared. The share bubble 1360 may also include a comments field 1368 where the user may enter comments about the items being shared or a message to the person(s) with whom the content items are being shared. Clicking the "share" button 1370 may complete the share action. A "cancel" button 1372 may be provided to cancel the share action; alternatively, simply clicking anywhere not on the share bubble 1360 may also cancel the share action. A similar share bubble may also appear when the user selects the share album control 612 in the album view discussed above.

The pick list controls 1340 may also include an "order prints" button to allow the user to order prints of the photographs in the pick list 1310. According to one embodiment,

clicking "order prints" button from the pick list 1310 shows the user options for ordering (such as print size, number of prints, etc.), and then places the order using information previously collected from the user, for example, during initial configuration of the portable computer 100. According to another embodiment, clicking the "order prints" button from the pick list 1310 opens an ordering panel that provides the user with options for ordering prints from any of a variety of online photo service providers. The ordering panel may include weblinks that allow the user to navigate to the websites of the online photo service providers. The ordering panel may also include a "stop" or "cancel" button. In another embodiment, clicking the "order prints" button from the pick list 1310 automatically opens a webpage of the online photo hosting service where the user's digital media library is stored. Thus, the user may order the desired prints (or other merchandise) directly from the hosting service on which they are stored. In one example, using the "order prints" control does not clear the content items from the pick list 1310 in case the user wishes to perform another action with the items.

According to one embodiment, the pick list controls 1340 may also include a control to create or add a channel. In one example, selecting the create a channel control in the pick list 1310 creates a channel card containing the content items in the pick list. As discussed above, according to one aspect, streamlining the presentation and integration of features and services available through the portable computer 100 includes developing consistent visual representations of available content (whether on the computer 100 or from third party service providers). In one embodiment, system features and web features are consistently presented as cards for the user to interact with to achieve their computer objectives. In some embodiments, cards comprise part of an interface layer between a computer user and a user's computer based objective and/or computer operation. Thus, the cards form a part of the structure of the graphical user interface between a computer system and the user to provide access to a plurality of views and/or content. In various embodiments, cards are configured to be context and/or content sensitive. Thus, the cards are selectable visual representations that are mapped either to computer functions or available computer content. Some examples of cards include web cards that map to views of web content including web pages, channel cards that map to customized views of content including web based content and picture and video content, and system cards that map to system functionality. In one example, system cards are configured to represent activities that have been specifically designed such as for example, a digital media card.

Referring to FIG. 16, in one embodiment, the home view 310 (see FIG. 3) is configured to manage and organize cards. Thus, in one example, the home view 310 includes a body 1610 in which a plurality of cards 1620 are arranged. The home view 310 may also include a header 1630 which displays a home indicator 1640, letting the user know that they are in the home view, 1640, and optionally includes a web search bar 1650, providing the user direct access to searching on the Internet. The home view 310 provides a simple and convenient mode of navigating through the features and content accessible through the device by organizing and managing cards. In some embodiments, channel cards provide additional features that enable a user to better interact with web based content, and in another example, channel cards provide interactive views by utilizing different content presentations provided by a web source. Thus, consistent user interfaces are used to access web based content, even content and applications provided by third parties.

According to one aspect, cards may have common features to promote user acceptance and improve adoption of different cards, while providing familiar a form. In one example, most cards are configured with a similar anatomy, and may comprise certain common elements described with reference to illustrated examples. According to one aspect, different cards types displayed in the home view are clearly defined by color scheme and appearance, while at the same time maintaining a similar format. For example the similar format includes header placement and sizing, display of tools, title and frame size. In one embodiment, a color scheme configured to differentiate card types provides for web cards with white headers with the content displayed on the web card showing as a thumbnail of the current state of the page. Channel cards may be configured with black headers, and the content presented in the channel card may comprise a simplified representation of the associated media or web content. System cards may be shown either with blue headers or grey headers.

According to one embodiment, the digital media aspect of the streamlined device is presented as and accessed through a system card 1620a. The digital media system card 1620 comprises a header 1660 running along the top of the card which identifies it as the digital media card, and a body 1670 which displays an image of one of the digital content items in the user's digital media library. In one example, the image displayed in the body 1670 is selected at random from the user's digital media library and may change periodically, for example, every few seconds or minutes. From the home view 310, selecting (e.g., by clicking) the digital media card 1620 navigates to either the time view or the album view of the user's

digital media library. The default view may be set in the card options, as discussed further below.

As discussed above, when the user selects the "create a channel" control in the pick list 1310, a channel card is created containing the content items in the pick list. The channel creation process may be animated. In one example, when the user clicks the control button, the system zooms out of the digital media library view to the home view 310, scrolls to the end of the displayed cards 1620 (if necessary), and shows the new channel card appearing, then scrolls back (if necessary) to where the digital media card 1620a is displayed in the home view, and zooms back into digital media view from which the user clicked on the control in the pick list 1310. The whole animation may take a brief time; short enough to not be too annoying to the user, but long enough not to cause the user any vertigo.

According to one embodiment, the user may also create channel from online photo services (such as SMUGMUG or KODAK GALLERY). In one example, when the user creates a channel from one of these services, the option may be given to save the photographs to the user's digital media library. If the user decides to add the photographs to the digital media library, new photographs subsequently added to the feed from the online service may also be added to the digital media library. This automatic updating stops (i.e., no more photographs are added) if the user deletes the channel card or transforms it into a web card. Similarly, the user may transform a web card of an online photo service (such as FLICKR or SHUTTERFLY) into a channel card using the card options discussed below. In one example, when the user creates a channel card from one of these photo services, the option is again given to add the contents of the channel card to the user's digital media library. This allows the user to get the benefit of an aggregated media library on the portable computer, but without automatically cluttering it up with unwanted images. Content subsequently added to the channel may also be added to user's digital media library. If the user deletes the channel card or transforms it back into a web card, new content is no longer added to the digital media library, but the existing content may not be removed.

Referring again to FIG. 16, the cards 1620 may include an "options" icon 1680 in the header 1660. In one embodiment, when card configurations and/or card options are selected by a user (if available), e.g., by clicking the card options icon 1680, a consistent animation is presented to the user. For example, selection of a card's options may cause an animation displaying the flipping of the card and the revelation of user selectable options. In one example, if the user clicks the card options icon 1680, there is presented a visualization of the

card turning over, similar to the animation/visualization of the item 1025 turning over to display the comments view discussed above. On the "back side" of the card 1620 the user may see various options which may differ depending on the type of card. Referring to FIG. 17A, there is illustrated one example of the back side of a card 1620. In the illustrated example, the card 1620 includes a header 1710 that displays an identifying field 1715 and optionally a logo or image 1720, to identify the card to the user. In an example of a web card, the identifying field 1715 may include the name of the associated website and optionally some description of the card. For example, a web card for an online news service may display the name of the news service along with a description such as "local news" or "news headlines" that identifies the card for the user. The available options for the card 1620 are shown in the body 1725 of the card.

In the illustrated example, the body 1725 of the back side of the web card 1620b shows an option 1730 for transforming the card into a channel card, and vice-versa. In the example of a web card, if the user checks the option 1730, the web card is recast into a channel card. Unchecking the option 1730 transforms the channel card back into a web card. The option 1730 may be displayed permanently checked for cards that are always available as channel cards (e.g., the digital media card 1620a, as shown in FIG. 17B), and may be missing for cards that are not available as channels, for example, some system cards. In the example of the digital media card 1620a, the option 1730 may include an option to show the card as a channel using a particular lens. Thus, for the digital media card 1620a, the control 1730 may read "Show as channel using [lens], as shown in FIG. 17B." A lens is a customized visualization for computer content, as discussed further below.

Still referring to FIG. 17A, channel cards may include an option 1735 to show the card in a screensaver. Typically the screensaver option 1735 is not an available option for other card types; however, the digital media system card 1620a does permit its content to be displayed in the screensaver. In one example, the digital media card 1620a is added to the screensaver mode by default. In the channel view (discussed below) and screensaver mode, the digital media system selects photographs randomly from the user's digital media library. This allows the portable computer 100 to function like a smart digital picture frame by default when the device is idle. According to one example, new channel cards are configured to not display in screensaver mode by default and therefore, the option 1735 is not checked for new channel cards.

The card options may also include share information/controls 1740. The shared information 1740 may include a "shared to/from" line which provides information on the user or device from which or with which the card was shared. Hovering over the "shared from" line causes the device to display an informational bubble with a list of people to whom the card was shared. Other options may be employed for displaying shared from information. Other options may include linking to a display list for share from information, and in some embodiments may include displaying the shared entities on the back of the card without selecting the "shared from" line. In such embodiments a maximum number of shared entities may be displayed before requiring selection of a more control. The more control expands on the list of shared entities to provide for listings that do not fit within the space provided on the back of a card. A "shared to" line may provide information about whether and to whom the card has been shared. According to one embodiment, system cards can not be shared, thus no shared to information is displayed. By default the "shared to" line does not display until a card has been shared. In one example, hovering over the shared to line causes the device to display an informational bubble with the list of people to whom the card has been shared. Other options may be employed for displaying shared to information. Other options may include linking to a display list for share to information, and in some embodiments may include displaying the shared entities on the back of the card without selecting the "shared to" line. In such embodiments a maximum number of shared entities may be displayed before requiring selection of a more control (not shown). The more control expands on the list of shared entities to provide for listings that do not fit within the space provided on the back of a card. Optionally the more control may cause the device to display an information bubble containing the remaining shared entities and/or all the shared entities. The share information 1740 may also display the number of times the card has been shared. As discussed above, the user may share content items from the pick list 1310 with other users. In one example, sharing items from the pick list operates similar to sharing a channel card that contains only photographs and videos. The recipient receives a channel card on their streamlined device (or an email with a link to the channel card on a website if the recipient does not have a streamlined device.

Still referring to FIG. 17A, for some cards the card options may further include a delete control 1745 which removes the card 1620 from the home view 310. The delete control 1745 is typically not available for system cards, which typically can not be deleted by the user. The card 1620 may also show a "last updated" field 1750 that displays update information. For example, for a web card that streams news or other online content, the update field 1750 may

display the last time the feed was updated, for example, "last updated 3 minutes ago" or "last updated at [date/time]." A "done" button 1755 may be provided that allows the user to turn the card 1620 back over to the front side view when the user is finished viewing/changing the card options. In one example, clicking the "done" button 1755 causes the system to display an animation of the card 1620 flipping over to show front side and zooming back out to the home view 310.

As discussed above, another view of the digital media library which may be offered to the user is the lens view. The lens view is a group of visualizations, or "lenses," that the user can choose from and which offer the user different ways in which to experience and interact with their digital media libraries. The content displayed and the interactions available may depend on the individual lens. In one example, all or at least some of the lenses allow the user to add a particular picture to the pick list 1310. The pick list may or may not be displayed in the lens view. In one example, lenses support passive viewing, i.e., they do not require user interaction to be effective since they can be applied to the channel view and screensaver mode.

According to one embodiment, by default, channel cards are displayed in the channel page view according to a pre-determined visualization. For channels that comprise photographs and videos, including the digital media card 1620a, and channels created from online photo services such as FLICKR or SHUTTERFLY, lenses are also available to modify the visualization of the channel. According to one embodiment, the channel page view is the zoomed-in computer implemented expression of a channel card. The channel page view may be invoked by clicking on the channel card. A channel page view may present a unique view into content made available through a website. The channel page view employs visualizations similar to corresponding visualization on channel cards but the large format of the view allows for a better display of content, and provides for increased interaction with users. The channel page view also comprises a mapping from the display content to the source from which the content is derived. The channel page view comprises a number of elements that are maintained across the channel page views of different content, although in some examples additional features may be provided to address unique aspects of the content being viewed. An example of a channel page view is the album view illustrated in FIG. 5.

As discussed above, and referring to FIG. 17B, for the digital media card, the channel control may read: "Show as channel using [lens]" to allow the user to select a particular lens. The lens button 1760 may display the name of the currently selected lens. Clicking the lens button 1760 reveals controls, for example, a drop-down menu, for selecting a lens. In one

example, when the user clicks on the drop-down menu to select a lens, the card 1620a and drop-down menu remain visible, but the rest of the home view 310 becomes obscured by a preview of the selected lens. Lenses may also be selected from any of the time view, album view, intermediate view, or lens view of the user's digital media library. For example, referring to FIG. 18A, there is illustrated an example of the time view showing the lens button 1760. The lens button 1760 displays the name of the currently selected lens. In one example, clicking on the lens button 1760 will switch to the lens view and show the current lens. Referring to FIG. 18B, there is illustrated an example of a lens view. The lens view includes a header 1810 and a body 1820 in which an image 1025 of the content item is displayed. The lens button is shown as a drop-down menu 1830, as discussed above, revealing a list of available lenses. The drop-down menu may be displayed responsive to the user clicking the arrow 1840 on the lens button. As the user moves through the list, an instant preview of the highlighted lens may appear in the body 1820 of the screen. Selecting a new lens from the list makes it the current lens, and changes the text on the lens button 1760 (see FIG. 18A) to match.

One example of a lens is the slideshow lens. In one embodiment, in a channel page view, the slideshow lens automatically shows random images from the user's digital media library in the full screen view. Each image may be displayed for a predetermined period of time, for example, a few seconds. In another example, the images are shown as a forward moving series, as shown in FIG. 19. In the example in FIG. 19, the front image 1910 is shown for a few seconds, then replaced with the next image 1920 and the series "shifts forward" with a new image being added at the back of the line. In one example, the images displayed are selected from a particular album, and the system automatically scans through all the images in the album, randomly or in sequence. The photo display restarts again at the beginning when the end of the photo content is reached. From the slideshow, the user may navigate to any image in the digital media library.

FIG. 21A, illustrates an example logical diagram of the behavior for the slideshow lens in the channel view. From channel page view 2110, selection of a menu button causes the device to display a content menu 2120, over the present channel page view. Selection of the menu button from the content menu, causes the device to display the selected content item in a channel page view 2502. The menu button may be a clickable button displayed on the screen (not shown in FIG. 19) or may be a hardware button, such as a button on the keyboard 106 (see FIG. 1) or one of the navigation buttons 122, 124 discussed above. In one example, from the

channel page view 2110, operation of the scroll wheel 120 (see FIG. 4), causes the device to display a channel selector view 2130. The channel selector may allow the user to select different albums or different channels for display. It is to be appreciated that the navigations discussed in reference to examples of navigating through photo content in the channel page view and slideshow lens may be similarly applied to channel page views of cards other than the digital media card, optionally using lenses other than the slideshow lens.

In one embodiment, if the user presses the menu button while looking at a particular item, a content menu for the album to which that item belongs is displayed, as shown in FIG. 20A. In one example, the content menu 2010 is configured to be responsive to manipulation of the embedded scroll wheel 120 discussed above. Manipulation of the scroll wheel 120 progress through the displayed content menu 2010, and in response the system displays the selected content in the full view with preview text appearing below. Manipulation of the scroll wheel 120 causes the system to scroll through the photos in the current album. In one embodiment, the content menu 2010 transitions between selections by rendering the apparent movement of the entire content menu either to the left of the right depending upon the orientation of the manipulation of the scroll wheel 120. Alternatively, the content menu is also responsive to arrow keys on the keyboard 106. Depressing an arrow key causes the system to display the apparent movement of the content menu 2010 to the next item. In one example, if the image 1025 belongs to more than one album, the system shows the content menu for the first album. If the item does not belong to any album, the system may show the content menu for unsorted images. In another example, pressing and holding the menu button may cause a content menu to be displayed, allowing the user to scroll through and select a particular album. A prompt 1930 may be displayed, as shown in FIG. 19, providing the user with instructions for changing the album.

According to one embodiment, if the user presses and holds the menu button, a contextual menu 2020 of all of the albums in the digital media library appears, as shown in FIG. 20B. The user may then use the scroll wheel 120 to navigate to any of the albums. The contextual menu 2020 may display the title of the albums, along with a representative, first or random thumbnail 2030 of a content item in the album. In one example, pressing the menu button opens the selected album, showing the first image in full screen and proceeding to show the rest as usual.

According to one embodiment, channels for displaying video content and/or audio content operate with a different logical flow. In one example, additional interactivity is

required to allow a user to, for example, stop a video, start a video from the middle, among other options. According to one embodiment, the streamlined device must be able to accommodate routine operations through manipulation of only a scroll wheel and a mouse, for example when the device is in an easel mode. It is to be appreciated that in other configurations the logical flow for the behavior of the channel view may be different, and may take advantage of addition input/output devices available in other device modes. Shown in FIG. 21B, is an example of a logical flow for device/UI functionality, during the normal operation of a channel view of video content. At 2140 shown is a channel page view of video content. Select of button (e.g. one of the navigation buttons 122, 124), causes the device to display a contextual menu 2145. The Contextual menu 2145 may include a visual representation of selectable options 2150. The selectable options 2150 rendered may include at least a rewind/fast forward selector, resume selection, other episodes, etc. Selection of the rewind/fast forward selector invokes a timeline controller 2155 shown in the content page view 2160. In one example, the time line controller 2155 is responsive to rotation of the scroll wheel 120, providing fast forward in one direction and rewind in the other. From 2160, selection of a navigation button causes the device to return the view to channel page view 2140. Selection of "resume" from the options 2150 also causes the device to return the view to channel page view 2140. Selection of other episodes from 2150 causes the device to invoke a content menu 2165, which provides a selector view of available content for the channel. Selection of content 2170 from the selector view 2165 causes the system to play the selected content in channel page view 2140. From channel page view 2140, the device displays a channel selector 2175, in response to operation of the scroll wheel 120. The logical flow illustrated may be used for interactions with audio content as well, for example, to control playing of .mp3 or other audio files.

As discussed above, in one embodiment, the portable computer is configurable into different modes, including a laptop mode (in which the portable computer has a conventional laptop appearance), a flat mode, a frame mode, and an easel mode in which the base of the computer and its display component stand vertically forming an inverted "V," as discussed above. It is be appreciated that different user interface architectures may be invoked in response to different device modes. For example, a portable computer in laptop mode may display a home view 310 as discussed with respect to FIG. 16, whereas when configured in Easel mode, user may be presented with a channel page view, for example, the slideshow view discussed above.

Referring to FIG. 22, there is illustrated an example of the portable computer 100 configured into the easel mode. To convert the portable computer 100 from the laptop mode (or closed position) into the easel mode, the display component 102 may be folded away from the base 104, in the same direction as to open the computer (i.e., to configure the computer from the closed position into the laptop mode) such that the base 104 and the display component 102 form an inverted "V" shape with the bottom of the base and the back of the display component face another, as illustrated in FIG. 22. In the easel mode, the display screen 110 is visible and accessible on one side of the portable computer 100 and the keyboard 106 (not shown in FIG. 22) is visible and accessible on the other side. Having the portable computer 100 be configurable between different modes supports the presentation of computer content using visual representation optimized for different viewing modes. In particular, ones of the visual representations are configured to display in a "lean forward" user viewing mode and a "lean backward" viewing mode. In one example, a lean forward user viewing mode includes a user typing at a keyboard of a laptop computer. In another example, a lean backward user viewing mode includes a user viewing a television from a distance. One should appreciate that the examples provided are illustrative and are not intended to be limiting. The configurable portable computer 100 permits a user to select a device configuration most suited to a particular user viewing mode. According to one embodiment, the easel mode of the device permits improved "lean back" interactions with computer content. In other words, the easel mode makes it easier to view the streamlined device's display from distances greater than conventionally used with laptop computers.

According to one embodiment, the function or display content and/or display orientation of the portable computer may vary when the portable computer is configured from the laptop mode into the easel mode, or vice versa. Thus, selection of a lean backward user viewing mode at triggers the portable computer 100 to transition to a content display that improves user interaction in that mode. For example, in response to configuring the device into the easel mode, the computer system display may transition to a channel viewing mode. The channel viewing mode is configured to present computer content, in large footprint displays, and further is designed to streamline user interaction with the streamlined device by permitting access through a first I/O profile associated with the streamlined device in easel mode. The first I/O profile in easel mode may consist of a scroll wheel and a selector button. In some embodiments, the first I/O profile may include a volume control. In another example, for at least some activities within at least some modes of content (e.g., viewing a photograph or

video), when the portable computer 100 is configured into the easel mode, the display may automatically adjust to "full screen view" (i.e., the displayed image or video is displayed on the full screen size, rather than in a window) to allow for comfortable viewing.

In addition, in one embodiment, when the portable computer 100 is configured into the easel mode, the visual display on the display screen 110 is automatically rotated 180 degrees such that the information appears "right-way-up," even through the display screen is upside-down compared to when the portable computer is in the laptop mode. Thus, a user may simply "flip" the portable computer 100 into the easel mode and immediately be able to comfortably view information on the display screen 110, without having to access display screen controls to adjust the orientation of the visual display. The ability to configure the portable computer 100 into either the laptop mode or the easel mode provides enhanced functionality. For example, when the portable computer 100 is not being actively used, the user may configure the portable computer into the easel mode, and program the portable computer to act as a digital photo frame, displaying one or more photos of the user's choice. In the easel mode, the portable computer 100 may occupy a smaller footprint on a surface than in the laptop or closed modes because the base 104 and display component 102 are upright, as illustrated in FIG. 22. In addition, because the portable computer can act as a passive information and/or entertainment device, such as a photo frame, as discussed above, the portable computer may provide a useful function even when not being actively used by the user, and may do so (in the easel mode) without taking up much surface area.

In another example, the portable computer 100 may be configured into a "frame" mode, as illustrated in FIG. 23, in which the portable computer is placed on a surface 2310 with the keyboard 106 "face down" on the surface 2310 and the display 110 facing upward. In the frame mode, the display component 102 may be at a similar orientation, and angle 2320, with respect to the base component 104 as in the easel mode. However, rather than the base component 104 and display component 102 being oriented vertically with respect to the surface 2310, as in the easel mode (in which the portable computer forms an inverted "V" as discussed above), in the frame mode, the base component 104 may lie flat on the surface 2310, as shown in FIG. 23. In one example, software and/or hardware protection may be provided for the keyboard to prevent keys from being pressed (or to prevent the portable computer from responding to pressed keys) when the portable computer is in the frame mode.

According to some embodiments, the streamlined computer system/device includes a plurality of I/O devices that a user needs to operate and transitions between modes (e.g. frame

and easel) triggers the presentation of different I/O profiles to the computer user. One should appreciate that the various I/O profiles can be selected through physical configuration of the device. By providing the user the ability to change from a first I/O profile to another, at will, improves the user experience and permits the user to dynamically select a preferred I/O profile best suited to the user's present need. According to one embodiment, user selection of I/O profile includes transitioning from a lean back mode to a lean forward mode and vice versa. In one embodiment, the user's computer device is configured to have multiple I/O profiles that can be selected by physically manipulating the orientation of the computer device itself.

According to one aspect, streamlining user interactions with the computer system/device includes representing computer based content in visual representations that render computer operations/behavior in a consistent manner. The visual representations are adapted to permit easy user interaction even upon selection of a first I/O profile or the change in selection of an I/O profile. According to one embodiment, the visual representations are rendered as cards. Different types of cards may be employed to render different types of available content. For example, web based content, may be rendered as a web card that associated with a mapping to web content. Some web cards map directly to web pages and in response to selection of the web card the computer device executes the mapping and displays a web view of the content. Other cards may be used to provide interactive displays selectable by a user. In another example, system operations are displayed as system cards, which are associated with mappings to system operations, for example communications configurations, and may comprise a settings card, among other system options. Another type of card includes a channel card configured to stream web based content in a manner that allows for summarization of content, while still providing the ability to fully appreciate the summarized content.

In one example, a streamlined hardware device provides for (in comparison to typical desktop and laptop systems) a reduced user input platform as a first I/O profile, comprising in one configuration a scroll wheel and a button interface. Other I/O profiles are available for user selection by manipulation of the device itself. In one embodiment, an easel mode presents the user with the first I/O profile and by rotating the computer device about a longitudinal axis; the user may select a second I/O profile, including a keyboard (e.g. laptop mode). The transition from one I/O profile to another may also cause the computer device to alter its display. In one example, the user interface provided to the user is responsive to selection of device mode and/or selection of I/O profile.

It is to be appreciated that reducing the number of I/O device achieves simplicity of design and ease of operation by the user, and at the same time may increase the complexity of the graphical user interfaces needed to support interaction with systems and third parties that anticipate, rely on, or expect additional I/O devices. Streamlining device operation by the user is balanced against sophistication of user the interface required to enable user interaction with the same features used with additional I/O devices. According to one embodiment, the user interface layer provides simplified accessibility based on the device's I/O platform, and for some embodiments, the user interface layer is responsive to device configurations that change the device's I/O capabilities. In other embodiments, the user interface is responsive to changes in the device's mode. In some examples, changes in device mode and changes I/O profile will occur together, however, in other examples a change in mode or a change in I/O profile will not require a corresponding change in profile or mode respectively.

Referring to FIG. 30, there is illustrated another configuration of the portable computer 100, referring to as the "flat" mode. In the flat mode, the display component 102 may be rotated (or opened) to approximately 180 degrees with respect to the base component 104, such that the base component and display component lay flat on a surface, with the keyboard 106 and display screen 110 exposed, as shown in FIG. 30. Unlike the easel and frame modes, in which the keyboard may be concealed and not easily accessible, in the flat mode, the keyboard is accessible and usable. In addition, as discussed above, the visual display on the display screen 110 may be automatically rotated to accommodate comfortable viewing of information by persons located in different positions relative to the base component 104 or display component 102. The visual display on the display screen 110 may also be manually adjusted by a user using, for example, the keyboard 106, touch pad 108 or mouse (not shown), scroll wheel 122 or navigation buttons (not shown). For example, if a user (located at position A) wishes to display information for a person located opposite the user (at position B), the visual display may be rotated (automatically or manually)180 degrees such that the information appears "right-way-up," to the person at location B, even through the display screen 110 is upside-down for that person. Similarly, in another example, the visual display may be rotated (automatically or manually) 90 degrees such that the information appears "right-way-up," for a person at location C. In one example, a user can "toggle" the visual display among various orientations. For example, a user at location A may have the visual display facing themselves while using the keyboard 106 or other controls to change or access information on the display,

then toggle the display orientation 180 or 90 degrees to display the information for persons at locations B or C.

According to another aspect, system and interface streamlining may be employed with devices of multiple configurations. In some embodiments, multiple configurations include a traditional configuration, for example, a configuration similar to a laptop device, and also include new configurations, for example, an easel mode. Some examples of streamlined devices have the ability to change between traditional configurations and other configurations. The change between configurations may change the I/O profile of the device and hence impact the user's interaction with the device itself and any content displayed on the device. In one embodiment, the user interface is responsive to changes in configuration. In another embodiment, the user interface is responsive to changes in I/O profile.

According to another aspect, the streamlining of the user's multi-media experience incorporates the device the user uses to interact with multi-media sources, whether the sources are on-line or provided by the device itself. Streamlining of the device includes developing consistent user interfaces for the user to access all features presented. The device's graphical user interface layer is customized to the I/O interfaces provided. In one example a device is provided in the form of a portable computer configurable between a laptop mode (in which the portable computer has a conventional laptop appearance) and an easel mode in which the base of the computer and its display component stand upright forming an inverted "V," a closed mode, a laptop mode, an easel mode, a flat mode and a frame mode. According to one embodiment, each of the display modes may employ different I/O profiles.

In some embodiments, multiple configurations include a traditional configuration, for example, a configuration similar to a laptop device, and also include new configurations, for example, an easel mode. Some examples of streamlined devices have the ability to change between traditional configurations and other configurations. The change between configurations may change the I/O profile of the device and hence impact the user's interaction with the device itself and any content displayed on the device. In one embodiment, the user interface is responsive to changes in configuration. In another embodiment, the user interface is responsive to changes in I/O profile.

Referring again to FIG. 16, the computer system may include various system cards that map to computer functionality. Functionality mapped to by system cards may include, for example, a communications card, for configuring wireless access of the device, bookmarks for presenting conventional styled web page bookmarks, and a camera card for providing for

configuration and operation of a camera, either embedded in the device upon construction, or incorporated through for example a USB port. According to one embodiment, a camera system card 1622 may provide a user with an easy way to get digital photographs and/or videos off their digital camera and stored safely in the cloud 330 with their online hosting service. The camera card may provide information and support during each stage of the process: before, during and after a digital camera is connected to the portable computer 100 and the content items uploaded to the cloud 330.

Digital cameras typically present themselves to computers as storage devices. In many cases, the portable computer 100 may not be able to distinguish between a digital camera, a memory card reader, a USB drive, or other attached storage devices. Therefore, according to one embodiment, the camera card treats all such devices in the same way. Thus, the camera card may support the upload of images and videos regardless of the type of devices on which they are stored. Accordingly, although the following discussion may refer primarily to a camera, the term "camera" is intended to be synonymous with digital camera, card reader, USB drive, or other attachable storage device.

According to one embodiment, when a camera is attached to the portable computer 100, the camera card becomes available in a channel view, where it displays images on the card using the slideshow lens. However, it will be appreciated that the camera card may also become available in the home view or another view, and may display the images using a lens and/or view other than the slideshow lens. When no camera is attached to the portable computer, the camera card may nonetheless be visible in the home view 310. Selecting the camera card may "open" the card into a "page view" (i.e., the card is viewed full screen) and may display instructions/information about connecting a camera to the portable computer 100. When a camera is first attached to the portable computer 100, the system may zoom into the camera card and present the user with several options. For example, the user may be able to upload all the images from the camera to the online photo hosting service, allowing the system to create default albums. Alternatively, the user can customize the upload by adjusting albums and selecting from multiple online services, as discussed further below. In another example, the user can simply view the images that are on the camera, without necessarily initiating an upload. In one embodiment, while photos and/or videos are being uploaded to the cloud 330, the user can continue to review images on the camera card. As discussed further below, the user may also see the upload progress both in the camera card and in the digital media card 1620a. The presence of a camera attached to the portable computer need not constrain the

user's access to the rest of the system. The user may simply navigate away from the camera card to interact normally with the portable computer and use its other functions.

Referring to FIG. 24, there is illustrated an example of a page view of a camera card 1622 showing an upload of images 2410 in progress. The camera card 1622 includes a header 2415 and a body 2420 in which the images 2410 are displayed. The header may include information that identifies the card 1622 as the camera card and, when a camera is connected to the portable computer 100, information 2425 that identifies the connected camera (e.g., a make/model of the camera). The header may also include status information 2430 that tells the user the current activity being performed by the camera card, for example, "saving new photos and/or videos." The header may also include a "stop" control 2435 that allows the user to stop the saving/upload process, as well as a display control 2440 that allows the user to, for example, cause the camera card to display the images 2410 using the slideshow lens. In the body 2420, a status indicator 2445 may inform the user of the progress of the save/upload process. For example, the status indicator 2445 may tell the user that 34 of 70 content items have been processed and the save is 50% complete.

In one embodiment, clicking on an individual image 2410 on the camera card 1622, regardless of the stage of the upload process, may bring the user to the intermediate view, as shown in FIG. 25. The other images re-arrange themselves to form a horizontal line of images sorted by the date the items were taken with older items to the left. The intermediate view for the camera card 1622 is similar to the intermediate view for the digital media card 1620a discussed above. In one example, in the intermediate view for the camera card 1622, the user options may include the ability to edit a caption for the selected image 2410a by typing into the caption field 2450. The date field 2455 displays the date of the image underneath the caption area. In one example, if the user clicks on the date field 2455, it becomes editable, allowing the user to correct the date in case the camera does not have the correct date, as discussed above. If the user corrects the date and saves the changes, the system may then prompt the user to see whether it should change the dates for the rest of the contents of the camera by the same offset. The intermediate view of the camera card 1622 may also include a rotate option 2460 which may allow the user to rotate the image 2410, as also discussed above. In one example, each click on the rotate button 2460 rotates the image (either clockwise or anti-clockwise) by 90 degrees, and the user may thus click as many times as necessary to rotate the image by the desired amount. A delete option 2465 deletes the item from the camera card, after prompting the user to confirm the delete. As in intermediate view in the digital media

application, the user can navigate between photos and videos by clicking on the left or right navigation bars 2470, or by using the arrow keys or other controls as would be recognized by those skilled in the art. In one example, clicking anywhere on the image 2410 shows the image full-screen. The header 2415 may also include controls for deleting items (control 2475), creating a new album (control 2480) and saving (control 2485), each of which is discussed further below.

When no camera is connected to the portable computer 100, or when the system does not see a camera, it may be in one of two states: normal or interrupted upload (discussed below). According to one embodiment, in the normal state, the camera card 1622 on the home view 310 displays a generic camera image, and selecting the camera card may display some helpful information about how to connect a camera to the portable computer, as discussed above. By placing the camera card on the home view 310, even when no camera is connected, the capabilities of the camera card application are highlighted. For example, a user, upon seeing the camera card, may be reminded to connect a camera to the portable computer, making it more likely that the user will use the portable computer for managing digital media content items.

According to one embodiment, when a user attaches a camera to the portable computer 100, the user sees an animation of the system going to the home view 310, scrolling as necessary to the page containing the camera card 1622 (which may show thumbnails of the content of the camera), then zooming into the camera card. In one example, if the user has already selected the camera card and is viewing the camera card in the page view prior to connecting the camera, this animation may not show. Once in the page view for the camera card, the user can see the contents of the attached camera, and may be given options for what can be done with the content on the camera. These options may be displayed, for example, in a bubble that appears over the line of images 2410. In one example, the options include a simple save and an advanced save. The simple save option may save the contents of the camera card to the user's online photo hosting service with automatically created albums. If the user has registered more than one online hosting service, the user may select the desired service from a drop-down menu. The advanced save option provides the user with the opportunity to manipulate the automatically saved sets, delete photos, and/or save photos to multiple online hosting services, as discussed further below.

In the page view, as shown for example in FIG. 24, the user can interact with the images on the camera. This interaction may be similar to interacting with digital content items

in the time view or album view discussed above. As discussed above, the user is free to interact normally with the entire system even when a camera is attached, and is not required to first complete any action associated with the camera card. For example, if the user returns to the home view 310 without initiating an upload of images, the camera card 1622 shows thumbnails 2620 of the images on the attached camera, as shown for example in FIG. 26. The header 2415 of the camera card may also display the number 2610 of new content items on the camera.

According to one embodiment, once a user has connected a camera to the portable computer 100 and is brought to the camera card, the user may rely on the system to create albums by selecting the simple save option. The upload process then begins, as discussed further below, using automatically-generated albums and saving images to the user's registered online photo hosting service. If there is more than one photo hosting service associated with the portable computer, the simple save option may default to the service that was used during the last upload. Some existing photo hosting services do not support video content. Accordingly, the portable computer may provide video storage services, either locally or through the cloud 330. Accordingly, users may have more than one service associated with the portable computer 100; however, the difference between the photo hosting service and the video hosting service may be seamlessly transparent to the user. In one example, in the simple save mode, by default, "delete items from the camera when they are safe" is checked. If a user prefers to leave the images on the camera, the user can uncheck this box before initiating the simple save option.

As discussed above, in one embodiment, the system may save the user time and effort by automatically organizing digital content items, including photos and videos, into albums. In one example, albums are created by date, with photos and videos taken on the same day going into a single album. If a set of photos are close in time (e.g., are taken within 90 minutes or so of each other) but span two days, the album may span those two days as well. For example, it may not be uncommon to see images taken just before and just after midnight on New Year's Day, and these images may be grouped into a single album. In one example, automatically generated albums may not contain fewer than a predetermined number of images, for example, five images. In the case that fewer than five photos for a single date are on the camera (or if there are fewer than 5 photos total on the camera), the photos may appear in the unsorted photos area discussed below. In one example, the default name of the automatically generated album is the date (or date range) on which the

content items were taken.

As discussed above, an alternative to the simple save option is the advanced save option. Selecting the advanced save option may bring the user to a "choose & organize" screen, an example of which is illustrated in FIG. 27. From the "choose & organize" screen, the user may organize digital content items before uploading them. Referring to FIG. 27, in one example, the "choose & organize" screen has four main areas, namely, albums 2710 which may appear at the top of the list and comprise automatically generated albums and/or albums that the user creates manually; unsorted photos 2715, videos 2720; and previously uploaded content 2725 which may appears at the end of the list. The "choose & organize" screen may also display a new content indicator 2730 which tells the user the number of new photos and videos on the camera. In one embodiment, automatically generated albums (discussed further below) are arranged in chronological order starting with the newest album at top. It is to be appreciated that although only one album 2710 is shown in FIG. 27, the "choose & organize" screen may display any number of albums. A scroll bar (not shown) may be used to scroll up and down the page if there are more albums than can be displayed at one time on the screen. In one example, if the user corrects the date of items in an automatically generated album, the album date may update to reflect the change, and the order of the albums in the list may be automatically updated. Each album 2710 includes an album title 2735 and thumbnails 2740 of the content items included in the album. When the user hovers over any part of an album 2710, that album may become active. When an album 2710 is active, the album title 2735 becomes an editable field, and a "dissolve album" button (not shown) is revealed. In one example, clicking the "dissolve album" button causes all the photos from that album to be placed into the unsorted photos area 2715.

According to one embodiment, "unsorted photos" (i.e., those not associated with an album) are displayed in the unsorted photos area 2715. The unsorted photos area 2715 includes a header 2745 identifying the area to the user, and also includes thumbnails 2740 of all items included in the unsorted photos area. In one example, when the camera is first attached, the unsorted photos area 2715 may be empty. A user can drag individual photos out of albums 2710 into the unsorted photos area 2715. As discussed above, a user can also click the "dissolve album" button (not shown) on an album 2710, thereby sending all the photos in that album to the unsorted photos area 2715. The user can also drag photos from the unsorted photos area 2715 into an album 2710. The videos area 2720 may similarly include a header 2745 identifying the area to a user, and thumbnails 2740 of an image of each video.

In one embodiment, if a user clicks the "new album" control button 2480 in the header 2415, a new album is added to the top of the list, pushing other albums down. When the new album appears, the title 2735 of the album may be pre-populated with "new album," but this title may also be selected/active so that the user can simply start typing to replace it. The user can then drag individual photos from other albums or from the unsorted photos area 2715 into the new album. The new album control 2480 may also be selected from the intermediate view, as shown in FIG. 25.

From the "choose & organize" screen a user may also delete items, such as, for example, out-of-focus or unflattering photos. In one example, the camera card supports batch deletion. This process may also provide the user with a safety net, making it more difficult to delete a content item by accident. In one example, when the user hovers over an individual thumbnail 2740, a check box labeled "delete" (or similar language) appears, and once the user checks the box, the image dims. The check box (without the "delete" label) may remain visible after it is checked, even if the user moves the cursor away from the item, making it very visually clear how to reverse the action. Un-checking the box may return the item to full saturation. When the user marks one or more items for deletion, the control buttons 2480 and 2485 in the header 2415 may be replaced with an "unmark all" option. The "delete all" control 2475 may remain or be replaced with "delete marked items." If user selects the "unmark all" control, all the items marked for deletion are unmarked. Selecting the delete control 2475 deletes the marked items and the thumbnails 2740 are removed from view. The remaining thumbnails 2740 may then rearrange themselves appropriately. The user can also delete items from the intermediate view shown in FIG. 24. In some cases, the camera (or other media device) that the user connects to the portable computer 100 may be locked or otherwise write-protected, making deletion impossible. In this case, the delete buttons (in the header 2415 and overlayed onto the thumbnails 2740) are dimmed, and information may be included in the header 2415 that indicates that the camera is locked. In this state, if the user hovers over the dimmed "delete all" button 2475 in the header 2415, a message may be displayed, such as "no deletion possible because the memory card is locked."

Still referring to FIG. 27, the user may move digital content items among different albums 2710 and to and from the unsorted photos area 2715. For example, the user can drag photos between albums 2710, from albums 2710 to the unsorted photos area 2715, or from the unsorted photos area into albums. When the user drags a photo, other thumbnails 2740 on the screen rearrange themselves to accommodate the added/removed item. In one example,

because videos are saved separately from photos, the user may not be able to drag videos from the video area 2720 into albums 2710. Similarly, the user may not drag a photo into the video area 2720. In one example, if the user attempts to drags a photo to an unavailable location (such as the videos area 2720 or previously uploaded items area 2725), the photo snaps back to its original location.

In one embodiment, if the user has previously uploaded items from a camera, but elected not to delete them, they appear in the "previously saved" area 2725. If there are no items that have been previously uploaded from the user's camera, the previously saved area 2725 may not appear. The previously saved area 2725 includes a header 2750 which identifies the area to the user, and may also display the number of previously uploaded content items that are on the camera. The previously saved area 2725 may initially not display thumbnails of the items, but instead display a "show items" button 2755. Clicking the "show items" button 2755 may reveal thumbnails of the previously uploaded items. The user may then select individual items to delete, or may drag photos from this area into albums 2710 or drag videos to the videos area 2720. If the user drags an item to an album 2710, the underlying behavior of the system on upload depends on the associated online photo hosting service. For services that use an "image stream" concept and therefore allow individual images to appear in multiple albums (e.g., FLICKR), the image may be added to the album using the camera card interface, but not uploaded again. For other services, the image may be uploaded again into the new album.

According to one embodiment, clicking on a thumbnail 2740 brings the user to the intermediate view, shown, for example, in FIG. 25. Clicking anywhere in the background may return the user to the standard view of the "choose & organize" screen. When the user has organized the digital content items to his/her satisfaction, the user may click the "save..." control 2485 in the header 2415. In one example, clicking the save control 2485 causes a modal page bubble 2810 to appear, providing the user with options for saving, as shown in FIG. 28. The user may elect to save or not save each individual album, as well as unsorted photos and videos using the check boxes 2815. In the illustrated example, a check box is included with each column header to allow the user to quickly select all items in that column. If the user has registered more than one photo or video host service, a column may be provided for each service, identified by name. The user may then elect to save each individual album to one, all, or none of the services, using the appropriate check boxes. In one example, the system warns the user about potential restrictions a photo host service may place on videos (e.g., size, format, etc.), allowing the user to use that information in selecting where the videos

are to be saved. A check box 2830 may be provided to given the user the option of whether or not the system will delete items from the attached camera after the items have been safely uploaded. In one example, deleting the items upon successful upload is selected by default. If the user does not select a service for a set of items (e.g., one or more albums, unsorted photos, or videos), the system will leave those items - they will not be uploaded, but they will also not be deleted from the camera. In this case, the information about the album (e.g., its contents and title) may be retained until the camera is disconnected from the portable computer. Thus, once the upload process for the rest of the items is complete and the user returns to the "choose & organize" screen, the album is still as the user arranged it. The bubble 2810 may further include a "cancel" button 2840 to allow the user the cancel the upload and return to the "choose & organize" screen, and a "save" button 2850 to initiate the upload process.

According to one embodiment, once the user initiates the upload process, by selecting either the simple save or advanced save option, the portable computer 100 begins uploading the digital content items to the cloud 330. As discussed above, the user may see the progress of the upload on the camera card. The user may also upload digital content items from within the digital media card 1620a. For example, the user may use the time view or album view to locate content items to upload, for example, to a social networking site or another online hosting service. In one example, the upload may be initiated from the user's pick list discussed above. Whether the upload is initiated from the camera card or the digital media card, the user may see information regarding the status of the upload, for example, whether each content item has been saved, how much progress has been made on the upload, which online hosting service the content item is being uploaded to, etc. In one example, during upload, the camera card displays the images being uploaded, with the current image shown enlarged. In one example, the user can interact with the images during the upload process. This interaction may behave similarly to the single album view in the digital media application discussed above.

In one example, all content uploaded on the user's behalf may be marked as "private" or the equivalent on their photo hosting service. This default behavior protects the user's privacy and keeps others from viewing the user's content without the user's permission. It is to be appreciated; however, that other default options may be implemented, and the user may be prompted to identify content as private or public, or equivalents thereof.

According to one embodiment, if the user has elected to have images deleted from the camera after upload, then each content item is deleted as soon as it is uploaded into the cloud 330. In one example, the user can still see the content items in the context of the camera card,

however, until the camera is disconnected from the portable computer 100. Referring to FIG. 24, in one example, if the user clicks the "Stop saving" button 2435 in the header 2415, the upload stops and the system then returns the user to the initial screen as though the camera had just been attached. In this instance, content items that have already been uploaded and deleted from the camera are no longer included. The content item that was in process when the user clicked the "Stop saving" button 2435 will not have been deleted from the camera yet and may therefore appear. In another example, if the user had elected not to delete content items from the camera (e.g., by unchecking box 2830, content items that have already been uploaded may appear in the previously saved area 2725.

Once the upload is complete (i.e. the digital content items are safely stored in the cloud 330), the system may display an informational bubble letting the user know it is safe to remove the camera. The user may then be returned to the camera card page view (if the simple save option was used) or to the "choose & organize" screen if the advanced save option was used. In either case, the system recognizes that the content items have been uploaded. If the content items have been deleted from the camera, they no longer appear in "choose & organize" screen, and if they have been left on the camera they appear in the previously saved area 2725. Once the camera is disconnected, or the user navigates away from the camera card after an upload, the newly uploaded content items may become indistinguishable from previously stored items in the digital media library.

In some instances, the upload process may be interrupted before it is complete. For example, the camera may run out of power, the portable computer may lose its connection to the cloud, or the user may disconnect the camera before the upload is complete. In one example, in the event of an interrupted upload, the camera card displays a warning and information about the state of the upload and/or camera. From the page view of the camera card, the user may elect to stop the upload or cancel the message, retuning the system to the "no camera connected" state. In one example, if the user elected to stop the upload and subsequently reconnects the camera, the camera card will behave as though it were the first time that camera is being connected. Alternatively, if the user elected instead to cancel the "saving interrupted" message, the camera card may resume uploading the digital content items the next time the user connects the camera. If the user has taken some new photos during the time when the camera was disconnected and then reconnected, the new photos may be automatically uploaded when the camera is reconnected. Alternatively, the use may be given the option to upload the new photos or not, or may navigate to the "choose & organize" screen

to select certain photos for upload. Any digital content items not uploaded may remain on the camera and be treated as new photos the next time the camera is connected to the portable computer.

As discussed above, in one embodiment the portable computer 100 is configurable into an easel mode. One example of the camera card behavior when a camera is connected to the portable computer in the easel mode is shown in diagrammatic form in FIG. 29. In this example, the camera card becomes the current channel 2910 and a camera menu 2920 is displayed to give the user the opportunity to save the contents of the camera (2930) or view the contents as a slideshow (2940). In one example, the save behavior is similar to the simple save behavior discussed above in that the system may save new items using automatically generated albums. In another example, if the user elects to save the contents of the camera, the upload begins. In one example, each content item is shown in full screen as it uploads, with an indication of its progress. In one example, the portable computer will not enter the screensaver mode during an upload. As in other examples discussed above, the user may continue to interact with the system during the upload. For example, the user may view other channels, and can navigate back to the camera card channel to view the progress of the upload. Once the upload is complete, a notification may be displayed to the effect that it is safe to disconnect the camera. In one example, this notification remains as long as the camera is still attached to the portable computer, but may be displayed in a corner or other unobtrusive location. In one example, when the user disconnects the camera, the camera card is no longer available as a channel. According to one embodiment, if an upload has been interrupted and the user reconnects the camera to the portable computer in the easel mode, the upload resumes in the background without notification. If there are no new images on the camera, the user may only be given the option to see a slideshow of the images on the camera.

Having thus described several aspects of at least one embodiment, it is to be appreciated various alterations, modifications, and improvements will readily occur to those skilled in the art. Such alterations, modifications, and improvements are intended to be part of this disclosure and are intended to be within the scope of the invention. Accordingly, the foregoing description and drawings are by way of example only, and the scope of the invention should be determined from proper construction of the appended claims, and their equivalents.

What is claimed is:

CLAIMS

1. A method for accessing and managing digital media libraries on a streamlined computing device with a plurality selectable I/O profiles, the method comprising:

displaying a graphical user interface on a computing device, wherein the graphical user interface comprises at least a plurality of views of digital media content;

providing for transition between the plurality of views in response to selection of an I/O profile;

providing for transition between the plurality of views in response to activation of a view selector component configured to permit a user to select one of the plurality of views;

associating at least one of a plurality of visual representations with digital media content;

executing the association with the at least one of the plurality of visual representations with digital media content in response to selection;

transitioning a display on the computing device to a view of the digital media content in response to the act of executing the association; and

providing for display of user digital media content and referenced digital media content in the view of the digital media content.

2. The method according to claim 1, further comprising an act of displaying in the view user digital media content and referenced digital media content in response to the act of executing the association with the at least one of the plurality of visual representations.

3. The method according to claim 2, wherein the act of displaying in the view user digital media content and referenced digital media content includes an act of accessing a reference to remote digital content not controlled by the user in order to display referenced digital content.

4. The method according to claim 1, further comprising an act of associating the at least one of the plurality of visual representations with a remote service provider.

5. The method of claim 4, further comprising an act storing the association between the at least one visual representation with the remote service provider in at least one of a device profile and a user profile.

6. The method according to claim 1 further comprising acts of:

configuring access to a remote service; and

integrating operations provided by the remote service provider into the view of the digital media content.

7. The method according to claim 1, wherein the view comprises at least one of an album view and a timeline view.

8. The method according to claim 7, further comprising an act of displaying digital media content in a body portion of the view.

9. The method according to claim 7, further comprising an act of displaying a toggle element in a header portion of the view, wherein the toggle element transitions the computing device display between the album view and the timeline view upon selection by a user.

10. The method according to claim 7, further comprising acts of:

displaying emulation controls responsive to selection by the user; and

emulating standard computer operations for referenced digital media content displayed in the view, wherein the act of emulating standard computer operations includes:

an act of determining if the user has authority to perform the standard computer operations,

determining the user does not have the authority to perform the standard computer operation on a source of the referenced digital media content, and wherein the act of displaying the emulation controls occurs in response to the determination that the user does not have the authority.

11. The method according to claim 10, wherein the standard computer operation includes an act of deleting digital media content, and the method further comprises an act of altering the view of the digital media content so the digital media content marked for deletion is not displayed within the view.

12. The method according to claim 11, further comprising an act of generating a state entry, associated with at least one of the view and the source of the referenced digital media content.

13. The method according to claim 12, further comprising an acts of:

accessing any state entry for at least one of the view and the source of referenced digital media content; and

displaying referenced digital media content according to any state entry requirement.

14. The method according to claim 10, wherein the standard computer operation includes an act of editing referenced digital media content, and the method further comprises an act of generating a state entry reflecting any edits made to the referenced digital media content.

15. The method according to claim 7, further comprising acts of:

providing an aggregation component configured to permit the user to select a plurality of digital media content;

displaying the plurality of digital media content in the body of the view; and

permitting the user to perform operations on the plurality of digital media content.

16. The method according to claim 15, wherein the act of permitting the user to perform operations on the plurality of digital media content includes at least one of a share operation, a create channel operation, and an order prints operation.

17. The method according to claim 16, wherein the at least one operation is a share operation, and the method further comprises acts of:

identifying any state entries for the plurality of digital media content;

identifying any remote service settings for the plurality of digital media content; and

transmitting a visual representation associated with the plurality of digital media content, any state settings, and any remote service settings to another streamlined device user.

18. The method according to claim 1, further comprising acts of:

permitting the user to share the at least one visual representation, including any associated digital media content with another user;

storing shared information in response to an act of sharing by the user; and

updating any associated digital media automatically for the another user, wherein the act of updating any associated digital media includes acts of:

identifying any changes in shared digital media content, wherein changes include at least one of addition of digital media content associated with the at least one visual representation, deletion of digital media content associated with the at least one visual representation, edits of digital media content associated with the at least one visual representation, and updates of information associated with digital media content associated with the at least one visual representation.

19. The method according to claim 1, further comprising acts of:

permitting the user to share the at least one visual representation, including any associated digital media content with another user;

transmitting the at least one visual representation associated with the digital media content, any state settings, and any remote service settings to another streamlined device user.

20. The method according to claim 1, further comprising an act of permitting the user to update date information associated with the digital media content.

21. The method according to claim 20, further comprising an acts of:

generating an offset for the updated date information associated with the digital media content; and

applying the offset to similar digital media content.

22. The method according to claim 7, wherein the view is a time view and the method further comprises:

displaying a timeline navigation control in the body of the view, wherein the timeline navigation control is configured to provide organization segments, the organization segments providing a visual indication of a number of digital media content items in each segment.

23. The method according to claim 22, wherein the timeline navigation control further comprises a handle responsive to a pointer displayed on the computer device, wherein the handle is further responsive to select and drag operations.

24. The method according to claim 1, wherein the act of displaying the user interface includes:

providing a plurality of views of the plurality of visual representations of computer content; and

associating the plurality of visual representations of computer content with at least one of the plurality of views, and wherein the each of the plurality of visual representations is responsive to focus and execution, wherein execution includes selection of the visual representation.

25. The method according to claim 1, wherein the act of providing for transition between the plurality of views in response to selection of an I/O profile includes:

permitting the user to rotate a display element about a longitudinal axis running along an interface between the display component and a base of the streamlined computing device;

wherein rotating the display component about the longitudinal axis up to approximately 180 degrees from the closed mode configures the portable computer into a laptop mode with one of the plurality of views as a default display; and

wherein rotating the display component about the longitudinal axis beyond approximately 180 degrees from the closed mode configures the portable computer into an easel mode with another one of the plurality of views as a default display.

26. A computer-readable medium having computer-readable instructions stored thereon that as a result of being executed by a computer, instruct the computer to perform the method for accessing and managing digital media libraries on a streamlined computing device with a plurality selectable I/O profiles, wherein the method comprises:

displaying a graphical user interface on a computing device, wherein the graphical user interface comprises at least a plurality of views of digital media content;

providing for transition between the plurality of views in response to selection of an I/O profile;

providing for transition between the plurality of views in response to activation of a view selector component configured to permit a user to select one of the plurality of views;

associating at least one of a plurality of visual representations with digital media content;

executing the association with the at least one of the plurality of visual representations with digital media content in response to selection;

transitioning a display on the computing device to a view of the digital media content in response to the act of executing the association; and

providing for display of user digital media content and referenced digital media content in the view of the digital media content.

27. A system for accessing and managing digital media libraries with a plurality selectable I/O profiles, the system comprising:

a display component configured to display a graphical user interface, wherein the graphical user interface comprises at least a plurality of views of digital media content, wherein the plurality of views include at least one of a plurality of visual representations;

an execution component configured to transition the graphical user interface between the plurality of views in response to selection of an I/O profile;

a view selector component configured to transition between the plurality of views in response to activation;

a storage component configured to store an association between at least one of a plurality of visual representations and digital media content;

wherein the execution component is further configured to execute the association with the at least one of the plurality of visual representations with digital media content in response to selection and transition the display to a view of the digital media content in response to the act of executing the association; and

wherein the display component is configured to display user digital media content and referenced digital media content in the view of the digital media content.

ABSTRACT

Various aspects and embodiments are directed to a streamlined computer device and a graphical user interface that organizes interface elements into views of computer content for presentation to a user. Various views of digital media content permits users to easily and efficiently access various digital media content. Different views are used to provide an interface that is responsive to configurations of the device and responsive to activity being performed by the user. Aspects include permitting the user to maintain and manage digital media content libraries. According to some embodiments, the libraries comprise user digital media content and references digital media content. Functionality provided to a user can be tailored to the type of content displayed, accessed and/or managed. According to various aspects, methods and systems are provided for accessing and managing digital media libraries on a streamlined computing device with a plurality selectable I/O profiles. According to some embodiments, the methods may include displaying a GUI on a device, wherein the GUI comprises at least a plurality of views of digital media content, providing for transition between the plurality of views in response to selection of an I/O profile and in response to activation of a view selector component by a user, executing an association with the at least one of the plurality of visual representations with digital media content in response to selection, transitioning a display on the computing device to a view of the digital media content, and providing for display of user digital media content and referenced digital media content in the view of the digital media content.

Electronic Acknowledgement Receipt

EFS ID:	6380341
Application Number:	12611282
International Application Number:	
Confirmation Number:	2160
Title of Invention:	METHODS AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT
First Named Inventor/Applicant Name:	Robert Sanford Havoc Pennington
Customer Number:	37462
Filer:	Matthew H. Grady
Filer Authorized By:	
Attorney Docket Number:	A2029-700719
Receipt Date:	03-NOV-2009
Filing Date:	
Time Stamp:	13:21:08
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Drawings-only black and white line drawings	A2029-700719_DRAWINGS.pdf	931318 6416727c7d6a6cac059d12d0d10a56d9fb6c96ce	no	37

Warnings:	
Information:	

2	Application Data Sheet	A2029-700719_ADS.pdf	966312 53e8c1be6a5bcd00a3499b694cab0b38f4f688bd	no	9
Warnings:					
Information:					
3		A2029-700719_SPEC.pdf	272845 9b8d8d07d957ccbaaa7e53550b26e4996e91d088	yes	70

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Specification	1	63
	Claims	64	69
	Abstract	70	70

Warnings:	
Information:	
Total Files Size (in bytes):	2170475

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New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Filing Date: **11/03/09**

Approved for use through 7/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 12/611,282

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	330
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	540
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	220
TOTAL CLAIMS (37 CFR 1.16(i))	27 minus 20 =	7	x$26		OR	x$52	364
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3 minus 3 =	*	x$110			x$220	
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $270 ($135 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR						
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))			195			390	
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	1454

APPLICATION AS AMENDED – PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					N/A		OR	N/A	
						TOTAL ADD'T FEE		OR	TOTAL ADD'T FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	RATE ($)	ADDITIONAL FEE ($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					N/A		OR	N/A	
						TOTAL ADD'T FEE		OR	TOTAL ADD'T FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/611,282	11/03/2009	Robert Sanford Havoc Pennington	A2029-700730

CONFIRMATION NO. 2160

37462
LANDO & ANASTASI, LLP
ONE MAIN STREET, SUITE 1100
CAMBRIDGE, MA 02142

FORMALITIES LETTER

OC000000038825022

Date Mailed: 11/19/2009

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The statutory basic filing fee is missing.
  *Applicant must submit $**330** to complete the basic filing fee for a non-small entity. If appropriate, applicant may make a written assertion of entitlement to small entity status and pay the small entity filing fee (37 CFR 1.27).*
- The oath or declaration is missing.
  A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.
  Note: If a petition under 37 CFR 1.47 is being filed, an oath or declaration in compliance with 37 CFR 1.63 signed by all available joint inventors, or if no inventor is available by a party with sufficient proprietary interest, is required.

The application is informal since it does not comply with the regulations for the reason(s) indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- Replacement drawings in compliance with 37 CFR 1.84 and 37 CFR 1.121(d) are required. The drawings submitted are not acceptable because:
  - The drawings must be reasonably free from erasures and must be free from alterations, overwriting, interlineations, folds, and copy marks. See Figure(s) 2.
  - The drawings submitted to the Office are not electronically reproducible because portions of figures 5-8, 10, 12-13B, 15, 18A are missing and/or blurry.

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

The applicant needs to satisfy supplemental fees problems indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- Additional claim fees of $**364** as a non-small entity, including any required multiple dependent claim fee, are required. Applicant must submit the additional claim fees or cancel the additional claims for which fees are due.
- To avoid abandonment, a surcharge (for late submission of filing fee, search fee, examination fee or oath or declaration) as set forth in 37 CFR 1.16(f) of $**130** for a non-small entity, must be submitted with the missing items identified in this notice.

SUMMARY OF FEES DUE:

Total additional fee(s) required for this application is $**1584** for a non-small entity
- $**330** Statutory basic filing fee.
- $**130** Surcharge.
- The application search fee has not been paid. Applicant must submit $**540** to complete the search fee.
- The application examination fee has not been paid. Applicant must submit $**220** to complete the examination fee for a non-small entity.
- Total additional claim fee(s) for this application is $**364**
  - $**364** for **7** total claims over 20.

Replies should be mailed to:

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P.O. Box 1450
Alexandria VA 22313-1450

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For more information about EFS-Web please call the USPTO Electronic Business Center at **1-866-217-9197** or visit our website at http://www.uspto.gov/ebc.

If you are not using EFS-Web to submit your reply, you must include a copy of this notice.

/ajackson/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
12/611,282	11/03/2009	2161	0.00	A2029-700730	27	3

CONFIRMATION NO. 2160

37462
LANDO & ANASTASI, LLP
ONE MAIN STREET, SUITE 1100
CAMBRIDGE, MA 02142

FILING RECEIPT

OC000000038825021

Date Mailed: 11/19/2009

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Applicant(s)

Robert Sanford Havoc Pennington, Asheville, NC;
Noah Bruce Guyot, Mill Valley, CA;
Daniel Kuo, San Francisco, CA;
Jenea Boshart Hayes, Castro Valley, CA;
Aaron Tang, Somerville, MA;
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Chris Moody, Boulder, CO;
Yves Behar, Oakland, CA;
Joshua Morenstein, San Francisco, CA;
Christopher Hibmacronan, Oakland, CA;
Naoya Edahiro, San Francisco, CA;
Matthew David Day, San Francisco, CA;

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a CIP of 12/170,951 07/10/2008
which claims benefit of 61/041,365 04/01/2008
This application 12/611,282
is a CIP of 12/170,939 07/10/2008
which claims benefit of 61/041,365 04/01/2008
This application 12/611,282
is a CIP of 12/416,479 04/01/2009

which claims benefit of 61/041,365 04/01/2008

Foreign Applications

If Required, Foreign Filing License Granted: 11/16/2009

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/611,282**

Projected Publication Date: To Be Determined - pending completion of Missing Parts

Non-Publication Request: No

Early Publication Request: No

Title

METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT

Preliminary Class

707

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

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For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific

countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

Docket No.: A2029-700730

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Robert Sanford Havoc Pennington, et al.
Serial No:	12/611,282
Confirmation No:	2160
Filed:	November 3, 2009
For:	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT
Examiner:	Not Yet Assigned
Art Unit:	2161

CERTIFICATE OF TRANSMISSION UNDER 37 C.F.R. §1.8(a)

The undersigned hereby certifies that this document is being electronically filed in accordance with § 1.6(a)(4), on the 3rd day of March, 2010.

/Matthew H. Grady/
Matthew H. Grady, Reg. No. 52,957

Commissioner for Patents

PRELIMINARY AMENDMENT

Sir:

Applicants request that the following amendments be made to the above-identified patent application prior to Examination on the merits:

Changes to the Specification are shown by strike through (for deleted matter) and underlining (for added matter).

Amendments to the Specification begin on page 2 of this paper.

Remarks begin on page 4 of this paper.

Amendments to the Specification

Please replace the paragraph beginning at page 1, line 3 with the following:

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a continuation-in-part of, and claims priority under 35 U.S.C. § 120 to, U.S. Patent Application Serial Number 12/170,951 entitled "PORTABLE COMPUTER WITH MULTIPLE DISPLAY CONFIGURATIONS," filed on July 10, 2008; which claims priority under 35 U.S.C. § 119(e) to U.S. Provisional Application Serial No. 61/041,365, entitled "PORTABLE COMPUTER WITH MULTIPLE DISPLAY CONFIGURATIONS," filed April 1, 2008, both of which are herein incorporated by reference in their entirety. Furthermore, this application is a continuation-in-part of, and claims priority under 35 U.S.C. § 120 to U.S. Patent Application Serial Number 12/170,939, entitled "PORTABLE COMPUTER WITH MULTIPLE DISPLAY CONFIGURATIONS," filed on July 10, 2008; which claims priority under 35 U.S.C. 119(e) to U.S. Provisional Application Serial No. 61/041,365, entitled "PORTABLE COMPUTER WITH MULTIPLE DISPLAY CONFIGURATIONS," filed April 1, 2008, both of which applications are herein incorporated by reference in their entirety. Furthermore, this application is a continuation-in-part of, and claims priority under 35 U.S.C. §120 to U.S. Patent Application No. 12/416,479, filed on April 1, 2009 and entitled "SYSTEM AND METHOD FOR STREAMLINING USER INTERACTION WITH ELECTRONIC CONTENT," which is a continuation-in-part of, and claims priority under 35 U.S.C. § 120 to: U.S. Patent Application Serial Number 12/170,951 entitled "PORTABLE COMPUTER WITH MULTIPLE DISPLAY CONFIGURATIONS," filed on July 10, 2008, which claims priority under 35 U.S.C. § 119(e) to U.S. Provisional Application Serial No. 61/041,365, entitled "PORTABLE COMPUTER WITH MULTIPLE DISPLAY CONFIGURATIONS," filed April 1, 2008; U.S. Patent Application No. 12/416,479 is also a continuation-in-part of, and claims priority under 35 U.S.C. §120 to U.S. Patent Application Serial Number 12/170,939, entitled "PORTABLE COMPUTER WITH MULTIPLE DISPLAY CONFIGURATIONS," filed on July 10, 2008, which claims priority under 35 U.S.C. § 119(e) to U.S. Provisional Application Serial No. 61/041,365, entitled "PORTABLE COMPUTER WITH MULTIPLE DISPLAY CONFIGURATIONS," filed April 1,

2008; U.S. Patent Application No. 12/416,479 also ~~which~~ claims priority under 35 U.S.C. 119(e) to U.S. Provisional Application Serial No. 61/041,365, entitled "PORTABLE COMPUTER WITH MULTIPLE DISPLAY CONFIGURATIONS," filed April 1, 2008, each ~~both~~ of which applications are herein incorporated by reference in their entirety.

REMARKS

If there is a fee occasioned by this submission, including an extension fee that is not covered by an accompanying payment, please charge any deficiency to Deposit Account No. 50/2762.

Respectfully submitted,
Robert Sanford Havoc Pennington, Applicants

By:/Matthew H. Grady/
Matthew H. Grady, Reg. No. 52,957
LANDO & ANASTASI, LLP
One Main Street
Cambridge, Massachusetts 02142
United States of America
Telephone: 617-395-7000
Facsimile: 617-395-7070

Docket No.: A2029-700730
Date: March 3, 2010

Electronic Acknowledgement Receipt

EFS ID:	7131439
Application Number:	12611282
International Application Number:	
Confirmation Number:	2160
Title of Invention:	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT
First Named Inventor/Applicant Name:	Robert Sanford Havoc Pennington
Customer Number:	37462
Filer:	Matthew H. Grady
Filer Authorized By:	
Attorney Docket Number:	A2029-700730
Receipt Date:	03-MAR-2010
Filing Date:	03-NOV-2009
Time Stamp:	14:35:28
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Corrected Filing Receipt	A2029-700730_Request_for_Corrected_Filing_Receipt.pdf	25676 c6303ca05f0a458120bf3b3853550b4fef166ab0	no	2

Warnings:	
Information:	

2	Miscellaneous Incoming Letter	A2029-700730_Marked-up_Filing_Receipt.pdf	180816 cd1a9c304ad6d2fe924ec982471f603842438982	no	3
Warnings:					
Information:					
3	Application Data Sheet	A2029-700730_Supplemental_ADS.pdf	644763 ec25262375c736661b14cb66e49a6242e3232cee	no	10
Warnings:					
Information:					
This is not an USPTO supplied ADS fillable form					
4		A2029-700730_Preliminary_Amendment.pdf	30541 1009df1c1ce7c219b9f55cc88b4fb9245e8dfbd1	yes	4

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Preliminary Amendment	1	1
	Specification	2	3
	Applicant Arguments/Remarks Made in an Amendment	4	4

Warnings:	
Information:	
Total Files Size (in bytes):	881796

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

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Docket No.: A2029-700730

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Robert Sanford Havoc Pennington, et al.
Serial No:	12/611,282
Confirmation No:	2160
Filed:	November 3, 2009
For:	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT
Examiner:	Not Yet Assigned
Art Unit:	2161

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The undersigned hereby certifies that this document is being electronically filed in accordance with § 1.6(a)(4), on the 3rd day of March, 2010.

/Matthew H. Grady/
Matthew H. Grady, Reg. No. 52,957

Commissioner for Patents

REQUEST FOR CORRECTED FILING RECEIPT

Issuance of a Corrected Filing Receipt is respectfully requested. Applicant submits herewith a Supplemental Application Data Sheet correcting the priority information of Application No. 12/611,282. Please correct the Priority Data as claimed by applicant as follows:

As Currently Listed:

This application is a CIP of 12/170,951 07/10/2008
which claims benefit of 61/041,365 04/01/2008
This application 12/611,282
is a CIP of 12/170,939 07/10/2008
which claims benefit of 61/041,365 04/01/2008
This application 12/611,282
is a CIP of 12/416,479 04/01/2009
which claims benefit of 61/041,365 04/01/2008

Please amend the priority data to include:

Application 12/416,479 04/01/2009
is a CIP of 12/170,951 07/10/2008
which claims benefit of 61/041,365 04/01/2008
Application 12/416,479 04/01/2009
is a CIP of 12/170,939 07/10/2008
which claims benefit of 61/041,365 04/01/2008

consistent with the accompanying Supplemental Application Data Sheet and Preliminary Amendment. Thus the corrected filing receipt should read as follows:

This application is a CIP of 12/170,951 07/10/2008
which claims benefit of 61/041,365 04/01/2008
This application 12/611,282
is a CIP of 12/170,939 07/10/2008
which claims benefit of 61/041,365 04/01/2008
This application 12/611,282
is a CIP of 12/416,479 04/01/2009
which claims benefit of 61/041,365 04/01/2008
Application 12/416,479 04/01/2009
is a CIP of 12/170,951 07/10/2008
which claims benefit of 61/041,365 04/01/2008
Application 12/416,479 04/01/2009
is a CIP of 12/170,939 07/10/2008
which claims benefit of 61/041,365 04/01/2008

A copy of the Filing Receipt mailed November 19, 2009 is attached with the desired corrections noted thereon.

Please forward a Corrected Filing Receipt to us at your earliest convenience. No additional fee or certification is believed to be required. However, if for any reason a fee paid is inadequate, or credit is owed for any excess fee paid, the Commissioner is hereby authorized and requested to charge or credit Deposit Account No. 50/2762, ref. no. A2029-700730.

Should any questions arise concerning the foregoing, please contact the undersigned at the telephone number listed below.

An early and favorable action is hereby earnestly solicited.

Respectfully submitted,
Robert Sanford Havoc Pennington, Applicants

By: /Matthew H. Grady /

Matthew H. Grady, Reg. No. 52,957
LANDO & ANASTASI, LLP
Riverfront Office Park
One Main Street
Cambridge, Massachusetts 02142
Tel. (617) 395-7000

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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12/611,282	11/03/2009	2161	0.00	A2029-700730	27	3

CONFIRMATION NO. 2160

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LANDO & ANASTASI, LLP
ONE MAIN STREET, SUITE 1100
CAMBRIDGE, MA 02142



Date Mailed: 11/19/2009

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Matthew David Day, San Francisco, CA;

Power of Attorney: None

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is a CIP of 12/416,479 04/01/2009

Please Amend Priority To Include:

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which claims benefit of 61/041,365 04/01/2008

Foreign Applications

Application 12/416,479 04/01/2009 is a CIP of 12/170,939 07/01/2008 which claims benefit of 61/041,365 04/01/2008

If Required, Foreign Filing License Granted: 11/16/2009

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Projected Publication Date: To Be Determined - pending completion of Missing Parts

Non-Publication Request: No

Early Publication Request: No

Title

METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT

Preliminary Class

707

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Title 37, Code of Federal Regulations, 5.11 & 5.15

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NOT GRANTED

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PTO/SB/14 (07-07)
Approved for use through 06/30/2010. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	A2029-700719
	Application Number	12/611,282
Title of Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Applicant Information:

Applicant 1

Applicant Authority ◉ Inventor ○ Legal Representative under 35 U.S.C. 117 ○ Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Robert	Sanford Havoc	Pennington	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Asheville	State/Province	NC	Country of Residence	US

Citizenship under 37 CFR 1.41(b) US

Mailing Address of Applicant:

Address 1	1304 Asheville Springs Cir		
Address 2			
City	Asheville	State/Province	NC
Postal Code	28806	Country	US

Applicant 2

Applicant Authority ◉ Inventor ○ Legal Representative under 35 U.S.C. 117 ○ Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Noah	Bruce	Guyot	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Mill Valley	State/Province	CA	Country of Residence	US

Citizenship under 37 CFR 1.41(b) US

Mailing Address of Applicant:

Address 1	4 Longfellow Road		
Address 2			
City	Mill Valley	State/Province	CA
Postal Code	94941	Country	US

Applicant 3

Applicant Authority ◉ Inventor ○ Legal Representative under 35 U.S.C. 117 ○ Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Daniel		Kuo	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	San Francisco	State/Province	CA	Country of Residence	US

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	A2029-700719
	Application Number	12/611,282
Title of Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT	

Citizenship under 37 CFR 1.41(b)	US				
Mailing Address of Applicant:					
Address 1	1916 Page Street, Apt. 1				
Address 2					
City	San Francisco	**State/Province**	CA		
Postal Code	94117	**Country**	US		

Applicant 4

Applicant Authority	(•) Inventor	( ) Legal Representative under 35 U.S.C. 117	( ) Party of Interest under 35 U.S.C. 118	
Prefix	**Given Name**	**Middle Name**	**Family Name**	**Suffix**
	Jenea	Boshart	Hayes	

Residence Information (Select One)	(•) US Residency	( ) Non US Residency	( ) Active US Military Service		
City	Castro Valley	**State/Province**	CA	**Country of Residence**	US
Citizenship under 37 CFR 1.41(b)	US				
Mailing Address of Applicant:					
Address 1	18379 Plymouth Drive				
Address 2					
City	Castro Valley	**State/Province**	CA		
Postal Code	94546	**Country**	US		

Applicant 5

Applicant Authority	(•) Inventor	( ) Legal Representative under 35 U.S.C. 117	( ) Party of Interest under 35 U.S.C. 118	
Prefix	**Given Name**	**Middle Name**	**Family Name**	**Suffix**
	Aaron		Tang	

Residence Information (Select One)	(•) US Residency	( ) Non US Residency	( ) Active US Military Service		
City	Somerville	**State/Province**	MA	**Country of Residence**	US
Citizenship under 37 CFR 1.41(b)	US				
Mailing Address of Applicant:					
Address 1	28 Dickinson Street, Apt. B				
Address 2					
City	Somerville	**State/Province**	MA		
Postal Code	02143	**Country**	US		

Applicant 6

Applicant Authority	(•) Inventor	( ) Legal Representative under 35 U.S.C. 117	( ) Party of Interest under 35 U.S.C. 118	
Prefix	**Given Name**	**Middle Name**	**Family Name**	**Suffix**
	David	Livingstone	Fore	

Residence Information (Select One)	(•) US Residency	( ) Non US Residency	( ) Active US Military Service		
City	Oakland	**State/Province**	CA	**Country of Residence**	US
Citizenship under 37 CFR 1.41(b)	US				

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	A2029-700719
	Application Number	12/611,282
Title of Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT	

Mailing Address of Applicant:

Address 1	1 Lakeside Drive, #602		
Address 2			
City	Oakland	**State/Province**	CA
Postal Code	96412	**Country**	

Applicant 7

Applicant Authority (•) Inventor ( ) Legal Representative under 35 U.S.C. 117 ( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	John		Chuang	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Brookline	**State/Province**	MA	**Country of Residence**	US
Citizenship under 37 CFR 1.41(b)	US				

Mailing Address of Applicant:

Address 1	185 Buckminster Road		
Address 2			
City	Brookline	**State/Province**	MA
Postal Code	02445	**Country**	US

Applicant 8

Applicant Authority (•) Inventor ( ) Legal Representative under 35 U.S.C. 117 ( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Chris		Bambacus	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Framingham	**State/Province**	MA	**Country of Residence**	US
Citizenship under 37 CFR 1.41(b)	US				

Mailing Address of Applicant:

Address 1	19 Burdette Ave		
Address 2			
City	Framingham	**State/Province**	MA
Postal Code	01702	**Country**	US

Applicant 9

Applicant Authority (•) Inventor ( ) Legal Representative under 35 U.S.C. 117 ( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Eben		Eliason	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Providence	**State/Province**	RI	**Country of Residence**	US
Citizenship under 37 CFR 1.41(b)	US				

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	A2029-700719
	Application Number	12/611,282
Title of Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT	

Mailing Address of Applicant:			
Address 1	392 S. Main Street, Apt. 67		
Address 2			
City	Providence	State/Province	RI
Postal Code	02903	Country	US

Applicant 10

Applicant Authority	(●) Inventor	( ) Legal Representative under 35 U.S.C. 117	( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Chris		Moody	

Residence Information (Select One)	(●) US Residency	( ) Non US Residency	( ) Active US Military Service		
City	Boulder	State/Province	CO	Country of Residence	US
Citizenship under 37 CFR 1.41(b)	US				

Mailing Address of Applicant:			
Address 1	429 Marine Street		
Address 2			
City	Boulder	State/Province	CO
Postal Code	80302	Country	US

Applicant 11

Applicant Authority	(●) Inventor	( ) Legal Representative under 35 U.S.C. 117	( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Yves		Behar	

Residence Information (Select One)	(●) US Residency	( ) Non US Residency	( ) Active US Military Service		
City	Oakland	State/Province	CA	Country of Residence	US
Citizenship under 37 CFR 1.41(b)	US				

Mailing Address of Applicant:			
Address 1	5741 Scarborough Drive		
Address 2			
City	Oakland	State/Province	CA
Postal Code	94611	Country	US

Applicant 12

Applicant Authority	(●) Inventor	( ) Legal Representative under 35 U.S.C. 117	( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Joshua		Morenstein	

Residence Information (Select One)	(●) US Residency	( ) Non US Residency	( ) Active US Military Service		
City	San Francisco	State/Province	CA	Country of Residence	US
Citizenship under 37 CFR 1.41(b)	US				

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	A2029-700719
	Application Number	12/611,282
Title of Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT	

Mailing Address of Applicant:

Address 1	124 Downey Street		
Address 2			
City	San Francisco	**State/Province**	CA
Postal Code	94117	**Country**	US

Applicant 13

Applicant Authority (•) Inventor ( ) Legal Representative under 35 U.S.C. 117 ( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Christopher		Hibmacronan	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Oakland	**State/Province**	CA	**Country of Residence**	US
Citizenship under 37 CFR 1.41(b)	US				

Mailing Address of Applicant:

Address 1	2429 Damuth Street		
Address 2			
City	Oakland	**State/Province**	CA
Postal Code	94602	**Country**	US

Applicant 14

Applicant Authority (•) Inventor ( ) Legal Representative under 35 U.S.C. 117 ( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Naoya		Edahiro	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	San Francisco	**State/Province**	CA	**Country of Residence**	US
Citizenship under 37 CFR 1.41(b)	JP				

Mailing Address of Applicant:

Address 1	375 Bartlett Street		
Address 2			
City	San Francisco	**State/Province**	CA
Postal Code	94110	**Country**	US

Applicant 15

Applicant Authority (•) Inventor ( ) Legal Representative under 35 U.S.C. 117 ( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Matthew	David	Day	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	San Francisco	**State/Province**	CA	**Country of Residence**	US
Citizenship under 37 CFR 1.41(b)	US				

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	A2029-700719
	Application Number	12/611,282
Title of Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT	

Mailing Address of Applicant:			
Address 1	425 2nd Street, #301		
Address 2			
City	San Francisco	State/Province	CA
Postal Code	94107	Country	US

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	37462		
Email Address		Add Email	Remove Email

Application Information:

Title of the Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT		
Attorney Docket Number	A2029-700719	Small Entity Status Claimed	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Suggested Class (if any)		Sub Class (if any)	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)	37	Suggested Figure for Publication (if any)	7B

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S. C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Enter either Customer Number or complete the Representative Name section below. If both sections are completed the Customer Number will be used for the Representative Information during processing.

Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	37462		

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	A2029-700719
	Application Number	12/611,282
Title of Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT	

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78(a)(2) or CFR 1.78(a)(4), and need not otherwise be made part of the specification.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Continuation in part of	12170951	2008-07-10
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
12170951	non provisional of	61041365	2008-04-01
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Continuation in part of	12170939	2008-07-10
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
12170939	non provisional of	61041365	2008-04-01
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Continuation in part of	12416479	2009-04-01
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
12416479	non provisional of	61041365	2008-04-01
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
12416479	Continuation in part of	12170951	2008-07-10
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
12170951	non provisional of	61041365	2008-04-01
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
12416479	Continuation in part of	12170939	2008-07-10
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
12170939	non provisional of	61041365	2008-04-01

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	A2029-700719
	Application Number	12/611,282
Title of Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT	

Foreign Priority Information:

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).

Remove

Application Number	Country[i]	Parent Filing Date (YYYY-MM-DD)	Priority Claimed
			(•) Yes ( ) No

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

Assignee Information:

Providing this information in the application data sheet does not substitute for compliance with any requirement of part 3 of Title 37 of the CFR to have an assignment recorded in the Office.

Assignee 1

If the Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information:

Address 1			
Address 2			
City		**State/Province**	
Country[i]		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee Data may be generated within this form by selecting the **Add** button.

Signature:

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 10.18. Please see 37 CFR 1.4(d) for the form of the signature.

Signature	/Matthew H. Grady/			Date (YYYY-MM-DD)	2009-11-03
First Name	Matthew	Last Name	Grady	Registration Number	52957

SUPPLEMENTAL ADS FILED: March 3, 2010

PTO/SB/14 (07-07)
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	A2029-700719
	Application Number	12/611,282
Title of Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT	

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
12/611,282	11/03/2009	2161	0.00	A2029-700719	27	3

CONFIRMATION NO. 2160

37462
LANDO & ANASTASI, LLP
ONE MAIN STREET, SUITE 1100
CAMBRIDGE, MA 02142

CORRECTED FILING RECEIPT

OC000000040554602

Date Mailed: 03/15/2010

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Applicant(s)

Robert Sanford Havoc Pennington, Asheville, NC;
Noah Bruce Guyot, Mill Valley, CA;
Daniel Kuo, San Francisco, CA;
Jenea Boshart Hayes, Castro Valley, CA;
Aaron Tang, Somerville, MA;
David Livingstone Fore, Oakland, CA;
John Chuang, Brookline, MA;
Chris Bambacus, Framingham, MA;
Eben Eliason, Providence, RI;
Chris Moody, Boulder, CO;
Yves Behar, Oakland, CA;
Joshua Morenstein, San Francisco, CA;
Christopher Hibmacronan, Oakland, CA;
Naoya Edahiro, San Francisco, CA;
Matthew David Day, San Francisco, CA;

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a CIP of 12/170,951 07/10/2008
which claims benefit of 61/041,365 04/01/2008
This application 12/611,282
is a CIP of 12/170,939 07/10/2008
which claims benefit of 61/041,365 04/01/2008
This application 12/611,282
is a CIP of 12/416,479 04/01/2009

which claims benefit of 61/041,365 04/01/2008
and is a CIP of 12/170,951 07/10/2008
which claims benefit of 61/041,365 04/01/2008
and said 12/416,479 04/01/2009
is a CIP of 12/170,939 07/10/2008
which claims benefit of 61/041,365 04/01/2008

Foreign Applications

If Required, Foreign Filing License Granted: 11/16/2009

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/611,282**

Projected Publication Date: To Be Determined - pending completion of Missing Parts

Non-Publication Request: No

Early Publication Request: No

Title

METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT

Preliminary Class

707

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Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

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The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

Docket No.: L2039-700630

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Robert Sanford Havoc Pennington, et al.
Serial No:	12/611,282
Confirmation No:	2160
Filed:	November 3, 2009
For:	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT
Examiner:	Not Yet Assigned
Art Unit:	2161

CERTIFICATE OF TRANSMISSION UNDER 37 C.F.R. §1.8(a)

The undersigned hereby certifies that this document is being electronically filed in accordance with § 1.6(a)(4), on the 18th day of March, 2010.

/Matthew H. Grady/
Matthew H. Grady, Reg. No. 52,957

Commissioner for Patents

RESPONSE TO NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

Sir:

In response to the Notice to File Missing Parts of Nonprovisional Application Serial No. 12/611,282 issued on November 19, 2009, Applicant encloses and files herewith an executed Declaration. Applicant encloses and files herewith a copy of the Supplemental ADS filed on March 3, 2010, to maintain the corrected priority information as indicated in the request for corrected filing receipt submitted on March 3, 2010 and received on March 15, 2010.

REMARKS

If there is a fee occasioned by this submission, including an extension fee that is not covered by an accompanying payment, please charge any deficiency to Deposit Account No. 50/2762.

Respectfully submitted,
Robert Sanford Havoc Pennington, Applicants

By:/Matthew H. Grady/
Matthew H. Grady, Reg. No. 52,957
LANDO & ANASTASI, LLP
One Main Street
Cambridge, Massachusetts 02142
United States of America
Telephone: 617-395-7000
Facsimile: 617-395-7070

Docket No.: L2039-700630
Date: March 18, 2010

Electronic Patent Application Fee Transmittal

Application Number:	12611282
Filing Date:	03-Nov-2009
Title of Invention:	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT
First Named Inventor/Applicant Name:	Robert Sanford Havoc Pennington
Filer:	Matthew H. Grady/Lori Biancuzzo
Attorney Docket Number:	L2039-700630

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Utility application filing	1011	1	330	330
Utility Search Fee	1111	1	540	540
Utility Examination Fee	1311	1	220	220
Pages:				
Claims:				
Claims in excess of 20	1202	7	52	364
Miscellaneous-Filing:				
Late filing fee for oath or declaration	1051	1	130	130

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 2 months with $0 paid	1252	1	490	490
Miscellaneous:				
		Total in USD ($)		**2074**

Electronic Acknowledgement Receipt

EFS ID:	7238479
Application Number:	12611282
International Application Number:	
Confirmation Number:	2160
Title of Invention:	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT
First Named Inventor/Applicant Name:	Robert Sanford Havoc Pennington
Customer Number:	37462
Filer:	Matthew H. Grady
Filer Authorized By:	
Attorney Docket Number:	L2039-700630
Receipt Date:	18-MAR-2010
Filing Date:	03-NOV-2009
Time Stamp:	15:51:31
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$2074
RAM confirmation Number	2147
Deposit Account	502762
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Oath or Declaration filed	L2039-700630_declaration.pdf	10029970 c2902674a373eecbaf936e573cda50f5a8c97708	no	20
Warnings:					
Information:					
2	Drawings-only black and white line drawings	L2039-700630_replacement_sheets.pdf	12607008 00638013c3b5e2ed2f0e41e118f09cf2aa393d24	no	37
Warnings:					
Information:					
3	Application Data Sheet	L2039-700630_Supplemental_ADS_AS_FILED.pdf	11787340 4d273865f9099b35a915a1adba8ca4375c6e9283	no	10
Warnings:					
Information:					
This is not an USPTO supplied ADS fillable form					
4	Applicant Response to Pre-Exam Formalities Notice	L2039-700630_Response_to_Notice_to_File_Missing_Parts.pdf	24403 21180e5098cbbcf4f06cd4ddb91f9bcfc7e9d32a	no	2
Warnings:					
Information:					
5	Fee Worksheet (PTO-875)	fee-info.pdf	40371 c09d53b93414d45a6111aab1e2ae11a15a59c216	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	34489092		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

DECLARATION FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the application entitled

METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT

was filed on November 3, 2009, as Application No. 12/611,282, bearing attorney docket No. A2029-700730.

I hereby state that I have reviewed and understand the contents of the above identified application, including the claims, and amended by any amendment referred to above.

I acknowledge the duty to disclose information which is known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119(a)-(d) or §365(b) of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT International application designating at least one country other than the United States listed below and have also identified below any foreign application for patent or inventor's certificate or PCT International application having a filing date before that of the application on which priority is claimed:

Prior Foreign or PCT International Application(s) and any priority claims under 35 U.S.C. §119(a)-(d) and §365(a),(b):

			Priority Claimed	
(Number)	(Country-if PCT, so indicate)	(DD/MM/YY Filed)	[ ] YES	[ ] NO
(Number)	(Country-if PCT, so indicate)	(DD/MM/YY Filed)	[ ] YES	[ ] NO
(Number)	(Country-if PCT, so indicate)	(DD/MM/YY Filed)	[ ] YES	[ ] NO

I hereby claim the benefit under Title 35, United States Code, §119(e) of any United States provisional application(s) listed below:

(Application Number)	(filing date)

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s), or §365(c) of any PCT International application(s) designating the United States of America listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information which is known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, §1.56, which became available between the filing date of the prior application and the national or PCT International filing date of this application:

12/170,951	July 10, 2008	Pending
(Application No.)	(filing date)	(status-patented, pending, abandoned)
12/170,939	July 10, 2008	Pending
(Application No.)	(filing date)	(status-patented, pending, abandoned)
12/416,479	April 1, 2009	Pending
(Application No.)	(filing date)	(status-patented, pending, abandoned)

PCT International Applications designating the United States:

(PCT Appl. No.)	(U.S. Ser. No.)	(PCT filing date)	(status-patented,pending,abandoned)

I hereby appoint the following Registered Practitioners to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

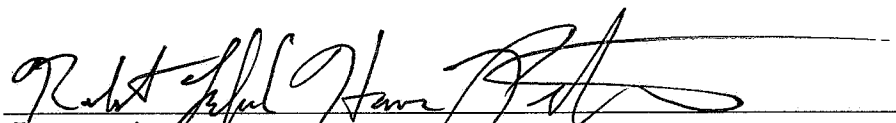
All Registered Practitioners of Lando & Anastasi, LLP associated with Customer Number 37462.

Address all telephone calls to Matthew H. Grady at telephone no. (617) 395-7000.

Address all correspondence to: the Correspondence Address associated with Customer Number 37462.

992711.1

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.



2/26/10

Inventor's signature **Date**

Full name of first or joint inventor:	Robert Sanford Havoc Pennington
Citizenship:	U.S.
Residence:	1304 Asheville Springs Cir Asheville, NC 28806
Post Office Address:	1304 Asheville Springs Cir Asheville, NC 28806



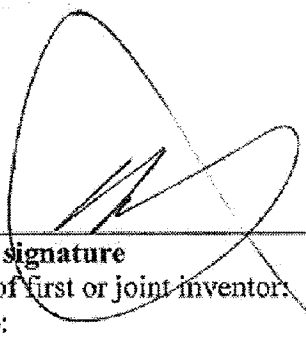
01.16.2010

Inventor's signature **Date**

Full name of first or joint inventor: Matthew David Day
Citizenship: U.S.
Residence: 3-1 Samsung-dong #503
Gangnam-gu, Seoul, S. Korea
135-889

Post Office Address: 3-1 Samsung-dong #503
Gangnam-gu, Seoul, S. Korea
135-889

992711.1



2.26.10

Inventor's signature **Date**

Full name of first or joint inventor:	Noah Bruce Guyot
Citizenship:	U.S.
Residence:	4 Longfellow Road Mill Valley, CA 94941
Post Office Address:	4 Longfellow Road Mill Valley, CA 94941

992711.1

State of California)
County of San Francisco)

CALIFORNIA ALL-PURPOSE CERTIFICATE OF ACKNOWLEDGMENT

On 2/26/2010 before me, Glenn Mathew Turner, Notary Public
(here insert name and title of the officer),

personally appeared NOAH BRUCE GUYOT

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity(~~ies~~), and that by his/~~her/their~~ signature(s) on the instrument the person(s), or the entity upon behalf of which the person(~~s~~) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

GLENN MATHEW TURNER
Commission # 1676046
Notary Public - California
San Francisco County
My Comm. Expires Jun 17, 2010

WITNESS my hand and official seal.

Signature _____

(Seal)

OPTIONAL INFORMATION

Although the information in this section is not required by law, it could prevent fraudulent removal and reattachment of this acknowledgment to an unauthorized document and may prove useful to persons relying on the attached document.

Description of Attached Document

The preceding Certificate of Acknowledgment is attached to a document titled/for the purpose of DECLARATION FOR PATENT APPLICATION,

containing 1 pages, and dated 1.

The signer(s) capacity or authority is/are as:

- ☐ Individual(s)
- ☐ Attorney-in-Fact
- ☐ Corporate Officer(s) _____ Title(s)
- ☐ Guardian/Conservator
- ☐ Partner - Limited/General
- ☐ Trustee(s)
- ☐ Other: _____

representing: _____ Name(s) of Person(s) or Entity(ies) Signer is Representing

Additional Information

Method of Signer Identification

Proved to me on the basis of satisfactory evidence:
☐ form(s) of identification ○ credible witness(es)

Notarial event is detailed in notary journal on:
Page # _____ Entry # _____

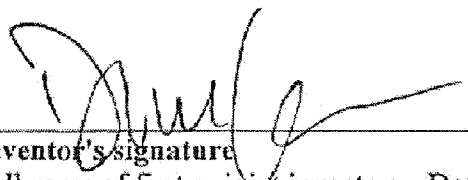
Notary contact: _____

Other

☐ Additional Signer(s) ☐ Signer(s) Thumbprint(s)

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2/26/10

Inventor's signature **Date**

Full name of first or joint inventor: Daniel Kuo

Citizenship: U.S.

Residence: 1916 Page Street, Apt. 1
San Francisco, CA 94117

Post Office Address: 1916 Page Street, Apt. 1
San Francisco, CA 94117

992711.1

State of California)

County of San Francisco)

CALIFORNIA ALL-PURPOSE CERTIFICATE OF ACKNOWLEDGMENT

On 2/26/2010 before me, Glenn Mathew Turner, Notary Public,
(here insert name and title of the officer)

personally appeared Daniel Kuo,

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~are~~ subscribed to the within instrument and acknowledged to me that he/she/~~they~~ executed the same in his/~~her/their~~ authorized capacity(ies), and that by his/~~her/their~~ signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

GLENN MATHEW TURNER
Commission # 1676046
Notary Public - California
San Francisco County
My Comm. Expires Jun 15, 2010

WITNESS my hand and official seal.

Signature Glenn M Turner

(Seal)

OPTIONAL INFORMATION

Although the information in this section is not required by law, it could prevent fraudulent removal and reattachment of this acknowledgment to an unauthorized document and may prove useful to persons relying on the attached document.

Description of Attached Document

The preceding Certificate of Acknowledgment is attached to a document titled/for the purpose of Declaration for Patent Application,

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The signer(s) capacity or authority is/are as:

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- ☐ Attorney-in-Fact
- ☐ Corporate Officer(s) _____ Title(s)
- ☐ Guardian/Conservator
- ☐ Partner - Limited/General
- ☐ Trustee(s)
- ☐ Other: _____

representing: _____ Name(s) of Person(s) or Entity(ies) Signer is Representing

Additional Information

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Proved to me on the basis of satisfactory evidence:
○ form(s) of identification ○ credible witness(es)

Notarial event is detailed in notary journal on:
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Notary contact: _____

Other

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2/26/10

Inventor's signature **Date**

Full name of first or joint inventor:	Jenea Boshart Hayes
Citizenship:	U.S.
Residence:	18379 Plymouth Dr. Castro Valley, CA 94546
Post Office Address:	18379 Plymouth Dr. Castro Valley, CA 94546

State of California)

County of San Francisco)

CALIFORNIA ALL-PURPOSE CERTIFICATE OF ACKNOWLEDGMENT

On 2/26/2010 before me, Glenn Mathew Turner, Notary Public
(here insert name and title of the officer),

personally appeared Jenee Boshart Hayes

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~are~~ subscribed to the within instrument and acknowledged to me that ~~he/she/they~~ executed the same in ~~his/her/their~~ authorized capacity(~~ies~~), and that by ~~his/her/their~~ signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature

GLENN MATHEW TURNER
Commission # 1676046
Notary Public - California
San Francisco County
My Comm. Expires Jun 19, 2010

(Seal)

OPTIONAL INFORMATION

Although the information in this section is not required by law, it could prevent fraudulent removal and reattachment of this acknowledgment to an unauthorized document and may prove useful to persons relying on the attached document.

Description of Attached Document

The preceding Certificate of Acknowledgment is attached to a document titled/for the purpose of Declaration for Payment Application,

containing 1 pages, and dated 1.

The signer(s) capacity or authority is/are as:

- ☐ Individual(s)
- ☐ Attorney-In-Fact
- ☐ Corporate Officer(s) _____ Title(s)
- ☐ Guardian/Conservator
- ☐ Partner - Limited/General
- ☐ Trustee(s)
- ☐ Other: _____

representing: _____ Name(s) of Person(s) or Entity(ies) Signer is Representing

Additional Information

Method of Signer Identification

Proved to me on the basis of satisfactory evidence:
☐ form(s) of identification ☐ credible witness(es)

Notarial event is detailed in notary journal on:
Page # _____ Entry # _____

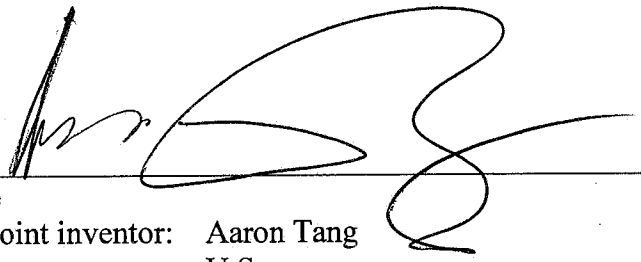
Notary contact: _____

Other

☐ Additional Signer(s) ☐ Signer(s) Thumbprint(s)

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JAN 11 2009

Inventor's signature **Date**

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Citizenship: U.S.
Residence: 28 Dickinson St. Apt B
Somerville, MA 02143
Post Office Address: 28 Dickinson St. Apt B
Somerville, MA 02143

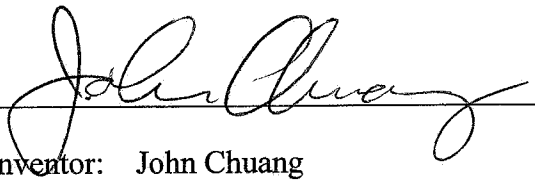
992711.1

3-3-10

Inventor's signature **Date**

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992711.1



12/14/09

Inventor's signature **Date**

Full name of first or joint inventor: John Chuang

Citizenship: U.S.

Residence: 185 Buckminster Road
Brookline, MA 02445

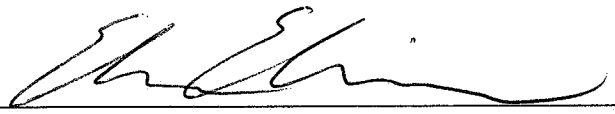
Post Office Address: 185 Buckminster Road
Brookline, MA 02445



1/11/10

Inventor's signature **Date**

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1/15/2010

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Post Office Address:	392 S. Main Street, Apt. 67 Providence, RI 02903

12/16/09

Inventor's signature **Date**

Full name of first or joint inventor: Chris Moody
Citizenship: U.S.
Residence: 429 Marine Street
Boulder, CO 80302

Post Office Address: 429 Marine Street
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Notary Public

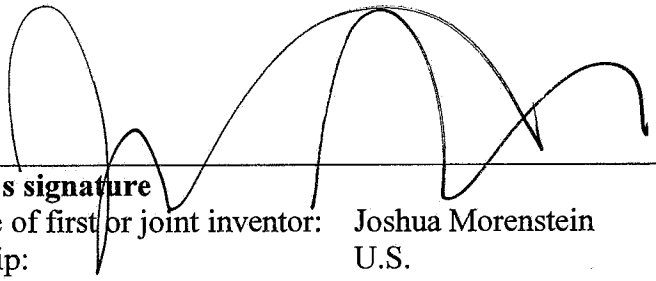
JENNIFER A. HORTON
Notary Public
COMMONWEALTH OF MASSACHUSETTS
My Commission Expires
December 5, 2014

992711.1

Yves Behar 3/03/2010

Inventor's signature **Date**

Full name of first or joint inventor:	Yves Behar
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Residence:	5741 Scarborough Drive Oakland, CA 94611
Post Office Address:	5741 Scarborough Drive Oakland, CA 94611



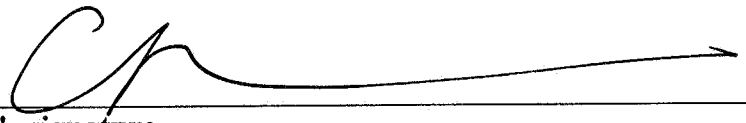
12/18/09

Inventor's signature **Date**

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San Francisco, CA 94117

Post Office Address: 124 Downey Street
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992711.1



12/18/09

Inventor's signature **Date**

Full name of first or joint inventor: Christopher Hibmacronan
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Post Office Address: 2429 Damuth Street
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12.18.09

Inventor's signature **Date**

Full name of first or joint inventor: Naoya Edahiro
Citizenship: Japan
Residence: 375 Bartlett Street
San Francisco, CA 94110
Post Office Address: 375 Bartlett Street
San Francisco, CA 94110

992711.1

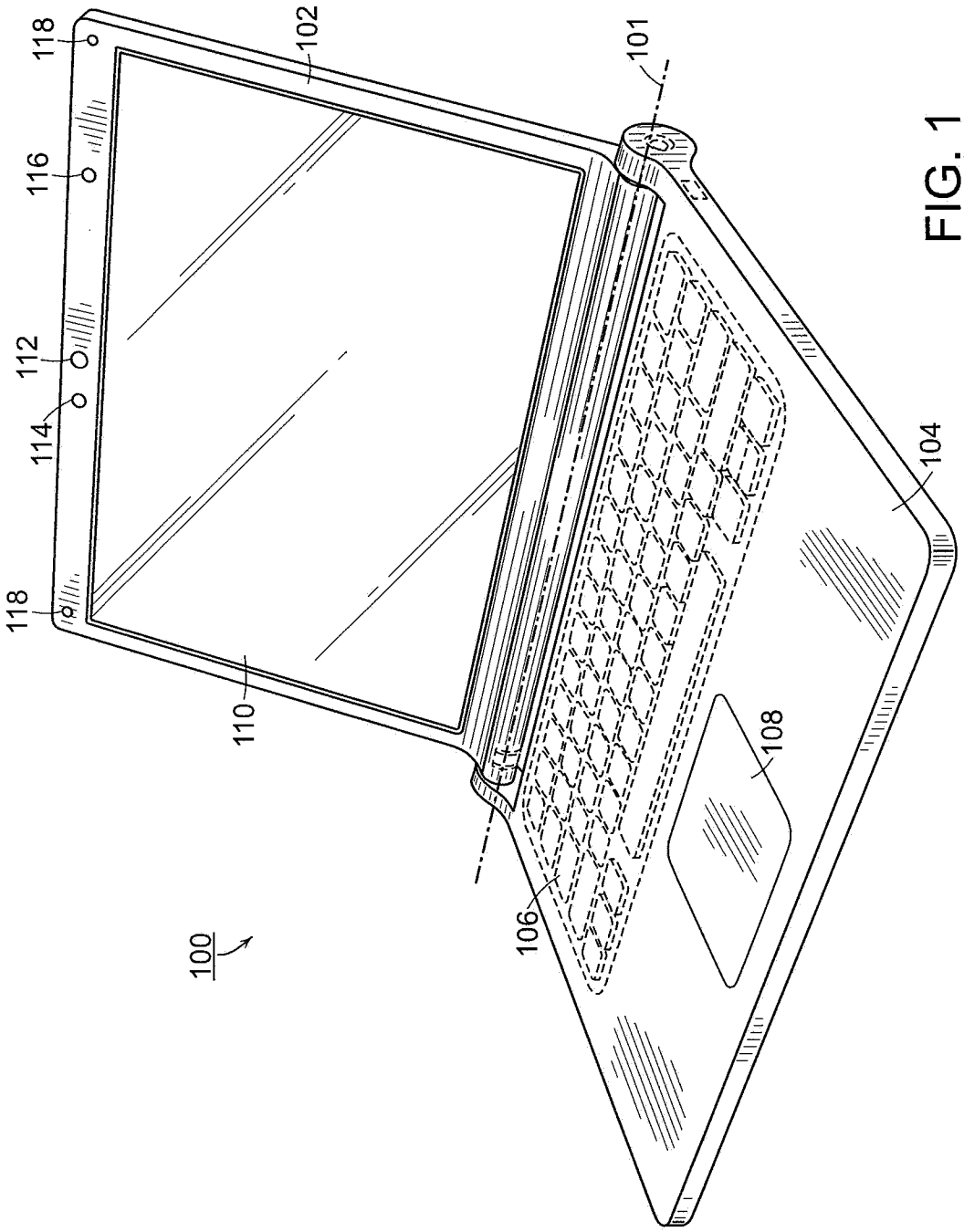


FIG. 1

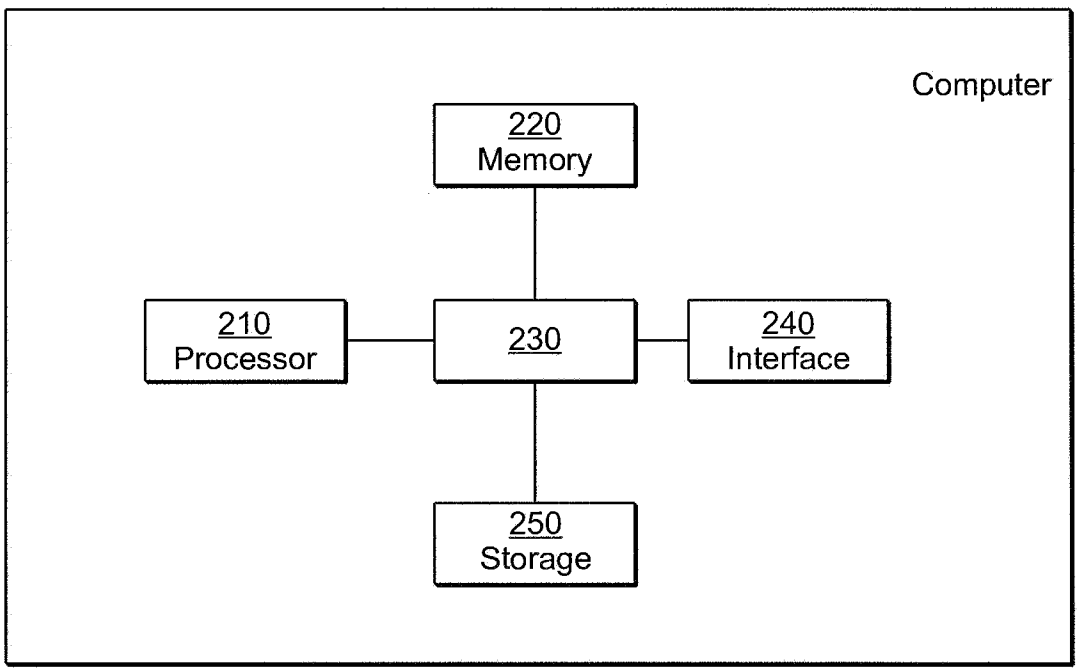

Computer
220
Memory
210
Processor
230
240
Interface
250
Storage

FIG. 2

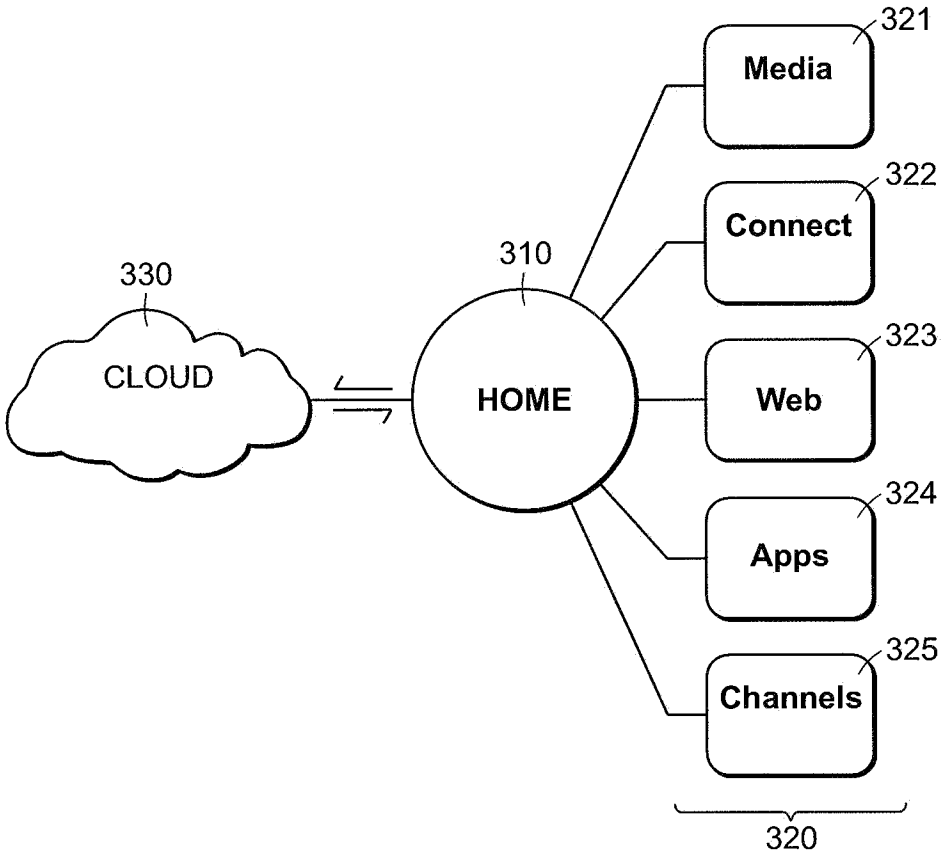

321
Media
322
Connect
310
330
CLOUD
HOME
323
Web
324
Apps
325
Channels
320

FIG. 3

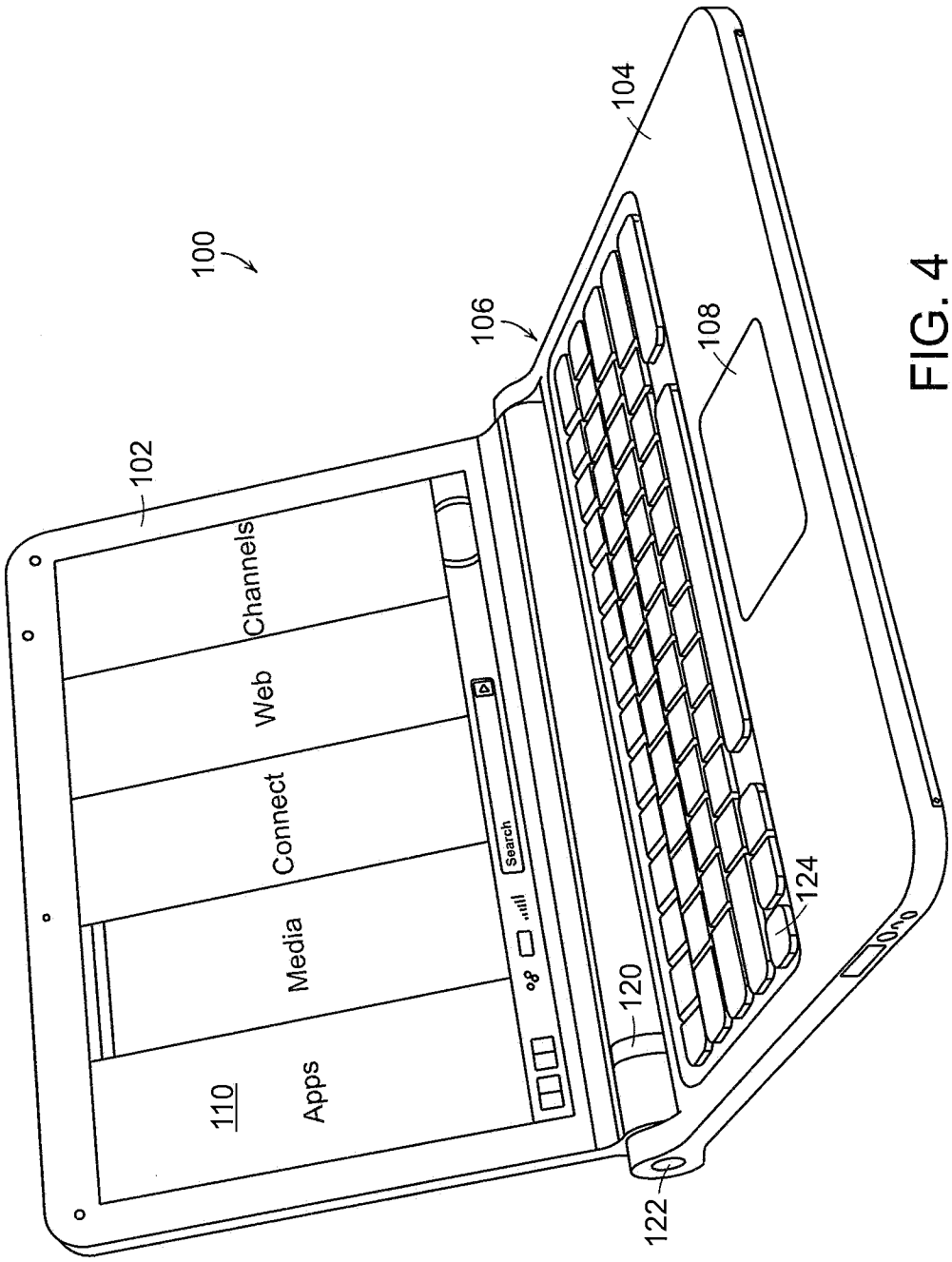

100
102
104
106
108
110
120
122
124
Apps
Media
Connect
Web
Channels
Search

FIG. 4

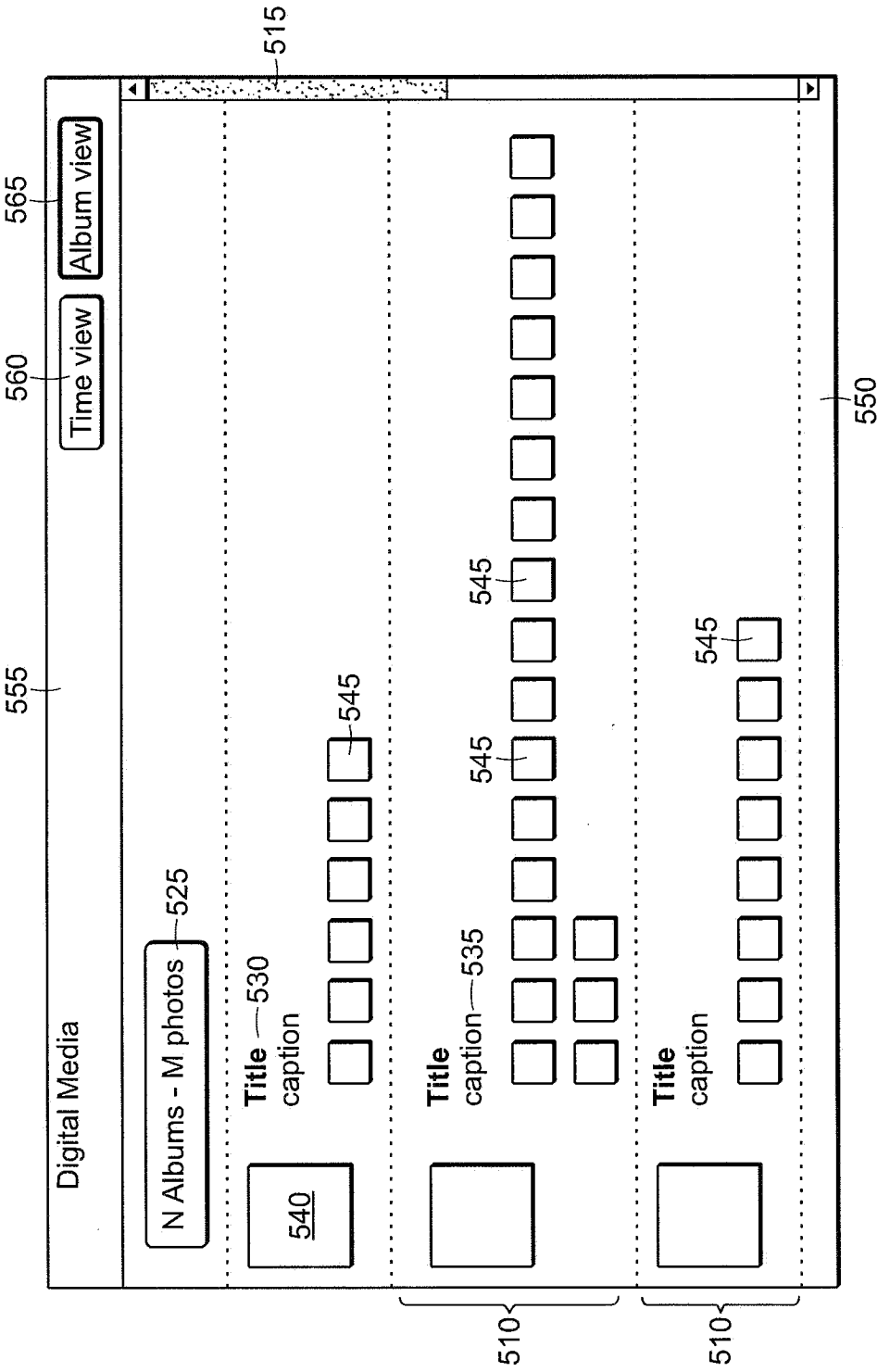

515
565
Album view
560
Time view
555
Digital Media
525
N Albums - M photos
530
Title
caption
540
545
545
545
535
Title
caption
Title
caption
510
510
550

FIG. 5

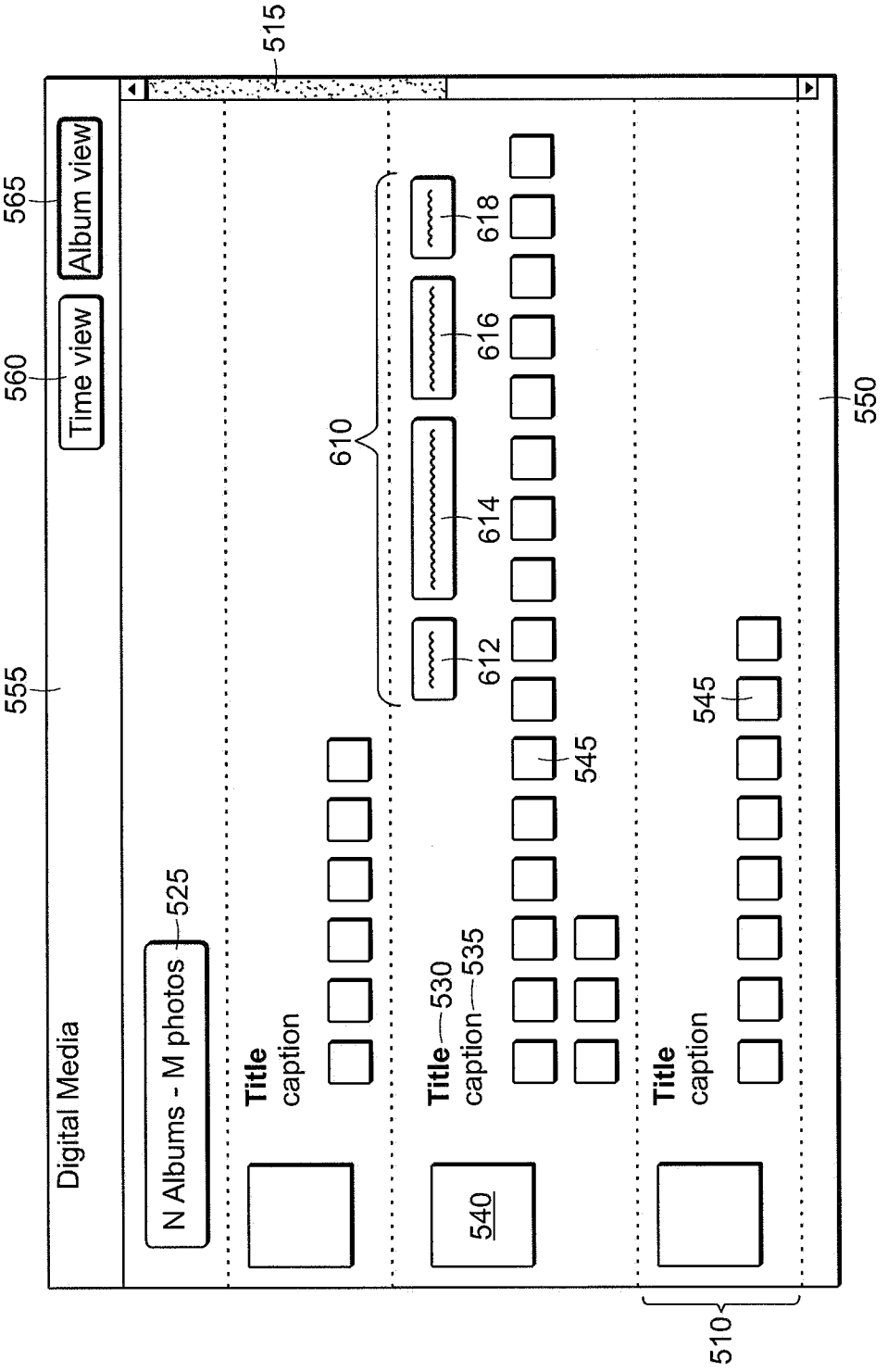

515
565
560
555
Digital Media
Album view
Time view
N Albums - M photos
525
610
612
614
616
618
550
545
Title
caption
530
535
540
510

FIG. 6

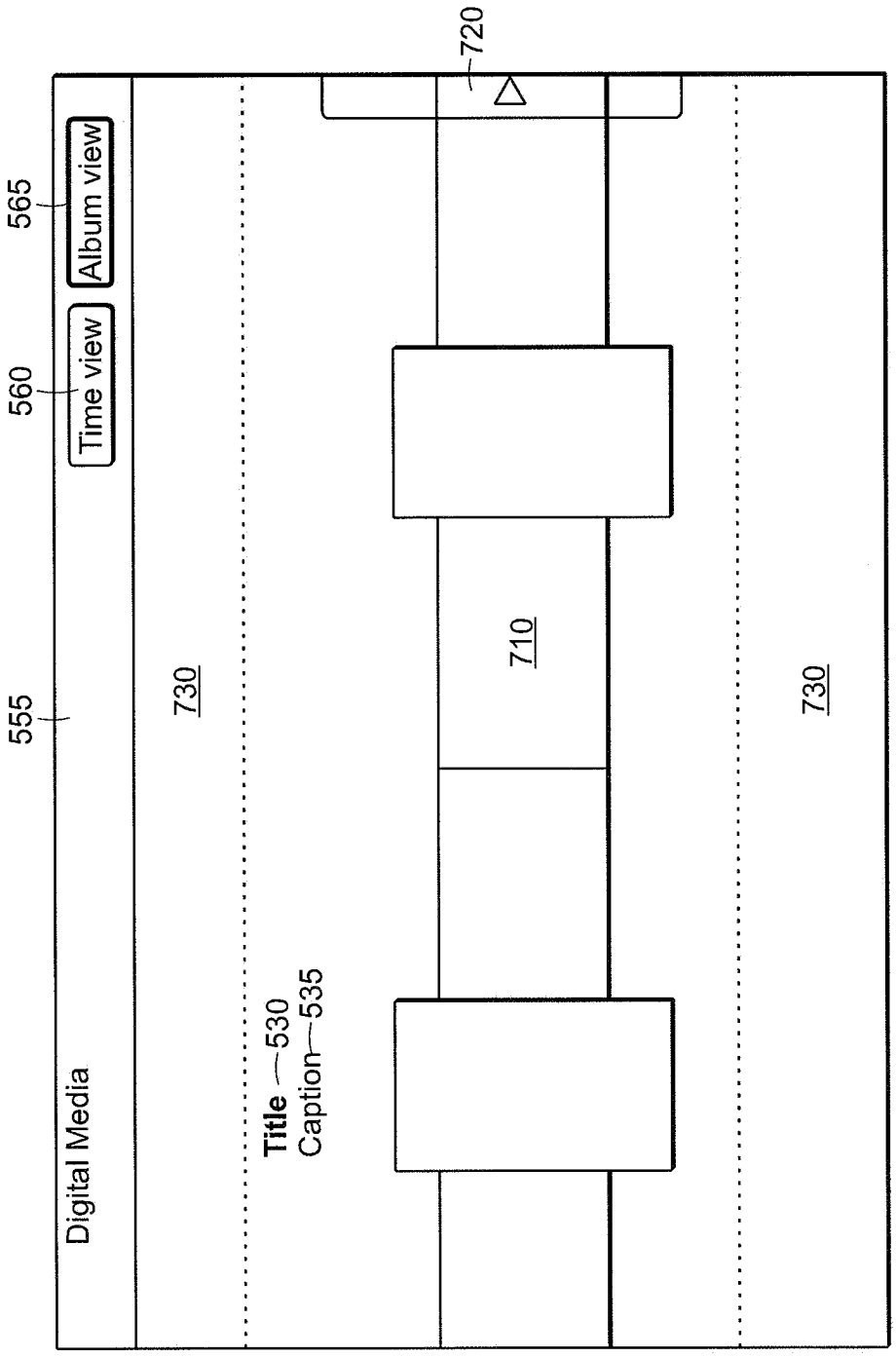

720
565
Album view
560
Time view
555
730
710
730
Digital Media
Title 530
Caption 535

FIG. 7A

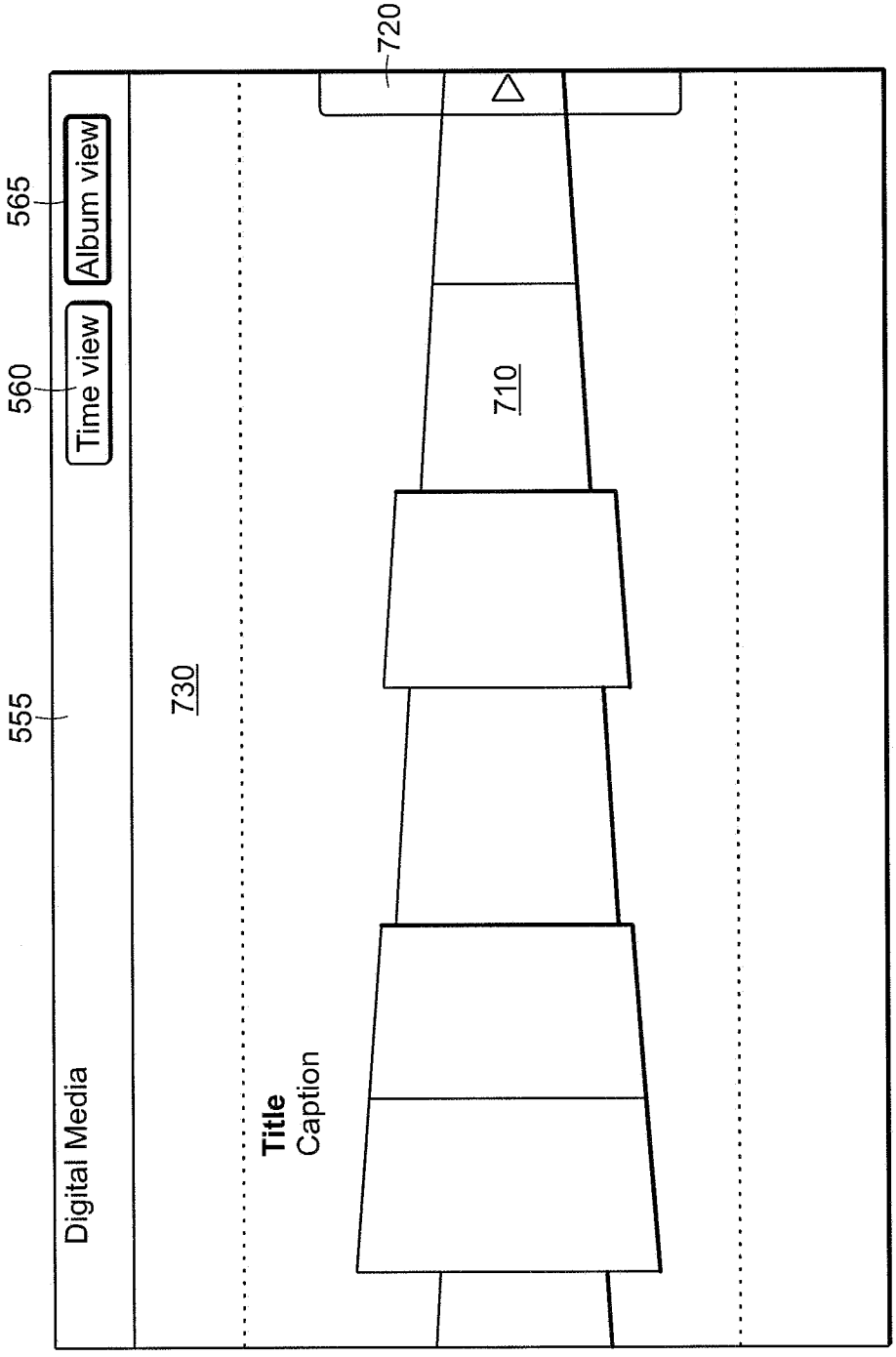

720
565
Album view
560
Time view
555
730
710
Digital Media
Title
Caption

FIG. 7B

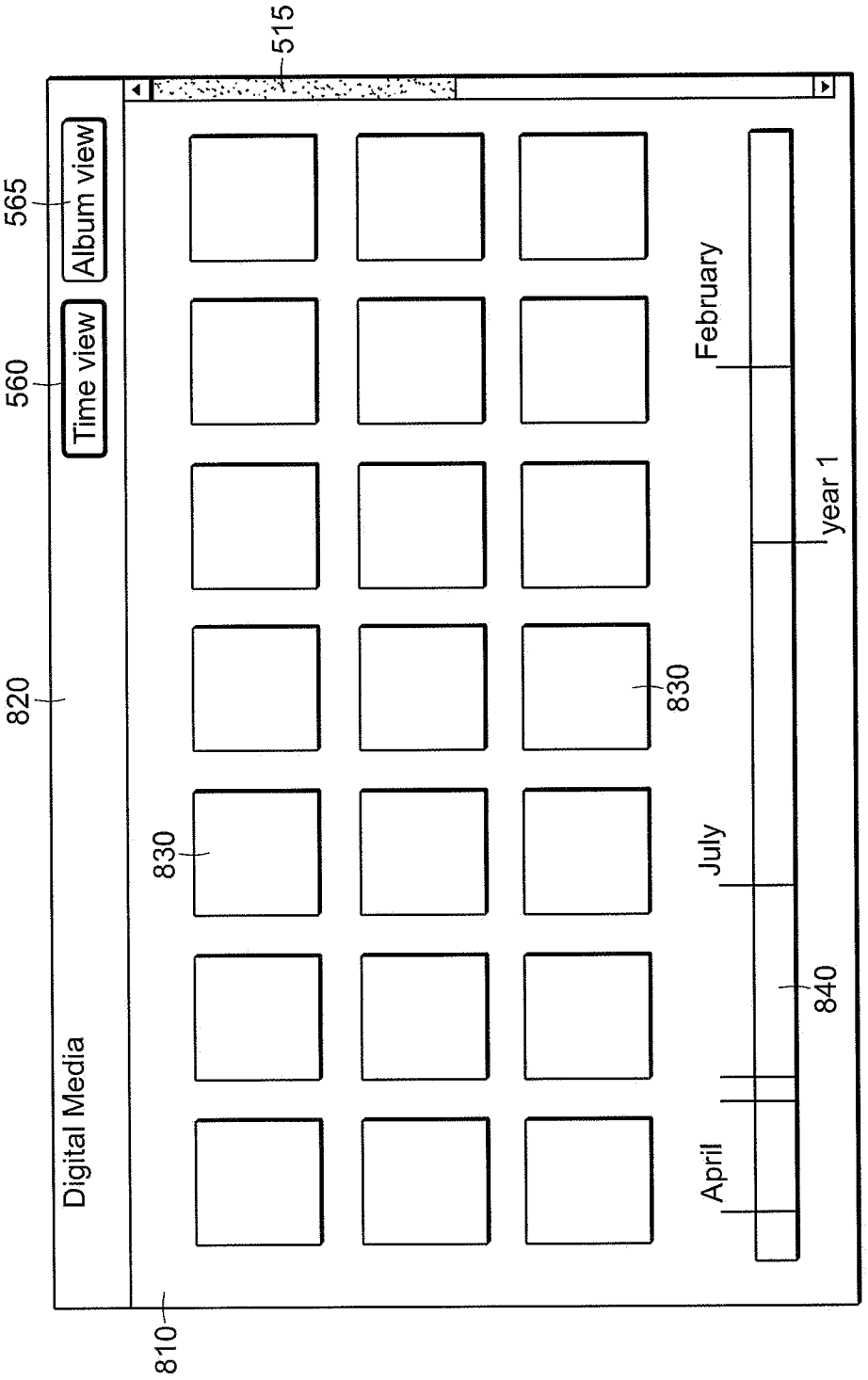

515
565
Album view
560
Time view
820
Digital Media
830
830
810
February
year 1
July
840
April

FIG. 8

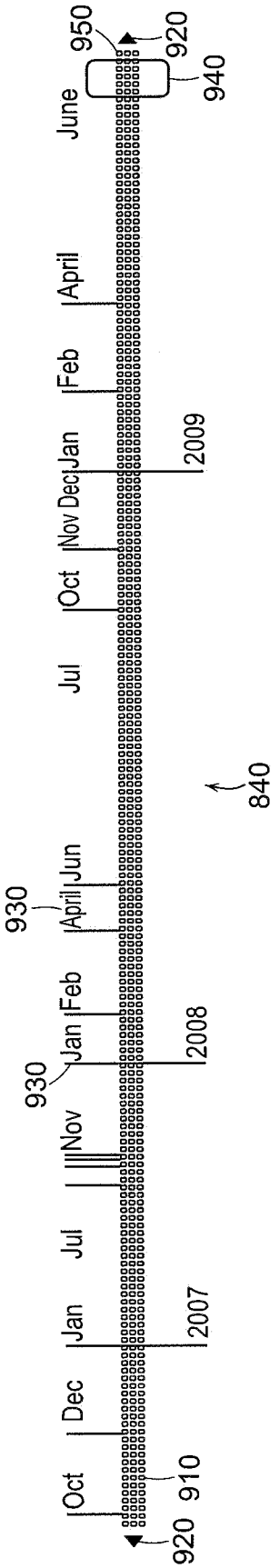

950
920
940
June
April
Feb
Jan
2009
Nov
Dec
Oct
Jul
840
930
April
Jun
930
Jan
Feb
2008
Nov
Jul
Jan
2007
Dec
Oct
910
920

FIG. 9

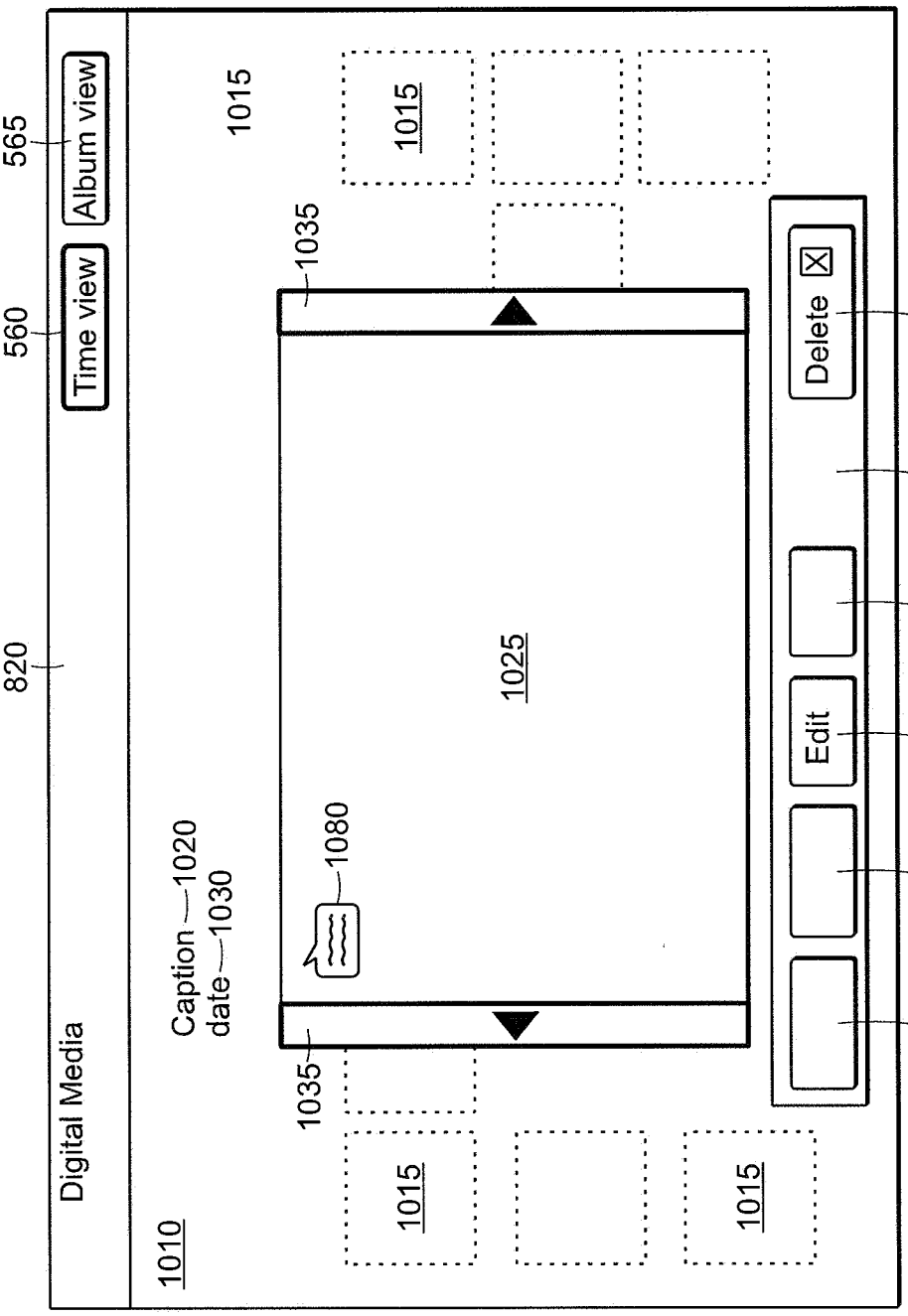

565
Album view
560
Time view
820
Digital Media
1010
1015
1035
1025
1080
Caption 1020
date 1030
Delete
1075
1040
1065
Edit
1070

FIG. 10

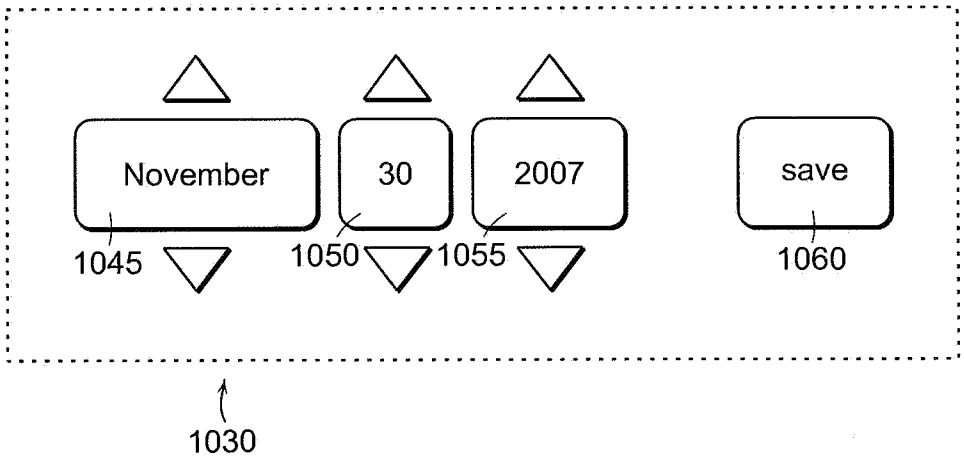


FIG. 11

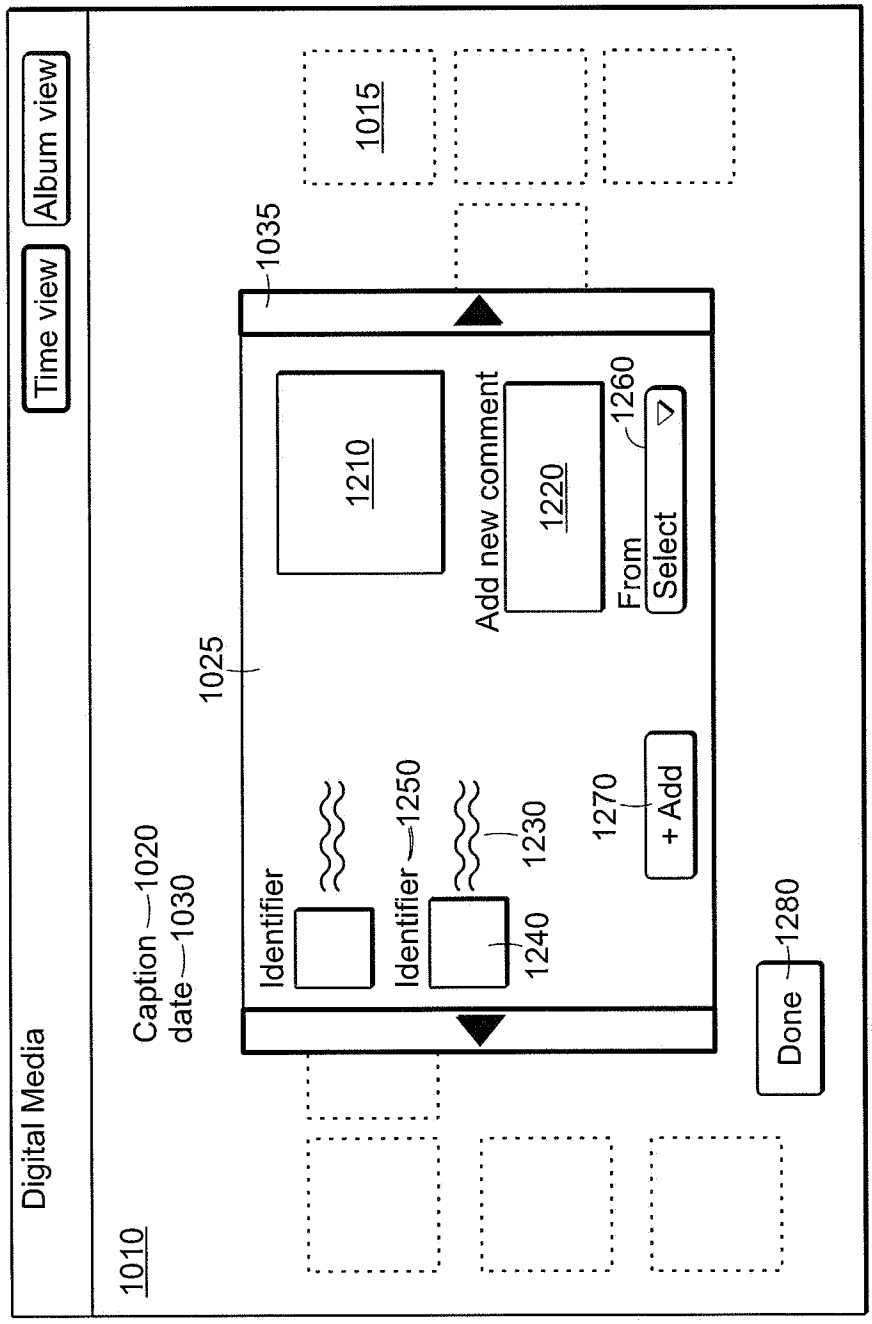

Digital Media
Time view
Album view
1010
1015
1035
1025
1210
Add new comment
1220
1260
From
Select
Caption
1020
date
1030
Identifier
Identifier
1250
1230
1240
1270
+ Add
Done
1280

FIG. 12

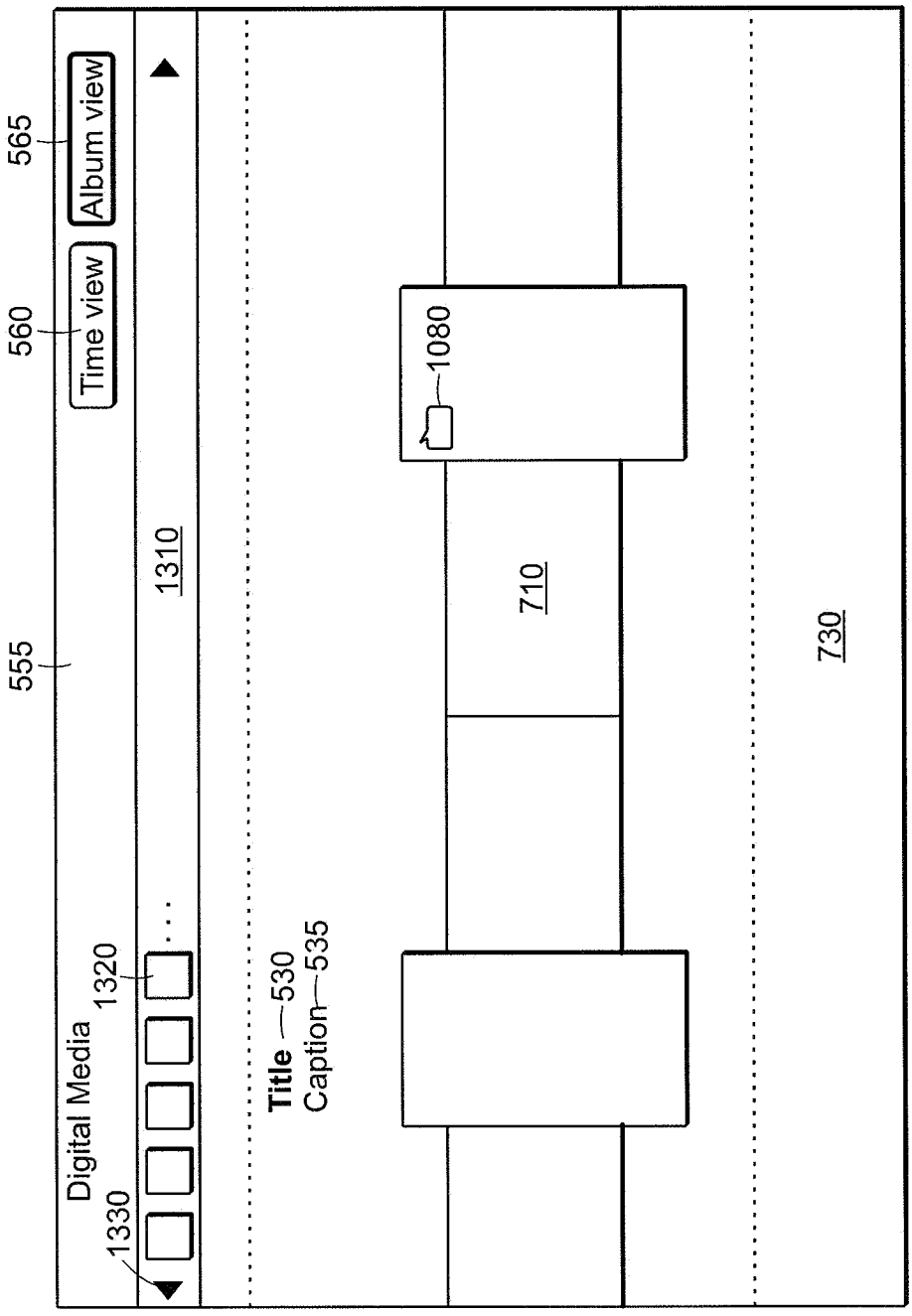

555
565
Album view
560
Time view
1310
1080
Digital Media
1320
1330
Title 530
Caption 535
710
730

FIG. 13A

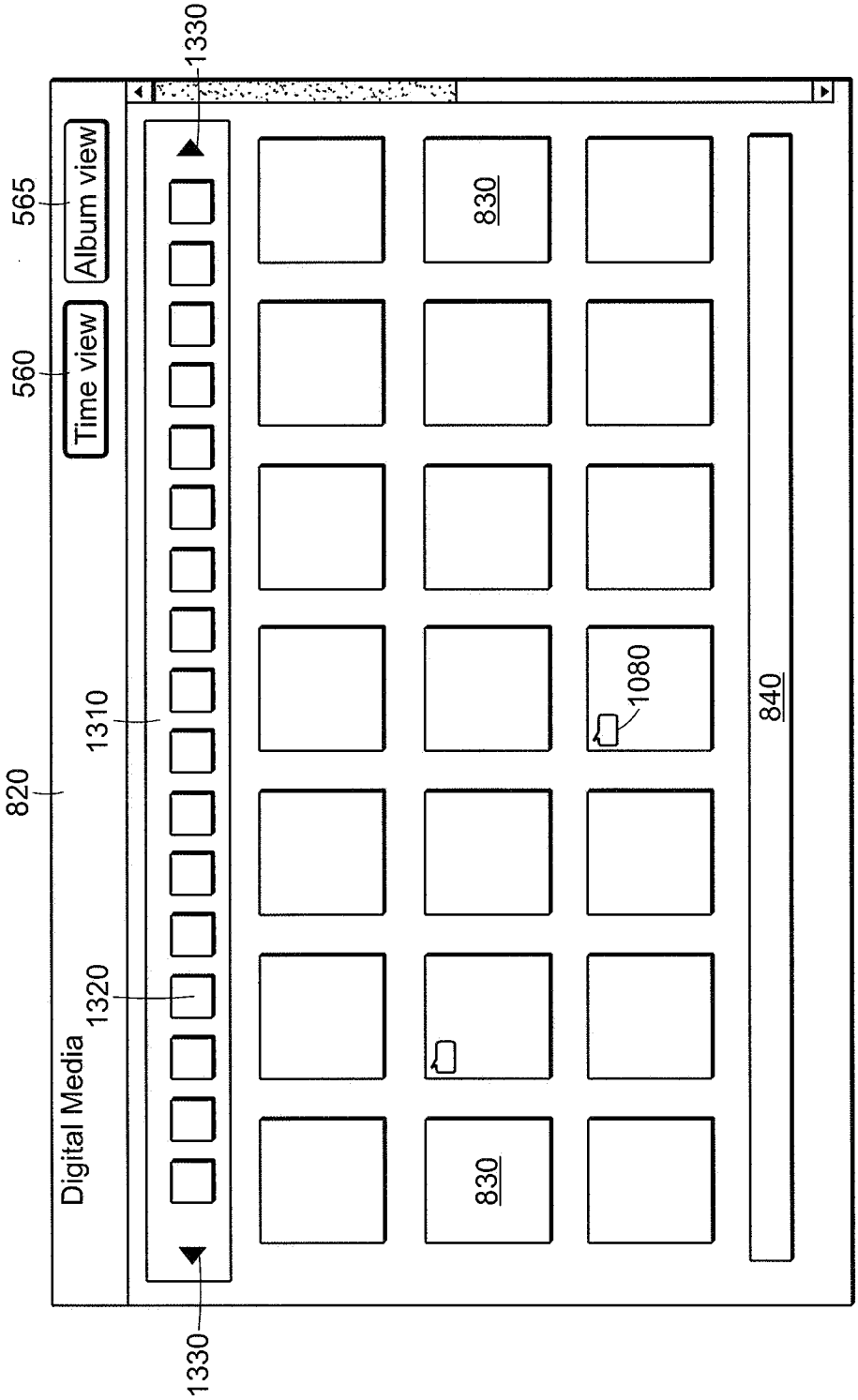

1330
565
Album view
560
Time view
820
1310
1320
Digital Media
830
830
1080
840
1330

FIG. 13B

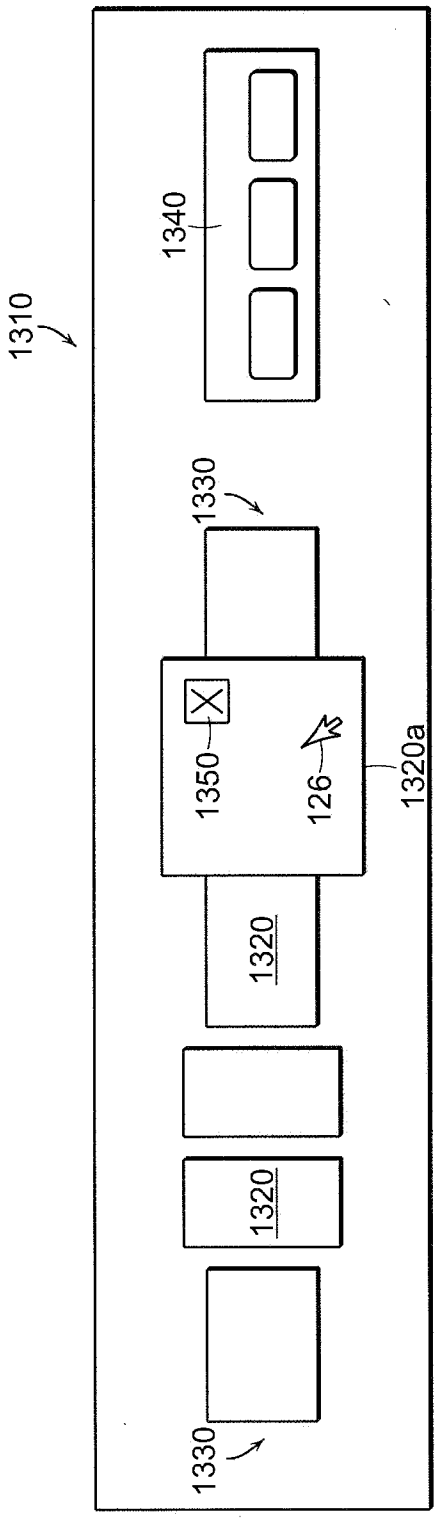


FIG. 13C

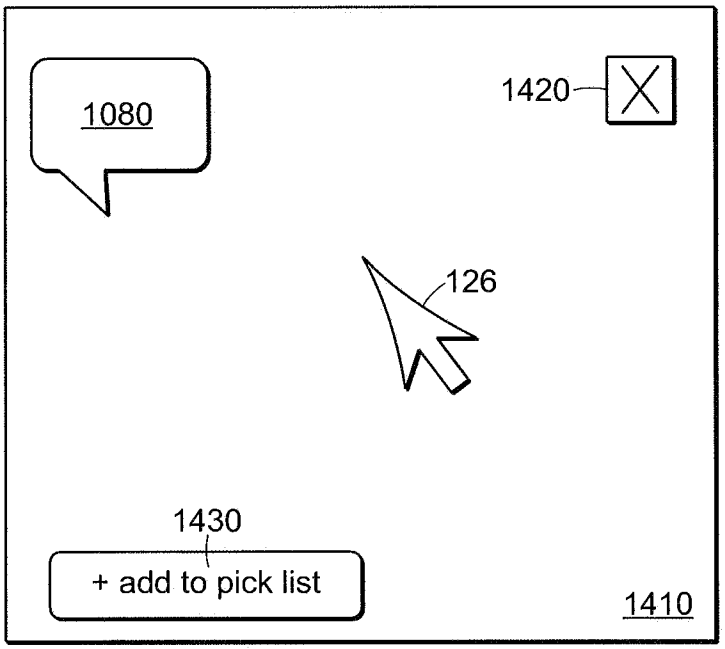


FIG. 14

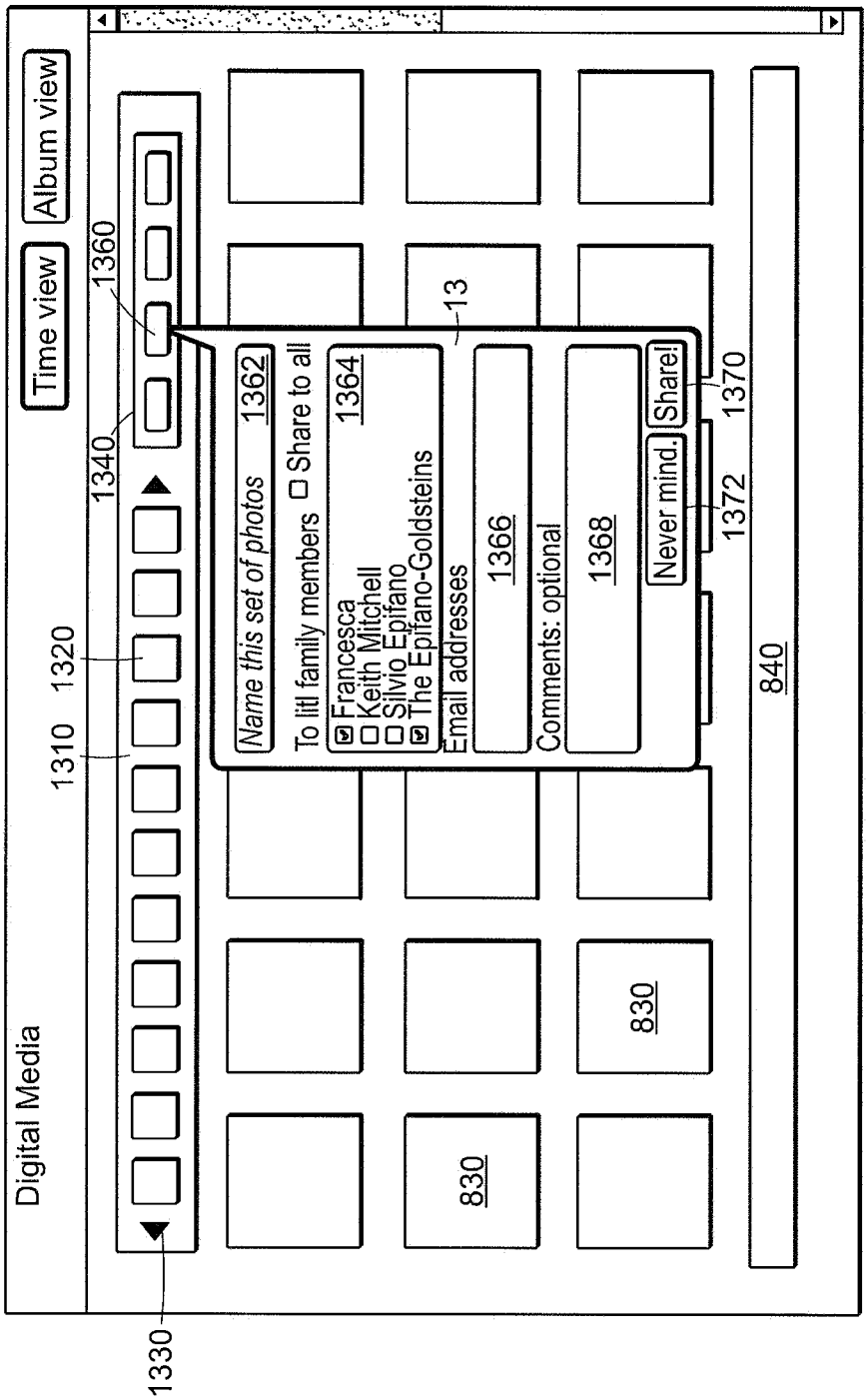

Digital Media
Time view
Album view
1330
1310
1320
1340
1360
1362
Name this set of photos
Share to all
To litl family members
1364
Francesca
Keith Mitchell
Silvio Epifano
The Epifano-Goldsteins
Email addresses
1366
Comments: optional
1368
Never mind.
Share!
1370
1372
13
830
830
840

FIG. 15

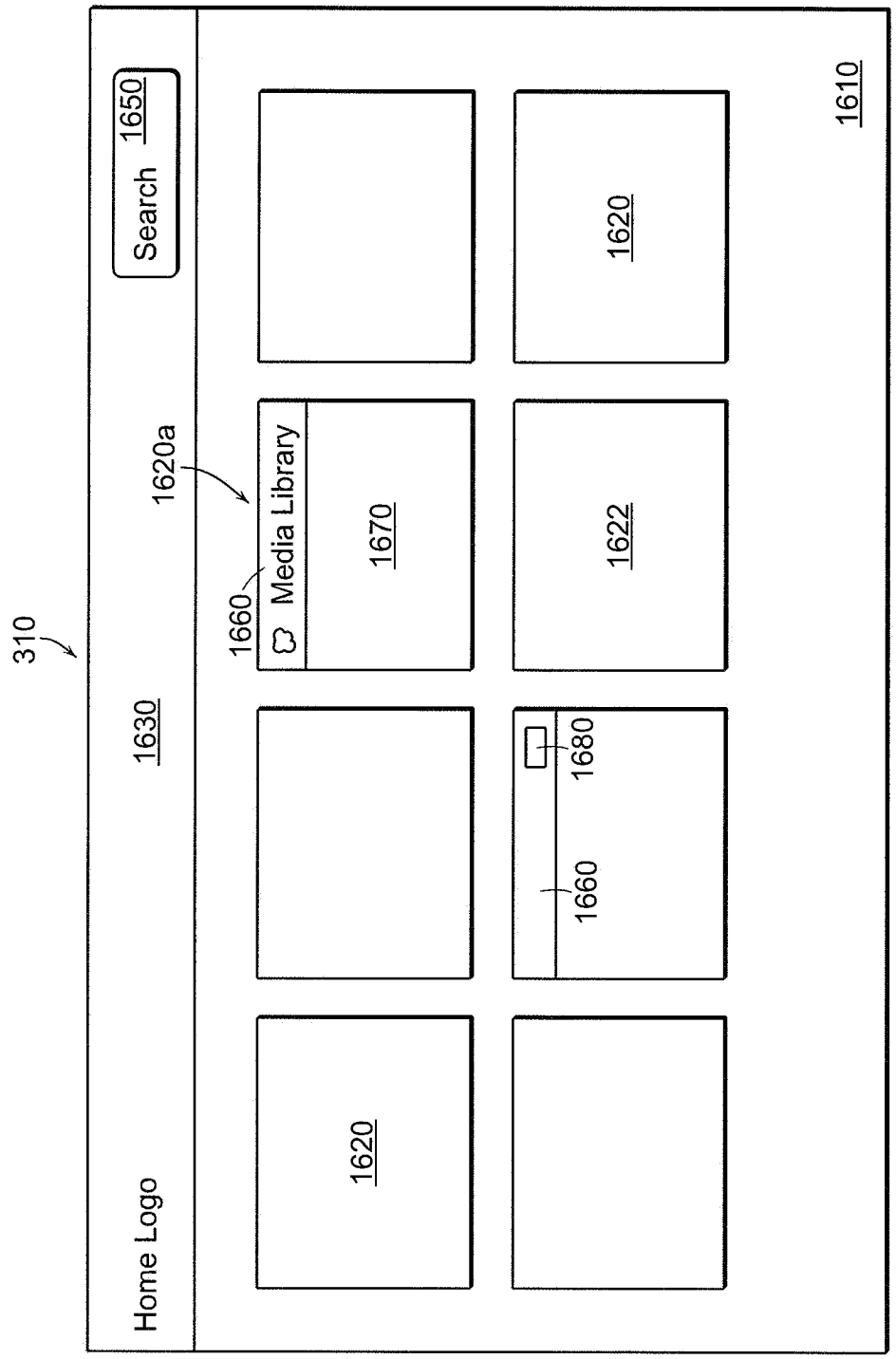

310
Home Logo
1630
Search
1650
1610
1620a
1660
Media Library
1670
1620
1622
1620
1680
1660

FIG. 16

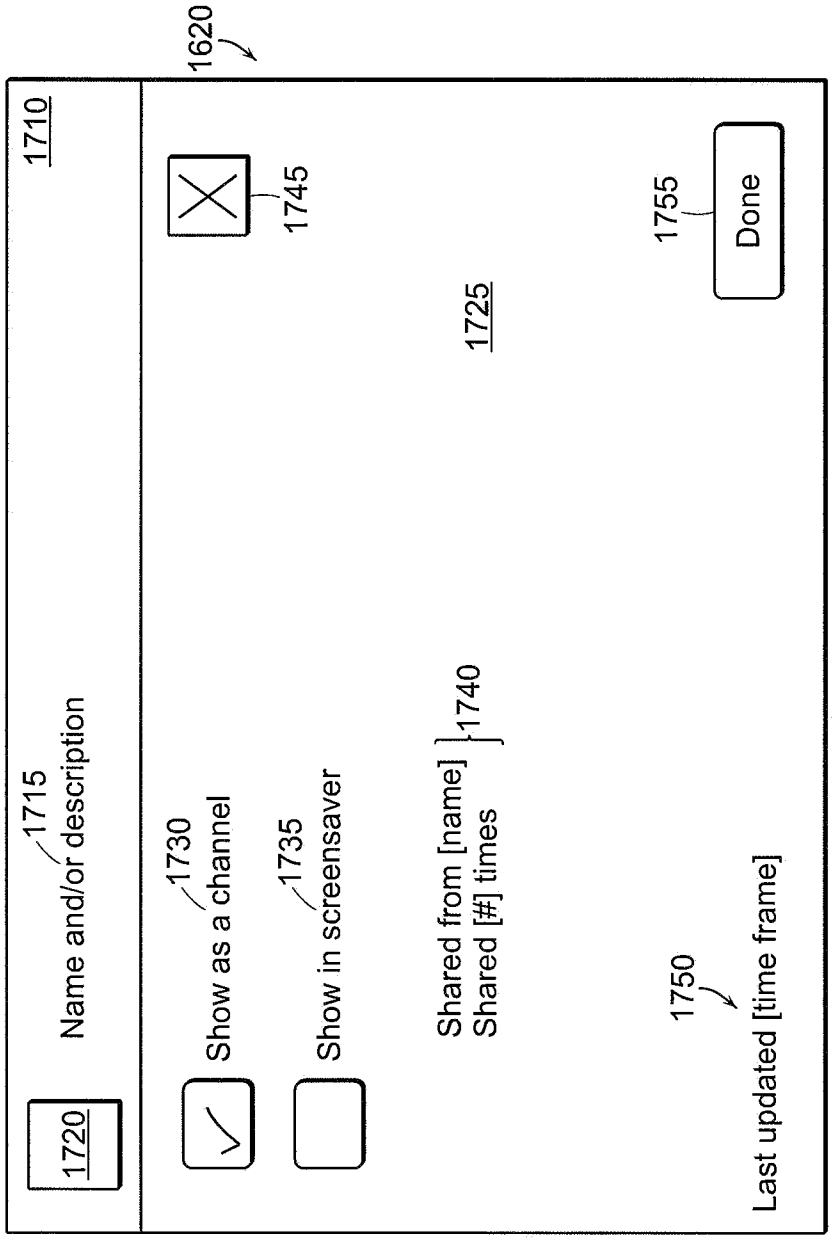

1620
1710
1715
Name and/or description
1720
1730
Show as a channel
1735
Show in screensaver
1740
Shared from [name]
Shared [#] times
1725
1745
1755
Done
1750
Last updated [time frame]

FIG. 17A

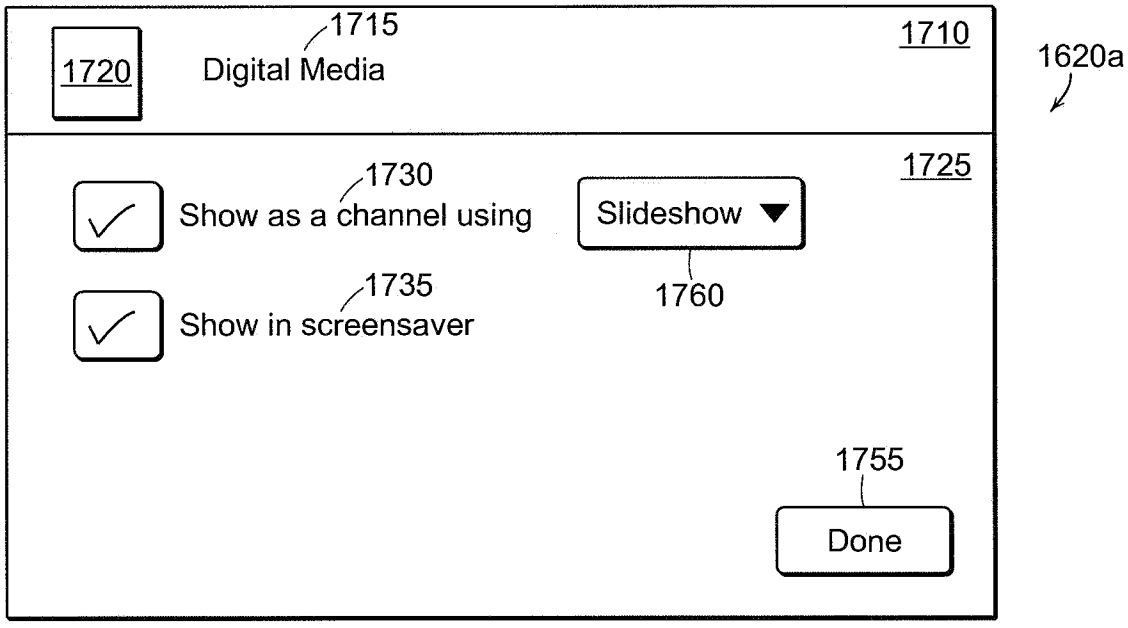

1715
1720
Digital Media
1710
1620a
1725
1730
Show as a channel using
Slideshow
1760
1735
Show in screensaver
1755
Done

FIG. 17B

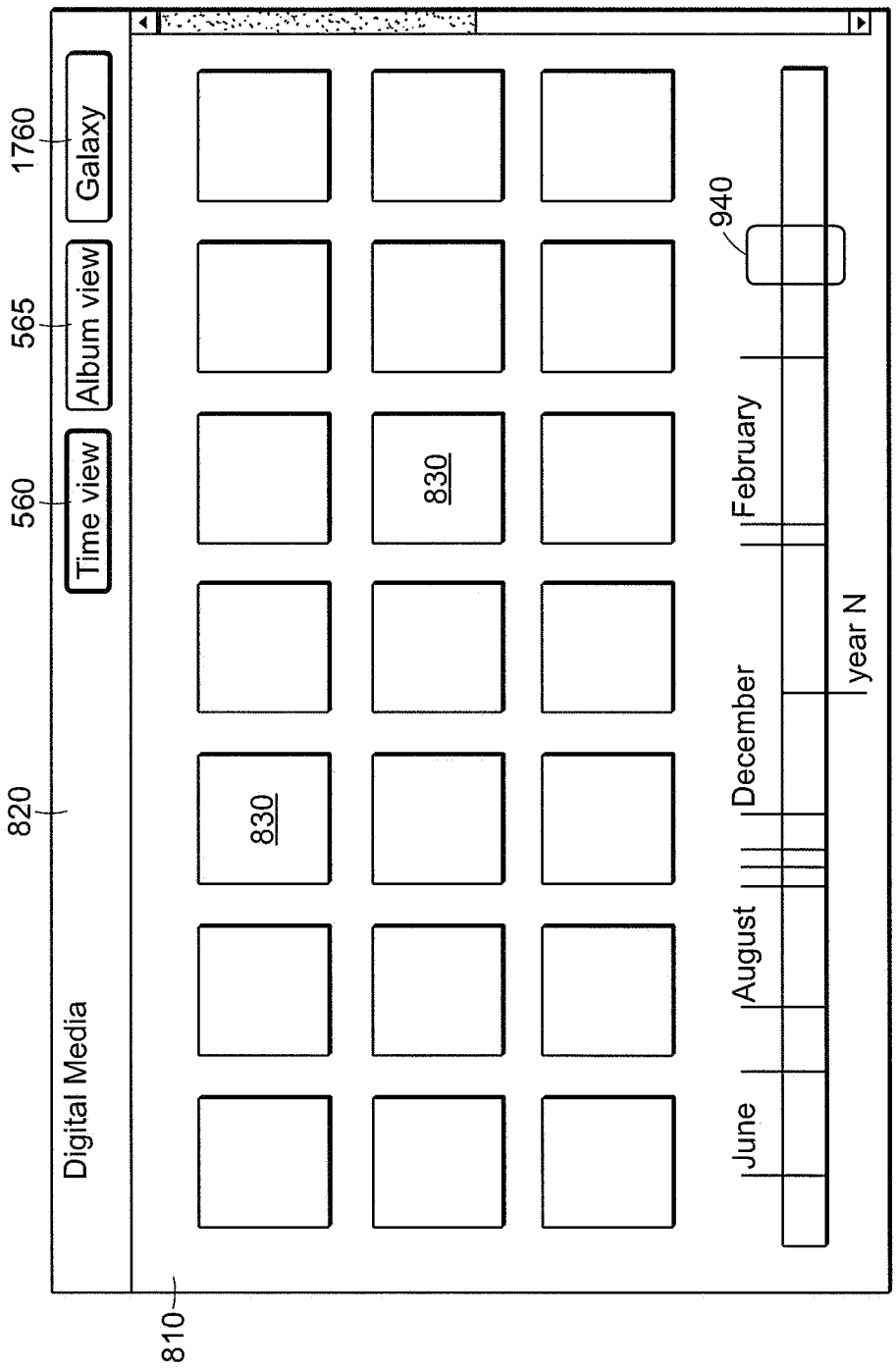

Digital Media
Time view
Album view
Galaxy
830
830
June
August
December
February
year N
940
820
560
565
1760
810

FIG. 18A

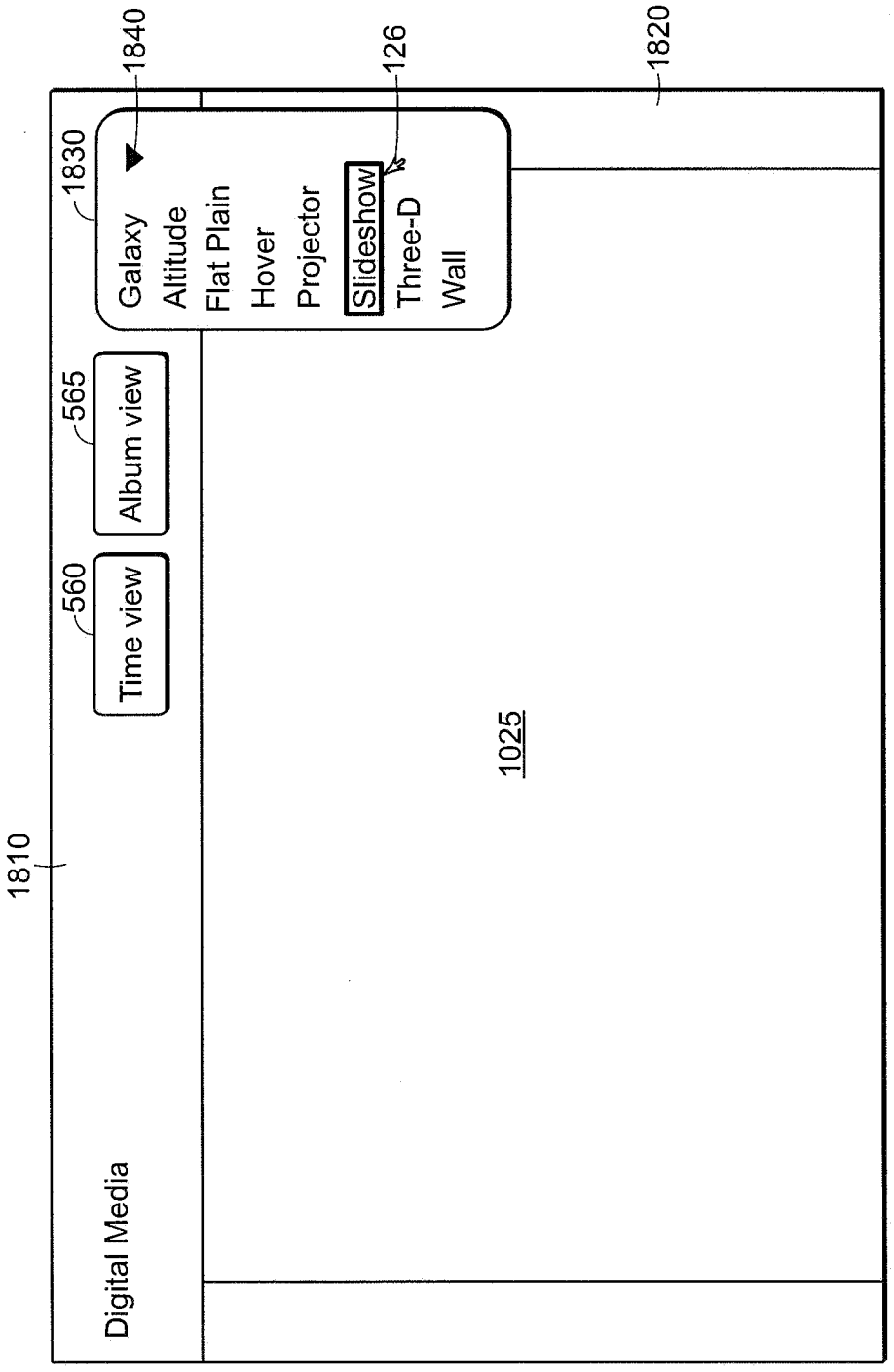

1840
126
1820
1830
Galaxy
Altitude
Flat Plain
Hover
Projector
Slideshow
Three-D
Wall
565
Album view
560
Time view
1810
Digital Media
1025

FIG. 18B

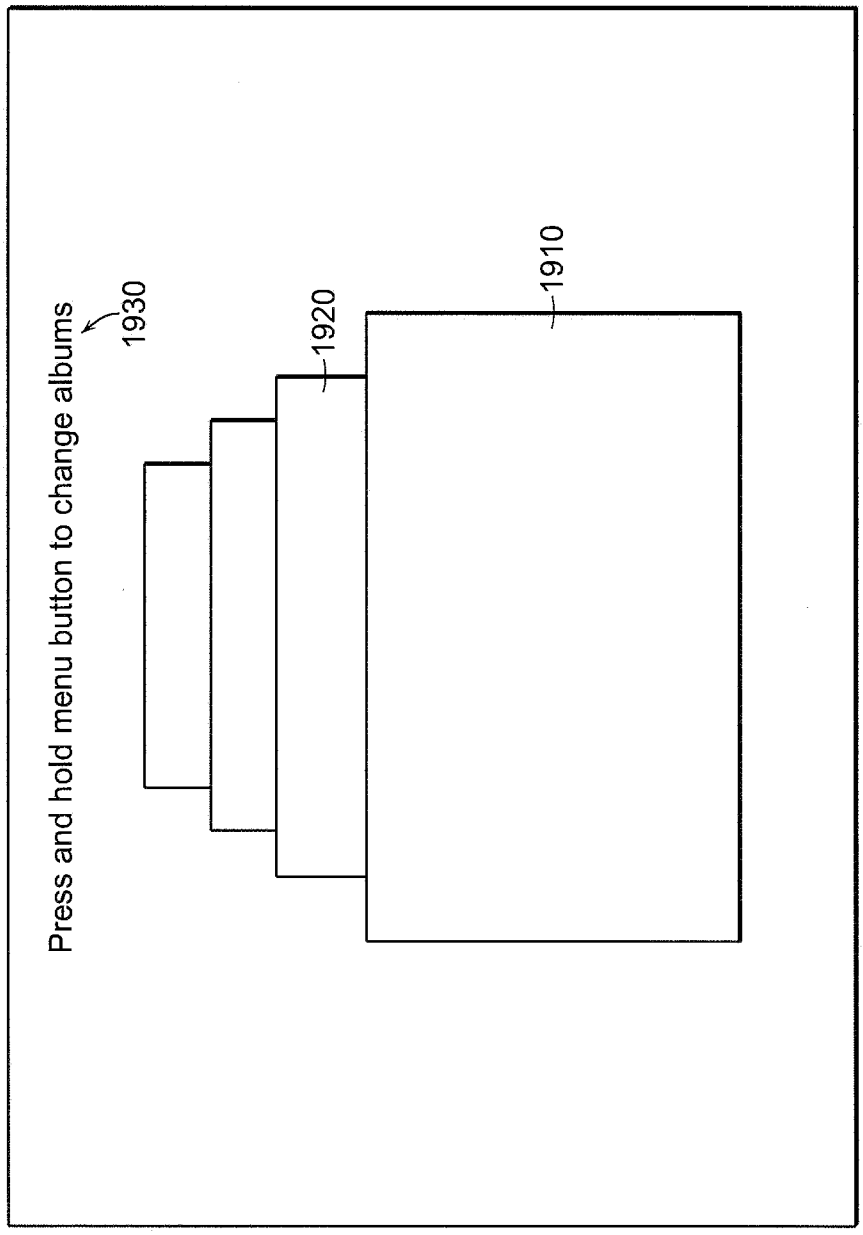


FIG. 19

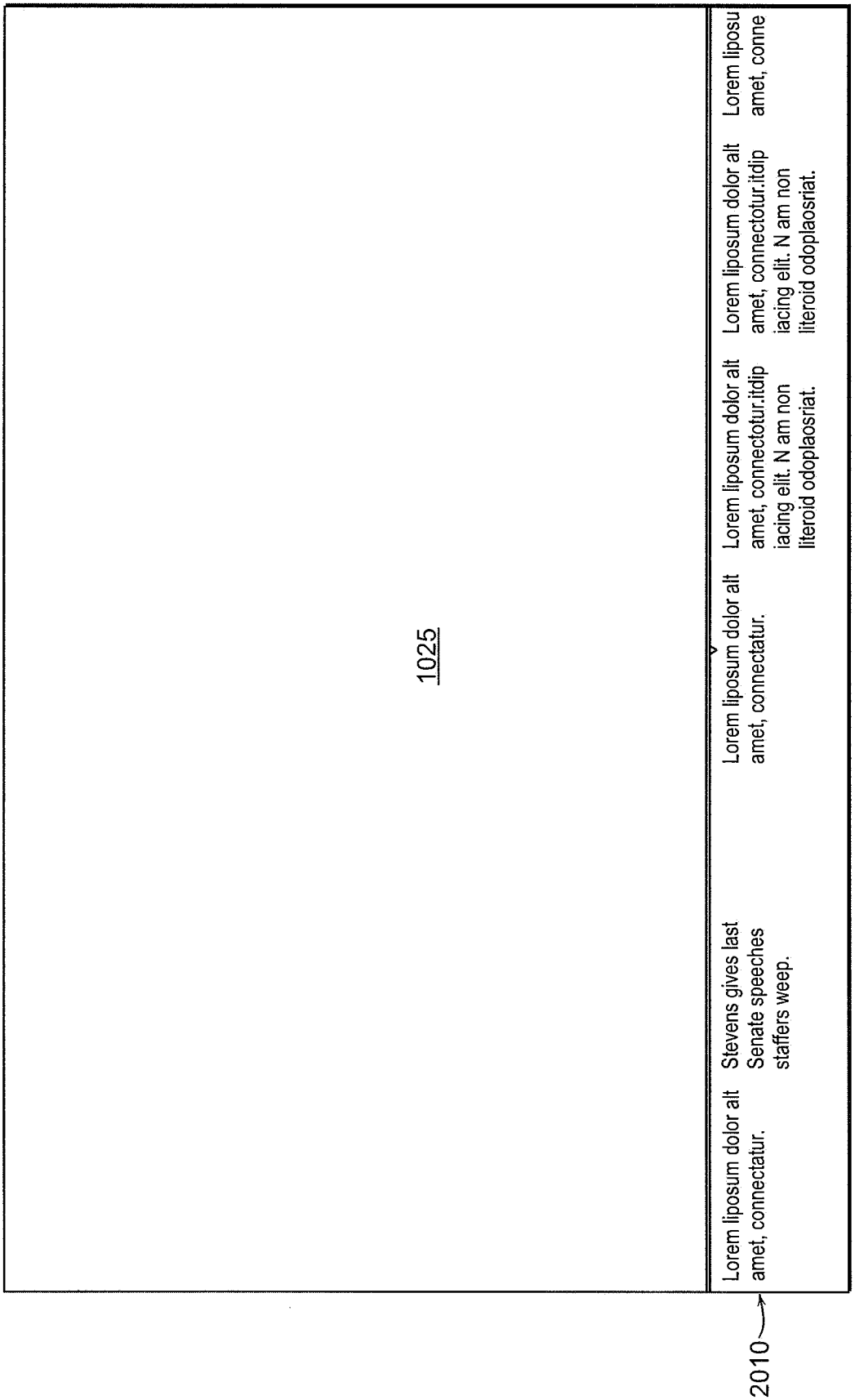

1025
Lorem liposum dolor alt amet, connectatur.
Stevens gives last Senate speeches staffers weep.
Lorem liposum dolor alt amet, connectatur.
Lorem liposum dolor alt amet, connectotur.itdip iacing elit. N am non literoid odoplaosriat.
Lorem liposum dolor alt amet, connectotur.itdip iacing elit. N am non literoid odoplaosriat.
Lorem liposu amet, conne
2010

FIG. 20A

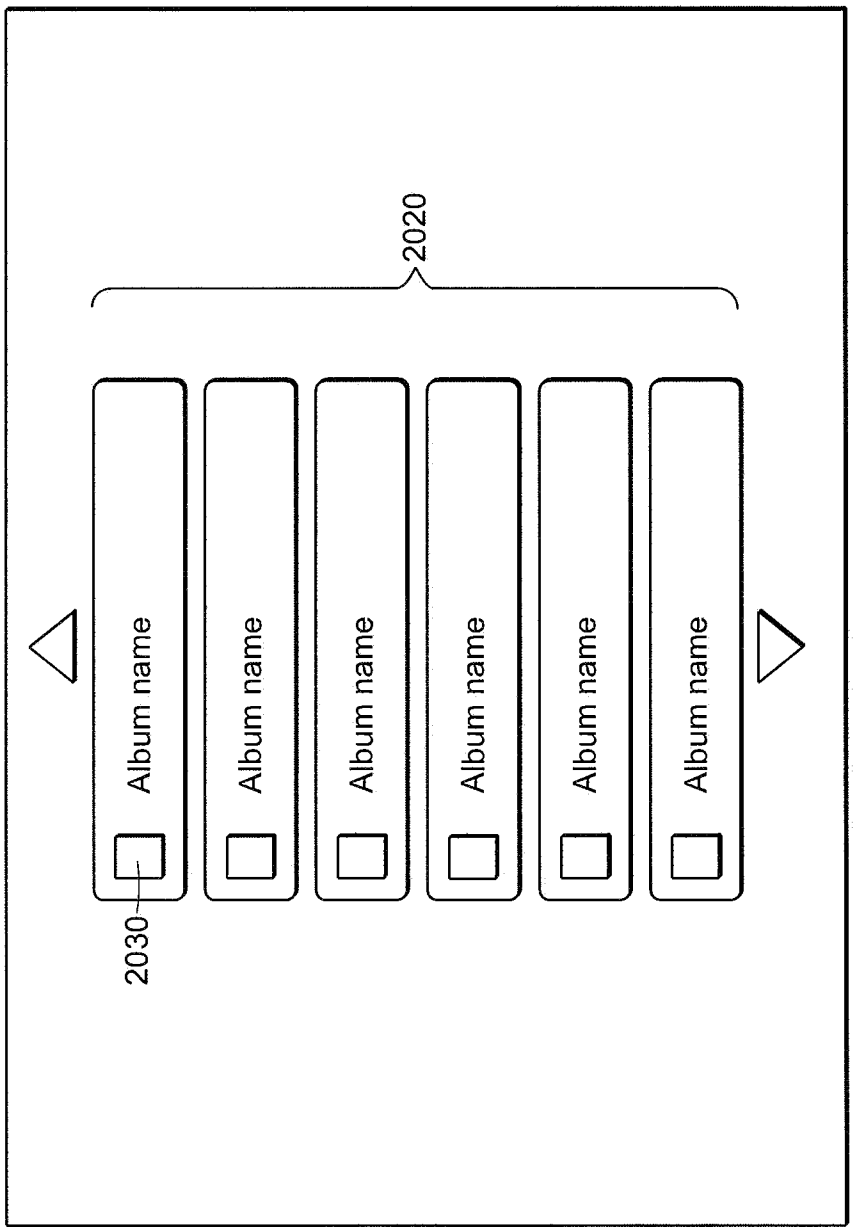

2020
Album name
Album name
Album name
Album name
Album name
Album name
2030

FIG. 20B

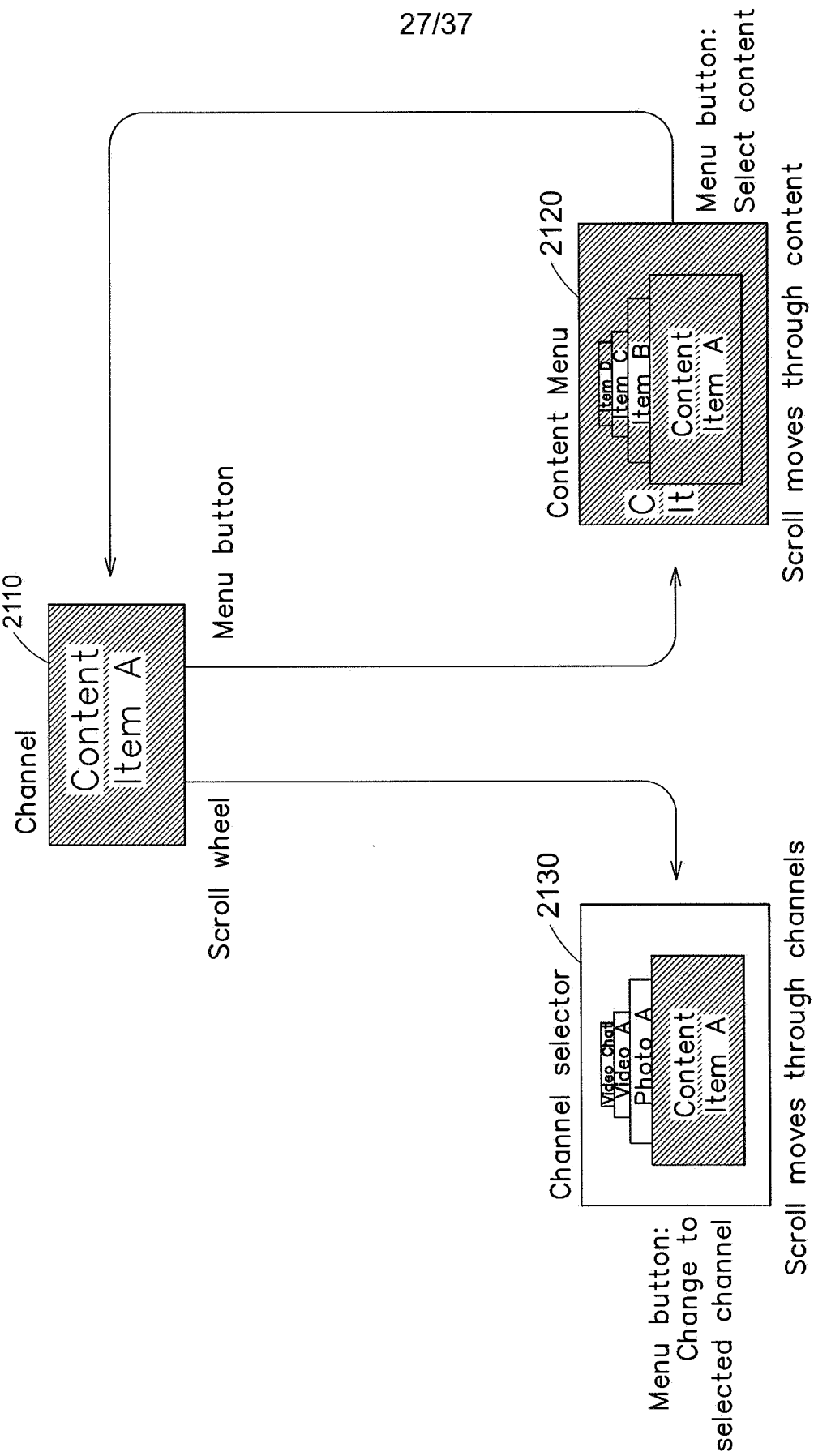

Channel
2110
Content Item A
Menu button
Scroll wheel
Content Menu
2120
Item D
Item C
Item B
Content Item A
Menu button: Select content
Scroll moves through content
Channel selector
2130
Video Chat
Video A
Photo A
Content Item A
Menu button: Change to selected channel
Scroll moves through channels

FIG. 21A

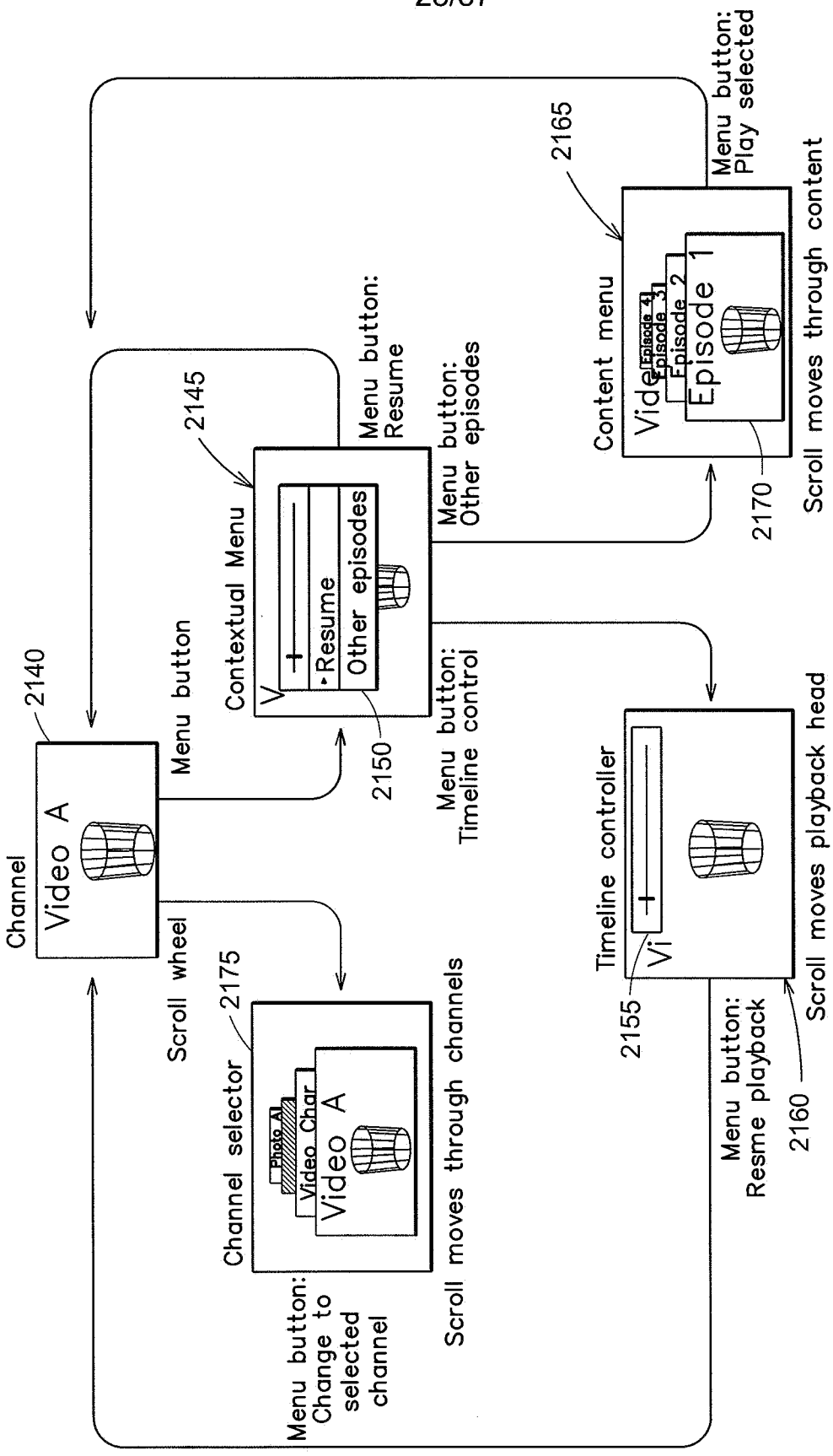

Channel
Video A
2140
Menu button
Contextual Menu
Resume
Other episodes
2145
2150
Menu button:
Resume
Menu button:
Other episodes
Menu button:
Timeline control
Content menu
Episode 1
2165
2170
Menu button:
Play selected
Scroll moves through content
Scroll wheel
Channel selector
Photo A
Video Char
Video A
2175
Menu button:
Change to
selected
channel
Scroll moves through channels
Timeline controller
2155
Menu button:
Resme playback
2160
Scroll moves playback head

FIG. 21B

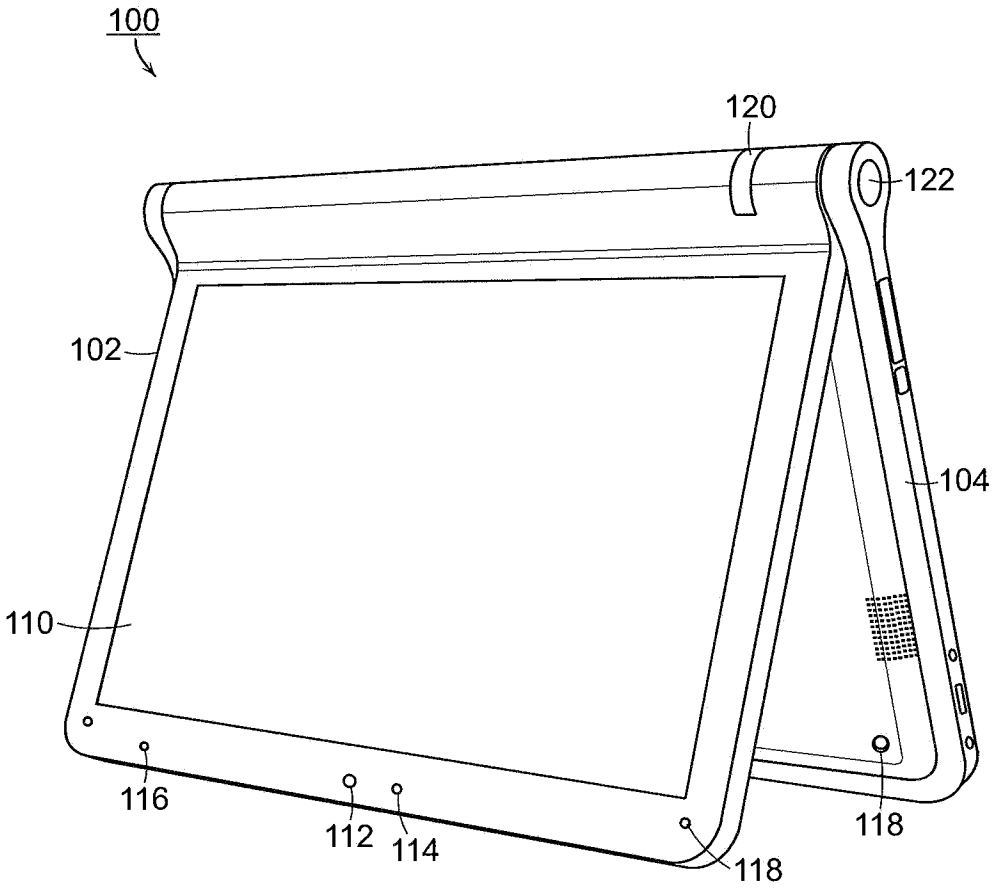


FIG. 22

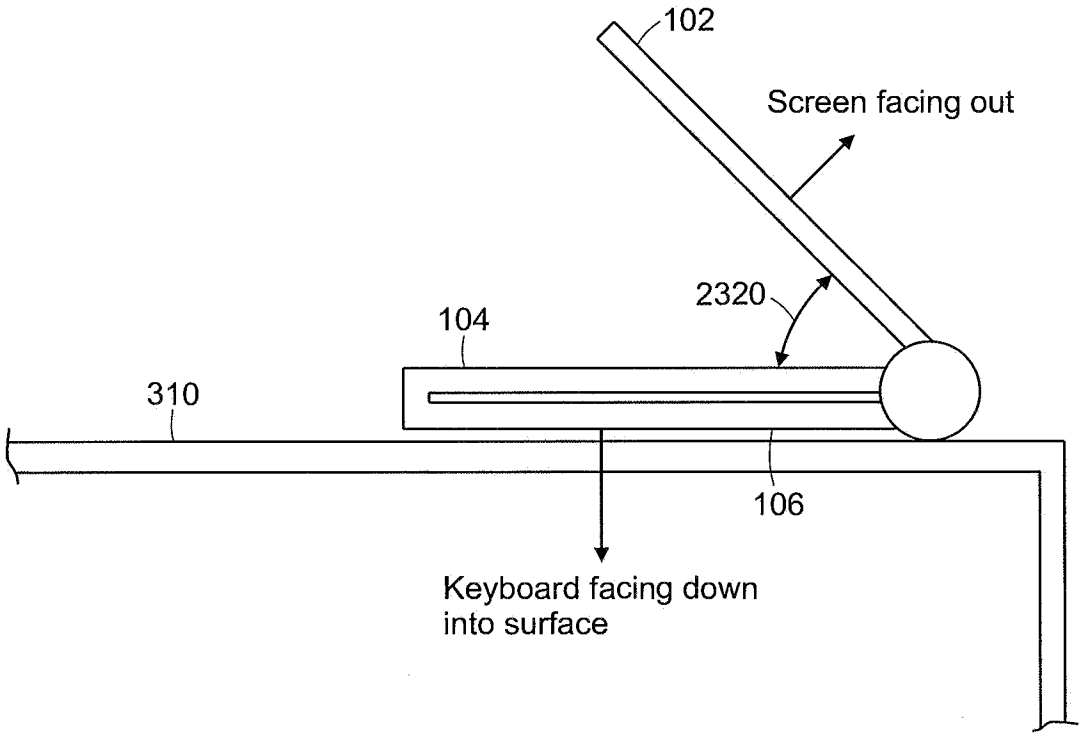

102
Screen facing out
2320
104
310
106
Keyboard facing down
into surface

FIG. 23

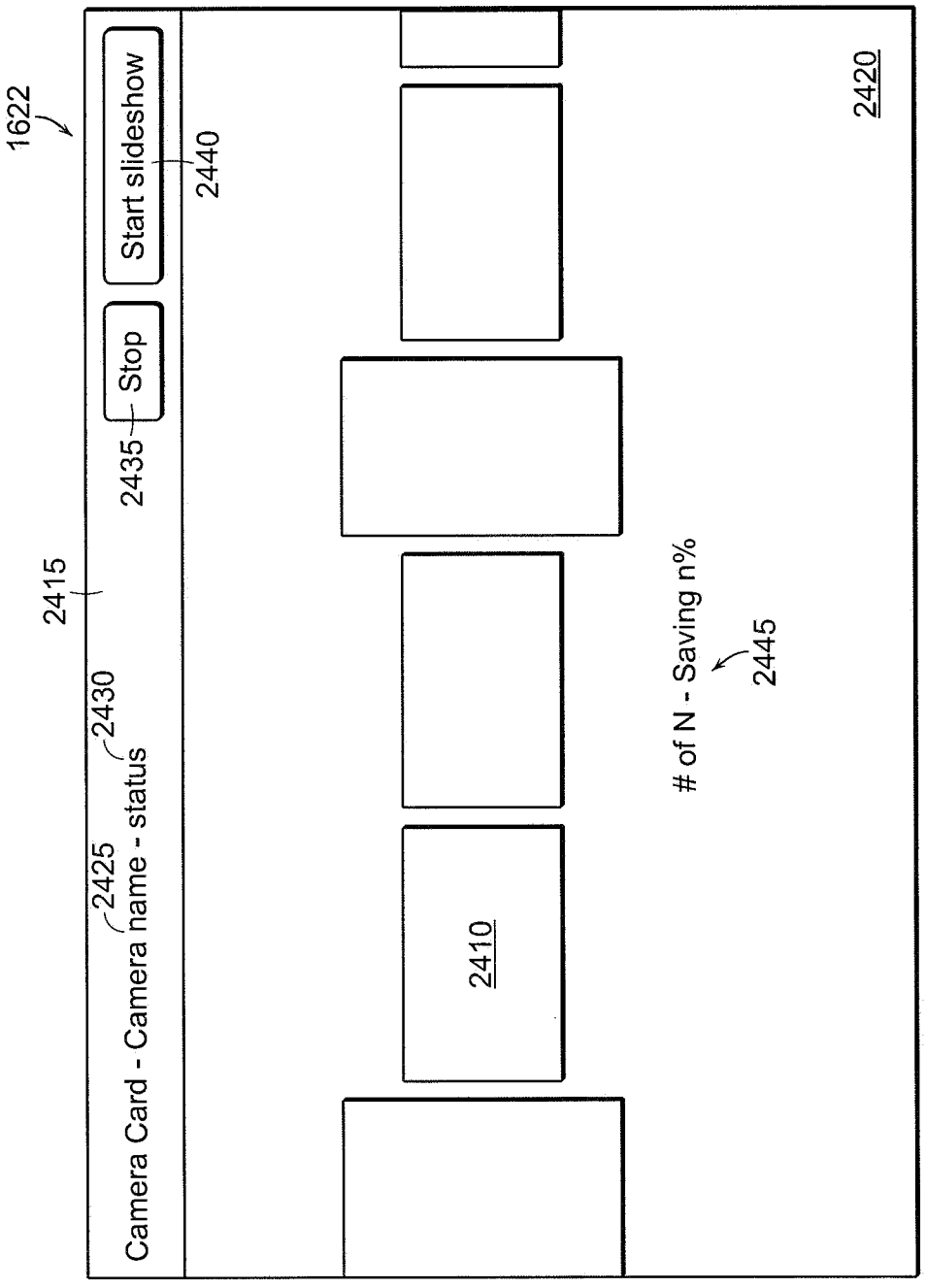

1622
Start slideshow
2440
Stop
2435
2415
2430
2425
Camera Card - Camera name - status
2410
of N - Saving n%
2445
2420

FIG. 24

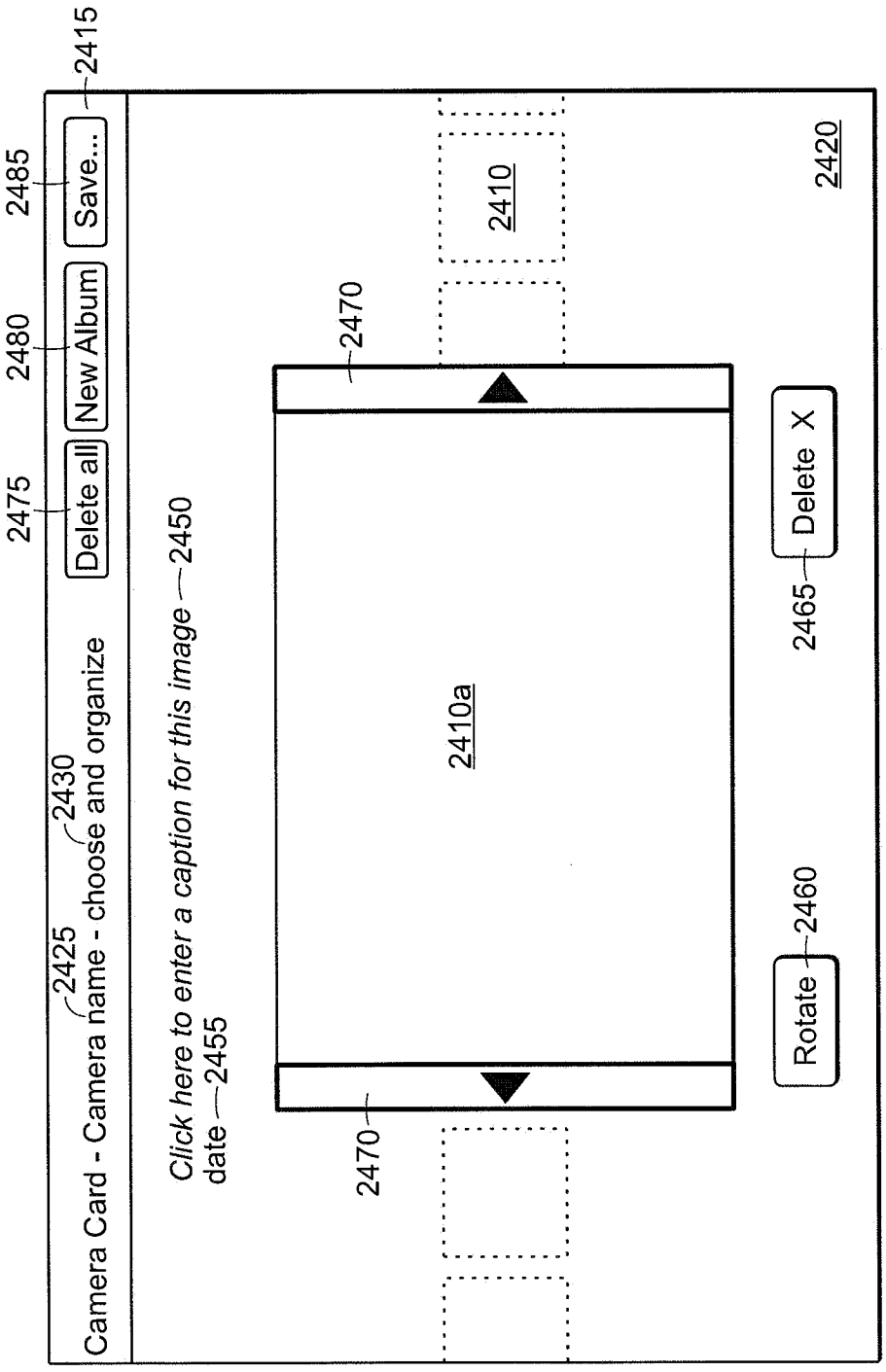

2415
2485
Save...
2480
New Album
2475
Delete all
2425
2430
Camera Card - Camera name - choose and organize
Click here to enter a caption for this image
2450
date
2455
2470
2410
2420
2470
2410a
Delete X
2465
Rotate
2460

FIG. 25

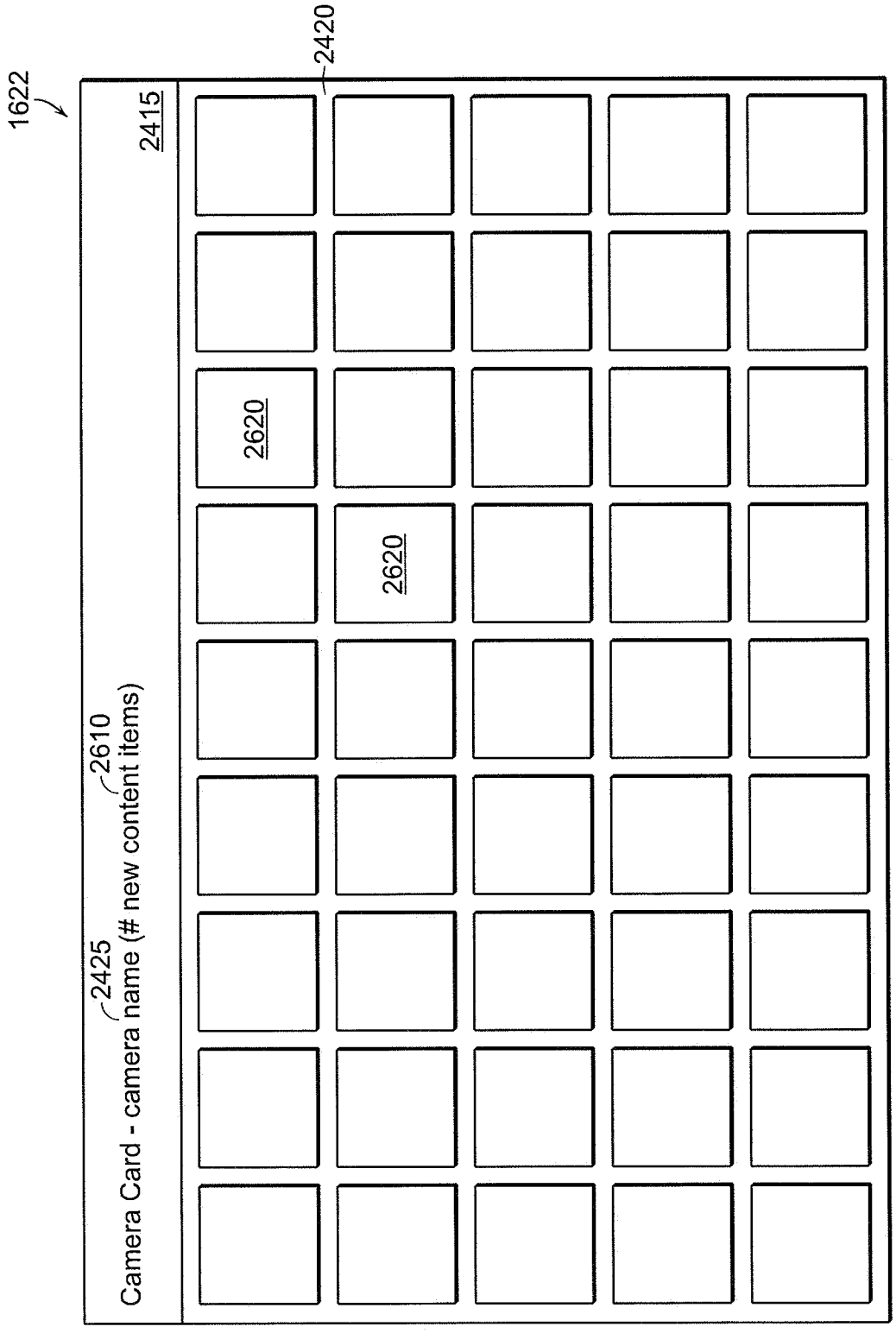

1622
2420
2415
2620
2620
2610
2425
Camera Card - camera name (# new content items)

FIG. 26

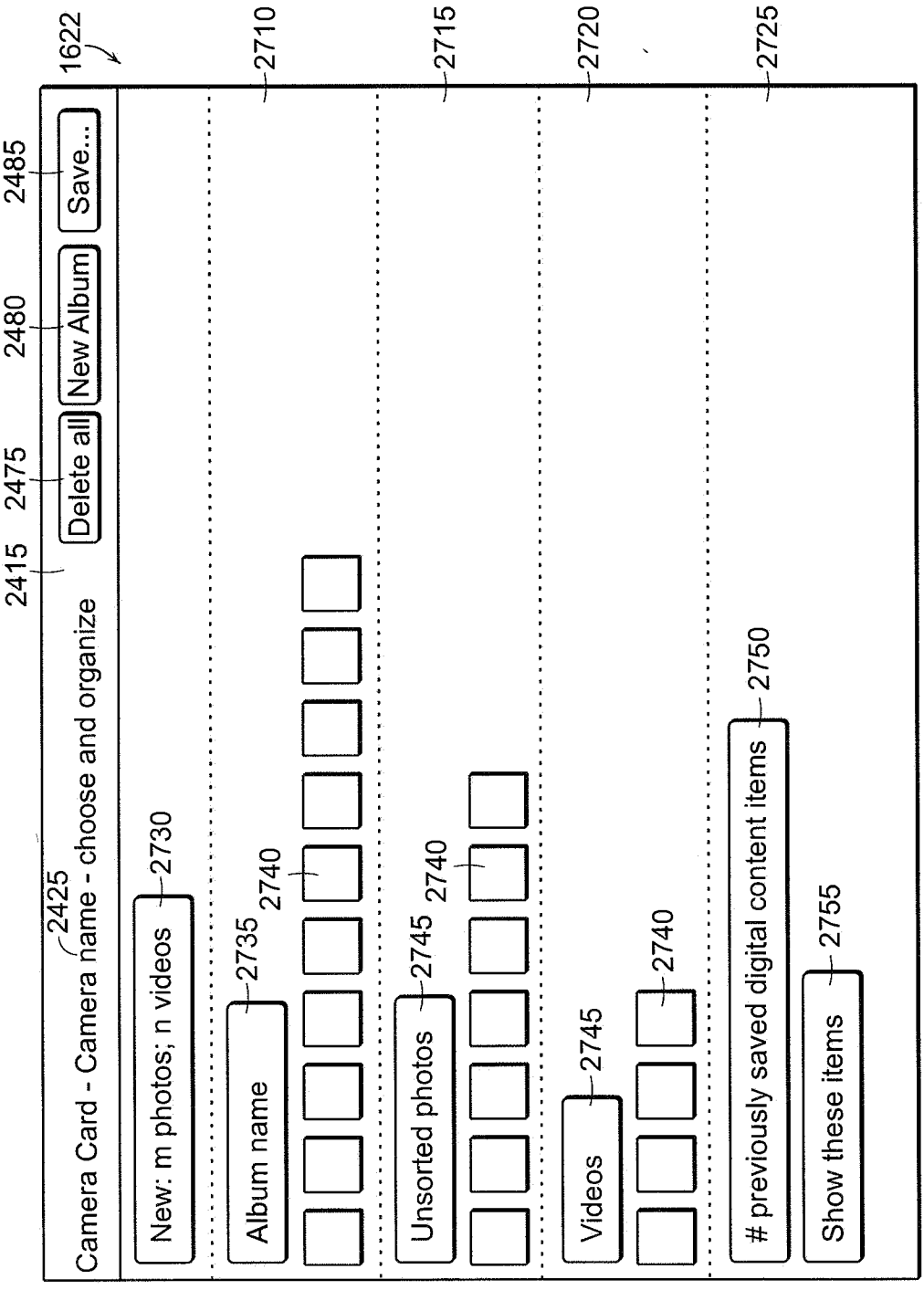

1622
2710
2715
2720
2725
2485
2480
2475
2415
2425
Camera Card - Camera name - choose and organize
Delete all
New Album
Save...
New: m photos; n videos
2730
Album name
2735
2740
Unsorted photos
2745
2740
Videos
2745
2740
previously saved digital content items
2750
Show these items
2755

FIG. 27

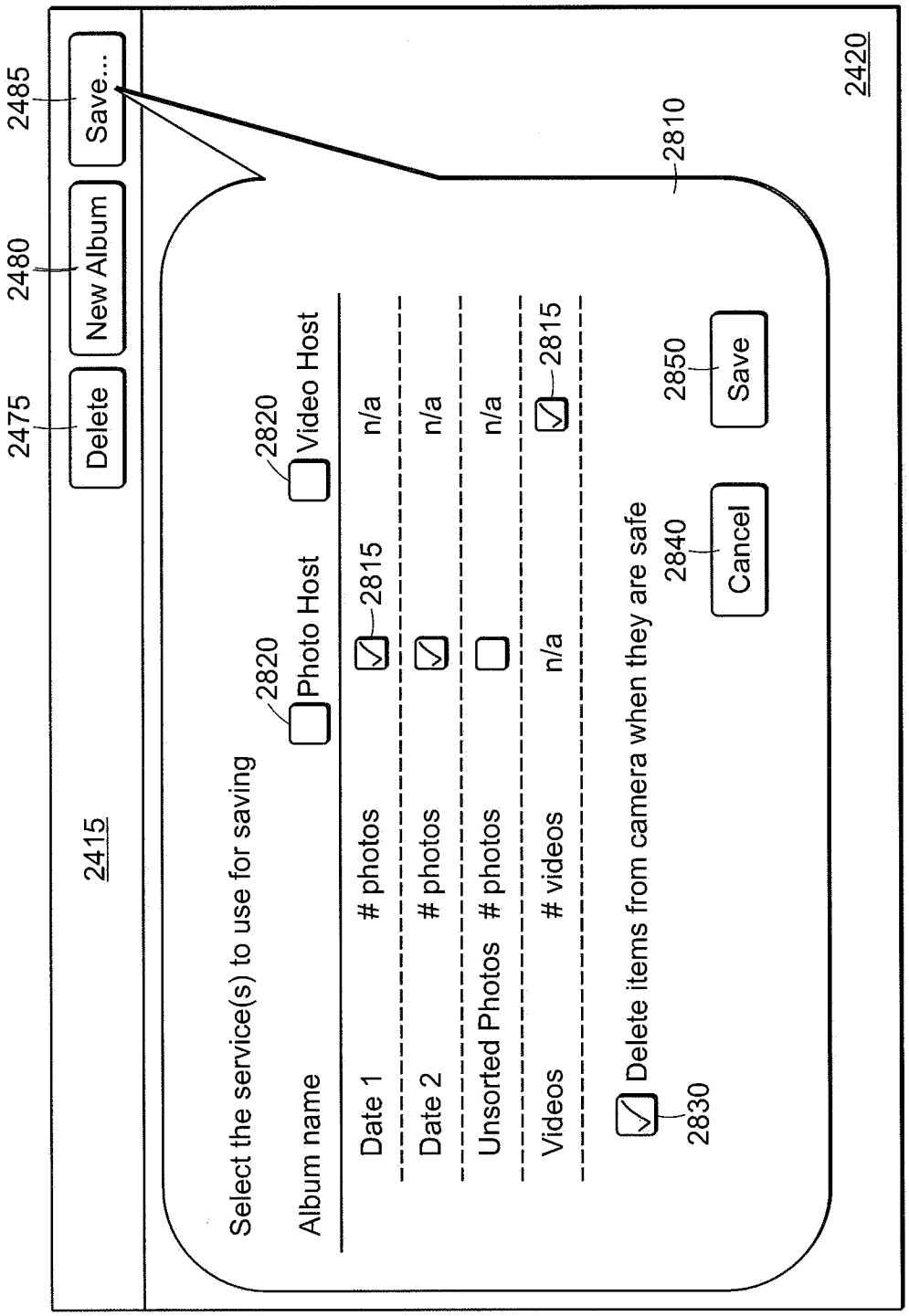

2485
2480
2475
Save...
New Album
Delete
2415
2420
2810
Select the service(s) to use for saving
Album name
2820
Photo Host
2820
Video Host
Date 1
photos
2815
n/a
Date 2
photos
n/a
Unsorted Photos
photos
n/a
Videos
videos
n/a
2815
Delete items from camera when they are safe
2830
2840
Cancel
2850
Save

FIG. 28

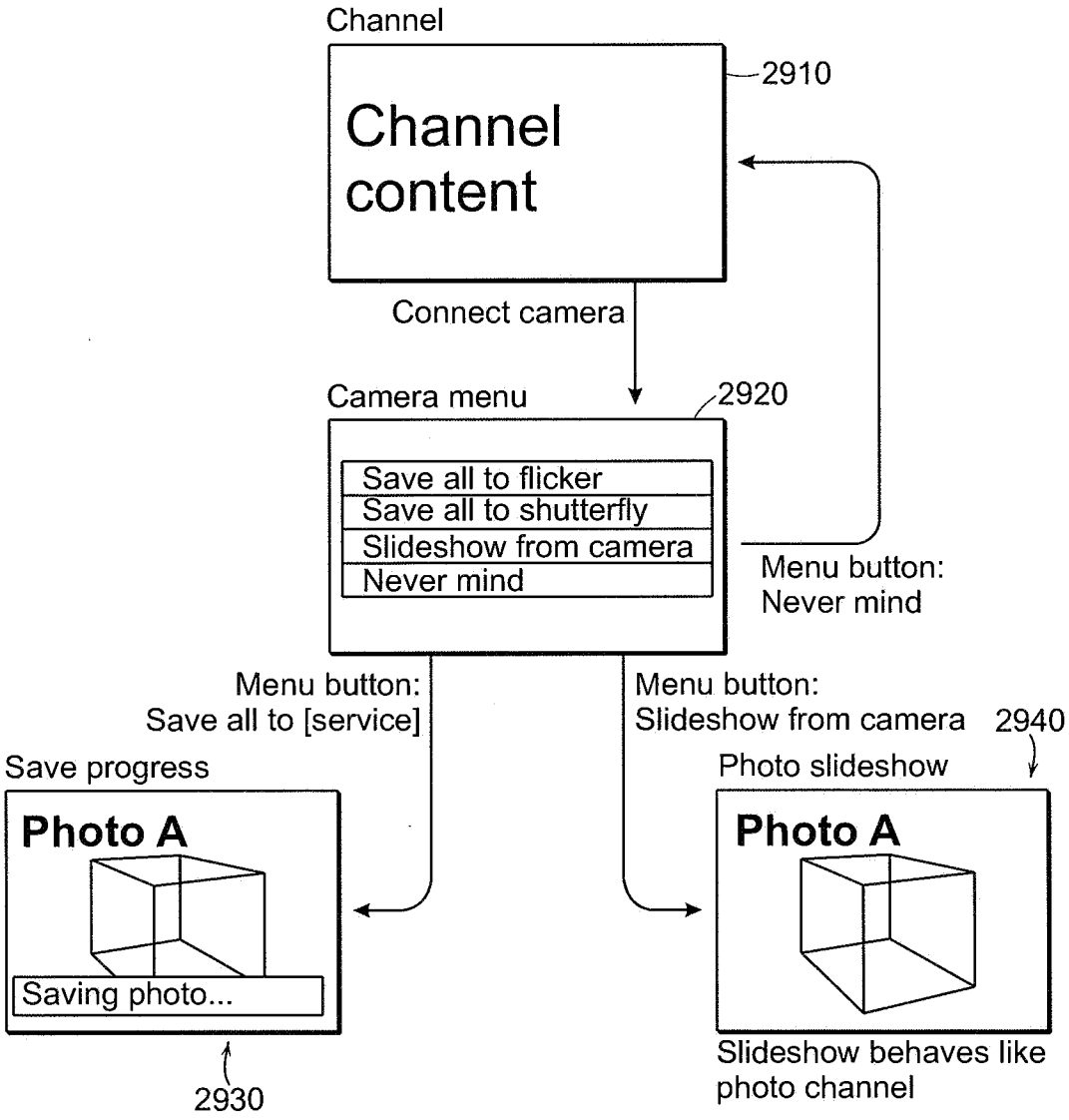

Channel
Channel content
2910
Connect camera
Camera menu
2920
Save all to flicker
Save all to shutterfly
Slideshow from camera
Never mind
Menu button:
Never mind
Menu button:
Save all to [service]
Menu button:
Slideshow from camera
2940
Save progress
Photo A
Saving photo...
2930
Photo slideshow
Photo A
Slideshow behaves like photo channel

FIG. 29

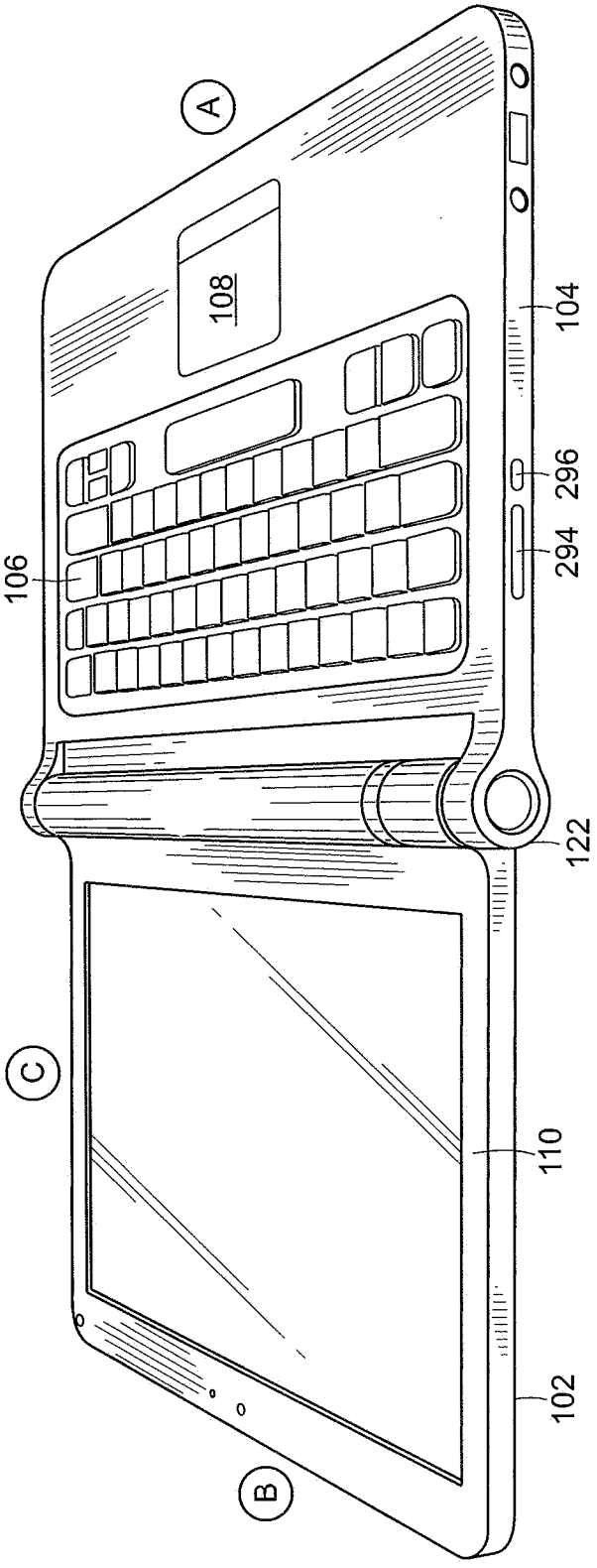


FIG. 30

PTO/SB/14 (07-07)
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	A2029-700719
	Application Number	12/611,282
Title of Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
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Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Applicant Information:

Applicant 1

Applicant Authority ◉ Inventor ○ Legal Representative under 35 U.S.C. 117 ○ Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Robert	Sanford Havoc	Pennington	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Asheville	State/Province	NC	Country of Residence	US

Citizenship under 37 CFR 1.41(b) US

Mailing Address of Applicant:

Address 1	1304 Asheville Springs Cir		
Address 2			
City	Asheville	State/Province	NC
Postal Code	28806	Country	US

Applicant 2

Applicant Authority ◉ Inventor ○ Legal Representative under 35 U.S.C. 117 ○ Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Noah	Bruce	Guyot	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Mill Valley	State/Province	CA	Country of Residence	US

Citizenship under 37 CFR 1.41(b) US

Mailing Address of Applicant:

Address 1	4 Longfellow Road		
Address 2			
City	Mill Valley	State/Province	CA
Postal Code	94941	Country	US

Applicant 3

Applicant Authority ◉ Inventor ○ Legal Representative under 35 U.S.C. 117 ○ Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Daniel		Kuo	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	San Francisco	State/Province	CA	Country of Residence	US

PTO/SB/14 (07-07)
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	A2029-700719
	Application Number	12/611,282
Title of Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT	

Citizenship under 37 CFR 1.41(b)	US			
Mailing Address of Applicant:				
Address 1	1916 Page Street, Apt. 1			
Address 2				
City	San Francisco	**State/Province**	CA	
Postal Code	94117	**Country**	US	

Applicant 4

Applicant Authority	(•) Inventor	( ) Legal Representative under 35 U.S.C. 117	( ) Party of Interest under 35 U.S.C. 118	
Prefix	**Given Name**	**Middle Name**	**Family Name**	**Suffix**
	Jenea	Boshart	Hayes	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Castro Valley	**State/Province**	CA	**Country of Residence**	US
Citizenship under 37 CFR 1.41(b)	US				

Mailing Address of Applicant:

Address 1	18379 Plymouth Drive		
Address 2			
City	Castro Valley	**State/Province**	CA
Postal Code	94546	**Country**	US

Applicant 5

Applicant Authority	(•) Inventor	( ) Legal Representative under 35 U.S.C. 117	( ) Party of Interest under 35 U.S.C. 118	
Prefix	**Given Name**	**Middle Name**	**Family Name**	**Suffix**
	Aaron		Tang	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Somerville	**State/Province**	MA	**Country of Residence**	US
Citizenship under 37 CFR 1.41(b)	US				

Mailing Address of Applicant:

Address 1	28 Dickinson Street, Apt. B		
Address 2			
City	Somerville	**State/Province**	MA
Postal Code	02143	**Country**	US

Applicant 6

Applicant Authority	(•) Inventor	( ) Legal Representative under 35 U.S.C. 117	( ) Party of Interest under 35 U.S.C. 118	
Prefix	**Given Name**	**Middle Name**	**Family Name**	**Suffix**
	David	Livingstone	Fore	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Oakland	**State/Province**	CA	**Country of Residence**	US
Citizenship under 37 CFR 1.41(b)	US				

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	A2029-700719
	Application Number	12/611,282
Title of Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT	

Mailing Address of Applicant:			
Address 1	1 Lakeside Drive, #602		
Address 2			
City	Oakland	State/Province	CA
Postal Code	96412	Country	

Applicant 7

Applicant Authority (●) Inventor ( ) Legal Representative under 35 U.S.C. 117 ( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	John		Chuang	

Residence Information (Select One) (●) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Brookline	State/Province	MA	Country of Residence	US
Citizenship under 37 CFR 1.41(b)	US				

Mailing Address of Applicant:			
Address 1	185 Buckminster Road		
Address 2			
City	Brookline	State/Province	MA
Postal Code	02445	Country	US

Applicant 8

Applicant Authority (●) Inventor ( ) Legal Representative under 35 U.S.C. 117 ( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Chris		Bambacus	

Residence Information (Select One) (●) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Framingham	State/Province	MA	Country of Residence	US
Citizenship under 37 CFR 1.41(b)	US				

Mailing Address of Applicant:			
Address 1	19 Burdette Ave		
Address 2			
City	Framingham	State/Province	MA
Postal Code	01702	Country	US

Applicant 9

Applicant Authority (●) Inventor ( ) Legal Representative under 35 U.S.C. 117 ( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Eben		Eliason	

Residence Information (Select One) (●) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Providence	State/Province	RI	Country of Residence	US
Citizenship under 37 CFR 1.41(b)	US				

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	A2029-700719
	Application Number	12/611,282
Title of Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT	

Mailing Address of Applicant:			
Address 1	392 S. Main Street, Apt. 67		
Address 2			
City	Providence	State/Province	RI
Postal Code	02903	Country	US

Applicant 10

Applicant Authority	(•) Inventor	( ) Legal Representative under 35 U.S.C. 117	( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Chris		Moody	

Residence Information (Select One)	(•) US Residency	( ) Non US Residency	( ) Active US Military Service

City	Boulder	State/Province	CO	Country of Residence	US
Citizenship under 37 CFR 1.41(b)	US				

Mailing Address of Applicant:			
Address 1	429 Marine Street		
Address 2			
City	Boulder	State/Province	CO
Postal Code	80302	Country	US

Applicant 11

Applicant Authority	(•) Inventor	( ) Legal Representative under 35 U.S.C. 117	( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Yves		Behar	

Residence Information (Select One)	(•) US Residency	( ) Non US Residency	( ) Active US Military Service

City	Oakland	State/Province	CA	Country of Residence	US
Citizenship under 37 CFR 1.41(b)	US				

Mailing Address of Applicant:			
Address 1	5741 Scarborough Drive		
Address 2			
City	Oakland	State/Province	CA
Postal Code	94611	Country	US

Applicant 12

Applicant Authority	(•) Inventor	( ) Legal Representative under 35 U.S.C. 117	( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Joshua		Morenstein	

Residence Information (Select One)	(•) US Residency	( ) Non US Residency	( ) Active US Military Service

City	San Francisco	State/Province	CA	Country of Residence	US
Citizenship under 37 CFR 1.41(b)	US				

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	A2029-700719
	Application Number	12/611,282
Title of Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT	

Mailing Address of Applicant:

Address 1	124 Downey Street		
Address 2			
City	San Francisco	State/Province	CA
Postal Code	94117	Country	US

Applicant 13

Applicant Authority (●) Inventor ( ) Legal Representative under 35 U.S.C. 117 ( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Christopher		Hibmacronan	

Residence Information (Select One) (●) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Oakland	State/Province	CA	Country of Residence	US
Citizenship under 37 CFR 1.41(b)	US				

Mailing Address of Applicant:

Address 1	2429 Damuth Street		
Address 2			
City	Oakland	State/Province	CA
Postal Code	94602	Country	US

Applicant 14

Applicant Authority (●) Inventor ( ) Legal Representative under 35 U.S.C. 117 ( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Naoya		Edahiro	

Residence Information (Select One) (●) US Residency ( ) Non US Residency ( ) Active US Military Service

City	San Francisco	State/Province	CA	Country of Residence	US
Citizenship under 37 CFR 1.41(b)	JP				

Mailing Address of Applicant:

Address 1	375 Bartlett Street		
Address 2			
City	San Francisco	State/Province	CA
Postal Code	94110	Country	US

Applicant 15

Applicant Authority (●) Inventor ( ) Legal Representative under 35 U.S.C. 117 ( ) Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Matthew	David	Day	

Residence Information (Select One) (●) US Residency ( ) Non US Residency ( ) Active US Military Service

City	San Francisco	State/Province	CA	Country of Residence	US
Citizenship under 37 CFR 1.41(b)	US				

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	A2029-700719
	Application Number	12/611,282
Title of Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT	

Mailing Address of Applicant:			
Address 1	425 2nd Street, #301		
Address 2			
City	San Francisco	State/Province	CA
Postal Code	94107	Country	US

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	37462		
Email Address		Add Email	Remove Email

Application Information:

Title of the Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT		
Attorney Docket Number	A2029-700719	Small Entity Status Claimed	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Suggested Class (if any)		Sub Class (if any)	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)	37	Suggested Figure for Publication (if any)	7B

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S. C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Enter either Customer Number or complete the Representative Name section below. If both sections are completed the Customer Number will be used for the Representative Information during processing.

Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	37462		

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	A2029-700719
	Application Number	12/611,282
Title of Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT	

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78(a)(2) or CFR 1.78(a)(4), and need not otherwise be made part of the specification.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Continuation in part of	12170951	2008-07-10
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
12170951	non provisional of	61041365	2008-04-01
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Continuation in part of	12170939	2008-07-10
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
12170939	non provisional of	61041365	2008-04-01
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Continuation in part of	12416479	2009-04-01
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
12416479	non provisional of	61041365	2008-04-01
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
12416479	Continuation in part of	12170951	2008-07-10
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
12170951	non provisional of	61041365	2008-04-01
Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
12416479	Continuation in part of	12170939	2008-07-10
Prior Application Status	Expired		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
12170939	non provisional of	61041365	2008-04-01

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	A2029-700719
	Application Number	12/611,282
Title of Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT	

Foreign Priority Information:

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).

Remove

Application Number	Country[i]	Parent Filing Date (YYYY-MM-DD)	Priority Claimed
			(•) Yes ( ) No

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

Assignee Information:

Providing this information in the application data sheet does not substitute for compliance with any requirement of part 3 of Title 37 of the CFR to have an assignment recorded in the Office.

Assignee 1

If the Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information:

Address 1			
Address 2			
City		**State/Province**	
Country[i]		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee Data may be generated within this form by selecting the **Add** button.

Signature:

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 10.18. Please see 37 CFR 1.4(d) for the form of the signature.

Signature	/Matthew H. Grady/			Date (YYYY-MM-DD)	2009-11-03
First Name	Matthew	Last Name	Grady	Registration Number	52957

SUPPLEMENTAL ADS FILED: March 3, 2010

PTO/SB/14 (07-07)
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	A2029-700719
	Application Number	12/611,282
Title of Invention	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT	

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
12/611,282	11/03/2009	2161	1584	A2039-700719	27	3

CONFIRMATION NO. 2160

37462
LANDO & ANASTASI, LLP
ONE MAIN STREET, SUITE 1100
CAMBRIDGE, MA 02142

UPDATED FILING RECEIPT

OC000000040792220

Date Mailed: 04/01/2010

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Applicant(s)

Robert Sanford Havoc Pennington, Asheville, NC;
Matthew David Day, Seoul, KOREA, REPUBLIC OF;
Noah Bruce Guyot, Mill Valley, CA;
Daniel Kuo, San Francisco, CA;
Jenea Boshart Hayes, Castro Valley, CA;
Aaron Tang, Somerville, MA;
David Livingstone Fore, Oakland, CA;
John Chuang, Brookline, MA;
Chris Bambacus, Framingham, MA;
Eben Eliason, Providence, RI;
Chris Moody, Boulder, CO;
Yves Behar, Oakland, CA;
Joshua Morenstein, San Francisco, CA;
Christopher Hibmacronan, Oakland, CA;
Naoya Edahiro, San Francisco, CA;

Power of Attorney: The patent practitioners associated with Customer Number 37462

Domestic Priority data as claimed by applicant

This application is a CIP of 12/170,951 07/10/2008
which claims benefit of 61/041,365 04/01/2008
This application 12/611,282
is a CIP of 12/170,939 07/10/2008
which claims benefit of 61/041,365 04/01/2008
This application 12/611,282
is a CIP of 12/416,479 04/01/2009

which claims benefit of 61/041,365 04/01/2008
and is a CIP of 12/170,951 07/10/2008
which claims benefit of 61/041,365 04/01/2008
and said 12/416,479 04/01/2009
is a CIP of 12/170,939 07/10/2008
which claims benefit of 61/041,365 04/01/2008

Foreign Applications

If Required, Foreign Filing License Granted: 11/16/2009

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/611,282**

Projected Publication Date: 07/08/2010

Non-Publication Request: No

Early Publication Request: No

Title

METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT

Preliminary Class

707

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

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Title 37, Code of Federal Regulations, 5.11 & 5.15

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/611,282	11/03/2009	Robert Sanford Havoc Pennington	L2039-700630

CONFIRMATION NO. 2160

37462
LANDO & ANASTASI, LLP
ONE MAIN STREET, SUITE 1100
CAMBRIDGE, MA 02142

PUBLICATION NOTICE

OC000000042473381

Title:METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT

Publication No.US-2010-0174993-A1
Publication Date:07/08/2010

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PTO/SB/08a (01-10)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	12611282
Filing Date	2009-11-03
First Named Inventor	Robert Sanford Havoc Pennington
Art Unit	2629
Examiner Name	Hjerpe, Richard A.
Attorney Docket Number	L2039-700630

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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	1	EP0588210	EP		1993-03-23	Hitachi		☐
	2	DE19952486	DE		2001-05-03	Schweizer		☐

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	Attorney Docket Number	L2039-700630

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☐ See attached certification statement.

☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ None

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Signature	/Matthew H. Grady/	Date (YYYY-MM-DD)	2010-11-03
Name/Print	Matthew H. Grady	Registration Number	52957

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(19) **KOREAN INTELLECTUAL PROPERTY OFFICE**

KOREAN PATENT ABSTRACTS

(11)Publication number: **1020000036647 A**

(43)Date of publication of application: **05.07.2000**

(21)Application number: **1020000015117**

(22)Date of filing: **24.03.2000**

(30)Priority: **..**

(51)Int. Cl **G06F 17/30**

(71)Applicant: **ITCEN COMMUNICATION CO., LTD.**

(72)Inventor: **YOO, U YEONG**

(54) **SEARCH METHOD USING IMAGE INFORMATION**

(57) Abstract:



PURPOSE: A search method using image information is provided for a convenient search technique by enabling users to instinctively find necessary information among searched results of search engines displayed in image. CONSTITUTION: A search method using image information is consisted of the three steps. A first step is for a user to connect to a site of search engine so as to search information. A second step is for the user to input query. A third step is for the search engine to display relevant image information after finding search results related to the query. A home page or a web page of a web site displayed as a search result, and specific icon, banner, or banner or icon using motion picture can be the image information. The home page is displayed as a small size icon made of itself and so, users can instinctively know whether the home page contains the needed information or not by seeing the icon. The site of a search engine should build an image database about information to be displayed as search result in advance, and shows image information, sometimes with text information, in case that there is a search request.

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Legal Status

(19) 대한민국특허청(KR)
(12) 공개특허공보(A)

(51) Int. Cl.[7]
G06F 17/30

(11) 공개번호 특2000-0036647
(43) 공개일자 2000년07월05일

(21) 출원번호 10-2000-0015117
(22) 출원일자 2000년03월24일

(71) 출원인 주식회사 메지정보기술 유우영
서울특별시 용산구 한강로2가 83-4
(72) 발명자 유우영
서울특별시성북구길음동1070-7
(74) 대리인 고영회, 황용범

심사청구 : 있음

(54) 이미지 정보를 이용한 검색방법

요약

본 발명은 인터넷상에서 검색엔진을 이용하여 원하는 정보를 검색한 경우, 검색결과를 단순한 텍스트가 아닌 이미지 정보를 디스플레이 함으로써 시각적 효과에 의해 보다 효율적인 검색이 가능한 이미지 검색 시스템에 관한 것이다.

본 발명의 이미지 정보를 이용한 검색방법은 인터넷상에서 정보를 검색하고자 하는 사용자가 검색엔진 사이트에 접속하고, 상기 사용자가 검색하고자 하는 검색어를 입력하고, 검색엔진 서버에서 상기 검색어에 해당하는 검색결과를 찾아 해당 이미지 정보를 출력하고, 출력된 이미지 정보 중의 어느 하나를 클릭하여 해당 웹페이지로 접속하는 단계로 구성된다. 상기 이미지 정보는 해당 웹사이트의 홈페이지나 특정의 웹페이지가 될 수도 있고, 특정한 아이콘이나 배너 또는 동영상을 이용한 배너나 아이콘이 될 수도 있다.

본 발명의 이미지 정보를 이용한 검색방법을 이용할 경우, 단순한 텍스트가 아닌 이미지 정보를 출력함으로써 시각적 효과에 의해 검색결과를 보다 신속하고 직관적으로 파악할 수 있어 검색이 용이한 장점이 있다.

대표도

도1

명세서

도면의 간단한 설명

도1은 본 발명의 이미지 정보를 이용한 검색방법에 의해 출력된 검색결과의 일 예이다.

발명의 상세한 설명

발명의 목적

발명이 속하는 기술 및 그 분야의 종래기술

본 발명은 이미지 검색 시스템이다. 보다 구체적으로, 인터넷상에서 검색엔진을 이용하여 원하는 정보를 검색한 경우, 검색결과를 단순한 텍스트가 아닌 이미지 정보를 디스플레이 함으로써 시각적 효과에 의해 보다 효율적인 검색이 가능한 이미지 검색 시스템에 관한 것이다.

인터넷상에서 원하는 정보를 찾기 위해 통상적으로 검색엔진을 이용한다. 사용자가 특정의 검색엔진 사이트에 접속한 후 찾고자 하는 정보와 관련된 키워드를 입력하면 검색엔진에서 키워드와 관련된 정보를 찾아서 화면상에 출력하게 된다. 그러나, 종래의 검색엔진은 검색결과를 단순히 텍스트로만 출력하고 있으며, 출력결과도 상기 검색엔진에 등록된 문장이나, 웹페이지의 타이틀과 같은 정보만을 출력할 뿐이다.

그러나, 최근에는 인터넷의 이용자가 폭발적으로 증가하고 인터넷상의 정보 또한 폭발적으로 증가하면서 검색엔진을 이용하여 자료를 검색한다는 것도 그다지 용이하지 않게 되었다. 즉, 내가 원하는 정보만을 검색할 수 있어야 하나, 너무 많은 검색결과가 출력됨으로써 정작 내가 원하는 정보를 찾기가 쉽지 않다. 또한, 텍스트로 출력된 검색결과만을 보고서 내가 원하는 정보인지를 알기 어려운 경우가 많으며 일일이 모든 검색결과를 조회해 볼 수밖에 없고 원하는 정보를 찾는데 많은 시간과 노력을 필요로 하게

된다.

발명이 이루고자하는 기술적 과제

본 발명의 목적은 검색엔진의 검색결과를 이미지 정보로 출력함으로써 사용자가 검색결과 중에서 자신이 원하는 정보를 직관적으로 찾을 수 있어 검색이 용이한 검색방법을 제공하는 것이다.

발명의 구성 및 작용

본 발명의 이미지 정보를 이용한 검색방법은 인터넷상에서 정보를 검색하고자 하는 사용자가 검색엔진 사이트에 접속하고, 상기 사용자가 검색하고자 하는 검색어를 입력하고, 검색엔진 서버에서 상기 검색어에 해당하는 검색결과를 찾아 해당 이미지 정보를 출력하는 단계로 구성된다. 상기 이미지 정보는 해당 웹사이트의 홈페이지나 특정의 웹페이지가 될 수도 있고, 특정한 아이콘이나 배너 또는 동영상을 이용한 배너나 아이콘이 될 수도 있다.

인터넷상에서 정보를 검색하고자 하는 사용자는 인터넷을 통해 특정 검색엔진 사이트에 접속한다. 상기 검색엔진 사이트에서 자신이 찾고자 하는 정보와 관련된 검색어를 입력하여 관련 정보를 출력할 것을 요청한다. 검색엔진 사이트에서는 입력된 검색어와 관련된 정보를 검색하여 다시 사용자에게 전송하여 사용자의 단말기로 출력하며, 이러한 일련의 검색엔진을 이용한 검색과정은 통상적으로 사용하는 것이다. 다만, 본 발명에서는 검색결과를 단순한 텍스트가 아닌 이미지 정보로 출력한다는 점에서 차이가 있다. 검색엔진 사이트에서는 검색결과로써 출력되기 위한 정보에 대한 이미지 데이터베이스를 사전에 구축해 놓으며, 해당 정보에 대한 검색요청이 있을 경우 상기 이미지 정보를 출력한다. 출력시 이미지와 함께 텍스트 정보를 출력할 수도 있다.

상기 이미지 정보는 해당 웹사이트의 홈페이지 화면이 될 수도 있고, 특정 아이콘이나 배너가 될 수도 있다. 웹사이트 홈페이지의 경우 사용자들이 상기 웹사이트 홈페이지만을 보더라도 그 웹사이트에서 어떠한 정보를 제공하고 있는지, 그 웹사이트가 사용자가 찾는 정보를 갖고 있는지 등에 대해서 직관적으로 알 수 있기 때문에 웹사이트 홈페이지 화면을 작은 크기로 아이콘화하여 디스플레이하는 것이다.

인터넷 웹사이트상에는 광고용으로 많은 아이콘이나 배너들이 링크되어 있다. 이러한 아이콘이나 배너들은 해당 아이콘이나 배너가 전달하고자 하는 내용을 그래픽으로 또는 동영상으로 함축적으로 표현하고 있어 사용자가 상기 아이콘이나 배너만을 보더라도 전달하고자 하는 내용을 직관적으로 파악할 수 있다. 따라서, 검색결과로써 이러한 아이콘이나 배너를 출력할 경우 사용자가 상기 아이콘이나 배너로부터 출력결과에 대한 내용을 직관적으로 파악할 수 있어 정보의 검색이 한결 용이해진다.

도 1은 본 발명의 이미지 정보를 이용한 검색방법에 의해 출력된 검색결과의 예이다. 검색결과는 이미지 정보와 텍스트가 함께 디스플레이되고 있으며, 이미지 정보는 검색결과에 해당하는 웹사이트의 홈페이지를 축소하여 디스플레이하고 있다. 이미지 정보와 함께 간단한 텍스트를 같이 부가함으로써 이미지 정보만으로 전달하기 어려운 정보를 함께 전달하며, 해당 웹사이트의 운영자나 소유자에 대한 정보와 해당 웹사이트에서 제공하는 정보 대한 간략한 요약정보가 디스플레이된다.

사용자는 검색결과중에서 자신이 원하는 정보가 있을 경우 그 이미지 정보나 텍스트 정보를 클릭하면 해당하는 웹사이트로 접속된다.

발명의 효과

본 발명의 이미지 정보를 이용한 검색방법을 이용할 경우, 단순한 텍스트가 아닌 이미지 정보를 출력함으로써 시각적 효과에 의해 검색결과를 보다 신속하고 직관적으로 파악할 수 있어 검색이 용이한 장점이 있다.

(57) 청구의 범위

청구항 1

인터넷상에서 정보를 검색하고자 하는 사용자가 검색엔진 사이트에 접속하고;

상기 사용자가 검색하고자 하는 검색어를 입력하고;

검색엔진 서버에서 상기 검색어에 해당하는 검색결과를 찾아 해당 이미지 정보를 출력하고; 그리고,

사용자는 출력된 이미지 정보중의 어느 하나를 클릭하여 해당 웹페이지로 접속하는 단계;

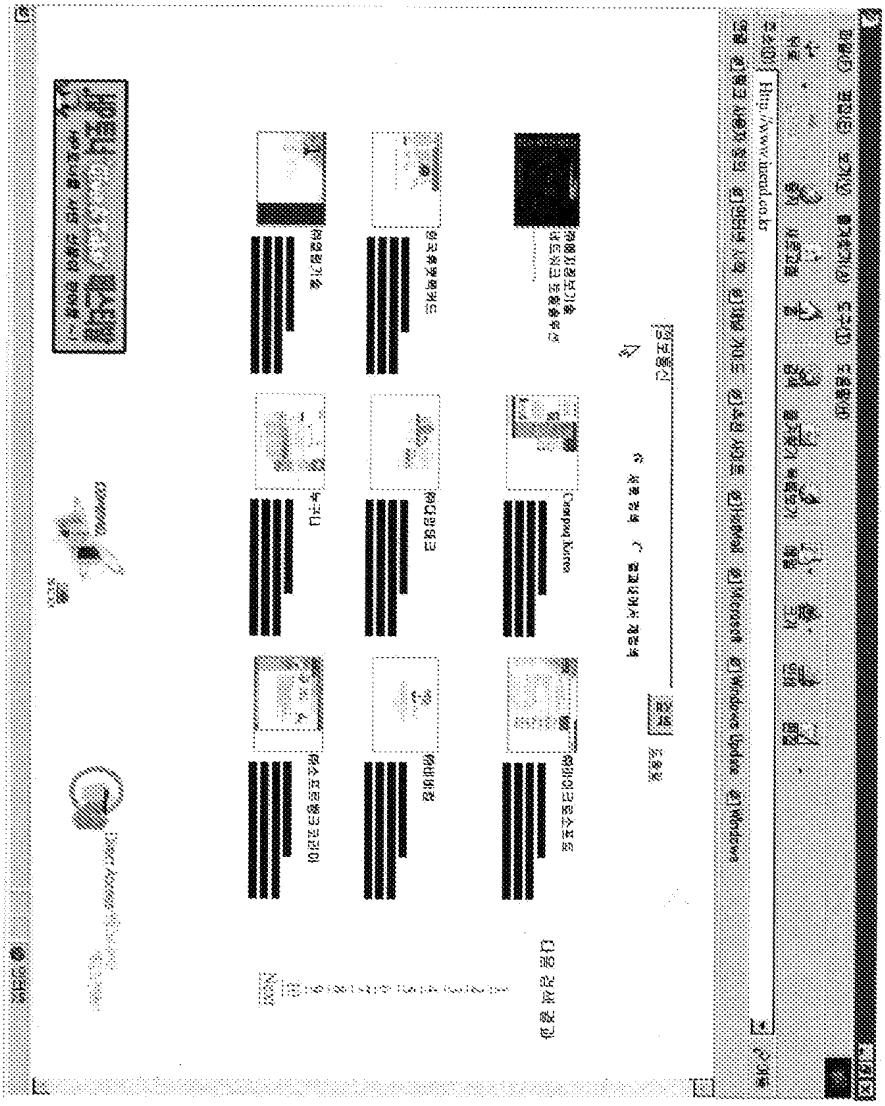
로 구성되는 것을 특징으로 하는 이미지 정보를 이용한 검색방법.

청구항 2

제1항에서, 상기 이미지 정보는 웹사이트의 홈페이지 화면, 특정 웹페이지 또는 그래픽 또는 동영상을 이용한 아이콘 또는 배너 중의 어느 하나인 것을 특징으로 하는 이미지 정보를 이용한 검색방법.

도면

도면1



(19) BUNDESREPUBLIK DEUTSCHLAND

DEUTSCHES PATENT- UND MARKENAMT

(12) **Offenlegungsschrift**

(10) **DE 199 52 486 A 1**

(51) Int. Cl.[7]:
G 06 F 1/16
G 09 F 9/30
// G09F 27/00

(21) Aktenzeichen: 199 52 486.6
(22) Anmeldetag: 29. 10. 1999
(43) Offenlegungstag: 3. 5. 2001

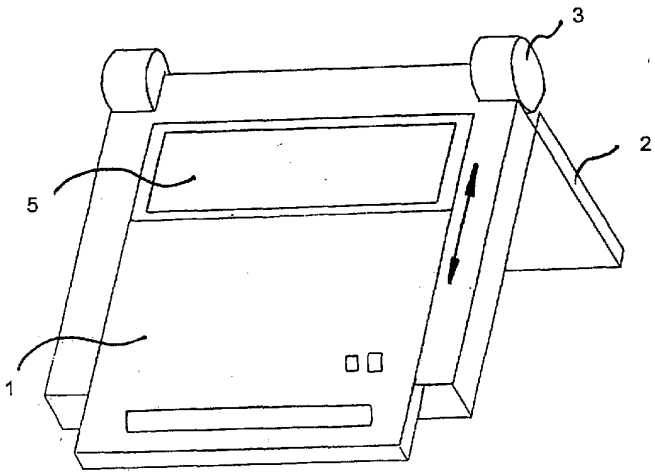
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Die folgenden Angaben sind den vom Anmelder eingereichten Unterlagen entnommen

(54) Präsentationsvorrichtung

(57) Die Erfindung bezieht sich auf eine Präsentationsvorrichtung, die vorwiegend für eine Kundenberatung im Außendienst konzipiert ist. Ein Laptop-Computer mit einer verschiebbaren Tastatur 1 hat unter dieser einen zweiten Bildschirm 5, der bei einer Präsentation als Kontrollbildschirm verwendet wird. Der Hauptbildschirm 2 kann über wenigstens 220 Grad verschwenkt werden, so daß bei einer Präsentation zwei sich gegenüber sitzende Personen je einen Bildschirm betrachten können. Die Präsentationsvorrichtung kann auch wie ein herkömmlicher Laptop genutzt werden.



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Beschreibung

Die Erfindung bezieht sich auf eine Präsentationsvorrichtung, die vorwiegend für eine Kundenberatung im Außendienst konzipiert ist.

Wenn ein Beratungs- bzw. Verkaufsgespräch beim Kunden durchgeführt wird, sind die räumlichen Verhältnisse oft nicht für eine optimale Präsentation geeignet, d. h., moderne Präsentationsmittel, wie Overhead-Projektor mit LC-Display oder Videoprojektor, können nicht eingesetzt werden. Wenn z. B. Versicherungsvertreter oder Finanzdienstleister ihre Kunden in der Wohnung aufsuchen, ist es nicht möglich, eine Projektionswand aufzustellen. Derartige räumliche Veränderungen werden von den meisten Kunden abgelehnt. Es ist daher üblich, Berechnungen und Diagramme auf einem Blatt Papier aufzuzeichnen und dabei das Blatt halb zum Kunden zu drehen, damit er der ergänzenden schriftlichen Erläuterung folgen kann. Es ist auch möglich, einen Laptop-Computer zu benutzen, was jedoch insofern Probleme bringt, da der Verkäufer und der Kunde gemeinsam einen relativ kleinen Bildschirm betrachten müssen.

Es hat sich gezeigt, daß die Präsentation mit einem Computer eine Reihe von Vorteilen bietet. Mittels spezieller Software können z. B. verschiedenste Varianten einer Lebensversicherung durchgerechnet und sofort grafisch, d. h. leicht verständlich und daher überzeugend, dargestellt werden. Da sich diese Präsentationstechnik ständig weiterentwickelt und vom Kunden als sehr komfortabel akzeptiert wird, besteht das dringende Bedürfnis, auch für den kleinen Präsentationseinsatz vor Ort, d. h. in der Wohnung des Kunden oder in einem kleinen Büroraum, diese Technik einzusetzen.

Moderne Kleincomputer, wie z. B. kleine Notebooks, bieten auf Grund ihrer hohen Rechenleistung prinzipiell die Möglichkeit, auch programm- und speicherintensive, d. h. anspruchsvolle, Präsentationssoftware zu verarbeiten. Somit wäre auch beim Kunden vor Ort eine überzeugende Präsentation möglich, wenn das o. g. Problem der räumlichen Einschränkungen gelöst werden könnte.

Dazu wurde in dem deutschen GBM 94 06 985 vorgeschlagen, an einem herkömmlichen Laptop mit Flachbildschirm einen weiteren Flachbildschirm über ein Gelenk anzukoppeln, so daß zwei sich gegenüber sitzende Personen jeweils auf einen Bildschirm sehen können. Diese Vorrichtung ist prinzipiell für den vorgesehenen Anwendungsfall geeignet, jedoch umständlich in der Bedienung. Es besteht daher das Bedürfnis nach einer weiteren Verbesserung der Präsentationsqualität, nach einer weiteren Kostensenkung, nach einer Gewichtsverringerung oder nach einer verbesserten Bedienbarkeit.

Die Aufgabe der Erfindung besteht in der Schaffung einer rechnergestützten Präsentationsvorrichtung, die auch unter sehr beengten räumlichen Verhältnissen eine überzeugende Präsentation ermöglicht und einfach und bequem zu bedienen ist.

Die Aufgabe wird mit Vorrichtungen nach Anspruch 1 gelöst. Die Präsentationsvorrichtung ist ein herkömmlicher Laptop-Computer mit einer verschiebbaren Tastatur und einem schwenkbaren Hauptbildschirm, der im eingeklappten Zustand auf dem Grundkörper des Laptop-Computer aufliegt und die Tastatur abdeckt.

Erfindungsgemäß ist unter der Tastatur in dem Grundkörper ein weiterer Bildschirm angeordnet, der ebenfalls an den Laptop-Computer angeschlossen ist. Weiterhin ist das Gelenk des schwenkbaren Hauptbildschirms so ausgebildet, daß der Hauptbildschirm wenigstens um ca. 220 Grad schwenkbar ist.

Die Präsentationsvorrichtung kann als herkömmlicher Laptop-Computer genutzt werden, wobei wahlweise die Tastatur so verschoben werden kann, so daß der darunter liegende Bildschirm sichtbar wird.

Wenn einer zweiten Person eine Präsentation gezeigt werden soll, wird der Hauptbildschirm um wenigstens 220 Grad oder mehr, umgeklappt, so daß die zweite Person nunmehr auf den Hauptbildschirm sehen kann. Durch eine Steuereinrichtung wird das Bild des Hauptbildschirms um 180 Grad gedreht.

Die Bedienerperson steuert die Präsentation mittels der Tastatur, Maus oder anderer Eingabeeinrichtungen und verfolgt den Ablauf der Präsentation auf dem zweiten Bildschirm, dem Kontrollbildschirm.

Das Einschalten des zweiten Bildschirms und das Umklappen des Bildes des Hauptbildschirms kann wahlweise über Schalter oder über Tastatureingabe manuell erfolgen. Zweckmäßig ist jedoch gemäß Anspruch 2 ein automatisches Einschalten und Drehen des Bildes, indem z. B. in dem Gelenk eine Schwenkwinkelerkennungsvorrichtung angeordnet ist, die veranlaßt, daß bei einem vorbestimmten Schwenkwinkel des Hauptbildschirms, das Bild des Hauptbildschirms gedreht und auch der zweite Bildschirm eingeschaltet wird.

Nach Anspruch 3 ist der zweite Bildschirm ein einfarbiger Bildschirm. Diese Weiterbildung ist dann vorteilhaft, wenn z. B. auf dem Hauptbildschirm dem Kunden eine aufwendige farbige Grafik, d. h. z. B. eine ansprechende und überzeugende Präsentation, gezeigt werden soll. Die Bedienperson, d. h. der Verkäufer, benötigt diese hochwertige Darstellung nicht. Er muß lediglich die Präsentation verfolgen können und bei Eingaben, z. B. persönliche Daten des Kunden, die Richtigkeit der Eingabe überprüfen können.

Da der zweite Bildschirm auch eine geringere Auflösung benötigt, ist er kostengünstiger als der Hauptbildschirm, wodurch die Gesamtkosten gesenkt werden können.

Nach Anspruch 4 ist ist die Tastatur auch abnehmbar, wobei die Kommunikation mit dem Rechner über eine drahtlose Datenschnittstelle erfolgt. Diese Option ist dann von Vorteil, wenn die Präsentationsvorrichtung z. B. nahe beim Kunden stehen soll.

Eine Ausführungsform der Erfindung wird an Hand der beigefügten schematischen Zeichnungen erläutert:

Fig. 1 zeigt eine perspektivische Seitenansicht der Erfindung bei herkömmlicher Verwendung als Laptop.

Fig. 2 zeigt eine perspektivische Seitenansicht der Erfindung bei Verwendung als Präsentationsvorrichtung.

Die **Fig.** 1 zeigt eine perspektivische Seitenansicht der Erfindung bei herkömmlicher Verwendung als Laptop mit einer Tastatur **1**, einem Hauptbildschirm **2**, der mit Gelenken **3** an dem Grundkörper **4** des Laptop schwenkbar befestigt ist. Es ist auch möglich, falls gewünscht, die Tastatur herauszuschieben.

Die **Fig.** 2 zeigt die Erfindung bei Verwendung als Präsentationsvorrichtung. Die Tastatur **1** ist herausgeschoben, so daß die Bedienperson auf den zweiten Bildschirm **5** sehen kann. Der Hauptbildschirm **2** ist umgeklappt, wie mit dem Doppelpfeil gezeigt. Damit der Kunde das Bild des Hauptbildschirms richtig betrachten kann, wird es elektronisch um 180 Grad gedreht.

Patentansprüche

1. Präsentationsvorrichtung, die als Laptop-Computer mit einer Tastatur (**1**) ausgebildet ist und ein aufklappbarer Hauptbildschirm (**2**) mit Gelenken (**3**) an dem Grundkörper (**4**) des Laptop-Computers schwenkbar befestigt ist, **dadurch gekennzeichnet**, daß

   – die Tastatur (**1**) im Grundkörper (**4**) verschieb-

bar ist,

– unter der verschiebbaren Tastatur (**1**) ein zweiter Bildschirm (**5**) vorgesehen ist,

die Gelenke (**3**) einen Schwenkradius von über 220 Grad aufweisen und

– eine Steuereinrichtung vorgesehen ist,

die das Bild auf dem Hauptbildschirm (**2**) um 180 Grad dreht, wenn der Hauptbildschirm (**2**) über 220 Grad geschwenkt ist.

2. Präsentationsvorrichtung nach Anspruch 1, dadurch gekennzeichnet, daß die Steuereinrichtung eine Schwenkwinkelerkennungsvorrichtung aufweist, die veranlaßt, daß bei einem vorbestimmten Schwenkwinkel des Hauptbildschirms (**2**), das Bild des Hauptbildschirms um 180 Grad gedreht wird und gleichzeitig der zweite Bildschirm (**5**) eingeschaltet wird.

3. Präsentationsvorrichtung nach Anspruch 1 und 2, dadurch gekennzeichnet, daß der zweite Bildschirm (**5**) ein einfarbiger Bildschirm ist.

4. Präsentationsvorrichtung nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß die Tastatur (**1**) auch abnehmbar ist, wobei die Kommunikation mit dem Rechner über eine drahtlose Datenschnittstelle erfolgt.

Hierzu 1 Seite(n) Zeichnungen

Nummer: DE 199 52 486 A1
Int. Cl.[7]: G 06 F 1/16
Offenlegungstag: 3. Mai 2001

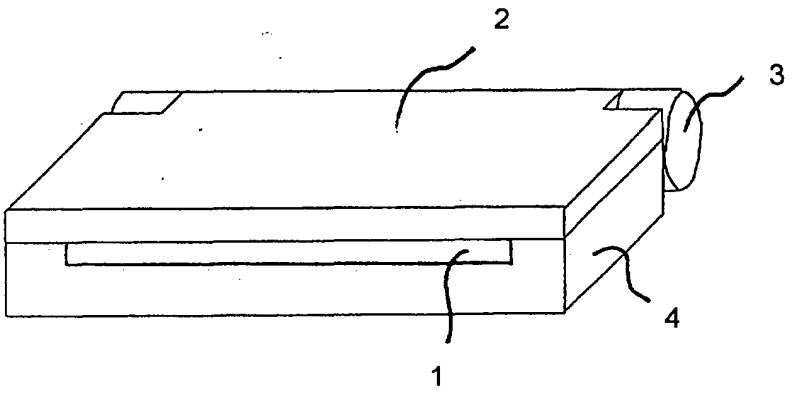


Fig. 1

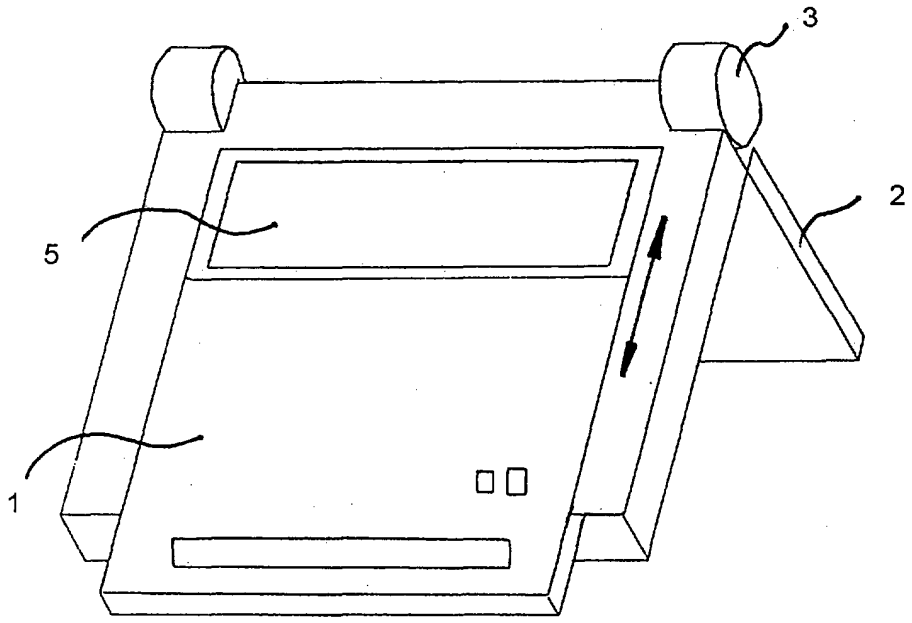


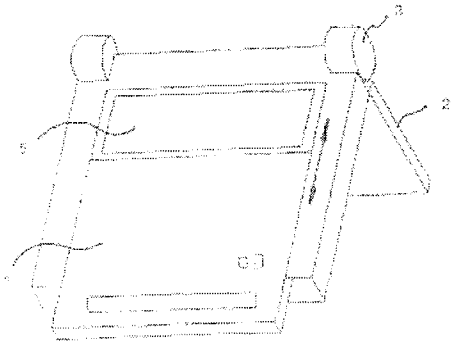
Fig. 2

Presentation device has lap-top, main and second screens, controller that rotates image on main screen by 180 degrees when main screen is pivoted by 220 degrees

Publication number: DE19952486 (A1)
Publication date: 2001-05-03
Inventor(s): SCHWEIZER JOACHIM [DE] +
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Classification:
- international: ***G06F1/16;*** **G06F1/16;** (IPC1-7): G06F1/16; G09F27/00; G09F9/30
- European: G06F1/16P2; G06F1/16P2S5; G06F1/16P2S6
Application number: DE19991052486 19991029
Priority number(s): DE19991052486 19991029

Abstract of **DE 19952486 (A1)**

The device is in the form of a lap-top computer with a removable keyboard (1), whereby the keyboard has a separate power supply and is coupled to the lap-top via a wireless link. A hinged main display screen (2) is pivotably attached to the lap-top's base body (4) via joints (3) and able to pivot over more than 200 degrees. A second screen is arranged in the base body beneath the removable keyboard. A controller rotates the image on the screen by 180 degrees when the main screen is pivoted by 220 degrees. Independent claims are also included for a notebook with a keyboard and for a flat screen unit for a notebook.



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The invention refers to a presentation device, which is predominant designed for a customer advisory service in the field service.

If a consulting and/or. Sales talk with the customer performed becomes, is often not the spatial ratios not for an optimum presentation appropriate, D. h., modern presentation means, like overhead projector with process card display or video projector, cannot become inserted. If z. B. Insurance agents or Finanzdienstleister their customers in the home visit, are not it not possible to set up an adjusting wall. Such spatial changes are rejected by most customers. It is usual to note calculations and diagrams on a sheet of paper and to turn the sheet half to the customer, so that it can follow the complementary written explanation. It is also possible, a laptop computer to use, which brings problems however to that extent, since the vendor and the customer must regard a common relative small screen.

It has itself shown that the presentation with a computer offers a number of advantages. By means of particular software z can. B. most diverse variants of a life insurance calculated and immediately graphic, D. h. easy understandably and therefore convincing, shown become. Since this presentation technology becomes continuous further developed and of the customer as very comfortable accepted, the urgent need, also for the small presentation employment locally, exists D. h. in the home of the customer or in a small office space to use this technique.

Modern small computers, like z. B. small notebooks, offer the possibility, also program and memory-intensive, D in principle due to their high arithmetic performance. h. fastidious to process presentation software. Thus a convincing presentation would locally be possible also with the customer, if the o. g. Problem of the spatial limitations dissolved will could.

In addition 94 06 985 proposed became to couple at a conventional laptop with flat screen an other flat screen over an articulation in the German GBM so that two can see themselves opposite seated persons in each case on a screen. This device is pedantic in principle for the intended application appropriate, however in the operation. It exists therefore the need after an other improvement of the presentation quality, after an other reduction of costs, after a weight reduction or after an improved operability.

The object of the invention exists in the provision of a computer-aided presentation device, which is to be served also bottom very much restrained spatial ratios a convincing presentation possible and simple and convenient.

The object becomes according to claim 1 dissolved with devices. The presentation device is a conventional laptop computer with a displaceable keyboard and a pivotable main screen, which rest upon in the folded state on the basic body laptop computers and which keyboard takes off.

The bottom keyboard in the basic body an other screen arranged, which is likewise connected to the laptop computer, is according to invention. Further the articulation of the pivotable main screen is so formed that the main screen at least over approx. 220 is degree more pivotable.

The presentation device can become as conventional laptop computers used, whereby alternatively the keyboard can become so shifted, so that the screen located under it becomes more visible.

If a second person a presentation is to become shown, the main screen is turned down around at least 220 degree or more, so that the second person can see now on the main screen. By control means the image of the main screen becomes around 180 rotated degree.

The operator person steers the presentation by means of the keyboard, mouse or other input mechanisms and the tracked flow of the presentation on the second screen, the control display.

Switching on of the second screen on and turning the image of the main screen down can be made alternatively by means of switches or by keyboard entry manual. Convenient one is however according to claim 2 automatic switching on and rotation of the image on, by z. B. in the articulation an angle of traverse recognition device arranged is, those caused that with a pre-determined pivoting angle of the main screen, the image of the main screen rotated and also the second screen are switched on.

According to claim one 3 is the second screen a monochrome screen. This development is favourable if z. B. on the main screen the customer an expensive colored diagram, D. h. z. B. a responsive and convincing presentation, shown will is. The operator, D. h. the vendor, required this high-quality illustration not. It must be able to only pursue the presentation and with inputs, z. B. personal data of the customer, the correctness of the input to examine can.

Since the second screen also a smaller resolution required, is he more inexpensive than the main screen, whereby the total costs lowered to become to be able.

According to claim 4 is is also more detachable the keyboard, whereby the communication with the computer over a wireless data interface made. This option is from advantage if the presentation device z. B. close with the customer to stand is.

An embodiment of the invention becomes explained on the basis the accompanying schematic designs:

Fig. 1 shows an isometric side view of the invention with conventional use as laptop.

Fig. an isometric side view of the invention shows 2 with use as presentation device.

The Fig. 1 shows an isometric side view of the invention with conventional use as laptop with a keyboard 1, a main screen 2, which is with articulations 3 at the basic body 4 laptop of the pivotally mounted. It is also possible, if desired, to shift the keyboard out.

The Fig. the invention shows 2 with use as presentation device. The keyboard 1 is shifted out, so that the operator can see 5 on the second screen. The main screen 2 turned down, as with the double arrow shown. So that the customer can regard the image of the main screen proper, it becomes electronic around 180 rotated degree.

Result Page

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1. Presentation device, which is formed as laptop computers with a keyboard (1) and a opening by hinges main screen (2) with articulations (3) at the basic body (4) of the laptop computer is pivotally mounted, characterised in that

- the keyboard (1) in the basic body (4) is more displaceable,
- is the bottom displaceable keyboard (1) a second screen (5) provided,
the articulations (3) a Schwenkradius of over 220 degree exhibit and

- is control means provided,
those the image on the main screen (2) 180 degree, if the main screen (2) over 220 is degree pivoted.

2. Presentation device according to claim 1, characterised in that the control means an angle of traverse recognition device exhibits, which caused that with a pre-determined pivoting angle of the main screen (2), the image of the main screen is switched on by 180 degree rotated will and the simultaneous second screen (5).

3. Presentation device according to claim 1 and 2, characterised in that the second screen (5) a monochrome screen is.

4. Presentation device after one of the preceding claims, characterised in that the keyboard (is 1) also more detachable, whereby the communication with the computer over a wireless data interface made.

Bibliography

DWPI Title
Presentation device has lap-top, main and second screens, controller that rotates image on main screen by 180 degrees when main screen is pivoted by 220 degrees

Original Title
Presentation device

Abstract

No Abstract exists for this Record

Family

Family

⊞ Expand INPADOC Family (12)

Claims

Claims

⊟ Collapse All Claims (4)

Claims (German)

1. Presentation device, those as laptop computers with a keyboard (**1**) and a opening by hinges main screen is trained (**2**) with joints (**3**) at the base (**4**) is tiltable fastened the laptop computer, **thus characterized**that

- - the keyboard (**1**) in the base (**4**) is adjustable,
- - under the adjustable keyboard (**1**) a second screen (**5**) is intended,

the joints (**3**) a Schwenkradius from over 220 degrees exhibit and

- - is intended control equipment,

those the picture on the main screen (**2**) turns around 180 degrees, if the main screen (**2**) is swivelled over 220 degrees.

2. Presentation device according to requirement 1, by characterized that the control equipment exhibits an angle of traverse recognition device, which arranges that with a pre-determined angle of traverse of the main screen (**2**), the picture of the main screen around 180 degrees is turned and at the same time the second screen (**5**) one switches on.

3. Presentation device according to requirement 1 and 2, by characterized that the second screen (**5**) a in-colored screen is.

4. Presentation device after one of the preceding requirements, thereby characterized that the keyboard (**1**) is also removable, whereby communication with the computer is made by a wireless data interface.

Description

Background/ Summary

⊟ Collapse Background/Summary

-

Drawing Description

⊟ Collapse Drawing Description

-

Description

⊟ Collapse Description

The invention refers to a presentation device, which is conceived predominantly for a customer advisory service in the field service.

If a consulting and/or a sales talk is accomplished with the customer, spatial conditions are often not for an optimal presentation suitable, are called modern presentation means, like overhead projector with LC-display or video projector, cannot be used. If e.g. Insurance agents or financial service provider their customers in the apartment visit, are not it not possible to set up an adjusting wall. Such spatial changes are rejected by most customers. It is usual to note computations and diagrams on a sheet paper and to turn the sheet half to the customer, so that it can follow the supplementing written explanation. It is also possible to use a laptop computer which brings problems however to that extent, since the salesman and the customer must regard a relatively small screen together.

It was shown that the presentation with a computer offers a set of advantages. By means of special software e.g. most

diverse variants of a life insurance can be calculated and be represented immediately graphically, i.e. easily understandably and from there convincing. Since this presentation technology constantly develops themselves further and is accepted by the customer as very comfortable, the urgent need, also for the small presentation employment locally, exists i.e. in the apartment of the customer or in a small office space to use this technology.

Modern small computers, like e.g. small notebooks, offer the possibility, also program and memory-intensive, i.e. fastidious in principle due to their high arithmetic performance, of processing presentation software. Thus locally a convincing presentation would be possible also at the customer, if that could be solved above mentioned problem of the spatial restrictions.

In addition in the German GBM 94 06 985 one suggested coupling at a conventional laptop with flat screen a further flat screen over a joint so that two can see themselves opposite sitting persons in each case on a screen. This device is pedantic in principle for the intended application suitably, however in the operation. There is from there the need after a further improvement of the presentation quality, after a further reduction of costs, after a weight reduction or after an improved operability.

The task of the invention exists in the creation of a computer-aided presentation device, which is to be served a convincing presentation also under very much restrained spatial conditions made possible and simply and comfortably.

The task is solved with devices according to requirement 1. The presentation device is a conventional laptop computer with an adjustable keyboard and a tiltable main screen, which rest upon in the folded condition on the base the laptop computers and which keyboard takes off.

A further screen is according to invention arranged under the keyboard in the base, which is likewise attached to the laptop computer. Further the joint of the tiltable main screen is in such a way trained that the main screen is tiltable around approx. 220 degrees at least.

The presentation device can be used as conventional laptop computers, whereby the keyboard can be shifted alternatively in such a way, so that the screen which is under it becomes visible.

If a second person a presentation is to be demonstrated, the main screen is turned down around at least 220 degrees or more, so that the second person can see now on the main screen. The picture of the main screen by control equipment 180 degrees.

The operator person steers the presentation by means of the keyboard, mouse or other input mechanisms and pursues the expiration of the presentation on the second screen, the control display.

Switching on of the second screen on and turning the picture of the main screen down can be made alternatively by means of switches or by keyboard entry manually. Appropriately however automatic switching on and rotation of the picture on, as e.g. in the joint an angle of traverse recognition device is arranged, are those compelled in accordance with requirement 2 that with a pre-determined angle of traverse of the main screen, the picture of the main screen is turned and also the second screen is switched on.

According to requirement 3 the second screen is a in-colored screen. This further training is favorable if e.g. on the main screen the customer a complex colored diagram, i.e. e.g. a responding and convincing presentation are to be demonstrated. The control person, i.e. the salesman, do not need this high-quality representation. It must be able to only pursue the presentation and during inputs, e.g. personal data of the customer, the correctness of the input to examine be able.

Since the second screen needs also a smaller dissolution, it is more economical than the main screen, whereby the total costs can be lowered.

According to requirement 4 is also removable the keyboard, whereby communication with the computer is made by a wireless data interface. This option is of advantage if the presentation device e.g. close is to stand at the customer.

An execution form of the invention is described on the basis the attached schematic designs:

Fig. 1 shows a perspective side view of the invention with conventional use as laptop.

Fig. a perspective side view of the invention shows 2 with use as presentation device.

Those **Fig.** 1 shows a perspective side view of the invention with conventional use as laptop with a keyboard **1**, a main screen **2**, that with joints **3** at the base **4** the laptop is tiltable fastened. It is also possible, if desired, to shift the keyboard out.

Those **Fig.** the invention shows 2 with use as presentation device. The keyboard **1** is shifted out, so that the control person on the second screen **5** to see can. The main screen **2** turned down, as shown with the double arrow. So that the customer can regard the picture of the main screen correctly, it electronically 180 degrees.

Citations

Citation

⊞ Expand Citing Patents (3)

Cited Patents (0)

Cited Non-patents (0)

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	12611282
Filing Date	2009-11-03
First Named Inventor	Robert Sanford Havoc Pennington
Art Unit	2629
Examiner Name	Hjerpe, Richard A.
Attorney Docket Number	L2039-700630

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	Examiner Name	Hjerpe, Richard A.
	Attorney Docket Number	L2039-700630

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	Filing Date	2009-11-03
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	Attorney Docket Number	L2039-700630

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	Examiner Name	Hjerpe, Richard A.
	Attorney Docket Number	L2039-700630

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	Art Unit	2629
	Examiner Name	Hjerpe, Richard A.
	Attorney Docket Number	L2039-700630

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	10-2000-0036647	KR	A	2000-07-05	Itcen Communication Co.		☐

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NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	http://laptop.org/en/laptop/start/ebook.shtml accessed on September 29, 2008	☐

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Signature	/Matthew H. Grady/	Date (YYYY-MM-DD)	2010-11-03
Name/Print	Matthew H. Grady	Registration Number	52957

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(19) Europäisches Patentamt
European Patent Office
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(11) Publication number: **0 588 210 A1**

(12) **EUROPEAN PATENT APPLICATION**

(21) Application number: **93114327.5**

(51) Int. Cl.5: **H04M 1/02**

(22) Date of filing: **07.09.93**

(30) Priority: **08.09.92 JP 239735/92**

(43) Date of publication of application:
23.03.94 Bulletin 94/12

(84) Designated Contracting States:
DE FR GB

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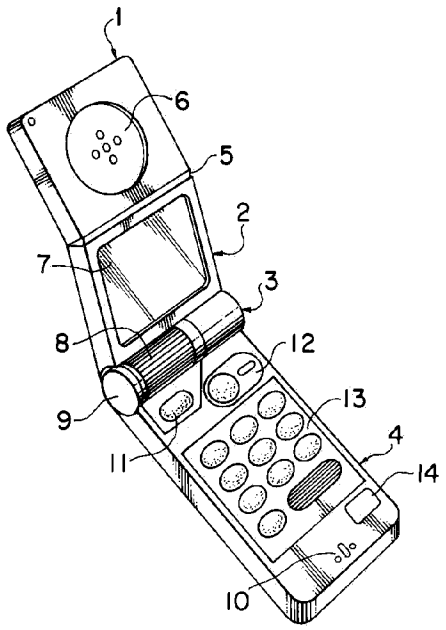
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Patent- und Rechtsanwälte,
Bardehle . Pagenberg . Dost . Altenburg . Frohwitter . Geissler & Partner,
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D-81679 München (DE)

(54) **Portable radio telephone set.**

(57) A portable radio telephone set provided with a display section includes a rotary selector which turns to select various functions. A menu displayed on the display section is selected by the rotary selector during a non-conversation time and the sound volume can be adjusted during a conversation time. The adjusting operation can be performed from both the front and rear sides of the telephone set. The rotary selector and button keys are arranged within the operation range of the thumb, and ordinary dial functions performed by operating these rotary selector and button keys are provided.

FIG. 1



EP 0 588 210 A1

BACKGROUND OF THE INVENTION

Field of the Invention:

The present invention relates to a portable radio terminal and, more particularly, to a portable radio telephone set having a folding and housing control mechanism and a rotary selector for selecting various functions provided in a hinge section for folding and housing purpose.

Description of the Related Art:

Conventional portable radio telephone sets (hereinafter referred to simply as telephone sets) are not only provided with ordinary telephone functions, but also an electronic telephone directory function by which telephone numbers and names can be registered, a help function for guiding various functions, an incoming call tone selection function for selecting incoming call tone, and the like, thus being formed as a multi-functional terminal. The conventional portable radio telephone set uses function buttons in order to select such functions. The operation of some terminals has been made easier by making the shape of function buttons different from that of dial buttons.

When, for example, the electronic telephone directory function is used, first a telephone set user operates a function button for the electronic telephone directory function in order to call a telephone number stored in the electronic telephone directory on a display section of the portable radio telephone set. Then, the telephone set user operates a function button for selecting the telephone number and a function button for scrolling the registered telephone numbers in order to call the wanted telephone number on the display section from among telephone numbers registered in the electronic telephone directory. When the wanted telephone number is confirmed on the display section by the above operation, the user operates a function button for starting a conversation in order to call the other party.

Though the conventional portable radio telephone set is multi-functional, the operation procedure thereof is complex for a user when the series of operations described above is considered. Furthermore, there is the possibility that the greater the number of buttons, the greater the chances that a button may be depressed erroneously when the button arrangement of a present portable radio telephone set is considered.

That is, in view of the complexity of such an operation procedure, it is not said easy, as regards a conventional telephone set in which functions are selected by function buttons, to operate various buttons with only one hand while holding the telephone set itself in the same hand.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a telephone set which makes it possible to easily perform various operations rehired particularly for conducting a radio conversation with one hand while the telephone set itself is being held by the same hand.

It is another object of the present invention to simplify the procedure for selecting or operating a plurality of functions of the telephone set.

It is still another object of the present invention to provide a multi-functional telephone set, the number of buttons thereof being reduced as much as possible.

To achieve the above-described objects, a portable radio telephone set in accordance with the present invention is provided, which portable radio telephone set has a display section, comprising a rotary selector which turns to select various functions. A menu of various functions displayed on the display section is selected when the rotary selector is during a non-conversation time, sound volume can be adjusted during a conversation time, the adjusting operation can be performed from both the front and rear sides of the telephone set. The rotary selector and button keys are arranged within the operation range of the thumb, and thus ordinary dial functions, performed by operating the rotary selector and the button keys, are provided.

According to the present invention, since the rotary selector is provided as a telephone terminal, it is possible to easily select a desired function of the telephone terminal with one hand by rotating the selector.

Also, according to the present invention, since the rotary selector is provided in a hinge section of a telephone terminal which is foldable so that it can be housed, it is possible to select a desired function of the telephone terminal by rotating the rotary selector.

Since the rotary selector is provided in the hinge section of the telephone terminal which is foldable so it can be housed, the hinge section can be of any size, and the mechanical strength of the hinge section is strengthened. The provision of the rotary selector results in a reduction of key buttons for performing multiple functions, or the like, making it possible to effectively use the space where the telephone set is arranged.

Also, by arranging the rotary selector provided in a terminal so as to be rotatable longitudinally and slidable along the shaft of the hinge, the rotary selector can be used as a cursor. Further, by moving the cursor on the display section up and down, or from side to side in linkage with the rotary

selector in this way, various functions of a portable telephone set can be performed, and it is made easy to perform an operation with one hand.

The above and further objects and novel features of the invention will more fully appear from the following detailed description when the same is read in connection with the accompanying drawings. It is to be expressly understood, however, that the drawings are for the purpose of illustration only and are not intended as a definition of the limits of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective view illustrating the appearance of a portable radio telephone set in accordance with an embodiment of the present invention;

Fig. 2 is a perspective view illustrating a state in which the portable radio telephone set shown in Fig. 1 is used while it is held with one hand;

Fig. 3 is a perspective view illustrating a state in which the portable radio telephone set is used during a radio conversation state as it is seen from the outer side (the rear side) thereof;

Fig. 4 is an illustration of a one-hand operation method in a state in which the radio telephone set is held with one hand;

Fig. 5 is a partial sectional view of a joint portion of the radio telephone set in accordance with the embodiment of the present invention;

Fig. 6 is a partial sectional view of the joint portion and the receiver portion of the radio telephone set, a display section, and the like;

Fig. 7 is a perspective view, partly in cross section, illustrating a state in which the radio telephone set is folded so it is housed;

Fig. 8 is a plan view illustrating a method for controlling the position of a cursor by operating the dials of the radio telephone set in accordance with the present invention; and

Fig. 9 is a flowchart showing a selection of various functions by using a rotary selector of the radio telephone set.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Preferred embodiments of the present invention will be explained below with reference to the accompanying drawings of Fig. 1 through Fig. 9.

The appearance of a telephone set in accordance with the present invention will be explained first. Fig. 1 illustrates in perspective the overall appearance of the main body of the telephone set when the folded state thereof is released and it is placed in a use state. In this case, a receiver section 1 and a display section 2 are freely flexed and engaged with each other via a hinge 5. These sections are engaged with an operation section 4 via a joint portion 3 by which the telephone set is folded and rotated so as to be housed. A receiver (speaker for outputting received voice sound) 6 is provided in the central portion of the receiver section 1. When this receiver is brought into contact with the ear of a party (user) during a radio conversation, a voice sound from the other party is heard. Since, as shown in the figure, the hinge 5 is flexed to form a V shape, it is easy to operate the telephone set during the radio conversation state. The joint portion 3 maintains the state in which the telephone set is rotated after the main body of the telephone set is folded and housed, that is, the use state, and is provided with a selector 8 for selecting functions, a rotation operation mechanism, and a push-button 9. A set button 11 for storing/retrieving and inputting/outputting information, a call origination (re-origination) button 12 for starting a conversation, a ten-key portion 13, and a termination button 14 for terminating a conversation are provided in the operation section 4, a microphone 10 being contained in the front end portion of the main body. With this construction, when a radio conversation function is selected by the selector 8, a telephone set user brings the receiver 6 into contact with the ear, and the user's mouth is brought close to the microphone 10 as in a handset of a conventional telephone set, a radio conversation with the other party then being conducted. Keyed-in information and necessary information from among stored information are called and displayed on a liquid-crystal display screen 7 disposed in the central portion of the display section 2.

Fig. 2 illustrates a state in which the telephone set is being used while it is held by one hand (the left hand in this embodiment). The telephone set user grasps both end portions of the joint portion 3 between the thumb "a" and the forefinger "b". The push-button 9 is depressed by the thumb "a" in order to rotate the display section 2 and the receiver section 1 via the joint portion 3, thereby shifting the state of the telephone set from the state in which it is folded and housed to a stable use state. Since the main body of the telephone set is basically held by the thenar "c" and the remaining three fingers "d", an accident, such as the main body of the telephone set falling from the hand, does not occur even if the thumb "a" and the forefinger "b" are separated from the main body of the telephone set. Therefore, if the main body of the telephone set is held as shown in Fig. 2, the telephone set user can operate the selector 8 and various operation buttons on the operation section 4 with the thumb "a" while simultaneously confirming a display on the liquid-crystal display screen 7.

Fig. 3 is a perspective view of the portable radio telephone set as it is seen from the outer side (the rear side) thereof, illustrating a state in which the radio telephone set is used during a radio conversation. As shown in Fig. 3, the forefinger "b" is separated from one end of the joint portion 3, and the selector 8 is operated by the forefinger "b". As a result, the selector 8 can be operated by the thumb "a" from the inner surface thereof, and also by the forefinger "b" from the outer surface thereof.

Therefore, the selector 8 is provided in the joint portion 3 so as to select various functions (to be specific, call origination/reception, telephone number, secrecy, input, output, storage, calculation, time, remote control, schedule, call, clear, calendar, dictionary, map, characters, numerals, or the like) during a non-radio conversation time, and so as to function to adjust the volume of the received voice sound during a radio conversation time. The selector 8 is provided in such a way that the selector 8 is rotatable longitudinally and can be operated from both the inner and outer surfaces.

Fig. 4 illustrates a one-hand operation method in a state in which the radio telephone set is held with one hand. As shown in the figure, in the main body of the telephone set, the right and left ends of the operation section 4 are held by the thenar "c" and the three fingers "d". If the push-button 9 is depressed by the thumb "a", the folded and housed telephone set can be shifted to a stable use state, i.e., a radio conversation state, by rotating the receiver section 1 and the display section 2 via the joint portion 3.

An example of a case in which a radio conversation is conducted in this use state will be explained. First, the telephone set user selects by using the selector 8 a list display function (one function of the telephone set) for displaying a list of names and their telephone numbers. The available selection methods include a method in which a list of functions is displayed beforehand on the liquid-crystal display screen 7 and a cursor which is moved in linkage with the rotation of the selector 8 or the like is moved up and down to identify any one of the functions, a method in which the selector itself is provided with a change-over switch corresponding to multiple functions, the selector being switched to select any one of the functions. The functions can be more easily selected by using the selector 8 in addition to the key buttons. Next, a list of the prestored names and their telephone numbers is displayed on the liquid-crystal display screen 7, and a wanted telephone number is retrieved by scrolling the display screen using the selector 8. In the above display and retrieval method, only the selector 8 needs to be operated. As a result, an operation for switching the selector 8 at a thumb position "f" is possible. Further, when the telephone number of the other party is confirmed, a set button 11 is depressed at a thumb position "g", and a call origination (re-origination) button 12 is operated, allowing a radio conversation to start. When the radio conversation is terminated, a termination button 14 is depressed at a thumb position "i" in order to complete a series of operations necessary for conducting a radio conversation. That is, the range in which the liquid-crystal display screen 7 can be visually confirmed and in which the thumb "a" can be moved to operate the selector 8, the call origination (re-origination) button 12, and the termination button 14 is assumed to be the range defined by the broken lines A and B shown in the figure. In this range, necessary operations can be performed by the thumb "a". In other words, this range is a range in which the thumb "a" is rotated, turned, moved back and forth, and bent in a combined manner at a joint "e" about the base of a human's phalanx in the thumb "a". Therefore, when the selector 8 and various buttons required for a radio conversation are arranged in the range defined by the broken lines A and B, since the selector 8 and the buttons are operated with one hand, the ease with which the telephone set is operated with one hand is enhanced.

An example in which these various functions are selected by the selector 8 will now be explained with reference to the flowchart in Fig. 9. When the telephone set is opened for use from the state in which it is housed because the push-button 9 is depressed by the thumb "a", the power supply is turned on, and the initial screen appears on the liquid-crystal display screen 7, on which screen date, time, and the like are displayed. When the set button 11 is depressed, a function screen appears on the display screen 7. The displayed function setting and the memory dial are cursor-moved by turning the selector 8. Then, a function is selected, and the function is determined by operating the set button 11.

When a function setting is selected in such function selection, functions "Set/Release", "Select", "Adjust", "Command input" and "Display only" are successively displayed as a result of the turning of the selector 8, making scrolling retrieval possible and allowing these selected functions to be confirmed. When these functions are selected and set by the set button 11, call origination restriction is set or released in "Set/Release", turning on/off of number announcement is selected by the cursor movement caused by the turning of the selector 8 and determined by the set button 11, and the screen returns to the initial screen. When the function "Select" is selected and set, the selectable range of ringing tone quality is displayed, and it is possible to select the tone quality by turning

the selector 8 while displaying the current situation. After the tone quality is determined by the set button 11, the screen returns to the initial screen. When the function "Adjust" is selected and set, the selectable range of the receiver tone volume is displayed, and it is possible to select the tone volume by turning the selector 8 while displaying the current situation. After the receiver tone volume is determined by the set button 11, the screen returns to the initial screen. When the function "Command input" is selected and set, a display screen for inputting four digits of a personal identification number appears, making it possible to input the number by using the buttons of a ten-key section 13. The number is set by the set button 11 after it is input, and the screen returns to the initial screen. When the function "Display only" is selected and set, the amount of the remaining memory of the memory dial is displayed, and the screen returns to the initial screen.

When the memory dial is selected in the function selection, "Store", "Update", and "Clear" displayed on the display screen 7 are set by the selector 8 as a result of the turning thereof, and set by the set button 11, making it possible to proceed to the subsequent functions.

Although in the above-described operation, functions are determined by the set button 11, the selector 8 may be moved axially so as to have the same functions as those of the set button 11 as in a joystick 29 which will be described later. In such a case, the ease with which the telephone set is operated with one hand is enhanced even more.

Fig. 5 is a partial sectional view of the joint portion 3 of the radio telephone set in accordance with the present invention. The joint portion 3 is formed of a case 15 and a button shaft 19, and fixed to the operation section 4. A boss shaft 16 is formed in the central end surface portion of the case 15, and the boss shaft 16 and a hollow flange 18 are rotatably engaged with each other. Similarly, a sleeve shaft 22 is formed in the button shaft 19, and the sleeve shaft 22 and a sleeve flange 20 are rotatably engaged with each other. The rotatable hollow flange 18 and the sleeve flange 20 are fixed by a chassis 17 which is stably fixed inside the display section 2. In this way, the operation section 4 and the display section 2 are freely engaged with each other in such a way that they can be folded on one another via the joint portion 3.

The push-button 9 can be movably inserted into the end surface of the button shaft 19. A shank 23 formed in the push-button 9 is slidably fitted into the inside of the sleeve shaft 22. A stopper piece 24 is disposed in the shank 23 which is engaged with notches 25 and 26 formed in the end surfaces of the sleeve shaft 22 and the sleeve flange 20. As a result, the rotation of the sleeve flange 20 is stopped, and consequently the rotation of the display section 2 is stopped stably. The notch 26 of the sleeve shaft 22 does not allow the engagement of the stopper piece 24 to be released for the maximum axial stroke of the push-button 9. In contrast, the engagement of the notch 25 of the sleeve flange 20 can be released and freely rotated. The notch 25 of the sleeve flange 20 is formed at an open position where the telephone set is being used and at a housing position (not shown) where it is folded and housed.

Further, a torsion coil spring 21 is disposed inside the case 15. One end of the torsion coil spring 21 is connected and fixed to the case 15, and the other end thereof is extended from the case 15 and engaged with a spring hole formed in the hollow flange 18. As a result, if the push-button 9 is depressed, the stopper piece 24 releases the stoppage at the notch 25 (not shown) when it is housed, and the elastic force of the torsion coil spring 21 is released, causing the hollow flange 18 to rotate. Therefore, the receiver section 1 and the display section 2 are rotated, becoming ready for use.

Since some elastic force still remains in the torsion coil spring 21 in the above connection in the use state, a rotational force is given continuingly in the direction in which the remaining elastic force is released. This fact indicates that unwanted jarring which may occur when the telephone set is used, is prevented by the rotational force thereof.

Further, when a selector shaft 28 engaging with the selector 8 moves along the axis thereof when the mechanical position thereof is read, the stroke stops at the end surface of the shank 23 so as to serve as a stopper. The press fitting between the shank 23 and a shaft 27 is not released by such an operation force acting on the selector shaft 28. The selector shaft 28 and the shaft 27 are able to slide axially and turn around the shaft thereof on one shaft. The shaft 27 is supported so as to be slidable and turnable inside the selector shaft 28, and the other end reaches the joystick 29. Further, the selector shaft 28 extends close to the center of the joint portion 3, and the selector 8 is press-fitted to the end. The selector 8 is able to smoothly slide axially and turn around the shaft thereof without contacting other components.

Next, the joystick 29 will be explained. Disposed inside the joystick 29 are a power-supply switch (not shown) working with the shaft 27, a volume (for adjusting the receiver tone volume) which operates in response to the movement of the selector shaft 28, a sensor (for selecting functions), and the like. Examples of the sensor are a mechanical sensor, an electrical sensor, or an optical sensor. In short, the sensor detects the rotational position of the selector shaft 28, the sliding opera-

tion along the rotational shaft, and sends a signal to the liquid-crystal display screen 7 so that function selection/setting shown in Fig. 9 is performed and the screen is switched. Examples of methods performed by the power-supply switch are a method in which the position of the selector shaft is detected by the sensor and the power supply is turned on/off, and a method in which simply one end of the selector shaft 28 and the surface which the one end contacts are formed into an electrical contact point, and it is made to work with the depressing of the push-button 9. If the turning on/off of the push-button 9 is made to work in linkage with the turning on/off of the power-supply switch as in these methods, the telephone set user depresses the push-button 9 in order to make the telephone set in a folded and housed state shift to a use state, the power supply of the telephone set can be turned on, making it unnecessary to provide a key button exclusively used for the power-supply switch in the operation section 4. More specifically, when the telephone set is shifted to a state in which it is placed in a use state from the folded and housed state, the power supply of the telephone set can be inevitably turned on without operating a key button exclusively used for the power supply. The sensor inside the joystick 29 works not only with the selector shaft 28, but also with the operation of the function button in the operation section 4, and functions can be selected from the operation section 4.

The functions selected in this way reach a display processing circuit (not shown) via a cord E, and various displays necessary for performing the functions are made. Although in the embodiment the selector 8 works for controlling the position of a cursor, a selector exclusively used for controlling the position of the cursor, in addition to the selector 8, may be disposed near the selector 8.

Fig. 6 is a partial sectional view of the joint portion 3, the receiver section 1, and the display section 2. As shown in the figure, the display section 2 is able to turn along a slide ring 30 which serves as a part of the joint portion 3 fixed to the operation section 4. Inside the display section 2, one end of a fine slide pin 31 is always pressed against and built onto the slide ring 30. The other end of the slide pin 31 is rotatably engaged with a hinge piece 32 which works with the hinge 5 by which the section between the display section 2 and the receiver section 1 is made flexible. An elastic spring 33 is fixed to the hinge piece 32, and the other end is fixed to a spring seat 34 formed inside the receiver section 1. As shown in the figure, the receiver section 1 stabilizes at the flex position as indicated by the solid line by the action of the elastic spring 33. When an unnecessary force acts on the receiver section 1, since the receiver section 1 is turned as indicated by the broken line, the telephone set itself is protected, and the receiver section 1 contacts the user's ear with elastic properties during a non-radio conversation. Thus, received voice can be heard in a satisfactory contact. When the telephone set is folded and housed, the receiver section 1 and the display section 2 are folded via the joint portion 3 as indicated by the broken line. Since, at that time, the slide pin 31 engages with a notch 35 of the slide ring 30, formed at the position at which the telephone set is housed, the receiver section 1 and the display section 2 are folded stably. At the folded time, the hinge piece 32 which works with the slide pin 31 is retracted into the display section 2. Therefore, the receiver section 1 which is flexed with respect to the display section 2 is folded in a state in which it is spread linearly so as to be along the display section 2.

Fig. 7 is a perspective view, partly in cross section, illustrating a state in which the telephone set is folded so as to be housed. As shown in the figure, since the slide pin 31 built into the display section 2 is engaged with the notch 35 formed in a part of the outer periphery of the joint portion 3 (equivalent to the slide ring 30), the telephone set is stably folded and housed. In this folded and housed state, if the push-button 9 is operated, the receiver section 1 and the display section 2 are turned for use, and the slide pin 31 is slidingly released from the notch 35. As a result, the receiver section 1 is flexed with respect to the display section 2.

Finally, controlling the position of the cursor by using the selector 8 will be explained. Fig. 8 illustrates a method for controlling the position of the cursor. As shown in the figure, the selector 8 disposed in the joint portion 3 is used to update the position of the noticed display on the liquid-crystal display screen 7, i.e., the position of a cursor 37. When that position is updated, the thumb "a" is operated at will from side to side in the direction of the arrow A or up and down in the direction of the arrow B in a state in which the thumb "a" contacts at a position "j" on the selector 8. That is, when the selector 8 is in a free state, the selector 8 stabilizes while maintaining clearances 36a and 36b of the same size toward the right and left, respectively. The operation using the thumb "a" in the direction of the arrow A changes the size of these clearances 36a and 36b. This change is sensed by a sensor inside the above-mentioned joystick 29. If, for example, the selector 8 is operated to the right, the cursor 37 is moved to the right on the liquid-crystal display screen 7. If the thumb "a" is released from the selector 8, the selector 8 is automatically made to return to the central position. The upward and downward opera-

tion of the selector 8 by using the thumb "a" causes the selector 8 to rotate up and down. The direction and the amount of the rotation at that time is sensed by the knob or sensor inside the joystick 29, and the cursor 37 moves up and down on the liquid-crystal display screen 7. What is meant by "sensed by the knob" here is that the amount of the rotation of the selector 8 is determined by voltage, current or the like corresponding to the knob. When a selector exclusively used for controlling the position of the cursor, in addition to the selector 8, is disposed near the selector 8, the selector exclusively used for controlling the position of the cursor is similarly operated, controlling the position of the cursor 37. Therefore, if the cursor 37 is moved successively to a desired position, for example, in a condition in which all necessary characters, numerals, symbols or the like are displayed on the liquid-crystal display screen 7, characters or the like at a moved position are sequentially selected as input subjects, and processed. When the set button 11 is operated on the operation section 4 in a condition in which, for example, the cursor 37 is moved to a desired character position, a list of names and telephone numbers can be displayed in part on the upper portion of the liquid-crystal display screen 7. Up to the present time, desired character strings or the like have been formed solely by operations of ten-keys for a necessary number of times. The operations are troublesome and complex, and key processing requiring a great number of operations is necessary. However, when display processing is performed as described above, such inconveniences as described above are reduced.

According to the embodiment of the present invention, as described above, since the rotary selector is disposed in the hinge section of a telephone set which is folded so as to be housed, the hinge section is made to have a desired size so that the mechanical strength of the hinge section can be strengthened. Since the provision of the rotary selector results in a reduction of key buttons for performing multiple functions, there is an advantage in that the space where the telephone set is arranged can be effectively used.

According to the embodiment of the present invention, there is an advantage in that by using the rotary selector disposed in a terminal, no key buttons exclusively used for controlling the cursor are needed, and the operation with one hand is made easier.

In addition, according to the embodiment of the present invention, the number of necessary key buttons can be reduced since the portable telephone set is provided with a rotary selector, and key buttons and a display of the most appropriate size can be arranged in a telephone set of the most appropriate size. Furthermore, when the rotary selector is disposed in the hinge section of a folding type portable telephone set, the space where the rotary selector is disposed can be reduced.

According to the embodiment of the present invention, since a rotary selector is disposed in the telephone set, it is possible to easily perform various operations necessary, in particular, for conducting a radio conversation with the fingers of one hand while the telephone set itself is being held with the same hand.

Many different embodiments of the present invention may be constructed without departing from the spirit and scope of the present invention. It should be understood that the present invention is not limited to the specific embodiment described in this specification. To the contrary, the present invention is intended to cover various modifications and equivalent arrangements included within the spirit and scope of the claims. The following claims are to be accorded the broadest interpretation, so as to encompass all such modifications and equivalent structures and functions.

Claims

1. A portable radio telephone set provided with a display section, comprising: a rotary selector which turns to select various functions,

   said rotary selector being capable of selecting a menu of the various functions displayed on the display section during a non-conversation time, and capable of adjusting the sound volume during a conversation time, the adjusting operation capable of being performed from both the front and rear sides of said telephone set, and

   button keys being arranged with said rotary selector within the operation range of the thumb so that ordinary dial functions performed by operating said rotary selector and said button keys are provided.

2. A portable radio telephone set according to claim 1, said telephone set being of a folding type so as to be housed, wherein said rotary selector is provided in the foldable hinge section so as to be rotatable in the same direction as that of said hinge section.

3. A portable radio telephone set according to claim 2, wherein a folding and housing control mechanism is disposed in the side end of said hinge section.

4. A portable radio telephone set according to claim 1, wherein said rotary selector is rotat-

able and slidable along the rotational shaft thereof.

5. A portable radio telephone set according to one of claims 1 and 4, wherein said rotary selector makes it possible to control the position of a cursor on the display section.

6. A portable radio telephone set according to claim 1, wherein, when said rotary selector turns to set functions in function selection, it is possible to scroll and retrieve setting and releasing of call origination restriction, ringing tone, receiver tone volume, inputting of a personal identification number or the like, which are functions displayed on said display section, and it is possible to select and set these functions by the rotary selector.

7. A portable radio telephone set which is provided with a display section and of a folding and housing type, said telephone set comprising a rotary selector which turns to select various functions being disposed in a hinge section for folding and housing purpose in such a way that the rotary selector can turn in the same direction as that of said hinge section, and a dial for controlling the position of a cursor being disposed near the shaft of the hinge section of said rotary selector, said dial being capable of turning in the same direction as that of said hinge section and capable of sliding along the shaft of said hinge section.

8. A portable radio telephone set according to claim 7, further comprising a folding and housing control mechanism disposed in the side end of said hinge section.

9. A portable radio telephone set which is provided with a display section and of a folding and housing type, said telephone set comprising a rotary selector which turns to select various functions disposed in a hinge section for folding and housing purpose in such a way that the rotary selector can turn in the same direction as that of said hinge section, said rotary selector selecting a menu displayed on a display section during a non-conversation time and adjusting a sound volume during a conversation time, such adjusting operation capable of being performed from both the front and rear sides of said telephone set, button keys being arranged with said rotary selector within the operation range of the thumb so that ordinary dial functions performed by operating said rotary selector and button keys are provided, and a dial for controlling the position of a cursor being disposed near the shaft of the hinge section of said rotary selector, said dial being capable of turning in the same direction as that of said hinge section and capable of sliding along the shaft of said hinge section.

FIG. 1

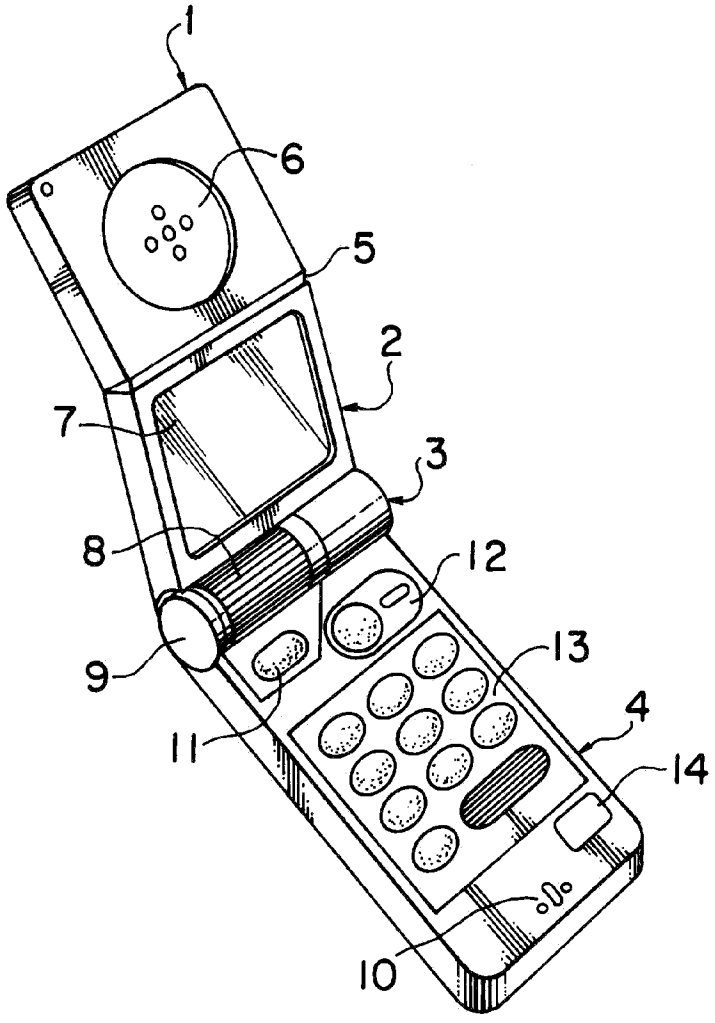


FIG. 2

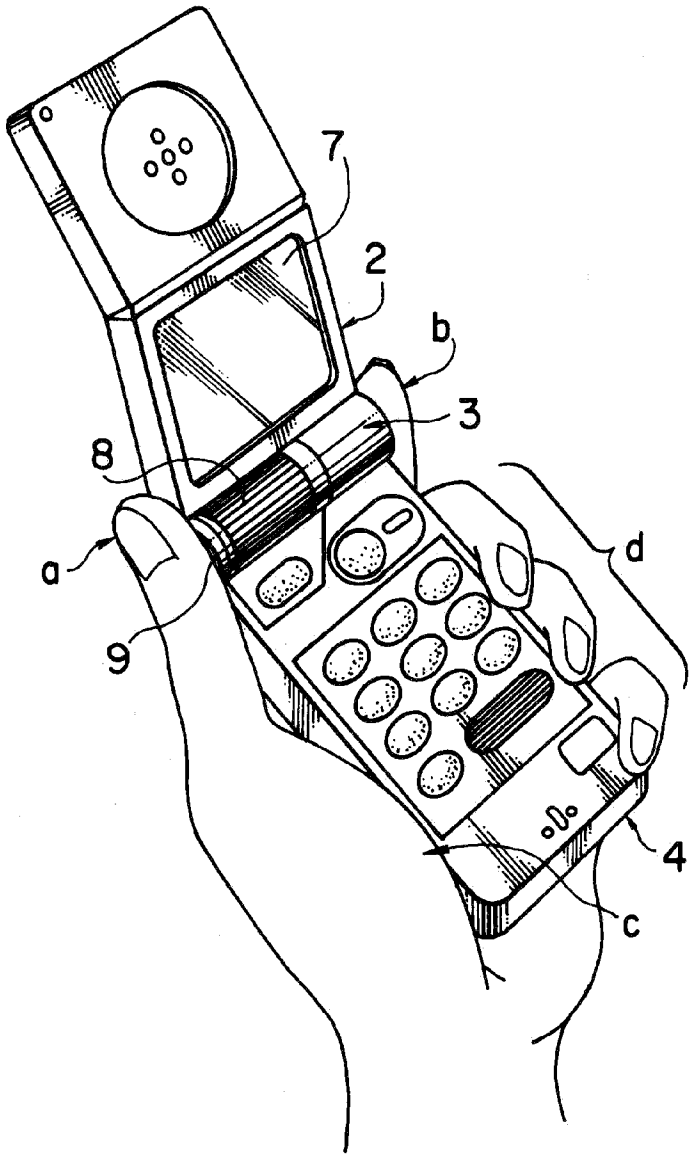


FIG. 4

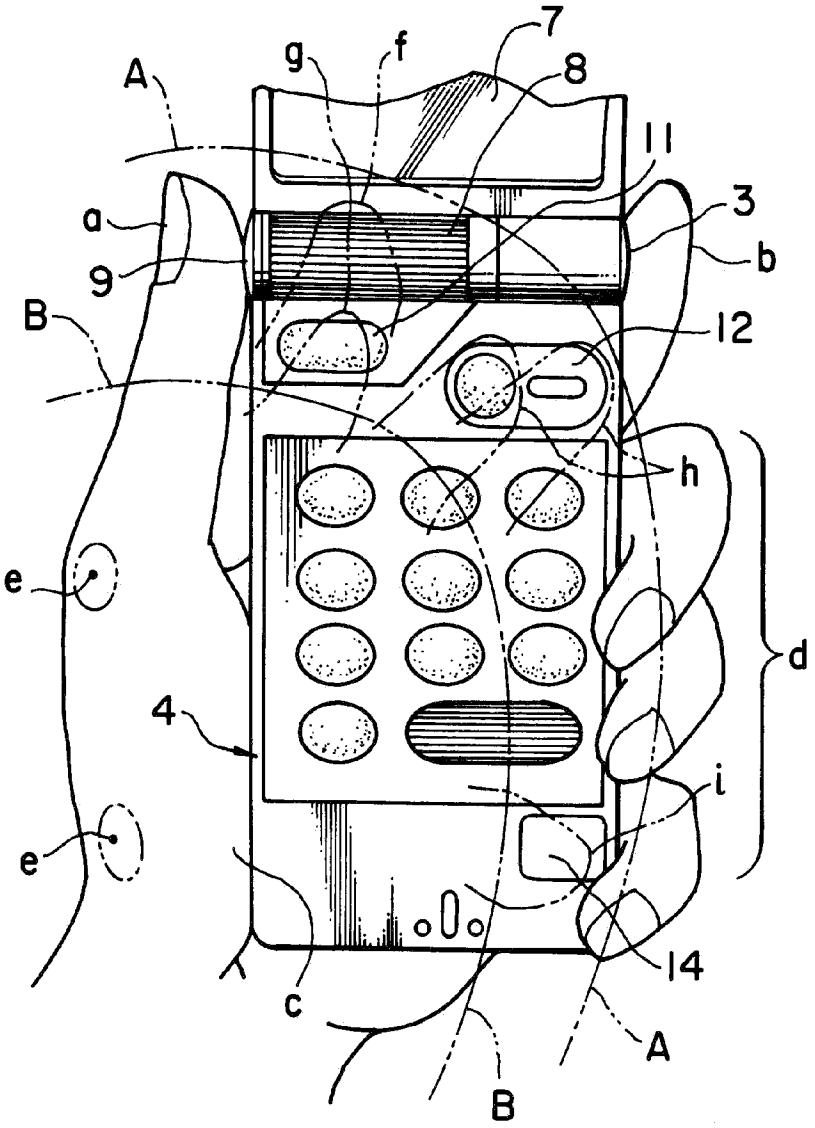


FIG. 3

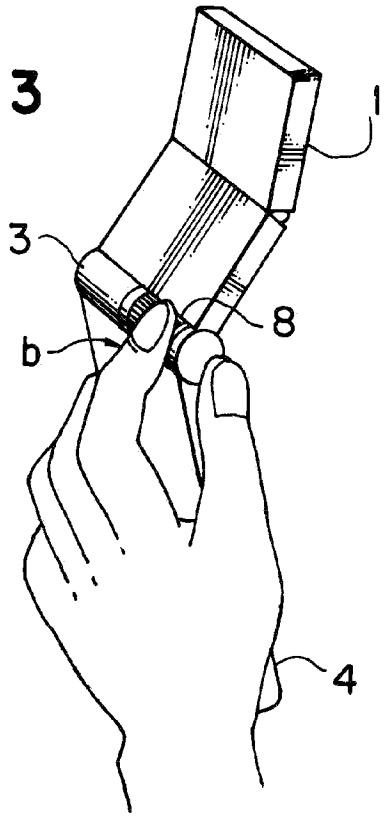


FIG. 5

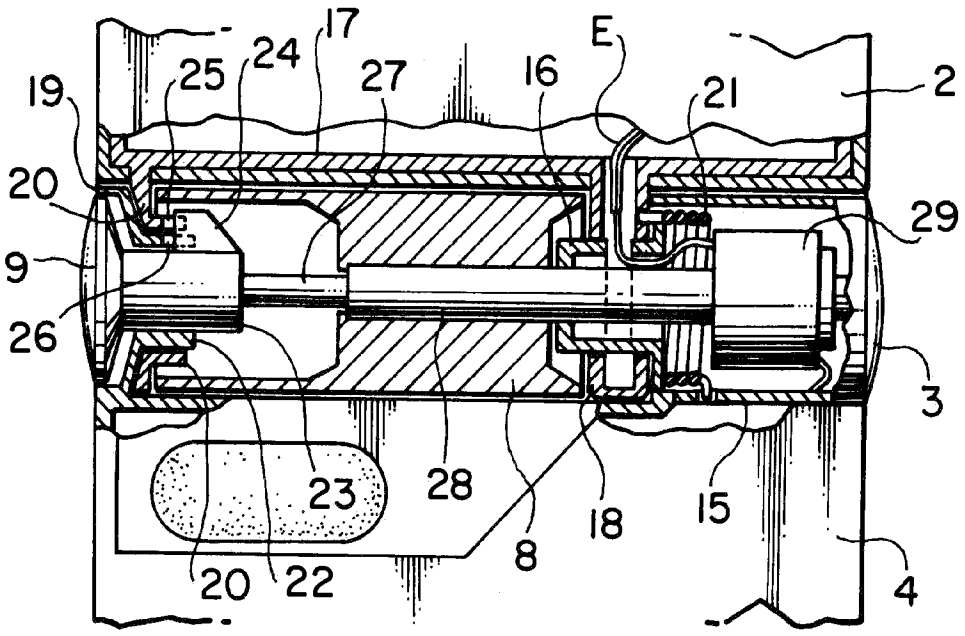


FIG. 6

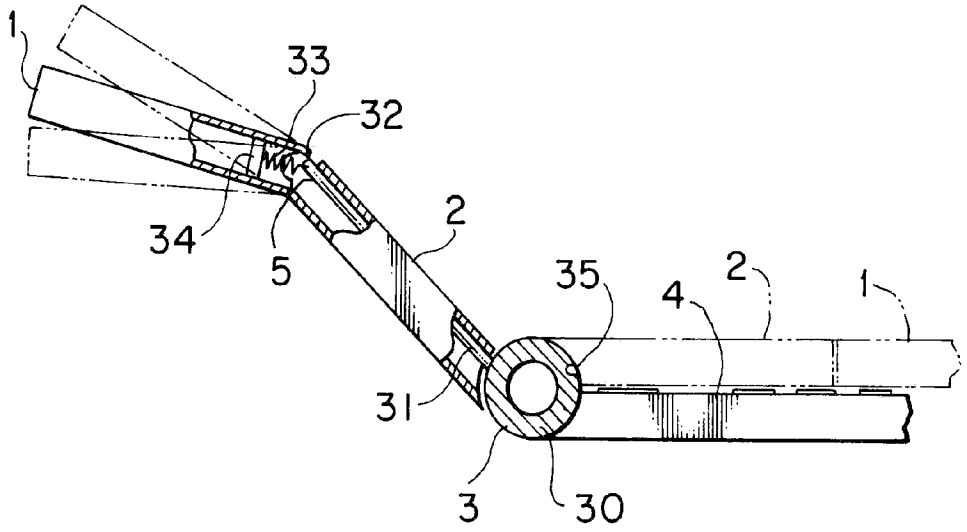


FIG. 7

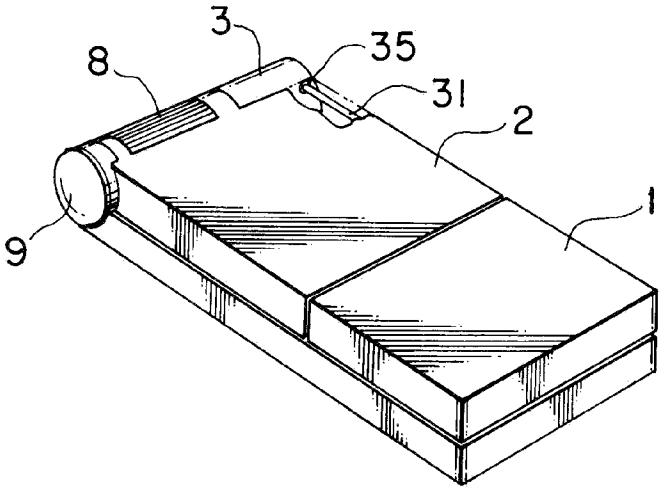


FIG. 8

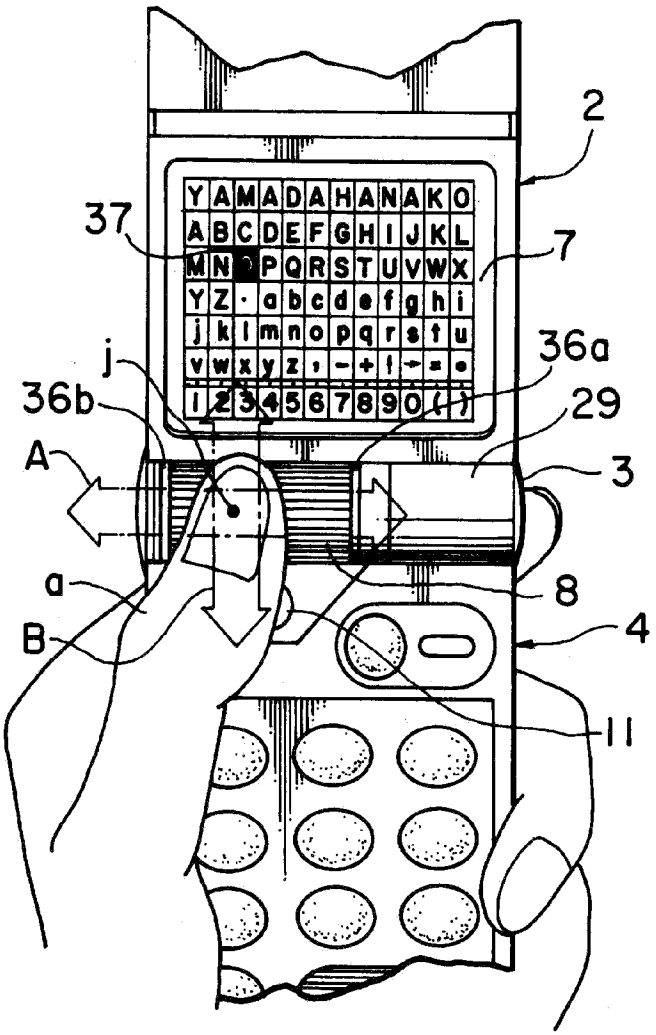
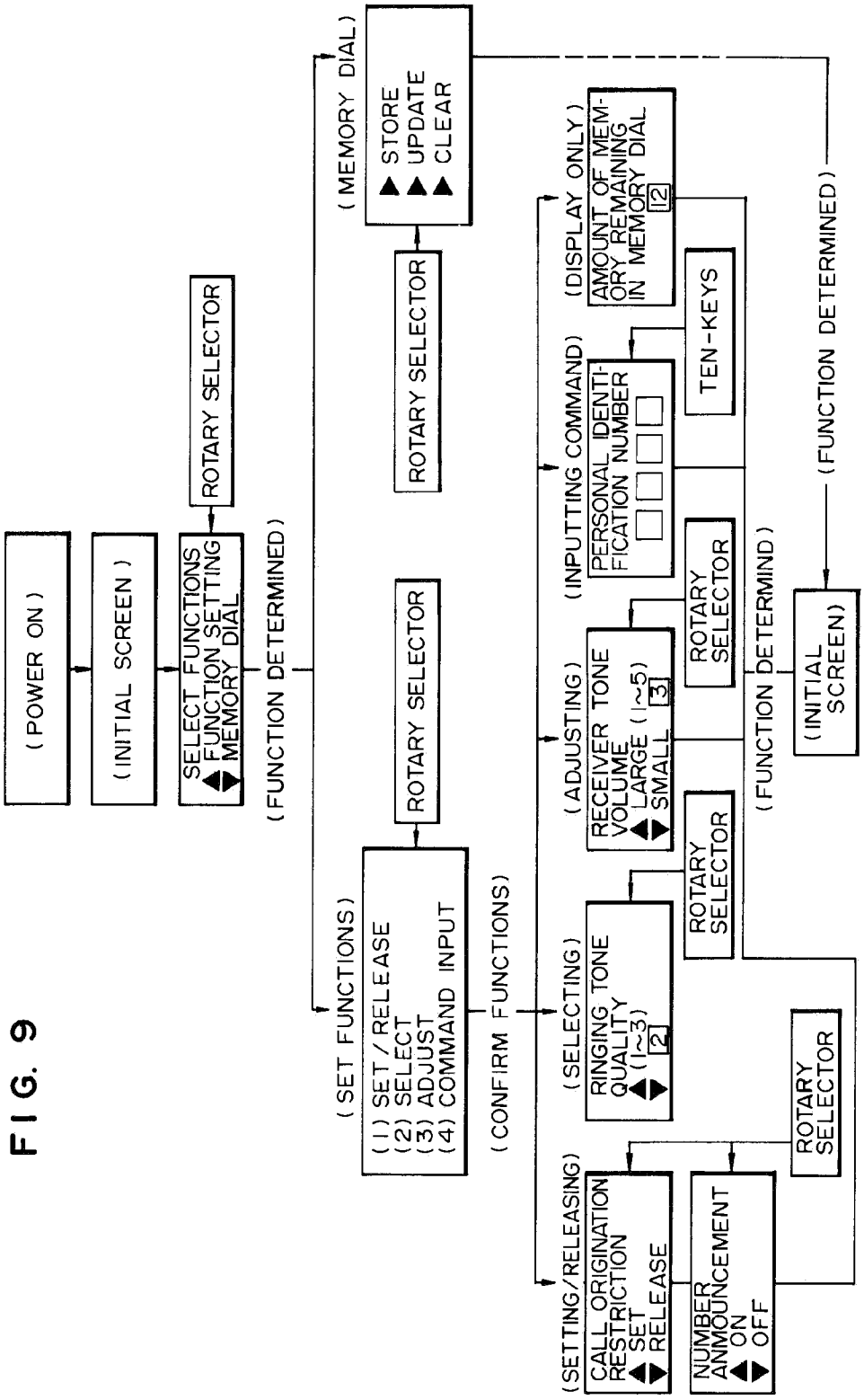


FIG. 9


(POWER ON)
(INITIAL SCREEN)
SELECT FUNCTIONS
▲FUNCTION SETTING
▼MEMORY DIAL
ROTARY SELECTOR
(FUNCTION DETERMINED)
(MEMORY DIAL)
▲STORE
▲▲UPDATE
▲▲CLEAR
ROTARY SELECTOR
(SET FUNCTIONS)
(1) SET/RELEASE
(2) SELECT
(3) ADJUST
(4) COMMAND INPUT
ROTARY SELECTOR
(CONFIRM FUNCTIONS)
(INPUTTING COMMAND)
(DISPLAY ONLY)
AMOUNT OF MEMORY REMAINING IN MEMORY DIAL 12
PERSONAL IDENTIFICATION NUMBER
TEN-KEYS
(ADJUSTING)
RECEIVER TONE VOLUME
▲LARGE (1~5)
▼SMALL 3
ROTARY SELECTOR
ROTARY SELECTOR
(FUNCTION DETERMIND)
(INITIAL SCREEN)
(FUNCTION DETERMINED)
(SELECTING)
RINGING TONE QUALITY
▲▼(1~3) 2
ROTARY SELECTOR
(SETTING/RELEASING)
CALL ORIGINATION RESTRICTION
▲SET
▼RELEASE
NUMBER ANNOUNCEMENT
▲ON
▼OFF
ROTARY SELECTOR

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 93 11 4327

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
Y A	EP-A-0 463 856 (NOKIA MOBILE PHONES LTD) * the whole document *	1,6 7,9	H04M1/02
Y	DE-A-40 08 598 (PHILIPS PATENTVERWALTUNG GMBH) * column 3, line 15 - column 5, line 34; figures 1-3 *	1,6	
A	EP-A-0 373 387 (ROBERT BOSCH GMBH) * column 2, line 40 - column 4, line 35; figures 1,2 *	1,5,7,9	
A	US-A-4 481 382 (VILLA-REAL) * column 3, line 10 - column 5, line 65; figures 1-6 *	1,7,9	
A	US-A-5 027 394 (ONO ET AL) * column 2, line 55 - column 3, line 30; figures 1-7 *	2	
			TECHNICAL FIELDS SEARCHED (Int.Cl.5) H04M

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	15 December 1993	Delangue, P

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

Electronic Acknowledgement Receipt

EFS ID:	8758727
Application Number:	12611282
International Application Number:	
Confirmation Number:	2160
Title of Invention:	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT
First Named Inventor/Applicant Name:	Robert Sanford Havoc Pennington
Customer Number:	37462
Filer:	Matthew H. Grady
Filer Authorized By:	
Attorney Docket Number:	L2039-700630
Receipt Date:	03-NOV-2010
Filing Date:	03-NOV-2009
Time Stamp:	13:47:28
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	L2039-700630_IDS_Letter.pdf	32268 2b8fbccb7113cfc1c39c9381474928e54686 3b83	no	3

Warnings:	
Information:	

2	Information Disclosure Statement (IDS) Filed (SB/08)	L2039-700630_updated_IDS_2.pdf	614763 73d4d5374a53d7f4047b2abfd99a6147485e4d67	no	12
Warnings:					
Information:					
3	Foreign Reference	KR_10_2000-0036647_Unex_Pub.pdf	474487 935c48471f99fa13f3045cf93322a2a8fad13a64	no	4
Warnings:					
Information:					
4	Foreign Reference	DE19952486A1_Plus_Translation.pdf	519019 e8d040c0b4a4fd3d09a78a0ed615fa3de9cdc33a	no	9
Warnings:					
Information:					
5	Information Disclosure Statement (IDS) Filed (SB/08)	L2039-700630_updated_IDS_1.pdf	113061 dd3bf1b10b8b4ddaf53a347baa6f613d5c188a21	no	7
Warnings:					
Information:					
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6	Foreign Reference	EP_0588210_12416479.pdf	908269 0391104a3150860e017714968a9e4a2b98168ff2	no	16
Warnings:					
Information:					
7	NPL Documents	One_laptop_per_child_12416479.pdf	241995 81a0de9743a3796b9835b54c7437be4c8ac2d58f	no	4
Warnings:					
Information:					
		Total Files Size (in bytes):	2903862		

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

DOCKET NO: L2039-700630

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Robert Sanford Havoc Pennington, et al.
Serial No:	12/611,282
Confirmation No:	2160
Filed:	November 3, 2009
For:	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT
Examiner:	HJERPE, RICHARD A
Art Unit:	2629

CERTIFICATE OF TRANSMISSION UNDER 37 C.F.R. §1.8(a)

The undersigned hereby certifies that this document is being electronically filed in accordance with 37 C.F.R. §1.6(a)(4) on the 3rd day of November, 2010.

/Matthew H. Grady/
Matthew H. Grady, Reg. No. 52,957

Commissioner for Patents

INFORMATION DISCLOSURE STATEMENT FILED PURSUANT TO THE DUTY OF DISCLOSURE UNDER 37 CFR §§1.56, 1.97 AND 1.98

Sir:

Pursuant to the duty of disclosure under 37 C.F.R. §§1.56, 1.97 and 1.98, the Applicant requests consideration of this Information Disclosure Statement.

PART I: Information Cited

The Applicant hereby makes of record in the above-identified application the information listed on the concurrently filed form PTO/SB/08a.

The order of presentation of the references should not be construed as an indication of the importance of the references.

The Applicant hereby makes the following additional information of record in the above-identified application.

The applicant would like to bring to the Examiner's attention the following co-pending applications that may contain subject matter related to this application:

Serial No.	Filing Date	Inventor(s)	Publication No.
12/416,479	**April 1, 2009**	**Yves Behar**	**US 2009/0322790 A1**
12/416,496	**April 1, 2009**	**Yves Behar**	**US 2009/0303676 A1**
12/416,503	**April 1, 2009**	**Yves Behar**	**US 2009/0300511 A1**
12/170,939	**July 10, 2008**	**Yves Behar**	**US 2009/0244832 A1**
12/170,951	**July 10, 2008**	**Yves Behar**	**US 2009/0244012 A1**

PART II: Explanation of Non-English Language References

The following is a concise explanation of the relevance of each non-English language reference listed on the concurrently filed form PTO/SB/08a:

For the relevance of the listed non-English language reference DE 19952486 A1 published March 05, 2001, the reference was cited in the International Search Report from a commonly owned PCT application PCT/US2009/038599. An English language version of the Abstract is attached, a machine based translation provided through the European Patent Office of the description and claims is provided herewith, and a translation from Thomson Innovation (www.thomsoninnovation.com), is also provided herewith.

For the relevance of the listed non-English language reference KR 10-2000-0036647 A published July 05, 2000, the reference was cited in the International Search Report from a commonly owned PCT application PCT/US09/39117, wherein this document was placed in category "A," meaning that, in the opinion of the International Searching Authority, it relates to the general state of the art disclosed in PCT/US09/39117 and is not considered to be of particular relevance. An English language version of the Abstract has been provided with KR 10-2000-0036647 A.

PART III: Remarks

Documents cited anywhere in the Information Disclosure Statement, other than U.S. Patents and U.S. Patent Application Publications listed on a Form PTO/SB/08a, are enclosed unless otherwise indicated. It is respectfully requested that:

1. The Examiner consider completely the cited information, along with any other information, in reaching a determination concerning the patentability of the present claims;

2. Any concurrently filed form PTO/SB/08a be signed by the Examiner to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application;

3. The citations for the information be printed on any patent which issues from this application.

By submitting this Information Disclosure Statement, the Applicant makes no representation that a search has been performed, of the extent of any search performed, or that more relevant information does not exist.

By submitting this Information Disclosure Statement, the Applicant makes no representation that the information cited in the Statement is, or is considered to be, material to patentability as defined in 37 C.F.R. §1.56(b).

By submitting this Information Disclosure Statement, the Applicant makes no representation that the information cited in the Statement is, or is considered to be, in fact, prior art as defined by 35 U.S.C. §102.

Notwithstanding any statements by the Applicant, the Examiner is urged to form his own conclusion regarding the relevance of the cited information.

An early and favorable action is hereby requested.

Respectfully submitted,

Yves Behar, Applicant

By: /Matthew H. Grady/

Matthew H. Grady, Reg. No. 52,957
Sarah M. Gates, Reg. No. 60,661
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PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	12611282
Filing Date	2009-11-03
First Named Inventor	Robert Sanford Havoc Pennington
Art Unit	2629
Examiner Name	
Attorney Docket Number	L2039-700630

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6343006	B1	2002-01-29	Moscovitch	

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20050146845	A1	2005-07-07	Moscovitch	
	2	20060126284	A1	2006-06-15	Moscovitch	
	3	20080062625	A1	2008-03-13	Batio	

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] ¡	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12611282
	Filing Date	2009-11-03
	First Named Inventor	Robert Sanford Havoc Pennington
	Art Unit	2629
	Examiner Name	
	Attorney Docket Number	L2039-700630

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NON-PATENT LITERATURE DOCUMENTS			Remove
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		☐
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Examiner Signature		Date Considered	

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[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12611282
	Filing Date	2009-11-03
	First Named Inventor	Robert Sanford Havoc Pennington
	Art Unit	2629
	Examiner Name	
	Attorney Docket Number	L2039-700630

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Matthew H. Grady/	Date (YYYY-MM-DD)	2011-02-25
Name/Print	Matthew H. Grady	Registration Number	52957

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

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Electronic Acknowledgement Receipt

EFS ID:	9531287
Application Number:	12611282
International Application Number:	
Confirmation Number:	2160
Title of Invention:	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT
First Named Inventor/Applicant Name:	Robert Sanford Havoc Pennington
Customer Number:	37462
Filer:	Matthew H. Grady
Filer Authorized By:	
Attorney Docket Number:	L2039-700630
Receipt Date:	25-FEB-2011
Filing Date:	03-NOV-2009
Time Stamp:	14:46:47
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Filed (SB/08)	L2039-700630_updated_IDS.pdf	612612 749078cb5769201e9c923bb92c39d5072aaa8824	no	4

Warnings:	
Information:	

Total Files Size (in bytes):	612612

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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/08a (01-10)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	12611282
Filing Date	2009-11-03
First Named Inventor	Robert Sanford Havoc Pennington
Art Unit	2629
Examiner Name	SHALWALA, BIPIN H
Attorney Docket Number	L2039-700630

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	5926364		1999-07-20	Karidis	
	2	6144358		2000-11-07	Narayanaswamy et al.	
	3	6341061		2002-01-22	Eisbach et al.	
	4	6437974		2002-08-20	Liu	
	5	6492974		2002-12-10	Nobuchi et al.	
	6	6882335		2005-04-19	Saarinen	
	7	6295038		2001-09-25	Rebeske	
	8	7698407		2010-04-13	Mattox, Jr. et al.	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12611282
	Filing Date	2009-11-03
	First Named Inventor	Robert Sanford Havoc Pennington
	Art Unit	2629
	Examiner Name	SHALWALA, BIPIN H
	Attorney Docket Number	L2039-700630

U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20050221865		2005-10-06	Nishiyama et al.	
	2	20080024465		2008-01-31	Hawkins et al.	

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] ¡	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐

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NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	Miller, M., "Creating a Digital Home Entertainment System with Windows Media Center" , Apr 2006, Que.	☐

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EXAMINER SIGNATURE

Examiner Signature		Date Considered	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12611282
	Filing Date	2009-11-03
	First Named Inventor	Robert Sanford Havoc Pennington
	Art Unit	2629
	Examiner Name	SHALWALA, BIPIN H
	Attorney Docket Number	L2039-700630

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12611282
	Filing Date	2009-11-03
	First Named Inventor	Robert Sanford Havoc Pennington
	Art Unit	2629
	Examiner Name	SHALWALA, BIPIN H
	Attorney Docket Number	L2039-700630

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Matthew H. Grady/	Date (YYYY-MM-DD)	2011-09-28
Name/Print	Matthew H. Grady	Registration Number	52957

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

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Electronic Acknowledgement Receipt

EFS ID:	11067878
Application Number:	12611282
International Application Number:	
Confirmation Number:	2160
Title of Invention:	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT
First Named Inventor/Applicant Name:	Robert Sanford Havoc Pennington
Customer Number:	37462
Filer:	Matthew H. Grady
Filer Authorized By:	
Attorney Docket Number:	L2039-700630
Receipt Date:	28-SEP-2011
Filing Date:	03-NOV-2009
Time Stamp:	14:35:08
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Non Patent Literature	L2039-700431-Miller-Ref.pdf	2170945 3150b1d2947b894807fc406a4298ad02a457f24f	no	28

Warnings:	
Information:	

2	Information Disclosure Statement (IDS) Form (SB08)	L2039-700630_IDS_.pdf	529502 1f292aba21422c49ad044836b55032a726ea2792	no	5

Warnings:	
Information:	
Total Files Size (in bytes):	2700447

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	12611282
Filing Date	2009-11-03
First Named Inventor	Noah B. Guyot
Art Unit	N/A
Examiner Name	Not Yet Assigned
Attorney Docket Number	L2039-700630

U.S.PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	5436954		1995-07-25	Nishiyama et al.	
	2	7035665		2006-04-25	Kido et al.	
	3	7869834		2011-01-11	Seol et al.	

If you wish to add additional U.S. Patent citation information please click the Add button.

U.S.PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20060238439		2006-10-26	Fuller et al.	
	2	20030107603		2003-06-12	Clapper	
	3	20050083642		2005-04-21	Senpuku et al.	

If you wish to add additional U.S. Published Application citation information please click the Add button.

FOREIGN PATENT DOCUMENTS

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	12611282
	Filing Date	2009-11-03
	First Named Inventor	Noah B. Guyot
	Art Unit	N/A
	Examiner Name	Not Yet Assigned
	Attorney Docket Number	L2039-700630

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] ¡	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		☐

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EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	12611282
	Filing Date	2009-11-03
	First Named Inventor	Noah B. Guyot
	Art Unit	N/A
	Examiner Name	Not Yet Assigned
	Attorney Docket Number	L2039-700630

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☐ See attached certification statement.

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SIGNATURE

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Signature	/Matthew H. Grady/	Date (YYYY-MM-DD)	2011-11-28
Name/Print	Matthew H. Grady	Registration Number	52957

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Electronic Acknowledgement Receipt

EFS ID:	11483981
Application Number:	12611282
International Application Number:	
Confirmation Number:	2160
Title of Invention:	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT
First Named Inventor/Applicant Name:	Robert Sanford Havoc Pennington
Customer Number:	37462
Filer:	Matthew H. Grady/Matthew Grady
Filer Authorized By:	Matthew H. Grady
Attorney Docket Number:	L2039-700630
Receipt Date:	28-NOV-2011
Filing Date:	03-NOV-2009
Time Stamp:	09:36:54
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	L2039-700630_SB08_2.pdf	37595 d49abe52eb862445f78fadac2f095dd6082fdbef	no	4

Warnings:	
Information:	

This is not an USPTO supplied IDS fillable form	
Total Files Size (in bytes):	37595

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New Applications Under 35 U.S.C. 111

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National Stage of an International Application under 35 U.S.C. 371

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PTO/SB/08a (01-10)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	12611282
Filing Date	2009-11-03
First Named Inventor	Noah B. Guyot
Art Unit	N/A
Examiner Name	Not Yet Assigned
Attorney Docket Number	L2039-700433

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

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U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20070242421		2007-10-18	Goschin et al.	
	2	20080024388		2008-01-31	Bruce	
	3	20080158795		2008-07-03	Aoki et al.	
	4	20090190295		2009-07-30	Chin et al.	

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FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] ¡	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12611282
	Filing Date	2009-11-03
	First Named Inventor	Noah B. Guyot
	Art Unit	N/A
	Examiner Name	Not Yet Assigned
	Attorney Docket Number	L2039-700433

	1							☐

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NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		☐

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

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[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12611282
	Filing Date	2009-11-03
	First Named Inventor	Noah B. Guyot
	Art Unit	N/A
	Examiner Name	Not Yet Assigned
	Attorney Docket Number	L2039-700433

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SIGNATURE

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Signature	/Matthew H. Grady/	Date (YYYY-MM-DD)	2012-05-18
Name/Print	Matthew H. Grady	Registration Number	52957

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Electronic Acknowledgement Receipt

EFS ID:	12815756
Application Number:	12611282
International Application Number:	
Confirmation Number:	2160
Title of Invention:	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT
First Named Inventor/Applicant Name:	Robert Sanford Havoc Pennington
Customer Number:	37462
Filer:	Matthew H. Grady/Matthew Grady
Filer Authorized By:	Matthew H. Grady
Attorney Docket Number:	L2039-700630
Receipt Date:	18-MAY-2012
Filing Date:	03-NOV-2009
Time Stamp:	15:54:43
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	L2039-700433_-_Information_Disclosure_Statement_Fillable_PDF_1.pdf	605378 9f88d407dcb57949a39e67017e63c24d10324540	no	4

Warnings:	
Information:	

Total Files Size (in bytes):	605378

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New Applications Under 35 U.S.C. 111
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National Stage of an International Application under 35 U.S.C. 371
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New International Application Filed with the USPTO as a Receiving Office
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PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	12611282
Filing Date	2009-11-03
First Named Inventor	Noah B. Guyot
Art Unit	2629
Examiner Name	G. Sitta
Attorney Docket Number	L2039-700433

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6693652		2004-02-17	Barrus et al.	
	2	7756928		2010-07-13	Meenan et al.	

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U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20070240076		2007-10-11	Astala et al.	
	2	20090150826		2009-06-11	Lyndersay et al.	
	3	20010032320		2001-10-18	Abdelnur et al.	

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12611282
	Filing Date	2009-11-03
	First Named Inventor	Noah B. Guyot
	Art Unit	2629
	Examiner Name	G. Sitta
	Attorney Docket Number	L2039-700433

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		☐

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Examiner Signature		Date Considered	

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[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	Filing Date	2009-11-03
	First Named Inventor	Noah B. Guyot
	Art Unit	2629
	Examiner Name	G. Sitta
	Attorney Docket Number	L2039-700433

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Matthew H. Grady/	Date (YYYY-MM-DD)	2012-08-22
Name/Print	Matthew H. Grady	Registration Number	52957

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	13562042
Application Number:	12611282
International Application Number:	
Confirmation Number:	2160
Title of Invention:	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT
First Named Inventor/Applicant Name:	Robert Sanford Havoc Pennington
Customer Number:	37462
Filer:	Matthew H. Grady
Filer Authorized By:	
Attorney Docket Number:	L2039-700433
Receipt Date:	22-AUG-2012
Filing Date:	03-NOV-2009
Time Stamp:	15:35:04
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	L2039-700433_-_Information_Disclosure_Statement_Fillable_PDF_1.pdf	612399 c97e3359787e6f183f515943676735d11d08d019	no	4

Warnings:	
Information:	

Total Files Size (in bytes):	612399

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	12611282
Filing Date	2009-11-03
First Named Inventor	Noah B. Guyot
Art Unit	2629
Examiner Name	G. Sitta
Attorney Docket Number	L2039-700433

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20080235594		2008-09-25	Bhumkar et al.	

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	Filing Date	2009-11-03
	First Named Inventor	Noah B. Guyot
	Art Unit	2629
	Examiner Name	G. Sitta
	Attorney Docket Number	L2039-700433

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	Art Unit	2629
	Examiner Name	G. Sitta
	Attorney Docket Number	L2039-700433

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☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Matthew H. Grady/	Date (YYYY-MM-DD)	2012-11-28
Name/Print	Matthew H. Grady	Registration Number	52957

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Electronic Acknowledgement Receipt

EFS ID:	14326313
Application Number:	12611282
International Application Number:	
Confirmation Number:	2160
Title of Invention:	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT
First Named Inventor/Applicant Name:	Robert Sanford Havoc Pennington
Customer Number:	37462
Filer:	Matthew H. Grady
Filer Authorized By:	
Attorney Docket Number:	L2039-700433
Receipt Date:	28-NOV-2012
Filing Date:	03-NOV-2009
Time Stamp:	14:54:56
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	L2039-700433_-_Information_Disclosure_Statement_Fillable_PDF_1.pdf	612186 97066dd17dfe433edee7bd0d7fd0e263e218136e	no	4

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PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	12611282
Filing Date	2009-11-03
First Named Inventor	Robert Sanford Havoc Pennington
Art Unit	2173
Examiner Name	LEE, TING ZHOU
Attorney Docket Number	L2039-700433

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	7467356		2008-12-16	Gettman et al.	
	2	6972752		2005-12-06	Nako et al.	

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20020010707		2002-01-24	CHANG et al.	
	2	20040001049		2004-01-01	Oakley	
	3	20070247446		2007-10-25	Orsley et al.	
	4	20050134717		2005-06-23	Misawa	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12611282
	Filing Date	2009-11-03
	First Named Inventor	Robert Sanford Havoc Pennington
	Art Unit	2173
	Examiner Name	LEE, TING ZHOU
	Attorney Docket Number	L2039-700433

	5	20040207568		2004-10-21	Ooshima et al.	
	6	20090322790		2009-12-31	Behar et al.	

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	6-242853	JP	A	1994-09-02	Hitachi Ltd et al.		☒
	2	6-259166	JP	A	1994-09-16	Hitachi Ltd		☒
	3	8-179851	JP	A	1996-07-12	Toshiba Corp		☒
	4	5-197507	JP	A	1993-08-06	Hitachi Ltd		☒
	5	1292112	CN	A	2001-04-18	Sharp Kk		☒
	6	2005-242436	JP	A	2005-09-08	Matsushita Electric Ind Co Ltd		☒
	7	2001-167211	JP	A	2001-06-22	Hitachi Ltd et al.		☒

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12611282
	Filing Date	2009-11-03
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	8	2005-159741	JP	A	2005-06-16	Fuji Photo Film Co Ltd		☒
	9	10-111658	JP	A	1998-04-28	Fujitsu Ltd		☒
	10	6090200	JP	A	1994-03-29	HITACHI LTD		☒
	11	2004-302179	JP	A	2004-10-28	Hitachi Ltd		☒

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	1		☐

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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12611282
	Filing Date	2009-11-03
	First Named Inventor	Robert Sanford Havoc Pennington
	Art Unit	2173
	Examiner Name	LEE, TING ZHOU
	Attorney Docket Number	L2039-700433

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Matthew H. Grady/	Date (YYYY-MM-DD)	2013-04-02
Name/Print	Matthew H. Grady	Registration Number	52957

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	15414843
Application Number:	12611282
International Application Number:	
Confirmation Number:	2160
Title of Invention:	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT
First Named Inventor/Applicant Name:	Robert Sanford Havoc Pennington
Customer Number:	37462
Filer:	Matthew H. Grady
Filer Authorized By:	
Attorney Docket Number:	L2039-700433
Receipt Date:	02-APR-2013
Filing Date:	03-NOV-2009
Time Stamp:	17:33:17
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	Information_Disclosure_Statement_1.pdf	29668 8b233f06cf3a4e9407df5ce5a342d6ffab6d0bc4	no	3

Warnings:	
Information:	

2	Foreign Reference	JP6242853A_3.PDF	267857 b1b1868854b324031ebb688b86e3e4a7b3f652e9	no	5
Warnings:					
Information:					
3	Foreign Reference	JP6-242853_machine_translation_4.PDF	127282 bc980dea04fed66b88cac72ce026ade2880bdb53	no	15
Warnings:					
Information:					
4	Foreign Reference	JP6259166A_5.PDF	344427 c9627a94c58453cff50b0dff68bfdcb080ffbd12e	no	8
Warnings:					
Information:					
5	Foreign Reference	JP06-259166_machine_translation_6.PDF	203829 906a139f18dabdb68c7af2348c7f579c9146ac54	no	19
Warnings:					
Information:					
6	Foreign Reference	JP8179851A_7.PDF	146254 c33a8a9c6fc02c90811aed4c5dec11340aa14e7f	no	4
Warnings:					
Information:					
7	Foreign Reference	JP08-179851_machine_translation_8.PDF	108295 f40451bbc1dc23288cd1c1acf4b64dacbe06388b	no	12
Warnings:					
Information:					
8	Foreign Reference	JP5197507A_9.PDF	518569 5ec3a5a2b35515129b91d44a7fb23a11290a00b0	no	12
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Information:					
9	Foreign Reference	JP05-197507_machine_translation_10.PDF	259159 1821e065d76f3487b77f82937fd2dee0d43b3f2c	no	31
Warnings:					
Information:					
10	Foreign Reference	JP2005242436A_11.PDF	312348 48cf2a8226278209c38d207c2666afc3bb25c9b4	no	9
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Information:					

11	Foreign Reference	JP2005-242436_machine_translation_12.PDF	141054 87af2b1d204ae623b9c06becd5f4d4d676e412ec	no	19
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Information:					
12	Foreign Reference	JP2001167211A_13.PDF	1095914 34d40ec0d5524b6d1fe088432e04c834392cdaeb	no	32
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13	Foreign Reference	JP2001-167211_machine_translation_14.PDF	481248 afada32802fffa1bc163443aa498961ea1fd452c	no	60
Warnings:					
Information:					
14	Foreign Reference	JP2005159741A_15.PDF	556080 751d2d568a5ec0a38f2e74a6966d810dc3e5fa22	no	16
Warnings:					
Information:					
15	Foreign Reference	Translation_of_jp-2005-159741_16.PDF	242783 4606dcb5d42d99682b505af4dbcaf0370b8f5a27	no	22
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Information:					
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Information:					

20	Foreign Reference	JP2004302179A_21.PDF	70192 9d7e9c335b80e9ebed2af0c288e1bb9ebdb28a6c	no	2
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23	Foreign Reference	CN1292112A_machine_translate_24.PDF	83176 89f6f36099668cb1641bf0a7cfa21b5fd9541879	no	49
Warnings:					
Information:					
24	Information Disclosure Statement (IDS) Form (SB08)	1573759_1.pdf	612992 4e58d9bf945d6eaa4f1415a35d38636bcb07f4c0	no	5
Warnings:					
Information:					
		Total Files Size (in bytes):	8163566		

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4).

Dated: April 2, 2013
Electronic Signature for Matthew H. Grady: /Matthew H. Grady/

Docket No.: L2039-700433
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Noah B. Guyot et al.

Application No.: 12/611,282 | Confirmation No.: 2160

Filed: November 3, 2009 | Art Unit: 2629

For: METHODS AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT | Examiner: G. Sitta

INFORMATION DISCLOSURE STATEMENT (IDS)

MS Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Madam:

Pursuant to 37 C.F.R. § 1.56, 1.97 and 1.98, the attention of the Patent and Trademark Office is hereby directed to the references listed on the attached PTO/SB/08. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

This Information Disclosure Statement is filed before the mailing date of a first Office Action on the merits as far as is known to the undersigned (37 C.F.R. § 1.97(b)(3)).

In accordance with 37 C.F.R. § 1.98(a)(2)(ii), Applicant has not submitted copies of U.S. patents and U.S. patent applications. Applicant submits herewith copies of foreign patents and non-patent literature in accordance with 37 C.F.R. § 1.98(a)(2).

The Applicant would like to bring to the Examiner's attention the following co-pending applications that may contain subject matter related to this application:

Serial No.	Filing Date	Inventor(s)
13/651,636	**October 15, 2012**	**Yves Behar**

The Applicant would like to bring to the Examiner's attention the cited search reports and/or written opinions from one or more related International or Foreign National Application PCT/US2009/038599 and PCT/US2009/039117, copies of which have been provided in prior respective corresponding application numbers 12/170,939 and 12/170,951 filed July, 10, 2008 and application number 12/416,479 filed April 1, 2009, on which the present application relies for priority under 35 U.S.C. § 120, identified in the Applicant's submission on November 3, 2010.

The following is a concise explanation of the relevance of each non-English Language reference listed on the concurrently filed form PTO/SB08: each foreign reference was cited in respective national phase examination of PCT/US2009/038599 corresponding to application numbers 12/170,939 and 12/170,951 filed July, 10, 2008. Full or partial machine based translations are also provided for the non-English language references.

In accordance with 37 C.F.R. § 1.97(g), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 C.F.R. § 1.56(a) exists. In accordance with 37 C.F.R. § 1.97(h), the filing of this Information Disclosure Statement shall not be construed to be an admission that any patent, publication or other information referred to therein is "prior art" for this invention unless specifically designated as such.

It is submitted that the Information Disclosure Statement is in compliance with 37 C.F.R. § 1.98 and the Examiner is respectfully requested to consider the listed references.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 50/2762, under Order No. L2039-700433.

Dated: April 2, 2013

Respectfully submitted,

Electronic signature: /Matthew H. Grady/
Matthew H. Grady
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(19)日本国特許庁（ＪＰ）　(12) **公開特許公報（Ａ）**　(11)特許出願公開番号

特開平6－242853

(43)公開日　平成６年(1994)９月２日

(51)Int.Cl.[5]	識別記号	庁内整理番号	ＦＩ		技術表示箇所
Ｇ０６Ｆ　1/16					
		7165－5B	Ｇ０６Ｆ　1/ 00	３１２　Ｊ	
		7165－5B		３１２　Ｆ	

審査請求　未請求　請求項の数12　ＯＬ　（全　５　頁）

(21)出願番号　特願平5－25126

(22)出願日　平成５年(1993)２月15日

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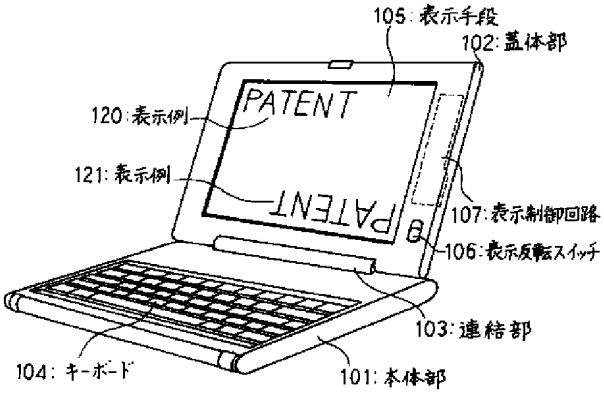
(74)代理人　弁理士　薄田　利幸

最終頁に続く

(54)【発明の名称】　電子機器装置及びパーソナルコンピュータ

(57)【要約】
【目的】キーボードを使用できる形態を保持しながら、ペン入力操作やマウス操作主体の利用環境に適した形態を採ることのできるパーソナルコンピュータを提供すること。
【構成】前面にキーボード１０４を有する本体部１０１と、前面に表示手段１０５を有する蓋体部１０２と、両者の前面を向かい合わせる状態で、本体部の一端と蓋体部の一端とを連結し、かつ両者を開閉可能とする連結機構１０３とからなり、この連結機構１０３は、本体部１０１に対して蓋体部１０２を１８０度を越えた角度に開き得る構造であるパーソナルコンピュータ。表示手段１０５の表示を天地逆にするための表示反転スイッチ１０６があることが好ましい。

図１



【特許請求の範囲】
【請求項１】前面にキーボードを有する本体部と、前面に表示手段を有する蓋体部と、該本体部の前面と該蓋体部の前面とを向かい合わせる状態で、本体部の一端と蓋体部の一端とを連結し、かつ両者を開閉可能とする連結機構とからなる電子機器装置において、上記連結機構は、上記本体部に対して上記蓋体部を１８０度を越えた角度に開き得る構造であることを特徴とする電子機器装置。
【請求項２】請求項１記載の電子機器装置において、上記表示手段は、表示される記号が天地逆に表示されるための切替手段を備えたことを特徴とする電子機器装置。
【請求項３】請求項１記載の電子機器装置において、上記連結機構は、上記本体部に対して上記蓋体部を実質的に０度から３６０度の範囲の任意の角度にし得る構造であることを特徴とする電子機器装置。
【請求項４】請求項３記載の電子機器装置において、上記表示手段は、表示される記号が天地逆に表示されるための切替手段を備えたことを特徴とする電子機器装置。
【請求項５】請求項１から４のいずれか一に記載の電子機器装置において、上記キーボードは、キーボードからの入力を無効とするための第２の切替手段を備えたことを特徴とする電子機器装置。
【請求項６】請求項１から４のいずれか一に記載の電子機器装置において、上記本体部は、本体部が鉛直線に対して所定の範囲の角度にあることを検出する検出手段を有し、上記キーボードは、該検出手段の検出した値に基づいて、キーボードからの入力を無効とするための第３の切替手段を備えたことを特徴とする電子機器装置。
【請求項７】前面にキーボードを有し、電子回路を格納する本体部と、前面に表示手段を有する蓋体部と、該本体部の前面と該蓋体部の前面とを向かい合わせる状態で、本体部の一端と蓋体部の一端とを連結し、かつ両者を開閉可能とする連結機構とからなるパーソナルコンピュータにおいて、上記連結機構は、上記本体部に対して上記蓋体部を１８０度を越えた角度に開き得る構造であることを特徴とするパーソナルコンピュータ。
【請求項８】請求項７記載のパーソナルコンピュータにおいて、上記表示手段は、表示される記号が天地逆に表示されるための切替手段を備えたことを特徴とするパーソナルコンピュータ。
【請求項９】請求項７記載のパーソナルコンピュータにおいて、上記連結機構は、上記本体部に対して上記蓋体部を実質的に０度から３６０度の範囲の任意の角度にし得る構造であることを特徴とするパーソナルコンピュータ。
【請求項１０】請求項９記載のパーソナルコンピュータにおいて、上記表示手段は、表示される記号が天地逆に表示されるための切替手段を備えたことを特徴とするパーソナルコンピュータ。
【請求項１１】請求項７から１０のいずれか一に記載のパーソナルコンピュータにおいて、上記キーボードは、キーボードからの入力を無効とするための第２の切替手段を備えたことを特徴とするパーソナルコンピュータ。
【請求項１２】請求項７から１０のいずれか一に記載のパーソナルコンピュータにおいて、上記本体部は、本体部が鉛直線に対して所定の範囲の角度にあることを検出する検出手段を有し、上記キーボードは、該検出手段の検出した値に基づいて、キーボードからの入力を無効とするための第３の切替手段を備えたことを特徴とするパーソナルコンピュータ。
【発明の詳細な説明】
【０００１】
【産業上の利用分野】本発明は、小型化により可搬性を高めた電子機器装置及びパーソナルコンピュータに関する。
【０００２】
【従来の技術】近年、情報処理装置等の電子機器装置の小型化の進展は著しく、とりわけ、パーソナルコンピュータは、その大きさ、重量の点で、携帯可能なまでに小型化されてきた。
【０００３】この様な従来の携帯型パーソナルコンピュータの一般的な形態は、（１）操作部を有する本体部と、（２）表示部を有する蓋体部と、（３）上記本体部と蓋体部とを連結すると共に、連結部を軸として蓋体を回動させて開閉可能にする構構とで構成される匡体構造を持つ。通常、携帯時等の未使用時には本体部と蓋体部とは向かい合わさる形で閉じられている。使用時にはこの蓋体部を１２０度程度に開けて操作するようになっている。この様な携帯型パーソナルコンピュータは、俗にラップトップ型コンピュータとも呼ばれ、近年省スペースの卓上型コンピュータとして数多く商品化され、利用されている。なお、この種の電子機器装置に関連するものには、例えば、特開平３－１０９６２２、特開平３－２９２５２０等がある。
【０００４】
【発明が解決しようとする課題】上記従来技術は、ペン入力操作やマウス操作主体のユーザーインターフェースを有する利用形態には適した形態でないという問題があった。近年、パーソナルコンピュータの利用環境が変わりつつあり、そのひとつは、マウス操作を主体とする操作環境の提供であり、さらには、ペン入力による操作環境の提供である。上記従来技術は、あくまでもキーボード入力による操作環境に適したものであった。なお、このような問題は、携帯型ワードプロセッサ等のパーソナルコンピュータ以外の電子機器装置においても同様である。
【０００５】本発明の目的は、キーボードを使用できる形態を保持しながら、ペン入力操作やマウス操作主体の利用環境に適した形態を採ることのできる電子機器装置

及びパーソナルコンピュータを提供することにある。
【０００６】
【課題を解決するための手段】上記目的を達成するために、本発明の電子機器装置は、前面にキーボードを有する本体部と、前面に表示手段を有する蓋体部と、この本体部の前面とこの蓋体部の前面とを向かい合わせる状態で、本体部の一端と蓋体部の一端とを連結し、かつ両者を開閉可能とする連結機構とからなり、本体部に対して蓋体部が１８０度を越えた角度に開き得るように、連結機構の構造を構成したものである。
【０００７】また、本発明のパーソナルコンピュータは、前面にキーボードを有し、電子回路を格納する本体部と、前面に表示手段を有する蓋体部と、この本体部の前面とこの蓋体部の前面とを向かい合わせる状態で、本体部の一端と蓋体部の一端とを連結し、かつ両者を開閉可能とする連結機構とからなり、本体部に対して蓋体部が１８０度を越えた角度に開き得るように、連結機構の構造を構成したものである。
【０００８】いずれの装置においても、上記連結機構は、本体部に対して蓋体部を実質的に０度から３６０度の範囲の任意の角度にし得る構造であることが好ましい。また、上記表示手段は、表示される記号が天地逆に表示されるための切替手段を備えることが好ましい。さらに、本体部に対して蓋体部を３６０度開き、蓋体部を表側にして用いる等のとき、蓋体部になんらかの力が加わると、裏側になっている本体部のキーボードから意図しないデータが誤って入力される場合があり得る。それを防止するためキーボードからの入力を無効とするための第２の切替手段を備えることが好ましい。また、この切替手段は、本体部の鉛直線に対してなす角度から自動的に切り替わるようにしてもよい。
【０００９】
【作用】上記のように構成することでキーボードを有する本体部と表示手段を有する蓋体部とをほぼ３６０度開き、キーボードと表示手段とが背中合わせとなるようにすることが出来る。そのような、ほぼ３６０度開いた状態では、キーボードも表示手段も機器の表面に露出する形となるので、表示手段を利用者に対面するように手で持てば、ペン入力環境にまさに好適な形態となる。しかも、必要とあれば、機器を裏返すことにより、利用者は、キーボードを操作することもできる。
【００１０】あるいはまた、本体部と蓋体部とを約３４０度に開くことが出来る。この状態だと、連結部分を上に、本体部の一端と蓋体部の一端とを下にした形で、机上に立てることが出きる。このとき、表示手段に表示される文字・図形等は、上下及び左右が逆となるため、利用者が表示内容を即座に読みとることは難しい。そこで、表示を天地逆にする。このようにして机上に立てて用いればマウス操作に好適な形態となる。
【００１１】
【実施例】本発明の一実施例を図面を用いて説明する。図１は、本発明を適用した携帯用パーソナルコンピュータの斜視図である。本体部１０１は、コンピュータ本体の電子回路を格納している。蓋体部１０２は、コンピュータの表示手段１０５をその全面に備え、使用時には、引き起こして表示手段が利用する人に対面するようになっている。表示手段１０５は、本コンピュータの表示部であり、ペン入力環境時には、入力手段ともなる。キーボード１０４は、コンピュータの入力部で、従来の使用においては中心となる入力部である。
【００１２】連結部１０３は、本体部１０１の一端とヒンジで繋がれている。また一方で、連結部１０３は、蓋体部１０２の一端ともヒンジで繋がれている。表示反転スイッチ１０６は、利用者によって操作されるスイッチで、ノーマル状態とリバース状態の２状態をとることが出来る。その状態は、表示制御回路１０７に入力されている。表示制御回路１０７は、本体部１０１に格納されているコンピュータ本体回路の制御により、表示手段１０５への出力を制御する電子回路である。表示制御回路１０７は、表示反転スイッチ１０６の状態により、表示手段への表示を天地逆にできる。つまり、表示反転スイッチ１０６がノーマル状態にあるときは、その表示は表示例１２０の如くに行われる。一方、表示反転スイッチ１０６がリバース状態にあるときは、その表示は表示例１２１の如く天地逆に、すなわち、表示面中心の鉛直線を中心として１８０度回転して行われる。
【００１３】次に、本発明で重要な役割を果たす連結機構の詳細を図２を用いて説明する。連結機構は、連結部１０３、本体支持軸１１０及び蓋体支持軸１１１を有する。本体支持軸１１０は、本体部１０１に設けられた本体支持部１１２と連結される。本体部１０１は、軸１５０を中心に自由に回転することが出来る。蓋体支持軸１１１は、蓋体部１０２に設けられた蓋体支持部１１３と連結される。蓋体部１０２は、軸１５１を中心に自由に回転することが出来る。
【００１４】次に、図２で説明した連結機構の働きにより、本体部１０１及び蓋体部１０２がどの様に回転するかを図３を用いて説明する。通常、携帯時等の未使用時には、本体部１０１と蓋体部１０２は図２を用いて説明した連結機構の働きによりキーボード１０４と表示手段１０５が向かい合うようにして閉じることが出来る。一方、使用時には蓋体部１０２は軸１５１を中心に回転させることにより、本体部１０１より起きあがらせて開けることが出来る。適当な角度、例えば回転１５２により蓋体部１０２を約１２０度開けるならば、蓋体部１０２は蓋体部位置１５５に位置する。これは、図１に示した形態であり、利用者はキーボード１０４と表示手段１０５とに自然な形で対面しながら本コンピュータを操作できる。
【００１５】いま、蓋体部１０２を回転１５３により１

８０度開けるならば、蓋体部１０２は蓋体部位置１５６に位置する。さらにそこで、連結部１０３を軸１５０を中心とする回転１５４により１８０度回転させ、軸１５１を軸位置１５７に移動させると、蓋体部１０２は、蓋体部位置１５８に位置する。このようにして、蓋体部１０２は図２を用いて説明した連結機構の働きによりほぼ３６０度回転させることが出来る。この状態では、表示手段１０５は表示手段位置１５９に位置する。すなわち、キーボード１０４も表示手段１０５も、コンピュータの表面に出ているので、必要とあれば利用者はキーボード１０４を操作することもできるし、表示手段１０５を使用することもできる。

【００１６】図３を用いて説明したように、本発明のパーソナルコンピュータは、本体部１０１と蓋体部１０２とをほぼ３６０度開けた状態にすることが出来る。図４は、このときの状態を示した斜視図であり、ペン入力によるコンピュータ利用に適した形態になっている。本図では、利用者に対して連結部１０３が手前側になっている。この時は表示手段１０５の表示向きは表示例１２０の如くで問題ない。しかしながら、利用者によっては、利用者に対して連結部１０３が向こう側になっていたほうが好まれる場合もある。その場合、表示反転スイッチ１０６をリバース状態にすることにより、表示手段１０５の表示向きを表示例１２１の如くにすれば良い。

【００１７】すでに説明してきたように、本発明によれば、本体部１０１と蓋体部１０２とをほぼ０度から３６０度の範囲で任意の角度に開けることが出来る。図５は、本体部１０１と蓋体部１０２とをおよそ３４０度開けた状態の利用形態を示すものである。この場合、表示反転スイッチ１０６をリバース状態に設定することにより表示手段１０５の表示向きを表示例１２１の如くにする。そして、連結部１０３を上方向にして机上に設置する。この時、キーボード１０４は利用者からみて完全に裏側になってしまうので、利用者は簡単にキーボード１０４を操作することは出来ないが、マウス１３０を接続して、マウス主体操作環境ならば大きな問題ではない。この様にして机上に設置した場合、コンピュータの占める机上面積は、図１に示した設置方法と比べて大幅に少なくすることが出来る。

【００１８】なお、図４に示した状態でパーソナルコンピュータを用い、表の表示手段１０５に多少強い力が加えられたときなど、裏側になっているキーボードから意図しないデータが誤って入力される場合があり得る。それを防止するためキーボードからの入力を無効とするための切替手段（図示せず）を設けておくことが好ましい。

【００１９】また、この切替手段は自動的に作動するようにしてもよい。例えば、本体部が鉛直線に対して所定の範囲の角度にあることを検出する検出手段を本体部に設け、この検出手段の検出した値に基づいて、キーボードからの入力を無効とするような構成としてもよい。

【００２０】

【発明の効果】本発明は、以上述べたように構成されているので次のような効果がある。

（１）従来通りのキーボード主体の利用形態と、ペン入力主体、マウス操作主体の利用形態に適した形態とのすべてを実現することができた。

（２）マウス操作主体で利用する場合、より少ない机上占有面積で済むようにできた。

（３）外部表示手段を利用する場合、利用者の正面に外部表示手段を無理なく設置できた。

【図面の簡単な説明】

【図１】本発明の一実施例のパーソナルコンピュータの斜視図である。

【図２】本発明の一実施例のパーソナルコンピュータの連結機構の構成図である。

【図３】図３に示した連結機構の動作説明図である。

【図４】本発明の一実施例のパーソナルコンピュータの一利用形態を説明する斜視図である。

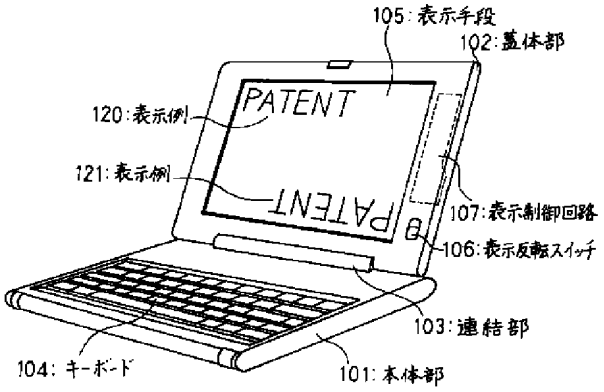
【図５】本発明の一実施例のパーソナルコンピュータの他の利用形態を説明する斜視図である。

【符号の説明】

１０１…本体部
１０２…蓋体部
１０３…連結部
１０４…キーボード
１０５…表示手段
１０６…表示反転スイッチ
１０７…表示制御回路
１１０…本体支持軸
１１１…蓋体支持軸
１１２…本体支持部
１１３…蓋体支持部
１２０、１２１…表示例
１３０…マウス
１５０、１５１…軸
１５２、１５３、１５４…回転
１５５、１５６、１５８…蓋体部位置
１５７…軸位置
１５９…表示手段位置

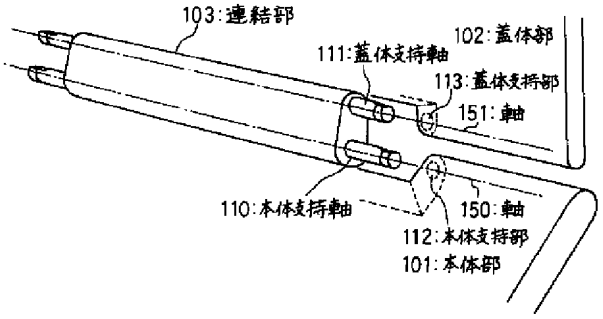
【図１】

図１



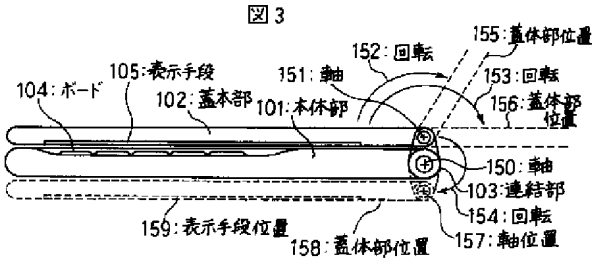
【図２】

図２



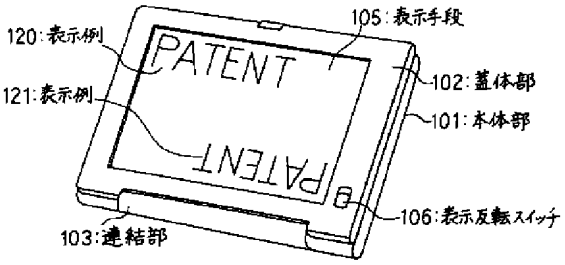
【図３】

図３



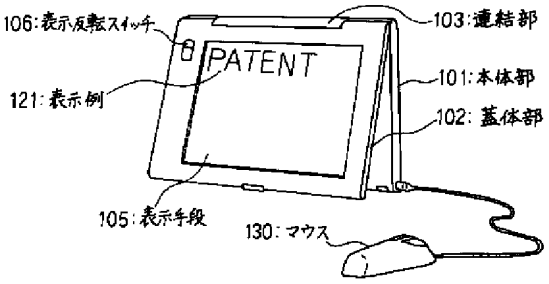
【図４】

図４



【図５】

図５



フロントページの続き

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PATENT ABSTRACTS OF JAPAN

(11)Publication number : **06-242853**
(43)Date of publication of application : **02.09.1994**

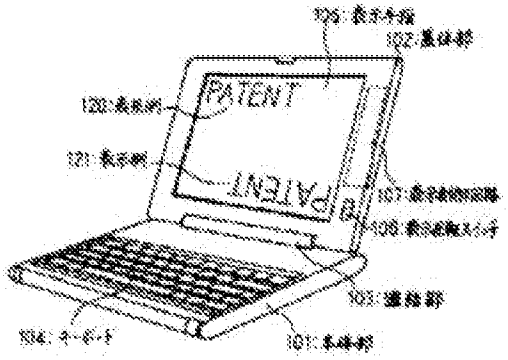
(51)Int.Cl. G06F 1/16

(21)Application number : **05-025126**
(22)Date of filing : **15.02.1993**

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(54) **ELECTRONIC APPARATUS DEVICE AND PERSONAL COMPUTER**

(57)Abstract:
PURPOSE: To provide the personal computer which can take a form being suitable for the use environment of mainly using a pen input operation and a mouse operation, while holding a form which can use a keyboard.
CONSTITUTION: The personal computer consists of a main body part 101 having a keyboard 104 in front, a cover body part 102 having a display means 105 in front, and a connecting mechanism 103 for connecting one end of the main body part to one end of the cover body part, in a state that the fronts of both of them are opposed to each other, and also, making both of them openable and closeable, and this connecting mechanism 103 has a structure which can open the cover body part 102 at an angle exceeding 180 degrees against the main body part 101. It is desirable that a display inversion switch 106 for reversing the top and the bottom of a display of the display means 105 is provided.



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CLAIMS

[Claim(s)]
[Claim 1]A body part which has a keyboard in a front face.
A lid part which has a displaying means in a front face.
A connecting mechanism whose opening and closing of both connect an end of a body part, and an end of a lid part, and are enabled in the state of opposing a front face of this body part, and a front face of this lid part.
In an electronic equipment device provided with the above,
An electronic equipment device, wherein the above-mentioned connecting mechanism is the structure which can open the above-mentioned lid part to an angle exceeding 180 degree to the above-mentioned body part.

[Claim 2]An electronic equipment device, wherein the above-mentioned displaying means is provided with a switching means for a sign displayed to be displayed on top-and-bottom reverse in the electronic equipment device according to claim 1.
[Claim 3]An electronic equipment device characterized by the above-mentioned connecting mechanism being the structure which can make the above-mentioned lid part substantially any angle of the range of 0 to 360 degree to the above-mentioned body part in the electronic equipment device according to claim 1.
[Claim 4]An electronic equipment device, wherein the above-mentioned displaying means is provided with a switching means for a sign displayed to be displayed on top-and-bottom reverse in the electronic equipment device according to claim 3.
[Claim 5]An electronic equipment device, wherein the above-mentioned keyboard is provided with a second switching means for repealing an input from a keyboard in the electronic equipment device according to any one of claims 1 to 4.
[Claim 6]An electronic equipment device comprising:
A detection means to detect that the above-mentioned body part has a body part in an angle of a predetermined range to a vertical line in the electronic equipment device according to any one of claims 1 to 4.
The 3rd switching means for the above-mentioned keyboard to repeal an input from a keyboard based on a value which this detection means detected.

[Claim 7]A body part which has a keyboard in a front face and stores an electronic circuit.
A lid part which has a displaying means in a front face.
A connecting mechanism whose opening and closing of both connect an end of a body part, and an end of a lid part, and are enabled in the state of opposing a front face of this body part, and a front face of this lid part.
In a personal computer provided with the above,
A personal computer, wherein the above-mentioned connecting mechanism is the structure which can open the above-mentioned lid part to an angle exceeding 180 degree to the above-mentioned body part.

[Claim 8]A personal computer, wherein the above-mentioned displaying means is provided with a switching means for a sign displayed to be displayed on top-and-bottom reverse in the personal

computer according to claim 7.
[Claim 9]A personal computer characterized by the above-mentioned connecting mechanism being the structure which can make the above-mentioned lid part substantially any angle of the range of 0 to 360 degree to the above-mentioned body part in the personal computer according to claim 7.
[Claim 10]A personal computer, wherein the above-mentioned displaying means is provided with a switching means for a sign displayed to be displayed on top-and-bottom reverse in the personal computer according to claim 9.
[Claim 11]A personal computer, wherein the above-mentioned keyboard is provided with a second switching means for repealing an input from a keyboard in the personal computer according to any one of claims 7 to 10.
[Claim 12]A personal computer comprising:
A detection means to detect that the above-mentioned body part has a body part in an angle of a predetermined range to a vertical line in the personal computer according to any one of claims 7 to 10.
The 3rd switching means for the above-mentioned keyboard to repeal an input from a keyboard based on a value which this detection means detected.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Industrial Application]The present invention relates to the electronic equipment device and personal computer which improved portability by miniaturization.
[0002]
[Description of the Prior Art]Progress of a miniaturization of electronic equipment devices, such as information processing equipment, is remarkable, and it divides in recent years, and in respect of the size and weight, the personal computer will have been miniaturized, by the time it is portable.
[0003]The general form of such a conventional portable personal computer connects the body part which has (1) operating part, the lid part which has (2) display parts, and the (3) above-

mentioned body part and a lid part, and it has the box structure which comprises **** which make rotate a lid centering on a connecting part, and whose opening and closing are enabled. Usually, at the times of intact at the time of carrying, etc., the body part and the lid part are closed in the form which goes and is put together. At the time of use, this lid part is opened in about 120 degree, and is operated. Such a portable personal computer is also commonly called a laptop computer, are commercialized as a desktop computer space-saving in recent years, and are used. [many] JP,3-109622,A, JP,3-292520,A, etc. are one of the things relevant to this kind of electronic equipment device, for example.
[0004]
[Problem to be solved by the invention]The above-mentioned prior art had the problem that it was not the form for which it was suitable in the usage pattern which has a user interface of the Penn alter operation or a mouse operation subject. In recent years, the utilizing environment of a personal computer is changing, the one is offer of the operating environment which makes mouse operation a subject, and it is offer of the operating environment by a pen input further. The above-mentioned prior art was suitable for the operating environment by a keyboard input to the last. Such a problem is the same also in electronic equipment devices other than personal computers, such as a portable word processor.
[0005]There is the object of this invention in providing the electronic equipment device and personal computer which can take a form suitable for the utilizing environment of the Penn alter operation or a mouse operation subject, holding the form which can use a keyboard.
[0006]
[Means for solving problem]To achieve the above objects, the electronic equipment device of the present invention, In the state of opposing the body part which has a keyboard in a front face, the lid part which has a displaying means in a front face, and the front face of this body part and the front face of this lid part, The end of a body part and the end of a lid part are connected, and it consists of a connecting mechanism whose opening and closing of both are enabled, and the structure of a connecting mechanism is constituted so that a lid part can open to the angle exceeding 180 degree to a body part.
[0007]The personal computer of the present invention in the state of opposing the body part which has a keyboard in a front face and stores an electronic circuit, the lid part which has a displaying means in a front face, and the front face of this body part and the front face of this lid part, The end of a body part and the end of a lid part are connected, and it consists of a connecting mechanism whose opening and closing of both are enabled, and the structure of a connecting mechanism is constituted so that a lid part can open to the angle exceeding 180 degree to a body part.
[0008]As for the above-mentioned connecting mechanism, also in which equipment, it is preferable that it is the structure which can make a lid part substantially any angle of the range of 0 to 360 degree to a body part. As for the above-mentioned displaying means, it is preferable to have a switching means for the sign displayed to be displayed on top-and-bottom reverse. A lid part is opened 360 degree to a body part, and if a certain power is added to a lid part at the times, such as making a lid part into a side front and using it, the data which is not meant from the keyboard of the body part which is the back side may be input accidentally. In order to prevent it, it is preferable to have a second switching means for repealing the input from a keyboard. It may be made for this switching means to change from the angle made to the vertical line of a body part automatically.
[0009]

[Function]The body part which has a keyboard with constituting as mentioned above, and the lid part which has a displaying means are opened about 360 degree, and a keyboard and a displaying means can be faced. In such a state where it opened about 360 degree, since a keyboard and a displaying means serve as a form exposed on the surface of apparatus, if it has a displaying means by hand so that a user may be met, it will become a form just preferable for pen input environment. And if it is with necessity, the user can also operate a keyboard by turning apparatus over.
[0010]Or a body part and a lid part can be opened to about 340 degree again. If it is in this state, standing on a desk will have come out in the form which turned the joining segment up and turned the end of a body part, and the end of the lid part down. Since the upper and lower sides and right and left become reverse, it is difficult for the character, figure, etc. which are displayed on a displaying means at this time for a user to read display information immediately. Then, an indication is given top-and-bottom reverse. Thus, if it stands and uses on a desk, it will become a form preferable for mouse operation.
[0011]
[Working example]One working example of the present invention is described using Drawings. Fig.1 is a perspective view of the portable personal computer to which the present invention is applied. The body part 101 stores the electronic circuit of a computer body. The lid part 102 is provided with the displaying means 105 of a computer all over the, and meets those whom are caused and a displaying means uses at the time of use. The displaying means 105 is a display part of this computer.
At the time of pen input environment, it also becomes an input means.
The keyboard 104 is an input part of a computer and is a main input part in the conventional use.
[0012]The connecting part 103 is tied by the ends and hinges of the body part 101. By one side, the connecting part 103 is tied also with the end of the lid part 102 by hinges. The display reversing switch 106 is a switch operated by the user, and can take 2 of a normal state and a reverse state states. The state is input into the display control circuit 107. The display control circuit 107 is an electronic circuit which controls the output to the displaying means 105 by control of the computer body circuit stored in the body part 101. The display to a displaying means is made as for the display control circuit 107 to top-and-bottom reverse according to the state of the display reversing switch 106. That is, when the display reversing switch 106 is in a normal state, the display is performed like the display example 120. On the other hand, when the display reversing switch 106 is in a reverse state, the display is performed like the display example 121 by rotating 180 degree around the center of the vertical line of top-and-bottom reverse, i.e., a display surface center.
[0013]Next, the details of the connecting mechanism which performs an important role are described using Fig.2 by the present invention. A connecting mechanism has the connecting part 103, the body support shaft 110, and the lid supporting spindle 111. The body support shaft 110 is connected with the body supporting part 112 provided by the body part 101. It can be freely rotated by the body part 101 focusing on the axis 150. The lid supporting spindle 111 is connected with the lid supporting part 113 provided by the lid part 102. It can be freely rotated by the lid part 102 focusing on the axis 151.
[0014]Next, it is described using Fig.3 how the body part 101 and the lid part 102 rotate by work of the connecting mechanism described by Fig.2.Usually, at the times of intact at the time of carrying, etc., the body part 101 and the lid part 102 can be closed, as the keyboard 104 and the displaying means 105 face each other by work of the connecting mechanism described using

Fig.2. On the other hand, at the time of use, by making it rotate focusing on the axis 151, it can be made to be able to get up and go up from the body part 101, and the lid part 102 can be opened. If the lid part 102 is opened about 120 degree with the suitable angle 152, for example, rotation, the lid part 102 will be placed at the lid part position 155. This is the form shown in Fig.1.
The user can operate this computer, meeting the keyboard 104 and the displaying means 105 in a natural form.

[0015]If the lid part 102 is opened 180 degree by the rotation 153 now, the lid part 102 will be placed at the lid part position 156. If it is made to rotate 180 degree by the rotation 154 of the connecting part 103 centering on the axis 150 and the axis 151 is furthermore moved to the shaft position 157 there, the lid part 102 will be placed at the lid part position 158. Thus, the lid part 102 can make it rotate about 360 degree by work of the connecting mechanism described using Fig.2. In this state, the displaying means 105 is placed at the displaying means position 159. That is, since they have come out on the surface of the computer, there are the keyboard 104 and the displaying means 105 with necessity, and the user can also operate the keyboard 104 and they can also use the displaying means 105.
[0016]As described using Fig.3, the personal computer of the present invention can change the body part 101 and the lid part 102 into the state where it opened about 360 degree. Fig.4 is a perspective view showing a state at this time.
It is a form suitable for computer applications by a pen input.
In this figure, the connecting part 103 is a near side to the user. At this time, for [the displaying means 105] displays comes out like the display example 120, and is satisfactory. However, the way where the connecting part 103 had become the other side to the user for some users may be liked. In that case, what is necessary is just to carry out for [the displaying means 105] displays like the display example 121 by changing the display reversing switch 106 into a reverse state.
[0017]As already described, according to the present invention, the body part 101 and the lid part 102 can be opened in any angle in about 0 to 360 degree. Fig.5 shows the usage pattern in the state where the body part 101 and the lid part 102 were opened about 340 degree. In this case, for [the displaying means 105] displays is carried out like the display example 121 by setting the display reversing switch 106 as a reverse state. And the connecting part 103 is made above and it installs on a desk. Since the keyboard 104 becomes the back side completely from the viewpoint of a user at this time, the user cannot operate the keyboard 104 easily, but the mouse 130 is connected, and it is not a big problem if it is a mouse subject operating environment. Thus, when it installs on a desk, the desk surface product which a computer occupies can be substantially lessened compared with the installation method shown in Fig.1.
[0018]When strong power is somewhat applied to the displaying means 105 of a table using a personal computer in the state which showed in Fig.4, the data which is not meant from the keyboard which is the back side may be input accidentally. In order to prevent it, it is preferable to provide the switching means (not shown) for repealing the input from a keyboard.
[0019]It may be made for this switching means to operate automatically. For example, it is good also as composition which repeals the input from a keyboard based on the value which provided a detection means to detect that a body part is in the angle of the predetermined range to a vertical line, to the body part, and this detection means detected.
[0020]
[Effect of the Invention]Since the present invention is constituted as stated above, there are the

following effects.
(1) All of the usage patterns of a keyboard subject as usual and forms suitable for the usage pattern of a pen input subject and a mouse operation subject were able to be realized.
(2) When using with a mouse operation subject, it could end with fewer desk occupation areas.
(3) When an external display means was used, the external display means has been installed in a user's transverse plane reasonable.

[Translation done.]

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TECHNICAL FIELD

[Industrial Application]The present invention relates to the electronic equipment device and personal computer which improved portability by miniaturization.

[Translation done.]

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PRIOR ART

[Description of the Prior Art]Progress of a miniaturization of electronic equipment devices, such as information processing equipment, is remarkable, and it divides in recent years, and in respect of the size and weight, the personal computer will have been miniaturized, by the time it is portable.

[0003]The general form of such a conventional portable personal computer connects the body part which has (1) operating part, the lid part which has (2) display parts, and the (3) above-mentioned body part and a lid part, and it has the box structure which comprises **** which make rotate a lid centering on a connecting part, and whose opening and closing are enabled. Usually, at the times of intact at the time of carrying, etc., the body part and the lid part are closed in the form which goes and is put together. At the time of use, this lid part is opened in about 120 degree, and is operated. Such a portable personal computer is also commonly called a laptop computer, are commercialized as a desktop computer space-saving in recent years, and are used. [many] JP,3-109622,A, JP,3-292520,A, etc. are one of the things relevant to this kind of electronic equipment device, for example.

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EFFECT OF THE INVENTION

[Effect of the Invention]Since the present invention is constituted as stated above, there are the following effects.
(1) All of the usage patterns of a keyboard subject as usual and forms suitable for the usage pattern of a pen input subject and a mouse operation subject were able to be realized.
(2) When using with a mouse operation subject, it could end with fewer desk occupation areas.
(3) When an external display means was used, the external display means has been installed in a user's transverse plane reasonable.

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TECHNICAL PROBLEM

[Problem to be solved by the invention]The above-mentioned prior art had the problem that it was not the form for which it was suitable in the usage pattern which has a user interface of pen input operation or a mouse operation subject. In recent years, the utilizing environment of a personal computer is changing, the one is offer of the operating environment which makes mouse operation a subject, and it is offer of the operating environment by a pen input further. The above-mentioned prior art was suitable for the operating environment by a keyboard input to the last. Such a problem is the same also in electronic equipment devices other than personal computers, such as a portable word processor.
[0005]There is the object of this invention in providing the electronic equipment device and personal computer which can take a form suitable for the utilizing environment of pen input operation or a mouse operation subject, holding the form which can use a keyboard.

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MEANS

[Means for solving problem]To achieve the above objects, the electronic equipment device of the present invention, In the state of opposing the body part which has a keyboard in a front face, the lid part which has a displaying means in a front face, and the front face of this body part and the front face of this lid part, The end of a body part and the end of a lid part are connected, and it consists of a connecting mechanism whose opening and closing of both are enabled, and the structure of a connecting mechanism is constituted so that a lid part can open to the angle exceeding 180 degree to a body part.
[0007]The personal computer of the present invention in the state of opposing the body part which has a keyboard in a front face and stores an electronic circuit, the lid part which has a displaying means in a front face, and the front face of this body part and the front face of this lid

part, The end of a body part and the end of a lid part are connected, and it consists of a connecting mechanism whose opening and closing of both are enabled, and the structure of a connecting mechanism is constituted so that a lid part can open to the angle exceeding 180 degree to a body part.
[0008]As for the above-mentioned connecting mechanism, also in which equipment, it is preferable that it is the structure which can make a lid part substantially any angle of the range of 0 to 360 degree to a body part. As for the above-mentioned displaying means, it is preferable to have a switching means for the sign displayed to be displayed on top-and-bottom reverse. A lid part is opened 360 degree to a body part, and if a certain power is added to a lid part at the times, such as making a lid part into a side front and using it, the data which is not meant from the keyboard of the body part which is the back side may be input accidentally. In order to prevent it, it is preferable to have a second switching means for repealing the input from a keyboard. It may be made for this switching means to change from the angle made to the vertical line of a body part automatically.

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OPERATION

[Function]The body part which has a keyboard with constituting as mentioned above, and the lid part which has a displaying means are opened about 360 degree, and a keyboard and a displaying means can be faced. In such a state where it opened about 360 degree, since a keyboard and a displaying means serve as a form exposed on the surface of apparatus, if it has a displaying means by hand so that a user may be met, it will become a form just preferable for pen input environment. And if it is with necessity, the user can also operate a keyboard by turning apparatus over.
[0010]Or a body part and a lid part can be opened to about 340 degree again. If it is in this state, standing on a desk will have come out in the form which turned the joining segment up and turned the end of a body part, and the end of the lid part down. Since the upper and lower sides and right and left become reverse, it is difficult for the character, figure, etc. which are displayed on a displaying means at this time for a user to read display information immediately. Then, an indication is given top-and-bottom reverse. Thus, if it stands and uses on a desk, it will become a form preferable for mouse operation.
[0011]

[Translation done.]

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EXAMPLE

[Working example]One working example of the present invention is described using Drawings. Fig.1 is a perspective view of the portable personal computer to which the present invention is applied. The body part 101 stores the electronic circuit of a computer body. The lid part 102 is provided with the displaying means 105 of a computer all over the, and meets those whom are caused and a displaying means uses at the time of use. The displaying means 105 is a display part of this computer.
At the time of pen input environment, it also becomes an input means.
The keyboard 104 is an input part of a computer and is a main input part in the conventional use.
[0012]The connecting part 103 is tied by the ends and hinges of the body part 101. By one side, the connecting part 103 is tied also with the end of the lid part 102 by hinges. The display reversing switch 106 is a switch operated by the user, and can take 2 of a normal state and a reverse state states. The state is input into the display control circuit 107. The display control circuit 107 is an electronic circuit which controls the output to the displaying means 105 by control of the computer body circuit stored in the body part 101. The display to a displaying means is made as for the display control circuit 107 to top-and-bottom reverse according to the state of the display reversing switch 106. That is, when the display reversing switch 106 is in a normal state, the display is performed like the display example 120. On the other hand, when the display reversing switch 106 is in a reverse state, the display is performed like the display example 121 by rotating 180 degree around the center of the vertical line of top-and-bottom reverse, i.e., a display surface center.
[0013]Next, the details of the connecting mechanism which performs an important role are described using Fig.2 by the present invention. A connecting mechanism has the connecting part 103, the body support shaft 110, and the lid supporting spindle 111. The body support shaft 110 is connected with the body supporting part 112 provided by the body part 101. It can be freely rotated by the body part 101 focusing on the axis 150. The lid supporting spindle 111 is connected with the lid supporting part 113 provided by the lid part 102. It can be freely rotated by the lid part 102 focusing on the axis 151.
[0014]Next, it is described using Fig.3 how the body part 101 and the lid part 102 rotate by work of the connecting mechanism described by Fig.2.Usually, at the times of intact at the time of

carrying, etc., the body part 101 and the lid part 102 can be closed, as the keyboard 104 and the displaying means 105 face each other by work of the connecting mechanism described using Fig.2. On the other hand, at the time of use, by making it rotate focusing on the axis 151, it can be made to be able to get up and go up from the body part 101, and the lid part 102 can be opened. If the lid part 102 is opened about 120 degree with the suitable angle 152, for example, rotation, the lid part 102 will be placed at the lid part position 155. This is the form shown in Fig.1.
The user can operate this computer, meeting the keyboard 104 and the displaying means 105 in a natural form.

[0015]If the lid part 102 is opened 180 degree by the rotation 153 now, the lid part 102 will be placed at the lid part position 156. If it is made to rotate 180 degree by the rotation 154 of the connecting part 103 centering on the axis 150 and the axis 151 is furthermore moved to the shaft position 157 there, the lid part 102 will be placed at the lid part position 158. Thus, the lid part 102 can make it rotate about 360 degree by work of the connecting mechanism described using Fig.2. In this state, the displaying means 105 is placed at the displaying means position 159. That is, since they have come out on the surface of the computer, there are the keyboard 104 and the displaying means 105 with necessity, and the user can also operate the keyboard 104 and they can also use the displaying means 105.
[0016]As described using Fig.3, the personal computer of the present invention can change the body part 101 and the lid part 102 into the state where it opened about 360 degree. Fig.4 is a perspective view showing a state at this time.
It is a form suitable for computer applications by a pen input.
In this figure, the connecting part 103 is a near side to the user. At this time, for [the displaying means 105] displays comes out like the display example 120, and is satisfactory. However, the way where the connecting part 103 had become the other side to the user for some users may be liked. In that case, what is necessary is just to carry out for [the displaying means 105] displays like the display example 121 by changing the display reversing switch 106 into a reverse state.
[0017]As already described, according to the present invention, the body part 101 and the lid part 102 can be opened in any angle in about 0 to 360 degree. Fig.5 shows the usage pattern in the state where the body part 101 and the lid part 102 were opened about 340 degree. In this case, for [the displaying means 105] displays is carried out like the display example 121 by setting the display reversing switch 106 as a reverse state. And the connecting part 103 is made above and it installs on a desk. Since the keyboard 104 becomes the back side completely from the viewpoint of a user at this time, the user cannot operate the keyboard 104 easily, but the mouse 130 is connected, and it is not a big problem if it is a mouse subject operating environment. Thus, when it installs on a desk, the desk surface product which a computer occupies can be substantially lessened compared with the installation method shown in Fig.1.
[0018]When strong power is somewhat applied to the displaying means 105 of a table using a personal computer in the state which showed in Fig.4, the data which is not meant from the keyboard which is the back side may be input accidentally. In order to prevent it, it is preferable to provide the switching means (not shown) for repealing the input from a keyboard.
[0019]It may be made for this switching means to operate automatically. For example, it is good also as composition which repeals the input from a keyboard based on the value which provided a detection means to detect that a body part is in the angle of the predetermined range to a vertical line, to the body part, and this detection means detected.

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1]It is a perspective view of the personal computer of one working example of the present invention.
[Drawing 2]It is a configuration diagram of the connecting mechanism of the personal computer of one working example of the present invention.
[Drawing 3]It is an explanatory view of the connecting mechanism shown in Fig.3 of operation.
[Drawing 4]It is a perspective view which describes one usage pattern of the personal computer of one working example of the present invention.
[Drawing 5]It is a perspective view which describes other usage patterns of the personal computer of one working example of the present invention.
[Explanations of letters or numerals]
101 -- Body part
102 -- Lid part
103 -- Connecting part
104 -- Keyboard
105 -- Displaying means
106 -- Display reversing switch
107 -- Display control circuit
110 -- Body support shaft
111 -- Lid supporting spindle
112 -- Body supporting part
113 -- Lid supporting part
120, 121 -- Display example
130 -- Mouse
150, 151 -- Axis
152, 153, 154 -- Rotation
155, 156, 158 -- Lid part position
157 -- Shaft position
159 -- Displaying means position

[Translation done.]

* NOTICES *

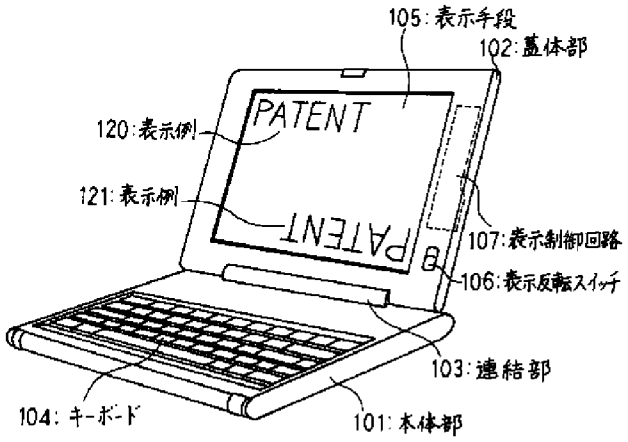
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DRAWINGS

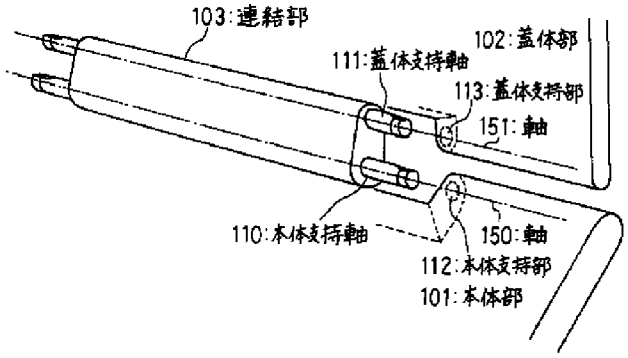
[Drawing 1]

図1



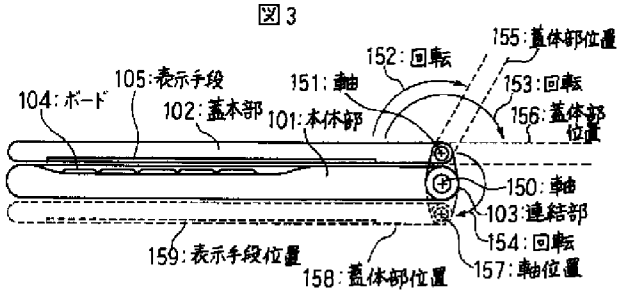
[Drawing 2]

図2



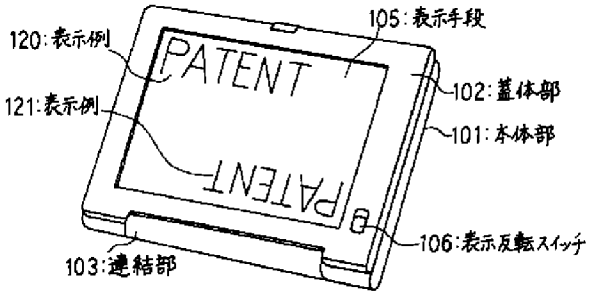
[Drawing 3]

図3



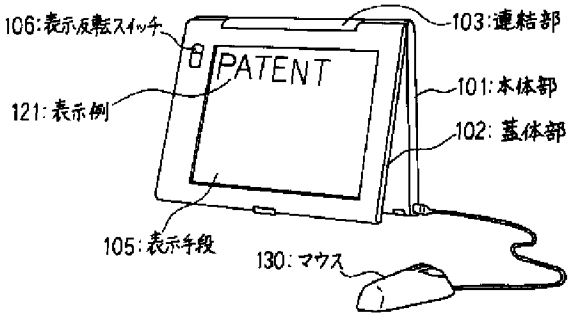
[Drawing 4]

図4



[Drawing 5]

図5



[Translation done.]

(19)日本国特許庁（ＪＰ）　(12)**公開特許公報（Ａ）**　(11)特許出願公開番号

特開平6－259166

(43)公開日　平成６年(1994)９月16日

(51)Int.Cl.[5]	識別記号	庁内整理番号	ＦＩ	技術表示箇所
Ｇ０６Ｆ　1/16				
Ｇ０９Ｇ　3/00		R　9176－5G		
// Ｇ０６Ｆ　15/20	５６４	M　7315－5L		
		7165－5B	Ｇ０６Ｆ　1/ 00	３１２　Ｆ
		7165－5B		３１２　Ｅ

審査請求　未請求　請求項の数７　ＯＬ　（全　８　頁）

(21)出願番号　特願平5－48979

(22)出願日　平成５年(1993)３月10日

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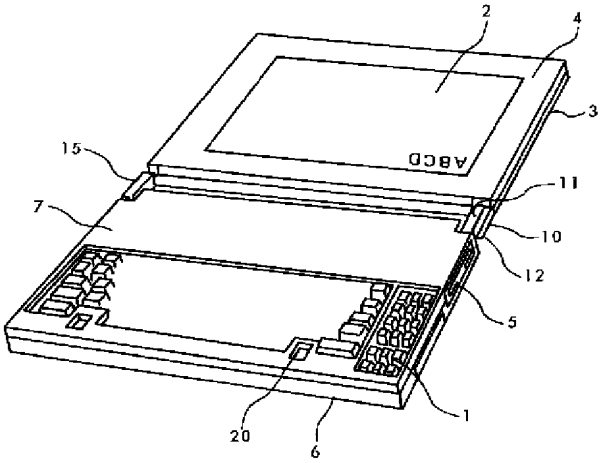
(74)代理人　弁理士　小川　勝男

最終頁に続く

(54)【発明の名称】　情報処理装置

(57)【要約】
【目的】本発明の目的は、液晶表示装置の表示面を１８０度以上回転できる構造とすると共に液晶表示装置の文字あるいはイメージ等の画面表示を点対称位置に変更して表示できるようにし、多用途向けに使用可能とするものである。
【構成】本体ケースに１８０度以上回転可能な支持機構によって液晶表示装置を取付け、液晶表示画面に文字あるいはイメージ等の画面表示を点対称位置に変更して表示可能に構成したもの。

図　7



【特許請求の範囲】
【請求項１】制御基板を収納保持する本体ケースと、この本体ケースに設けられ、文字データあるいは記号データ等を入力する文字キーを有するキーボードと、この本体ケースに収納した記憶装置と、本体ケースの後方に回転自在に取付けられた平面的な表示画面とを有する情報処理装置において、
前記表示装置を本体ケースに対して少なくとも１８０度以上回転可能に支持する支持機構と、前記文字キーによって入力された文字を倒立文字パターンに変更する手段と、前記文字キーによって入力された文字位置を点対称位置に変更する文字位置変更手段と、前記キーボードに設けられた表示状態変更キーと、表示状態変更キーの入力信号により、前記で変更された倒立文字パターンを文字位置変更手段によって変更された新たな表示位置に表示する表示制御装置を具備している情報処理装置。
【請求項２】制御基板を収納保持する本体ケースと、この本体ケースに設けられ、文字データあるいは記号データ等を入力する文字キーを有するキーボードと、この本体ケースに収納した記憶装置と、本体ケースの後方に回転自在に取付けられた平面的な表示画面とを有する情報処理装置において、
前記表示装置を本体ケースに対して少なくとも１８０度以上回転可能に支持する支持機構と、前記文字キーによって入力された文字等のドットの総てを点対称位置に変更するドット位置変更手段と、前記キーボードに設けられた表示状態変更キーと、表示状態変更キーの入力信号により、前記ドット位置変更手段で変更された総てのドットを変更された新たな表示位置に表示する表示制御装置を具備している情報処理装置。
【請求項３】請求項１あるいは請求項２のいずれかにおいて、
前記支持機構は、本体ケースと表示装置の表示器ケースとを回転可能に連結するアームと、このアームと本体ケースとを所定の摩擦力で回転可能に連結する表示器側ロックヒンジと、同じくこのアームと表示器ケースとを所定の摩擦力で回転可能に連結する本体側ロックヒンジとから構成すると共に、この本体側ロックヒンジの摩擦トルクを表示器側ロックヒンジより大きく設定した情報処理装置。
【請求項４】請求項１あるいは請求項２のいずれかにおいて、
前記支持機構は前記表示装置を本体ケースに対して２７０度以上回転可能に支持するものであると共に、キーボードの周縁高さをキー押下時のキートップよりも高く形成した情報処理装置。
【請求項５】請求項１あるいは請求項２のいずれかにおいて、
前記支持機構は前記表示装置を本体ケースに対して３６０度回転可能に支持するものであると共に、表示装置の表示器ケースと本体ケースの裏面を相互密着状態に保持可能に構成した情報処理装置。
【請求項６】請求項５において、
本体上ケースの手前に係止部を形成した情報処理装置。
【請求項７】請求項５において、
表示器ケースと本体ケースの裏面を相互密着状態に組合せ保持した状態において、
表示器ケースと本体ケースの後端部を底面として立脚させるように構成した情報処理装置。
【発明の詳細な説明】
【０００１】
【産業上の利用分野】本発明はノート形の日本語ワードプロセッサやパーソナルコンピュータのような情報処理装置に関し、特に平面的な液晶表示装置を備えた情報処理装置に関するものである。
【０００２】
【従来の技術】パーソナルユースとして近年急速に普及しつつある日本語ワードプロセッサやパーソナルコンピュータなどは、可搬性からその表示装置として薄形軽量な液晶表示装置が用いられるようになってきた。この情報処理装置は、実開昭61－160526号公報に示されている如く、本体ケース内部にキーボードをはじめとして、制御基板，磁気ディスク駆動装置等の外部記憶装置（以下外部記憶装置と称する），電源等を配置し、本体ケース後方に液晶表示装置を開閉可能なＬＣＤケースに液晶表示装置を収納して構成するのが一般的である。
【０００３】
【発明が解決しようとする課題】上記従来の情報処理装置は、一人の使用者のために使用し易い構成になっている。表示画面も一人の使用者が見易いように１３５度程度まで開くことが可能となっているが、これ以上は開くことができないように構成されている。従って、相手と机を挟んで対座した場合、相手は表示画面をみることができない状態になる。そのため、使用者の傍に相手にも座ってもらい、一つの表示画面を二人で見なければならないことが余儀なく生じるものであり、面倒であり窮屈でもある。又、通常の使用時以外の保管あるいは収納時には、情報処理装置が本来有している機能を充分に機能させることが困難であった。即ち、液晶表示装置を開けてタイマー機能に基づく時計等を表示しておいても、本体部が机上で邪魔になり、このような使用には不向きであった。
【０００４】本発明の主たる目的は、対面した相手とも表示画面を互いに見ながら話をすることができるようにし、この種情報処理装置を利用して会議を進めることを可能にすることを主たる目的とし、更に、他の目的は、通常使用時以外の非使用時の保管時において時計表示等の機能を活かせるようにすることにある。
【０００５】
【課題を解決するための手段】前記主たる目的は、制御

基板を収納保持する本体ケースと、この本体ケースに設けられ、文字データあるいは記号データ等を入力する文字キーを有するキーボードと、この本体ケースに収納した記憶装置と、本体ケースの後方に回転自在に取付けられた平面的な表示画面とを有する情報処理装置において、前記表示装置を本体ケースに対して少なくとも１８０度以上回転可能に支持する支持機構と、前記文字キーによって入力された文字を倒立文字パターンに変更する手段と、前記文字キーによって入力された文字位置を点対称位置に変更する文字位置変更手段と、前記キーボードに設けられた表示状態変更キーと、表示状態変更キーの入力信号により、前記で変更された倒立文字パターンを文字位置変更手段によって変更された新たな表示位置に表示する表示制御装置を具備させることにより達成される。又、文字データをドットリフレッシュ方式で記憶している場合は、前記文字キーによって入力された文字等のドットの総てを点対称位置に変更するドット位置変更手段と、前記キーボードに設けられた表示状態変更キーと、表示状態変更キーの入力信号により、前記ドット位置変更手段で変更された総てのドットを変更された新たな表示位置に表示する表示制御装置を具備させることによって達成される。

【０００６】更に又、他の目的は、前記支持機構は前記表示装置を本体ケースに対して270度以上回転可能に支持するものであると共に、キーボードの周縁高さをキー押下時のキートップよりも高く形成するか、あるいは前記支持機構は前記表示装置を本体ケースに対して３６０度回転可能に支持するものであると共に、表示装置の表示器ケースと本体ケースの裏面を相互密着状態に保持可能に構成するか、あるいは表示器ケースと本体ケースの裏面を相互密着状態に組合せ保持した状態において、表示器ケースと本体ケースの後端部を底面として立脚させるように構成することによって達成される。

【０００７】

【作用】本発明は、表示器を本体ケースに対して１８０度回転でき、更に文字を倒立パターンとし文字位置を点対称位置に変更するように構成するか、あるいは入力された総てのドットを点対称位置に変更するようにしたので、対面した相手に見易く、又理解し易い状態に表示され、この種情報処理装置を利用しての会議に便ならしめるように作用する。又、本体ケースに対して３６０度まで回転可能とし、任意の角度、例えば２７０度，３６０度の角度で仮固定可能としているので、この情報処理装置を時計等の表示装置として利用可能になるように作用する。

【０００８】

【実施例】以下、本発明の構成の一実施例を図面に基づき説明する。

【０００９】図１，図２は本発明の一実施例であるノート形の日本語ワードプロセッサの使用状態図を示す斜面図および側面図である。

【００１０】１は主として文字や記号等を入力する文字キー１０１、主として数字を入力するテンキー１０２，カーソルキー１０３、あるいは機能キー１０４等を有するキーボードである。このキーボード１から入力された入力データを表示するＬＣＤ液晶表示器２が開閉可能な表示器ケース３に組込まれ、この表示器ケースの前面を液晶パネル４で覆う構造となっている。５は入力編集した情報を記憶しておくための磁気ディスク駆動装置からなる外部記憶装置であり、本体下ケース６と本体上ケース７の間に介在されている。６７はこれら本体下ケース６および本体上ケース７の組合せによって成された本体ケースである。前記磁気ディスク駆動装置はハードディスクあるいはフロッピーディスク駆動装置いずれも適用される。キーボード１に設ける各種キーはいずれも本体上ケース７から突出しないような構造としてキートップを下にして本体ケース６７を倒置して机上に設置しても、不用意にキーが作用しないようにし、あるいは、キーボード１のストロークを大きくしてキートップ等の操作感触を改良するために本体上ケース７から突出する場合は、キートップ面を下面にして机上に設置した時、キートップが本体自重により沈み込むようにキートップ操作力を配慮しているものである。尚、このとき、前述のように不用意にキー入力されないようにする必要がある。即ち、キートップと本体上ケースとの関係は、本体上ケースの表面（周縁）高さをキー押し下げによる入力発生時のキートップよりも高く形成していることが絶対的条件である。

【００１１】文字や数字等を入力するキーボード１の下部には図３に示す如く装置全体を制御するための制御基板８が配置されている。

【００１２】一方、本体下ケース６後部の片側には液晶表示器２と制御基板８を接続するためのＬＣＤケーブル９がアーム１０，アーム１１の組立品により中空状に形成される支持機構１２内に挿入配置され、液晶表示装置の回転に対応できるようにしている。本体下ケース６後部の他の一方には本体側ロックヒンジ１３を設けると共に、表示器ケース３の下部にはＬＣＤ側ロックヒンジ１４を設け、その各々をアルミダイキャスト品等により製作されたヒンジ側アーム１５により結合される構成となっている。なお、本体側ロックヒンジ１３及びＬＣＤ側ロックヒンジ１４はシャフト１６とコイルばね１７の締代を利用したばねクラッチ方式を応用した例を示したものである。この他ウェーブスプリングを圧接する摩擦板方式も有り、この方式ではウェーブスプリングの締め代を調整することによって摩擦トルクの調整ができる。このようにしてロックヒンジの構成は装置によって最適なものを選択して使用することができる。ロックヒンジのトルクについて説明すると、通常使用時は図２に示す如く、液晶表示装置を開閉する操作頻度が多いことからＬ

ＣＤ側ロックヒンジ１４に対して本体側ロックヒンジ１３の回転トルクを大きく設定している。即ち、通常の液晶表示装置４の開閉時には本体側ロックヒンジ１３及びヒンジ側アーム１５は動作しないよう構成されている。

【００１３】また、キーボード１上の特定キーを操作することによって液晶表示装置２に表示された文字あるいはイメージ等の画面表示を１８０°回転した状態(倒立状態)に表示できるように構成されている。

【００１４】これを図５に示す回路ブロック図により説明する。通常の入力装置であるキーボード１からの入力は、キーボードコントローラ２１，ＣＰＵ２２，文字パターンおよび文字位置変更手段（プログラムメモリ）２３を介してキャラクタジェネレータ２４により表示内容が、例えば「Ａ」のように構成される。このデータ「Ａ」を表示用メモリ２５に転送し、液晶コントローラ２６を介して液晶表示装置２の画面上に「Ａ」と表示されるものである。これらは通常の液晶表示装置２の画面表示であるが、画面表示を１８０°回転した状態（倒立状態）で表示するため、キーボード１の機能キー１０４の表示状態変更キー１０４Ａを操作することによりＣＰＵ２２を介して文字パターンおよび文字位置変更手段（プログラムメモリ）２３によりキャラクタジェネレータ２４から文字やイメージ等のデータを図７あるいは図５のように倒立して表示用メモリ２５に転送するようプログラム構成されている。又、この文字パターンおよび文字位置変更手段２３は倒立文字作成と同時に前記キーボードによって通常に入力された文字の位置の点対称位置を計算して新たな文字位置とする機能を有している。この文字パターンおよび文字位置変更手段２３は文字パターン変更手段と文字位置変更手段を個別に分割して備えてもいい。

【００１５】この文字位置変更手法は文字データをキャラクタジェネレータ２４から読みだす方式のものについてのものであるが、文字データの総てをドットリフレッシュ方式で表示するものにあっては、入力された文字等のドットデータの総てのドットを点対称位置に変更することによって全画面の倒立表示状態を得ることができる。即ち、キャラクタジェネレータを使用し一字毎に倒立文字パターンを作成する手間を省力することができる。

【００１６】尚、図５において、２７はワークメモリ、２８は印刷バッファメモリ、３１はインターフェース回路、３２は印刷スイッチ、３３は電源ＬＥＤ、３４は印刷ＬＥＤ、３５はプリンタコントローラ、３６は印刷ユニット、３７は送紙ユニット、３８はフロッピーディスクコントローラである。

【００１７】以上のように構成された装置の操作方法について次に説明する。

【００１８】図１，図２はノート型の日本語ワードプロセッサやパーソナルコンピュータのような情報処理装置の通常の使用状態を示すものであり、通常は前述の如くLCD側ロックヒンジ１４のみが回転動作するものである。図６は会議の席上あるいは机上で第３者にオペレータが情報処理装置の操作方法，機能等を説明するため液晶表示装置４を１８０°回転して、机上に水平になるようにヒンジ側アーム１５を介して本体側ロックヒンジ１３を動作させたものである。図７は更にこの状態において、キーボード１の表示状態変更キー１０４Ａを操作することにより、上述で説明したごとく液晶表示装置２の文字あるいはイメージ等の表示内容を対面する第３者から見易くするため倒立状態に表示可能としたものである。更に、ＬＣＤ側ロックヒンジ１４，ヒンジ側アーム１５，本体側ロックヒンジ１３の連動により本体側装置に対して３６０°回転可能な構造であるため、第３者に対する説明時、図８のように略２２０°前後まで回転することにより画面表示を一段と見易くすることも可能となる。通常、液晶表示装置２の表示画面は指向性があるためオペレータと同方向からは非常に見にくい面があるが、上述の操作形態にすることにより非常に見やすくすることができるものである。

【００１９】以上は通常の使用状態について述べたものであるが、非使用時の設置例について述べる。図９は液晶表示装置２を約３００°程度回転することによりカレンダー，時計，スケジュールを表示させて机上に設置した（これを仮にステーショナリー機能と称す）ものである。これにより、非使用時の収納，保管等の問題も改善され、しかも、机上で各種スケジュール等の確認を始めとして有効利用できるものである。また、非使用時更に設置面積を小さくするために、および机上設置が問題な場合には壁掛けとしても使用できるようにしたものである。

【００２０】即ち、本発明の一実施例構成によれば、液晶表示装置の表示器ケースの裏面と本体ケースの裏面との密着組合せ状態として、図１０のように机上に立脚させることができ、これを希望しないときは図１１に示す如く３６０°回転させ、図１２に示すように、壁１８に取り付けたフック１９に本体上ケース７のキーボード１手前に設けた係合部（凹部）２０を係合することにより、ステーショナリー機能を維持しながら表示保管することが可能となるものである。

【００２１】

【発明の効果】本発明によれば、制御基板を収納保持する本体ケースと、この本体ケースに設けられ、文字データあるいは記号データ等を入力する文字キーを有するキーボードと、この本体ケースに収納した記憶装置と、本体ケースの後方に回転自在に取付けられた平面的な表示画面とを有する情報処理装置において、前記表示装置を本体ケースに対して少なくとも１８０度以上回転可能に支持する支持機構と、前記文字キーによって入力された文字を倒立文字パターンに変更する手段と、前記文字キ

ーによって入力された文字位置を点対称位置に変更する文字位置変更手段と、前記キーボードに設けられた表示状態変更キーと、表示状態変更キーの入力信号により、前記で変更された倒立文字パターンを文字位置変更手段によって変更された新たな表示位置に表示する表示制御装置を具備させるか、あるいは、前記表示装置を本体ケースに対して少なくとも１８０度以上回転可能に支持する支持機構と、前記文字キーによって入力された文字等のドットの総てを点対称位置に変更するドット位置変更手段と、前記キーボードに設けられた表示状態変更キーと、表示状態変更キーの入力信号により、前記ドット位置変更手段で変更された総てのドットを変更された新たな表示位置に表示するように構成したので、対面した相手とも表示画面を互いに見ながら話をすることができるようになり、この種情報処理装置を利用して会議を進めることが可能に成る。又、通常使用時以外の非使用時の保管時において時計表示等の機能を活かすことが可能になる。

【図面の簡単な説明】

【図１】本発明の一実施例であるラップトップ形の日本語ワードプロセッサあるいはパーソナルコンピュータのような可搬形の情報処理装置の使用状態斜面図。

【図２】同じく通常使用状態の側面図。

【図３】液晶表示装置を閉じたときの断面図。

【図４】本体とＬＣＤケースの結合断面図。

【図５】回路ブロック図。

【図６】第３者への説明状態図。

【図７】第３者への説明状態図。

【図８】第３者への説明状態図。

【図９】非使用時における机上への設置例を示す図。

【図１０】非使用時における壁掛け状態図。

【図１１】液晶表示装置を３６０°回転した場合の断面図。

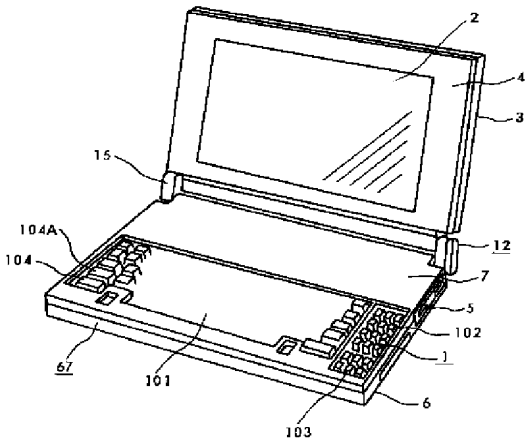
【図１２】使用時における壁掛け状態の断面図。

【符号の説明】

１…キーボード、２…液晶表示画面、３…表示器ケース、５…外部記憶装置、６…本体下ケース、７…本体上ケース、８…制御基板、１２…支持機構、１３本体側ロックヒンジ、１４…ＬＣＤ側ロックヒンジ、１５…ヒンジ側アーム、１８…壁、１９…フック、２０…凹部、２３…文字位置変更手段、６７…本体ケース、１０４Ａ…表示状態変更キー。

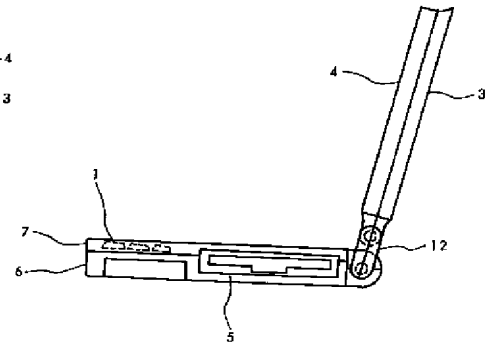
【図１】

図 1

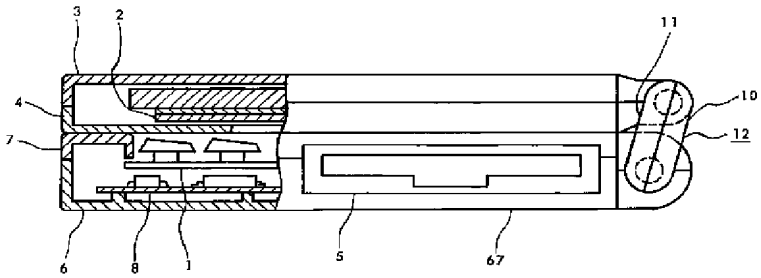


【図２】

図 2

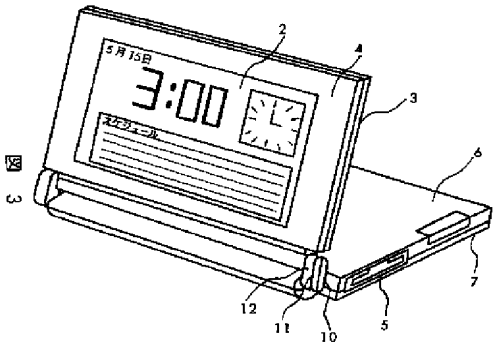


【図３】



【図９】

図 9



【図４】

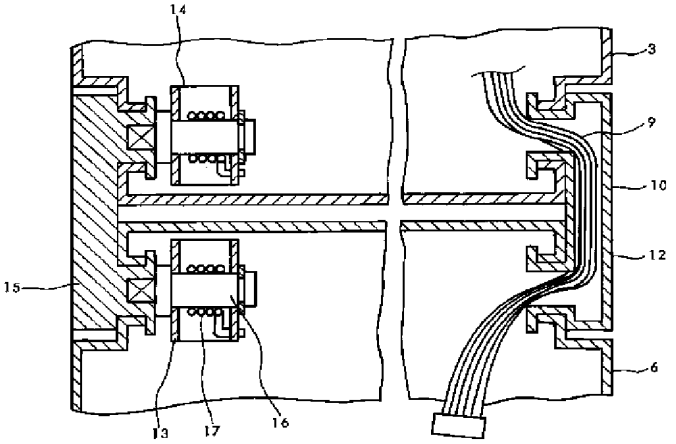
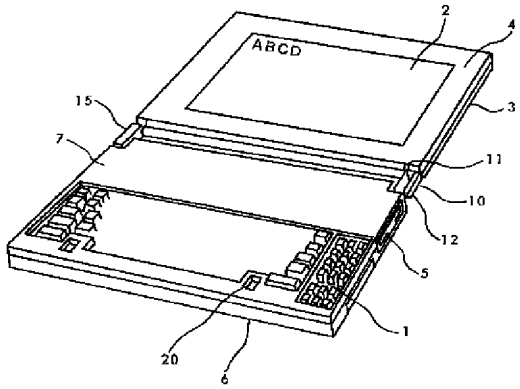


図４

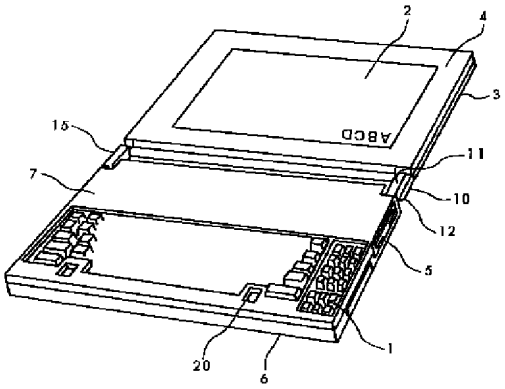
【図６】

図 6



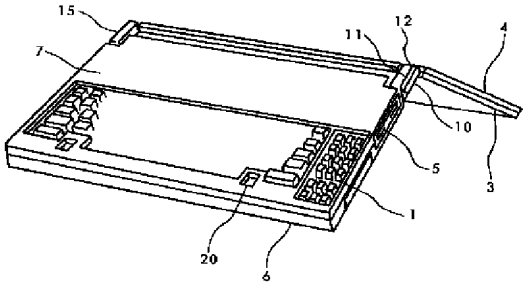
【図７】

図 7



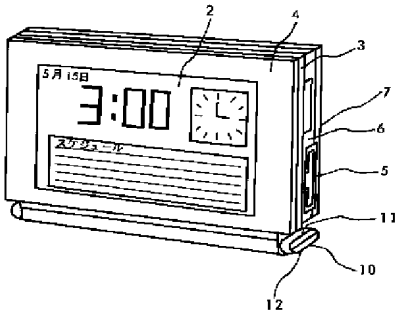
【図８】

図 8



【図１０】

図 10



【図１１】

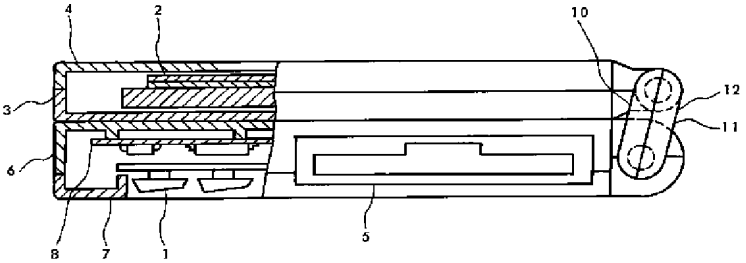
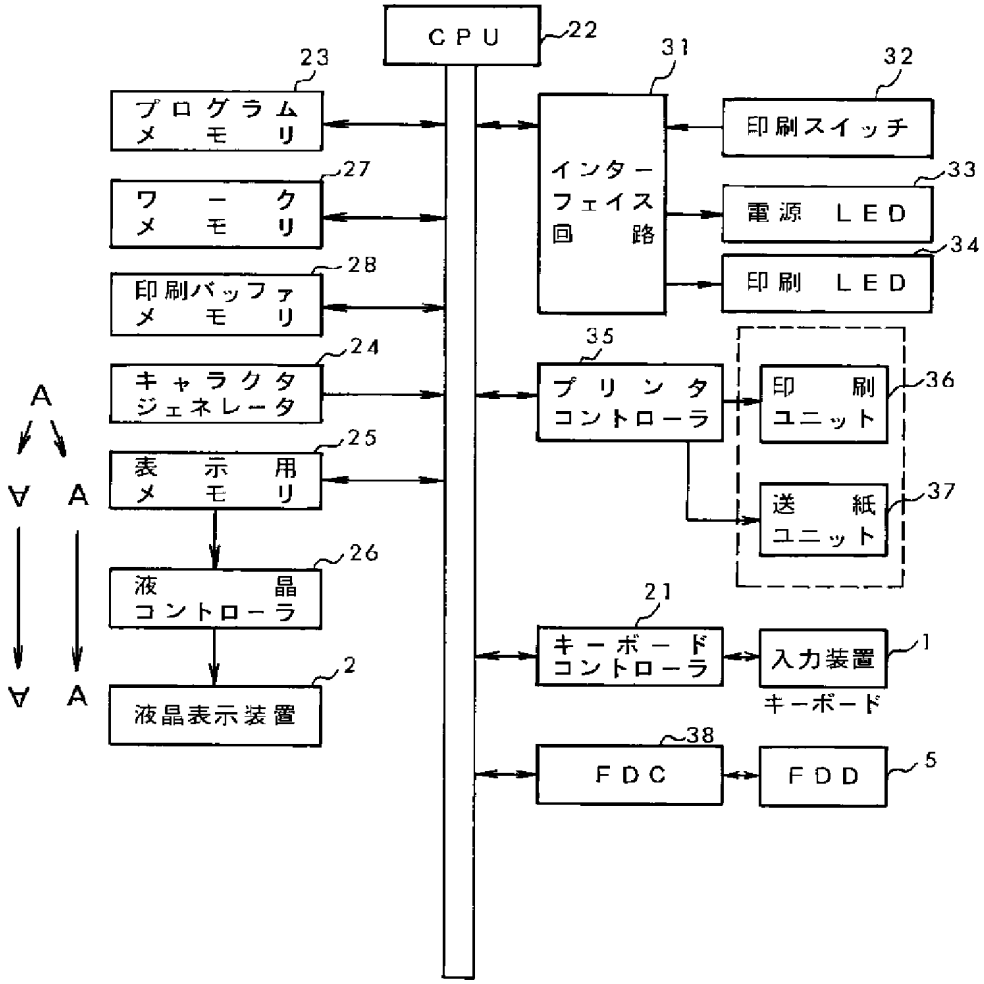


図１１

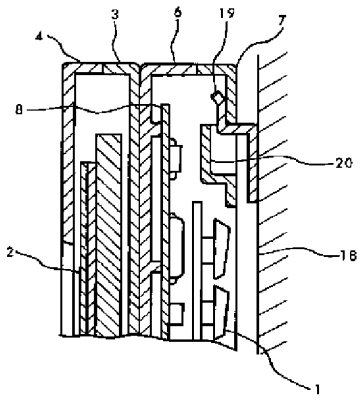
【図５】

図　5


CPU
22
23
プログラムメモリ
27
ワークメモリ
28
印刷バッファメモリ
24
キャラクタジェネレータ
25
表示用メモリ
26
液晶コントローラ
2
液晶表示装置
A
A
A
A
31
インターフェイス回路
32
印刷スイッチ
33
電源　LED
34
印刷　LED
35
プリンタコントローラ
36
印刷ユニット
37
送紙ユニット
21
キーボードコントローラ
1
入力装置
キーボード
38
FDC
FDD
5

【図１２】

図 12



フロントページの続き

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PATENT ABSTRACTS OF JAPAN

(11)Publication number : **06-259166**
(43)Date of publication of application : **16.09.1994**

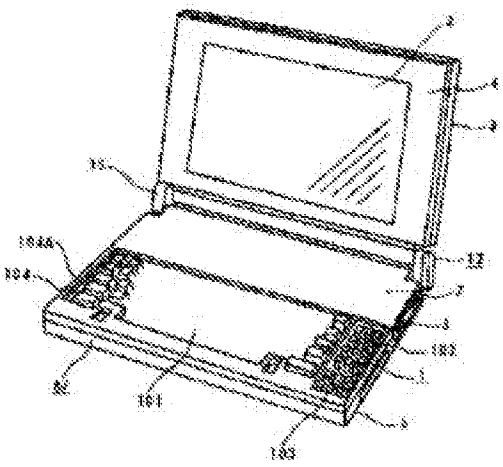
(51)Int.Cl. G06F 1/16
G09G 3/00
// G06F 15/20

(21)Application number : **05-048979**
(22)Date of filing : **10.03.1993**

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(54) **INFORMATION PROCESSOR**

(57)Abstract:
PURPOSE: To have a conversation even with the confronted opposite party side while looking at a display screen by displaying an inverted character pattern on a rotary display device at a position symmetrical to an input position in terms of a point by the input signal of a display state change key.
CONSTITUTION: The lock hinges provided at the rear part of a main body lower case 6 and at the lower part of a display case 3 respectively are connected together by a hinge side arm 15. Then a liquid crystal display device 2 is supported rotatable at 180° or more to a main body case 6, and a screen is turned by 180° for display. Thus the character patterns are displayed via a CPU with operation of a display state change key 104A. Then the data on the characters, images, etc., are inverted and sent to a display memory by a character position changing means. At the same time, the position symmetrical to the position of a character supplied normally through a keyboard 1 in terms of a point is defined as a new character position. Thus it is possible to have a conversation even with the confronted opposite party side while looking at a display screen. Then an information processor of such a constitution can be applied to a conference.



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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Industrial Application]The present invention relates to the information processing equipment especially provided with the superficial liquid crystal display about information processing equipment like the Japanese word processor of a note form, or a personal computer.
[0002]
[Description of the Prior Art]while spreading through urgency as a personal youth in recent years -- one day -- this word word processor, a personal computer, etc. -- as the display device from portability -- a thin type -- a lightweight liquid crystal display has come to be used. This information processing equipment makes a keyboard the inside of body casing with the start as shown in JP,S61-160526,U, It is common to arrange external storages (an external storage is called below), such as a control board and a magnetic disk driving device, a power supply, etc., and to store and constitute a liquid crystal display in the LCD case which can open and close a liquid crystal display to body casing back.
[0003]
[Problem to be solved by the invention]The above-mentioned conventional information processing equipment has composition which is easy to use it for a one user. Although a display screen can also be opened by the one user to about 135 degree legible, it is constituted more so that it cannot open. Therefore, when it sits opposite with a partner on both sides of a desk, a partner will be in the state where a display screen cannot be seen. Therefore, I also get a partner to sit on a user side, that one display screen must be seen by two persons arises unavoidably, and it is troublesome, and also narrow. At the time of the storage of those other than the time of anticipated use, or storage, it was difficult to operate sufficiently the function which information processing equipment originally has. That is, even if the liquid crystal display was opened and it displayed the clock based on a timer function, etc., the body part became obstructive on the desk and was unsuitable for such use.
[0004]It enables it to talk while the main purpose of the present invention looks at a display screen mutually also with the partner who met, Setting it as the main purpose to make it possible to be able to proceed a meeting using this species information processing unit, the purpose of further others is to enable it to utilize functions, such as a clock display, at the time of the storage at the time of disuse other than the time of normal use.
[0005]
[Means for solving problem]The keyboard which has a letter key which the above-mentioned main purpose is provided by the body casing which carries out storing and holding of the control

board, and this body casing, and inputs alphabetic data or sign data, In the information processing equipment which has the memory storage stored to this body casing, and the superficial display screen rotatably attached behind body casing, The used machine style which supports the aforementioned display device pivotable at least 180 degree or more to body casing, A means to change into a handstand character pattern the character input by the aforementioned letter key, The character position input by the aforementioned letter key with the input signal of the character position alteration means changed into a point symmetry position, the displaying condition change key provided by the aforementioned keyboard, and a displaying condition change key, It is attained by making the display control which displays the handstand character pattern changed above on the new display position changed by the character position alteration means provide. When alphabetic data is memorized with the dot refreshing system, All the dots, such as a character input by the aforementioned letter key, with the input signal of the dot position alteration means changed into a point symmetry position, the displaying condition change key provided by the aforementioned keyboard, and a displaying condition change key, It is attained by making the display control displayed on the new display position which had all the dots changed by the aforementioned dot position alteration means changed provide.
[0006]The aforementioned used machine style supports the aforementioned display device pivotable 270 degree or more to body casing, and other purposes again. Form the periphery height of a keyboard more highly than the keytop at the time of key press Shimo, or the aforementioned used machine style supports the aforementioned display device pivotable 360 degree to body casing, and. In the state where constituted the back surface of the indicator case of a display device, and body casing in the mutual adhesion condition so that holding was possible, or combined the back surface of an indicator case and body casing with the mutual adhesion condition, and it was held, It is attained by constituting so that the rear end part of an indicator case and body casing may be made based as a bottom surface.
[0007]
[Function]All the dots which consisted of the present invention so that an indicator could be rotated 180 degree to body casing, and also a character might be used as a handstand pattern and a character position might be changed into a point symmetry position, or were input were changed into a point symmetry position.
Therefore, it is legible as a partner who met, and is displayed on the state of being easy to understand, and it acts so that it may close, if it is [a meeting using this species information processing unit] facilities.
Since it supposes that it is pivotable to 360 degree to body casing and temporary fastening is made possible at an angle of any angle, for example, 270 degree, and 360 degree, it acts so that it may become available considering this information processing equipment as display devices, such as a clock.
[0008]
[Working example]Hereafter, one working example of the composition of the present invention is described based on Drawings.
[0009]Fig.1 and Fig.2 are the slope figures and side views showing the busy condition figure of the Japanese word processor of a note form which is one working example of the present invention.
[0010]1 is a keyboard which has the letter key 101 which mainly inputs a character, a sign, etc., the ten key 102 which mainly inputs a number, the cursor key 103, or the function key 104. It is included in the indicator case 3 which can open and close the LCD liquid crystal indicator 2

which displays the input data input from this keyboard 1, and has wrap structure with the liquid crystal panel 4 in the front face of this indicator case. 5 is an external storage consisting of the magnetic disk driving device for memorizing the information which carried out the input editing, and interposes between the main part lower case 6 and the main part upper case 7. 67 is the body casing accomplished with the combination of these main part lower case 6 and the main part upper case 7. The aforementioned magnetic disk driving device is applied either a hard disk or floppy disk driving. Even if each various key provided on the keyboard 1 turns a keytop down as a structure which is not projected from the main part upper case 7, inverts the body casing 67 and installs it on a desk, A key is kept from acting carelessly, Or when projecting from the main part upper case 7 in order to carry out the stroke of the keyboard 1 largely and to improve operation touch, such as a keytop, and a keytop surface is used as a lower surface and it installs on a desk, the keytop operating physical force is considered so that a keytop may sink with main part weight. It is necessary to make it not carelessly inputted as mentioned above at this time. That is, it is absolute conditions for the relation between a keytop and a main part upper case to carry out the key press of the surface (periphery) height of a main part upper case, and to form more highly than the keytop at the time of input generating by lowering.

[0011]The control board 8 for controlling the whole equipment in the lower part of the keyboard 1 which inputs a character, a number, etc. to be shown in Fig.3 is arranged.

[0012]Insertion arrangement of the LCD cable 9 for connecting the control board 8 with the liquid crystal display 2 at rear one side is carried out into the main part lower case 6 used machine style 12 formed in hollow shape of the assembly of the arm 10 and the arm 11, and it enables it to correspond to rotation of a liquid crystal display on the other hand. To other one side of main part lower case 6 rear part, the main part side lock hinge 13 is provided, and the LCD side lock hinge 14 is provided in the lower part of the indicator case 3, and it has composition combined by the hinge side arm 15 manufactured with the aluminum dies casting article etc. in each of it. The main part side lock hinge 13 and the LCD side lock hinge 14 show the example adapting the wrapped-spring-clutch system using the interference of the shaft 16 and the coil spring 17. In addition, there is also a friction plate system which welds a wave spring by pressure, and adjustment of friction torque can be performed by adjusting the interference of a wave spring by this system. Thus, the composition of a lock hinge can choose and use the optimal thing with equipment. If it describes about the torque of a lock hinge, since there is much operation frequency which opens and closes a liquid crystal display as shown in Fig.2, the rotational torque of the main part side lock hinge 13 will have been largely set up to the LCD side lock hinge 14 at the time of normal use. That is, at the time of opening and closing of the usual liquid crystal display 4, the main part side lock hinge 13 and the hinge side arm 15 are constituted so that it may not operate.

[0013]By operating the specific key on the keyboard 1, it is constituted so that screen display displayed on the liquid crystal display 2, such as a character or an image, can be displayed on the state (handstand state) where 180 degrees rotated.

[0014]This is described with the circuit block figure shown in Fig.5. Via the keyboard controller 21, CPU22, a character pattern, and the character position alteration means (program memory) 23, in display information, the input from the keyboard 1 which is the usual input device is constituted by the character generator 24, for example as shown in "A." This data "A" is transmitted to the memory 25 for a display, and it is displayed as "A" on the screen of the liquid crystal display 2 via the liquid crystal controller 26. Although these are the screen display of the usual liquid crystal display 2, After 180 degrees has rotated a screen display (handstand state), in

order to display, By operating the displaying condition change key 104A of the function key 104 of the keyboard 1. The program configuration is carried out so that a handstand may be done like Fig.7 or Fig.5 in the data of a character, an image, etc. from the character generator 24 via CPU22 by the character pattern and the character position alteration means (program memory) 23 and it may transmit to the memory 25 for a display.This character pattern and the character position alteration means 23 have a function which calculates the point symmetry position of the position of the character input into usual, and is made into a new character position with the aforementioned keyboard simultaneously with handstand character creation. A character-pattern alteration means and a character position alteration means may be divided individually, and this character pattern and the character position alteration means 23 may be provided with them.
[0015]Although this character position change technique is a thing about the thing of the system which reads alphabetic data from the character generator 24, If it is in some which display all the alphabetic data with a dot refreshing system, the handstand displaying condition of the full screen can be acquired by changing all the dots of dot data, such as an input character, into a point symmetry position. That is, a labor can be reduced in the time and effort which creates a handstand character pattern for every character using a character generator.
[0016]In Fig.5, a work memory and 28 27 A printing buffer memory, 31 -- an interface circuit and 32 -- as for a printer controller and 36, power supply LED and 34 are [a paper feed unit and 38] floppy disk controllers a printing unit and 37 printing LED and 35 a printing switch and 33.
[0017]It describes next about the operating instructions of the equipment constituted as mentioned above.
[0018]Fig.1 and Fig.2 show the anticipated-use state of information processing equipment like the Japanese word processor of a notebook type, or a personal computer, and only the LCD side lock hinge 14 usually carries out rotating operation like the above-mentioned.Fig.6 rotates 180 degrees of liquid crystal displays 4, in order that an operator may describe the operating instructions of information processing equipment, a function, etc. to the 3rd person on the session of a meeting, or a desk, and it operates the main part side lock hinge 13 via the hinge side arm 15 so that it may become level on a desk. Further, in this state, by operating the displaying condition change key 104A of the keyboard 1, since Fig.7 makes legible display information, such as a character of the liquid crystal display 2, or an image, from the 3rd person who meets as described by ****, it enables a display in the handstand state. Since it is a structure pivotable 360 degrees to a body side device by linkage of the LCD side lock hinge 14, the hinge side arm 15, and the main part side lock hinge 13, It also becomes possible at the time of the description to the 3rd person to make a screen display legible much more by rotating to abbreviated 220 degree order like Fig.8. Usually, since the display screen of the liquid crystal display 2 has directivity, there is a surface very hard to see an operator and from said, but it can be made very legible by using an above-mentioned operation form.
[0019]Although the above describes an anticipated-use state, the example of installation at the time of disuse is described. Fig.9 is a calendar, a clock, and the thing (this is temporarily called a stationery function) that was made to display a schedule and was installed on the desk by rotating about 300 degrees of liquid crystal displays 2. Thereby, problems, such as storage at the time of disuse and storage, are also solved, and, moreover, various schedules etc. can be used effectively including a check on a desk. When desk installation is problematic, it enables it to use it also as a wall tapestry, in order to make an installation area small further at the time of disuse.
[0020]Namely, according to one working-example composition of the present invention, as an adhesion combination state of the back surface of the indicator case of a liquid crystal display,

and the back surface of body casing, As you can make it based on a desk like Fig.10, 360 degrees is rotated as shown in Fig.11 when you do not wish this, and shown in Fig.12.By engaging the engagement part (concave part) 20 provided before [keyboard 1] the main part upper case 7 with the hook 19 attached to the wall 18, it becomes possible to carry out display storage, maintaining a stationery function.
[0021]
[Effect of the Invention]The body casing which carries out storing and holding of the control board in the present invention, and the keyboard which has a letter key which is provided by this body casing and inputs alphabetic data or sign data, In information processing equipment which has memory storage stored to this body casing, and the superficial display screen rotatably attached behind body casing, A used machine style which supports the aforementioned display device pivotable at least 180 degree or more to body casing, A means to change into a handstand character pattern a character input by the aforementioned letter key, A character position input by the aforementioned letter key with an input signal of a character position alteration means changed into a point symmetry position, a displaying condition change key provided by the aforementioned keyboard, and a displaying condition change key, . [whether a display control which displays a handstand character pattern changed above on the new display position changed by a character position alteration means is made to provide, and] Or a used machine style which supports the aforementioned display device pivotable at least 180 degree or more to body casing, All the dots, such as a character input by the aforementioned letter key, with an input signal of a dot position alteration means changed into a point symmetry position, a displaying condition change key provided by the aforementioned keyboard, and a displaying condition change key, It constituted so that it might display on the new display position which had all the dots changed by the aforementioned dot position alteration means changed.
Therefore, it can talk looking at a display screen mutually also with a partner who met, and it changes that he can proceed a meeting using this species information processing unit possible.
It becomes possible to utilize functions, such as a clock display, at the time of the storage at the time of disuse other than the time of normal use.

[Translation done.]

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TECHNICAL FIELD

[Industrial Application]The present invention relates to the information processing equipment especially provided with the superficial liquid crystal display about information processing equipment like the Japanese word processor of a note form, or a personal computer.

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PRIOR ART

[Description of the Prior Art]while spreading through urgency as a personal youth in recent years -- one day -- this word word processor, a personal computer, etc. -- as the display device from portability -- a thin type -- a lightweight liquid crystal display has come to be used. This information processing equipment makes a keyboard the inside of body casing with the start as shown in JP,S61-160526,U, It is common to arrange external storages (an external storage is called below), such as a control board and a magnetic disk driving device, a power supply, etc., and to store and constitute a liquid crystal display in the LCD case which can open and close a liquid crystal display to body casing back.

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EFFECT OF THE INVENTION

[Effect of the Invention]The body casing which carries out storing and holding of the control board in the present invention, and the keyboard which has a letter key which is provided by this body casing and inputs alphabetic data or sign data, In information processing equipment which has memory storage stored to this body casing, and the superficial display screen rotatably attached behind body casing, A used machine style which supports the aforementioned display device pivotable at least 180 degree or more to body casing, A means to change into a handstand character pattern a character input by the aforementioned letter key, A character position input by the aforementioned letter key with an input signal of a character position alteration means changed into a point symmetry position, a displaying condition change key provided by the aforementioned keyboard, and a displaying condition change key, . [whether a display control which displays a handstand character pattern changed above on the new display position changed by a character position alteration means is made to provide, and] Or a used machine style which supports the aforementioned display device pivotable at least 180 degree or more to body casing, All the dots, such as a character input by the aforementioned letter key, with an input signal of a dot position alteration means changed into a point symmetry position, a displaying condition change key provided by the aforementioned keyboard, and a displaying condition change key, It constituted so that it might display on the new display position which had all the dots changed by the aforementioned dot position alteration means changed.
Therefore, it can talk looking at a display screen mutually also with a partner who met, and it changes that he can proceed a meeting using this species information processing unit possible.
It becomes possible to utilize functions, such as a clock display, at the time of the storage at the time of disuse other than the time of normal use.

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TECHNICAL PROBLEM

[Problem to be solved by the invention]The above-mentioned conventional information processing equipment has composition which is easy to use it for a one user. Although a display screen can also be opened by the one user to about 135 degree legible, it is constituted more so that it cannot open. Therefore, when it sits opposite with a partner on both sides of a desk, a partner will be in the state where a display screen cannot be seen. Therefore, I also get a partner to sit on a user side, that one display screen must be seen by two persons arises unavoidably, and it is troublesome, and also narrow. At the time of the storage of those other than the time of

anticipated use, or storage, it was difficult to operate sufficiently the function which information processing equipment originally has. That is, even if the liquid crystal display was opened and it displayed the clock based on a timer function, etc., the body part became obstructive on the desk and was unsuitable for such use.
[0004]It enables it to talk while the main purpose of the present invention looks at a display screen mutually also with the partner who met, Setting it as the main purpose to make it possible to be able to proceed a meeting using this species information processing unit, the purpose of further others is to enable it to utilize functions, such as a clock display, at the time of the storage at the time of disuse other than the time of normal use.

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MEANS

[Means for solving problem]The keyboard which has a letter key which the above-mentioned main purpose is provided by the body casing which carries out storing and holding of the control board, and this body casing, and inputs alphabetic data or sign data, In the information processing equipment which has the memory storage stored to this body casing, and the superficial display screen rotatably attached behind body casing, The used machine style which supports the aforementioned display device pivotable at least 180 degree or more to body casing, A means to change into a handstand character pattern the character input by the aforementioned letter key, The character position input by the aforementioned letter key with the input signal of a Monju repositioning means to change into a point symmetry position, the displaying condition change key provided by the aforementioned keyboard, and a displaying condition change key, It is attained by making the display control which displays the handstand character pattern changed above on the new display position changed by the character position alteration means provide. When alphabetic data is memorized with the dot refreshing system, All the dots, such as a character input by the aforementioned letter key, with the input signal of the dot position alteration means changed into a point symmetry position, the displaying condition change key provided by the aforementioned keyboard, and a displaying condition change key, It is attained by making the display control displayed on the new display position which had all the dots changed by the aforementioned dot position alteration means changed provide.
[0006]The aforementioned used machine style supports the aforementioned display device pivotable 270 degree or more to body casing, and other purposes again. Form the periphery

height of a keyboard more highly than the keytop at the time under a key press, or the aforementioned used machine style supports the aforementioned display device pivotable 360 degree to body casing, and. In the state where constituted the back surface of the indicator case of a display device, and body casing in the mutual adhesion condition so that holding was possible, or combined the back surface of an indicator case and body casing with the mutual adhesion condition, and it was held, It is attained by constituting so that the rear end part of an indicator case and body casing may be made based as a bottom surface.

[Translation done.]

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OPERATION

[Function]All the dots which consisted of the present invention so that an indicator could be rotated 180 degree to body casing, and also a character might be used as a handstand pattern and a character position might be changed into a point symmetry position, or were input were changed into a point symmetry position.
Therefore, it is legible as a partner who met, and is displayed on the state of being easy to understand, and it acts so that it may close, if it is [a meeting using this species information processing unit] facilities.
Since it supposes that it is pivotable to 360 degree to body casing and temporary fastening is made possible at an angle of any angle, for example, 270 degree, and 360 degree, it acts so that it may become available considering this information processing equipment as display devices, such as a clock.

[Translation done.]

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EXAMPLE

[Working example]Hereafter, one working example of the composition of the present invention is described based on Drawings.
[0009]Fig.1 and Fig.2 are the slope figures and side views showing the busy condition figure of the Japanese word processor of a note form which is one working example of the present invention.
[0010]1 is a keyboard which has the letter key 101 which mainly inputs a character, a sign, etc., the ten key 102 which mainly inputs a number, the cursor key 103, or the function key 104. It is included in the indicator case 3 which can open and close the LCD liquid crystal indicator 2 which displays the input data input from this keyboard 1, and has wrap structure with the liquid crystal panel 4 in the front face of this indicator case. 5 is an external storage consisting of the magnetic disk driving device for memorizing the information which carried out the input editing, and interposes between the main part lower case 6 and the main part upper case 7. 67 is the body casing accomplished with the combination of these main part lower case 6 and the main part upper case 7. The aforementioned magnetic disk driving device is applied either a hard disk or floppy disk driving. Even if each various key provided on the keyboard 1 turns a keytop down as a structure which is not projected from the main part upper case 7, inverts the body casing 67 and installs it on a desk, A key is kept from acting carelessly, Or when projecting from the main part upper case 7 in order to carry out the stroke of the keyboard 1 largely and to improve operation touch, such as a keytop, and a keytop surface is used as a lower surface and it installs on a desk, the keytop operating physical force is considered so that a keytop may sink with main part weight. It is necessary to make it not carelessly inputted as mentioned above at this time. That is, it is absolute conditions for the relation between a keytop and a main part upper case to carry out the key press of the surface (periphery) height of a main part upper case, and to form more highly than the keytop at the time of input generating by lowering.
[0011]The control board 8 for controlling the whole equipment in the lower part of the keyboard 1 which inputs a character, a number, etc. to be shown in Fig.3 is arranged.
[0012]Insertion arrangement of the LCD cable 9 for connecting the control board 8 with the liquid crystal display 2 at rear one side is carried out into the main part lower case 6 used machine style 12 formed in hollow shape of the assembly of the arm 10 and the arm 11, and it enables it to correspond to rotation of a liquid crystal display on the other hand. To other one side of main part lower case 6 rear part, the main part side lock hinge 13 is provided, and the LCD side lock hinge 14 is provided in the lower part of the indicator case 3, and it has composition combined by the hinge side arm 15 manufactured with the aluminum dies casting article etc. in each of it. The main part side lock hinge 13 and the LCD side lock hinge 14 show the example adapting the wrapped-spring-clutch system using the interference of the shaft 16 and the coil spring 17. In addition, there is also a friction plate system which welds a wave spring by pressure, and adjustment of friction torque can be performed by adjusting the interference of a wave spring by this system. Thus, the composition of a lock hinge can choose and use the optimal thing with equipment. If it describes about the torque of a lock hinge, since there is much operation frequency which opens and closes a liquid crystal display as shown in Fig.2, the rotational torque of the main part side lock hinge 13 will have been largely set up to the LCD

side lock hinge 14 at the time of normal use. That is, at the time of opening and closing of the usual liquid crystal display 4, the main part side lock hinge 13 and the hinge side arm 15 are constituted so that it may not operate.
[0013]By operating the specific key on the keyboard 1, it is constituted so that screen display displayed on the liquid crystal display 2, such as a character or an image, can be displayed on the state (handstand state) where 180 degrees rotated.
[0014]This is described with the circuit block figure shown in Fig.5. Via the keyboard controller 21, CPU22, a character pattern, and the character position alteration means (program memory) 23, in display information, the input from the keyboard 1 which is the usual input device is constituted by the character generator 24, for example as shown in "A." This data "A" is transmitted to the memory 25 for a display, and it is displayed as "A" on the screen of the liquid crystal display 2 via the liquid crystal controller 26. Although these are the screen display of the usual liquid crystal display 2, After 180 degrees has rotated a screen display (handstand state), in order to display, By operating the displaying condition change key 104A of the function key 104 of the keyboard 1. The program configuration is carried out so that a handstand may be done like Fig.7 or Fig.5 in the data of a character, an image, etc. from the character generator 24 via CPU22 by the character pattern and the character position alteration means (program memory) 23 and it may transmit to the memory 25 for a display.This character pattern and the character position alteration means 23 have a function which calculates the point symmetry position of the position of the character input into usual, and is made into a new character position with the aforementioned keyboard simultaneously with handstand character creation. A character-pattern alteration means and a character position alteration means may be divided individually, and this character pattern and the character position alteration means 23 may be provided with them.
[0015]Although this character position change technique is a thing about the thing of the system which reads alphabetic data from the character generator 24, If it is in some which display all the alphabetic data with a dot refreshing system, the handstand displaying condition of the full screen can be acquired by changing all the dots of dot data, such as an input character, into a point symmetry position. That is, a labor can be reduced in the time and effort which creates a handstand character pattern for every character using a character generator.
[0016]In Fig.5, a work memory and 28 27 A printing buffer memory, 31 -- an interface circuit and 32 -- as for a printer controller and 36, power supply LED and 34 are [a paper feed unit and 38] floppy disk controllers a printing unit and 37 printing LED and 35 a printing switch and 33.
[0017]It describes next about the operating instructions of the equipment constituted as mentioned above.
[0018]Fig.1 and Fig.2 show the anticipated-use state of information processing equipment like the Japanese word processor of a notebook type, or a personal computer, and only the LCD side lock hinge 14 usually carries out rotating operation like the above-mentioned.Fig.6 rotates 180 degrees of liquid crystal displays 4, in order that an operator may describe the operating instructions of information processing equipment, a function, etc. to the 3rd person on the session of a meeting, or a desk, and it operates the main part side lock hinge 13 via the hinge side arm 15 so that it may become level on a desk. Further, in this state, by operating the displaying condition change key 104A of the keyboard 1, since Fig.7 makes legible display information, such as a character of the liquid crystal display 2, or an image, from the 3rd person who meets as described by ****, it enables a display in the handstand state. Since it is a structure pivotable 360 degrees to a body side device by linkage of the LCD side lock hinge 14, the hinge side arm 15, and the main part side lock hinge 13, It also becomes possible at the time of the description to the

3rd person to make a screen display legible much more by rotating to abbreviated 220 degree order like Fig.8. Usually, since the display screen of the liquid crystal display 2 has directivity, there is a surface very hard to see an operator and from said, but it can be made very legible by using an above-mentioned operation form.
[0019]Although the above describes an anticipated-use state, the example of installation at the time of disuse is described. Fig.9 is a calendar, a clock, and the thing (this is temporarily called a stationery function) that was made to display a schedule and was installed on the desk by rotating about 300 degrees of liquid crystal displays 2. Thereby, problems, such as storage at the time of disuse and storage, are also solved, and, moreover, various schedules etc. can be used effectively including a check on a desk. When desk installation is problematic, it enables it to use it also as a wall tapestry, in order to make an installation area small further at the time of disuse.
[0020]Namely, according to one working-example composition of the present invention, as an adhesion combination state of the back surface of the indicator case of a liquid crystal display, and the back surface of body casing, As you can make it based on a desk like Fig.10, 360 degrees is rotated as shown in Fig.11 when you do not wish this, and shown in Fig.12.By engaging the engagement part (concave part) 20 provided before [keyboard 1] the main part upper case 7 with the hook 19 attached to the wall 18, it becomes possible to carry out display storage, maintaining a stationery function.

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1]The busy condition slope figure of the Japanese word processor of a laptop form, or information processing equipment of a portable form like a personal computer which is one working example of the present invention.
[Drawing 2]Similarly it is a side view of a normal use state.
[Drawing 3]A cross sectional view when a liquid crystal display is closed.
[Drawing 4]The joint cross sectional view of a main part and an LCD case.
[Drawing 5]Circuit block figure.
[Drawing 6]The description constitutional diagram to the 3rd person.
[Drawing 7]The description constitutional diagram to the 3rd person.
[Drawing 8]The description constitutional diagram to the 3rd person.

[Drawing 9]The figure showing the example of installation to the desk top at the time of disuse.
[Drawing 10]The wall tapestry constitutional diagram at the time of disuse.
[Drawing 11]The cross sectional view at the time of rotating 360 degrees of liquid crystal displays.
[Drawing 12]The cross sectional view of a wall tapestry state at the time of use.
[Explanations of letters or numerals]
1 -- keyboard, 2 -- liquid crystal display screen, 3 -- indicator case, 5 -- external storage, 6 -- main part lower case, 7 -- main part upper case, 8 -- control board, 12 -- a used machine style and the 13 main-part side lock hinge, 14 -- the LCD side lock hinge, 15 -- the hinge side arm, 18 -- wall, 19 -- hook, 20 -- concave part, 23 -- character position alteration means, 67 -- body casing, 104 A -- displaying condition change key.

[Translation done.]

* NOTICES *

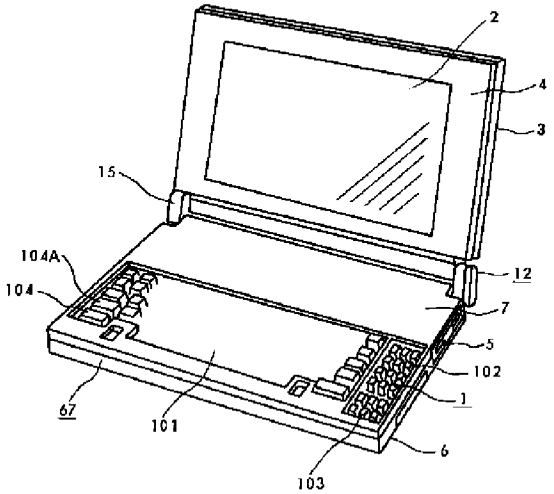
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DRAWINGS

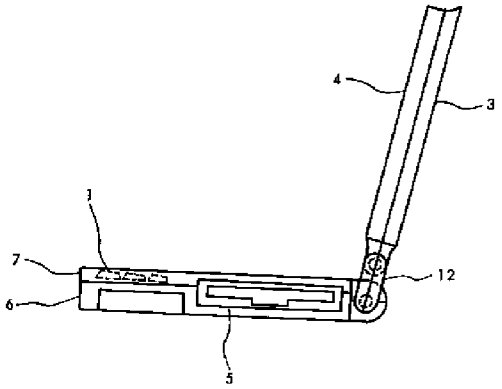
[Drawing 1]

図 1



[Drawing 2]

図 2



[Drawing 3]

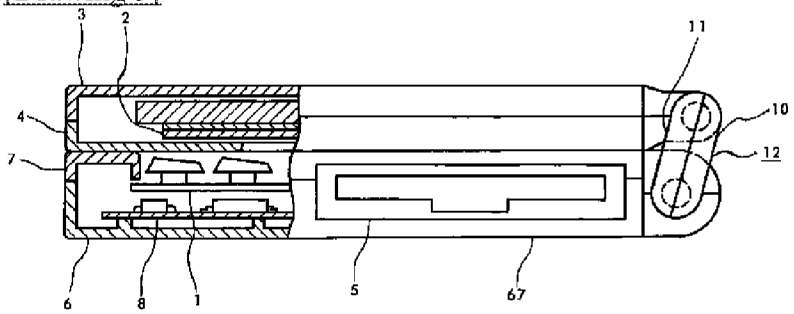
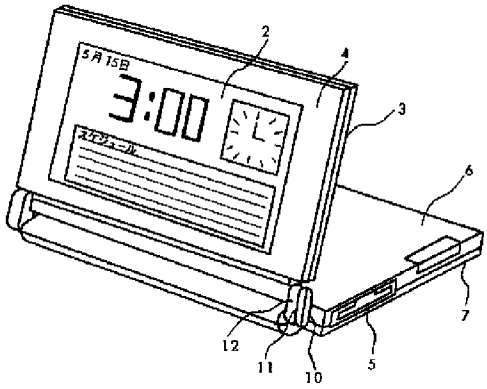


図 3

[Drawing 9]

図 9



[Drawing 4]

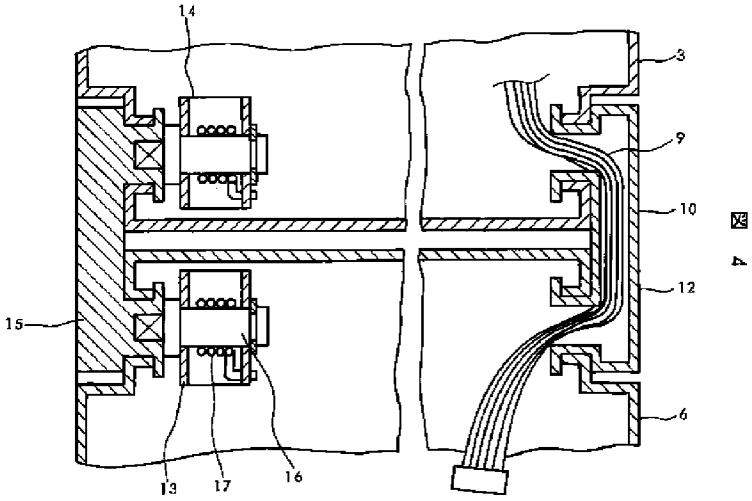
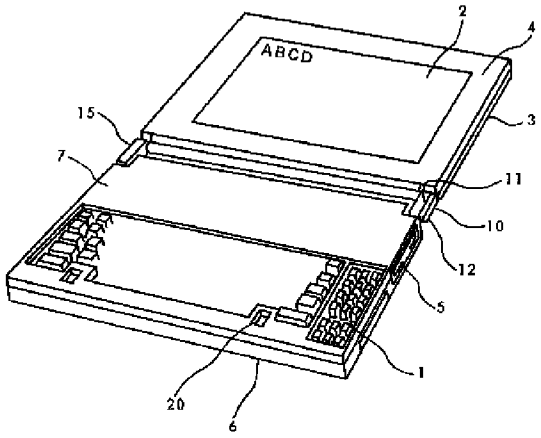


図 4

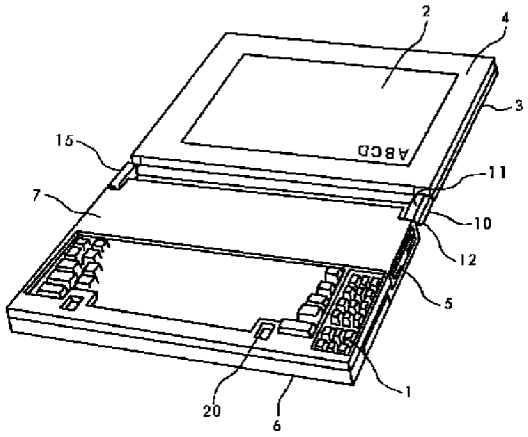
[Drawing 6]

図 6



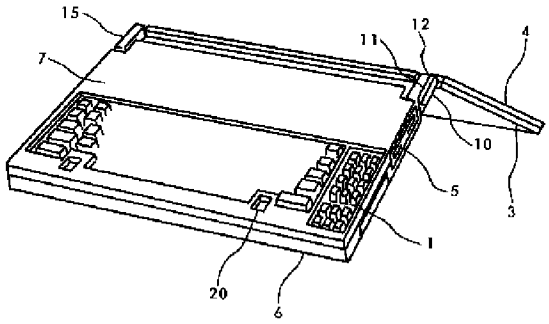
[Drawing 7]

図 7



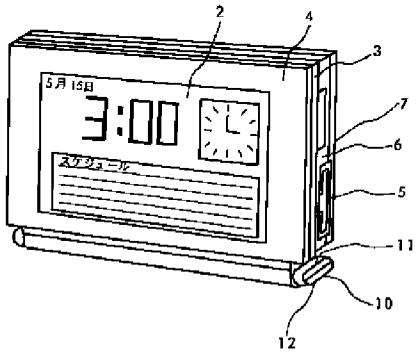
[Drawing 8]

図 8



[Drawing 10]

図 10



[Drawing 11]

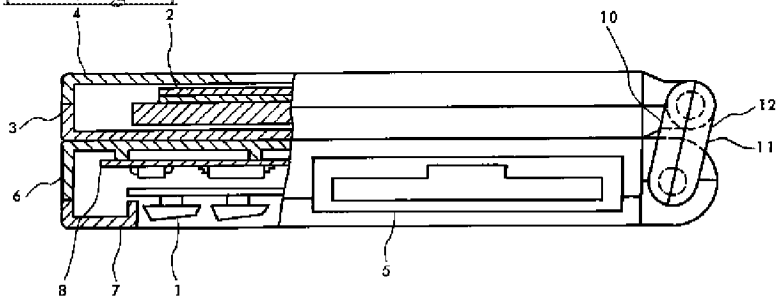
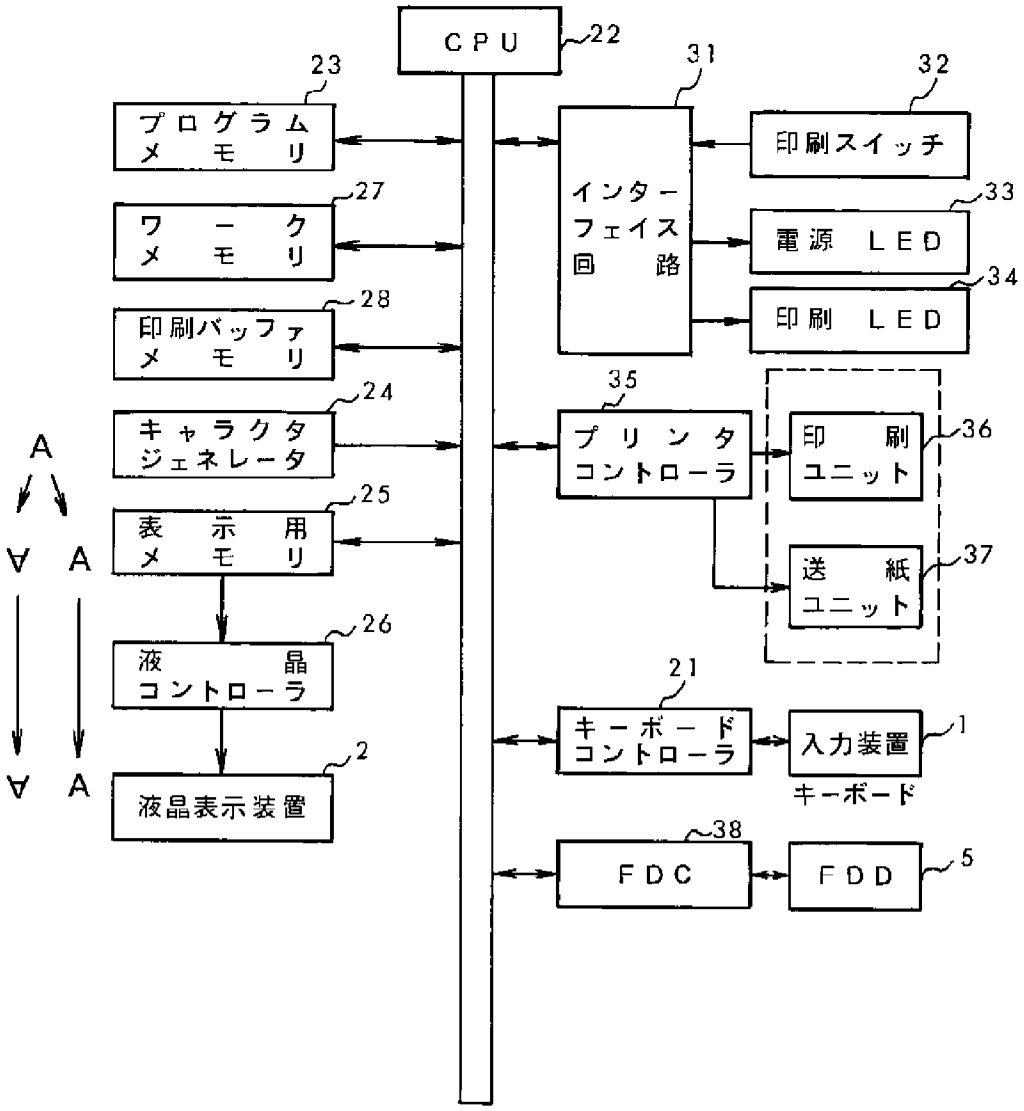


図 11

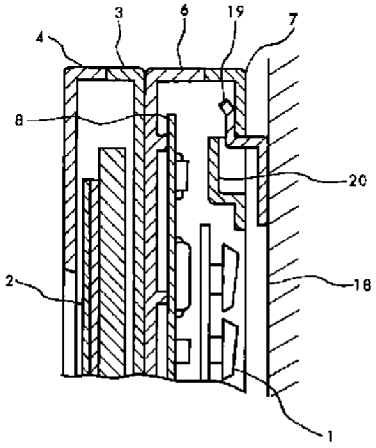
[Drawing 5]

図　5



[Drawing 12]

図 12



[Translation done.]

(19)日本国特許庁（ＪＰ）　(12) **公開特許公報（Ａ）**　(11)特許出願公開番号

特開平8－179851

(43)公開日　平成８年(1996)７月12日

(51)Int.Cl.[6]	識別記号	庁内整理番号	ＦＩ	技術表示箇所
Ｇ０６Ｆ　1/16				
			Ｇ０６Ｆ　1/00　３１２　Ｆ	

審査請求　未請求　請求項の数１　ＯＬ　（全　４　頁）

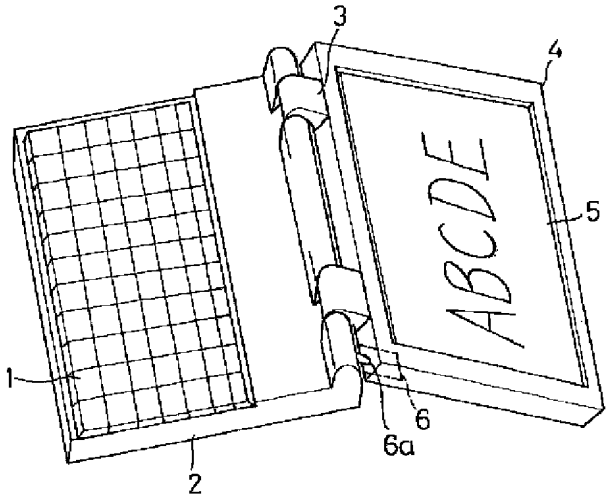
(21)出願番号　特願平6－322621

(22)出願日　平成６年(1994)12月26日

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(54)【発明の名称】　携帯型コンピュータ

(57)【要約】
【目的】　ディスプレイを大きく開くとその表示内容が１８０°回転して表示され、対面の相手側から正常な立像として見えるようにし、プレゼンテーションをしやすくした携帯型コンピュータを実現する。
【構成】　ディスプレイが蓋側に取り付けられ、キーボードが本体側に取り付けられ、開閉自在となった携帯型コンピュータであって、ディスプレイの開き角度が所定値以上になったことを検出する開き角度センサと、開き角度センサがディスプレイの開き角度が所定値以上となったのを検出したときに、ディスプレイの表示を１８０°回転させる表示処理部とを備えている。



【特許請求の範囲】
【請求項１】　ディスプレイが蓋側に取り付けられ、キーボードが本体側に取り付けられ、開閉自在となった携帯型コンピュータにおいて、
前記ディスプレイの開き角度が所定値以上になったことを検出する開き角度センサと、
前記開き角度センサがディスプレイの開き角度が所定値以上となったのを検出したときに、前記ディスプレイの表示を１８０°回転させる表示処理部とを備えて成る携帯型コンピュータ。
【発明の詳細な説明】
【０００１】
【産業上の利用分野】この発明はラップトップコンピュータ、ノートブック型コンピュータ、サブノート型コンピュータなどの携帯型コンピュータに関する。
【０００２】
【従来の技術】従来から、ラップトップコンピュータ、ノートブック型コンピュータ、サブノート型コンピュータなどの携帯型コンピュータが広く普及しており、客先に商談に行くときに携帯して行き、商談相手に携帯型コンピュータのディスプレイでプレゼンテーションを行ない、商談を進める形態で利用される機会も多い。
【０００３】
【発明が解決しようとする課題】ところが、従来の携帯型コンピュータでは、応接室などで対面して商談するような場合、対面の席に座っている相手にディスプレイの表示を見てもらうためにはコンピュータ本体を相手側に向くように回転させたり、相手に使用者側に来てもらっていっしょに見たりする必要があり、コンピュータを回転させて相手に見てもらっている場合には使用者がキーボードを操作してディスプレイの表示を変化させる必要があればもう一度コンピュータを使用者側に向け直す手間が掛かり、またいっしょに同じ向きに座り直してもらうのも客人相手では面倒であり、対面しながら円滑に商談を進める点で不自由があった。
【０００４】この発明はこのような従来の問題点に鑑みてなされたもので、ディスプレイを大きく開いて対面している相手に見えるようにすれば、ディスプレイの表示内容が自動的に１８０°回転して相手から見て正常な立像で見えるようにできる携帯型コンピュータを提供することを目的とする。
【０００５】
【課題を解決するための手段】この発明は、ディスプレイが蓋側に取り付けられ、キーボードが本体側に取り付けられ、開閉自在となった携帯型コンピュータにおいて、ディスプレイの開き角度が所定値以上になったことを検出する開き角度センサと、開き角度センサがディスプレイの開き角度が所定値以上となったのを検出したときに、ディスプレイの表示を１８０°回転させる表示処理部とを備えたものである。
【０００６】
【作用】この発明の携帯型コンピュータでは、対面に座わって話しているときに相手方にディスプレイの表示を見せる必要が生じたような場合、ディスプレイの取り付けられた蓋側を大きく開いて相手に見せるようにすれば、開き角度センサがそれを検出し、これによって表示処理部がそれまでのディスプレイの表示を１８０°回転させて表示するようになる。
【０００７】したがって、対面の相手にディスプレイを大きく開いて正常な表示を見せながら、使用者は反対側から本体のキーボードを通常の姿勢で操作するという使い方が可能となる。
【０００８】
【実施例】以下、この発明の実施例を図に基づいて詳説する。図１及び図２はこの発明の一実施例の携帯型コンピュータの外観を示しており、キーボード１の備えられた本体２と、この本体２に対してヒンジ３によって開閉自在に連結された蓋体４と、蓋体４に取り付けられたディスプレ５から構成されている。そして蓋体４のヒンジ側端面には蓋体４を１８０°以上に大きく開いたときにその突起部６ａが本体２の背面に当接してスイッチ動作する開き角度センサ６が設けられている。
【０００９】図３はこの実施例の携帯型コンピュータの回路構成を示しており、通常のコンピュータの構成と同じように中央演算処理装置（ＣＰＵ）７と、主メモリ８と、キーボード１からの入力操作信号をＣＰＵに対して入力処理する入力処理部９と、ＣＰＵ７からの表示データをディスプレイ５に表示させる制御を行なう表示処理部１０と、ハードディスク、フロッピーディスクなどの外部記憶装置１１を備えている。
【００１０】入力処理部９に対しては、キーボード１を接続すると共に、開き角度センサ６のセンシング信号も入力するようになっている。この開き角度センサ６は蓋体４を１８０°以上に大きく開いたときに突起部６ａが没入してスイッチ６ｂを閉じ、これによって開き角度センシング信号を入力処理部９に与える構成である。
【００１１】なお、開き角度センサ６はこの構成のものに限定されず、広く開き角度を検出する機械的手段や電気的手段を利用することができる。
【００１２】ＣＰＵ７は開き角度センサ６から開き角度センシング信号が入力されると、表示データを表示処理部１０に出力している場合に、表示データと共に１８０°回転表示指令信号も出力し、これを受けて表示処理部１０はディスプレイ５の表示をそれまでの表示状態から１８０°回転させた状態、つまり天地を逆転させた表示状態に変化させるようになっている。
【００１３】次に、上記構成の携帯型コンピュータの動作について説明する。通常の使用状態は図１に示すように蓋体４を９０°～１２０°程度に開き、ディスプレイ５の表示を見ながら、同じ向きで本体２上のキーボード

１を操作する。

【００１４】しかしながら、客先に持ち込んでプレゼンテーションを行なうような場合には、通常、図４（ａ）に示すように使用者Ａと相手Ｂとは対面座して商談を進めるので、使用者Ａは図１に示す状態、つまりコンピュータＣの蓋体４をその中のディスプレイ５が自分の方から見える角度に開いた状態で操作し、所望の内容が表示できれば図４（ｂ）に示すように蓋体４を１８０°以上に大きく開いて相手Ｂにディスプレイの表示を見せるようにする。

【００１５】この状態では、図２に示すように、開き角度センサ６が所定角度以上に大きく開いたことを示すセンシング信号を入力処理部９に入力し、入力処理部９はＣＰＵ７にその信号を与える。

【００１６】そこで、ＣＰＵ７はそれまでの表示状態から１８０°回転させて表示させる指令を表示データと共に表示処理部１０に出力し、表示処理部１０はディスプレイ５に表示データを１８０°回転させた状態で表示させる。したがって、対面に座っている相手Ｂはディスプレイ５の表示を通常の立像となった状態で見ることができるようになる。しかもこの場合、使用者Ａはそれまでと同じ向きに座ったまま、キーボード１を操作して入力を行ない、ディスプレイ５の表示内容を変化させることができることになる。

【００１７】

【発明の効果】以上のようにこの発明によれば、通常、対面して相手方と商談を行なうが、その対面座のままコンピュータのディスプレイを相手に見える角度まで大きく開くだけで相手に正常な立像状態で表示内容を見せることができ、コンピュータを客先に持ち込み、対面に座りながら話し合い、その後、コンピュータを開いてプレゼンテーションを始めるような場合、従来のように相手に席を変わってもらったり、使用者が相手と同じ向きの席に変わったりして同じ向きからディスプレイを見、あるいはコンピュータ自体を相手側に回転させてディスプレイを見てもらうような面倒な作業をする必要がなくなり、しかも相手にディスプレイの表示を見せながら対面座からキーボードを通常と同じ姿勢で操作して表示内容を変化させることもでき、使い勝手が大幅に向上する。

【図面の簡単な説明】

【図１】この発明の一実施例の通常の使用状態の斜視図。

【図２】上記実施例のディスプレイを大きく開いた状態での表示状態を示す斜視図。

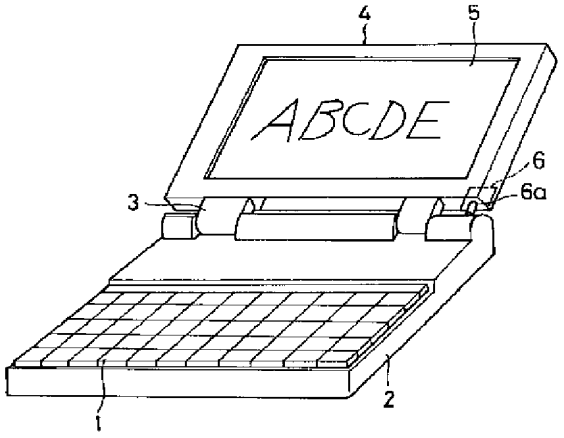
【図３】上記実施例の回路ブロック図。

【図４】上記実施例の使用説明図。

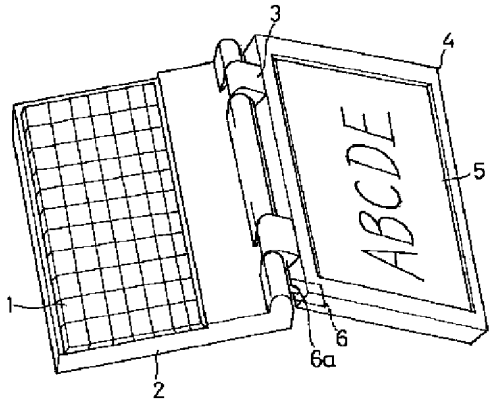
【符号の説明】

１　キーボード
２　本体
３　ヒンジ
４　蓋体
５　ディスプレイ
６　開き角度センサ
６ａ　突起部
６ｂ　スイッチ
７　ＣＰＵ
８　主メモリ
９　入力処理部
１０　表示処理部
１１　外部記憶装置
Ａ　使用者
Ｂ　相手
Ｃ　コンピュータ

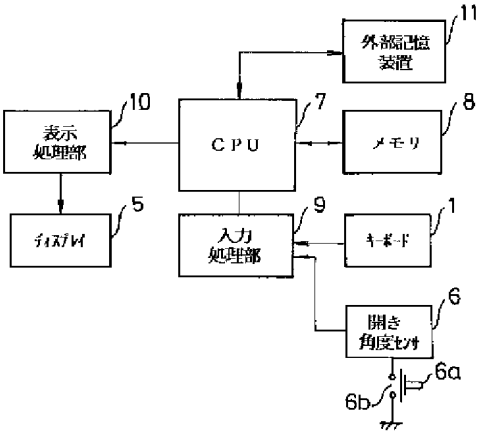
【図１】



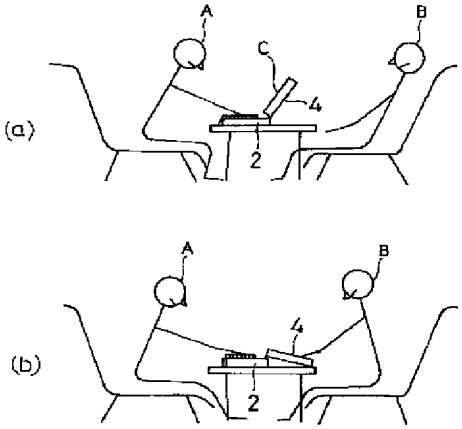
【図２】



【図３】


外部記憶装置
11
表示処理部
10
CPU
7
メモリ
8
ディスプレイ
5
入力処理部
9
キーボード
1
開き角度センサ
6
6a
6b

【図４】


(a)
A
B
C
4
2
(b)
A
B
4
2

PATENT ABSTRACTS OF JAPAN

(11)Publication number : **08-179851**
(43)Date of publication of application : **12.07.1996**

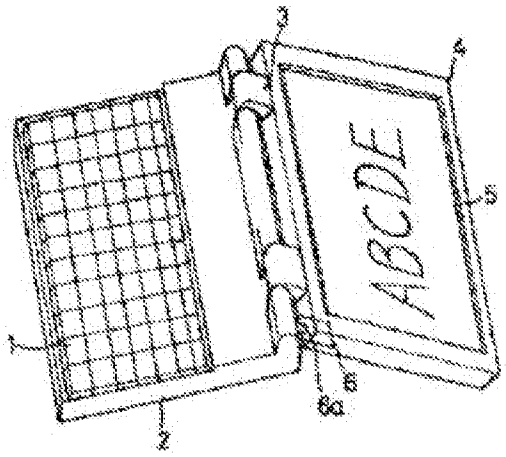
(51)Int.Cl. G06F 1/16

(21)Application number : **06-322621**
(22)Date of filing : **26.12.1994**

(71)Applicant : **TOSHIBA CORP**
(72)Inventor : **TAKAGI SHIGEO**

(54) **PORTABLE COMPUTER**

(57)Abstract:
PURPOSE: To observe displayed contents on a display as a normal erected image for a facing party by rotating the display on the display just at a specified angle when the opening angle of the display gets larger than a prescribed value.
CONSTITUTION: When a user and the party have a business talk while facing each other, the computer is operated in the state of opening a lid body 4 at a certain angle so that a display 5 in it can be observed from the user side and when desired contents are displayed, the lid body 4 is widely opened more than 180° so that the party can observe the display on the display. In such a state, an opening angle sensor 6 inputs a sensing signal showing that the cover is widely opened more than the prescribed angle to an input processing part, and this input processing part applies that signal to the CPU. Then, the CPU outputs a command for displaying data while rotating the cover at 180° from the display state up to the moment to a display processing part together with display data, and the display processing part displays the display data on the display 5 in the state of rotating it at 180°.



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CLAIMS

[Claim(s)]
[Claim 1]In a portable computer whose opening and closing a display was attached to the lid side, a keyboard was attached to the main part side, and were attained,
A portable computer comprising:
A difference angle sensor which detects that a difference angle of the aforementioned display became beyond a specified value.
A display processing part which rotates 180 degrees of displays of the aforementioned display when the aforementioned difference angle sensor detects that a difference angle of a display became beyond a specified value.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Industrial Application]This invention relates to portable computers, such as a laptop computer, a notebook type computer, and a subnote type computer.
[0002]

[Description of the Prior Art]The laptop computer from the former, a notebook type computer, There are also many opportunities used with the form which carries and goes when portable computers, such as a subnote type computer, have spread widely and go to a customer to have a business talk, gives a business talk partner a presentation on the display of a portable computer, and can proceed a business talk.
[0003]
[Problem to be solved by the invention]In however, the case so that it may meet and have a business talk in the conventional portable computer at a reception room etc. In order to get a partner sitting on the seat of a confrontation to look at the display of a display, rotate a computer body so that the other party may be turned to, or, It takes the time and effort which will turn a computer to the user side once again if a user needs to operate a keyboard and needs to change the display of a display when I get a partner to come to the user side, it is necessary to see together, a computer is rotated and I get the partner seeing, While it is troublesome that I also have you sit up straight in the same direction together and it met in the visitor partner, there was inconvenience at the point which can proceed a business talk smoothly.
[0004]If it is made visible [this invention] to the partner who was made in view of such a conventional problem, opened the display largely, and has met, It aims at providing the portable computer where 180 degrees of display information of a display rotate automatically, sees from a partner, and can be in sight with a normal statue.
[0005]
[Means for solving problem]A display is attached to the lid side, a keyboard is attached to the main part side, and the present invention is characterized by that a portable computer whose opening and closing were attained comprises the following.
A difference angle sensor which detects that a difference angle of a display became beyond a specified value.
A display processing part which rotates 180 degrees of displays of a display when a difference angle sensor detects that a difference angle of a display became beyond a specified value.

[0006]
[Function]If the lid side with which the display was attached is opened largely and it is made to show it as a partner when the display of a display needs to be shown to the other party, while telling [the portable computer of this invention] **** to the confrontation, A difference angle sensor detects it, and by this, a display processing part rotates 180 degrees and comes to display the display of the display till then.
[0007]Therefore, a user becomes possible [the usage of operating the keyboard of a main part with the usual attitude] from an opposite side, opening a display as the partner of a confrontation largely and showing him a normal display.
[0008]
[Working example]Hereafter, the working example of this invention is explained in full detail based on a figure. Fig.1 and Fig.2 show the appearance of the portable computer of one working example of this invention, and comprise the display 5 attached to the main part 2 equipped with the keyboard 1, the lid 4 connected by the hinges 3 to this main part 2 enabling free opening and closing, and the lid 4.And when the lid 4 is largely opened to not less than 180 degrees at the hinge side edge of the lid 4, the difference angle sensor 6 in which the protruding part 6a abuts and carries out switching to the back face of the main part 2 is provided.
[0009]Fig.3 shows the circuit configuration of the portable computer of this working example,

and like the composition of the usual computer The central processing unit (CPU) 7, It has the external storages 11, such as the main memory 8, the input processing part 9 which carries out the input process of the alter operation signal from the keyboard 1 to CPU, the display processing part 10 which performs control for which the displayed data from CPU7 are displayed on the display 5, a hard disk, a floppy disk.
[0010]The keyboard 1 is connected to the input processing part 9, and the sensing signal of the difference angle sensor 6 is also input. This difference angle sensor 6 is the composition of the protruding part 6a being absorbed and closing the switch 6b when the lid 4 is largely opened to not less than 180 degrees, and this opening, and giving an angle sensing signal to the input processing part 9.
[0011]The difference angle sensor 6 is not limited to the thing of this composition, but can use the mechanical means and electric means which detect a difference angle widely.
[0012]If CPU7 is opened from the difference angle sensor 6 and an angle sensing signal is input, When displayed data are being outputted to the display processing part 10, a 180-degree rotational display command signal is also outputted with displayed data, In response, the display processing part 10 is changed to the state, i.e., the displaying condition which reversed top and bottom, where 180 degrees of displays of the display 5 were rotated from the displaying condition till then.
[0013]Next, it describes about operation of the portable computer of the above-mentioned composition. An anticipated-use state opens the lid 4 to 90 degrees - about 120 degrees, as shown in Fig.1, and it operates the keyboard 1 on the main part 2 by the same direction, looking at the display of the display 5.
[0014]However, in carrying into a customer and performing a presentation. Usually, since the user A and the partner B do a confrontation seat and can proceed a business talk as shown in Fig.4 (a), The user A operates it in the state shown in Fig.1, i.e., the state where the lid 4 of the computer C was opened to the angle at which the display 5 in it appears from its direction, If the desired contents can be displayed, as shown in Fig.4 (b), the lid 4 will be largely opened to not less than 180 degrees, and the display of a display will be shown to the partner B.
[0015]In this state, as shown in Fig.2, the sensing signal which shows that the difference angle sensor 6 opened largely more than the predetermined angle is input into the input processing part 9, and the input processing part 9 gives that signal to CPU7.
[0016]Then, CPU7 outputs the instructions which rotate 180 degrees and are displayed from the displaying condition till then to the display processing part 10 with displayed data, and the display processing part 10 is displayed in the state where the display 5 was made to rotate 180 degrees of displayed data. Therefore, the partner B sitting on the confrontation can see the display of the display 5 now in the state where it became the usual statue. And while the user A has sat on the same direction even with it in this case, it can input by the ability to operate the keyboard 1, and the display information of the display 5 can be made to change.
[0017]
[Effect of the Invention]As mentioned above, according to this invention, meet, and usually perform a business talk with the other party, but. Display information can be shown to a partner in the state of a normal statue only by opening largely to the angle which is visible against the display of a computer with the confrontation seat, Carry a computer into a customer, discuss, sitting on a confrontation, and After that, When opening a computer and beginning a presentation, get a seat to change to a partner like before, or. A user changes to the seat of a partner and the same direction, and looks at a display from the same direction, It becomes

unnecessary or to do troublesome work which makes the other party rotate the computer itself and has a display seen. And a keyboard can be operated with the same attitude as usual from a confrontation seat, display information can also be changed, showing a partner the display of a display, and usability improves substantially.

[Translation done.]

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TECHNICAL FIELD

[Industrial Application]This invention relates to portable computers, such as a laptop computer, a notebook type computer, and a subnote type computer.

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PRIOR ART

[Description of the Prior Art]The laptop computer from the former, a notebook type computer, There are also many opportunities used with the form which carries and goes when portable computers, such as a subnote type computer, have spread widely and go to a customer to have a business talk, gives a business talk partner a presentation on the display of a portable computer,

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EFFECT OF THE INVENTION

[Effect of the Invention]As mentioned above, according to this invention, meet, and usually perform a business talk with the other party, but. Display information can be shown to a partner in the state of a normal statue only by opening largely to the angle which is visible against the display of a computer with the confrontation seat, Carry a computer into a customer, discuss, sitting on a confrontation, and After that, When opening a computer and beginning a presentation, get a seat to change to a partner like before, or. A user changes to the seat of a partner and the same direction, and looks at a display from the same direction, It becomes unnecessary or to do troublesome work which makes the other party rotate the computer itself and has a display seen. And a keyboard can be operated with the same attitude as usual from a confrontation seat, display information can also be changed, showing a partner the display of a display, and usability improves substantially.

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TECHNICAL PROBLEM

[Problem to be solved by the invention]In however, the case so that it may meet and have a business talk in the conventional portable computer at a reception room etc. In order to get a partner sitting on the seat of a confrontation to look at the display of a display, rotate a computer body so that the other party may be turned to, or, It takes the time and effort which will turn a computer to the user side once again if a user needs to operate a keyboard and needs to change the display of a display when I get a partner to come to the user side, it is necessary to see together, a computer is rotated and I get the partner seeing, While it is troublesome that I also have you sit up straight in the same direction together and it met in the visitor partner, there was inconvenience at the point which can proceed a business talk smoothly.
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MEANS

[Means for solving problem]A display is attached to the lid side, a keyboard is attached to the main part side, and the present invention is characterized by that a portable computer whose opening and closing were attained comprises the following.
A difference angle sensor which detects that a difference angle of a display became beyond a specified value.
A display processing part which rotates 180 degrees of displays of a display when a difference angle sensor detects that a difference angle of a display became beyond a specified value.

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OPERATION

[Function]If the lid side with which the display was attached is opened largely and it is made to show it as a partner when the display of a display needs to be shown to the other party, while telling [the portable computer of this invention] **** to the confrontation, A difference angle sensor detects it, and by this, a display processing part rotates 180 degrees and comes to display the display of the display till then.
[0007]Therefore, a user becomes possible [the usage of operating the keyboard of a main part with the usual attitude] from an opposite side, opening a display as the partner of a confrontation largely and showing him a normal display.

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EXAMPLE

[Working example]Hereafter, the working example of this invention is explained in full detail based on a figure. Fig.1 and Fig.2 show the appearance of the portable computer of one working example of this invention, and comprise the display 5 attached to the main part 2 equipped with the keyboard 1, the lid 4 connected by the hinges 3 to this main part 2 enabling free opening and closing, and the lid 4.And when the lid 4 is largely opened to not less than 180 degrees at the hinge side edge of the lid 4, the difference angle sensor 6 in which the protruding part 6a abuts and carries out switching to the back face of the main part 2 is provided.
[0009]Fig.3 shows the circuit configuration of the portable computer of this working example, and like the composition of the usual computer The central processing unit (CPU) 7, It has the external storages 11, such as the main memory 8, the input processing part 9 which carries out the input process of the alter operation signal from the keyboard 1 to CPU, the display processing part 10 which performs control for which the displayed data from CPU7 are displayed

on the display 5, a hard disk, a floppy disk.
[0010]The keyboard 1 is connected to the input processing part 9, and the sensing signal of the difference angle sensor 6 is also input. This difference angle sensor 6 is the composition of the protruding part 6a being absorbed and closing the switch 6b when the lid 4 is largely opened to not less than 180 degrees, and this opening, and giving an angle sensing signal to the input processing part 9.
[0011]The difference angle sensor 6 is not limited to the thing of this composition, but can use the mechanical means and electric means which detect a difference angle widely.
[0012]If CPU7 is opened from the difference angle sensor 6 and an angle sensing signal is input, When displayed data are being outputted to the display processing part 10, a 180-degree rotational display command signal is also outputted with displayed data, In response, the display processing part 10 is changed to the state, i.e., the displaying condition which reversed top and bottom, where 180 degrees of displays of the display 5 were rotated from the displaying condition till then.
[0013]Next, it describes about operation of the portable computer of the above-mentioned composition. An anticipated-use state opens the lid 4 to 90 degrees - about 120 degrees, as shown in Fig.1, and it operates the keyboard 1 on the main part 2 by the same direction, looking at the display of the display 5.
[0014]However, in carrying into a customer and performing a presentation. Usually, since the user A and the partner B do a confrontation seat and can proceed a business talk as shown in Fig.4 (a), The user A operates it in the state shown in Fig.1, i.e., the state where the lid 4 of the computer C was opened to the angle at which the display 5 in it appears from its direction, If the desired contents can be displayed, as shown in Fig.4 (b), the lid 4 will be largely opened to not less than 180 degrees, and the display of a display will be shown to the partner B.
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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1]The perspective view of an anticipated-use state of one working example of this invention.
[Drawing 2]The perspective view showing the displaying condition in the state where the display of the above-mentioned working example was opened largely.
[Drawing 3]The circuit block figure of the above-mentioned working example.
[Drawing 4]The use explanatory view of the above-mentioned working example.
[Explanations of letters or numerals]
1 Keyboard
2 Main part
3 Hinge
4 Lid
5 Display
6 Difference angle sensor
6a Protruding part
6b Switch
7 CPU
8 Main memory
9 Input processing part
10 Display processing part
11 External storage
A User
B Partner
C Computer

[Translation done.]

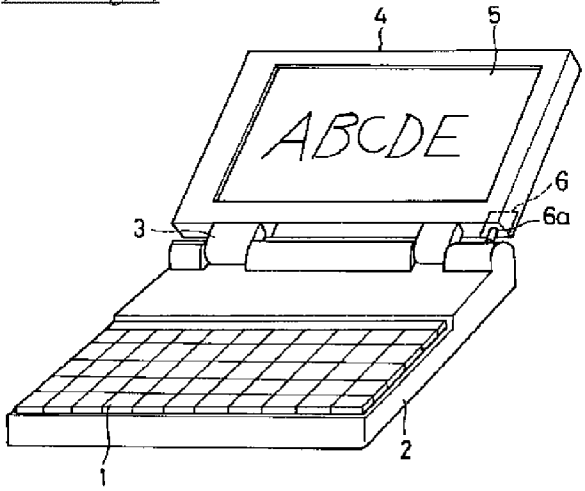
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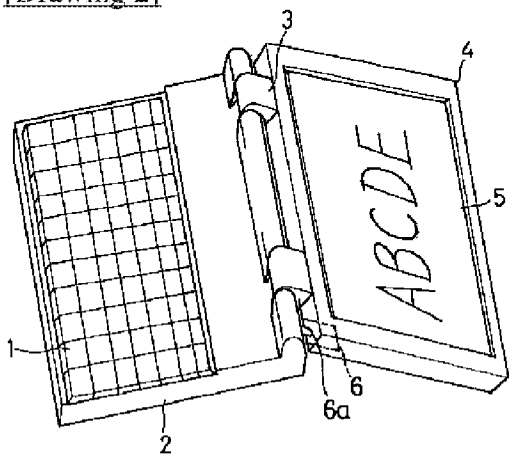
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DRAWINGS

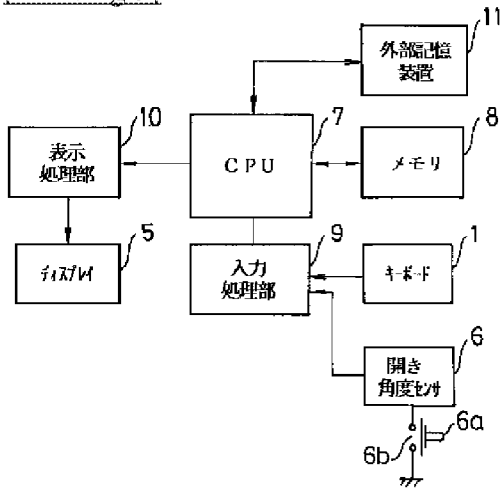
[Drawing 1]



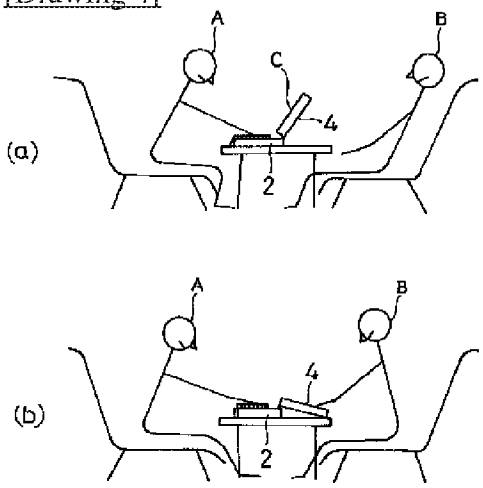
[Drawing 2]



[Drawing 3]



[Drawing 4]



[Translation done.]

(19)日本国特許庁（ＪＰ）　(12) **公開特許公報（Ａ）**　(11)特許出願公開番号

特開平5－197507

(43)公開日　平成５年(1993)８月６日

(51)Int.Cl.[5]		識別記号	庁内整理番号	ＦＩ	技術表示箇所
Ｇ０６Ｆ	3/14	３５０　Ｂ	7165－5B		
	1/16				
Ｇ０９Ｆ	9/00	３１２	6447－5G		
Ｇ０９Ｇ	3/20	Ｕ	8621－5G		
			7927－5B	Ｇ０６Ｆ　1/ 00　３１２　Ｆ	

審査請求　未請求　請求項の数９(全 12 頁)　最終頁に続く

(21)出願番号　特願平4－6643

(22)出願日　平成４年(1992)１月17日

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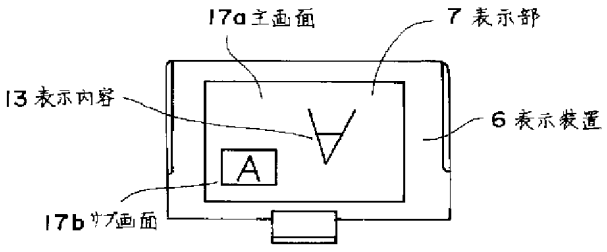
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(54)【発明の名称】　ポータブルコンピュータ

(57)【要約】
【目的】ポータブルコンピュータにおいて、単一の表示装置を用いて、コンピュータの操作者、および操作者と対面して位置する人物が、表示部に表示された表示内容を対面する２方向から同時に読み取ることができるようにする。
【構成】ポータブルコンピュータの単一の表示部に２個の画面を設け、各々の画面に表示された文字、グラフ、図形等の表示内容を、互いに１８０°反転した方向に表示させる。２画面のうちの一方の画面はポータブルコンピュータのキーボードの操作者が、他の一方の画面は操作者と対面して位置する人物が、表示内容を目視できるようにする。

［図　１］



【特許請求の範囲】
【請求項１】１つの表示部を第１の画面と第２の画面に分割し、さらに上記第２の画面の表示方向を第１の画面の表示方向に対して反転させる手段を備えていることを特徴とするポータブルコンピュータ。
【請求項２】上記第１の画面の表示内容の表示方向と第２の画面の表示内容の表示方向とを入換る手段を備えていることを特徴とする請求項１記載のポータブルコンピュータ。
【請求項３】上記第２の画面を表示する表示部上の位置を、任意の位置に移動させる手段を備えていることを特徴とする請求項１記載のポータブルコンピュータ。
【請求項４】上記第２の画面の大きさを可変する手段を備えていることを特徴とする請求項１記載のポータブルコンピュータ。
【請求項５】上記第２の画面に上記第１の画面の表示内容全体を縮少して表示する手段を備えていることを特徴とする請求項１記載のポータブルコンピュータ。
【請求項６】上記第２の画面に上記第１の画面の表示内容の一部を第１の画面と同一の大きさで表示する手段を備えていることを特徴とする請求項１記載のポータブルコンピュータ。
【請求項７】上記第２の画面を表示するか否かを選択する手段を備えていることを特徴とする請求項１記載のポータブルコンピュータ。
【請求項８】ディスプレイカバーとボトムケースを揺動可能に接続するヒンジ機構を備え、上記ヒンジ機構は、キーボード等の操作パネルを覆う第１の位置と、操作者が表示部を目視しながら、キーボードを操作する第２の位置と、操作者およびその操作者と対面して位置する人物が、同時に表示部を目視する第３の位置と、前記操作者と対面して位置する人物が表示部を目視する第４の位置とに、ディスプレイカバーを回転し、その位置を保持することを特徴とする請求項１記載のポータブルコンピュータ。
【請求項９】第２の画面を目視する人物が操作可能なサブキーボードを備えたことを特徴とする請求項１記載のポータブルコンピュータ。
【発明の詳細な説明】
【０００１】
【産業上の利用分野】本発明はポータブルなパーソナルコンピュータ（ポータブルコンピュータ）に関するもので、特に、表示装置に表示される文字、グラフ、図形等の表示内容を、対面する２方向から同時に読み取ることを可能とし、複数者の情報の交換を可能としたポータブルコンピュータに関する。
【０００２】
【従来の技術】いわゆるラップトップ型やノートブック型のパーソナルコンピュータにおいては、キーボードを操作する人物が表示装置に表示された文字、グラフ、図形等の表示内容を読み取り易いように、表示装置をキーボードの上部に固定している。この場合、キーボードを操作する位置から表示部に表示された表示内容を読み取ることは容易であるが、キーボードの操作位置以外の位置や方向から表示装置に表示された表示内容を読み取ることは難しい。
【０００３】この点に関して、表示装置を移動する技術が提案されている。例えば、特開昭６３－１５５３１３号公報に開示されているように、ラップトップ型ワープロ、ラップトップ型パソコン、ノートブック型パソコンにおいて、表示装置をコンピュータ本体から取りはずして、接続ケーブルを介して使用することで、表示装置を見やすい任意の位置に置くことを可能とするものである。
【０００４】
【発明が解決しようとする課題】上記従来技術は、ラップトップ型ワープロ、ラップトップ型パソコン、ノートブック型パソコン等において、表示装置を上記各種ポータブルコンピュータの操作者から見て、任意の見易い位置に置くことはできるものの、同一の表示内容を、例えば対面する２方向から同時に読み取るという点に関しては配慮がなされていない。したがって、ポータブルコンピュータを用いて、データの表示、見積りの提示等の情報の交換を行う場合、操作者と該操作者に対面して位置する人物が、対面する２方向から、表示内容を同時に読み取るには不適当であるという問題点があった。
【０００５】本発明の目的は、ポータブルコンピュータを用いて、データの表示・見積りの提示等の情報交換を行う際に、複数の人物がポータブルコンピュータの表示内容を確認する必要があり、このような場合、対面する２方向から単一の表示部を目視することで、対面して位置する複数者が同一の表示内容を同時に読み取ることが可能なポータブルコンピュータを提供することにある。
【０００６】本発明の他の目的は、単一の表示部に表示された表示内容を対面して位置する複数者が同時に読み取ることができる上記ポータブルコンピュータにおいて、表示部の見易さを向上し、表示内容を読み取り易くすることにある。
【０００７】本発明の他の目的は、単一の表示部に表示された表示内容を対面して位置する複数者が同時に読み取ることができる上記ポータブルコンピュータにおいて、操作性を向上することにある。
【０００８】
【課題を解決するための手段】上記目的を達成するために表示部に主画面の他にサブ画面を設け、サブ画面に表示される文字、グラフ、図形等の表示内容を、主画面に表示された表示内容と１８０°反転して表示したものである。さらに表示内容を読み取り易くするために、主画面とサブ画面の表示方向の入れ換え、サブ画面の位置・大きさの変更、サブ画面の表示内容の拡大、縮少を可能

としたものである。
【０００９】また、上記目的を達成するために表示部を２画面に分割し、各々の画面に表示された文字、グラフ、図形等の表示内容を、互いに１８０°反転して表示したものである。さらに、表示内容を読み取り易くするために、２画面の大きさを可変とし、２画面を上下方向あるいは左右方向に並べたものである。
【００１０】また、操作性を向上するために、上記の画面切換操作は、キーボードの操作、切換スイッチ、あるいは表示装置とボトムケースの角度の変化によって行うとしたものである。
【００１１】また、操作性を向上するために、主となる操作者と対面して位置する人物の方向からポータブルコンピュータを操作することができるように、主となるキーボードの他に、主となる操作者と対面して位置する人物の方向から操作することが可能なサブキーボードを設けたものである。
【００１２】また、操作性を向上するために、主となるキーボードあるいはサブキーボードと、制御装置により、複数の画面に表示された文字、グラフ、図形等の表示内容を、同時に制御することを可能にしたものである。
【００１３】また、表示部に表示された表示内容を対面する２方向から読み取り易くするために、表示部を操作パネルに対して、多段階に回転、固定することができるヒンジ機構を用いたものである。
【００１４】
【作用】表示部に主画面の他にサブ画面を設け、サブ画面に表示される文字、グラフ、図形等の表示内容を、主画面に表示される表示内容と１８０°反転して表示させる。それによって、表示内容は対面する２方向から同時に読み取ることが可能になるので、ポータブルコンピュータの操作者およびその操作者と対面して位置する人物が、単一の表示部を目視することにより、同一の表示内容を同時に読み取ることができる。
【００１５】さらに、主画面とサブ画面の表示方向の入れ換え、サブ画面を表示する位置の変更、サブ画面の大きさの変更、サブ画面の表示内容の拡大、縮少を行う。それによって、主画面及びサブ画面の表示方法を任意に変更することが可能になるので、表示内容を容易に読み取ることができる。
【００１６】また、表示部を２画面に分割し、各々の画面に表示された文字、グラフ、図形等の表示内容を、互いに１８０°反転して表示させる。それによって、表示内容は対面する２方向から同時に読み取ることができる様になるので、ポータブルコンピュータの操作者およびその操作者と対面して位置する人物が、単一の表示部を目視することにより、同一の表示内容を同時に読み取ることができる。さらに、２画面の大きさを変更し、２画面を上下方向あるいは左右方向に並べる。それによって、表示部に表示される表示内容の大きさ及び位置を変更することができるので、表示内容を容易に読み取ることができる。
【００１７】また、サブ画面の表示、画面の分割をキーボードの操作、切り換えスイッチ、あるいは表示装置の角度の変化によって行う。それによって、表示部に表示された表示内容の変更を簡便かつ瞬時に行うことができるので、操作性が増す。
【００１８】また、ポータブルコンピュータの主となるキーボードの他に、主となるキーボードの操作者と対面して位置する人物が操作可能なサブキーを備える。それによって、主となる操作者と対面して位置する人物もポータブルコンピュータへの入力が容易に行えるので、ポータブルコンピュータの操作性が増す。
【００１９】また、ポータブルコンピュータの主となるキーボード、あるいはサブキーボードと、制御装置によって、複数の画面の表示内容を同時に制御する。それによって、主となる操作者およびその操作者と対面して位置する人物が、容易に複数の画面の表示内容を制御し、かつ制御された表示内容は複数の画面に同時に表示されるので、ポータブルコンピュータの操作性を向上することができる。
【００２０】また、表示部を操作パネルに対して、多段階に回転、固定することができるヒンジを用いる。それによって、ポータブルコンピュータを持ち運ぶときには表示部で操作パネルを覆い、ポータブルコンピュータの操作者がキーボードを操作する時には、その操作者が目視し易い角度に表示部を回転し、前記操作者およびその操作者と対面して位置する人物が、同時に表示内容を目視する場合には、表示部は操作パネルとほぼ同一平面をなすように開き、操作者と対面して位置する人物が主として表示内容を目視する場合には、表示部と操作パネルのなす角を上記よりも更に大きくすることができるので、表示部に表示された文字、グラフ、図形等の表示内容を、対面する２方向から目視することを容易にする。
【００２１】
【実施例】以下添付の図面に示す実施例により、さらに詳細に本発明について説明する。図３と図４は、本発明が適用されるポータブルコンピュータの外観の一例を示す斜視図である。図３はポータブルコンピュータの持ち運び時の外観を示し、図４は操作時の外観を示している。図示するように、ポータブルコンピュータは、ボトムケース１、リアカバー２、ディスプレイカバー３から成っている。ラッチ９を解除してディスプレイカバー３を開くことにより、キーボード４の操作、表示部７の目視ができる様になる。ポータブルコンピュータの機能を果たすための回路基板は、操作パネル５の下部に収められている。また、ボトムケース１の側面にフロッピーデッキ８ａ、カードスロット８ｂが設けられている。ポータブルコンピュータは電源スイッチ１１を入れることに

より作動し、キーボード４に入力することで各種情報を処理し、表示部７に処理した情報の内容を表示する。なお、図３と図４において、１０はディスプレイカバー３を開くためのヒンジ、１２は後述する主画面とサブ画面の表示切替えを行う切換スイッチを示している。

【００２２】本実施例では、表示装置６としてはアクティブマトリックス方式のカラーＬＣＤ（液晶ディスプレイ）を用いている。しかし、他にもプラズマディスプレイ、ＥＬ（エレクトロルミネセンス）等、ラップトップ型のポータブルコンピュータに使用可能な、いわゆるフラットパネルディスプレイであれば何でも用いることが可能である。また、本実施例に用いた表示装置６は、対角方向の大きさ１０．４インチ、１６色表示のＴＦＴ（薄膜トランジスタ）－ＬＣＤである。画素数は６４０（Ｈ）×４８０（Ｖ）ドット、カラーフィルターの配置はＲ、Ｇ、Ｂ縦ストライプ、６４０×３ピクセル、ピクセル・ピッチは０．１１（Ｈ）、０．３３（Ｖ）で、冷陰極蛍光管によるバックライト方式である。

【００２３】図１と図２は、表示部７上に主画面１７ａとサブ画面１７ｂを設けて表示した状態を示す説明図である。図１は主画面１７ａの一部にサブ画面１７ｂを設け、主画面１７ａにはキーボードの操作者と対面して位置している人物（図示せず）から読み取ることができる方向に表示内容１３を表示し、サブ画面１７ｂにはキーボードの操作者１４ａが読み取ることができる方向に表示内容１３を表示した状態を示す。図２は図１の主画面１７ａとサブ画面１７ｂの表示方向を入れ換えた状態を示す。本実施例において、上記のサブ画面１７ｂの表示と主画面１７ａとサブ画面１７ｂの表示方向の入換えは、ポータブルコンピュータの操作を行うキーとは別に設けられた切換スイッチ１２（図４参照）によって行われる。

【００２４】図５と図６は、主画面１７ａ内のサブ画面１７ｂの表示位置を示す説明図である。図５に示す例では、サブ画面１７ｂを主画面１７ａの４ヶ所に移動できるように構成した。これにより、主画面１７ａに表示される表示内容１３のうち、サブ画面１７ｂの表示によって隠される部分を変更することができる。

【００２５】図６はサブ画面１７ｂの大きさを変更できるようにした例を示す。本実施例では、サブ画面１７ｂの大きさは、縦横共に長さが主画面１７ａの１／４となるようにし、更にサブ画面１７ｂの大きさを縦横の長さが主画面１７ａの１／５から１／２まで変更できる様にした。サブ画面１７ｂの大きさとしては、主画面１７ａの１／５より小さいと画面が小さく表示内容１３が読み取りにくくなり、１／２より大きいと主画面１７ａに表示されている表示内容１３が隠れる部分が多過ぎる。このことにより、サブ画面１７ｂの表示内容１３の大きさを、主画面１７ａの表示内容１３との関係を考えながら変更することができ、表示内容１３を読み取り易くすることができる。また、サブ画面１７ｂの表示は、主画面１７ａの表示全体を縮少して表示させること、および主画面１７ａの表示内容１３の一部を主画面１７ａと同一の大きさ、あるいは拡大して表示させることができるようにする。このことにより、サブ画面１７ｂを目視する側の人物が、容易に表示内容全体を読み取ること、および表示内容１３の一部を詳細に確認することが可能になる。

【００２６】図７は、本実施例のポータブルコンピュータを使用している状態を示す側面図である。ポータブルコンピュータの表示部７は操作パネル５と約１８０°の角度をなすように開らかれ、操作パネル５と表示部７とコンピュータを設置した机面１５とを平行にする。これにより、表示部７の主画面１７ａに表示された表示内容１３の表示方向はポータブルコンピュータの操作者と対面して位置する人物１４ｂに向き、表示部７のサブ画面１７ｂに表示された表示内容１３の表示方向はポータブルコンピュータのキーボードの操作者１４ａに向く。主画面１７ａの表示内容１３の表示方向と、サブ画面１７ｂの表示内容１３の表示方向は、必要に応じて逆にしても良い。図７に示す様に、キーボードの操作者１４ａと、その操作者と対面して位置する人物１４ｂとが、単一の表示部７の主画面１７ａとサブ画面１７ｂを目視することで、同一の表示内容１３を同時に読み取ることが可能になる。

【００２７】図８は表示装置６の拡大説明図である。本実施例に用いた表示装置６は、前記したＴＦＴ－ＬＣＤであり、画素１６は長方形の形状に、横にｍ個、縦にｎ個並んでいる。画素１６の液晶層１６ｄは画素電極１６ａに印加する画像信号によって制御する。表示装置６に表示された表示内容１３を１８０°反転して表示するためには、表示装置６の左上端部に位置する画素１６から数えて、横ａ番目、縦ｂ番目に存在する画素電極１６ａに印加する画像信号を、横（ｍ－ａ＋１）番目、縦（ｎ－ｂ＋１）番目に存在する画素電極１６ａに印加する画像信号と入れ替える操作を行うことで達成される。なお、図中、１６ｂはドレインバス、１６ｃはゲートバスを示している。

【００２８】図９は上記した主画面１７ａとサブ画面１７ｂを表示可能なポータブルコンピュータの一例を示すブロック図である。図示するように、ポータブルコンピュータは、表示装置６とドレイン・ドライバー２７ａとゲート・ドライバー２７ｂとインターフェイスコントローラ２８と主画面フレームバッファメモリ２９ａとサブ画面フレームバッファメモリ２９ｂと座標変換回路３０と表示処理装置３１とマイクロプロセッサ３２とＲＯＭ３３とＲＡＭ３４とから構成されている。

【００２９】図９において、マイクロプロセッサ３２は、ＲＯＭ３３に記憶されているプログラムをＲＡＭ３４をワークエリアとして動作させる。すなわち、マイク

ロプロセッサ３２が表示命令を発行すると、表示処理装置３１は該表示命令に対応する画像信号を発生して出力する。例えば、文字を表示する場合には、ＲＯＭ３３に記憶されている文字パターンを読み出し、それを画像信号として主画面フレームバッファメモリ２９ａとサブ画面フレームバッファメモリ２９ｂの、表示命令によって定められたアドレスに書き込む。このとき、例えば主画面の表示内容を上下反転表示する場合、座標変換回路３０の働きにより、上記文字パターンは、反転文字パターンに座標変換され、これが画像信号として主画面フレームバッファメモリ２９ａに格納される。また、サブ画面フレームバッファメモリ２９ｂには座標変換されない画像信号が格納される。インターフェイスコントローラ２８は、主画面フレームバッファメモリ２９ａとサブ画面フレームバッファメモリ２９ｂに格納された画像信号を順次読み取り、ドレイン・ドライバー２７ａとゲート・ドライバー２７ｂを駆動して、表示装置６に表示内容１３として表示する。

【００３０】図１０は表示装置６に表示内容１３を表示する場合における画像信号の表示部上のｘ，ｙ座標を示し、図１１は主画面フレームバッファメモリ２９ａのｘ，ｙ座標（各座標はアドレスを意味する）を示し、図１２はサブ画面フレームバッファメモリ２９ｂのｘ，ｙ座標（各座標はアドレスを意味する）を示す。図１０、１１、１２において、Ａ，Ｂは主画面フレームバッファメモリ２９ａのそれぞれｘ座標とｙ座標を示し、ａ，ｂは主画面１７ａのそれぞれｘ座標とｙ座標を示し、Ｐ，Ｑはサブ画面フレームバッファメモリ２９ｂのそれぞれｘ座標とｙ座標を示し、ｐ，ｑはサブ画面１７ｂのそれぞれｘ座標、ｙ座標を示す。

【００３１】図示するように、主画面１７ａのｘ座標、ｙ座標の最大値はそれぞれｍ、ｎであり、サブ画面１７ｂのｘ座標、ｙ座標の最大値はそれぞれｕ、ｖである。主画面１７ａを正規の方向に表示し、サブ画面１７ｂを反転して表示する場合には、（数１）および（数２）に示す座標変換を行う。また、サブ画面１７ｂを正規の方向に表示し、主画面１７ａを反転して表示する場合には、（数３）および（数４）に示す座標変換を行う。

【００３２】

【数１】

$$[\text{数1}] \qquad (A,\ B) = (a,\ b)$$

【００３３】

【数２】

$$[\text{数2}] \qquad (P,\ Q) = (m-a+1,\ n-b+1)$$

【００３４】

【数３】

$$[\text{数3}] \qquad (A,\ B) = (m-a+1,\ n-b+1)$$

【００３５】

【数４】

$$[\text{数4}] \qquad (P,\ Q) = (a,\ b)$$

【００３６】上式の座標変換は、座標変換回路３０によって行われる。座標変換回路３０は、通常の加算機と補数器から構成される。上式で使用するｍ、ｎ、ａ、ｂはあらかじめＲＯＭ３３に記憶されており、サブ画面１７ｂを設定して反転して表示するための入力信号が、マイクロプロセッサ３２に入力されると、マイクロプロセッサ３２はＲＯＭ３３から必要な定数値をよみだし、表示処理装置３１および座標変換回路３０に送る。さらに、マイクロプロセッサ３２は座標変換の指令を送り、座標変換回路３０において上記必要な座標変換を行い、またはスルーで主画面フレームバッファメモリ２９ａとサブ画面フレームバッファメモリ２９ｂとに座標変換回路３０の出力結果を書き込む。インターフェイスコントローラ２８は、主画面フレームバッファメモリ２９ａ、およびサブ画面フレームバッファメモリ２９ｂの情報を順次読み取り、ドレイン・ドライバー２７ａ、ゲート・ドライバー２７ｂを駆動して、表示装置６に主画面１７ａおよびサブ画面１７ｂを設定し、互いに反転した方向に表示内容１３を表示する。

【００３７】サブ画面１７ｂは主画面１７ａよりも表示面積が小さいため、通常は主画面１７ａに表示された表示内容１３のすべてを反転して表示することはできず、一部分を表示する。主画面１７ａのどの部分を表示するかは、ポータブルコンピュータ、ワードプロセッサ等で通常行われているような、画面１７のスクロールを行うことで設定・変更することができる。また、サブ画面１７ｂに主画面１７ａの画面１７全体を、通常行われているようなレイアウト表示を用いて表示することも可能である。

【００３８】図１３と図１４は、表示部７の画面を２分割して表示した状態の一例を示す説明図である。図１３は画面を縦方向に２分割し、一方の画面１７ｃにキーボードの操作者１４ａから見て読み取れる方向に表示内容１３を表示し、他方の画面１７ｄにキーボードの操作者と対面して位置する人物１４ｂから見て読み取れる方向に表示内容１３を表示したところを示す。２分割された画面１７ｃ，１７ｄの各々は、同一の表示内容１３を表示するが、表示方向は反転させる。図１４は、画面を横方向に２分割し（表示部７の上下方向に画面分割）した例を示している。縦方向に分割するか、または横方向に分割するかは、選択可能に形成し、また画面の大きさも可変可能に形成する。例えば、表示部全体の１／３を一

方の画面１７ｃ、残りの２／３を他方の画面１７ｄとする切り換えを可能にすること等が考えられる。以上により、表示部７に表示された表示内容１３を対面する２方向から読み取る場合、読み取り易いように表示部７の画面１７の構成を変更することが可能になる。

【００３９】ここで、２分割画面において、互いに反転した方向に表示内容１３を表示する方法は、前記した主画面とサブ画面における表示方法に準ずる。この例においては、２分割画面の表示はキーボード４の操作によって行った。すなわち、キーボード上のコントロールキーと文字キーの一種を同時に押すことにより、２分割画面を表示する。

【００４０】図１５は上記実施例にかかるポータブルコンピュータの側面説明図である。本実施例に用いるヒンジ１０は、ポータブルコンピュータの表示部７が操作パネル５となす角を任意に変更できるようにする。ポータブルコンピュータを持ち運ぶ場合には、表示部７は操作パネル５を被う。ポータブルコンピュータの操作者１４ａが単独でキーボード４を操作する場合には、表示部７はＡの位置に固定し、キーボード４を操作しながら表示内容１３を読み取る。ポータブルコンピュータの主たる操作者１４ａと、その操作者１４ａと対面して位置する人物１４ｂの両者が表示部７を目視する場合には、表示部７はＢの位置に固定し、複数者が対面して表示内容１３を読み取ることができるようにする。更に、キーボードの操作者１４ａと対面して位置する人物１４ｂが主として表示部７を目視する場合には、表示部７はｃの位置に固定し、通常とは反対方向からの目視を容易にする。

【００４１】図１６は本実施例によるヒンジ１０の一例を示す斜視図である。ヒンジ１０は、その取り付け金具１８ａ，１８ｂのねじ穴１９ａ，１９ｂを介して、ボトムケース１とディスプレイカバー３にねじによって固定される。ここで、取り付け金具１８ａはボトムケース１への取り付け金具であり、取り付け金具１８ｂはディスプレイカバー３への取り付け金具である。表示部７は、上記取り付け金具１８ａに固定されている樹脂製のシャフト２０と、ディスプレイカバー３への取り付け金具１８ｂに固定されている樹脂製のブッシュ２１との間の摩擦力により、表示部７と操作パネル５とのなす角度が任意となる位置で停止可能に構成されている。この他に、３段階以上のラッチ構造を設けて、表示部７が操作パネル５となす角度を変更できるように構成しても良い。

【００４２】図１７は、上記実施例にかかるポータブルコンピュータの他の例を示す側面説明図である。図１７に示すポータブルコンピュータにおいては、接触型スイッチ２２のオン・オフにより、表示部７に表示した文字、グラフ、図形等の表示内容１３を互いに１８０°反転した方向に表示する２画面表示に切り換えが行われる。図示するように、接触型スイッチ２２はディスプレイカバー３とリアカバー２とに設けられ、表示部７が操作パネル５と例えば１８０°の角度をなし、ディスプレイカバー３とリアカバー２が接触して停止した場合にオンとなる。その結果、マイクロプロイセッサ３２（図９参照）に対して信号が送られ、マイクロプロセッサ３２は表示部７に表示された表示内容１３を互いに１８０°反転し、２画面表示を行う旨の命令を出力する。表示部７と操作パネル５とのなす角度が、例えば１８０°より小さくなった場合には、接触型スイッチ２２がオフとなり、２画面表示は解除される。

【００４３】図１８と図１９は、ボトムケース１とディスプレイカバー３とを接続するヒンジ部の構成を示す説明図であり、接触型スイッチ２２をヒンジ部に設けたものである。図示するように、ヒンジ１０の取り付け金具１８ａ，１８ｂとシャフト２０の一部に接触型スイッチ２２が設けられている。図１８に示すように、表示部７と操作パネル５のなす角度が小さい場合には、接触型スイッチ２２はオンしない。図１９に示すように、表示部７と操作パネル５のなす角度を大きくした場合、例えば１８０°より大きくした場合には、接触型スイッチ２２がオンし、マイクロプロセッサ３２によって２画面表示が行われる。再度、上記角度を小さくもどすと、接触型スイッチ２２はオフし、表示部７の表示は通常にもどる。このように、表示部７と操作パネル５のなす角度を変更することにより、他の操作を行うことなく自動的に、表示内容１３を互いに１８０°反転した方向に表示する２画面表示を行うことが可能になる。

【００４４】図２０～図２２は、ポータブルコンピュータの他の例を示す外観図である。図２０～図２２に示すポータブルコンピュータは、主となるキーボード４の他に、操作者１４ａと対面して位置する人物１４ｂが操作することのできるサブキーボード２３を備えている。図２０に示す例は、サブキーボード２３をポータブルコンピュータ本体とは別に用意し、接続ケーブル２４を介して使用する例を示している。また、図２１は、表示部７の周辺にサブキーボード２３を設置して操作する例を示している。また、図２２は、表示部７の下側にサブキーボード２３を収納しておき、使用時に引き出して使用する例を示している。図２２において、サブキーボード２３は通常サブキーボードカバー２６に収納されており、使用時に操作者と対面して位置する人物１４ｂの側に引き出し、スタンド２５によって支えて使用する。サブキーボード２３の設置により、ポータブルコンピュータの主となる操作者と対面して位置する人物１４ｂも、主となる操作者１４ａと同様にサブキーボード２３に設けられているサブキー２３ａを介してコンピュータに入力することが可能となり、ポータブルコンピュータの操作性が向上する。

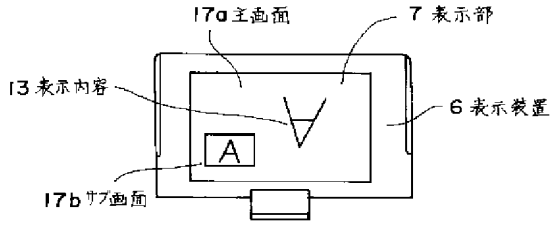
【００４５】なお、上記の実施例においては、表示部に主画面とサブ画面を設けたり、表示部を２つの画面に分割したが、本発明はこれに限定されるものではなく、表

示部に３つ以上の画面を設けるようにしてもよい。
【００４６】上記実施例のポータブルコンピュータによれば、キーボードの操作者と該操作者と対面している人物等の複数の人物が、単一の表示部７を目視することで、同一の表示内容を読み取ることができる。
【００４７】さらに、上記実施例のポータブルコンピュータによれば、会社等で業務を進行する際に、複数の人物間でデータの表示、見積りの提示等の情報交換を行うことが容易である。また、学校、塾等で、教育者と被教育者が対面して学習を行う場合にも有効となる。
【００４８】また、上記実施例において、ポータブルコンピュータの表示装置６だけを銀行のカウンター等に設置し、銀行員と顧客がやり取りをするのに利用することもできる。
【００４９】
【発明の効果】本発明によれば、ラップトップ型あるいはノートブック型のポータブルコンピュータにおいて、表示部に表示された文字、グラフ、図形等の表示内容を、ポータブルコンピュータの操作者が読み取る方向、およびその操作者と対面して位置するの人物が読み取る方向の、対面する２方向に表示することが可能になる。したがって、対面して位置する複数の人物が、単一の表示部を目視することで、同一の表示内容を同時かつ容易に読み取ることができる効果がある。
【００５０】また、ポータブルコンピュータの表示部に表示された文字、グラフ、図形等の表示内容を、対面する２方向から同時に読み取ることができるように表示変更する場合、さらに表示部の画面の構成を種々変更することができるので、表示内容を対面する２方向から容易に読み取ることができる効果がある。
【００５１】また、ポータブルコンピュータの表示部に表示された文字、グラフ、図形等の表示内容を、対面する２方向から読み取ることができるように表示切換する場合、キーボード操作等により容易に行うことができる効果がある。
【００５２】また、表示部と操作パネルのなす角度を変更することができるので、表示部に表示された文字、グラフ、図形等の表示内容を、対面する２方向から容易に読み取ることができる効果がある。
【００５３】また、ポータブルコンピュータの主たる操作者と対面して位置する人物が、必要に応じてサブキーボードを介してポータブルコンピュータに入力することができるので、操作性を向上させる効果がある。
【００５４】また、表示内容を互いに１８０°反転して表示した２画面を、同時に制御することができるので、操作性を向上させる効果がある。
【図面の簡単な説明】
【図１】表示部上に主画面とサブ画面を設けて表示した状態を示す説明図。
【図２】表示部上に主画面とサブ画面を設けて表示した状態を示す説明図。
【図３】本発明が適用されるポータブルコンピュータの外観の一例を示す斜視図。
【図４】本発明が適用されるポータブルコンピュータの外観の一例を示す斜視図。
【図５】主画面内のサブ画面の表示位置を示す説明図。
【図６】主画面内のサブ画面の表示位置を示す説明図。
【図７】ポータブルコンピュータを使用している状態の一例を示す側面図。
【図８】表示装置の拡大説明図。
【図９】主画面とサブ画面を表示可能なポータブルコンピュータの一例を示すブロック図。
【図１０】画像信号の表示部上のｘ，ｙ座標を示す説明図。
【図１１】主画面フレームバッファメモリのｘ，ｙ座標（各座標はアドレスを意味する）を示す説明図。
【図１２】サブ画面フレームバッファメモリのｘ，ｙ座標（各座標はアドレスを意味する）を示す説明図。
【図１３】表示部の画面を２分割表示した状態の一例を示す説明図。
【図１４】表示部の画面を２分割表示した状態の一例を示す説明図。
【図１５】ポータブルコンピュータの側面説明図。
【図１６】ヒンジの一例を示す斜視図。
【図１７】ポータブルコンピュータの他の例を示す側面説明図。
【図１８】ボトムケースとディスプレイカバーとを接続するヒンジ部の構成を示す説明図。
【図１９】ボトムケースとディスプレイカバーとを接続するヒンジ部の構成を示す説明図。
【図２０】ポータブルコンピュータの他の例を示す外観図。
【図２１】ポータブルコンピュータの他の例を示す外観図。
【図２２】ポータブルコンピュータの他の例を示す外観図。
【符号の説明】
１…ボトムケース、２…リアカバー、３…ディスプレイカバー、４…キーボード、５…操作パネル、６…表示装置、７…表示部、８ａ…フロッピーデッキ、８ｂ…カードスロット、９…ラッチ、１０…ヒンジ、１１…電源スイッチ、１２…表示反転スイッチ、１３…表示内容、１４ａ…操作者、１４ｂ…操作者と対面して位置する人物、１５…机面、１６…画素、１６ａ…画素電極、１６ｂ…ドレイン・バス、１６ｃ…ゲート・バス、１６ｄ…液晶層、１７…画面、１７ａ…主画面、１７ｂ…サブ画面、１７ｃ…２分割画面の一方の画面、１７ｄ…２分割画面の他方の画面、１８ａ、１８ｂ…取り付け金具、１９ａ、１９ｂ…ねじ穴、２０…シャフト、２１…ブッシュ、２２…接触型スイッチ、２３…サブキーボード、２

３ａ…サブキー、２４…接続ケーブル、２５…スタンド、２６…サブキーボードカバー、２７ａ…ドレインドライバー、２７ｂ…ゲートドライバー、２８…インターフェイスコントローラ、２９ａ…主画面フレームバッファメモリ、２９ｂ…サブ画面フレームバッファメモリ、３０…座標変換回路、３１…表示処理装置、３２…マイクロプロセッサ、３３…ＲＯＭ、３４…ＲＡＭ。

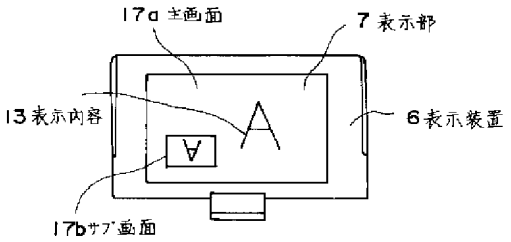
【図１】

［図　１］



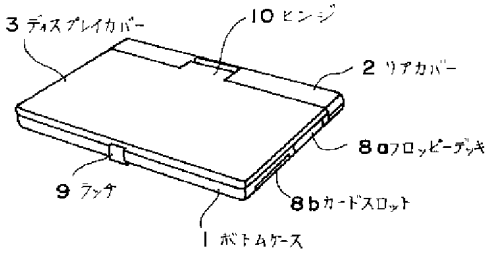
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［図　２］



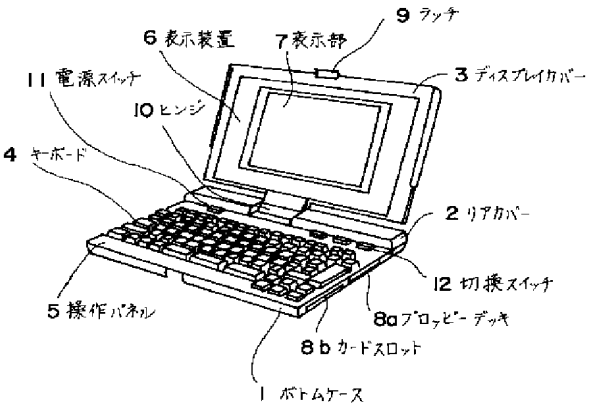
【図３】

［図　３］



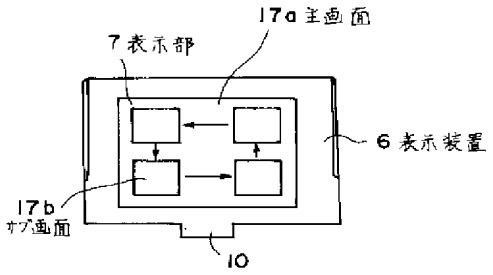
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［図　４］



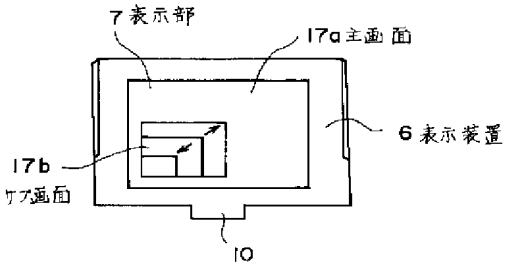
【図５】

［図　５］



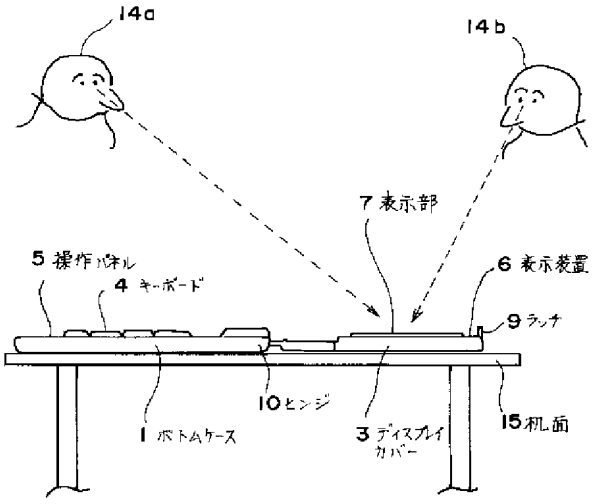
【図６】

［図　６］



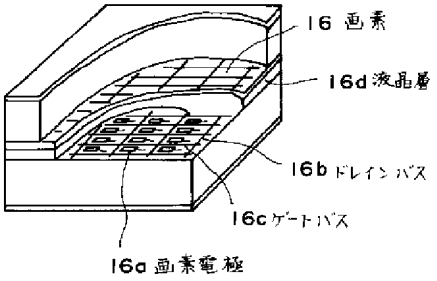
【図７】

[図 7]



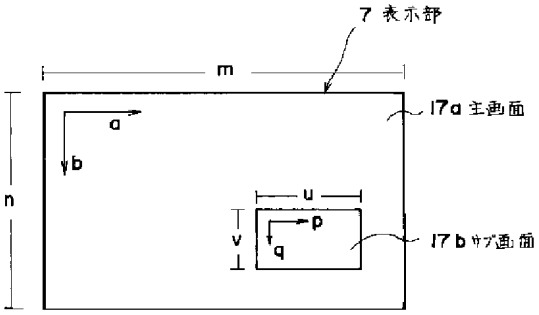
【図８】

[図 8]



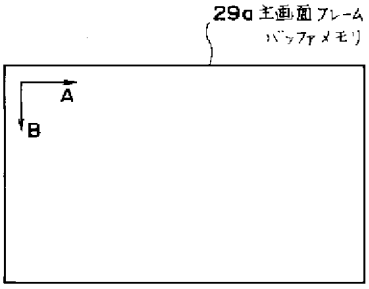
【図１０】

[図 10]



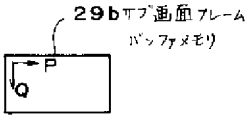
【図１１】

[図 11]



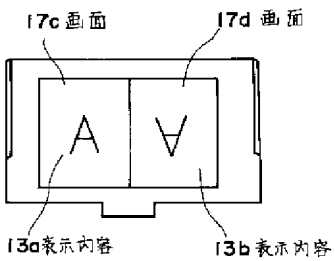
【図１２】

[図 12]



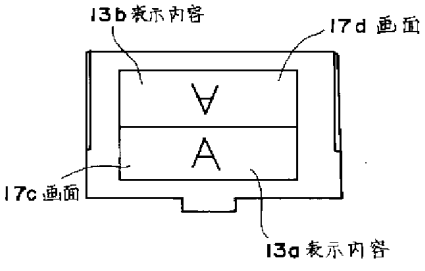
【図１３】

[図 13]



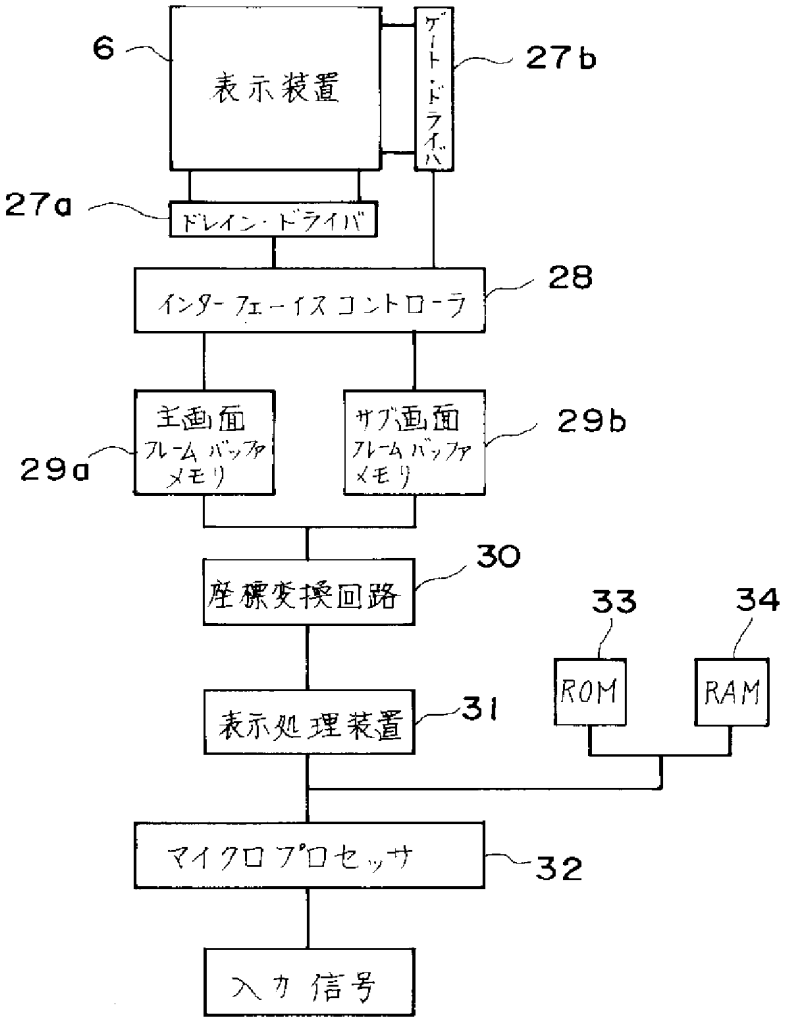
【図１４】

[図 14]



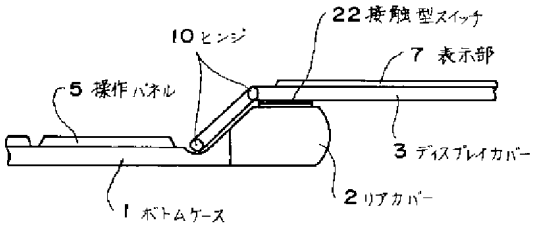
【図９】

［図　９］



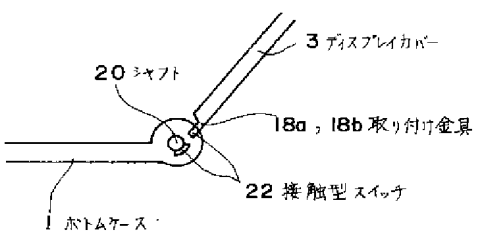
【図１７】

［図 17］



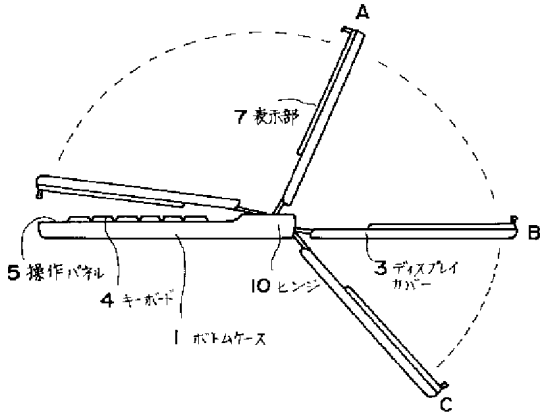
【図１８】

［図 18］



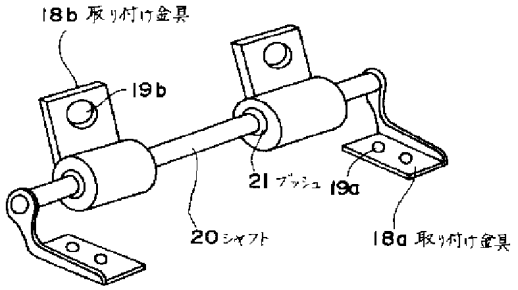
【図１５】

[図 15]



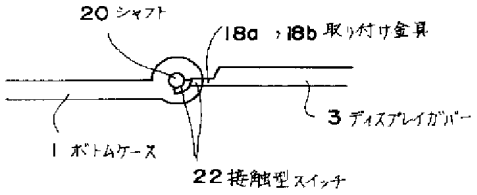
【図１６】

[図 16]



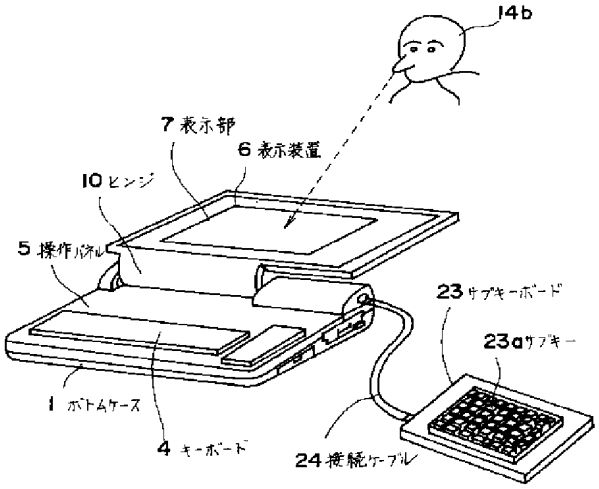
【図１９】

[図 19]



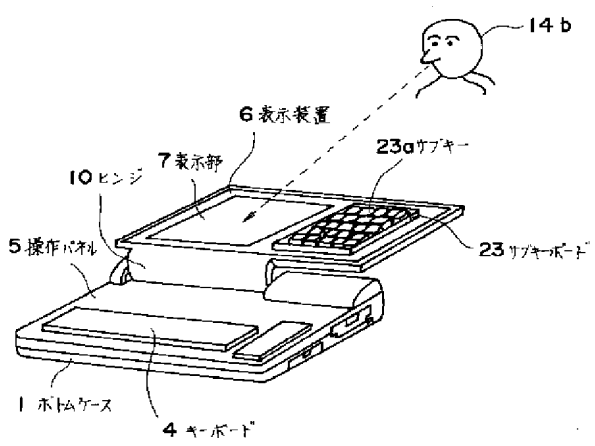
【図２０】

[図 20]



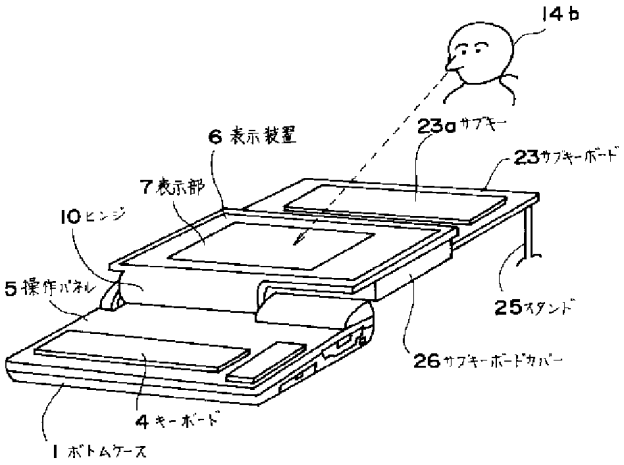
【図２１】

[図 21]



【図２２】

[図 22]



フロントページの続き

(51)Int.Cl.[5]	識別記号	庁内整理番号	ＦＩ	技術表示箇所
Ｇ０９Ｇ　5/14		8121－5G		

PATENT ABSTRACTS OF JAPAN

(11)Publication number : **05-197507**
(43)Date of publication of application : **06.08.1993**

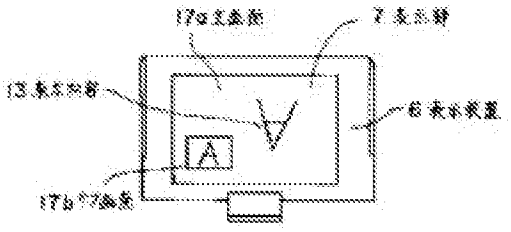
(51)Int.Cl. G06F 3/14
G06F 1/16
G09F 9/00
G09G 3/20
G09G 5/14

(21)Application number : **04-006643**
(22)Date of filing : **17.01.1992**

(71)Applicant : **HITACHI LTD**
(72)Inventor : **YAMAUCHI TOSHIYASU**

(54) PORTABLE COMPUTER

(57)Abstract:
PURPOSE: To enable plural persons who face each other to easily read the same display contents at the same time by providing a means which inverts the display direction of the 2nd screen of a display part about the display direction of the 1st screen.
CONSTITUTION: A subordinate screen 17b is provided at part of the main screen 17a of the display part 7, and the display contents are displayed on the main screen 17a in a readable direction for the person who faces the operator of a keyboard and on the subordinate screen 17b in a readable direction for the keyboard operator. The display of the subordinate screen 17b and the display directions of the main screen 17a and subordinate screen 17b are switched with a changeover switch provided separately from keys for the operation of the portable computer. In this case, the display contents of characters, a graph, a figure, etc., displayed on the subordinate screen 17b are displayed while 180° turned over to the display contents of the main screen 17a.



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2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]
[Claim 1]A portable computer provided with a means to divide one display part into a first screen and a second screen, and to reverse a display direction of the 2nd screen of the above to a display direction of a first screen further.
[Claim 2]The portable computer according to claim 1 provided with a means as for which ON replaces a display direction of display information of the 1st screen of the above, and a display direction of display information of a second screen.
[Claim 3]The portable computer according to claim 1 provided with a means to move a position on a display part which displays the 2nd screen of the above to any position.
[Claim 4]The portable computer according to claim 1 provided with a means to change a size of the 2nd screen of the above.
[Claim 5]The portable computer according to claim 1 provided with a means to reduce and display the whole display information of the 1st screen of the above on the 2nd screen of the above.
[Claim 6]The portable computer according to claim 1 provided with a means to display a part of display information of the 1st screen of the above on the 2nd screen of the above in the same size as a first screen.
[Claim 7]The portable computer according to claim 1 provided with a means to choose whether the 2nd screen of the above is displayed.
[Claim 8]Have a hinge mechanism which connects a bottom case with a display cover rockable, and the above-mentioned hinge mechanism, While the 1st is wrap located in navigational panels, such as a keyboard, and an operator views a display part, A second position which operates a keyboard, and the 3rd position in which a person who meets an operator and its operator and is placed views a display part simultaneously, The portable computer according to claim 1 rotating a display cover in the 4th position in which a person who meets the aforementioned operator and is placed views a display part, and holding the position in it.
[Claim 9]The portable computer according to claim 1, wherein a person who views a second screen has an operational sub key board.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Industrial Application]The present invention is a thing about a portable personal computer (portable computer), It makes it possible to read simultaneously the display information of a character, a graph, a figure, etc. which are especially displayed on a display device in the 2-way which meets, and is related with the portable computer which enabled exchange of two or more persons' information.
[0002]
[Description of the Prior Art]In what is called a personal computer of a laptop type or a notebook type, the display device is fixed to the upper part of a keyboard so that the person who operates a keyboard may tend to read the display information of a character, a graph, a figure, etc. which were displayed on the display device. In this case, although it is easy to read the display information displayed on the display part in the position which operates a keyboard, it is difficult to read in the position and direction of [other than the actuated valve position of a keyboard] the display information displayed on the display device.
[0003]The technology which moves a display device is proposed about this point. For example, as it discloses in JP,S63-155313,A. In a laptop type word processor, a laptop PC, and a book type personal computer, it makes it possible to put a display device on any legible position by removing a display device from a computer body and using it via a connecting cable.
[0004]
[Problem to be solved by the invention]In a laptop type word processor, a laptop PC, a book type personal computer, etc. the above-mentioned prior art, A display device is seen from the operator of the various above-mentioned portable computers, and consideration is not made about the point of reading simultaneously the same display information of what can be put on any legible position in the 2-way which meets, for example. Therefore, when information, including the display of data, estimated presentation, etc., was exchanged using a portable computer, there was a problem that the person who meets and is placed at an operator and this operator was unsuitable for reading display information in the 2-way which meets simultaneously.
[0005]When exchanging the information about presentation of a display and estimate of data, etc. using a portable computer, the object of this invention, Two or more persons need to check the display information of a portable computer, and it is in providing a portable computer with two or more persons able to read the same display information in the 2-way which meets simultaneously in such a case who meet and are placed by viewing a single display part.
[0006]In the above-mentioned portable computer with which two or more persons who meet and

are placed can read simultaneously the display information displayed on the single display part, other purposes of the present invention improve the conspicuousness of a display part, and are in making display information easy to read.
[0007]In the above-mentioned portable computer with which two or more persons who meet and are placed can read simultaneously the display information displayed on the single display part, other purposes of the present invention are to improve operativity.
[0008]
[Means for solving problem]To achieve the above objects, a sub screen other than a main screen is provided to a display part, 180 degrees is reversed with the display information displayed on the main screen, and the display information of a character, a graph, a figure, etc. which are displayed on a sub screen is displayed. In order to make display information furthermore easy to read, exchange of the display direction of a main screen and a sub screen, change of the position and size of a sub screen, expansion of the display information of a sub screen, and reduction are enabled.
[0009]A display part is divided into two screens to achieve the above objects, mutually, 180 degrees is reversed and the display information of a character, a graph, a figure, etc. which were displayed on each screen is displayed. In order to make display information easy to read, the size of two screens is made variable and two screens are arranged in a vertical direction or right and left directions.
[0010]In order to improve operativity, the above-mentioned screen switching operation presupposes that change of the angle of operation of a keyboard, a change-over switch or a display device, and a bottom case performs.
[0011]So that a portable computer can be operated from the direction of the person who meets the operator who becomes main and is placed, in order to improve operativity. The sub key board which can be operated from the direction of the person who meets the operator who becomes main and is placed besides the keyboard which becomes main is provided.
[0012]In order to improve operativity, it makes it possible the keyboard or sub key board which becomes main, and to control simultaneously the display information of a character, a graph, a figure, etc. which were displayed on two or more screens by a control device.
[0013]In order to make easy to read in the 2-way which meets display information displayed on the display part, the hinge mechanism which can rotate and fix a display part to a multistage story to a navigational panel is used.
[0014]
[Function]A sub screen other than a main screen is provided to a display part, 180 degrees is reversed with the display information displayed on a main screen, and the display information of a character, a graph, a figure, etc. which are displayed on a sub screen is displayed. Since it becomes possible to read display information in the 2-way which meets simultaneously by it, when the person who meets the operator of a portable computer and its operator, and is placed views a single display part, the same display information can be read simultaneously.
[0015]Exchange of the display direction of a main screen and a sub screen, change of the position which displays a sub screen, change of the size of a sub screen, expansion of the display information of a sub screen, and reduction are performed. Since it enables it to change arbitrarily the method of presentation of a main screen and a sub screen, display information can be read easily.
[0016]A display part is divided into two screens, mutually, 180 degrees is reversed and the display information of a character, a graph, a figure, etc. which were displayed on each screen is

displayed. Since display information can be simultaneously read now in the 2-way which meets by it, when the person who meets the operator of a portable computer and its operator, and is placed views a single display part, the same display information can be read simultaneously. The size of two screens is changed and two screens are arranged in a vertical direction or right and left directions. Since the size and position of display information which are displayed on a display part can be changed by it, display information can be read easily.
[0017]Change of the angle of operation of a keyboard, a change over switch, or a display device performs display of a sub screen, and division of a screen. Since the display information displayed on the display part can be changed into simple and an instant by it, operativity increases.
[0018]The person who meets the operator of the keyboard which becomes main and is placed has an operational sub key besides the keyboard which becomes main [a portable computer]. Since the person who meets the operator who becomes main and is placed by it can also perform the input to a portable computer easily, the operativity of a portable computer increases.
[0019]The display information of two or more screens is simultaneously controlled by the keyboard which becomes main or sub key board of a portable computer, and a control device. The person who meets the operator who becomes main, and its operator, and is placed by it controls the display information of two or more screens easily, and since the controlled display information is simultaneously displayed on two or more screens, it can improve the operativity of a portable computer.
[0020]The hinge which can rotate and fix a display part to a multistage story to a navigational panel is used. When carrying a portable computer, and a navigational panel is covered by a display part and the operator of a portable computer operates a keyboard by it, When the person who rotates a display part at the angle which the operator tends to view, meets the aforementioned operator and its operator, and is placed views display information simultaneously, When the person who opens a display part so that the same plane may be substantially made with a navigational panel, meets an operator, and is placed mainly views display information, Since the angle which a navigational panel makes can be made a display part further more largely than the above, it makes it easy to view the display information of a character, a graph, a figure, etc. which were displayed on the display part from the 2-way which meets.
[0021]
[Working example]According to the working example shown in attached Drawings below, it describes about the present invention still in detail. Fig.3 and Fig.4 are the perspective views showing an example of the appearance of the portable computer with which the present invention is applied.Fig.3 shows the appearance at the time of carrying of a portable computer, and Fig.4 shows the appearance at the time of operation.The portable computer comprises the bottom case 1, the rear cover 2, and the display cover 3 so that it may illustrate. It comes to be able to perform operation of the keyboard 4 and viewing of the display part 7 by releasing the latch 9 and opening the display cover 3. The circuit board for performing the function of a portable computer is stored in the lower part of the navigational panel 5. The floppy disk deck 8a and the card slot 8b are provided by the side surface of the bottom case 1. The contents of the information which the portable computer operated by turning on the electric power switch 11, processed the variety of information in inputting into the keyboard 4, and was processed to the display part 7 are displayed. In Fig.3 and Fig.4, a hinge for 10 to open the display cover 3 and 12 show the change-over switch which performs the display change of a main screen and a sub screen mentioned

later.
[0022]In this example, color LCD (liquid crystal display) of the active matrix system is used as the display device 6. However, otherwise, the thing usable to the portable computer of a laptop type for which anything is used with what is called a flat-panel display is possible for a plasma display, EL (electroluminescence), etc. The display device 6 used for this example is TFT-(thin film transistor) LCD of the size of 10.4 inches of a diagonal direction, and 16 color specification. As for arrangement of a 640(H) x480(V) dot and a light filter, pixel numbers are 0.11 (H) and 0.33(V), and R, G, B length stripe, 640x3 pixels, and their pixel pitch are the backlight systems by a cold cathode fluorescent tube.
[0023]Fig.1 and Fig.2 are the explanatory views showing the state where the main screen 17a and the sub screen 17b were provided and displayed on the display part 7.Fig.1 provides the sub screen 17b to some main screens 17a, and the display information 13 is displayed in the direction which can be read in the person (not shown) who meets the operator of a keyboard and is placed at the main screen 17a, The state where the display information 13 was displayed in the direction which the operator 14a of a keyboard can read is shown in the sub screen 17b. Fig.2 shows the state where the display direction of the main screen 17a and the sub screen 17b of Fig.1 was replaced.In this example, exchange of the display direction of a display and the main screen 17a of the above-mentioned sub screen 17b, and the sub screen 17b is performed by the change-over switch 12 (refer to Fig.4) provided separately from the key which operates a portable computer.
[0024]Fig.5 and Fig.6 are the explanatory views showing the display position of the sub screen 17b in the main screen 17a.It constituted from an example shown in Fig.5 so that the sub screen 17b could be moved to four places of the main screen 17a. The portion hidden by the display of the sub screen 17b by this among the display information 13 displayed on the main screen 17a can be changed.
[0025]Fig.6 shows the example which enabled it to change the size of the sub screen 17b. It is made for length to become one fourth of the main screens 17a in every direction, and also length in every direction enabled it, as for the size of the sub screen 17b, to change the size of the sub screen 17b in this example from 1/5 to 1/2 of the main screen 17a. When larger [if smaller than one fifth of the main screens 17a, a screen will be small and it will become difficult to read the display information 13 as a size of the sub screen 17b, and] than one half, there are too many portions in which the display information 13 currently displayed on the main screen 17a hides. Display information 13 can be made easy to be able to change the size of the display information 13 of the sub screen 17b by this, considering a relation with the display information 13 of the main screen 17a, and to read. a part of the display of the sub screen 17b reducing the whole display of the main screen 17a, and making it display, and display information 13 of the main screen 17a -- the same size as the main screen 17a -- or it expands and enables it to make it display It becomes possible that the near person who views the sub screen 17b reads the whole display information easily by this, and to check a part of display information 13 in detail.
[0026]Fig.7 is a side view showing the state where the portable computer of this example is used. The display part 7 of a portable computer makes parallel him of open, the navigational panel 5, the display part 7, and the desktop 15 that installed the computer so that the navigational panel 5 and the angle of about 180 degrees may be made. This turns to the display direction of the display information 13 displayed on the main screen 17a of the display part 7 to the person 14b who meets the operator of a portable computer and is placed, It turns to the display direction of the display information 13 displayed on the sub screen 17b of the display part 7 to the operator 14a of the keyboard of a portable computer. The display direction of the display information 13

of the main screen 17a and the display direction of the display information 13 of the sub screen 17b may be made reverse if needed. As shown in Fig.7, it enables the person 14b who meets the operator 14a and operator of a keyboard and is placed to read the same display information 13 simultaneously by viewing the main screen 17a and the sub screen 17b of the single display part 7.

[0027]Fig.8 is an expansion explanatory view of the display device 6. The display device 6 used for this example is above-mentioned TFT-LCD.

The pixel 16 is located in a line with rectangular form at m width and n length.

16 d of liquid crystal layers of the pixel 16 are controlled by the picture signal applied to the picture element electrode 16a. In order 180 degrees is reversed and to display the display information 13 displayed on the display device 6, It is attained by counting from the pixel 16 which is placed at the upper left end of the display device 6, and performing operation replaced with the picture signal which applies the picture signal applied to the picture element electrode 16a which exists in the a-th width and the b-th length to the picture element electrode 16a which exists in eye horizontal (m-a+1) watch and eye vertical (n-b+1) watch. 16b shows a drain bus among a figure, and 16c shows the gate bus.

[0028]Fig.9 is a block diagram showing an example of the portable computer which can display the above-mentioned main screen 17a and the sub screen 17b. So that it may illustrate a portable computer, The display device 6. The drain driver 27a. It comprises the gate driver 27b, the interface controller 28, the main screen frame buffer memory 29a, the sub screen frame buffer memory 29b, the coordinate transformation circuit 30, the display processing device 31, the microprocessor 32, and ROM33 and RAM34.

[0029]In the program memorized by ROM33, in Fig.9, the microprocessor 32 operates RAM34 as a work area. That is, if the microprocessor 32 publishes a display command, the display processing device 31 will generate and output the picture signal corresponding to this display command. For example, in displaying a character, it writes in the address which made reading the character pattern memorized by ROM33 and was defined by making it into a picture signal by the display command of the main screen frame buffer memory 29a and the sub screen frame buffer memory 29b. When indicating the display information of a main screen by flip vertical, for example at this time, coordinate conversion of the above-mentioned character pattern is carried out to a character inversion pattern by work of the coordinate transformation circuit 30, and this is stored in the main screen frame buffer memory 29a as a picture signal. The picture signal by which coordinate conversion is not carried out is stored in the sub screen frame buffer memory 29b. The interface controller 28 reads sequentially the picture signal stored in the main screen frame buffer memory 29a and the sub screen frame buffer memory 29b, drives the drain driver 27a and the gate driver 27b, and displays them on the display device 6 as the display information 13.

[0030]Fig.10 shows x on the display part of the picture signal in the case of displaying the display information 13, and a y-coordinate to the display device 6, Fig.11 shows x of the main screen frame buffer memory 29a, and a y-coordinate (each coordinates mean an address), and Fig.12 shows x of the sub screen frame buffer memory 29b, and a y-coordinate (each coordinates mean an address). in Fig.10, and 11 and 12 -- A and B -- each of the main screen frame buffer memory 29a -- an x-coordinate and a y-coordinate, [show and] a and b -- each of the main screen 17a -- an x-coordinate and a y-coordinate are shown -- P and Q -- each of the sub screen frame buffer memory 29b -- an x-coordinate and a y-coordinate are shown -- p and q -- each of the sub screen 17b -- an x-coordinate and a y-coordinate are shown.

[0031]The maximums of the x-coordinate of the main screen 17a and a y-coordinate are m and n, respectively, and the maximums of the x-coordinate of the sub screen 17b and a y-coordinate are u and v, respectively so that it may illustrate. In displaying the main screen 17a in the regular direction and reversing and displaying the sub screen 17b, it performs coordinate conversion shown in (several 1) and (several 2). In displaying the sub screen 17b in the regular direction and reversing and displaying the main screen 17a, it performs coordinate conversion shown in (several 3) and (several 4).

[0032]

[Mathematical formula 1]

[数1] $(A, B) = (a, b)$

[0033]

[Mathematical formula 2]

[数2] $(P, Q) = (m-a+1, n-b+1)$

[0034]

[Mathematical formula 3]

[数3] $(A, B) = (m-a+1, n-b+1)$

[0035]

[Mathematical formula 4]

[数4] $(P, Q) = (a, b)$

[0036]Coordinate conversion of an upper type is performed by the coordinate transformation circuit 30. The coordinate transformation circuit 30 comprises a usual adding machine and complementer. If m, n, a, and b which are used by an upper formula are beforehand memorized by ROM33 and the input signal for setting up the sub screen 17b, and it being reversed, and displaying is input into the microprocessor 32, The microprocessor 32 reads a required constant value from ROM33, and sends it to a broth, the display processing device 31, and the coordinate transformation circuit 30. furthermore -- the microprocessor 32 sending instructions of coordinate conversion and setting to the coordinate transformation circuit 30 -- the above -- required coordinate conversion is performed or the output of the coordinate transformation circuit 30 is through written in the main screen frame buffer memory 29a and the sub screen frame buffer memory 29b. The interface controller 28 reads sequentially the information on the main screen frame buffer memory 29a and the sub screen frame buffer memory 29b, and drives the drain driver 27a and the gate driver 27b, The main screen 17a and the sub screen 17b are set to the display device 6, and the display information 13 is displayed in the direction reversed mutually.

[0037]Rather than the main screen 17a, since the display surface product is small, the sub screen 17b cannot reverse and display all the display information 13 usually displayed on the main screen 17a, but displays a part. It can be set up and changed by scrolling Screen 17 which is usually performed with a portable computer, a word processor, etc. whether the portion of a main screen 17a throat is displayed. It is also possible to display the screen 17 whole of the main screen 17a on the sub screen 17b using a layout display which is usually performed.

[0038]Fig.13 and Fig.14 are the explanatory views showing an example in the state where it divided and displayed two about the screen of the display part 7.Fig.13 shows the place which

divided the screen into two in the longitudinal direction, displayed the display information 13 in the direction which can be seen and read in the operator 14a of a keyboard on one screen 17c, and displayed the display information 13 in the direction which is seen and can be read in the person 14b who meets the operator of a keyboard and is placed at Screen 17d of another side. A display direction is reversed although Screens [which were divided into two / 17c and 17d] each displays the same display information 13. Fig.14 shows the example which divided the screen into the transverse direction two and carried out it (it is a screen separation to the vertical direction of the display part 7). Whether it divides into a longitudinal direction or it divides into a transverse direction form selectable, and it also forms the size of a screen so that variable is possible. For example, it is possible to enable the change which uses one third of the whole display parts as one screen 17c, and uses the two thirds [remaining] as Screen 17d of another side etc. When reading the display information 13 displayed on the display part 7 in the 2-way which meets by the above, it becomes possible to change the composition of Screen 17 of the display part 7 so that it may be easy to read.

[0039]Here, in two split screens, the method of displaying the display information 13 in the direction reversed mutually applies to the method of presentation in the above-mentioned main screen and sub screen. In this example, operation of the keyboard 4 performed the display of two split screens. That is, two split screens are displayed by pushing simultaneously the Control key on a keyboard, and a kind of a letter key.

[0040]Fig.15 is a side surface explanatory view of the portable computer concerning the above-mentioned working example. The hinge 10 used for this example enables it to change arbitrarily the angle which the display part 7 of a portable computer makes with the navigational panel 5. In carrying a portable computer, the display part 7 covers the navigational panel 5. When the operator 14a of a portable computer operates the keyboard 4 independently, the display part 7 is fixed to the position of A, and it reads the display information 13, operating the keyboard 4. When the main operator 14a of a portable computer and both of the person 14b who meets the operator 14a and is placed view the display part 7, it fixes to the position of B, two or more persons meet, and the display part 7 enables it to read the display information 13. When the person 14b who meets the operator 14a of a keyboard and is placed mainly views the display part 7, the display part 7 is fixed to the position of c, and usual makes viewing from a counter direction easy.

[0041]Fig.16 is a perspective view showing an example of the hinge 10 by this example. The hinge 10 is fixed to the bottom case 1 and the display cover 3 with a screw via the screw holes 19a and 19b of the mounting hardware 18a and 18b. Here, the mounting hardware 18a is the mounting hardware to the bottom case 1, and the mounting hardware 18b is the mounting hardware to the display cover 3. The display part 7 according to the frictional force between the shaft 20 made of resin currently fixed to the above-mentioned mounting hardware 18a, and the bush 21 made of resin currently fixed to the mounting hardware 18b to the display cover 3, It comprises a position which becomes arbitrary [the angle of the display part 7 and the navigational panel 5 to make] so that a stop is possible. In addition, the latch structure more than a three-stage may be provided, and it may constitute so that the display part 7 can change the navigational panel 5 and the angle to make.

[0042]Fig.17 is a side surface explanatory view showing other examples of the portable computer concerning the above-mentioned working example. In the portable computer shown in Fig.17, a change is carried out to two screen display which displays the display information 13 of a character, a graph, a figure, etc. which were displayed on the display part 7 in the direction

reversed 180 degrees mutually by ON/OFF of the contact type switch 22. The display cover 3 and the rear cover 2 provide, the display part 7 makes the navigational panel 5 and the angle of 180 degrees, and when the display cover 3 and the rear cover 2 contacted and stop, the contact type switch 22 is set to ON so that it may illustrate. As a result, a signal is sent to micro ploy SESSA 32 (refer to Fig.9), and the microprocessor 32 reverses mutually 180 degrees of display information 13 displayed on the display part 7, and outputs the command of the purport that two screen display is performed. When the angle of the display part 7 and the navigational panel 5 to make becomes smaller than 180 degrees, for example, the contact type switch 22 serves as OFF, and two screen display is released.

[0043]Fig.18 and Fig.19 are the explanatory views showing composition of a hinge region which connects the bottom case 1 and the display cover 3.

The contact type switch 22 is provided to a hinge region.

The contact type switch 22 is provided by the mounting hardware 18a and 18b of the hinge 10, and a part of shaft 20 so that it may illustrate. As shown in Fig.18, when the angle which the display part 7 and the navigational panel 5 make is small, the contact type switch 22 is not turned on. As shown in Fig.19, when the angle which the navigational panel 5 makes is largely made the display part 7, for example it carries out more largely than 180 degrees, the contact type switch 22 turns on and two screen display is performed by the microprocessor 32. Again, if the above-mentioned angle is returned small, the contact type switch 22 will be turned off and the display of the display part 7 will return to normal. Thus, it becomes possible to perform two screen display which displays the display information 13 in the direction reversed 180 degrees mutually automatically by changing the angle which the display part 7 and the navigational panel 5 make, without performing other operations.

[0044]Fig.20 - Fig.22 are the outline views showing other examples of a portable computer.The portable computer shown in Fig.20 - Fig.22 is provided with the sub key board 23 which the person 14b who meets the operator 14a other than the keyboard 4 which becomes main, and is placed can operate.The example shown in Fig.20 prepares the sub key board 23 separately from the main part of a portable computer, and shows the example used via the connecting cable 24. Fig.21 shows the example which installs and operates the sub key board 23 around the display part 7. Fig.22 stores the sub key board 23 below the display part 7, and shows the example used pulling out at the time of use. In Fig.22, the sub key board 23 is usually stored by the sub key board cover 26, is pulled out to the person 14b side who meets an operator at the time of use and is placed, and is supported and used with the stand 25. The person 14b who meets the operator who becomes main [a portable computer] and is placed by installation of the sub key board 23, It becomes possible to input into a computer via the sub key 23a currently provided by the sub key board 23 like the operator 14a who becomes main, and the operativity of a portable computer improves.

[0045]Although the main screen and the sub screen were provided to the display part or the display part was divided into two screens, the present invention is not limited to this and it may be made to provide three or more screens to a display part in the above-mentioned working example.

[0046]According to the portable computer of the above-mentioned working example, the same display information can be read because two or more persons, such as a person who has met the operator of a keyboard and this operator, view the single display part 7.

[0047]According to the portable computer of the above-mentioned working example, when going on business in a company etc., it is easy to exchange the information about the display of

data and estimated presentation, etc. among two or more persons. It becomes effective also when learning by an educator and an educator meeting in a school, a cram school, etc.
[0048]In the above-mentioned working example, only the display device 6 of a portable computer can be installed in the counter of a bank, etc., and it can also use for a customer exchanging with a bank clerk.
[0049]
[Effect of the Invention]In [according to the present invention] a laptop type or notebook type portable computer, It becomes possible to display the display information of a character, a graph, a figure, etc. which were displayed on the display part on the 2-way which the direction which the operator of a portable computer reads, and the direction which a being [it / the operator is met and] person reads meet. Therefore, it is effective in the ability to read the same display information simultaneous and easily because two or more persons who meet and are placed view a single display part.
[0050]The character, graph which were displayed on the display part of the portable computer, Since various composition of the screen of a display part can be further changed when carrying out a display change so that the display information of a figure etc. can be simultaneously read in the 2-way which meets, it is effective in the ability to read display information in the 2-way which meets easily.
[0051]When carrying out a display change so that the display information of a character, a graph, a figure, etc. which were displayed on the display part of the portable computer can be read in the 2-way which meets, there is an effect which can be easily performed by keyboard grabbing etc.
[0052]Since the angle which a display part and a navigational panel make can be changed, it is effective in the ability to read easily the display information of a character, a graph, a figure, etc. which were displayed on the display part in the 2-way which meets.
[0053]Since the person who meets the main operator of a portable computer and is placed can input into a portable computer via a sub key board if needed, there is an effect which improves operativity.
[0054]Since two screens which were reversed 180 degrees and displayed display information mutually are simultaneously controllable, there is an effect which improves operativity.

[Translation done.]

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PRIOR ART

[Description of the Prior Art]In what is called a personal computer of a laptop type or a notebook type, the display device is fixed to the upper part of a keyboard so that the person who operates a keyboard may tend to read the display information of a character, a graph, a figure, etc. which were displayed on the display device. In this case, although it is easy to read the display information displayed on the display part in the position which operates a keyboard, it is difficult to read in the position and direction of [other than the actuated valve position of a keyboard] the display information displayed on the display device.
[0003]The technology which moves a display device is proposed about this point. For example, as it discloses in JP,S63-155313,A. In a laptop type word processor, a laptop PC, and a book type personal computer, it makes it possible to put a display device on any legible position by removing a display device from a computer body and using it via a connecting cable.

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EFFECT OF THE INVENTION

[Effect of the Invention]In [according to the present invention] a laptop type or notebook type portable computer, It becomes possible to display the display information of the character displayed on the display part, Graf, a figure, etc. on the 2-way which the direction which the operator of a portable computer reads, and the direction which a being [it / the operator is met and] person reads meet. Therefore, it is effective in the ability to read the same display information simultaneous and easily because two or more persons who meet and are placed view a single display part.
[0050]The character, Graf who were displayed on the display part of the portable computer, Since various composition of the screen of a display part can be further changed when carrying out a display change so that the display information of a figure etc. can be simultaneously read in the 2-way which meets, it is effective in the ability to read display information in the 2-way which meets easily.
[0051]When carrying out a display change so that the display information of a character, a graph, a figure, etc. which were displayed on the display part of the portable computer can be read in the 2-way which meets, there is an effect which can be easily performed by keyboard grabbing etc.
[0052]Since the angle which a display part and a navigational panel make can be changed, it is

effective in the ability to read easily the display information of a character, a graph, a figure, etc. which were displayed on the display part in the 2-way which meets.
[0053]Since the person who meets the main operator of a portable computer and is placed can input into a portable computer via a sub key board if needed, there is an effect which improves operativity.
[0054]Since two screens which were reversed 180 degrees and displayed display information mutually are simultaneously controllable, there is an effect which improves operativity.

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TECHNICAL PROBLEM

[Problem to be solved by the invention]In a laptop type word processor, a laptop PC, a book type personal computer, etc. the above-mentioned prior art, A display device is seen from the operator of the various above-mentioned portable computers, and consideration is not made about the point of reading simultaneously the same display information of what can be put on any legible position in the 2-way which meets, for example. Therefore, when information, including the display of data, estimated presentation, etc., was exchanged using a portable computer, there was a problem that the person who meets and is placed at an operator and this operator was unsuitable for reading display information in the 2-way which meets simultaneously.
[0005]When exchanging the information about presentation of a display and estimate of data, etc. using a portable computer, the object of this invention, Two or more persons need to check the display information of a portable computer, and it is in providing a portable computer with two or more persons able to read the same display information in the 2-way which meets simultaneously in such a case who meet and are placed by viewing a single display part.
[0006]In the above-mentioned portable computer with which two or more persons who meet and are placed can read simultaneously the display information displayed on the single display part, other purposes of the present invention improve the conspicuousness of a display part, and are in making display information easy to read.
[0007]In the above-mentioned portable computer with which two or more persons who meet and are placed can read simultaneously the display information displayed on the single display part, other purposes of the present invention are to improve operativity.

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MEANS

[Means for solving problem]To achieve the above objects, a sub screen other than a main screen is provided to a display part, 180 degrees is reversed with the display information displayed on the main screen, and the display information of a character, a graph, a figure, etc. which are displayed on a sub screen is displayed. In order to make display information furthermore easy to read, exchange of the display direction of a main screen and a sub screen, change of the position and size of a sub screen, expansion of the display information of a sub screen, and reduction are enabled.
[0009]A display part is divided into two screens to achieve the above objects, mutually, 180 degrees is reversed and the display information of a character, a graph, a figure, etc. which were displayed on each screen is displayed. In order to make display information easy to read, the size of two screens is made variable and two screens are arranged in a vertical direction or right and left directions.
[0010]In order to improve operativity, the above-mentioned screen switching operation presupposes that change of the angle of operation of a keyboard, a change-over switch or a display device, and a bottom case performs.
[0011]So that a portable computer can be operated from the direction of the person who meets the operator who becomes main and is placed, in order to improve operativity. The sub key board which can be operated from the direction of the person who meets the operator who becomes main and is placed besides the keyboard which becomes main is provided.
[0012]In order to improve operativity, it makes it possible the keyboard or sub key board which becomes main, and to control simultaneously the display information of a character, a graph, a figure, etc. which were displayed on two or more screens by a control device.
[0013]In order to make easy to read in the 2-way which meets display information displayed on the display part, the hinge mechanism which can rotate and fix a display part to a multistage story to a navigational panel is used.

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OPERATION

[Function]A sub screen other than a main screen is provided to a display part, 180 degrees is reversed with the display information displayed on a main screen, and the display information of a character, a graph, a figure, etc. which are displayed on a sub screen is displayed. Since it becomes possible to read display information in the 2-way which meets simultaneously by it, when the person who meets the operator of a portable computer and its operator, and is placed views a single display part, the same display information can be read simultaneously.
[0015]Exchange of the display direction of a main screen and a sub screen, change of the position which displays a sub screen, change of the size of a sub screen, expansion of the display information of a sub screen, and reduction are performed. Since it enables it to change arbitrarily the method of presentation of a main screen and a sub screen, display information can be read easily.
[0016]A display part is divided into two screens, mutually, 180 degrees is reversed and the display information of a character, a graph, a figure, etc. which were displayed on each screen is displayed. Since display information can be simultaneously read now in the 2-way which meets by it, when the person who meets the operator of a portable computer and its operator, and is placed views a single display part, the same display information can be read simultaneously. The size of two screens is changed and two screens are arranged in a vertical direction or right and left directions. Since the size and position of display information which are displayed on a display part can be changed by it, display information can be read easily.
[0017]Change of the angle of operation of a keyboard, a change over switch, or a display device performs display of a sub screen, and division of a screen. Since the display information displayed on the display part can be changed into simple and an instant by it, operativity increases.
[0018]The person who meets the operator of the keyboard which becomes main and is placed has an operational sub key besides the keyboard which becomes main [a portable computer]. Since the person who meets the operator who becomes main and is placed by it can also perform the input to a portable computer easily, the operativity of a portable computer increases.
[0019]The display information of two or more screens is simultaneously controlled by the keyboard which becomes main or sub key board of a portable computer, and a control device. The person who meets the operator who becomes main, and its operator, and is placed by it controls the display information of two or more screens easily, and since the controlled display information is simultaneously displayed on two or more screens, it can improve the operativity of a portable computer.
[0020]The hinge which can rotate and fix a display part to a multistage story to a navigational

panel is used. When carrying a portable computer, and a navigational panel is covered by a display part and the operator of a portable computer operates a keyboard by it, When the person who rotates a display part at the angle which the operator tends to view, meets the aforementioned operator and its operator, and is placed views display information simultaneously, When the person who opens a display part so that the same plane may be substantially made with a navigational panel, meets an operator, and is placed mainly views display information, Since the angle which a navigational panel makes can be made a display part further more largely than the above, it makes it easy to view the display information of a character, a graph, a figure, etc. which were displayed on the display part from the 2-way which meets.

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EXAMPLE

[Working example]According to the working example shown in attached Drawings below, it describes about the present invention still in detail. Fig.3 and Fig.4 are the perspective views showing an example of the appearance of the portable computer with which the present invention is applied.Fig.3 shows the appearance at the time of carrying of a portable computer, and Fig.4 shows the appearance at the time of operation.The portable computer comprises the bottom case 1, the rear cover 2, and the display cover 3 so that it may illustrate. It comes to be able to perform operation of the keyboard 4 and viewing of the display part 7 by releasing the latch 9 and opening the display cover 3. The circuit board for performing the function of a portable computer is stored in the lower part of the navigational panel 5. The floppy disk deck 8a and the card slot 8b are provided by the side surface of the bottom case 1. The contents of the information which the portable computer operated by turning on the electric power switch 11, processed the variety of information in inputting into the keyboard 4, and was processed to the display part 7 are displayed. In Fig.3 and Fig.4, a hinge for 10 to open the display cover 3 and 12 show the change-over switch which performs the display change of a main screen and a sub screen mentioned later.
[0022]In this example, color LCD (liquid crystal display) of the active matrix system is used as the display device 6. However, otherwise, the thing usable to the portable computer of a laptop

type for which anything is used with what is called a flat-panel display is possible for a plasma display, EL (electroluminescence), etc. The display device 6 used for this example is TFT-(thin film transistor) LCD of the size of 10.4 inches of a diagonal direction, and 16 color specification. As for arrangement of a 640(H) x480(V) dot and a light filter, pixel numbers are 0.11 (H) and 0.33(V), and R, G, B length stripe, 640x3 pixels, and their pixel pitch are the backlight systems by a cold cathode fluorescent tube.

[0023]Fig.1 and Fig.2 are the explanatory views showing the state where the main screen 17a and the sub screen 17b were provided and displayed on the display part 7.Fig.1 provides the sub screen 17b to some main screens 17a, and the display information 13 is displayed in the direction which can be read in the person (not shown) who meets the operator of a keyboard and is placed at the main screen 17a, The state where the display information 13 was displayed in the direction which the operator 14a of a keyboard can read is shown in the sub screen 17b. Fig.2 shows the state where the display direction of the main screen 17a and the sub screen 17b of Fig.1 was replaced.In this example, exchange of the display direction of a display and the main screen 17a of the above-mentioned sub screen 17b, and the sub screen 17b is performed by the change-over switch 12 (refer to Fig.4) provided separately from the key which operates a portable computer.

[0024]Fig.5 and Fig.6 are the explanatory views showing the display position of the sub screen 17b in the main screen 17a.It constituted from an example shown in Fig.5 so that the sub screen 17b could be moved to four places of the main screen 17a. The portion hidden by the display of the sub screen 17b by this among the display information 13 displayed on the main screen 17a can be changed.

[0025]Fig.6 shows the example which enabled it to change the size of the sub screen 17b. It is made for length to become one fourth of the main screens 17a in every direction, and also length in every direction enabled it, as for the size of the sub screen 17b, to change the size of the sub screen 17b in this example from 1/5 to 1/2 of the main screen 17a. When larger [if smaller than one fifth of the main screens 17a, a screen will be small and it will become difficult to read the display information 13 as a size of the sub screen 17b, and] than one half, there are too many portions in which the display information 13 currently displayed on the main screen 17a hides. Display information 13 can be made easy to be able to change the size of the display information 13 of the sub screen 17b by this, considering a relation with the display information 13 of the main screen 17a, and to read. a part of the display of the sub screen 17b reducing the whole display of the main screen 17a, and making it display, and display information 13 of the main screen 17a -- the same size as the main screen 17a -- or it expands and enables it to make it display It becomes possible that the near person who views the sub screen 17b reads the whole display information easily by this, and to check a part of display information 13 in detail.

[0026]Fig.7 is a side view showing the state where the portable computer of this example is used. The display part 7 of a portable computer makes parallel him of open, the navigational panel 5, the display part 7, and the desktop 15 that installed the computer so that the navigational panel 5 and the angle of about 180 degrees may be made. This turns to the display direction of the display information 13 displayed on the main screen 17a of the display part 7 to the person 14b who meets the operator of a portable computer and is placed, It turns to the display direction of the display information 13 displayed on the sub screen 17b of the display part 7 to the operator 14a of the keyboard of a portable computer. The display direction of the display information 13 of the main screen 17a and the display direction of the display information 13 of the sub screen 17b may be made reverse if needed. As shown in Fig.7, it enables the person 14b who meets the operator 14a and operator of a keyboard and is placed to read the same display information 13

simultaneously by viewing the main screen 17a and the sub screen 17b of the single display part 7.
[0027]Fig.8 is an expansion explanatory view of the display device 6. The display device 6 used for this example is above-mentioned TFT-LCD.
The pixel 16 is located in a line with rectangular form at m width and n length.
16 d of liquid crystal layers of the pixel 16 are controlled by the picture signal applied to the picture element electrode 16a. In order 180 degrees is reversed and to display the display information 13 displayed on the display device 6, It is attained by counting from the pixel 16 which is placed at the upper left end of the display device 6, and performing operation replaced with the picture signal which applies the picture signal applied to the picture element electrode 16a which exists in the a-th width and the b-th length to the picture element electrode 16a which exists in eye horizontal (m-a+1) watch and eye vertical (n-b+1) watch. 16b shows a drain bus among a figure, and 16c shows the gate bus.
[0028]Fig.9 is a block diagram showing an example of the portable computer which can display the above-mentioned main screen 17a and the sub screen 17b. So that it may illustrate a portable computer, The display device 6. The drain driver 27a. It comprises the gate driver 27b, the interface controller 28, the main screen frame buffer memory 29a, the sub screen frame buffer memory 29b, the coordinate transformation circuit 30, the display processing device 31, the microprocessor 32, and ROM33 and RAM34.
[0029]In the program memorized by ROM33, in Fig.9, the microprocessor 32 operates RAM34 as a work area. That is, if the microprocessor 32 publishes a display command, the display processing device 31 will generate and output the picture signal corresponding to this display command. For example, in displaying a character, it writes in the address which made reading the character pattern memorized by ROM33 and was defined by making it into a picture signal by the display command of the main screen frame buffer memory 29a and the sub screen frame buffer memory 29b. When indicating the display information of a main screen by flip vertical, for example at this time, coordinate conversion of the above-mentioned character pattern is carried out to a character inversion pattern by work of the coordinate transformation circuit 30, and this is stored in the main screen frame buffer memory 29a as a picture signal. The picture signal by which coordinate conversion is not carried out is stored in the sub screen frame buffer memory 29b. The interface controller 28 reads sequentially the picture signal stored in the main screen frame buffer memory 29a and the sub screen frame buffer memory 29b, drives the drain driver 27a and the gate driver 27b, and displays them on the display device 6 as the display information 13.
[0030]Fig.10 shows x on the display part of the picture signal in the case of displaying the display information 13, and a y-coordinate to the display device 6, Fig.11 shows x of the main screen frame buffer memory 29a, and a y-coordinate (each coordinates mean an address), and Fig.12 shows x of the sub screen frame buffer memory 29b, and a y-coordinate (each coordinates mean an address). in Fig.10, and 11 and 12 -- A and B -- each of the main screen frame buffer memory 29a -- an x-coordinate and a y-coordinate, [show and] a and b -- each of the main screen 17a -- an x-coordinate and a y-coordinate are shown -- P and Q -- each of the sub screen frame buffer memory 29b -- an x-coordinate and a y-coordinate are shown -- p and q -- each of the sub screen 17b -- an x-coordinate and a y-coordinate are shown.
[0031]The maximums of the x-coordinate of the main screen 17a and a y-coordinate are m and n, respectively, and the maximums of the x-coordinate of the sub screen 17b and a y-coordinate are u and v, respectively so that it may illustrate. In displaying the main screen 17a in the regular

direction and reversing and displaying the sub screen 17b, it performs coordinate conversion shown in (several 1) and (several 2). In displaying the sub screen 17b in the regular direction and reversing and displaying the main screen 17a, it performs coordinate conversion shown in (several 3) and (several 4).

[0032]

[Mathematical formula 1]

[数1] $(A, B) = (a, b)$

[0033]

[Mathematical formula 2]

[数2] $(P, Q) = (m-a+1, n-b+1)$

[0034]

[Mathematical formula 3]

[数3] $(A, B) = (m-a+1, n-b+1)$

[0035]

[Mathematical formula 4]

[数4] $(P, Q) = (a, b)$

[0036]Coordinate conversion of an upper type is performed by the coordinate transformation circuit 30. The coordinate transformation circuit 30 comprises a usual adding machine and complementer. If m, n, a, and b which are used by an upper formula are beforehand memorized by ROM33 and the input signal for setting up the sub screen 17b, and it being reversed, and displaying is input into the microprocessor 32, The microprocessor 32 reads a required constant value from ROM33, and sends it to a broth, the display processing device 31, and the coordinate transformation circuit 30. furthermore -- the microprocessor 32 sending instructions of coordinate conversion and setting to the coordinate transformation circuit 30 -- the above -- required coordinate conversion is performed or the output of the coordinate transformation circuit 30 is through written in the main screen frame buffer memory 29a and the sub screen frame buffer memory 29b. The interface controller 28 reads sequentially the information on the main screen frame buffer memory 29a and the sub screen frame buffer memory 29b, and drives the drain driver 27a and the gate driver 27b, The main screen 17a and the sub screen 17b are set to the display device 6, and the display information 13 is displayed in the direction reversed mutually.

[0037]Rather than the main screen 17a, since the display surface product is small, the sub screen 17b cannot reverse and display all the display information 13 usually displayed on the main screen 17a, but displays a part. It can be set up and changed by scrolling Screen 17 which is usually performed with a portable computer, a word processor, etc. whether the portion of a main screen 17a throat is displayed. It is also possible to display the screen 17 whole of the main screen 17a on the sub screen 17b using a layout display which is usually performed.

[0038]Fig.13 and Fig.14 are the explanatory views showing an example in the state where it divided and displayed two about the screen of the display part 7.Fig.13 shows the place which divided the screen into two in the longitudinal direction, displayed the display information 13 in the direction which can be seen and read in the operator 14a of a keyboard on one screen 17c, and displayed the display information 13 in the direction which is seen and can be read in the

person 14b who meets the operator of a keyboard and is placed at Screen 17d of another side. A display direction is reversed although Screens [which were divided into two / 17c and 17d] each displays the same display information 13. Fig.14 shows the example which divided the screen into the transverse direction two and carried out it (it is a screen separation to the vertical direction of the display part 7). Whether it divides into a longitudinal direction or it divides into a transverse direction form selectable, and it also forms the size of a screen so that variable is possible. For example, it is possible to enable the change which uses one third of the whole display parts as one screen 17c, and uses the two thirds [remaining] as Screen 17d of another side etc. When reading the display information 13 displayed on the display part 7 in the 2-way which meets by the above, it becomes possible to change the composition of Screen 17 of the display part 7 so that it may be easy to read.

[0039]Here, in two split screens, the method of displaying the display information 13 in the direction reversed mutually applies to the method of presentation in the above-mentioned main screen and sub screen. In this example, operation of the keyboard 4 performed the display of two split screens. That is, two split screens are displayed by pushing simultaneously the Control key on a keyboard, and a kind of a letter key.

[0040]Fig.15 is a side surface explanatory view of the portable computer concerning the above-mentioned working example. The hinge 10 used for this example enables it to change arbitrarily the angle which the display part 7 of a portable computer makes with the navigational panel 5. In carrying a portable computer, the display part 7 covers the navigational panel 5. When the operator 14a of a portable computer operates the keyboard 4 independently, the display part 7 is fixed to the position of A, and it reads the display information 13, operating the keyboard 4. When the main operator 14a of a portable computer and both of the person 14b who meets the operator 14a and is placed view the display part 7, it fixes to the position of B, two or more persons meet, and the display part 7 enables it to read the display information 13. When the person 14b who meets the operator 14a of a keyboard and is placed mainly views the display part 7, the display part 7 is fixed to the position of c, and usual makes viewing from a counter direction easy.

[0041]Fig.16 is a perspective view showing an example of the hinge 10 by this example. The hinge 10 is fixed to the bottom case 1 and the display cover 3 with a screw via the screw holes 19a and 19b of the mounting hardware 18a and 18b. Here, the mounting hardware 18a is the mounting hardware to the bottom case 1, and the mounting hardware 18b is the mounting hardware to the display cover 3. The display part 7 according to the frictional force between the shaft 20 made of resin currently fixed to the above-mentioned mounting hardware 18a, and the bush 21 made of resin currently fixed to the mounting hardware 18b to the display cover 3, It comprises a position which becomes arbitrary [the angle of the display part 7 and the navigational panel 5 to make] so that a stop is possible. In addition, the latch structure more than a three-stage may be provided, and it may constitute so that the display part 7 can change the navigational panel 5 and the angle to make.

[0042]Fig.17 is a side surface explanatory view showing other examples of the portable computer concerning the above-mentioned working example. In the portable computer shown in Fig.17, a change is carried out to two screen display which displays the display information 13 of the character displayed on the display part 7, Graf, a figure, etc. in the direction reversed 180 degrees mutually by ON/OFF of the contact type switch 22. The display cover 3 and the rear cover 2 provide, the display part 7 makes the navigational panel 5 and the angle of 180 degrees, and when the display cover 3 and the rear cover 2 contacted and stop, the contact type switch 22

is set to ON so that it may illustrate. As a result, a signal is sent to micro ploy SESSA 32 (refer to Fig.9), and the microprocessor 32 reverses mutually 180 degrees of display information 13 displayed on the display part 7, and outputs the command of the purport that two screen display is performed. When the angle of the display part 7 and the navigational panel 5 to make becomes smaller than 180 degrees, for example, the contact type switch 22 serves as OFF, and two screen display is released.

[0043]Fig.18 and Fig.19 are the explanatory views showing composition of a hinge region which connects the bottom case 1 and the display cover 3.

The contact type switch 22 is provided to a hinge region.

The contact type switch 22 is provided by the mounting hardware 18a and 18b of the hinge 10, and a part of shaft 20 so that it may illustrate. As shown in Fig.18, when the angle which the display part 7 and the navigational panel 5 make is small, the contact type switch 22 is not turned on. As shown in Fig.19, when the angle which the navigational panel 5 makes is largely made the display part 7, for example it carries out more largely than 180 degrees, the contact type switch 22 turns on and two screen display is performed by the microprocessor 32. Again, if the above-mentioned angle is returned small, the contact type switch 22 will be turned off and the display of the display part 7 will return to normal. Thus, it becomes possible to perform two screen display which displays the display information 13 in the direction reversed 180 degrees mutually automatically by changing the angle which the display part 7 and the navigational panel 5 make, without performing other operations.

[0044]Fig.20 - Fig.22 are the outline views showing other examples of a portable computer.The portable computer shown in Fig.20 - Fig.22 is provided with the sub key board 23 which the person 14b who meets the operator 14a other than the keyboard 4 which becomes main, and is placed can operate.The example shown in Fig.20 prepares the sub key board 23 separately from the main part of a portable computer, and shows the example used via the connecting cable 24. Fig.21 shows the example which installs and operates the sub key board 23 around the display part 7. Fig.22 stores the sub key board 23 below the display part 7, and shows the example used pulling out at the time of use. In Fig.22, the sub key board 23 is usually stored by the sub key board cover 26, is pulled out to the person 14b side who meets an operator at the time of use and is placed, and is supported and used with the stand 25. The person 14b who meets the operator who becomes main [a portable computer] and is placed by installation of the sub key board 23, It becomes possible to input into a computer via the sub key 23a currently provided by the sub key board 23 like the operator 14a who becomes main, and the operativity of a portable computer improves.

[0045]Although the main screen and the sub screen were provided to the display part or the display part was divided into two screens, the present invention is not limited to this and it may be made to provide three or more screens to a display part in the above-mentioned working example.

[0046]According to the portable computer of the above-mentioned working example, the same display information can be read because two or more persons, such as a person who has met the operator of a keyboard and this operator, view the single display part 7.

[0047]According to the portable computer of the above-mentioned working example, when going on business in a company etc., it is easy to exchange the information about the display of data and estimated presentation, etc. among two or more persons. It becomes effective also when learning by an educator and an educator meeting in a school, a cram school, etc.

[0048]In the above-mentioned working example, only the display device 6 of a portable

computer can be installed in the counter of a bank, etc., and it can also use for a customer exchanging with a bank clerk.

[Translation done.]

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1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1]The explanatory view showing the state where the main screen and the sub screen were provided and displayed on the display part.
[Drawing 2]The explanatory view showing the state where the main screen and the sub screen were provided and displayed on the display part.
[Drawing 3]The perspective view showing an example of the appearance of the portable computer with which the present invention is applied.
[Drawing 4]The perspective view showing an example of the appearance of the portable computer with which the present invention is applied.
[Drawing 5]The explanatory view showing the display position of the sub screen in a main screen.
[Drawing 6]The explanatory view showing the display position of the sub screen in a main screen.
[Drawing 7]The side view showing an example in the state where the portable computer is used.
[Drawing 8]The expansion explanatory view of a display device.
[Drawing 9]The block diagram showing an example of the portable computer which can display a main screen and a sub screen.
[Drawing 10]The explanatory view showing x on the display part of a picture signal, and a y-coordinate.
[Drawing 11]The explanatory view showing x of main screen frame buffer memory, and a y-coordinate (each coordinates mean an address).
[Drawing 12]The explanatory view showing x of sub screen frame buffer memory, and a y-coordinate (each coordinates mean an address).
[Drawing 13]The explanatory view showing an example in the state where 2 split displays of the screen of a display part were carried out.
[Drawing 14]The explanatory view showing an example in the state where 2 split displays of the screen of a display part were carried out.

[Drawing 15]The side surface explanatory view of a portable computer.
[Drawing 16]The perspective view showing an example of a hinge.
[Drawing 17]The side surface explanatory view showing other examples of a portable computer.
[Drawing 18]The explanatory view showing the composition of the hinge region which connects a bottom case and a display cover.
[Drawing 19]The explanatory view showing the composition of the hinge region which connects a bottom case and a display cover.
[Drawing 20]The outline view showing other examples of a portable computer.
[Drawing 21]The outline view showing other examples of a portable computer.
[Drawing 22]The outline view showing other examples of a portable computer.
[Explanations of letters or numerals]
1 -- bottom case, 2 -- rear cover, 3 -- display cover, 4 -- keyboard, 5 -- navigational panel, 6 -- display device, 7 -- display part, 8 a -- floppy disk deck, 8 b -- card slot, 9 -- latch, 10 -- hinge, 11 -- electric power switch, 12 -- display reversing switch, 13 -- display information, 14 a -- operator, 14 b -- person who meets an operator and is placed, 15 -- desktop, 16 -- pixel, 16 a -- picture element electrode, 16 b -- Dorain Buss, 16 c -- gate bus, 16 d -- liquid crystal layer, 17 -- screen, 17 a -- main screen, 17 b -- one screen of a sub screen and c--172 split screen, 17 d -- screen of another side of two split screens, 18a, 18b -- Mounting hardware, 19a, 19b -- A screw hole, 20 -- Shaft, 21 -- bush, 22 -- contact type switch, 23 -- sub key board, 23 a -- sub key, 24 -- connecting cable, 25 -- stand, 26 -- sub key board cover, 27 a -- drain driver, 27 b -- gate driver, 28 -- interface controller, 29 a -- main screen frame buffer memory, 29 b -- sub screen frame buffer memory, 30 -- coordinate transformation circuit, 31 -- display processing device, 32 -- microprocessor, 33 -- ROM, 34 -- RAM.

[Translation done.]

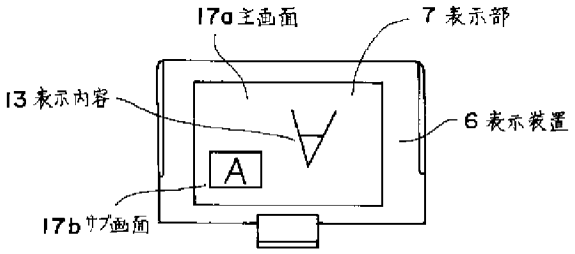
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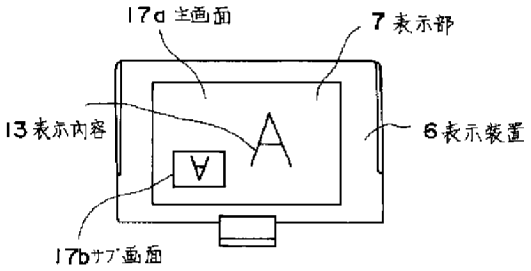
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2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DRAWINGS

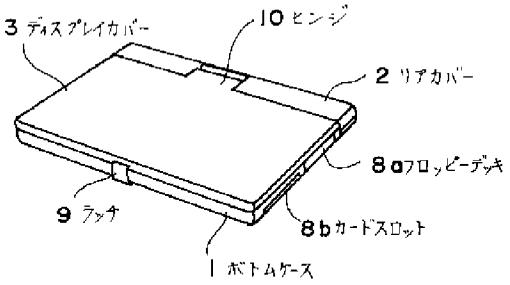
[Drawing 1]
[図 1]



[Drawing 2]
[図 2]

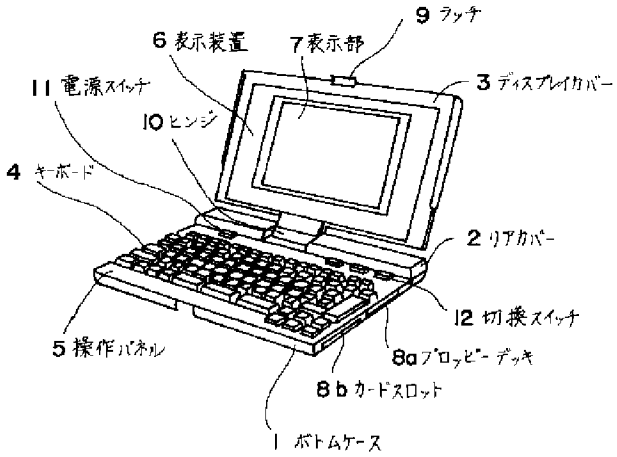


[Drawing 3]
[図 3]



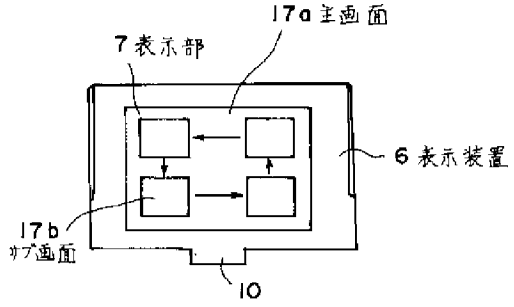
[Drawing 4]

【図 4】



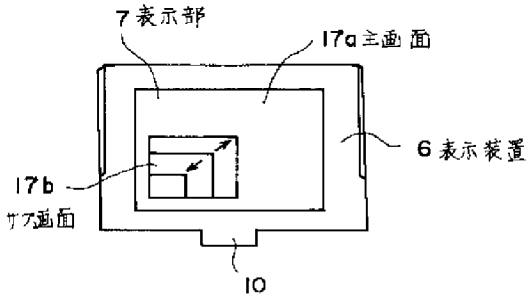
[Drawing 5]

【図 5】



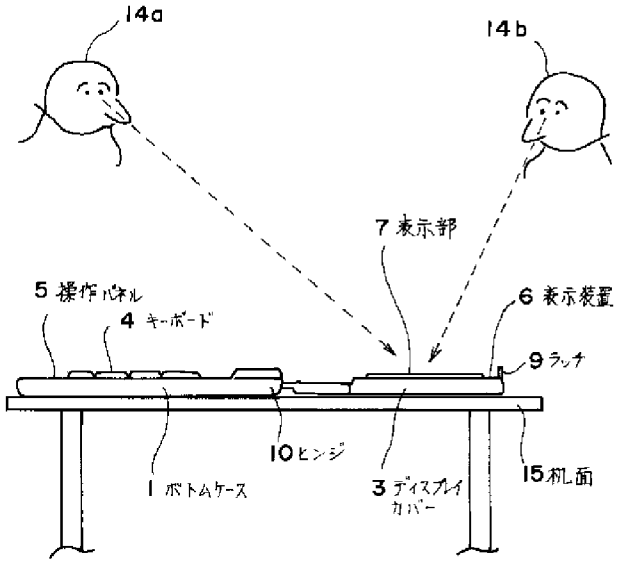
[Drawing 6]

【図 6】

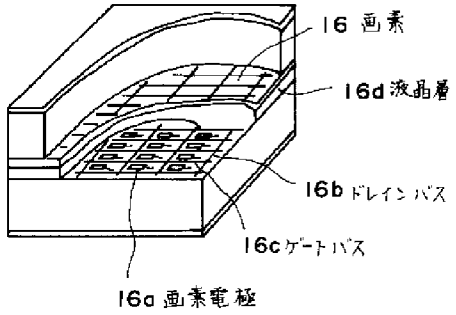


[Drawing 7]

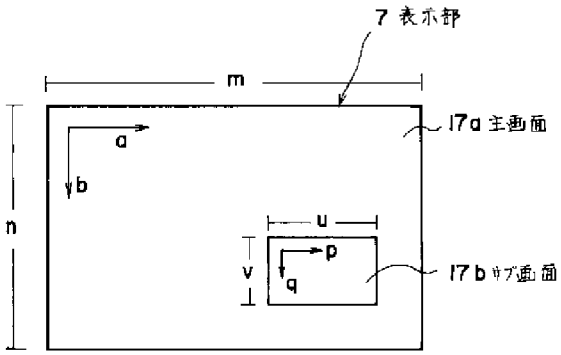
[図 7]



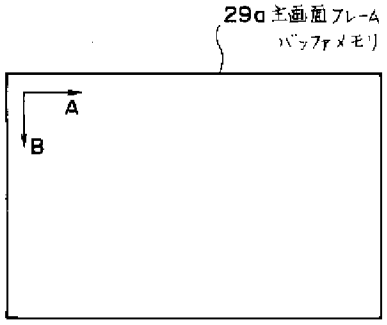
[Drawing 8]
[図 8]



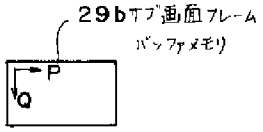
[Drawing 10]
[図 10]



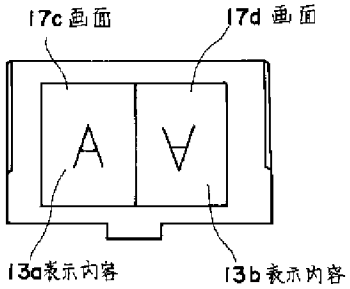
[Drawing 11]
[図 11]



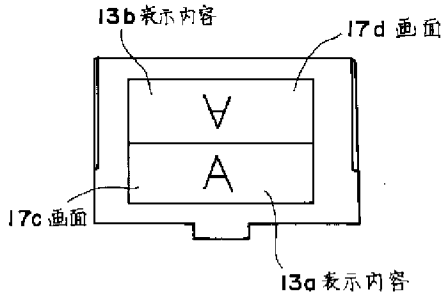
[Drawing 12]
[図 12]



[Drawing 13]
[図 13]

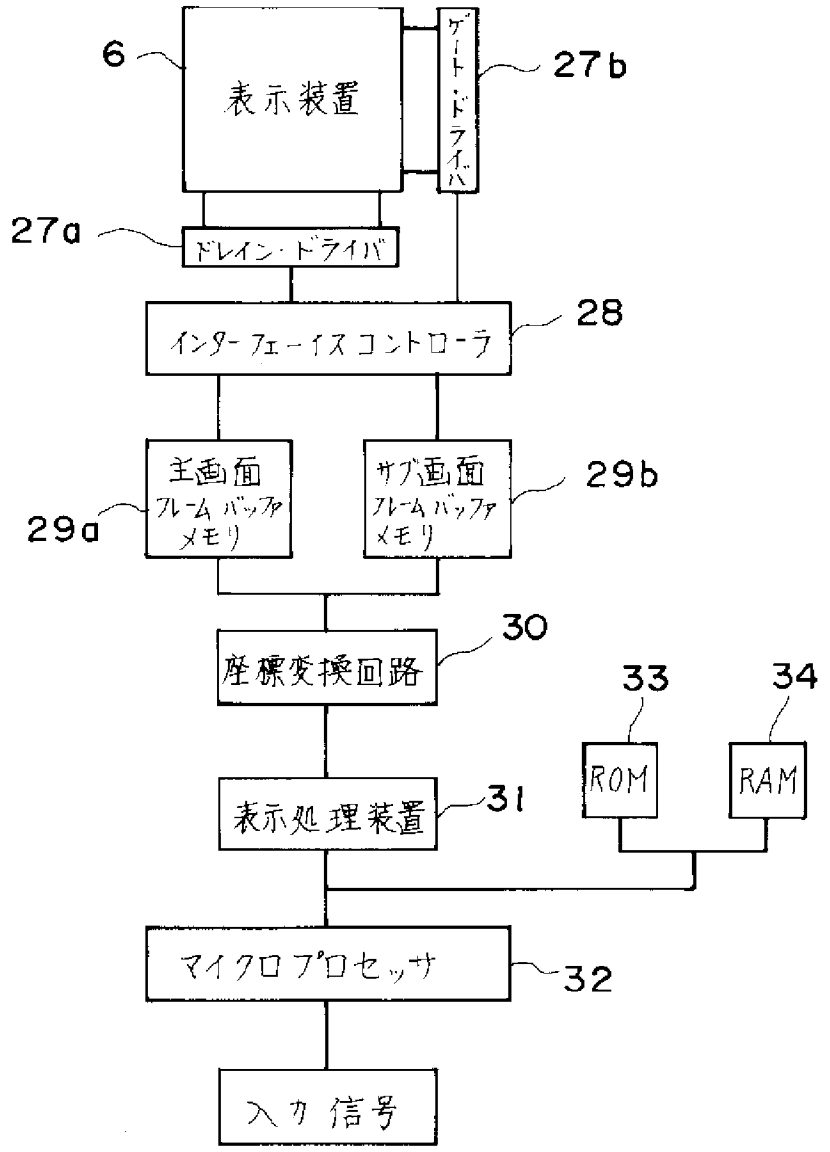


[Drawing 14]
[図 14]

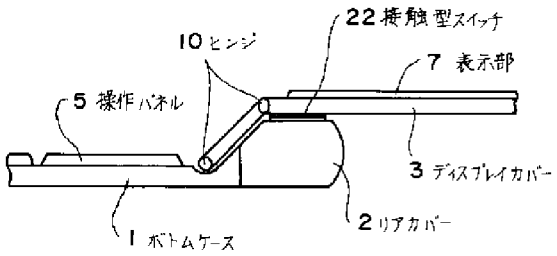


[Drawing 9]

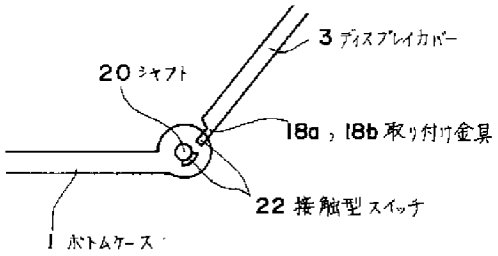
[図 9]



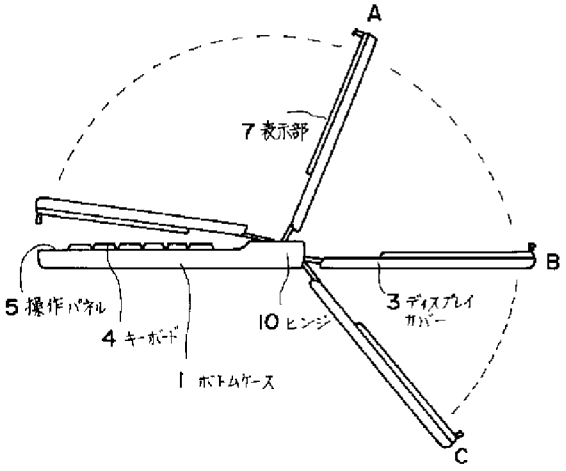
[Drawing 17]
[図 17]



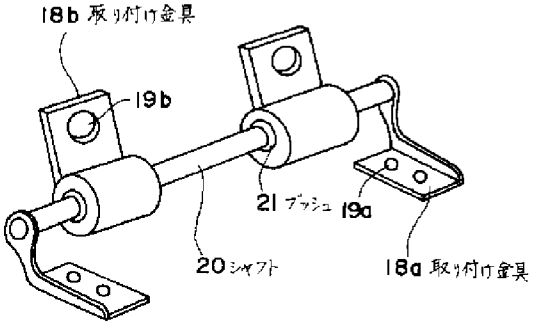
[Drawing 18]
[図 18]



[Drawing 15]
[図 15]

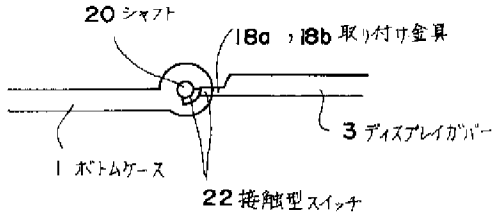


[Drawing 16]
[図 16]



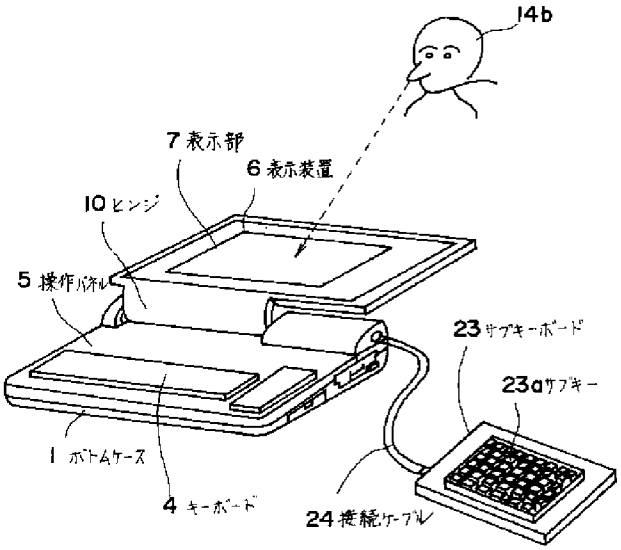
[Drawing 19]

[図19]



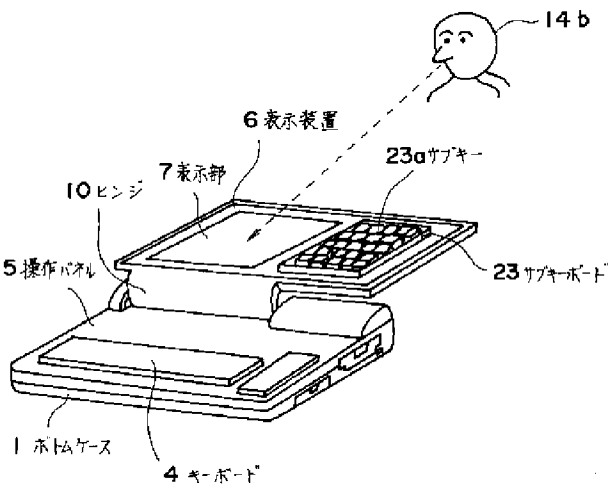
[Drawing 20]

[図20]



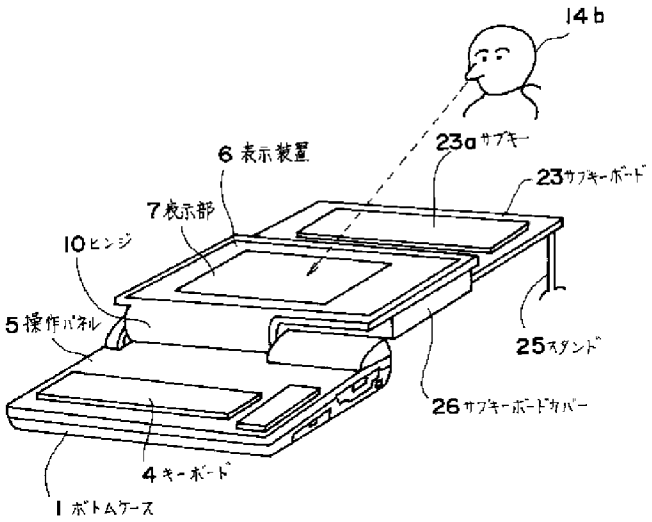
[Drawing 21]

[図21]



[Drawing 22]

【図２２】



[Translation done.]

(19)日本国特許庁(JP)　(12)公開特許公報(A)　(11)特許出願公開番号
特開2005-242436
(P2005-242436A)
(43)公開日　平成17年9月8日(2005.9.8)

(51)Int.Cl.[7]	F I			テーマコード（参考）
G06F 17/30	G06F	17/30	110H	5B020
G06F 1/16	G06F	3/00	656A	5B075
G06F 3/00	G06F	3/02	310A	5E501
G06F 3/02	G06F	1/00	312G	

審査請求 未請求　請求項の数 4　OL　（全 9 頁）

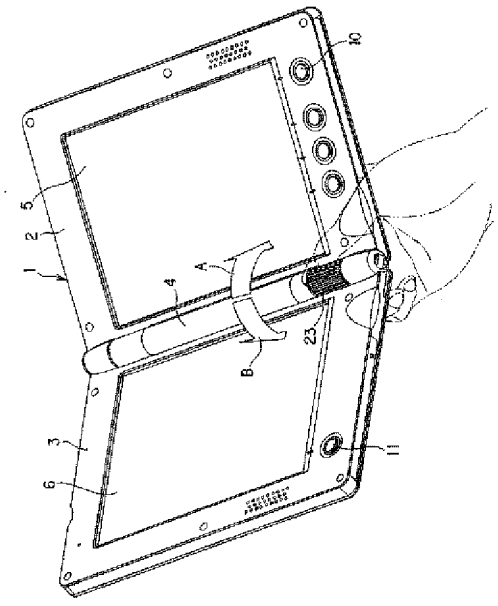
(21)出願番号　特願2004-47718 (P2004-47718)
(22)出願日　平成16年2月24日 (2004.2.24)

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(54)【発明の名称】電子書籍

(57)【要約】
【課題】　電子書籍を片手で挟み持つ力を弱めることなく、頁更新操作を容易に行うことができるようにする。
【解決手段】　文章データを頁単位に表示する平板状の表示装置５、６を収納する筐体２、３と、筐体２、３を連結するヒンジ部分に設けられたジョグダイヤル２３と、ジョグダイヤル２３が所定位置まで回動されたことを検出したとき検出信号を出力する検出信号出力手段と、この検出信号出力手段から前記検出信号が出力されたとき表示装置５、６に表示する文章データの頁更新を行う制御手段とを備える。ジョグダイヤル２３を片手で回動させるだけで頁更新が行われるため、電子書籍を持つ力を弱めることなく、頁更新操作を行うことができる。
【選択図】　図５



【特許請求の範囲】
【請求項1】
文章データを頁単位に表示する平板状の表示装置を収納する筐体と、前記筐体の一部に設けられたジョグダイヤルと、前記ジョグダイヤルが所定位置まで回動されたことを検出したとき検出信号を出力する検出信号出力手段と、前記検出信号出力手段から前記検出信号が出力されたとき前記表示装置に表示する文章データの頁更新を行う制御手段とを備えることを特徴とする電子書籍。
【請求項2】
前記表示装置を２面備え、各面の表示装置を夫々収納する筐体をヒンジにより開閉可能に連結して折り畳み型としたことを特徴とする請求項１に記載の電子書籍。
【請求項3】
前記ヒンジの部分に前記ジョグダイヤルを配置したことを特徴とする請求項２に記載の電子書籍。
【請求項4】
前記検出信号出力手段は前記ジョグダイヤルの時計方向の回動と反時計方向の回動を検出し、前記制御手段は前記時計方向の所定位置までの回動が前記検出信号出力手段で検出されたとき頁を先に進める更新処理を行い前記反時計方向の所定位置までの回動が前記検出信号出力手段で検出されたとき頁を前に戻す更新処理を行うことを特徴とする請求項１乃至請求項３のいずれかに記載の電子書籍。

【発明の詳細な説明】
【技術分野】
【0001】
本発明は電子書籍に係り、特に、頁更新操作を片手で容易に行うことができる電子書籍に関する。
【背景技術】
【0002】
記憶型液晶表示装置を搭載した電子書籍（電子ブック）は、筐体に設けられている入力キーを所定操作することで、メモリ内に格納されている書籍の文章データのうち１頁分あるいは２頁分を読み出して記憶型液晶表示装置に表示する。この電子書籍では、その頁の表示データは消えずに残り、ユーザはその文章を読むことができる。
【0003】
次に、入力キーから、頁を先に進める指示を入力すると、次の１頁分あるいは２頁分の文章データがメモリから読み出されて表示される。
【0004】
この様に、電子書籍における主な操作は頁更新操作であり、このため、電子書籍の筐体には、少なくとも、頁を先に進めるキーと、頁を前に戻すキーが設けられている（特許文献１参照）。
【0005】
【特許文献1】特開平２００１－２５５９７７号公報
【発明の開示】
【発明が解決しようとする課題】
【0006】
電子書籍を持ち歩き、例えば電車の吊革につかまりながら文章データを読む場合には、片手の親指と人差し指との間に電子書籍を挟み持つことになる。そして、頁更新操作を行う場合には、親指を少しずらして、頁を先に進めるキーあるいは頁を前に戻すキーのいずれかを押すことになる。この頁更新操作を行うとき、電子書籍を持つ親指を電子書籍から若干浮かす必要があり、このため、電子書籍を挟み持つ力が弱くなり、電子書籍を落としてしまう虞が生じる。
【0007】
本発明の目的は、電子書籍を片手で挟み持つ力を弱めることなく、頁更新操作を容易に

行うことができる電子書籍を提供することにある。
【課題を解決するための手段】
【0008】
本発明の電子書籍は、文章データを頁単位に表示する平板状の表示装置を収納する筐体と、前記筐体の一部に設けられたジョグダイヤルと、前記ジョグダイヤルが所定位置まで回動されたことを検出したとき検出信号を出力する検出信号出力手段と、前記検出信号出力手段から前記検出信号が出力されたとき前記表示装置に表示する文章データの頁更新を行う制御手段とを備えることを特徴とする。
【0009】
この構成により、親指による回動操作によつて容易にジョグダイヤルから頁更新指示を入力できるため、片手で持った電子書籍の頁更新操作が容易となる。
【0010】
本発明の電子書籍では、前記表示装置を２面備え、各面の表示装置を夫々収納する筐体をヒンジにより開閉可能に連結して折り畳み型としたことを特徴とする。
【0011】
この構成により、２頁分の文章データを読むことができ、しかも、折り畳んで仕舞った場合には表示画面が隠れるため表示画面の保護を図ることができる。
【0012】
本発明の電子書籍で、前記ヒンジの部分に前記ジョグダイヤルを配置したことを特徴とする。
【0013】
この構成により、折畳型の電子書籍を開いて片手で持ったとき、丁度ジョグダイヤル部分に親指が来るようになり、操作が更に容易となる。
【0014】
本発明の電子書籍の前記検出信号出力手段は前記ジョグダイヤルの時計方向の回動と反時計方向の回動を検出し、前記制御手段は前記時計方向の所定位置までの回動が前記検出信号出力手段で検出されたとき頁を先に進める更新処理を行い前記反時計方向の所定位置までの回動が前記検出信号出力手段で検出されたとき頁を前に戻す更新処理を行うことを特徴とする。
【0015】
この構成により、頁を先に進める操作と頁を前に戻す操作を行う位置が同じとなり、ジョグダイヤルを回動させる方向のみ違えれば良くなるため、操作が容易となる。
【発明の効果】
【0016】
本発明によれば、親指を載せたジョグダイヤルをその位置で若干回動させるだけで、頁更新操作ができるため、頁更新操作が容易となり、しかも、電子書籍を落とす虞がなくなる。
【発明を実施するための最良の形態】
【0017】
以下、本発明の一実施形態について、図面を参照して説明する。
【0018】
図１は、本発明の一実施形態に係る折畳型電子書籍の正面図であり、１８０°開いた状態を示している。この電子書籍１は、３つの主要筐体で構成され、矩形平板状の右側本体部２と、矩形平板状の左側本体部３と、両者間に設けられる円筒状の電池ケース４とを備える。
【0019】
右側本体部２と左側本体部３には、夫々、薄型表示装置たとえば記憶型液晶装置５、６が搭載され、右側本体部２の下辺部には４つの操作ボタン７、８、９、１０が設けられ、左側本体部３の左下隅には１個の操作ボタン１１が設けられている。
【0020】

左側本体部３の左下隅に設けられた操作ボタン１１は、頁を先に進めるキーであり、右側本体部２の右下隅に設けられた操作ボタン１０は、頁を前に戻すキーである。これらの操作ボタン１０、１１は、この電子書籍１を両手で開いて読んでいるときの頁更新操作を容易にするためのものである。

【0021】

右側本体部２の左辺には、上下に離間する２つのヒンジ部１２、１３が突設されており、左側本体部３の右辺にも、上下に離間する２つのヒンジ部１４、１５（ヒンジ１５（図２参照）は、後述のジョグダイヤル機構２０によって外面が覆われている。）が突設されている。そして、右側のヒンジ部１２、１３と左側のヒンジ部１４、１５とを夫々回動自在に連結することで、右側本体部２と左側本体部３とが開閉自在に結合されている。

【0022】

この電子書籍１では、右側本体部２と左側本体部３とを結合するときにヒンジ部１２、１３間に形成される円柱状の空きスペースに、円筒状の電池ケース４を取り付け、電子書籍１の省スペース化を図っている。そして、ヒンジ部１５に重複する場所に、片手で頁更新操作を行うことができるジョグダイヤル機構２０が設けられる。

【0023】

図２は、電子書籍１からジョグダイヤル機構２０を分解した図である。ジョグダイヤル機構２０は、右側本体部２の筐体に一体に突設されたヒンジ部１３に固定される円柱状の固定軸体２１と、固定軸体２１の削成部２１ａに取り付けられた電子基板２２と、固定軸体２１に回動可能に外嵌されるジョグダイヤル２３と、固定軸体２１に外嵌されジョグダイヤル２３の回動位置を常時所定位置に戻す力をジョグダイヤル２３に付与するコイル形状の戻しバネ２４と、ジョグダイヤル機構２０の端部を覆うキャップ部材２５とを備える。電子基板２２には、２方向検出タイプのスイッチ２６が取り付けられている。このスイッチ２６は、本実施形態では、ジョグダイヤル２３が所定位置まで回動されたことを検出したとき検出信号を出力する検出信号出力手段として機能する。

【0024】

図３（ａ）は、図１のIII―III線断面図であり、ジョグダイヤル２３のうち戻しバネ２４が配置された個所の断面図である。円筒状のジョグダイヤル２３の周壁には、周方向に沿う穴２３ａが穿設されており、また、ジョグダイヤル２３が摺接する右側本体部２の円弧壁２ａにも、円周方向に沿う穴２ｂが穿設されている。穴２３ａ、２ｂのジョグダイヤル２３の中心軸に対する開き角θは同一になっており、穴２３ａの周方向の一方の端壁が穴２ｂの端壁に整列した位置では、穴２３ｂ、２ｂの他方の端壁も整列する様になっている。

【0025】

固定軸体２１に外嵌されジョグダイヤル２３の内側に収納されたコイル状の戻しバネ２４の両端部２４ａ、２４ｂは、穴２３ａ、２ｂを通して右側本体部２内に突出している。戻しバネ２４の両端部２４ａ、２４ｂは、バネ弾発力によって拡開方向に付勢されており、このバネ弾発力によって、穴２３ａと穴２ｂとは端部２４ａ、２４ｂによって整列位置に規制される。また、両端部２４ａ、２４ｂの先端は、穴２ｂから容易に脱却しないように、穴２ｂの外側方向に屈曲されている。

【0026】

この状態で、ジョグダイヤル２３を図３（ａ）上で時計方向に回動すると、穴２３ａの端壁に押されたバネ２４の一方の端部２４ｂもバネ弾発力に抗して時計方向に移動する。そして、図３（ｂ）に示す様に、バネ２４の一方の端部２４ｂが、他方の端部２４ａを係止している穴２ｂの他端壁に当接する位置まで来ると、それ以上の回動移動が阻止され、ジョグダイヤル２３は停止する。また、ジョグダイヤル２３に回動力を付与するのを止めてジョグダイヤル２３をフリーにすると、戻しバネ２４のバネ力によって図３（ａ）の状態に戻る。

【0027】

逆に、ジョグダイヤル２３を図３（ａ）上で反時計方向に回動すると、穴２３ａの端壁

に押されたバネ２４の他方の端部２４ａもバネ弾発力に抗して反時計方向に移動する。そして、図３（ｃ）に示す様に、バネ２４の他方の端部２４ａが、一方の端部２４ｂを係止している穴２ｂの端壁に当接する位置まで来ると、それ以上の回動移動が阻止され、ジョグダイヤル２３は停止する。

【0028】

図４（ａ）は、図１のIV―IV線断面図であり、右側本体部２にヒンジ１３を介して固定された軸体２１に取り付けられているスイッチ２６の位置の断面図である。ジョグダイヤル２３が図３（ａ）に示す位置にあるときの状態を図４（ａ）に示し、図３（ｂ）（ｃ）に対応する位置にあるときの状態を夫々図４（ｂ）（ｃ）に示す。

【0029】

ジョグダイヤル２３の内壁には凹部２３ｂが穿設されており、この凹部２３ｂ内に、スイッチ２６のスイッチ投入杆２６ａが挿入されている。このスイッチ投入杆２６ａは、常に正立位置となるように図示しないバネ力で規制されている。そして、ジョグダイヤル２３が時計方向に回動され図３（ｂ）に示す限界位置まで来たとき、図４（ｂ）に示す様に、スイッチ投入杆２６ａは凹部２３ｂの周方向一方端壁に押されて傾倒し、頁更新（頁を前に進める更新）指示スイッチ信号が図示しない電子書籍制御部に出力される。

【0030】

また、ジョグダイヤル２３が反時計方向に回動され図３（ｃ）に示す限界位置まできたとき、図４（ｃ）に示す様に、スイッチ投入杆２６ａは凹部２３ｂの周方向他方端壁に押されて傾倒し、頁更新（頁を前に戻す更新）指示スイッチ信号が図示しない電子書籍制御部に出力される。

【0031】

図５は、上述した構成のジョグダイヤル機構２０を備えた折畳型電子書籍１を片手で持ち、ページ更新操作を行う状態を示した図である。ユーザは、電子書籍１を開き、中央下部の部分を、右手親指と人差し指の間に挟み持つ。この状態で、親指は丁度ジョグダイヤル２３の上に来ることになる。

【0032】

そして、頁を先に進める操作が必要になったときは、スベリ止め模様が外周部に刻設されているジョグダイヤル２３を時計方向Ａに回動する。これにより、ジョグダイヤル２３は図３（ｂ）及び図４（ｂ）に示す位置まで回動し、頁更新が行われる。その後、回動する力を少し弱めれば、ジョグダイヤル２３はバネ２４の弾発力によって元に戻り、スイッチ２６のスイッチ投入杆２６ａは正立位置に復帰する。

【0033】

頁を前に戻す操作が必要になったときは、ジョグダイヤル２３を反時計方向Ｂに回動する。これにより、ジョグダイヤル２３は図３（ｃ）及び図４（ｃ）に示す位置まで回動し、頁更新が行われる。同様に、回動する力を少し弱めれば、ジョグダイヤル２３はバネ２４の弾発力によって元に戻り、スイッチ２６のスイッチ投入杆２６ａは正立位置に復帰する。

【0034】

何頁も先の頁を見たい場合や、何頁も前の頁に戻りたい場合には、何回も連続して頁更新指示スイッチ信号が出力されるように、ジョグダイヤル２３の回動、復帰、回動、復帰を小刻みに繰り返すことで、目的の頁を迅速に表示させることができる。

【0035】

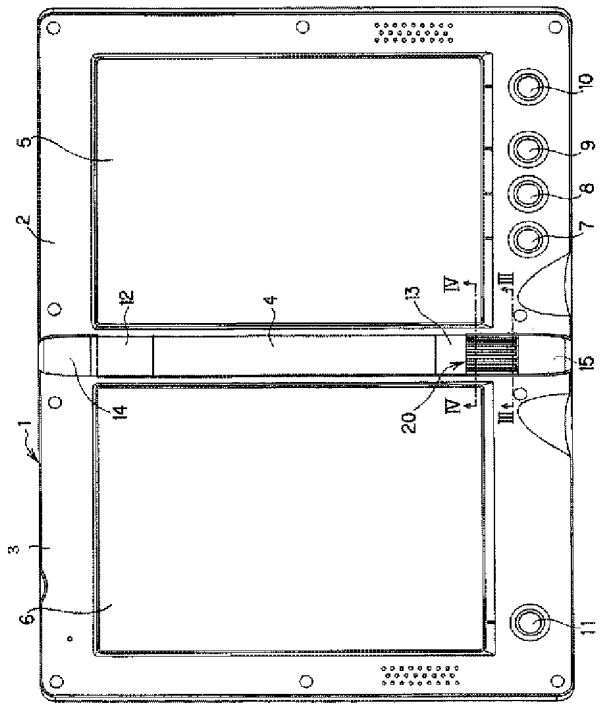
以上述べた様に、本実施形態によれば、ジョグダイヤル２３を用いて頁更新を行うことができるので、電子書籍１の片手操作が容易となり、電子書籍１の使い勝手を向上することができる。

【0036】

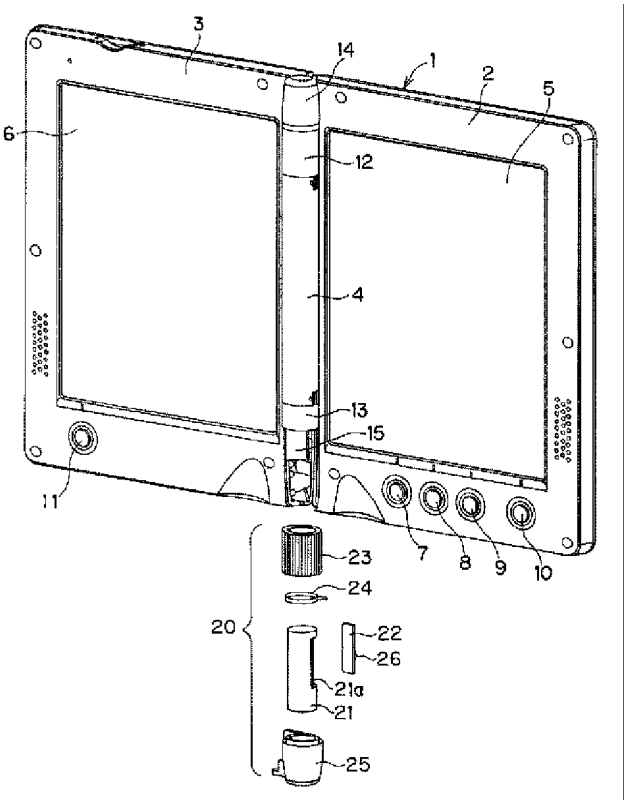
尚、上述した実施形態では、折畳型の電子書籍について述べたが、本発明は１枚板タイプの電子書籍にも適用可能である。この場合には、電子書籍を片手で持ったときに親指が当たる筐体箇所に上述したのと同様の構造を持つジョグダイヤルを設ければよい。

【産業上の利用可能性】
【0037】
本発明は、片手で保持し且つ片手操作によって容易に頁更新操作ができるという効果を奏し、電子書籍に適用すると有用である。
【図面の簡単な説明】
【0038】
【図1】本発明の一実施形態に係る折畳型の電子書籍を１８０°開いた状態の正面図
【図2】本発明の一実施形態に係る電子書籍のうちジョグダイヤル機構部分を分解した分解図
【図3】本発明の一実施形態に係る電子書籍の要部断面図であり、　（ａ）は図１のIII—III線位置の断面図　（ｂ）はジョグダイヤルを時計方向に回動した限界位置の断面図　（ｃ）はジョグダイヤルを反時計方向に回動した限界位置の断面図
【図4】本発明の一実施形態に係る電子書籍の要部断面図であり、　（ａ）は図１のIV—IV線位置の断面図　（ｂ）はジョグダイヤルを時計方向に回動した限界位置の断面図　（ｃ）はジョグダイヤルを反時計方向に回動した限界位置の断面図
【図5】本発明の一実施形態に係る折畳型電子書籍を片手で持って操作するときの斜視図
【符号の説明】
【0039】
１　電子書籍
２　右側本体部（固定側）
３　左側本体部（可動側）
４　電池ケース
５、６　記憶型液晶表示装置
２０　ジョグダイヤル機構部
２１　固定軸体
２２　電子基板
２３　ジョグダイヤル
２４　戻しバネ
２５　キャップ
２６　スイッチ
２６ａ　スイッチ投入杆

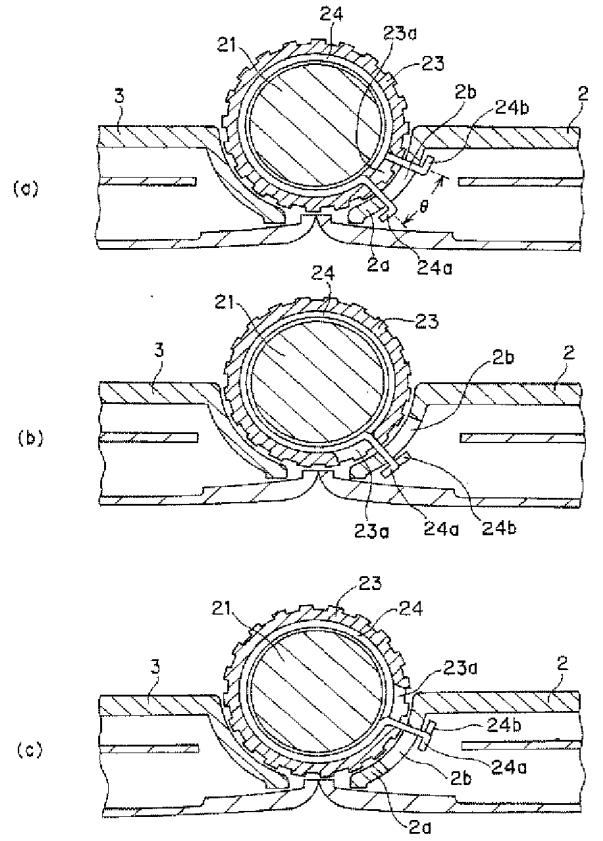
【図1】


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12
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14
15
20
III
IV

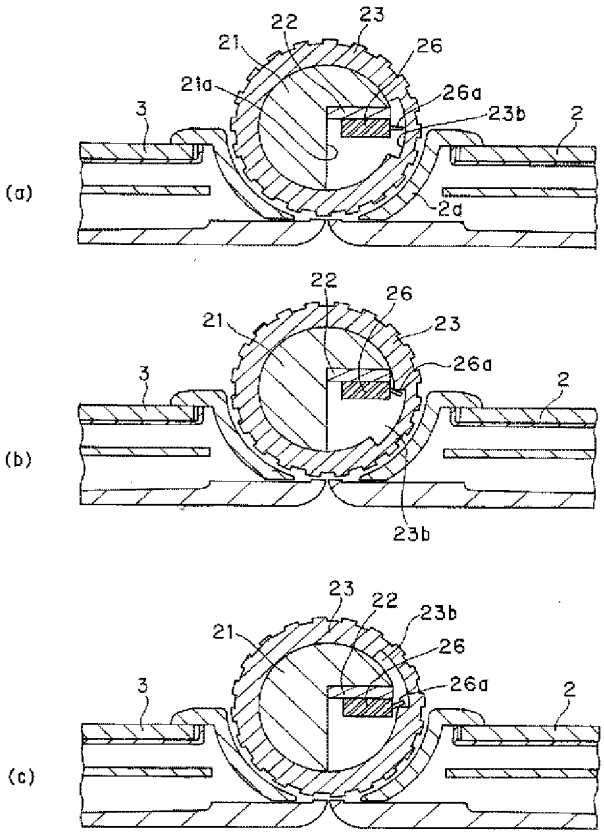
【図2】


1
2
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4
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12
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14
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21
21a
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23
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25
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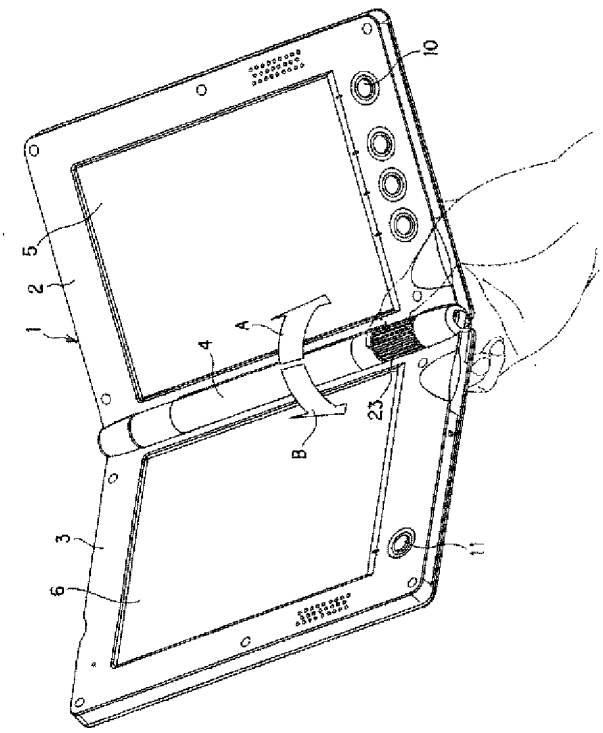
【図3】


(a)
(b)
(c)
2
2a
2b
3
21
23
23a
24
24a
24b
θ

【図4】


(a)
(b)
(c)
2
2a
3
21
21a
22
23
23b
26
26a

【図5】



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Ｆターム(参考) 5B020 DD00
5B075 ND03 PQ43 UU11
5E501 AA12 BA05 CA04 CB03 FA13 FB33

PATENT ABSTRACTS OF JAPAN

(11)Publication number : **2005-242436**
(43)Date of publication of application : **08.09.2005**

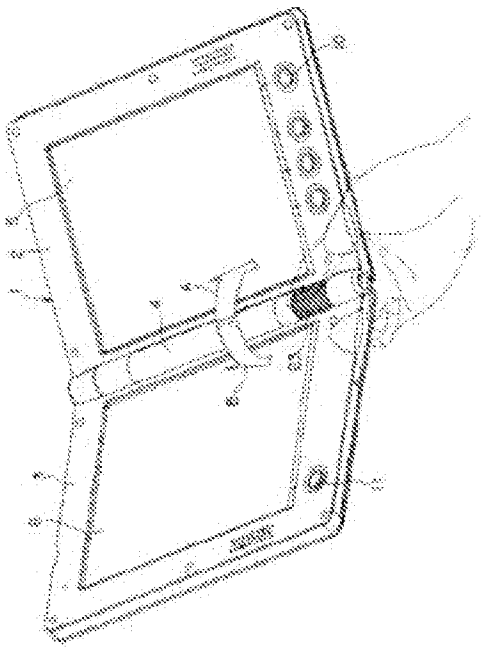
(51)Int.Cl. G06F 17/30
G06F 1/16
G06F 3/00
G06F 3/02

(21)Application number : **2004-047718**
(22)Date of filing : **24.02.2004**

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HIGUCHI TORU

(54) ELECTRONIC BOOK

(57)Abstract:
PROBLEM TO BE SOLVED: To easily perform a page updating operation without weakening strength to hold an electronic book with one hand.
SOLUTION: This electronic book comprises case bodies 2 and 3 in which plate-shaped display devices 5 and 6 for displaying text data by page units are stored; a jog dial 23 installed at a hinge part connecting the case bodies 2 and 3; a detection signal outputting means for outputting a detection signal at the time of detecting that the job dial 23 has been rotated to a predetermined position; and a control means for executing the page update of text data to be displayed at the display devices 5 and 6 when the detection signal is output from the detection signal outputting means. Thus, it is possible to execute the page update only by rotating the jog dial 23 with one hand, and to execute the page updating operation without weakening strength to hold the electronic book.



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CLAIMS

[Claim(s)]
[Claim 1]
A digital book comprising:
A housing which stores a plate-like display device which displays text data on a page unit.
A jog dial provided by some aforementioned housings.
A detecting signal outputting means which outputs a detecting signal when it detects that the aforementioned jog dial rotated to a predetermined position.
A control means which performs page updating of text data displayed on the aforementioned display device when the aforementioned detecting signal is outputted from the aforementioned detecting signal outputting means.

[Claim 2]
The digital book according to claim 1 having connected with hinges a housing which stores a display device of each surface, respectively so that opening and closing were possible, having folded [having had the 2nd page of the aforementioned display device,] it up, and considering it as a mold.
[Claim 3]
The digital book according to claim 2 having arranged the aforementioned jog dial into a portion of the aforementioned hinge.
[Claim 4]
The aforementioned detecting signal outputting means detects rotation of a clockwise rotation of the aforementioned jog dial, and counterclockwise rotation, When rotation to a predetermined position of the aforementioned clockwise rotation is detected by the aforementioned detecting signal outputting means as for the aforementioned control means. The digital book according to any one of claims 1 to 3 performing an update process returned with a page near at hand when an update process which can proceed a page first is performed and rotation to a predetermined position of the aforementioned counterclockwise rotation is detected by the aforementioned detecting signal outputting means.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[Field of the Invention]
[0001]
The present invention relates to a digital book and relates to the digital book which can perform page update operation easily single hand especially.
[Background of the Invention]
[0002]
The digital book (Electronic Book) carrying a memory type liquid crystal display is carrying out prescribed operation of the input key currently provided by the housing, reads 1 page or 2 pages among the text data of the books stored in the memory, and displays it on a memory type liquid crystal display. In this digital book, the displayed data of that page can remain without disappearing, and the user can read that text.
[0003]
Next, if the instruction which can proceed a page first is input from an input key, the text data of the following for for 2 1 page will be read from a memory, and will be displayed.
[0004]
Thus, the main operations in a digital book are page update operation, and, for this reason, the key which can proceed a page first, and the key returned with a page near at hand are provided at least by the housing of the digital book (see Patent Document 1).
[0005]
[Patent document 1] JP,H2001-255977,A
[Description of the Invention]
[Problem to be solved by the invention]
[0006]
When reading text data, walking around with a digital book, for example, holding to the strap of a train, on both sides of a digital book, it will have between the thumb of one hand, and an index finger. And when performing page update operation, a little thumb will be shifted and either of the keys which returns a page before the key or page which he can proceed first will be pushed. When performing this page update operation, it is necessary to float the thumb with a digital book slightly from a digital book, for this reason, the power which it has on both sides of a digital book becomes weak, and a possibility of dropping a digital book arises.
[0007]

There is the object of this invention in providing the digital book which can perform page update operation easily, without weakening the power which it has on both sides of a digital book single hand.
[Means for solving problem]
[0008]
The present invention is characterized by a digital book comprising the following.
A housing which stores a plate-like display device which displays text data on a page unit.
A jog dial provided by some aforementioned housings.
A detecting signal outputting means which outputs a detecting signal when it detects that the aforementioned jog dial rotated to a predetermined position.
A control means which performs page updating of text data displayed on the aforementioned display device when the aforementioned detecting signal is outputted from the aforementioned detecting signal outputting means.

[0009]
By this composition, since page update indication can be easily input from a jog dial by rotating operation with the thumb, the page update operation of the digital book which it had single hand becomes easy.
[0010]
In the digital book of the present invention, with hinges, the housing which stores the display device of each surface, respectively was connected so that opening and closing were possible, and it was folded [it had the 2nd page of the aforementioned display device, and] up, and it was considered as the mold.
[0011]
By this composition, the text data for 2 pages can be read, and since a display screen moreover hides when it folded up and keeps, protection of a display screen can be aimed at.
[0012]
With the digital book of the present invention, the aforementioned jog dial has been arranged into the portion of the aforementioned hinge.
[0013]
When the digital book of a hemming die is opened and it has single hand by this composition, the thumb comes to come to a jog dial portion exactly, and operation becomes still easier.
[0014]
The aforementioned detecting signal outputting means of the digital book of the present invention detects rotation of the clockwise rotation of the aforementioned jog dial, and counterclockwise rotation, The aforementioned control means performs the update process returned with a page near at hand, when the update process which can proceed a page first when rotation to the predetermined position of the aforementioned clockwise rotation is detected by the aforementioned detecting signal outputting means is performed and rotation to the predetermined position of the aforementioned counterclockwise rotation is detected by the aforementioned detecting signal outputting means.
[0015]
Operation becomes easy in order for what is necessary to be coming to change only the direction which rotates the next door where the position which performs operation which can proceed a page first, and operation returned with a page near at hand by this composition is the same, and a jog dial.

[Effect of the Invention]
[0016]
According to the present invention, a possibility of page update operation becoming easy and moreover dropping a digital book only to rotating slightly the jog dial which carried the thumb in the position since page update operation can be performed is lost.
[Best Mode of Carrying Out the Invention]
[0017]
Hereafter, with reference to Drawings, it describes about one embodiment of the present invention.
[0018]
Fig.1 is a front view of the hemming-die digital book concerning one embodiment of the present invention, and shows the state where 180 degrees was opened. This digital book 1 is provided with the following.
It comprises three main housings and is the rectangular plate-like right-hand side body part 2.
The rectangular plate-like left-hand side body part 3.
The cylindrical cell case 4 provided among both.

[0019]
The thin display 5 and 6, for example, memory type liquid crystal devices, is carried in the right-hand side body part 2 and the left-hand side body part 3, respectively, the four manual operation buttons 7, 8, 9, and 10 are provided by the lower edge part of the right-hand side body part 2, and the one manual operation button 11 is provided by the lower left corner of the left-hand side body part 3.
[0020]
The manual operation button 11 provided by the lower left corner of the left-hand side body part 3 is a key which can proceed a page first, and the manual operation button 10 provided by the lower right corner of the right-hand side body part 2 is a key returned with a page near at hand. These manual operation buttons 10 and 11 are for making easy page update operation when opening and reading this digital book 1 with both hands.
[0021]
The two hinge regions 12 and 13 separated up and down protrude on the left side of the right-hand side body part 2, and the two hinge regions 14 and 15 (as for the hinge 15 (refer to Fig.2), the outer surface is covered by the below-mentioned jog dial mechanism 20.) separated up and down also to the right-hand side of the left-hand side body part 3 protrude. And the right-hand side body part 2 and the left-hand side body part 3 are combined by connecting the right-hand side hinge regions 12 and 13 and the left-hand side hinge regions 14 and 15, enabling respectively free rotation, enabling free opening and closing.
[0022]
In this digital book 1, the cylindrical cell case 4 is attached to the cylindrical free space formed between the hinge regions 12 and 13 when combining the right-hand side body part 2 and the left-hand side body part 3, and the space saving of the digital book 1 is attained. And the jog dial mechanism 20 in which page update operation can be performed at the place which overlaps with the hinge region 15 single hand is provided.
[0023]
Fig.2 is the figure which disassembled the jog dial mechanism 20 from the digital book 1. The jog dial mechanism 20 is provided with the following.

The cylindrical fixing axis 21 fixed to the hinge region 13 which protruded on a housing of the right-hand side body part 2 integrally.
The electronic substrate 22 attached to the cutting part 21a of the fixing axis 21.
The jog dial 23 by which outer fitting is carried out to the fixing axis 21 rotatable.
It is the wrap cap member 25 about the return spring 24 of coil shape which gives power of outer fitting being carried out to the fixing axis 21, and always returning a rotating position of the jog dial 23 to a predetermined position to the jog dial 23, and an end of the jog dial mechanism 20.
The 2-way detection type switch 26 is attached to the electronic substrate 22. In this embodiment, this switch 26 functions as a detecting signal outputting means which outputs a detecting signal, when it detects that the jog dial 23 rotated to the predetermined position.
[0024]
Fig.3 (a) is an III-III line cross sectional view of Fig.1, and is a cross sectional view of the part where the return spring 24 is arranged among the jog dials 23.Hole 2b in alignment with a circumferential direction is drilled by the circular arc wall 2a of the right-hand side body part 2 in which the hole 23a which is along circumferentially is drilled by the peripheral wall of the cylindrical jog dial 23, and the jog dial 23 ****s. The difference angle theta to the medial axis of the hole 23a and the jog dial 23 of 2b is the same, and the end wall of the hole 23b and another side of 2b also aligns in the position in which one end wall of the hoop direction of the hole 23a aligned at the end wall of hole 2b.
[0025]
The both ends 24a and 24b of the coiled return spring 24 which outer fitting was carried out to the fixing axis 21, and was stored inside the jog dial 23 are projected in the right-hand side body part 2 through the hole 23a and 2b. The both ends 24a and 24b of the return spring 24 are energized in the extension direction by spring resiliency, and the hole 23a and hole 2b are restricted by this spring resiliency by the ends 24a and 24b in an aligning position. The tip of the both ends 24a and 24b is bent in the outside direction of hole 2b so that it may not be easily freed from hole 2b.
[0026]
In this state, if the jog dial 23 is clockwise rotated on Fig.3 (a), one end 24b of the spring 24 pushed on the end wall of the hole 23a will also resist spring resiliency, and will move clockwise. And if one end 24b of the spring 24 comes to the position to which the other end wall of hole 2b which is locking the end 24a of another side is abutted as shown in Fig.3 (b), rotation movement beyond it will be prevented and the jog dial 23 will stop. If it stops giving rotational force to the jog dial 23 and the jog dial 23 is made free, it will return to the state of Fig.3 (a) according to the spring force of the return spring 24.
[0027]
On the contrary, if the jog dial 23 is counterclockwise rotated on Fig.3 (a), the end 24a of another side of the spring 24 pushed on the end wall of the hole 23a will also resist spring resiliency, and will move counterclockwise. And if the end 24a of another side of the spring 24 comes to the position to which the end wall of hole 2b which is locking one end 24b is abutted as shown in Fig.3 (c), rotation movement beyond it will be prevented and the jog dial 23 will stop.
[0028]
Fig.4 (a) is an IV-IV line cross sectional view of Fig.1, and is a cross sectional view of the position of the switch 26 attached to the axis 21 fixed to the right-hand side body part 2 via the hinge 13.A state in case the jog dial 23 is in the position shown in Fig.3 (a) is shown in Fig.4 (a), and a state when it is in the position corresponding to Fig.3 (b) and (c) is shown in Fig.4 (b) and

(c), respectively.
[0029]
The concave part 23b is drilled by the wall of the jog dial 23, and the switch supply lever 26a of the switch 26 is inserted into this concave part 23b. This switch supply lever 26a is restricted by the spring force which is not illustrated so that it may always become an erection position. And when it comes to the limit position which the jog dial 23 rotates clockwise and is shown in Fig.3 (b), As shown in Fig.4 (b), it is pushed on the hoop direction one end wall of the concave part 23b, and concentrates, and the switch supply lever 26a is outputted to the digital book control part which a page updating (updating which can proceed with page near at hand) directing switch signal does not illustrate.
[0030]
When it comes to the limit position which the jog dial 23 rotates counterclockwise and is shown in Fig.3 (c), As shown in Fig.4 (c), it is pushed on the hoop direction another side end wall of the concave part 23b, and concentrates, and the switch supply lever 26a is outputted to the digital book control part which a page updating (updating returned with page near at hand) directing switch signal does not illustrate.
[0031]
Fig.5 is a figure showing the state of having the hemming-die digital book 1 provided with the jog dial mechanism 20 of composition of having mentioned above single hand, and performing page update operation. A user opens the digital book 1 and has on both sides of the portion of the central lower part between a right hand thumb and an index finger. The thumb will come by this state on the jog dial 23 exactly.
[0032]
And when the operation which can proceed a page first is needed, a slide stop pattern rotates the jog dial 23 currently engraved on the outer peripheral part to the clockwise rotation A. Thereby, the jog dial 23 rotates to the position shown in Fig.3 (b) and Fig.4 (b), and page updating is performed.Then, if slight power to rotate is weakened, the jog dial 23 will return by the resiliency of the spring 24, and the switch supply lever 26a of the switch 26 will return to an erection position.
[0033]
When the operation returned with a page near at hand is needed, the jog dial 23 is rotated to the counterclockwise rotation B. Thereby, the jog dial 23 rotates to the position shown in Fig.3 (c) and Fig.4 (c), and page updating is performed.If similarly slight power to rotate is weakened, the jog dial 23 will return by the resiliency of the spring 24, and the switch supply lever 26a of the switch 26 will return to an erection position.
[0034]
The target page can be promptly displayed [the case where he would like to see a numbers of pages of previous page, and] by repeating gradually rotation of the jog dial 23, a return, rotation, and a return for numbers of pages to return to a front page so that a page update indication switch signal may be outputted continuously repeatedly.
[0035]
Since page updating can be performed using the jog dial 23 according to this embodiment as stated above, one hand operation of the digital book 1 becomes easy, and can improve the usability of the digital book 1.
[0036]
In the embodiment mentioned above, although the digital book of the hemming die was

described, the present invention is applicable also to a single board type digital book. In this case, what is necessary is just to provide a jog dial with the structure same with having mentioned above in the housing part where the thumb hits, when it has a digital book single hand.

[Industrial applicability]

[0037]

If the present invention is held single hand, and generates the effect that page update operation can be easily performed by one hand operation and applies it to a digital book, it is useful.

[Brief Description of the Drawings]

[0038]

[Drawing 1]The front view in the state where 180 degrees of digital books of the hemming die concerning one embodiment of the present invention were opened

[Drawing 2]The exploded view which decomposed the jog dial working part among the digital books concerning one embodiment of the present invention

[Drawing 3]It is an essential part cross sectional view of the digital book concerning one embodiment of the present invention, As for (a), in cross sectional view [of the III-III line position of Fig.1] (b), cross sectional view [of a limit position] (c) which rotated the jog dial clockwise is the cross sectional view of a limit position which rotated the jog dial counterclockwise.

[Drawing 4]It is an essential part cross sectional view of the digital book concerning one embodiment of the present invention, As for (a), in cross sectional view [of the IV-IV line position of Fig.1] (b), cross sectional view [of a limit position] (c) which rotated the jog dial clockwise is the cross sectional view of a limit position which rotated the jog dial counterclockwise.

[Drawing 5]A perspective view when having and operating the hemming-die digital book concerning one embodiment of the present invention single hand

[Explanations of letters or numerals]

[0039]

1 Digital book
2 Right-hand side body part (fixed side)
3 Left-hand side body part (movable side)
4 Cell case
5 and 6 Memory type liquid crystal display
20 Jog dial mechanism part
21 Fixing axis
22 Electronic substrate
23 Jog dial
24 Return spring
25 Cap
26 Switch
26a Switch supply lever

[Translation done.]

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TECHNICAL FIELD

[Field of the Invention]
[0001]
The present invention relates to a digital book and relates to the digital book which can perform page update operation easily single hand especially.

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PRIOR ART

[Background of the Invention]
[0002]
The digital book (Electronic Book) carrying a memory type liquid crystal display is carrying out prescribed operation of the input key currently provided by the housing, reads 1 page or 2 pages among the text data of the books stored in the memory, and displays it on a memory type liquid crystal display. In this digital book, the displayed data of that page can remain without disappearing, and the user can read that text.
[0003]
Next, if the instruction which can proceed a page first is input from an input key, the text data of the following for for 2 1 page will be read from a memory, and will be displayed.
[0004]

Thus, the main operations in a digital book are page update operation, and, for this reason, the key which can proceed a page first, and the key returned with a page near at hand are provided at least by the housing of the digital book (see Patent Document 1).
[0005]
[Patent document 1] JP,H2001-255977,A

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EFFECT OF THE INVENTION

[Effect of the Invention]
[0016]
According to the present invention, a possibility of page update operation becoming easy and moreover dropping a digital book only to rotating slightly the jog dial which carried the thumb in the position since page update operation can be performed is lost.

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TECHNICAL PROBLEM

[Problem to be solved by the invention]
[0006]

When reading text data, walking around with a digital book, for example, holding to the strap of a train, on both sides of a digital book, it will have between the thumb of one hand, and an index finger. And when performing page update operation, a little thumb will be shifted and either of the keys which returns a page before the key or page which he can proceed first will be pushed. When performing this page update operation, it is necessary to float the thumb with a digital book slightly from a digital book, for this reason, the power which it has on both sides of a digital book becomes weak, and a possibility of dropping a digital book arises.
[0007]
There is the object of this invention in providing the digital book which can perform page update operation easily, without weakening the power which it has on both sides of a digital book single hand.

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MEANS

[Means for solving problem]
[0008]
The present invention is characterized by a digital book comprising the following.
A housing which stores a plate-like display device which displays text data on a page unit.
A jog dial provided by some aforementioned housings.
A detecting signal outputting means which outputs a detecting signal when it detects that the aforementioned jog dial rotated to a predetermined position.
A control means which performs page updating of text data displayed on the aforementioned display device when the aforementioned detecting signal is outputted from the aforementioned detecting signal outputting means.

[0009]
By this composition, since page update indication can be easily input from a jog dial by rotating operation with the thumb, the page update operation of the digital book which it had single hand becomes easy.
[0010]

In the digital book of the present invention, with hinges, the housing which stores the display device of each surface, respectively was connected so that opening and closing were possible, and it was folded [it had the 2nd page of the aforementioned display device, and] up, and it was considered as the mold.
[0011]
By this composition, the text data for 2 pages can be read, and since a display screen moreover hides when it folded up and keeps, protection of a display screen can be aimed at.
[0012]
With the digital book of the present invention, the aforementioned jog dial has been arranged into the portion of the aforementioned hinge.
[0013]
When the digital book of a hemming die is opened and it has single hand by this composition, the thumb comes to come to a jog dial portion exactly, and operation becomes still easier.
[0014]
The aforementioned detecting signal outputting means of the digital book of the present invention detects rotation of the clockwise rotation of the aforementioned jog dial, and counterclockwise rotation, The aforementioned control means performs the update process returned with a page near at hand, when the update process which can proceed a page first when rotation to the predetermined position of the aforementioned clockwise rotation is detected by the aforementioned detecting signal outputting means is performed and rotation to the predetermined position of the aforementioned counterclockwise rotation is detected by the aforementioned detecting signal outputting means.
[0015]
Operation becomes easy in order for what is necessary to be coming to change only the direction which rotates the next door where the position which performs operation which can proceed a page first, and operation returned with a page near at hand by this composition is the same, and a jog dial.

[Translation done.]

* NOTICES *

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1.This document has been translated by computer. So the translation may not reflect the original precisely.
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3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[0038]

[Drawing 1]The front view in the state where 180 degrees of digital books of the hemming die concerning one embodiment of the present invention were opened
[Drawing 2]The exploded view which decomposed the jog dial working part among the digital books concerning one embodiment of the present invention
[Drawing 3]It is an essential part cross sectional view of the digital book concerning one embodiment of the present invention, As for (a), in cross sectional view [of the III-III line position of Fig.1] (b), cross sectional view [of a limit position] (c) which rotated the jog dial clockwise is the cross sectional view of a limit position which rotated the jog dial counterclockwise.
[Drawing 4]It is an essential part cross sectional view of the digital book concerning one embodiment of the present invention, As for (a), in cross sectional view [of the IV-IV line position of Fig.1] (b), cross sectional view [of a limit position] (c) which rotated the jog dial clockwise is the cross sectional view of a limit position which rotated the jog dial counterclockwise.
[Drawing 5]A perspective view when having and operating the hemming-die digital book concerning one embodiment of the present invention single hand

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[Translation done.]

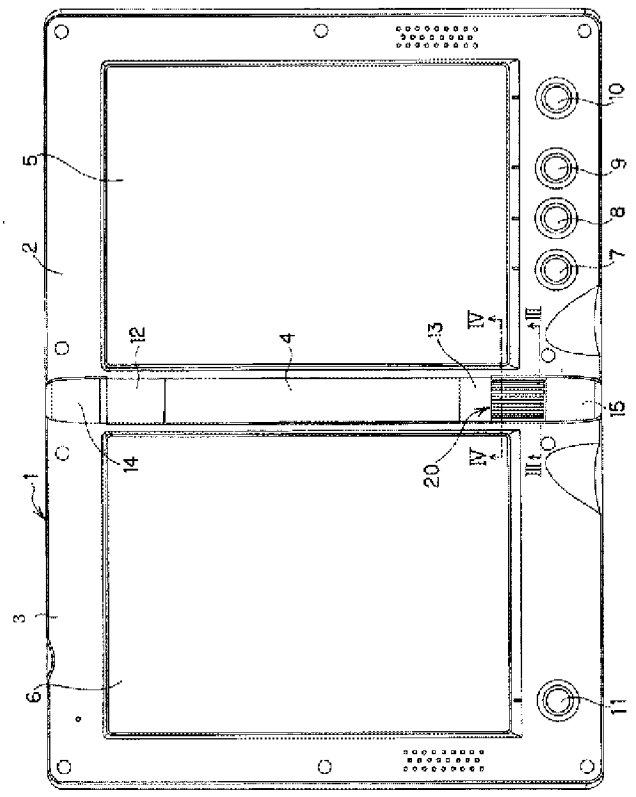
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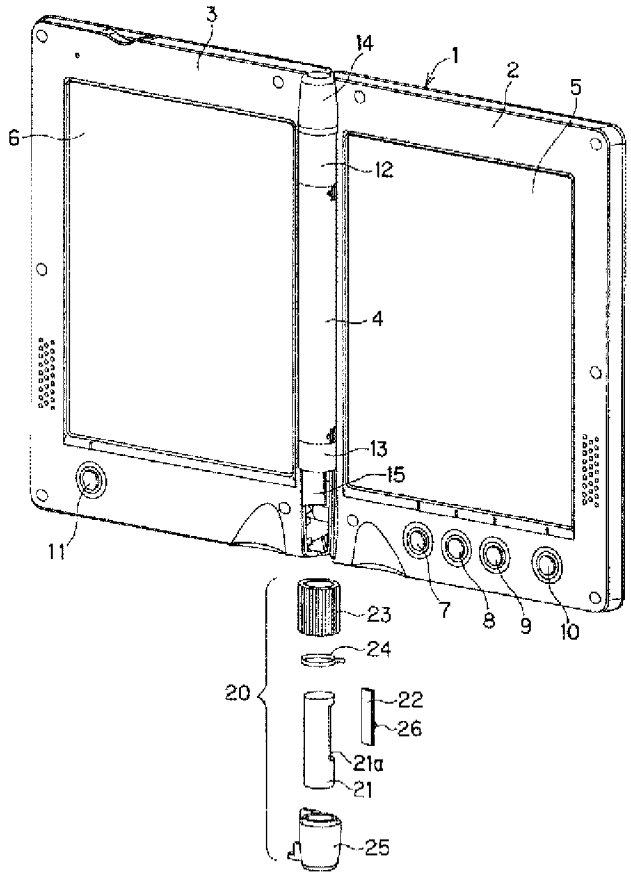
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DRAWINGS

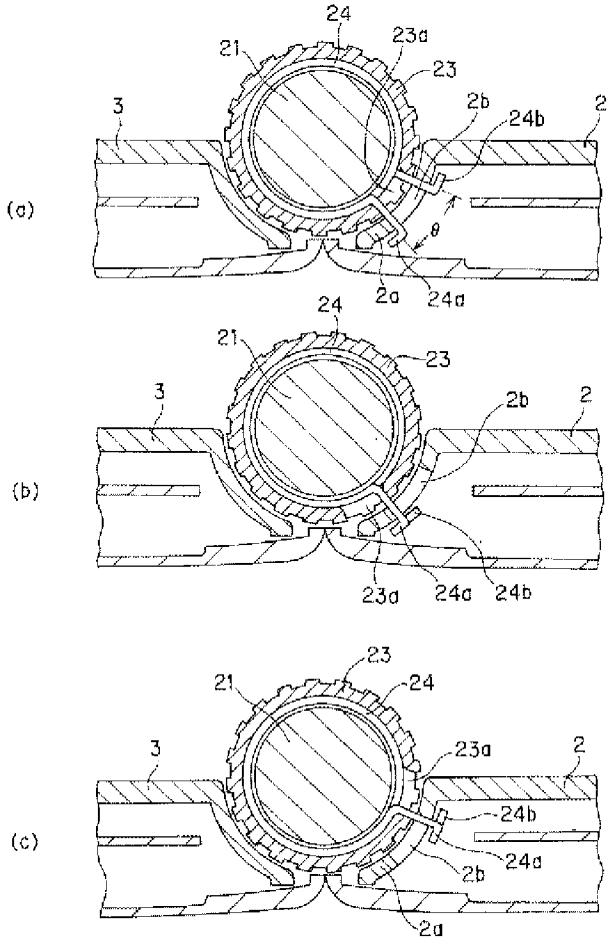
[Drawing 1]



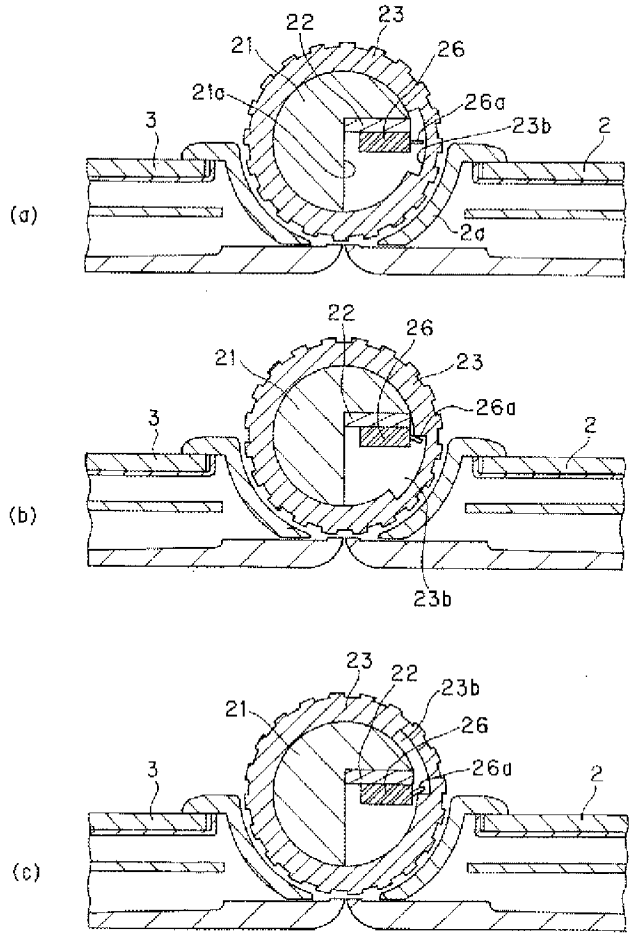
[Drawing 2]



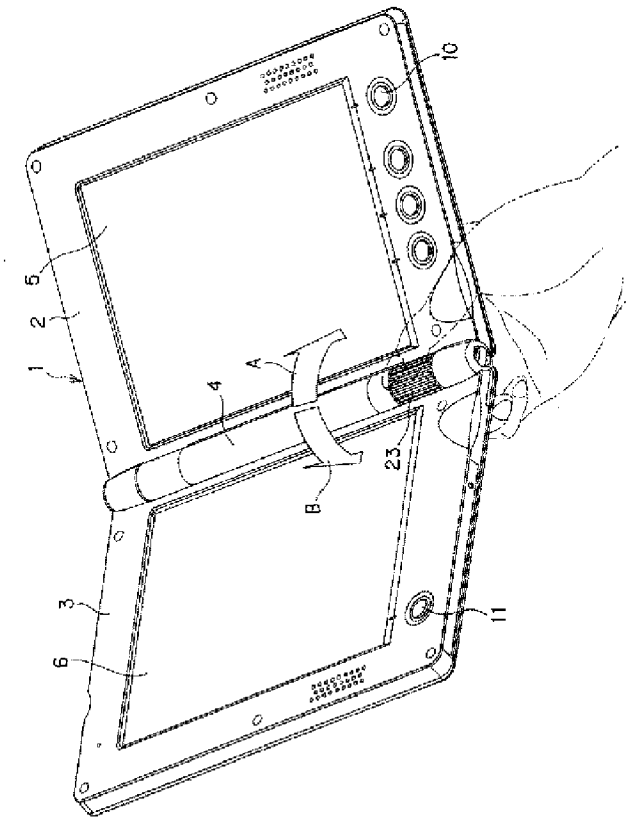
[Drawing 3]


(a)
24
21
23a
23
3
2b
24b
2
θ
2a
24a
(b)
24
21
23
3
2b
2
23a
24a
24b
(c)
23
21
24
3
23a
2
24b
24a
2b
2a

[Drawing 4]


(a)
22
23
21
26
21a
26a
23b
2
3
2a
(b)
22
26
21
23
26a
3
2
23b
(c)
23
22
23b
21
26
26a
3
2

[Drawing 5]



[Translation done.]

(19)日本国特許庁（ＪＰ）　(12)**公開特許公報（Ａ）**　(11)特許出願公開番号
特開2001－167211
（P2001－167211A）
(43)公開日　平成13年６月22日(2001.6.22)

(51)Int.Cl.[7]	識別記号	ＦＩ		テーマコード（参考）
Ｇ０６Ｆ　19/00		Ｃ０４Ｇ　1/00	３１４Ｚ	２Ｆ００２
Ｇ０４Ｇ　1/00	３１４	Ｃ０６Ｋ　17/00	Ｌ	３Ｅ０４０
Ｇ０６Ｋ　17/00		Ｃ０６Ｆ　15/30	３５０Ｚ	３Ｅ０４４
Ｇ０７Ｆ　19/00		Ｃ０７Ｄ　9/00	４７６	５Ｂ０５５
7/08		Ｃ０７Ｆ　7/08	Ｒ	５Ｂ０５８

審査請求　未請求　請求項の数９　ＯＬ　（全 32 頁）　最終頁に続く

(21)出願番号　特願平11－347885

(22)出願日　平成11年12月７日(1999.12.7)

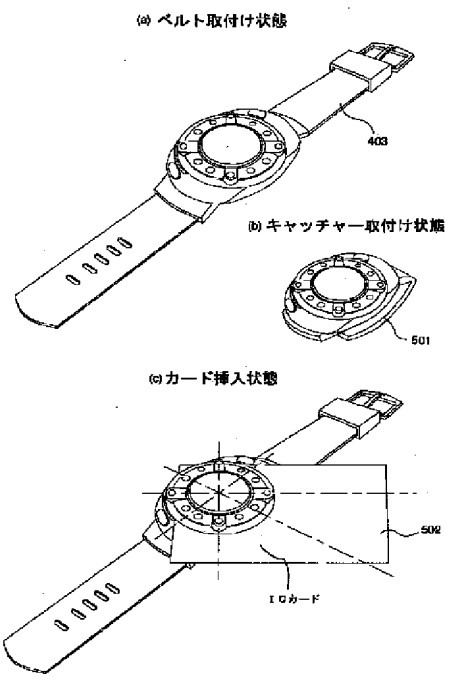
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最終頁に続く

(54)【発明の名称】　ＩＣカード用端末

(57)【要約】
【課題】　各種の電子通貨システム、クレジットカードシステム等に共通に使用することができるマルチアプリケーションＩＣカードを扱うための極めて小型で携帯性に優れたＩＣカード用端末。
【解決手段】　端末本体部がベルトにより腕に取り付ける、あるいは、キャッチャーにより鞄に取り付けることが可能で時刻表示が可能な時計型に構成される。本体部上面に表示部が設けられ、側面に回転可能なＩＣカード挿入口が設けられ、複数の方向からＩＣカードの挿入を可能としている。表示部の周囲には、回転可能なベゼル部が備えられ、ベゼル部を回転させることにより、前記本体部内及びＩＣカード内に格納されている利用可能なアプリケーションの切り替えを行うことができる。

図５



【特許請求の範囲】
【請求項１】　電子通貨システム、複数のクレジットカードシステムに共通に使用することができるマルチアプリケーションＩＣカードを扱うＩＣカード用端末において、端末本体部がベルトにより腕に取り付ける、あるいは、キャッチャーにより鞄に取り付けることが可能で時刻表示が可能な時計型に構成され、本体部上面に表示部が設けられ、側面に回転可能なＩＣカード挿入口が設けられ、複数の方向からＩＣカードの挿入を可能としたことを特徴とするＩＣカード用端末。
【請求項２】　ＩＣカードが挿入されたとき、ＩＣカード上の接点が本体部の内部に収納された状態になることを特徴とする請求項１記載のＩＣカード用端末。
【請求項３】　前記ＩＣカード挿入口の入り口には、挿入口を開くツマミを持つ蓋が備えられることを特徴とする請求項１または２記載のＩＣカード用端末。
【請求項４】　前記本体部上部に、前記表示部の周囲に回転可能なベゼル部を備え、ベゼル部を回転させることにより、前記本体部内及びＩＣカード内に格納されている利用可能なアプリケーションの切り替えを行うことを特徴とする請求項１、２または３記載のＩＣカード用端末。
【請求項５】　電子通貨システム、複数のクレジットカードシステムに共通に使用することができるマルチアプリケーションＩＣカードを扱うＩＣカード用端末において、端末本体部上面に表示部が設けられ、側面にロータリースイッチを持つ回転可能な円筒部が設けられ、端末本体部下面にＩＣカード挿入口が設けられてキーホルダタイプに構成されたことを特徴とするＩＣカード用端末。
【請求項６】　前記回転可能な円筒部に複数のアプリケーションを記したラベルが貼付されたことを特徴とする請求項５記載のＩＣカード用端末。
【請求項７】　前記回転可能な円筒部は、２重リングにより構成され、さらに、端部に決定ボタンが備えられたことを特徴とする請求項５または６記載のＩＣカード用端末。
【請求項８】　前記表示部の表示が反転可能であることを特徴とする請求項５、６または７記載のＩＣカード用端末。
【請求項９】　電子通貨システム、複数のクレジットカードシステムに共通に使用することができるマルチアプリケーションＩＣカードを扱うＩＣカード用端末において、端末本体部が、周辺部を構成するフレームと、該フレームの上下に設けられるケースによりペンダント型に構成され、端末本体部上面に表示部と、ボタン式十字カーソルと、決定ボタンとが設けられ、端末本体部側面にＩＣカード挿入口が設けられたことを特徴とするＩＣカード用端末。
【発明の詳細な説明】
【０００１】
【発明の属する技術分野】本発明は、ＩＣカード用端末に係り、特に、複数のアプリケーションが格納されたＩＣカードを扱うことが可能なＩＣカード用端末に関する。
【０００２】
【従来の技術】近年、ＩＣカードを使用する各種の電子通貨システム、ＩＣカードを使用する各種のクレジットカードシステムが提案されている。これらのシステムに使用するＩＣカードは、その内部に通信機能を有するマイクロプロセッサと、処理プログラム、電子通貨の残額、カードの使用により与えられてその点数が所定値となると所定の金品を受け取ることができるポイントを格納するＥＥＰＲＯＭ等によるメモリとを備えて構成される。そして、電子通貨に使用するＩＣカードは、銀行、商店、個人の住宅等に備えられる端末を通信回線を介して任意に接続可能に構成される電子通貨システムを介して、また、専用の端末を使用することにより、他のＩＣカードとの間で、電子通貨の出し入れが可能である。また、クレジットのために使用するＩＣカードは、商店等に備えられる端末を介してクレジット会社からのカードの正当性の確認を受け、商品購入等の処理後に前述のポイントが格納される。
【０００３】そして、前述したような各種のシステムに対して、１枚のＩＣカードで対応可能としたマルチアプリケーションＩＣカードも提案されている。
【０００４】なお、この種のマルチアプリケーションＩＣカード、及び、マルチアプリケーションＩＣカードを使用するシステムに関する従来技術として、例えば、特開平１１－３９４４５号公報等に記載された技術が知られている。
【０００５】
【発明が解決しようとする課題】前述で提案されている各種の電子通貨システム、各種のクレジットカードシステムに共通なマルチアプリケーションＩＣカードは、金融機関、商店等で使用することだけを考えれば、１枚のＩＣカードを持ち歩くだけで済むので、非常に携帯性のよいものであるということができる。しかし、使用者は、外出先等でＩＣカード内の情報を確認したいという要求を持っており、このために、小型で携帯性に優れた端末が必要である。
【０００６】本発明の目的は、前述した各種の電子通貨システム、クレジットカードシステム等に共通に使用することができるマルチアプリケーションＩＣカードを扱うための小型で携帯性に優れたＩＣカード用端末を提供することにある。
【０００７】
【課題を解決するための手段】本発明によれば前記目的は、電子通貨システム、複数のクレジットカードシステムに共通に使用することができるマルチアプリケーショ

ンＩＣカードを扱うＩＣカード用端末において、端末本体部がベルトにより腕に取り付ける、あるいは、キャッチャーにより鞄に取り付けることが可能で時刻表示が可能な時計型に構成され、本体部上面に表示部が設けられ、側面に回転可能なＩＣカード挿入口が設けられ、複数の方向からＩＣカードの挿入を可能としたことにより達成される。

【０００８】また、前記目的は、ＩＣカードが挿入されたとき、ＩＣカード上の接点が本体部の内部に収納された状態になることにより、また、前記ＩＣカード挿入口の入り口には、挿入口を開くツマミを持つ蓋が備えられることにより、また、前記本体部上部に、前記表示部の周囲に回転可能なベゼル部を備え、ベゼル部を回転させることにより、前記本体部内及びＩＣカード内に格納されている利用可能なアプリケーションの切り替えを行うことにより達成される。

【０００９】また、前記目的は、電子通貨システム、複数のクレジットカードシステムに共通に使用することができるマルチアプリケーションＩＣカードを扱うＩＣカード用端末において、端末本体部上面に表示部が設けられ、側面にロータリースイッチを持つ回転可能な円筒部が設けられ、端末本体部下面にＩＣカード挿入口が設けられてキーホルダタイプに構成されたことにより達成される。

【００１０】また、前記目的は、前記回転可能な円筒部に複数のアプリケーションを記したラベルが貼付されたことにより、また、前記回転可能な円筒部が、２重リングにより構成され、さらに、端部に決定ボタンが備えられたことにより、また、前記表示部の表示が反転可能であることにより達成される。

【００１１】また、前記目的は、電子通貨システム、複数のクレジットカードシステムに共通に使用することができるマルチアプリケーションＩＣカードを扱うＩＣカード用端末において、端末本体部が、周辺部を構成するフレームと、該フレームの上下に設けられるケースによりペンダント型に構成され、端末本体部上面に表示部と、ボタン式十字カーソルと、決定ボタンとが設けられ、端末本体部側面にＩＣカード挿入口が設けられたことにより達成される。

【００１２】

【発明の実施の形態】以下、本発明によるＩＣカード用端末の実施形態を図面により詳細に説明する。

【００１３】図１は本発明の第１の実施形態によるＩＣカード用端末の外観を示す斜視図、図２は第１の実施形態によるＩＣカード端末の外観を示す４面図、図３は第１の実施形態によるＩＣカード用端末の断面図、図４は第１の実施形態によるＩＣカード用端末の全体の構造を説明する分解斜視図である。図１～図４において、１０１は本体上ケース、１０２は回転カードスロット、１０３はベゼルベース部、１０４はＯＫボタン、１０５はＣボタン、１０６はベゼル部、１０７は機能／アプリケーション設定マーク、１０８はイシュアーアプリケーションマーク貼り付け部、１０９はアプリケーション選択マーク、１１０はＬＣＤレンズ、１１１は本体下ケース、１１２は電池交換用蓋、１１３はベルト取り付け部、１１４はベルト取り付け穴、２０１はゴミ取り出し穴、３０１はＬＣＤユニット、３０２はＬＣＤユニットケース、３０３はメイン基板、３０４はインタフェース基板、３０５は接点リング部、３０６、３０７は回転接点部、３０８はＩＣ接点部、３０９は電池、３１０は回転カードスロット、３１１は回転ベース部、４０１は回転スロットユニット、４０２は回転ロックボタン、４０３はベルト、４０４はベルト取り付けピンである。

【００１４】本発明の第１の実施形態は、図１（ａ）に示す上面斜視図、図１（ｂ）に示す裏面斜視図、図２に示す４面図から判るように、腕時計等の小型の時計に適用したものである。そして、図示ＩＣカード用端末は、図１に示すように、本体上ケース１０１と本体下ケース１１１とにより構成される本体部の上に、回転可能に構成されるベゼルベース部１０３、ベゼル部１０６を設け、ベゼルベース部１０３と本体上ケース１０１との間に図示しないＩＣカードを挿入することのできる回転カードスロット３１０を形成して構成されている。本体上ケース１０１のベゼルベース部１０３の外側の位置には、操作用のＯＫボタン１０４とＣ（クリア）ボタン１０５とが配置され、ベゼルベース部１０３の側面にはアプリケーション選択マーク１０９が配置されている。また、円形に形成されるベゼル部１０３の内側部はＬＣＤレンズ１１０が配置され、ベゼル部１０３の周囲には、その機能については後述する機能／アプリケーション設定マーク１０７とイシュアーアプリケーションマーク貼り付け部１０８とが配置されている。さらに、図示ＩＣカード用端末は、その裏面側の本体下ケース１１１に電池交換用蓋１１２が設けられると共に、図示しないベルトを連結するベルト取り付け穴１１４を有するベルト取り付け部１１３が設けられて構成される。また、回転カードスロット３１０の最奥部には、ゴミ排出用のゴミ取りだし穴２０１が設けられている。

【００１５】本発明の第１の実施形態によるＩＣカード用端末の内部には、図３に示す断面図に示すように、ＬＣＤユニットケース３０２に納められたＬＣＤユニット３０１、メイン基板３０３、メイン基板３０３と挿入されたＩＣカードとの接続を行うＩＣ接点部３０８、メイン基板３０３と他の基板との接続を行う接点リング部３０５、回転接点部３０６、３０７、インタフェース基板３０４、電池３０９、回転ベース部３１１が収納されている。また、回転カードスロット３１０の内部は、回転カードスロット３１０として構成される。

【００１６】前述で説明した本発明の第１の実施形態を構成する各部材の組み立て状況を分解斜視図として示し

ているのが図４であり、図４において、ＬＣＤレンズ１１０から回転ベース部３１１までの部分が回転スロットユニット４０１を構成している。この回転スロットユニット４０１のベゼル部１０６から回転カードスロット３１０までの部材は、ＩＣカードの挿入方向を変更する場合に回転可能に構成され、また、ベゼル部１０６から回転接点部３０７までの部材が、カード挿入後のアプリケーション選択等の場合に回転可能である。

【００１７】図４には、本発明の第１の実施形態を、通常腕時計として使用することが可能なように、ベルト４０３にＩＣカード用端末を取り付けるように示している。ＩＣカード用端末のベルト４０３への取り付けは、前述で説明した本体下ケース１１１のベルト取り付け部１１３のベルト取り付け穴１１４とベルト取り付けピン４０４とにより行われる。

【００１８】図５は本発明の第１の実施形態によるＩＣカード用端末の通常の使用状態とＩＣカードの挿入状態とを説明する図、図６は本発明の第１の実施形態によるＩＣカード用端末を腕に付けてＩＣカードを挿入した状態とＩＣカードの挿入方向のバリエーションについて説明する図、図７はカードスロットの挿入方向について説明する図、図８はベゼル部１０３を回転させてアプリケーションを選択することを説明する図、図９はカードスロットに対する防水防塵機構の構成について説明する図、図１０はＩＣカードの挿入方向の他の例について説明する図である。図５～図１０において、５０１はキャッチャー、５０２はＩＣカード、７０１、７０２はカード端支持部材、９０１は防水防塵蓋ツマミ、９０２は上下スライド防水防塵蓋、９０３は上下バネユニット、１００１は挿入用ガイドであり、他の符号は図１～図４の場合と同一である。

【００１９】本発明の第１の実施形態によるＩＣカード用端末は、ベルト４０３に取り付けられたとき、図５（ａ）に示すような状態となり、ＬＣＤユニット３０１に時計情報を表示させて、通常、腕時計として使用することができ、また、図５（ｂ）に示すように、キャッチャー５０１に取り付けることにより、鞄、パンツのベルト等に取り付けて使用することができる。この場合にも、ＬＣＤユニット３０１に時計情報を表示させて、通常、時計として使用することができる。図５（ｃ）には、図５（ａ）に示す腕時計としての状態のＩＣカード用端末にＩＣカード５０２を挿入した状態を示している。ＩＣカード５０２は、カードの隅の２辺がカード端支持部材７０１、７０２により位置決めされて挿入されカード上の接点がＩＣ接点部３０８と接続される。

【００２０】図６（ａ）には、左腕の手の甲側に装着された状態のＩＣカード用端末にＩＣカード５０２を挿入した状態を示しており、ＩＣカード５０２は、右上から挿入されて、時計の１２時の方向に対して４５度の傾きを持って挿入される。このとき、ＩＣカード５０２の端末の外部に出る部分は、手の甲の上に位置することになり、ＩＣカードが安定に保持され、また、右手での操作の邪魔になるようなこともない。なお、図６（ａ）において、ＬＣＤレンズ１１０内に示している四角は、ＩＣカード状の接点のある位置とその寸法とを示している。ＩＣカード５０２は、図６（ｂ）に示すように、図６（ａ）に示した挿入方向に対して、９０度づつ異なる方向から挿入することが可能である。図６（ｂ）に示すａの方向が図６（ａ）の状態に相当し、ＩＣカード用端末が右腕の手の甲側に装着されたときに有効なのがｃ方向からの挿入であり、左腕の手の平側に装着されたときに有効なのがｂ方向からの挿入であり、また、右腕の手の平側に装着されたときに有効なのがｄ方向からの挿入である。

【００２１】ＩＣカード５０２が挿入される回転カードスロット３１０は、図７に示すように、挿入されるＩＣカード５０２の２辺を支持するカード端支持部材７０１、７０２を備えて構成されており、図４により説明した回転スロットユニット４０１を構成する部材の回転により回転させられて、図６により説明した複数のカード挿入方向の１つに設定することができる。そして、１度挿入方向が設定された後は、回転ロックボタン４０２によりＩＣカード５０２の挿入方向が変化しないようにロックされる。また、２つのカード端支持部材７０１と７０２とが繋がっていない部分は、外部に開いた穴となり、この穴が前述で説明したゴミ取り出し穴２０１となる。スロットの内部に入ってしまったゴミは、ＩＣカードの挿入時に、カードの挿入動作により排出される。

【００２２】なお、ＩＣカード５０２の挿入方向は、図６により説明した例に限らず、どのような方向から挿入するようにしてもよい。但し、ＩＣカード５０２が挿入されたとき、ＩＣカードを前述したようにカードの２辺で支持して位置決めできることが必要である。

【００２３】次に、図８を参照して、ベゼル部１０６を回転させることによりアプリケーションの切り替えを行うことについて説明する。図１、図２で説明したように、ベゼル部１０６の周囲には、機能／アプリケーション設定マーク１０７とイシュアーアプリケーションマーク貼り付け部１０８とが配置されており、ベゼル部１０６を回転させて、これらの１つをアプリケーション選択マーク１０９の位置に位置付けることにより、アプリケーションを切り替えることができる。図８において、斜線を施した少し大きい４つの丸印が機能／アプリケーション設定マーク１０７であり、これらの１つをアプリケーション選択マーク１０９の位置に位置付けることにより、本体部に備えられる機能、アプリケーションを選択することができる、本体部に備えられる機能、アプリケーションとは、例えば、時計機能、アラーム機能、電卓機能、簡易ゲーム機能、占い等である。また、８つの小さい丸印で示しているのがとイシュアーアプリケーショ

ンマーク貼り付け部１０８であり、これらの１つをアプリケーション選択マーク１０９の位置に位置付けることにより、ＩＣカード５０２内に備えられるアプリケーションを選択することができる。ＩＣカード内に備えられるアプリケーションとは、例えば、電子マネーの残高確認、商品の購入に対する月別、購入品別等の履歴情報の確認、金銭管理情報、決済情報、名簿、住所録、電話帳等の個人情報、スケジュール情報、個人情報保護ＩＤ管理情報等である。

【００２４】前述したような各種のアプリケーションは、前述したように選択されたとき、ＬＣＤユニット３０１の表示画面に、その初期画面が表示される。その後の操作については後述する。なお、前述において、機能／アプリケーション設定マーク１０７を４個、イシューアプリケーションマーク貼り付け部１０８を８個設けるとして説明したが、これらの数は、任意の数とすることができる。

【００２５】前述までの説明では、回転カードスロット３１０が外部に開いていて、水、塵埃等が入り易いものとなっている。本発明の第１の実施形態は、このようなことを防止するために、回転カードスロット３１０の入り口にスライド式の防水防塵蓋を設けることができる。この防水防塵蓋は、図９に示すように、回転カードスロット３１０の入り口とゴミ取り出し穴２０１とを塞ぐ鍔状部材をもち、上下バネユニット９０３により上下にスライド可能に構成された上下スライド防水防塵蓋９０１と、鍔部に設けられた防水防塵蓋ツマミ９０１とにより構成される。ＩＣカードが挿入されていない状態で、回転カードスロット３１０の入り口とゴミ取り出し穴２０１とは、上下バネユニット９０３により押し上げられた上下スライド防水防塵蓋９０１の鍔状部材により塞がれた状態となり、水、塵埃等の侵入が防止される。ＩＣカードの挿入時、ＩＣカードにより防水防塵蓋ツマミ９０１を押し下げながらＩＣカードを挿入する。すなわち、ＩＣカードにより防水防塵蓋ツマミ９０１を押し下げると、回転カードスロット３１０の入り口とゴミ取り出し穴２０１とが開き、ＩＣカードを容易に挿入することが可能になる。

【００２６】さて、前述では、ＩＣカード５０２をＩＣカード用端末を構成する本体部に対して斜め方向から挿入する幾つかのバリエーションについて説明したが、本発明の第１の実施形態は、図１０に示すように、ＩＣカード５０２を本体部の真横から挿入するようにすることができる。この場合、挿入のためのガイドとカードの所定位置での支持のため、ＩＣカード５０２の表面または裏面に、凸状で直線形状の挿入用ガイド１００１が設けられる。図に示していないが、ＩＣカード用端末のカードスロットの内部には、この挿入用ガイド１００１と係合する溝が設けられる。

【００２７】図１１は前述で説明した本発明の第１の実施形態の変形例を説明する図であり、以下、この第１の実施形態の変形例について説明する。

【００２８】前述した本発明の第１の実施形態は、ベゼル部１０６に多数の機能／アプリケーション設定マーク１０７、イシューアプリケーションマーク貼り付け部１０８を設けていたが、図１１に示す変形例は、ベゼル部１０６にアプリケーション選択マーク１０９のみを設けるようにしてベゼル部１０６を小型化したものである。そして、アプリケーション設定マークをＬＣＤユニットの表示部に表示させるようにしたものである。

【００２９】図１１（ａ）には、表示可能な全てのアプリケーションすなわち、本体部のみで使用可能な基本アプリケーションＡＰ１～ＡＰ４、ＩＣカードに保持されているアプリケーションＣ１～Ｃ８を表示部に表示している例を示している。これらのアプリケーションは、ベゼル部１０６を回転させてベゼル部１０６に設けられるアプリケーション選択マーク１０９を表示されているアプリケーションの位置に位置付けることにより選択することができる。図１１（ｂ）は、初期使用時の状態を示すもので、本体部のみで使用可能なアプリケーションＡＰ１～ＡＰ４が表示され、ＡＰ４の位置にアプリケーション選択マーク１０９が位置付けられていることを示している。そして、図１１（ｃ）に示すように、ＡＰ１の位置にアプリケーション選択マーク１０９を位置付けると、アプリケーションＡＰ１で使用可能なメニューが表示される。そして、これらのメニューは、Ｃボタン１０５とＯＫボタン１０４とが上下スクロールのボタンとして機能し選択可能となる。また、上下スクロールのボタンとして機能するＣボタン１０５またはＯＫボタン１０４を次々と押すと、表示画面が小さいために表示されていなかったメニューをも含めてメニューがサイクリックに表示されてくる。選択されたメニューはＯＫボタン１０４の長押しにより決定され、あるいは、そのメニューの次画面の表示となる。

【００３０】なお、ボタンの長押しを機能させるためには、通常の上下スクロール時には、ボタンを離したときにスクロールを機能行わせるようにし、長押しで決定とするようにすればよい。

【００３１】図１１（ｄ）は、ＩＣカード５０２が挿入されていて、ＩＣカードに保持されているアプリケーションを示すアプリケーションＣ１の位置にアプリケーション選択マーク１０９を位置付けた状態を示しており、基本アプリケーションＡＰ１～ＡＰ４とＩＣカードに保持されている使用可能なアプリケーション、図示例ではアプリケーションＣ１～Ｃ４が表示されている。この例において、アプリケーションＣ１の位置の３角のマークが黒く表示されているのは、そのアプリケーションが、ＩＣカード内のアプリケーションを本体部に移して保存しているものであることを示している。そして、表示されているアプリケーションＣ１の位置にアプリケーショ

ン選択マーク１０９を位置付けると、図１１（ｅ）に示すように、アプリケーションＣ１で使用可能なメニューが表示される。これらのメニューの選択、操作は、図１１（ｃ）と同様に行うことができる。

【００３２】図１２は本発明の第１の実施形態によるＩＣカード用端末の操作処理について説明するフローチャート、図１３は処理の途中で表示される表示画面例を説明する図であり、以下、図１２、図１３を使用して、操作フローと表示画面例とについて説明する。なお、図１２により説明する操作フローは、ベゼル部１０６の上面に、機能／アプリケーション設定マーク１０７とイシューアプリケーション設定マーク１０８とを設けた場合の例である。

【００３３】（１）通常の待機状態において、例えば、図１３（ａ）に示すように、基本アプリケーションである時計機能により時刻が表示されているものとする。この状態で、使用者がＩＣカード５０２を端末に挿入すると、表示画面には、図示していないが、「ベゼルを回転してアプリケーションを選択してください」等の表示が行われる（ステップ１２０１～１２０３）。

【００３４】（２）待機状態の画面から直接またはＩＣカードの挿入後、使用者がベゼルを回転して、基本アプリケーションの選択マークである機能／アプリケーション設定マーク１０７をアプリケーション選択マーク１０９の位置に位置付けると、そのアプリケーションの機能選択のメニューが表示される。この表示の状態は、図１１（ｃ）により説明したようなものである（ステップ１２０４～１２０６）。

【００３５】（３）Ｃボタン１０５とＯＫボタン１０４とにより、機能の１つを選択し、ＯＫボタン１０４の長押しにより決定する。以後、その機能の表示が行われる状態となって待機状態になる（ステップ１２０７、１２０８、１２０１）。

【００３６】（４）また、使用者がベゼルを回転して、カード内のアプリケーションの選択マークであるイシューアプリケーション設定マーク１０８をアプリケーション選択マーク１０９の位置に位置付けると、図１３（ｂ）に示すように、そのアプリケーション名（ブランド）、例えば、ＣＤショップＡ等が表示される（ステップ１２０４、１２０９、１２１０）。

【００３７】（５）このアプリケーションは、挿入されるＩＣカード内のアプリケーションであるため、ＩＣカードが挿入されていない場合、「カードを挿入して下さい」等の表示を行って、カードの挿入を促した後、カード挿入の有無をチェックする（ステップ１２１１、１２１２）。

【００３８】（６）ステップ１２１２のチェックでカードが挿入されていなかった場合、カードからダウンロードしてあるそのアプリケーションの内容が本体内にあれば、図１３（ｃ）に示すように、そのアプリケーションの機能、例えば、ゲーム、買物履歴等のメニューを表示する。また、カードが挿入されていれば、図１１（ｄ）に示すように、ＩＣカード内のアプリケーション機能、例えば、残高表示、ポイント等のメニューの表示を行う（ステップ１２１３、１２１４）。

【００３９】（７）ステップ１２１３、１２１４で表示されたメニューの１つ、Ｃボタン、ＯＫボタンにより上下スクロールして選択し、あるいは、消去、終了を表示させて選択する（ステップ１２１５）。

【００４０】（８）ステップ１２１５で選択したメニューを開始したいとき、あるいは、消去の表示を選択したとき、ＯＫボタンの長押しでそのメニューを決定し、例えば、図１３（ｅ）に示すような表示とさせて、そのメニュー、例えば、ゲームの画面を表示して実行し、あるいは、残高を表示させることができる（ステップ１２１６、１２１７、１２１９、１２２０）。

【００４１】（９）ステップ１２１９、１２２０での決定後、あるいは、メニューの実行途中でＣボタンを長押しすると、それがキャンセルされてステップ１２１５に戻り、また、ゲームの終了後、残高表示後、図１３（ｆ）に示すように戻るメニューが表示されるので、ＯＫボタンを長押しすることにより、ステップ１２１４のアプリケーション開始の状態に戻る（ステップ１２２１、１２２２）。

【００４２】(11) ステップ１２１５で、終了のメニューを表示させて、ＯＫボタンを長押しすることにより、ステップ１２０１の待機状態の表示に戻ることができる（ステップ１２１８、１２２４）。

【００４３】図１４は本発明の第１の実施形態の変形例によるＩＣカード用端末の操作処理について説明するフローチャートであり、以下、これについて説明する。ここで説明する例は、図１１により説明したベゼル部を小型にしてベゼル部にアプリケーション選択マークのみを設けた場合の例であり、基本的には、そのほとんどが図１２に示したフローと同一であるので、以下では、図１２の場合と相違する部分のみ説明することとする。

【００４４】図１４に示すフローで、図１２のフローと相違している点の１つは、図１２のステップ１２０５における、使用者がベゼル部を回転して、基本アプリケーションの選択マークである機能／アプリケーション設定マーク１０７をアプリケーション選択マーク１０９の位置に位置付ける操作に代り、使用者がベゼル部を回転して、表示されている基本アプリケーションの選択マークの位置にアプリケーション選択マーク１０９を位置付けるステップ１４０１の操作とした点である。

【００４５】また、他の１つは、図１２のステップ１２０９における、使用者がベゼルを回転して、カード内のアプリケーションの選択マークであるイシューアプリケーション設定マーク１０８をアプリケーション選択マーク１０９の位置に位置付ける操作に代り、表示部に選択

可能なアプリケーションを表示させ、使用者がベゼル部を回転して、表示されているアプリケーションマークの位置にアプリケーション選択マーク１０９を位置付けるステップ１４０２、１４０３の操作とした点である。

【００４６】図１５は本発明の第２の実施形態によるＩＣカード用端末の外観を示す斜視図、図１６は第２の実施形態によるＩＣカード端末の外観を示す４面図、図１７は第２の実施形態によるＩＣカード用端末の断面図、図１８は第２の実施形態によるＩＣカード用端末へのアプリケーションラベルの貼付について説明する図、図１９は第２の実施形態の外形寸法について説明する図、図２０、図２１は第２の実施形態の変形例を説明する図、図２２は表示の反転について説明する図である。図１５～図２２において、１５０１は本体上ケース、１５０２は本体下ケース、１５０３はアプリケーション切り替えロータリースイッチ、１５０４はサブアプリケーション切り替えロータリースイッチ、１５０５は決定ボタン、１５０６は液晶表示部、１５０７は液晶表示上下反転ボタン、１５０８は電池蓋、１５０９はＩＣカード挿入口、１５１０はアプリケーション設定マーク、１５１１はアプリケーション選択マーク、１７０１は回路基板、１７０２は基板部品、１７０３は液晶窓、１７０４は液晶、１７０５はＩＣカード接点、１７０６はフレーム、１７０７は電池接点、１７０８は電池、１７０９はカード挿入口蓋、１７１０はロータリースイッチ接点及び決定ボタン認識部品である。

【００４７】本発明の第２の実施形態は、本発明をキーホルダタイプとして構成した例であり、図１５に示す全体の斜視図、図１６に示す４面図から判るように、円筒の一部にＩＣカードを挿入するＩＣカード挿入口１５０９を持ち、上面に液晶表示部１５０６を備える４角柱を取り付けたような外観形状を有している。そして、図示ＩＣカード用端末は、本体上ケース１５０１と本体下ケース１５０２とにより構成される本体部の長手方向の側面に円筒状をしたアプリケーション切り替えロータリースイッチ１５０３とサブアプリケーション切り替えロータリースイッチ１５０４とを設け、反対側の側面に設けられる短い円筒状部にストラップ穴を有する電池蓋１５０８が備えられて構成されている。

【００４８】そして、本体上ケース１５０１のアプリケーション切り替えロータリースイッチ１５０３との結合部の近傍上面には、アプリケーション選択マーク１５１１が付けられており、また、アプリケーション切り替えロータリースイッチ１５０３の本体部との結合部の近傍の周囲には、複数、例えば、６個のアプリケーション設定マーク１５１０が付けられている。アプリケーション切り替えロータリースイッチ１５０３を回転させて、これらのアプリケーション設定マーク１５１０の１つをアプリケーション選択マーク１５１１の位置に位置付けることにより、アプリケーション設定マーク１５１０に予め割り付けられているアプリケーションを選択することができる。また、このようにして、１つのアプリケーションを選択した後、サブアプリケーション切り替えロータリースイッチ１５０４を回転させることにより、そのアプリケーションの中で使用可能なサブアプリケーションを選択することができる。

【００４９】本体上ケース１５０１と本体下ケース１５０２とにより構成される本体部の上面には、液晶表示部１５０６と、表示文字の方向を反転させると共に、第１の実施形態におけるＣボタンと同等の機能を有する液晶表示上下反転ボタン１５０７とが設けられ、本体上ケース１５０１と本体下ケース１５０２との合わせ部分の正面側にカード挿入口１５０９が設けられ、さらに、サブアプリケーション切り替えロータリースイッチ１５０４の側面には第１の実施形態におけるＯＫボタンと同等の機能を有する決定ボタン１５０５が設けられている。

【００５０】本発明の第２の実施形態によるＩＣカード用端末の内部には、図１７（ａ）、図１７（ｂ）の図１６のＡ－Ａ断面、Ｂ－Ｂ断面に示すように、液晶表示部１５０６を構成する液晶窓１７０３及び液晶１７０４と、ＩＣカード側の接点との接続のためのＩＣカード接点１７０５及び基板部品１７０２を持つ回路基板１７０１と、カードスロットを構成する２枚のフレーム１７０６と、基板部品１７０２’を持つもう１枚の回路基板１７０１’とが本体部の上面から下面の方向に順に配置されている。また、アプリケーション切り替えロータリースイッチ１５０３の内部には、２つのロータリースイッチ１５０３、１５０４のスイッチ接点及び決定ボタン認識部品１７１０が設けられ、さらに、電池蓋１５０８の内側の位置に電池接点１７０７及び電池１７０８が備えられている。

【００５１】さらに、カード挿入口１５０９の拡大した状態を示す図１７（ｃ）に示すように、カード挿入口１５０９の入り口には、カード挿入口蓋１７０９が設けられており、この蓋１７０９は、ＩＣカードの挿入により矢印に示す方向に内側の下方向に回転させられてカードの挿入を可能にする。そして、カードが挿入されていない状態で、蓋１７０９は、バネ等の力により図示の位置に保持されてカード挿入口１５０９を塞ぎ、水、塵埃等の侵入を防止いている。

【００５２】前述で説明した本発明の第２の実施形態は、アプリケーション切り替えロータリースイッチ１５０３の本体部との結合部の近傍の周囲には、複数、例えば、６個のアプリケーション設定マーク１５１０が付けられているとしたが、このようなマークだけでは、どのようなアプリケーションが設定されているか、一目では判らず、そのアプリケーションを選択して表示された状態により確認するしかないが、本発明の実施形態では、アプリケーション切り替えロータリースイッチ１５０３の周囲にアプリケーション名を示すラベルを貼付して、

一目でアプリケーションの設定状態が判るようにしている。

【００５３】図１８（ａ）に示す例は、単に、アプリケーション設定マーク１５１０の軸方向の隣に、小さなアプリケーション名を記載したラベルを貼付するようにした例である。また、図１８（ｂ）に示す例は、アプリケーション設定マーク１５１０の軸方向の隣に、予め、アプリケーション名を記載したラベルを貼付す領域を示すマークを溝、窪み、印刷等によるラベル貼付ガイドとして設けておき、ここに、アプリケーション名を記載したラベルを貼付するようにした例である。

【００５４】前述で説明した本発明の第２の実施形態によるＩＣカード用端末の大きさの大凡を示しているのが、正面図に寸法を書き入れた図１９である。規格化されているＩＣカードの縦横の寸法が８５㎜×５４㎜であるため、第２の実施形態によるＩＣカード用端末の本体部は、その横方向の寸法を図に示すように６０㎜としており、ＩＣカード上の接点位置が、ＩＣカードの長手方向のエッジから２１．５㎜までの部分にあるので、本体部の奥行き方向の寸法を２４㎜として構成されている。これにより、ＩＣカードの挿入時に、ＩＣカードの接点部を本体内に収納して内部の回路との接続が可能となる。

【００５５】以上説明した本発明の第２の実施形態は、その正面図、斜視図等から理解できるように、本体部と円筒部との関係が、本体部の一部が円筒部の片側に突き出すように構成されている。図２０には、この第２の実施形態の変形例を示しており、この変形例は、本体部と円筒部との関係が、本体部の一部が円筒部の両側に突き出すように構成したものである。この場合にも、本体部の奥行き寸法と幅寸法とを図１９により説明した場合と同一とすることにより、ＩＣカードの挿入時に、ＩＣカードの接点部を本体内に収納して内部の回路との接続が可能となる。

【００５６】図２１に示す第２の実施形態の変形例は、前述で説明した第２の実施形態の円筒部を多角柱とした例であり、図示例では、４角柱である。そして、この例は、４角の各面にアプリケーション設定マーク１５１０が設けられる。多角柱としての変形例は、図示の４角に限らず３角柱、６角柱、８角柱、さらに多い多角柱等として構成することができる。

【００５７】図２２（ａ）には、液晶表示部１５０６に表示される通常の表示状態を示しており、この状態は、左手でＩＣカード用端末の電池蓋側を持ち、右手でロータースイッチ１５０３、１５０４を操作するときに、使用者から正常に文字を見ることができる状態である。これに対して、図２２（ｂ）には、文字を逆転させて表示した状態を示している。この状態は、他の人に表示されている情報を見せる場合に有効であり、また、右手でＩＣカード用端末の電池蓋側を持ち、左手でロータースイッチ１５０３、１５０４を操作するときに、使用者から正常に文字を見ることができる状態である。このような文字の逆転は、液晶表示上下反転ボタン１５０７の長押しにより行うことができる。

【００５８】なお、前述で説明した本発明の第２の実施形態においても、通常持ち歩く状態で、液晶表示部１５０６には、時刻を表示しておくようにすることもでき、あるいは、何も表示させないようにしておくこともできる。また、すでに説明したように、液晶表示上下反転ボタン１５０７は、第１の実施形態におけるＣボタンの機能をも持ち、また、決定ボタン１５０５は、第１の実施形態におけるＯＫボタンの機能を持つものであるので、ロータリースイッチ１５０３、１５０４によりアプリケーションを選択した後の操作は、これらのボタン１５０５、１５０７の操作により第１の実施形態の場合と同様に行うことができるので、ここでは、操作の説明を省略する。また、前述で説明した第２の実施形態は、液晶表示部１５０６の幅が小さいため高々２行程度の表示しか行うことができないが、決定ボタン１５０５により次々に文字列をスクロールさせるようにすることにより、必要な情報の表示を行わせることができる。

【００５９】図２３は本発明の第３の実施形態によるＩＣカード用端末の外観を示す斜視図、図２４は第３の実施形態によるＩＣカード端末の外観を示す３面図、図２５は第３の実施形態によるＩＣカード用端末の断面図、図２６は第３の実施形態の変形例を説明する図、図２７は表示画面の例を説明する図である。図２３～図２６において、２３０１はフレーム、２３０２は本体上ケース、２３０３は液晶表示部、２３０４はカード挿入口、２３０５は決定ボタン、２３０６はボタン式十字カーソル、２３０７はストラップ用穴、２３０８はストラップ、２５０１は本体下ケース、２５０２は回路基板、２５０３は基板部品、２５０４はカード挿入検出スイッチ、２５０５は接点、２６０１は選択・決定ボタンである。

【００６０】本発明の第３の実施形態は、本発明をペンダントタイプとして構成した例であり、図２３に示す全体の斜視図、図２４に示す３面図から判るように、細長い楕円状の平面形状を有し、中心部に向かって膨らみを持って全体の形状が形成されている。そして、本発明の第３の実施形態によるＩＣカード用端末は、図２３、図２５に示すように、周辺部を形成するフレーム２３０１の両面に本体上ケース２３０１、本体下ケース２５０１が取り付けられ、フレーム２３０１の端部にストラップ用穴が２３０７が設けられてその外観が形成されている。本体上ケース２３０２の上面中央には液晶表示部２３０３が配置され、液晶表示部２３０３の両側の部分には、決定・解除の機能を有する決定ボタン２３０５と選択・スクロールの機能を有するボタン式十字カーソル２３０６とが配置されている。また、フレームの長手方向

の一部に切欠きが設けられて、この部分の本体上ケース２３０１と本体下ケース２５０１との間にカード挿入口が形成されている。第３の実施形態の大きさは、図２４に示す３面図の中に大凡の寸法を入れて示しているように、長手方向の寸法９８㎜、最大幅寸法３５㎜、厚さ寸法１６㎜である。また、カード挿入口２３０４の長手方向寸法は、ＩＣカードの幅寸法５４㎜より僅かに大きい幅に設定されている。そして、この場合にも幅寸法は、挿入されたＩＣカード上の接点が内部の回路に接続可能なだけの寸法が必要である。

【００６１】図２６に示す本発明の第２の実施形態の変形例は、図２３～図２５に示す例における決定ボタン２３０５とボタン式十字カーソル２３０６との２つのボタンに代わって、選択・スクロール及び決定・解除の機能を行う選択・決定ボタン２６０１をフレーム２３０１の先端部を切り欠いて設けて構成したものである。この選択・決定ボタン２６０１は、回転及び押下が可能であり、回転によりアプリケーションの選択、スクロールを行わせ、押下により決定・解除を行わせることができる。

【００６２】次に、図２７に示す表示画面の例を参照しながら、操作と表示画面とについて説明する。

【００６３】図２７に示す画面１は、何もしていない通常の状態での表示例であり、この例では、２行表示として、年月日と時刻を表示している状態である。この状態でＩＣカードを挿入することなく、ボタン式十字カーソル２３０６を上下に動かすことにより、本体の内部に備えられているアプリケーションが順次選択可能に表示される。この例が画面４として示されており、決定ボタン２３０５を押すことにより表示されているアプリケーションを決定して利用することができる。画面５は、ここでアプリケーション「ペットとお話し」を選択決定した場合の画面例を示している。２行表示の場合、１画面内に１つの文が表示される。ここで、ボタン式十字カーソル２３０６を上下に動かすことにより、ペットからのお話しの内容を示す文の前後が順次表示されてくる。また、１行表示の場合、ボタン式十字カーソル２３０６を左右に動かすことにより、１画面内に表示しきれない１つの文の前後の文を表示させることができる。また、アプリケーションの操作を終了したい場合、決定ボタン２３０５の長押しにより、アプリケーションを終了して、画面１の状態に戻ることができる。なお、ここでのアプリケーションの種類としては、図に示している「今日の占い」、「ペットとお話し」以外に、例えば、単語帳、住所録、電話帳等がある。

【００６４】また、画面１の状態、あるいは、画面４、５の状態のどのような状態のときにでも、ＩＣカードが挿入されると、まず、画面２として示すように、ＩＣカード内の保持されている電子マネーの残高が表示される。この状態で、ボタン式十字カーソル２３０６を上下に動かすことにより、ＩＣカード内に格納されて使用可能なアプリケーション、例えば、画面３に示すように、種々のショップにおける決済履歴を順次選択して表示させることができる。そして、任意の画面が表示されている状態で決定ボタン２３０５を長押しすれば、カード残高の表示に戻り、あるいは、ＩＣカードを取り出せば、ＩＣカード挿入前の画面の状態に戻る。また、残高表示が行われている状態で決定ボタン２３０５を長押しすれば、ＩＣカード挿入前の画面の状態に戻る。

【００６５】図２８は本発明の第４の実施形態によるＩＣカード用端末の外観を示す斜視図、図２９は第４の実施形態によるＩＣカード端末の外観を示す５面図、図３０は第４の実施形態によるＩＣカード用端末の断面図、図３１はＩＣカード用端末を手にもった状態を説明する図、図３２は第４の実施形態の変形例を説明する図、図３３は表示画面の例を説明する図である。図２８～図３２において、２８０１は本体上ケース、２８０２は本体下ケース、２８０３はＬＣＤレンズ、２８０４は下・次・ＯＫボタン、２８０５はスライドツマミ、２８０６は上・前・キャンセルボタン、２８０７はキーホルダー穴、２８０８はカードスロット、３００１はカードガイドプレート、３００２はメイン基板、３００３は接点部、３００４はＬＣＤユニット、３００５はバッテリー部、３００６はカードケースユニット、３２０１は表示部である。

【００６６】本発明の第４の実施形態は、本発明をキーホルダタイプとして構成した例であり、図２８（ａ）に示す正面の斜視図、図２８（ｂ）に示す裏面の斜視図、図２９に示す５面図から判るように、下面側が上面側より幅広の扇の一部を切り取ったような形状に形成されている。そして、この第４の実施形態によるＩＣカード用端末は、本体上ケース２８０１と本体下ケース２８０２とにより本体部が形成され、本体上ケース２８０１の上面に、内部にＬＣＤユニットを備えて表示部を構成するＬＣＤレンズ２８０３と、本発明の第１の実施形態におけるＣボタン及びＯＫボタンと同等の機能を有する下・次・ＯＫボタン２８０４及び上・前・キャンセルボタン２８０６とが設けられ、上ケース上面の一部を窪ませて形成した部分にアプリケーション選択のためのスライドツマミ２８０５が設けられて構成されている。

【００６７】また、図示ＩＣカード用端末は、本体上ケース２８０１と本体下ケース２８０２との合わせ部の下面側の本体下ケース２８０２にＩＣカードの厚みに窪ませた部分を形成して、ここにカードスロット２８０８を形成し、さらに、本体部の隅にキーホルダ穴２８０７を設けて構成されている。この第４の実施形態の大きさは、図２９に示す５面図の中に大凡の寸法を入れて示しているように、長手方向の寸法７５㎜、最大幅寸法４０㎜、厚さ寸法１２㎜である。また、カード挿入口２８０８の長手方向寸法は、ＩＣカードの幅寸法５４㎜より僅

かに大きい幅に設定されている。そして、この場合にも本体部の幅寸法は、挿入されたＩＣカード上の接点が内部の回路に接続可能なだけの寸法が必要である。

【００６８】本発明の第４の実施形態によるＩＣカード用端末の内部には、図３０の断面図に示すように、液晶表示部を構成するＬＣＤレンズ２８０３、ＬＣＤユニット３００４と、ＩＣカード側の接点との接続のための接点部３００３を持つメイン基板３００２と、カードスロットを構成するカードガイドプレート３００１とが本体部の上面から下面の方向に順に配置されている。また、本体部の内部の上面の側の一部には、カードケースユニット３００６とバッテリー部３００５とが設けられている。

【００６９】図３１（ａ）、図３１（ｂ）には、第４の実施形態によるＩＣカード用端末を手に持った状態を示している。図３１（ａ）に示すように、第４の実施形態によるＩＣカード用端末は、ＩＣカードを挿入後、ＩＣカードの長手方向が上になるように手に持った場合、あるいは、図３１（ｂ）に示すように、ＩＣカードを挿入後、ＩＣカードの長手方向が横になるように手に持った場合のいずれの場合にも、片手だけで保持することができ、しかも、端末を保持している手の指でアプリケーション選択のためのスライドツマミ２８０５を操作することができる。

【００７０】図３１（ｂ）に示すように、ＩＣカードの長手方向が横になるように手に持った場合、表示部の長手方向に文字列を表示すると、表示文字列が読みにくくなるため、これを解消することが可能なようにＩＣカード用端末を構成することができる。この場合、ＩＣカード用端末は、図３２に示す変形例のように、表示部の縦横比を小さくした横表示可能な表示部３２０１を設けて構成される。そして、文字列を９０度回転させて横方向に表示する。この回転の制御は、表示されるメニューの最後に回転のメニューを設けて、下・次・ＯＫボタン２８０４により行うようにすればよい。

【００７１】前述で説明した本発明の第４の実施形態においても、通常持ち歩く状態で、ＬＣＤユニット３００４には、時刻を表示しておくようにすることもでき、あるいは、何も表示させないようにしておくこともできる。また、すでに説明したように、上・前・キャンセルボタン２８０６は、第１の実施形態におけるＣボタンの機能を持ち、また、下・次・ＯＫボタン２８０４は、第１の実施形態におけるＯＫボタンの機能を持つものであるので、スライドツマミ２８０５によりアプリケーションを選択した後の操作は、前述のボタン２８０６、２８０４の操作により第１の実施形態の場合と同様に行うことができるので、ここでは、操作の説明を省略する。また、前述で説明した第４の実施形態は、液晶表示部に３行の表示を行うようにしている。

【００７２】次に、図３３を参照して３行の表示による表示例の幾つかについて説明する。

【００７３】図３３（ａ）には、メニュー画面の例を示しており、左側にスクロールツマミ２８０５により、メニューを上下にスクロールして表示されていないメニューが表示できることを示すマークが表示されている。そして、この例は、いま、アラームのメニューが選択可能であることを示している。また、画面の右側には、選択状態のメニューに次のページ、例えば、設定画面があることを示すマークが表示され、ボタン２８０４により次ページを表示させることができる。なお、前述した表示画面上のマークの意味は、後述の他の例の場合も同一である。

【００７４】図３３（ｂ）には、マネー管理機能／電卓機能を選択決定した場合の表示例を示しており、図では、マネーの現在までの使用金額、今回の使用金額等が表示された状態を示している。図３３（ｃ）には、時計機能／アラーム機能を選択決定した場合の表示例を示しており、現在の時刻と現在の日付とが表示されていると共に、アラームがオンとなっていることを示している。図３３（ｄ）には、簡易スケジュール機能を選択決定した場合の表示例を示しており、３つのスケジュールを時刻と共に表示し、現在時のスケジュールがアラームのマークで示されている。

【００７５】

【発明の効果】以上説明したように本発明によれば、各種の電子通貨システム、クレジットカードシステム等に共通に使用することができるマルチアプリケーションＩＣカードを扱うための小型で携帯性に優れたＩＣカード用端末を提供することができる。

【図面の簡単な説明】

【図１】本発明の第１の実施形態によるＩＣカード用端末の外観を示す斜視図である。

【図２】第１の実施形態によるＩＣカード端末の外観を示す４面図である。

【図３】第１の実施形態によるＩＣカード用端末の断面図である。

【図４】第１の実施形態によるＩＣカード用端末の全体の構造を説明する分解斜視図である。

【図５】本発明の第１の実施形態によるＩＣカード用端末の通常の使用状態とＩＣカードの挿入状態とを説明する図である。

【図６】本発明の第１の実施形態によるＩＣカード用端末を腕に付けてＩＣカードを挿入した状態とＩＣカードの挿入方向のバリエーションについて説明する図である。

【図７】カードスロットの挿入方向について説明する図である。

【図８】ベゼル部１０３を回転させてアプリケーションを選択することを説明する図である。

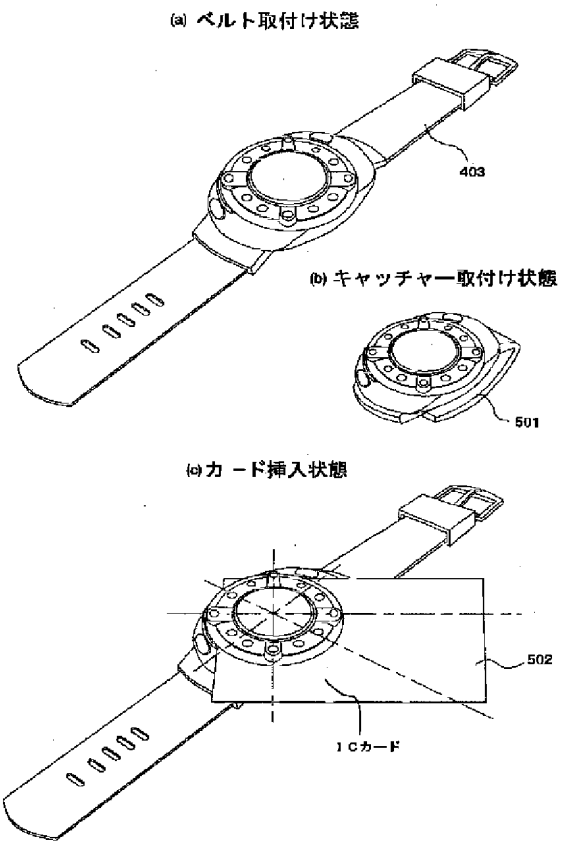
【図９】カードスロットに対する防水防塵機構の構成に

ついて説明する図である。
【図１０】ＩＣカードの挿入方向の他の例について説明する図である。
【図１１】本発明の第１の実施形態の変形例を説明する図である。
【図１２】本発明の第１の実施形態によるＩＣカード用端末の操作処理について説明するフローチャートである。
【図１３】処理の途中で表示される表示画面例を説明する図である。
【図１４】本発明の第１の実施形態の変形例によるＩＣカード用端末の操作処理について説明するフローチャートである。
【図１５】本発明の第２の実施形態によるＩＣカード用端末の外観を示す斜視図である。
【図１６】第２の実施形態によるＩＣカード端末の外観を示す４面図である。
【図１７】第２の実施形態によるＩＣカード用端末の断面図である。
【図１８】第２の実施形態によるＩＣカード用端末へのアプリケーションラベルの貼付について説明する図である。
【図１９】第２の実施形態の外形寸法について説明する図である。
【図２０】第２の実施形態の変形例を説明する図である。
【図２１】第２の実施形態の他の変形例を説明する図である。
【図２２】表示の反転について説明する図である。
【図２３】本発明の第３の実施形態によるＩＣカード用端末の外観を示す斜視図である。
【図２４】第３の実施形態によるＩＣカード端末の外観を示す３面図である。
【図２５】第３の実施形態によるＩＣカード用端末の断面図である。
【図２６】第３の実施形態の変形例を説明する図である。
【図２７】表示画面の例を説明する図である。
【図２８】本発明の第４の実施形態によるＩＣカード用端末の外観を示す斜視図である。
【図２９】第４の実施形態によるＩＣカード端末の外観を示す５面図である。
【図３０】第４の実施形態によるＩＣカード用端末の断面図である。
【図３１】ＩＣカード用端末を手にもった状態を説明する図である。
【図３２】第４の実施形態の変形例を説明する図である。
【図３３】表示画面の例を説明する図である。
【符号の説明】
１０１　本体上ケース
１０３　ベゼルベース部
１０４　ＯＫボタン
１０５　Ｃボタン
１０６　ベゼル部
１０７　機能／アプリケーション設定マーク
１０８　イシュアーアプリケーションマーク貼り付け部
１０９　アプリケーション選択マーク
１１０　ＬＣＤレンズ
１１１　本体下ケース
１１２　電池交換用蓋
１１３　ベルト取り付け部
１１４　ベルト取り付け穴
２０１　ゴミ取り出し穴
３０１　ＬＣＤユニット
３０２　ＬＣＤユニットケース
３０３　メイン基板
３０４　インタフェース基板
３０５　接点リング部
３０６、３０７　回転接点部
３０８　ＩＣ接点部
３０９　電池
３１０　回転カードスロット
３１１　回転ベース部
４０１　回転スロットユニット
４０２　回転ロックボタン
４０３　ベルト
４０４　ベルト取り付けピン
５０１　キャッチャー
５０２　ＩＣカード
７０１、７０２　カード端支持部材
９０１　防水防塵蓋ツマミ
９０２　上下スライド防水防塵蓋
９０３　上下バネユニット
１００１　挿入用ガイド
１５０１　本体上ケース
１５０２　本体下ケース
１５０３　アプリケーション切り替えロータリースイッチ
１５０４　サブアプリケーション切り替えロータリースイッチ
１５０５　決定ボタン
１５０６　液晶表示部
１５０７　液晶表示上下反転ボタン
１５０８　電池蓋
１５０９　ＩＣカード挿入口
１５１０　アプリケーション設定マーク
１５１１　アプリケーション選択マーク
１７０１　回路基板
１７０２　基板部品

１７０３　液晶窓
１７０４　液晶
１７０５　ＩＣカード接点
１７０６　フレーム
１７０７　電池接点
１７０８　電池
１７０９　カード挿入口蓋
１７１０　ロータリースイッチ接点及び決定ボタン認識部品
２３０１　フレーム
２３０２　本体上ケース
２３０３　液晶表示部
２３０４　カード挿入口
２３０５　決定ボタン
２３０６　ボタン式十字カーソル
２３０７　ストラップ用穴
２３０８　ストラップ
２５０１　本体下ケース
２５０２　回路基板
２５０３　基板部品
２５０４　カード挿入検出スイッチ
２５０５　接点
２６０１　選択・決定ボタン
２８０１　本体上ケース
２８０２　本体下ケース
２８０３　ＬＣＤレンズ
２８０４　下・次・ＯＫボタン
２８０５　スライドツマミ
２８０６　上・前・キャンセルボタン
２８０７　キーホルダー穴
２８０８　カードスロット
３００１　カードガイドプレート
３００２　メイン基板
３００３　接点部
３００４　ＬＣＤユニット
３００５　バッテリー部
３００６　カードケースユニット
３２０１　表示部

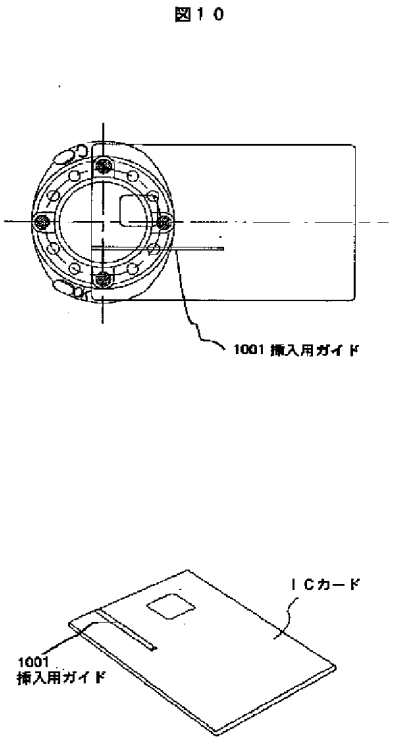
【図５】

図5



【図１０】

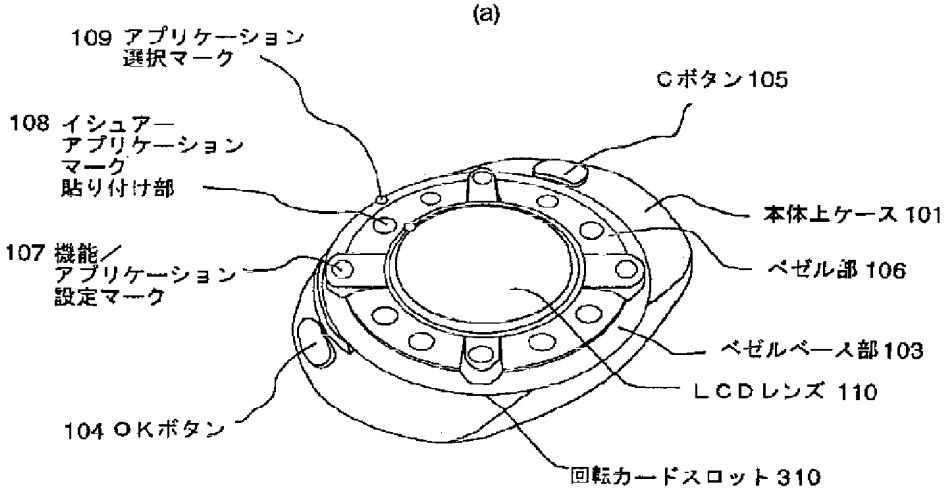
図10



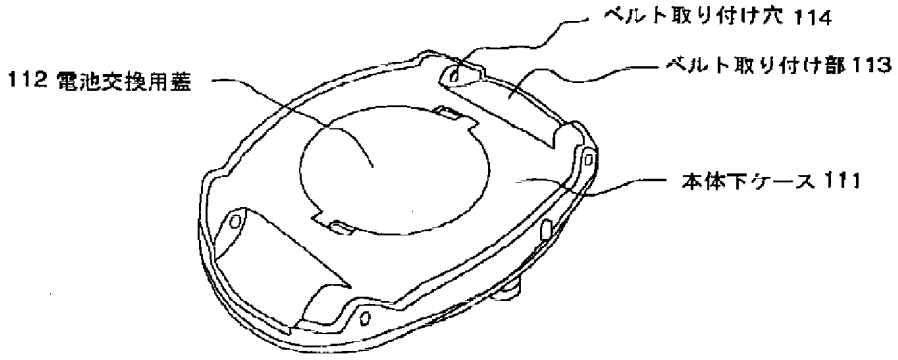
【図1】

図1

(a)

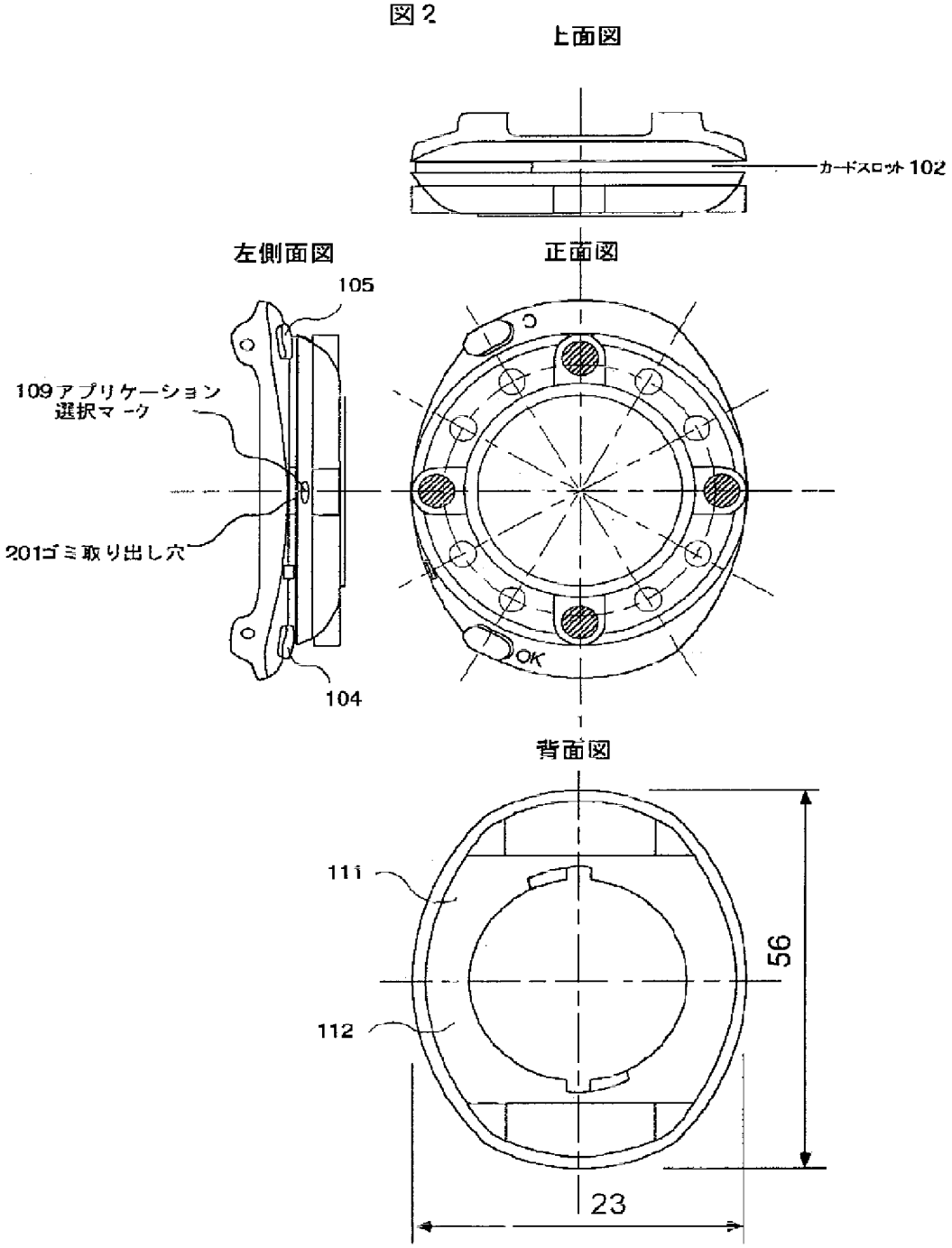

109 アプリケーション
選択マーク
Cボタン105
108 イシュアー
アプリケーション
マーク
貼り付け部
本体上ケース101
107 機能／
アプリケーション
設定マーク
ベゼル部106
ベゼルベース部103
LCDレンズ 110
104 OKボタン
回転カードスロット310

(b)


ベルト取り付け穴 114
ベルト取り付け部113
112 電池交換用蓋
本体下ケース111

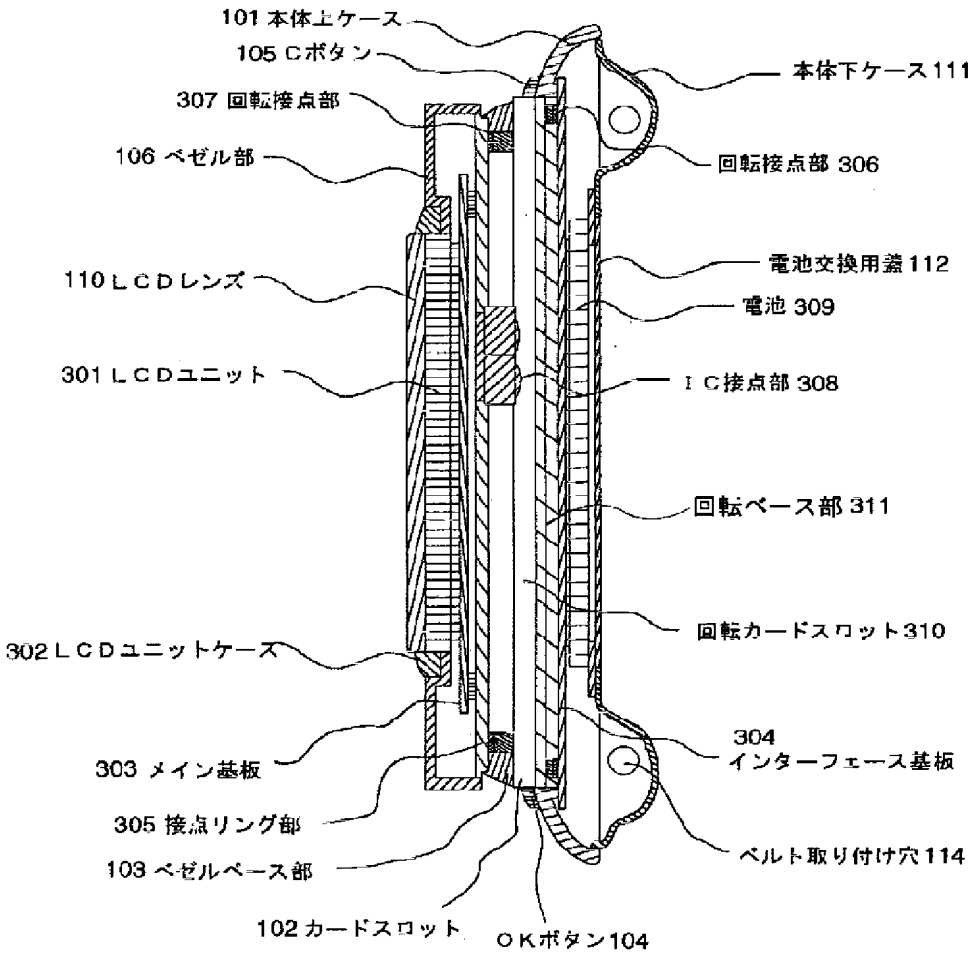
【図2】

図2


上面図
カードスロット102
左側面図
正面図
105
109アプリケーション
選択マーク
201ゴミ取り出し穴
104
OK
背面図
111
112
56
23

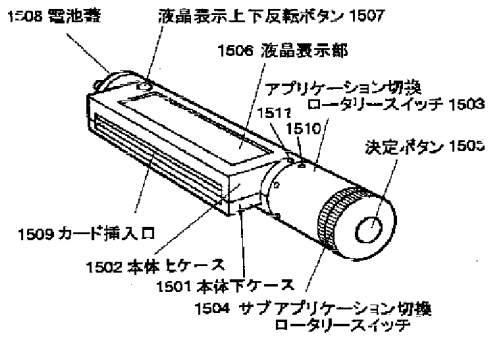
【図3】

図3



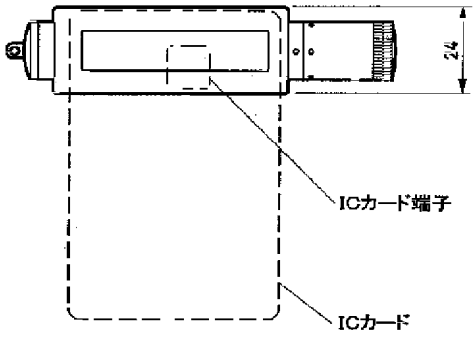
【図15】

図15

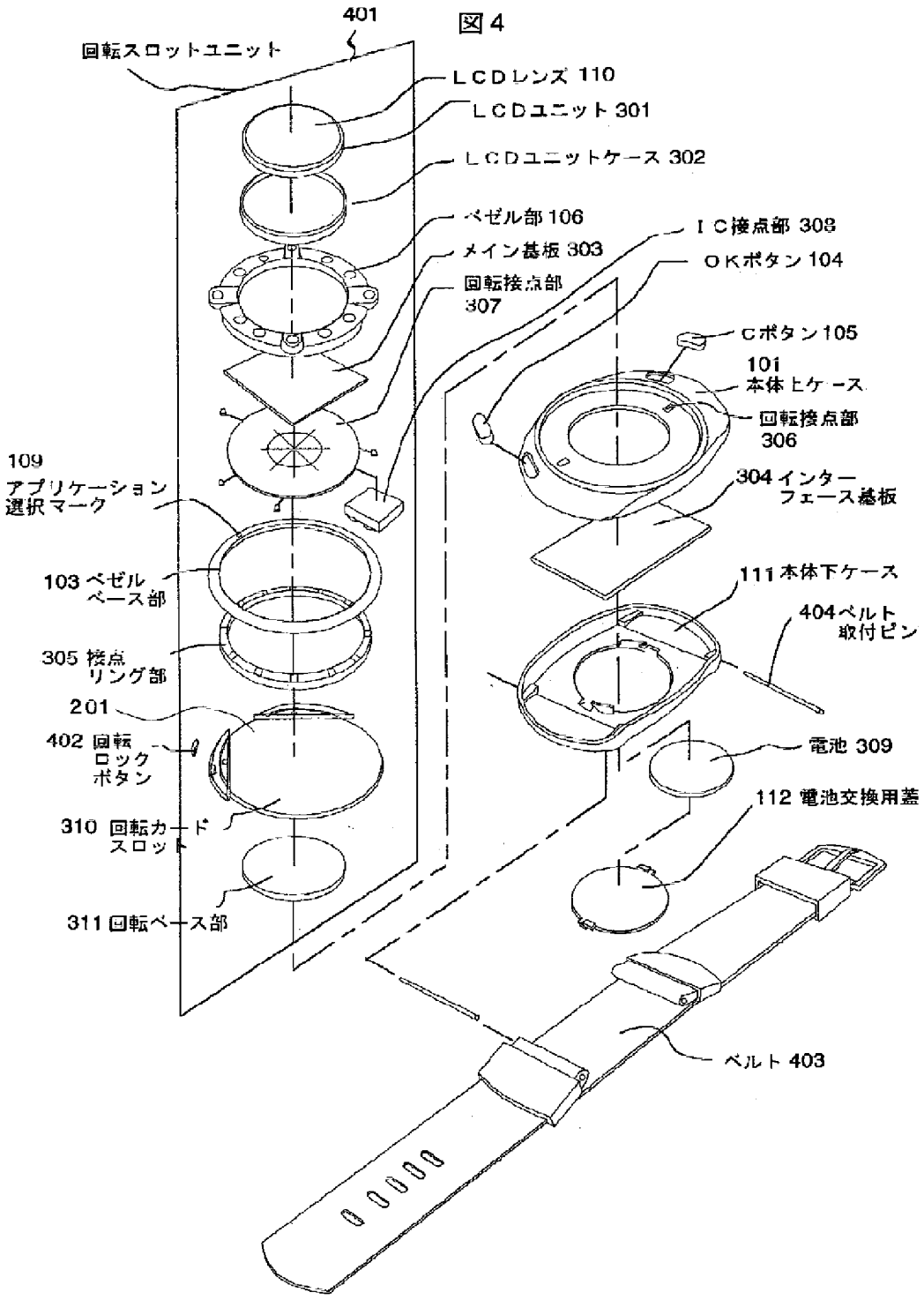


【図20】

図20

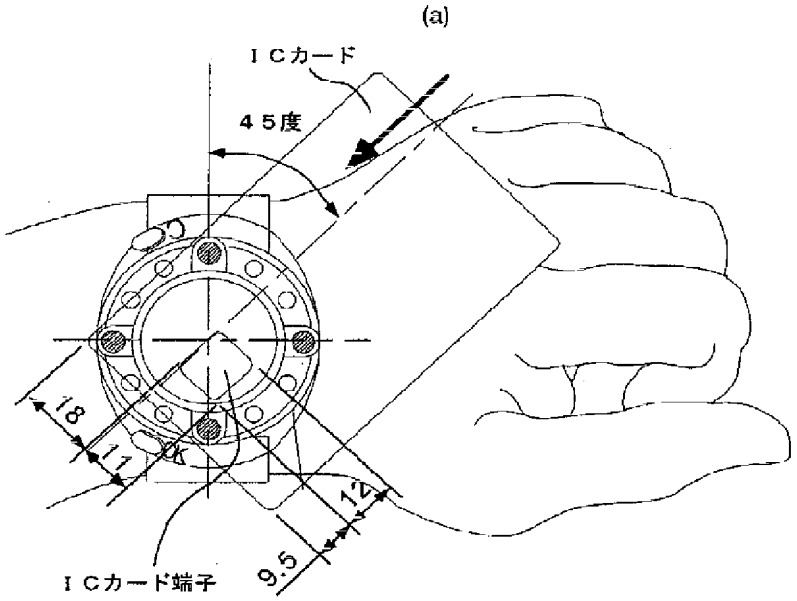


【図4】


401
図4
回転スロットユニット
LCDレンズ 110
LCDユニット 301
LCDユニットケース 302
ベゼル部 106
メイン基板 303
回転接点部 307
IC接点部 308
OKボタン 104
Cボタン 105
101 本体上ケース
回転接点部 306
304 インターフェース基板
109 アプリケーション選択マーク
103 ベゼルベース部
111 本体下ケース
404 ベルト取付ピン
305 接点リング部
201
402 回転ロックボタン
電池 309
112 電池交換用蓋
310 回転カードスロット
311 回転ベース部
ベルト 403

【図6】

図6



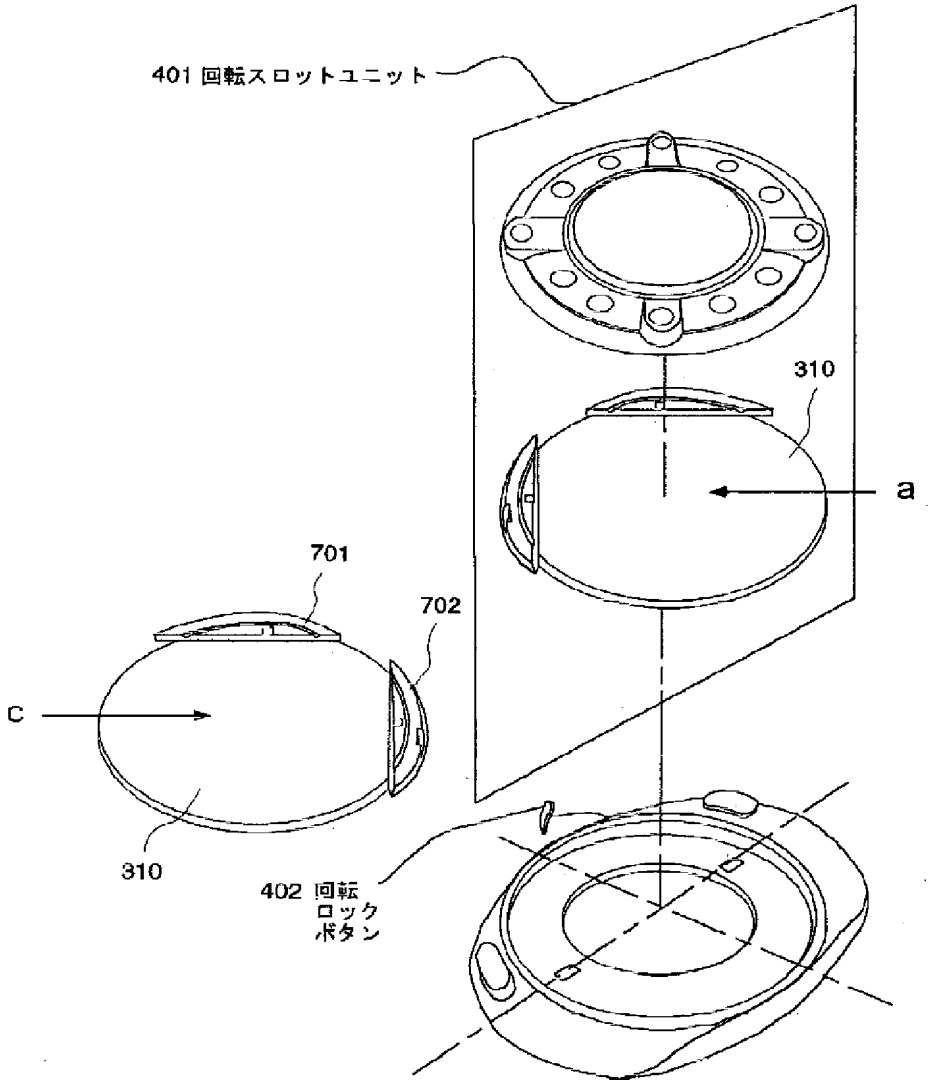
【図３２】

図３２



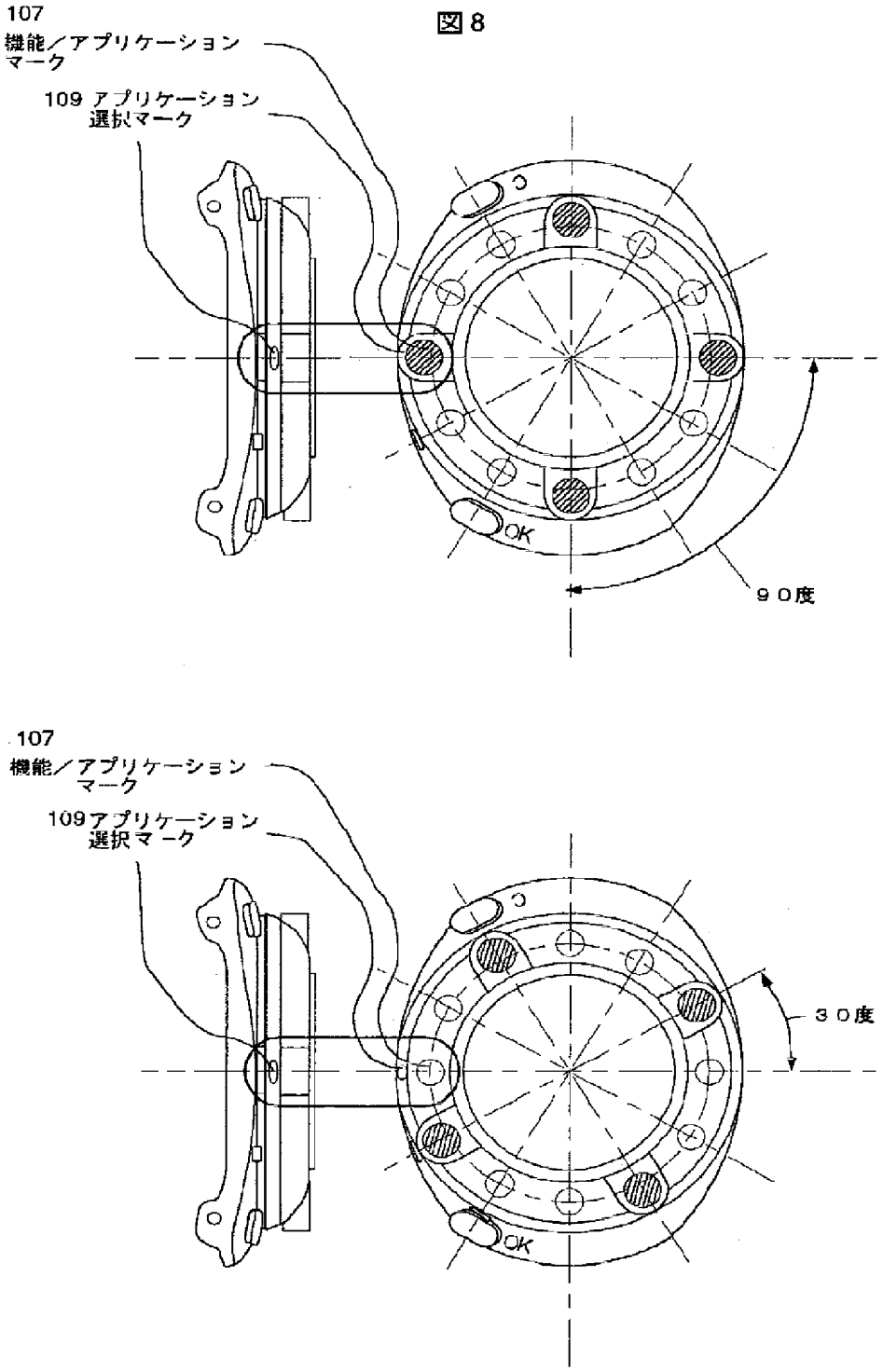
【図7】

図7



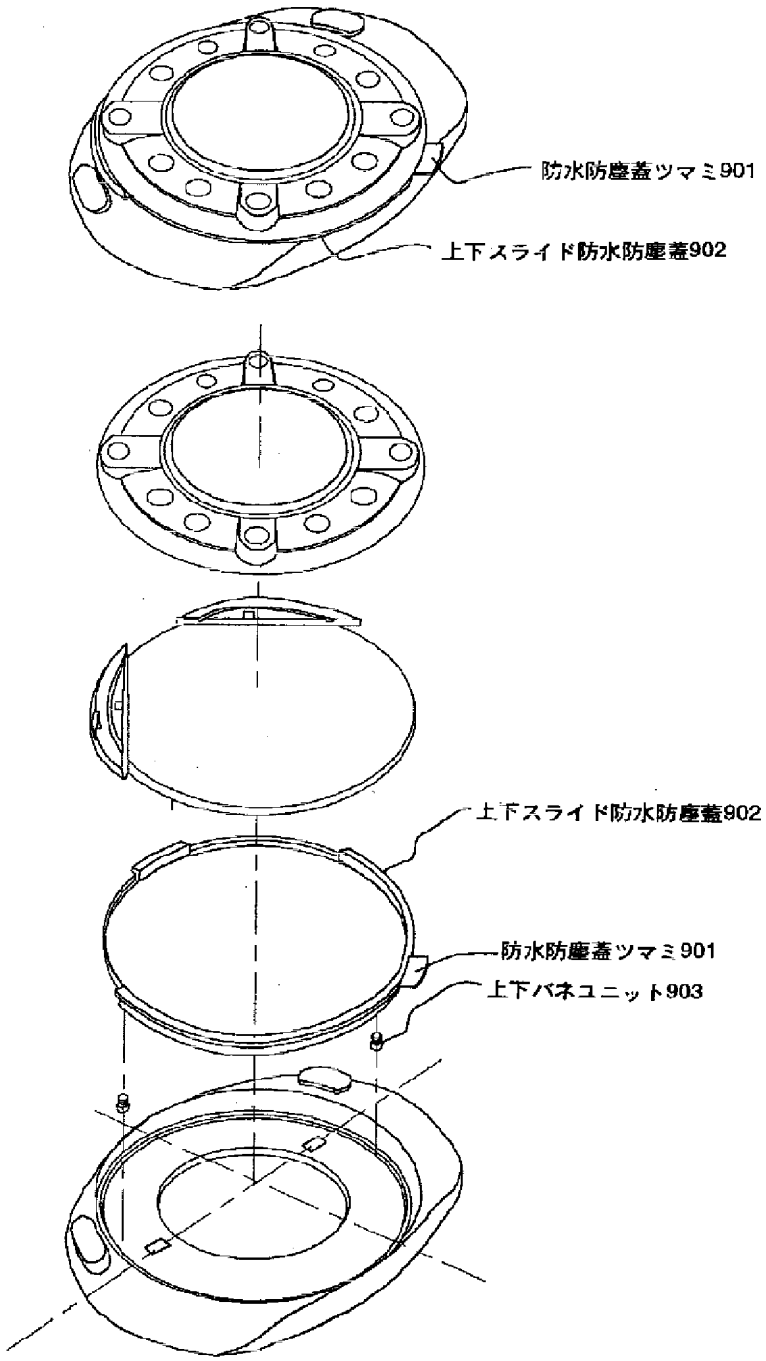
【図8】

図8


107
機能／アプリケーション
マーク
109 アプリケーション
選択マーク
OK
90度
107
機能／アプリケーション
マーク
109アプリケーション
選択マーク
OK
30度

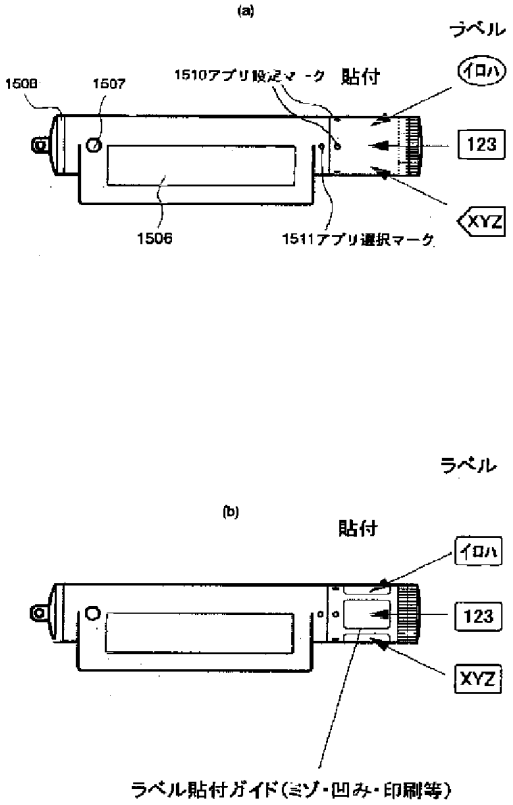
【図９】

図９



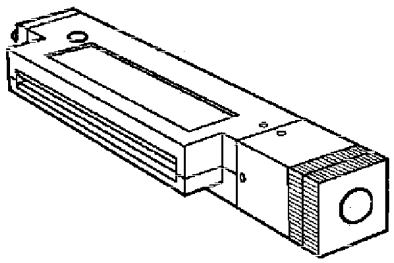
【図１８】

図１８



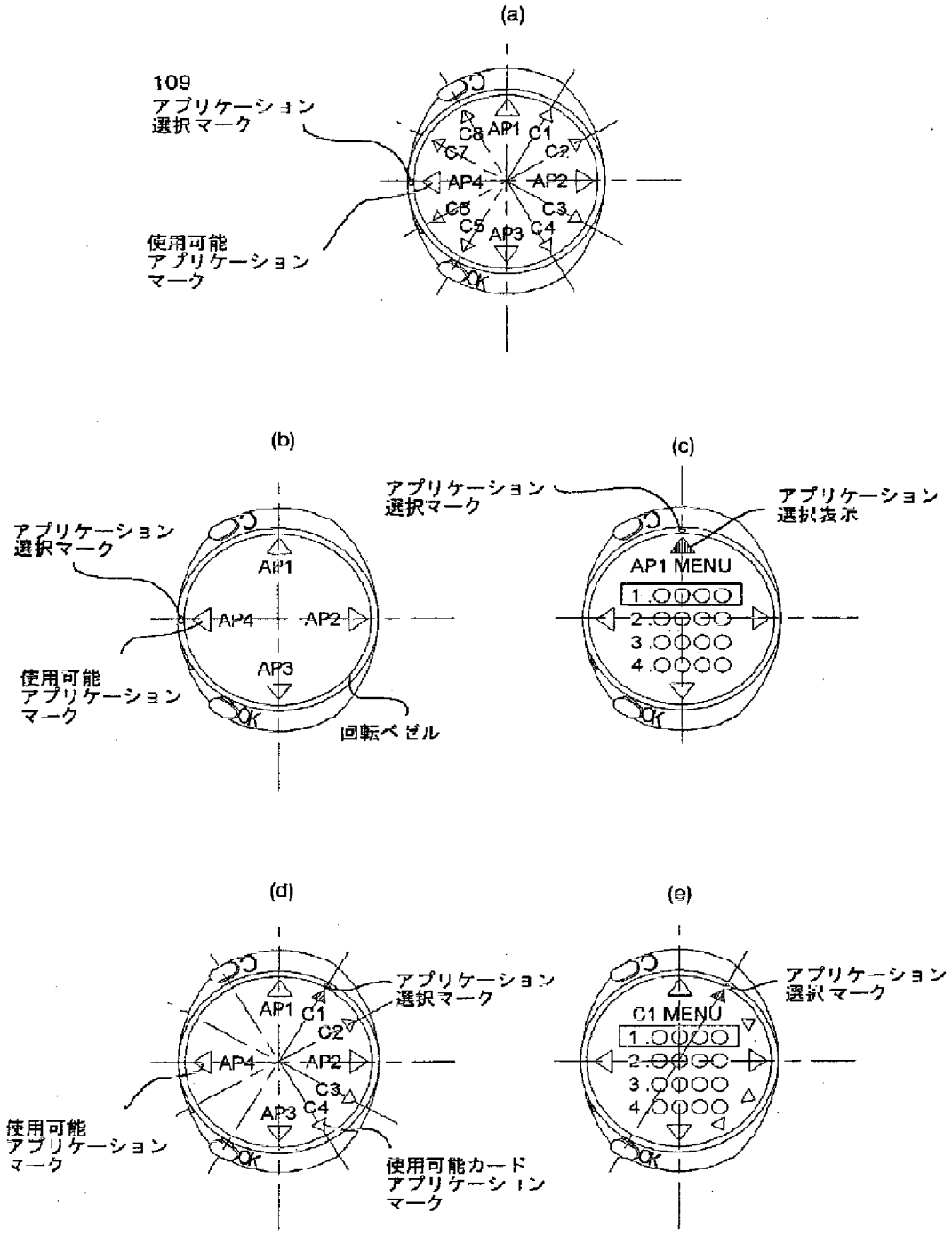
【図２１】

図２１



【図11】

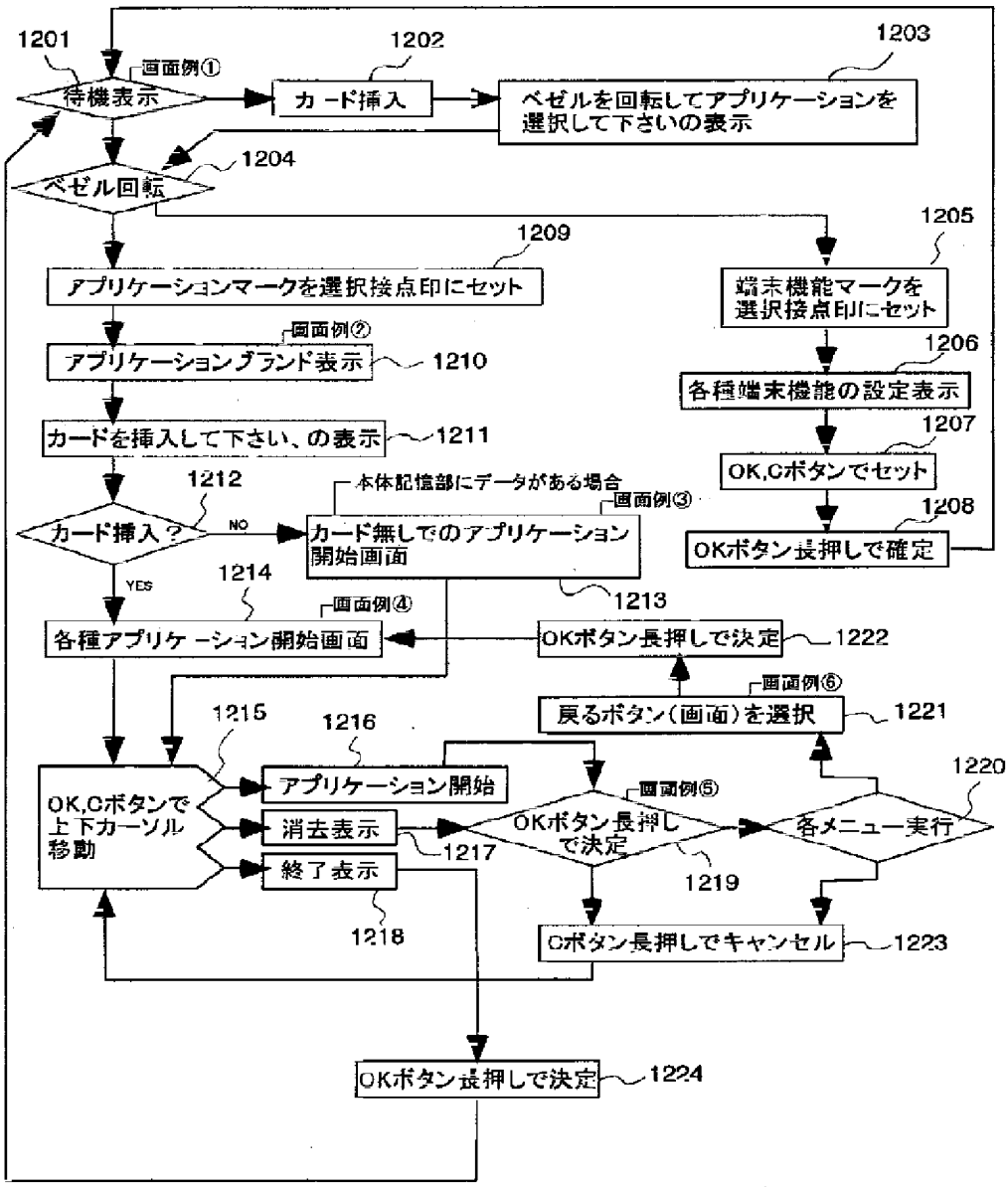
図11


(a)
109
アプリケーション
選択マーク
使用可能
アプリケーション
マーク
AP1
AP2
AP3
AP4
C1
C2
C3
C4
C5
C6
C7
C8
OK
(b)
アプリケーション
選択マーク
使用可能
アプリケーション
マーク
回転ベゼル
(c)
アプリケーション
選択マーク
アプリケーション
選択表示
AP1 MENU
1.
2.
3.
4.
(d)
アプリケーション
選択マーク
使用可能
アプリケーション
マーク
使用可能カード
アプリケーション
マーク
(e)
アプリケーション
選択マーク
C1 MENU

【図12】

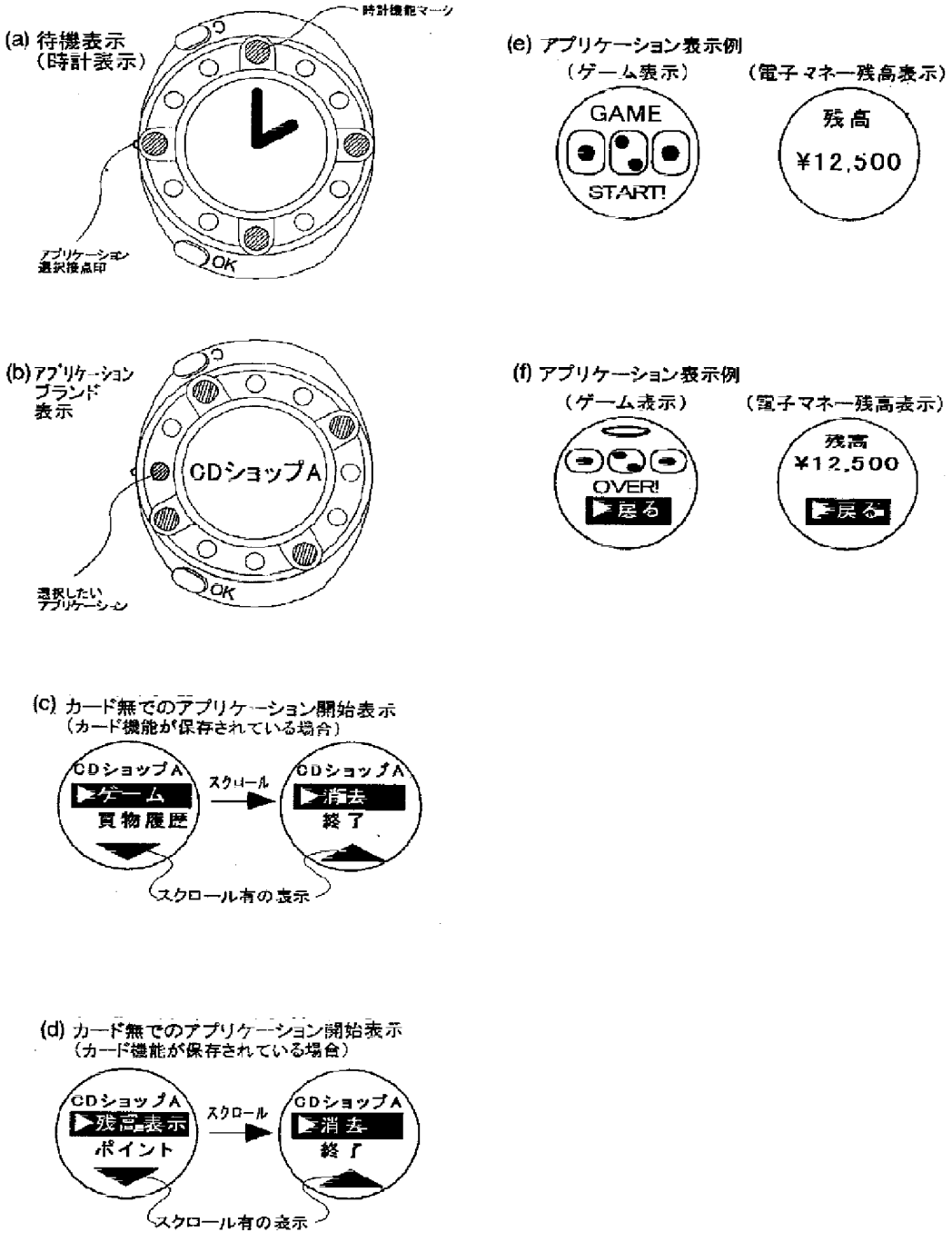
図12

ベゼル部にアプリケーションマークを表示



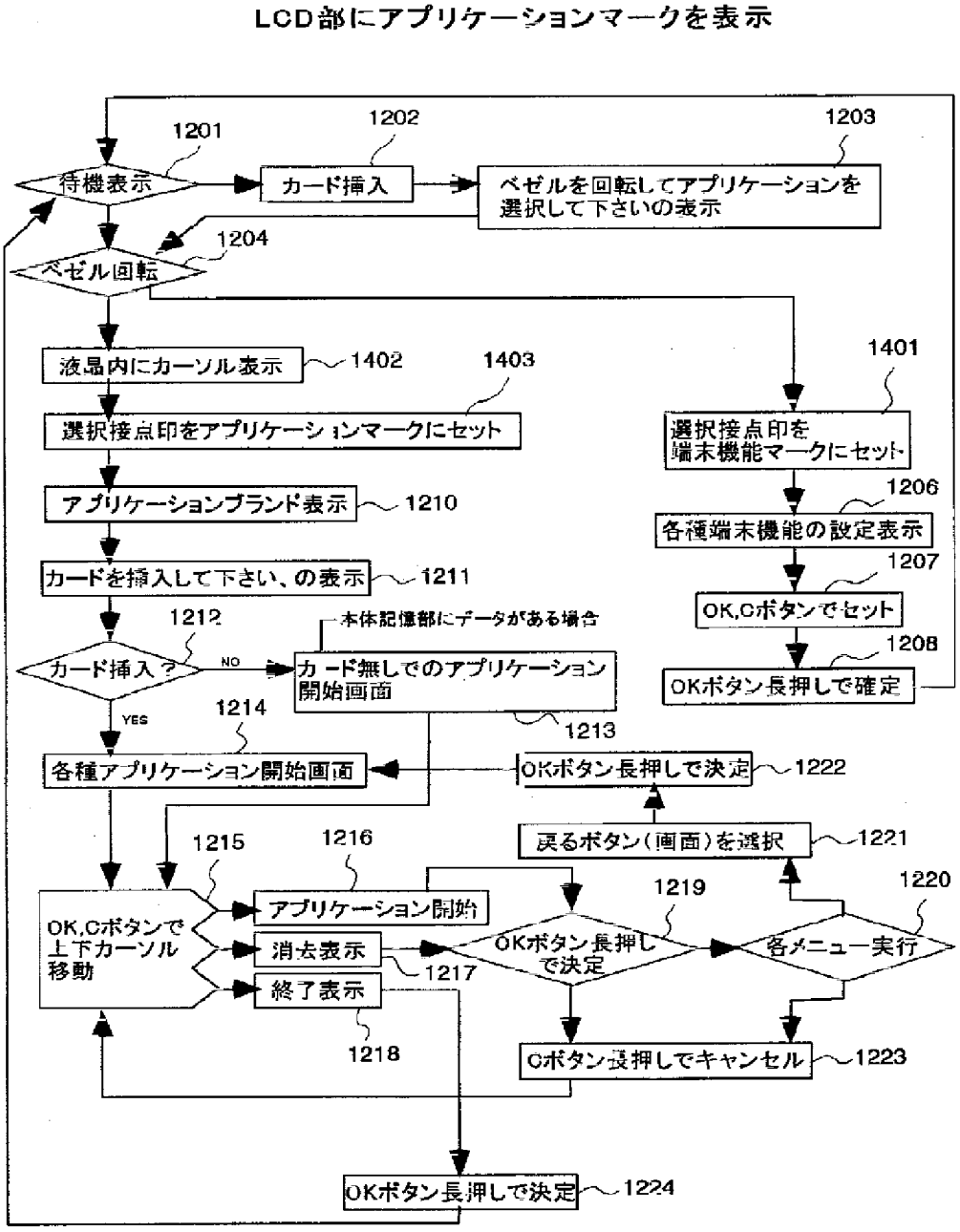
【図１３】

図１３


(a) 待機表示
（時計表示）
時計機能マーク
アプリケーション
選択指点印
OK
(b) アプリケーション
ブランド
表示
CDショップA
選択したい
アプリケーション
OK
(c) カード無でのアプリケーション開始表示
（カード機能が保存されている場合）
CDショップA
ゲーム
買物履歴
スクロール
CDショップA
消去
終了
スクロール有の表示
(d) カード無でのアプリケーション開始表示
（カード機能が保存されている場合）
CDショップA
残高表示
ポイント
スクロール
CDショップA
消去
終了
スクロール有の表示
(e) アプリケーション表示例
（ゲーム表示）
GAME
START!
（電子マネー残高表示）
残高
¥12,500
(f) アプリケーション表示例
（ゲーム表示）
OVER!
戻る
（電子マネー残高表示）
残高
¥12,500
戻る

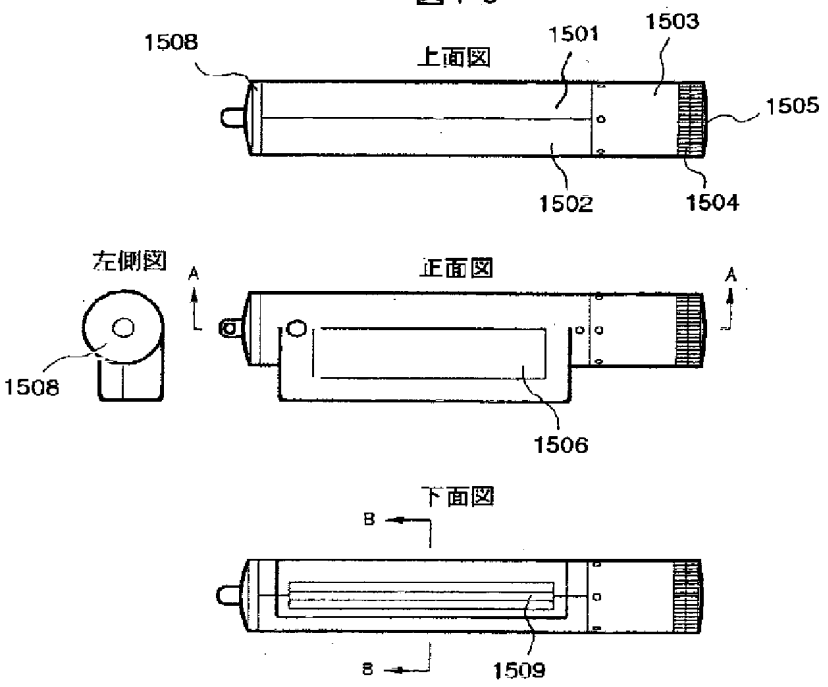
【図14】

図14


LCD部にアプリケーションマークを表示
1201
待機表示
1202
カード挿入
1203
ベゼルを回転してアプリケーションを選択して下さいの表示
1204
ベゼル回転
液晶内にカーソル表示
1402
1403
選択接点印をアプリケーションマークにセット
アプリケーションブランド表示
1210
カードを挿入して下さい、の表示
1211
1212
カード挿入？
NO
本体記憶部にデータがある場合
カード無しでのアプリケーション開始画面
1213
YES
1214
各種アプリケーション開始画面
1401
選択接点印を端末機能マークにセット
1206
各種端末機能の設定表示
1207
OK,Cボタンでセット
1208
OKボタン長押しで確定
OKボタン長押しで決定
1222
戻るボタン(画面)を選択
1221
1215
1216
OK,Cボタンで上下カーソル移動
アプリケーション開始
消去表示
終了表示
1217
1218
1219
OKボタン長押しで決定
1220
各メニュー実行
Cボタン長押しでキャンセル
1223
OKボタン長押しで決定
1224

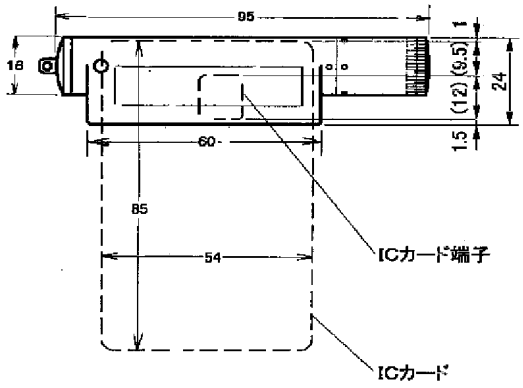
【図16】

図16



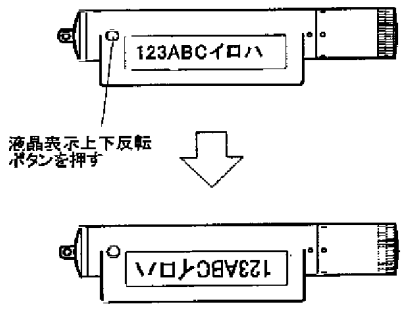
【図19】

図19



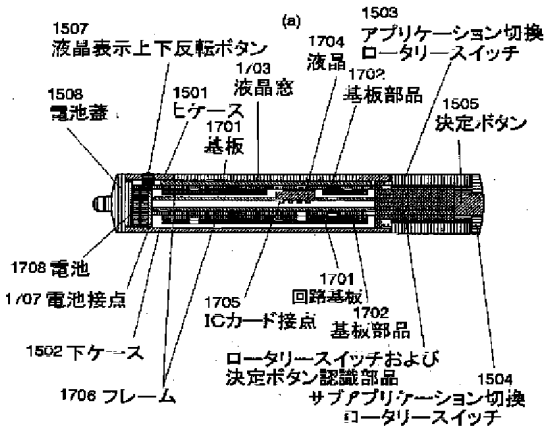
【図22】

図22



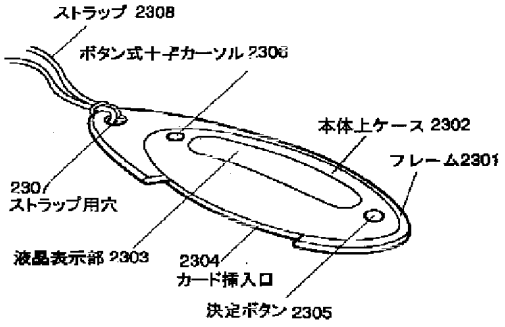
【図17】

図17



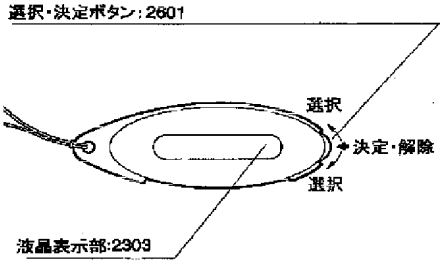
【図23】

図23



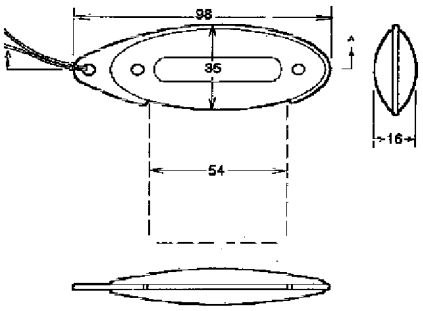
【図26】

図26



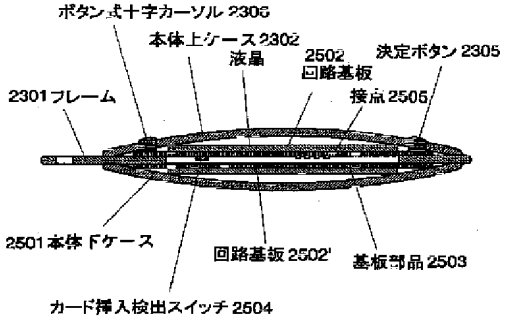
【図24】

図24



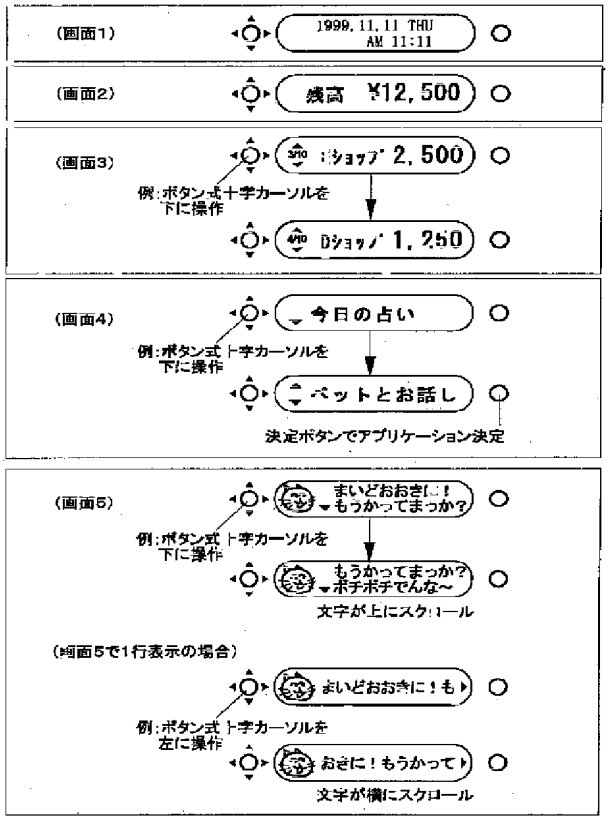
【図25】

図25



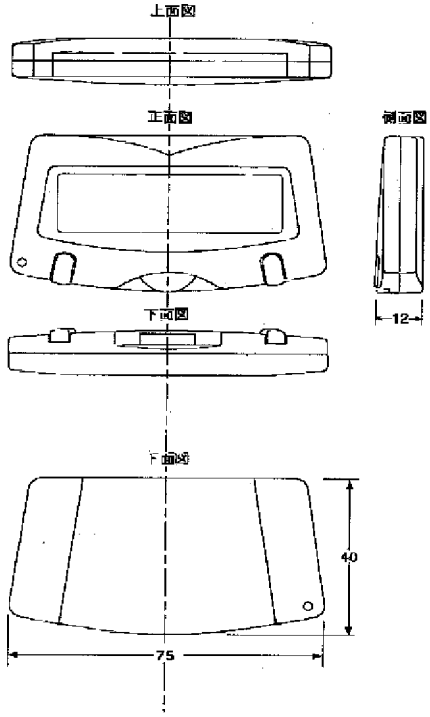
【図27】

図27



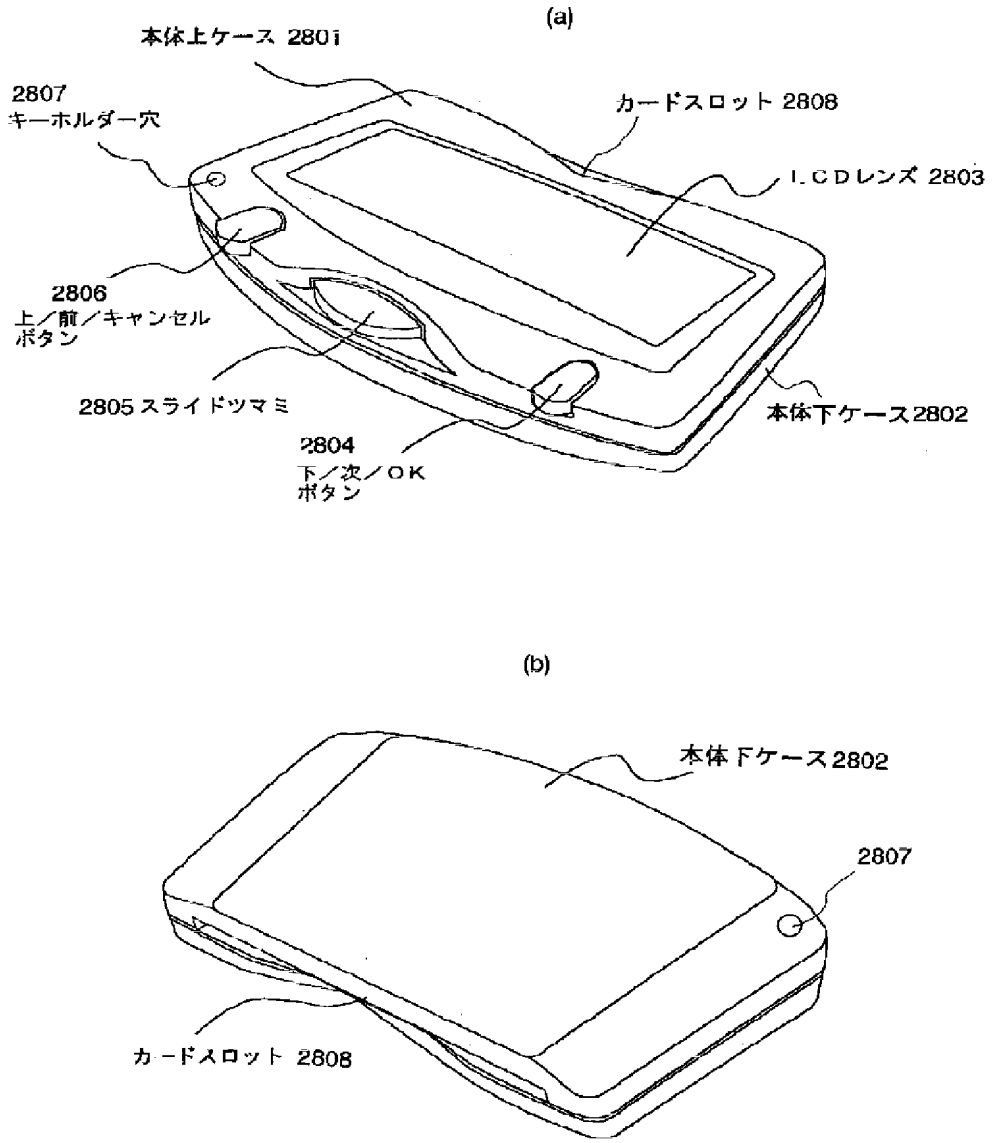
【図29】

図29



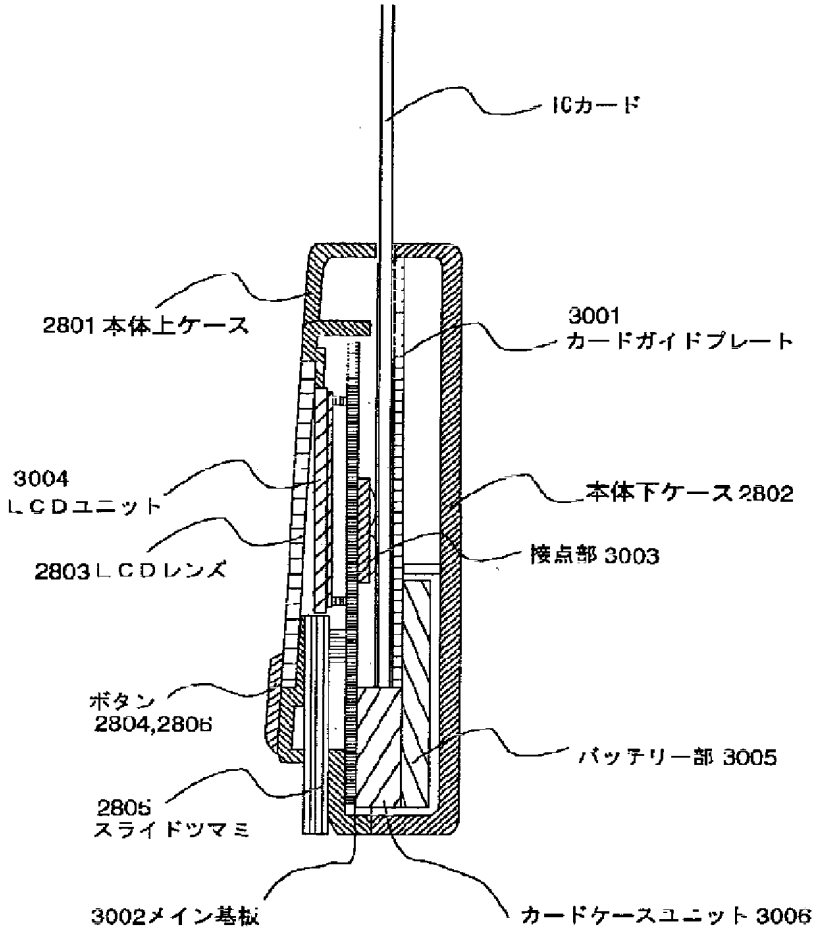
【図２８】

図２８


(a)
本体上ケース 2801
2807
キーホルダー穴
カードスロット 2808
LCDレンズ 2803
2806
上／前／キャンセル
ボタン
2805 スライドツマミ
本体下ケース2802
2804
下／次／OK
ボタン
(b)
本体下ケース2802
2807
カードスロット 2808

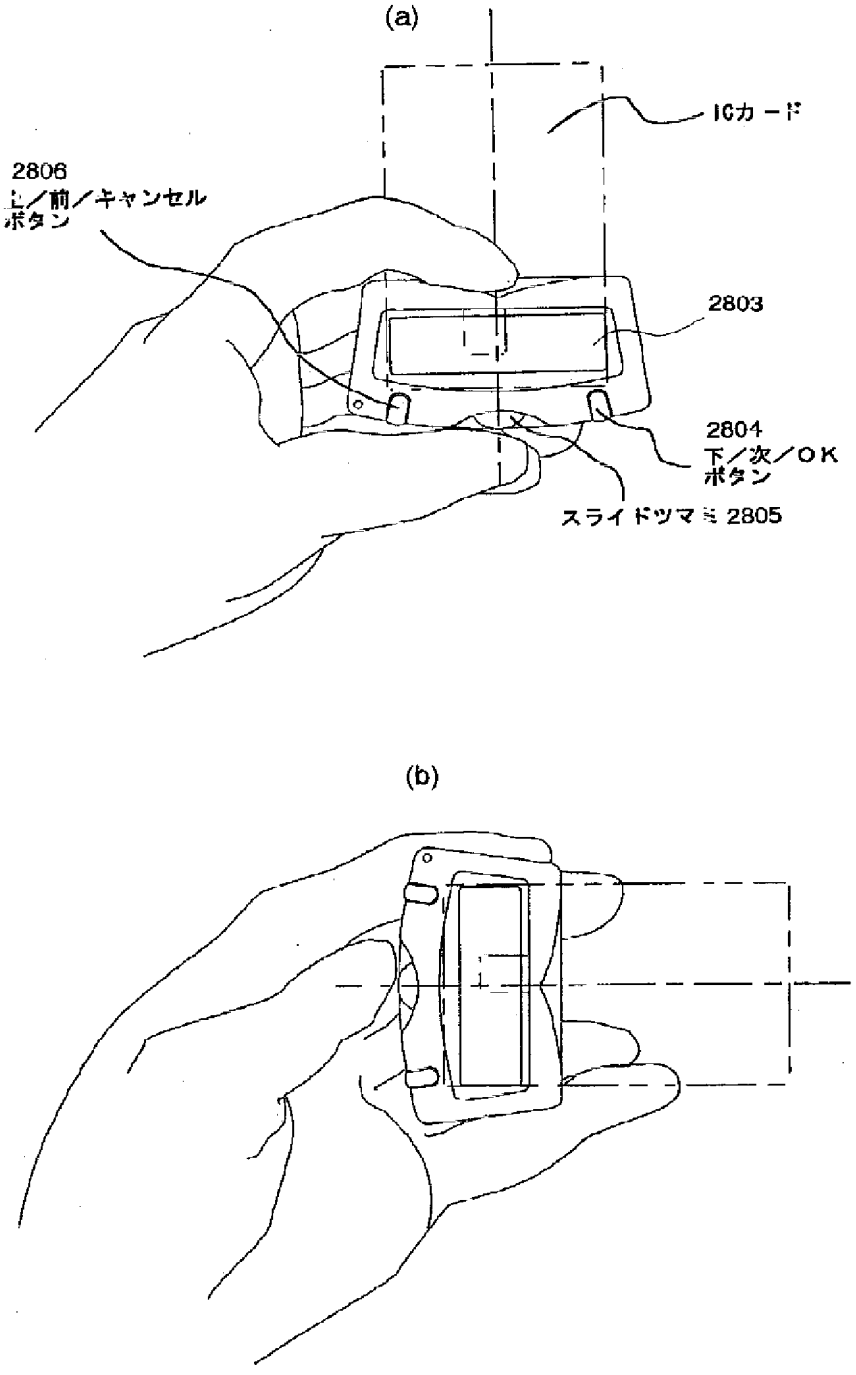
【図３０】

図３０


ICカード
2801 本体上ケース
3001
カードガイドプレート
3004
LCDユニット
本体下ケース 2802
2803 LCDレンズ
接点部 3003
ボタン
2804,2806
バッテリー部 3005
2805
スライドツマミ
3002メイン基板
カードケースユニット 3006

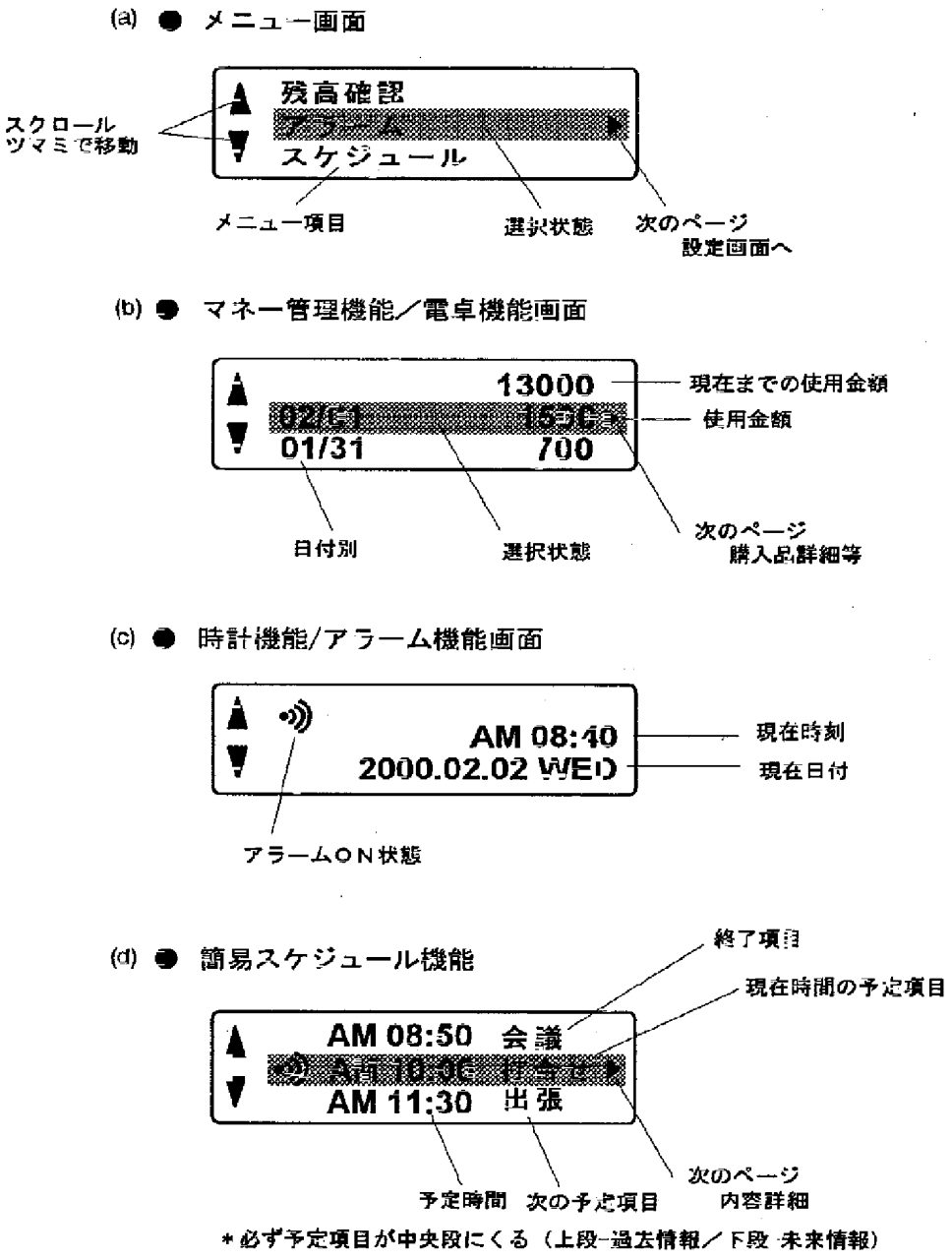
【図３１】

図３１



【図33】

図３３



フロントページの続き

(51)Int.Cl.⁷	識別記号	ＦＩ	(参考)
// Ｇ０６Ｆ 1/16		Ｇ０６Ｆ 1/00	３１２Ａ ９Ａ００１

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Ｆターム(参考)　2F002 AA01 AA02 AB02 AB03 AB06
AC01 BA04 BA05 BA07 BA21
BA26 BB03 EA01 EE00 EE01
EF01 EH01 GA00
3E040 AA03 BA18 FH05 FJ05
3E044 BA04 CA06
5B055 BB12 KK05 KK09 KK12 KK14
PA02
5B058 CA13 KA06 KA12 KA24
9A001 BB06 DD13 HH34 JJ72 KK63

PATENT ABSTRACTS OF JAPAN

(11)Publication number : **2001-167211**
(43)Date of publication of application : **22.06.2001**

(51)Int.Cl. G06F 19/00
G04G 1/00
G06K 17/00
G07F 19/00
G07F 7/08
// G06F 1/16

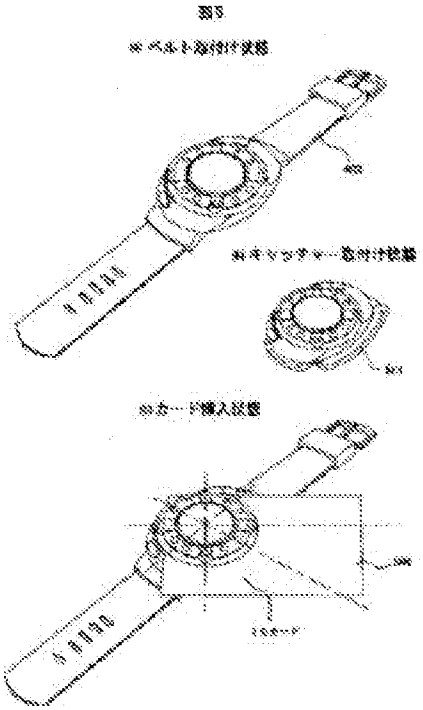
(21)Application number : **11-347885**
(22)Date of filing : **07.12.1999**

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(54) **TERMINAL FOR IC CARD**

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a terminal for IC card, which can be commonly used for various kinds of electronic currency system and credit card system, extremely miniaturized and improved in portability.
SOLUTION: The main body part of the terminal is constituted into watch so that the terminal can be attached to the arm by a belt or attached to a bag by a catcher and can display time. A display part is provided on the upper surface of the main body part and a rotatable IC card slot is provided on the side so that an IC card can be inserted from plural directions. A rotatable vessel part is provided around the main body part and by rotating the vessel part, usable applications stored in the main body part and in the IC card can be switched.



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CLAIMS

[Claim(s)]
[Claim 1]In a terminal for IC cards treating a multi application IC card which can be used common to an electronic-monetary system and two or more credit card systems, A terminal body part attaches to an arm with a belt, Or a terminal for IC cards having been constituted by clock type in which attaching to a bag by a catcher is possible, and a time stamp is possible, a display part's having been provided by the body part upper surface, and a pivotable IC card loading slot's having been provided by side surface, and enabling insertion of an IC card from two or more directions.
[Claim 2]The terminal for IC cards according to claim 1 when an IC card is inserted, wherein contact on an IC card will be stored inside a body part.
[Claim 3]The terminal for IC cards according to claim 1 or 2, wherein it has a lid which has a knob which opens a loading slot in an entrance of the aforementioned IC card loading slot.
[Claim 4]The terminal for IC cards according to claim 1, 2, or 3 changing available application stored in the aforementioned body part and an IC card by equipping the circumference of the aforementioned display part with a pivotable bezel part, and making the aforementioned body

part upper part rotate a bezel part.
[Claim 5]In a terminal for IC cards treating a multi application IC card which can be used common to an electronic-monetary system and two or more credit card systems, A terminal for IC cards characterized by what a display part was provided by the terminal body part upper surface, a pivotable cylindrical part which has a rotary switch in a side surface was provided, and an IC card loading slot was provided by terminal body subordinate surface, and was constituted by key case type.
[Claim 6]The terminal for IC cards according to claim 5, wherein a label which described two or more applications in said pivotable cylindrical part is stuck.
[Claim 7]The terminal for IC cards according to claim 5 or 6 which said pivotable cylindrical part is constituted by double ring, and is further characterized by equipping an end with a determination button.
[Claim 8]The terminal for IC cards according to claim 5, 6, or 7 being able to reverse a display of the aforementioned display part.
[Claim 9]In a terminal for IC cards treating a multi application IC card which can be used common to an electronic-monetary system and two or more credit card systems,
A terminal for IC cards characterized by comprising the following.
A frame from which a terminal body part constitutes a periphery.
It is constituted by pendant type in a case provided by the upper and lower sides of this frame, and is a display part to the terminal body part upper surface.
A button type crosshair cursor.
A determination button is provided and it is an IC card loading slot to a terminal body part side surface.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention]The present invention relates to the terminal for IC cards, and relates to the terminal for IC cards which can treat the IC card in which two or more applications were stored especially.

[0002]
[Description of the Prior Art]In recent years, various kinds of electronic-monetary systems which use an IC card, and various kinds of credit card systems which use an IC card are proposed. The microprocessor to which the IC card used for these systems has a communication function in the inside, When it is given by a processing program, the balance of electronic money, and use of a card and the mark serve as a specified value, it has a memory by EEPROM etc. which store the point which can receive predetermined money and goods, and is constituted. And extraction and insertion of electronic money is possible for the IC card used for electronic money among other IC cards by using a terminal for exclusive use via the electronic-monetary system arbitrarily constituted via a communication line in the terminal with which a bank, a store, an individual residence, etc. are equipped so that connection is possible. The IC card used for a credit receives the check of the justification of the card from a credit company via the terminal with which a store etc. are equipped, and the above-mentioned point is stored after processing of merchandise purchase etc.
[0003]And the multi application IC card whose correspondence was enabled by the IC card of one sheet is also proposed to various kinds of systems which were mentioned above.
[0004]The technology described in JP,H11-39445,A etc. is known, for example as a prior art about the system which uses this kind of multi application IC card, and a multi application IC card.
[0005]
[Problem to be solved by the invention]A multi application IC card common to the electronic-monetary system of the various kinds proposed by the above-mentioned, and various kinds of credit card systems, Since what is necessary is just only considering using it at a financial institution, a store, etc. to walk around with the IC card of one sheet, it can be said that portability is dramatically good. However, the user has the demand of liking to check the information in an IC card, by the place where one has gone etc., for this reason it is small and the terminal excellent in portability is required.
[0006]There is the object of this invention in providing the terminal for IC cards which was excellent in portability by the small size for treating the multi application IC card which can be used common to various kinds of electronic-monetary systems mentioned above, a credit card system, etc.
[0007]
[Means for solving problem]In the terminal for IC cards treating the multi application IC card which can use the aforementioned purpose common to an electronic-monetary system and two or more credit card systems according to the present invention, A terminal body part attaches to an arm with a belt, Or it is constituted by the clock type in which attaching to a bag by a catcher is possible, and a time stamp is possible, a display part is provided by the body part upper surface, a pivotable IC card loading slot is provided by the side surface, and it is attained by having enabled insertion of the IC card from two or more directions.
[0008]Again the aforementioned purpose by storing the contact on an IC card inside a body part, when an IC card is inserted in the entrance of the aforementioned IC card loading slot, By having a lid with the knob which opens a loading slot, by equipping the circumference of the aforementioned display part with a pivotable bezel part, and making the aforementioned body part upper part rotate a bezel part, It is attained by changing the available application stored in the aforementioned body part and the IC card.
[0009]In the terminal for IC cards treating the multi application IC card which can use the

aforementioned purpose common to an electronic-monetary system and two or more credit card systems, It is attained, when the display part was provided by the terminal body part upper surface, the pivotable cylindrical part which has a rotary switch in a side surface was provided, the IC card loading slot was provided by the terminal body subordinate surface and it was constituted by the key case type.
[0010]By having stuck the label in which the aforementioned purpose described two or more applications in the above-mentioned pivotable cylindrical part, It is attained by that the display of the aforementioned display part can be reversed again by the above-mentioned pivotable cylindrical part's having been constituted by the double ring, and having equipped the end with the determination button further.
[0011]In the terminal for IC cards treating the multi application IC card which can use the aforementioned purpose common to an electronic-monetary system and two or more credit card systems, It is attained, when the terminal body part was constituted by the pendant type in the frame which constitutes a periphery, and the case provided by the upper and lower sides of this frame, the display part, the button type crosshair cursor, and the determination button were provided by the terminal body part upper surface and the IC card loading slot was provided by the terminal body part side surface.
[0012]
[Mode for carrying out the invention]Hereafter, the embodiment of the terminal for IC cards by the present invention is described in detail with Drawings.
[0013]The perspective view showing the appearance of the terminal for IC cards according [Fig.1] to the first embodiment of the present invention, The 4th page figure showing the appearance of the IC card terminal according [Fig.2] to a first embodiment, the cross sectional view of the terminal for IC cards according [Fig.3] to a first embodiment, and Fig.4 are exploded perspective views which describe the structure of the whole terminal for IC cards by a first embodiment.In Fig.1 - Fig.4, a main part upper case and 102 101 A rotation card slot,103 a bezel base part and 104 an OK button and 105 The C button, 106 a bezel part and 107 a function / application setting mark, and 108 An issuer application mark sticking part, 109 an application selection mark and 110 a LCD lens and 111 A main part lower case, 112 the lid for changing batteries, and 113 a belt mounting part and 114 A belt mounting hole, 201 a garbage extraction hole and 301 an LCD unit and 302 An LCD unit case, 303 a main substrate and 304 an interface board and 305 A contact ring part, 306 and 307 -- a rotation contact surface and 308 -- an IC contact part and 309 -- as for a rotation slot unit and 402, a rotation card slot and 311 are [a belt and 404] belt fitting pins a rotation lock button and 403 a rotatable base part and 401 a cell and 310.
[0014]The first embodiment of the present invention is applied to small clocks, such as a wrist watch, as shown in the top perspective view shown in Fig.1 (a), the back surface perspective view shown in Fig.1 (b), and the 4th page figure shown in Fig.2.And on the body part constituted with the main part upper case 101 and the main part lower case 111 as the terminal for graphic display IC cards is shown in Fig.1, The bezel base part 103 and the bezel part 106 which are constituted pivotable are provided, and the rotation card slot 310 which can insert the IC card which is not illustrated between the bezel base part 103 and the main part upper case 101 is formed, and it is constituted. OK button 104 and the C (clear) button 105 for operation are arranged at the position of the outside of the bezel base part 103 of the main part upper case 101, and the application selection mark 109 is arranged in the side surface of the bezel base part 103. The function / application setting mark 107, and the issuer application mark sticking part 108 for

which the LCD lens 110 is arranged and the inner portion of the bezel part 103 formed circularly mentions the function later around the bezel part 103 are arranged. The lid 112 for changing batteries is provided by the main part lower case 111 by the side of the back surface, and the belt mounting part 113 which has the belt mounting hole 114 which connects the belt which is not illustrated is provided, and the terminal for graphic display IC cards is constituted. The dustpan broth hole 201 for garbage discharge is provided by the innermost part of the rotation card slot 310.

[0015]Inside the terminal for IC cards by the first embodiment of the present invention, As shown in the cross sectional view shown in Fig.3. The IC contact part 308 which makes connection between LCD unit 301, the main substrate 303 and the main substrate 303 which were stored in the LCD unit case 302, and the inserted IC card, the contact ring part 305 which makes connection between the main substrate 303 and other substrates, the rotation contact surfaces 306 and 307, The interface board 304, the cell 309, and the rotatable base part 311 are stored. The inside of the rotation card slot 310 is constituted as the rotation card slot 310.

[0016]Fig.4 shows the assembly situation of each component which constitutes the first embodiment of the present invention described by the above-mentioned as an exploded perspective view, and the portion to the rotatable base part 311 constitutes the rotation slot unit 401 from the LCD lens 110 in Fig.4. The component from the bezel part 106 of this rotation slot unit 401 to the rotation card slot 310, When changing the path of insertion of an IC card, it is constituted pivotable, and in the case of the application selection after card insertion, etc., the component from the bezel part 106 to the rotation contact surface 307 is pivotable.

[0017]It indicates Fig.4 that the terminal for IC cards is attached to the belt 403 so that it may be possible to usually use the first embodiment of the present invention as a wrist watch. Attachment to the belt 403 of the terminal for IC cards is performed by the belt mounting hole 114 and the belt fitting pin 404 of the belt mounting part 113 of the main part lower case 111 which were described by the above-mentioned.

[0018]The figure which describes the anticipated-use state of the terminal for IC cards and the insertion condition of an IC card according [Fig.5] to the first embodiment of the present invention, The figure described about the variation of the path of insertion of the state where Fig.6 attached the terminal for IC cards by the first embodiment of the present invention to the arm, and the IC card was inserted, and an IC card, The figure which Fig.7 describes about the path of insertion of a card slot, the figure which describes that Fig.8 rotates the bezel part 103 and chooses application,Fig.9 is a figure described about the composition of the water proof dustproof mechanism over a card slot, and a figure which Fig.10 describes about other examples of the path of insertion of an IC card.In Fig.5 - Fig.10, a catcher and 502 501 An IC card,As for a water proof dustproof lid knob and 902, 701 and 702 are [an up-and-down spring unit and 1001] the guides for insertion a vertical slide water proof dustproof lid and 903 a card end support component and 901, and other codes are the same as that of the case of Fig.1 - Fig.4.

[0019]The terminal for IC cards by the first embodiment of the present invention, When attached to the belt 403, as can be in the state where it is shown in Fig.5 (a), clock information is displayed on LCD unit 301, and it can usually be used as a wrist watch and it is shown in Fig.5 (b). It can be used by attaching to the catcher 501, being able to attach to the belt of a bag and trousers, etc. Also in this case, clock information can be displayed on LCD unit 301, and it can usually be used as a clock. The state where IC card 502 was inserted in the terminal for IC cards of the state as a wrist watch shown in Fig.5 (a) is shown in Fig.5 (c). Two sides of the corner of a card are positioned by the card end support components 701 and 702, IC card 502 is inserted,

and the contact on a card is connected with the IC contact part 308.
[0020]The state where IC card 502 was inserted is shown in the terminal for IC cards in the state where the back side of the hand of the left arm was equipped, and IC card 502 is inserted in Fig.6 (a) from the upper right, and is inserted in it with 45 inclination to the direction of 12:00 of a clock. At this time, it will be placed on the back of a hand, and an IC card is held stably, and the portion which comes out to the outside of the terminal of IC card 502 does not become the obstacle of operation with the right hand. In Fig.6 (a), the rectangular head shown in the LCD lens 110 shows a position with IC card-like contact, and its dimension. IC card 502 can be inserted from a different direction by a unit of 90 degree to the path of insertion shown in Fig.6 (a), as shown in Fig.6 (b). When the direction of a shown in Fig.6 (b) is equivalent to the state of Fig.6 (a) and the back side of the hand of a right arm is equipped with the terminal for IC cards, the insertion from c is effective, the palm of the left arm -- when a side is equipped, the insertion from b is effective -- the palm of a right arm -- when a side is equipped, the insertion from d is effective.
[0021]The rotation card slot 310 in which IC card 502 is inserted, As shown in Fig.7, have the card end support components 701 and 702 which support two sides of IC card 502 inserted, and it is constituted, It can be rotated by rotation of the component which constitutes the rotation slot unit 401 described by Fig.4, and can be set as one of two or more of the directions of card insertion described by Fig.6.And after the path of insertion is set up once, it is locked so that the path of insertion of IC card 502 may not change with rotation lock buttons 402. The portion with which the two card end support components 701 and 702 are not connected serves as an outside open hole, and serves as the garbage extraction hole 201 which this hole described by the above-mentioned. The garbage included in the inside of a slot is discharged by the insertion operation of a card at the time of insertion of an IC card.
[0022]It may be made to insert the path of insertion of IC card 502 not only from the example described by Fig.6 but from what kind of direction. However, when IC card 502 is inserted, it is required to be able to support and position by two sides of a card, as the IC card was mentioned above.
[0023]Next, with reference to Fig.8, it describes about changing application by rotating the bezel part 106. As described by Fig.1 and Fig.2, around the bezel part 106,The function / application setting mark 107, and the issuer application mark sticking part 108 are arranged, Application can be switched by rotating the bezel part 106 and positioning these one in the position of the application selection mark 109. By four somewhat large round marks which gave the slash being a function / application setting mark 107 in Fig.8, and positioning these one in the position of the application selection mark 109, The functions and applications which can choose the function with which a body part is equipped, and application and with which a body part is equipped are a clock function, an alarm function, a calculator function, simple game functions, fortune-telling, etc., for example. eight small round marks show -- it is the issuer application mark sticking part 108, and the application which it has in IC card 502 can be chosen by positioning these one in the position of the application selection mark 109. The applications which it has in an IC card are the personal information on the check of hysteresis information, such as monthly [to the balance confirmation of electronic money, and the purchase of goods], and a goods-purchased exception, money management information, settlement information, list of names, an address book, a telephone directory, etc., schedule information, private-information-proctection ID management information, etc., for example.
[0024]As various kinds of applications which were mentioned above were mentioned above,

when it is chosen, the initial screen is displayed on the display screen of LCD unit 301. Subsequent operation is mentioned later. In the above-mentioned, the function / application setting mark 107 was described for providing four pieces and the eight issuer application mark sticking parts 108, but these numbers can be made into any number.

[0025]In the description to the above-mentioned, the rotation card slot 310 is outside open, and water, dust, etc. enter easily. The first embodiment of the present invention can provide the water proof dustproof lid of a sliding type at the entrance of the rotation card slot 310, in order to prevent such a thing. This water proof dustproof lid has the collar-like part material which plugs up the entrance and the garbage extraction hole 201 of the rotation card slot 310, as shown in Fig.9, It is constituted by the vertical slide water proof dustproof lid 901 constituted up and down with the up-and-down spring unit 903 so that a slide was possible, and the water proof dustproof lid knob 901 provided by the flange. In the state where the IC card is not inserted, it will be in the state where the entrance and the garbage extraction hole 201 of the rotation card slot 310 were closed by the collar-like part material of the vertical slide water proof dustproof lid 901 pushed up with the up-and-down spring unit 903, and entering of water, dust, etc. will be prevented. An IC card is inserted at the time of insertion of an IC card, depressing the water proof dustproof lid knob 901 by an IC card. That is, if the water proof dustproof lid knob 901 is depressed by an IC card, the entrance and the garbage extraction hole 201 of the rotation card slot 310 will open, and it will become possible to insert an IC card easily.

[0026]Now, although described in the above-mentioned about some variations which insert IC card 502 from an oblique direction to the body part which constitutes the terminal for IC cards, the first embodiment of the present invention can insert IC card 502 from just beside [of a body part], as shown in Fig.10. In this case, the guide 1001 for insertion of linear shape is provided by the surface or the back surface of IC card 502 with convex for support in the guide for insertion, and the predetermined position of a card. Although not shown in a figure, inside the card slot of the terminal for IC cards, the slot which engages with this guide 1001 for insertion is provided.

[0027]Fig.11 is a figure which describes the modification of the first embodiment of the present invention described by the above-mentioned, and describes about the modification of this first embodiment hereafter.

[0028]Although many function / application setting mark 107, and the issue application mark sticking part 108 were provided in the bezel part 106, the first embodiment of the present invention mentioned above, As the modification shown in Fig.11 provides only the application selection mark 109 in the bezel part 106, it miniaturizes the bezel part 106. And it is made to display an application setting mark on the display part of an LCD unit.

[0029]The example which shows all the applications AP1-AP4, i.e., basic applications usable only at a body part, which can be displayed, and the applications C1-C8 currently held at the IC card to the display part is shown in Fig.11 (a). Such applications can be chosen by positioning in the position of the application which is having the application selection mark 109 which makes rotate the bezel part 106 and is provided by the bezel part 106 displayed. Fig.11 (b) shows the state at the time of initial use, and the usable applications AP1-AP4 are displayed only by a body part, and it shows that the application selection mark 109 is positioned in the position of AP4. And if the application selection mark 109 is positioned in the position of AP1 as shown in Fig.11 (c), an usable menu will be displayed by application AP1. And the C button 105 and OK button 104 function as buttons of up-and-down scrolling, and these menus become selectable. If one the C button 105 or OK button 104 after another which functions as a button of up-and-down scrolling is pushed, menus also including the menu which was not displayed since the display

screen was small will be displayed cyclically. The selected menu is determined by the long aggressiveness of OK button 104, or serves as a display of the following screen of the menu.
[0030]in addition -- it is scrolling when a button is detached at the time of the usual up-and-down scrolling, in order to operate the long aggressiveness of a button -- opportunity Yoshiyuki ****** -- to make it like and what is necessary is just made to consider it as determination by long aggressiveness
[0031]IC card 502 is inserted and Fig.11 (d) shows the state where the application selection mark 109 was positioned in the position of the application C1 which shows the application currently held at the IC card, In the basic applications AP1-AP4, the usable application currently held at the IC card, and an illustrated example, the applications C1-C4 are displayed. In this example, that the mark of three angles of the position of the application C1 is displayed black shows that that application is what moves the application in an IC card to a body part, and saves it. And if the application selection mark 109 is positioned in the position of the application C1 currently displayed, as shown in Fig.11 (e), an usable menu will be displayed with the application C1. Selection of these menus and operation can be performed like Fig.11 (c).
[0032]The flow chart which Fig.12 describes about operation processing of the terminal for IC cards by the first embodiment of the present invention, and Fig.13 are figures which describe the example of a display screen displayed in the middle of processing, hereafter, use Fig.12 and Fig.13 and describe about operation flows and the example of a display screen.The operation flows described by Fig.12 are the examples at the time of providing a function / application setting mark 107, and the issuer application setting mark 108 on the upper surface of the bezel part 106.
[0033](1) In the usual waiting state, as shown in Fig.13 (a), time shall be shown by the clock function which is basic applications. In this state, if a user inserts IC card 502 in a terminal, it will not illustrate to a display screen, but the display of "please rotate a bezel and choose application" is performed (Steps 1201-1203).
[0034](2) A user rotates a bezel after insertion of direct or an IC card from the screen of a waiting state, If the function / application setting mark 107 which is a selection mark of basic applications are positioned in the position of the application selection mark 109, the menu of a selection of function of the application will be displayed. The state of this display is what was described by Fig.11 (c) (Steps 1204-1206).
[0035](3) Choose one of the functions with the C button 105 and OK button 104, and determine by the long aggressiveness of OK button 104. Henceforth, it will be in the state where the display of the function is performed, and will be in a waiting state (Steps 1207, 1208, and 1201).
[0036](4) If a user rotates a bezel and positions the issue application setting mark 108 which is a selection mark of the application in a card in the position of the application selection mark 109, As shown in Fig.13 (b), the application name (brand) A, for example, CD shop etc., is displayed (Steps 1204, 1209, and 1210).
[0037](5) After indicating "insert a card" etc. and urging insertion of a card to it when the IC card is not inserted since this application is the application in the IC card inserted, it checks the existence of card insertion (Steps 1211 and 1212).
[0038](6) If the contents of the application downloaded from the card are in a main part when the card is not inserted with the check of Step 1212, as shown in Fig.13 (c), menus, such as the function of the application, for example, a game, and a shopping history, will be displayed. If the card is inserted, as shown in Fig.11 (d), menus, such as the application function in an IC card, for example, a balance display, and a point, will be displayed (Steps 1213 and 1214).

[0039](7) Carry out up-and-down scrolling with one of the menus displayed at Steps 1213 and 1214, the C button, and an OK button, choose, or display elimination and an end and choose (Step 1215).
[0040](8) When you would like to start the menu selected at Step 1215, Or when the display of elimination is chosen, the menu is determined by the long aggressiveness of an OK button, For example, it can be considered as a display as shown in Fig.13 (e), and the menu, for example, the screen of a game, can be displayed and performed, or the balance can be displayed (Steps 1216, 1217, 1219, and 1220).
[0041](9) After determination at Steps 1219 and 1220, Or since the menu which returns as it is canceled, and it returns to Step 1215 and it is shown in Fig.13 (f) after the end of a game and a balance display will be displayed if the long aggressiveness [the C button] in the middle of execution of a menu, By long aggressiveness [an OK button], it returns to the state of an application start of Step 1214 (Steps 1221 and 1222).
[0042](11) It can return to the display of the waiting state of Step 1201 by long aggressiveness [Step 1215 / displaying the menu of an end and / an OK button] (Steps 1218 and 1224).
[0043]Fig.14 is a flow chart described about operation processing of the terminal for IC cards by the modification of the first embodiment of the present invention, and describes about this hereafter. The example described here is an example at the time of making small the bezel part described by Fig.11, and providing only an application selection mark in a bezel part, and since the most is the same as that of the flow shown in Fig.12 fundamentally, below, suppose it that only the portion which is different from the case of Fig.12 is described.
[0044]One of the points which are different from the flow of Fig.12 by the flow shown in Fig.14.The user in Step 1205 of Fig.12 rotates a bezel part, Instead of operation of positioning the function / application setting mark 107 which is a selection mark of basic applications in the position of the application selection mark 109, a user rotates a bezel part, It is the point made into the position of the selection mark of the basic applications currently displayed with the operation of Step 1401 in which the application selection mark 109 is positioned.
[0045]A user [in / in other one / Step 1209 of Fig.12] rotates a bezel, The issue application setting mark 108 which is a selection mark of the application in a card to the operation positioned in the position of the application selection mark 109 Instead of, It is the point which selectable application was displayed on the display part, and the user rotated the bezel part, and was made into the position of the application mark currently displayed with the operation of Steps 1402 and 1403 in which the application selection mark 109 is positioned.
[0046]The perspective view showing the appearance of the terminal for IC cards according [Fig.15] to the second embodiment of the present invention, The 4th page figure showing the appearance of the IC card terminal according [Fig.16] to a second embodiment, The cross sectional view of the terminal for IC cards according [Fig.17] to a second embodiment, the figure which Fig.18 describes about pasting of the application label to the terminal for IC cards by a second embodiment,The figure with which the figure, Fig.20, and Fig.21 which Fig.19 describes about the outside dimension of a second embodiment describe the modification of a second embodiment, and Fig.22 are figures described about reversal of a display.In Fig.15 - Fig.22, a main part upper case and 1502 1501 A main part lower case,An application change rotary switch and 1504 1503 A sub application change rotary switch, 1505 a determination button and 1506 a liquid crystal display section and 1507 A liquid-crystal-display flip vertical button, 1508 a battery lid and 1509 an IC card loading slot and 1510 An application setting mark, 1511 an application selection mark and 1701 a circuit board and 1702 A board part article, 1703

-- a liquid crystal window and 1704 -- as for a battery contact and 1708, IC card contact and 1706 are [a card slot lid and 1710] rotary switch contact and a determination button recognition part article a cell and 1709 a frame and 1707 a liquid crystal and 1705.
[0047]As the second embodiment of the present invention been the example which constituted the present invention as a key case type and shown in the perspective view of the whole shown in Fig.15, and the 4th page figure shown in Fig.16.It has the IC card loading slot 1509 which inserts an IC card in cylindrical [a part of], and has the appearance shape which attached four[which equip the upper surface with the liquid crystal display section 1506] -sided prisms. And the terminal for graphic display IC cards, The application change rotary switch 1503 and the sub application change rotary switch 1504 which made cylindrical shape the side surface of the longitudinal direction of the body part constituted with the main part upper case 1501 and the main part lower case 1502 are provided, The battery lid 1508 which has a strap hole is provided with and constituted by the short cylindrical part provided by the side surface of an opposite side.
[0048]And on the neighborhood upper surface of a bond part with the application change rotary switch 1503 of the main part upper case 1501, The application selection mark 1511 is attached and the plurality 1510, for example, six application setting marks, is attached to the circumference near the bond part with the body part of the application change rotary switch 1503. By rotating the application change rotary switch 1503 and positioning one of the application setting marks 1510 of these in the position of the application selection mark 1511, The application currently previously assigned to the application setting mark 1510 can be chosen. Thus, after choosing one application, usable sub application can be chosen in the application by rotating the sub application change rotary switch 1504.
[0049]On the upper surface of the body part constituted with the main part upper case 1501 and the main part lower case 1502, Reverse the liquid crystal display section 1506 and the direction of a printable character, and the C button in a first embodiment and the liquid-crystal-display flip vertical button 1507 which has an equivalent function are provided, The card slot 1509 is provided at the transverse-plane side of the doubling portion of the main part upper case 1501 and the main part lower case 1502, The determination button 1505 which has a function equivalent to the OK button in a first embodiment is provided by the side surface of the sub application change rotary switch 1504.
[0050]Inside the terminal for IC cards by the second embodiment of the present invention, As shown in the A-A section of the Fig.16 of Fig.17 (a) and Fig.17 (b), and a B-B section.The liquid crystal window 1703 and the liquid crystal 1704 which constitute the liquid crystal display section 1506, The circuit board 1701 with the IC card contact 1705 and the board part article 1702 for connection with the contact by the side of an IC card, The frame 1706 of two sheets which constitutes a card slot, and the circuit board 1701' with the board part article 1702' of one more sheet are arranged in order in the direction of at the bottom from the upper surface of the body part. Inside the application change rotary switch 1503, The switch contact and the determination button recognition part article 1710 of the two rotary switches 1503 and 1504 are provided, and the position inside the battery lid 1508 is further equipped with the battery contact 1707 and the cell 1708.
[0051]As shown in the Fig.17 (c) in which the state where the card slot 1509 was expanded is shown, in the entrance of the card slot 1509, The card slot lid 1709 is provided, and this lid 1709 is rotated by down [inside] in the direction shown in an arrow by insertion of an IC card, and enables insertion of a card. And in the state where the card is not inserted, it is held with power, such as a spring, at an illustrated position, the card slot 1509 is plugged up, and the lid 1709 is

prevention ******** about entering of water, dust, etc.
[0052]Although the second embodiment of the present invention described by the above-mentioned assumed that the plurality 1510, for example, six application setting marks, is attached to the circumference near the bond part with the body part of the application change rotary switch 1503, Only by such a mark. [what kind of application is set up and] Although it cannot but understand at a glance but the application must be checked according to the state where it was chosen and displayed, in the embodiment of the present invention, He sticks the label in which an application name is shown on the circumference of the application change rotary switch 1503, and is trying to know the established state of application at a glance.
[0053]The example shown in Fig.18 (a) is an example which stuck the label which only described the small application name next to the axial direction of the application setting mark 1510. The example shown in Fig.18 (b) next to the axial direction of the application setting mark 1510, The mark which shows pasting ****** for the label which described the application name is previously provided as a label attachment guide by slot, a dent, printing, etc., and it is the example which stuck the label which described the application name here.
[0054]The Fig.19 which wrote the dimension in the front view shows size ** of the size of the terminal for IC cards by the second embodiment of the present invention described by the above-mentioned. Since the dimensions of the IC card standardized in every direction are 85 mm x 54 mm, the body part of the terminal for IC cards by a second embodiment, Since the dimension of the transverse direction is 60 mm as shown in a figure, and the contact position on an IC card is in the portion from the edge of the longitudinal direction of an IC card to 21.5 mm, the dimension of the depth direction of a body part is constituted as 24 mm. Thereby, at the time of insertion of an IC card, the contact surface of an IC card is stored in a main part, and connection with an internal circuit is attained.
[0055]The relation between a body part and a cylindrical part is constituted so that a part of body part may project in one side of a cylindrical part, so that he can understand the second embodiment of the present invention described above from the front view, a perspective view, etc. The modification of this second embodiment is shown in Fig.20, and the relation between a body part and a cylindrical part constitutes this modification so that a part of body part may project on both sides of a cylindrical part. Also in this case, by supposing that it is the same as that of the case where the depth size and width dimension of a body part are described by Fig.19, at the time of insertion of an IC card, the contact surface of an IC card is stored in a main part, and connection with an internal circuit is attained.
[0056]The modification of the second embodiment shown in Fig.21 is an example which used as the multiple pillar the cylindrical part of the second embodiment described by the above-mentioned, and is a four-sided prism in an illustrated example. And as for this example, the application setting mark 1510 is provided by each surface of four angles. The modification as a multiple pillar can be constituted as eight-sided six-sided not only four illustrated angles but triangular prisms and a prism, and a prism, still larger multiple pillars, etc.
[0057]When the usual displaying condition displayed on the liquid crystal display section 1506 is shown in Fig.22 (a), this state has the battery lid side of the terminal for IC cards with the left hand and the rotor switches 1503 and 1504 are operated with the right hand, it is in the state where a character can be normally seen from a user. On the other hand, the state where reversed the character and it displayed is shown in Fig.22 (b). This state is in the state where a character can be normally seen from a user, when showing the information currently displayed on other persons, and it is effective, and it has the battery lid side of the terminal for IC cards with the

right hand and the rotor switches 1503 and 1504 are operated with the left hand. The long aggressiveness of the liquid-crystal-display flip vertical button 1507 can perform the inversion of such a character.

[0058]Time can be displayed on the liquid crystal display section 1506, or it can also prevent from displaying nothing on it in the state of usually carrying around, also in the second embodiment of the present invention described by the above-mentioned. As already described, the liquid-crystal-display flip vertical button 1507, Also have a function of the C button in a first embodiment, and the determination button 1505, Since it has a function of the OK button in a first embodiment, the operation after choosing application with the rotary switches 1503 and 1504, Since operation of these buttons 1505 and 1507 can perform like the case of a first embodiment, the description of operation is omitted here. Since the second embodiment described by the above-mentioned has the small width of the liquid crystal display section 1506, it can perform only the display which is at most about two lines, but it can display required information by making it scroll one character string after another with the determination button 1505.

[0059]The perspective view showing the appearance of the terminal for IC cards according [Fig.23] to a 3rd embodiment of the present invention, The 3rd page figure showing the appearance of the IC card terminal according [Fig.24] to a 3rd embodiment, the cross sectional view of the terminal for IC cards according [Fig.25] to a 3rd embodiment, the figure with which Fig.26 describes the modification of a 3rd embodiment, and Fig.27 are figures which describe the example of a display screen.In Fig.23 - Fig.26, a frame and 2302 2301 A main part upper case,2303 a liquid crystal display section and 2304 a card slot and 2305 A determination button, 2306 -- a button type crosshair cursor and 2307 -- the hole for straps, and 2308 -- as for a board part article and 2504, a main part lower case and 2502 are [contact and 2601] selection and a determination button a card insertion pilot switch and 2505 a circuit board and 2503 a strap and 2501.

[0060]A 3rd embodiment of the present invention is the example which constituted the present invention as a pendant type, as shown in the perspective view of the whole shown in Fig.23, and the 3rd page figure shown in Fig.24, it has the plane shape of long and slender elliptic form, and the whole form is formed with the swelling toward the central part.And the terminal for IC cards by a 3rd embodiment of the present invention, As shown in Fig.23 and Fig.25, the main part upper case 2301 and the main part lower case 2501 are attached to both sides of the frame 2301 which forms a periphery, 2307 is provided for the hole for straps by the end of the frame 2301, and the appearance is formed.The liquid crystal display section 2303 is arranged in the center of the upper surface of the main part upper case 2302, and the determination button 2305 which has a function of determination and release, and the button type crosshair cursor 2306 which has a function of selection and scrolling are arranged at the portion of the both sides of the liquid crystal display section 2303. A notch is provided by a part of longitudinal direction of a frame, and the card slot is formed between the main part upper case 2301 of this portion, and the main part lower case 2501. The sizes of a 3rd embodiment are 98 mm in dimension of a longitudinal direction, 35 mm in maximum width dimension, and 16 mm in width dimension as the near dimension is put in and shown in the 3rd [which is shown in Fig.24] page figure. The longitudinal direction dimension of the card slot 2304 is set as slightly larger width than the width dimension of 54 mm of an IC card. And only the dimension which the contact on the inserted IC card can connect to an internal circuit is required for a width dimension also in this case.

[0061]The modification of the second embodiment of the present invention shown in Fig.26, Instead of two buttons of the determination button 2305 and the button type crosshair cursor 2306 in the example shown in Fig.23 - Fig.25, the point of the frame 2301 is cut, and the selection and the determination button 2601 which performs the function of selection, scrolling, and determination and release are provided, and is constituted.Rotation and a depression are possible for this selection and determination button 2601, and it can make rotation able to perform selection of application, and scrolling, and can make a depression perform determination and release.
[0062]Next, it describes about operation and a display screen, referring to the example of the display screen shown in Fig.27.
[0063]Screen 1 shown in Fig.27 is a display example in the usual state which nothing has carried out, and is in the state which shows a date and time as two line displays in this example. The application with which the inside of a main part is equipped is sequentially displayed selectable by moving the button type crosshair cursor 2306 up and down, without inserting an IC card in this state. This example is shown as Screen 4, and the application currently displayed by pushing the determination button 2305 can be determined and used. Screen 5 shows the example of a screen at the time of carrying out selection decision of the application "speak with a pet" here. In the case of two line displays, one sentence is displayed in 1 screen. moving the button type crosshair cursor 2306 up and down here -- the sentence order which shows the contents of the talk is sequentially displayed from a pet. In the case of one line display, the sentence before and behind one sentence which cannot be displayed in 1 screen can be displayed by moving the button type crosshair cursor 2306 to right and left. By the long aggressiveness of the determination button 2305, application can be ended and it can return to the state of Screen 1 to end operation of application. As a kind of application here, there are a word book, an address book, a telephone directory, etc., for example "today's fortune-telling" who shows in the figure, and besides "speaking with a pet."
[0064]If an IC card is inserted in the state of Screen 1, or a state like the state throat of Screens 4 and 5, the balance of the electronic money in an IC card currently held will be first displayed so that it may be shown as Screen 2. In this state, by moving the button type crosshair cursor 2306 up and down, the settlement-of-accounts history in various shops can be chosen sequentially, and can be displayed so that it may be stored in an IC card and may be shown in the usable application 3, for example, a screen. And if long aggressiveness [the state where any screen is displayed / the determination button 2305], it will return to the display of a card balance, or if an IC card is taken out, it will return to the state of the screen before IC card insertion. If long aggressiveness [the state where the balance display is performed / the determination button 2305], it will return to the state of the screen before IC card insertion.
[0065]The perspective view showing the appearance of the terminal for IC cards according [Fig.28] to a 4th embodiment of the present invention, The 5th page figure showing the appearance of the IC card terminal according [Fig.29] to a 4th embodiment, The cross sectional view of the terminal for IC cards according [Fig.30] to a 4th embodiment, the figure which describes the state where Fig.31 had a terminal for IC cards in the hand, the figure with which Fig.32 describes the modification of a 4th embodiment, and Fig.33 are figures which describe the example of a display screen.In Fig.28 - Fig.32, a main part upper case and 2802 2801 A main part lower case,2803 a LCD lens and 2804 lower, following and the OK button, and 2805 A slide knob, The upper, front and a Cancel button, and 2807 2806 A key case hole, 2808 -- a card slot and 3001 -- as for an LCD unit and 3005, a main substrate and 3003 are [a card case unit and

3201] display parts a battery part and 3006 a contact surface and 3004 a card guide plate and 3002.
[0066]A 4th embodiment of the present invention is formed in form which cut off some fans in which the lower surface side is broader than the upper surface side, as been the example constituted as a key case type and the present invention shown in the perspective view of the transverse plane shown in Fig.28 (a), the perspective view of the back surface shown in Fig.28 (b), and the 5th page figure shown in Fig.29.And the terminal for IC cards by this 4th embodiment, The LCD lens 2803 which a body part is formed with the main part upper case 2801 and the main part lower case 2802, and equips an inside with an LCD unit and constitutes a display part on the upper surface of the main part upper case 2801, Lower, following, OK button 2804, and the upper, front and the Cancel button 2806 which have a function equivalent to the C button and OK button in the first embodiment of the present invention are provided, The slide knob 2805 for application selection is provided and constituted by the portion which a part of upper case upper surface was hollowed, and was formed.
[0067]The terminal for graphic display IC cards forms the portion which hollowed the main part lower case 2802 by the side of the lower surface of the doubling part of the main part upper case 2801 and the main part lower case 2802 in the thickness of the IC card, The card slot 2808 is formed here, and further, the key case hole 2807 is provided in a corner of a body part, and it is constituted. The sizes of this 4th embodiment are 75 mm in dimension of a longitudinal direction, 40 mm in maximum width dimension, and 12 mm in width dimension as the near dimension is put in and shown in the 5th [which is shown in Fig.29] page figure. The longitudinal direction dimension of the card slot 2808 is set as slightly larger width than the width dimension of 54 mm of an IC card. And only the dimension which the contact on the inserted IC card can connect to an internal circuit is required for the width dimension of a body part also in this case.
[0068]Inside the terminal for IC cards by a 4th embodiment of the present invention, The LCD lens 2803 and LCD unit 3004 which constitute a liquid crystal display section as shown in the cross sectional view of Fig.30, The main substrate 3002 with the contact surface 3003 for connection with the contact by the side of an IC card and the card guide plate 3001 which constitutes a card slot are arranged in order in the direction of at the bottom from the upper surface of the body part. The card case unit 3006 and the battery part 3005 are provided by a part of near upper surface inside a body part.
[0069]The state where it had a terminal for IC cards by a 4th embodiment in the hand is shown in Fig.31 (a) and Fig.31 (b). When it has a terminal for IC cards by a 4th embodiment in a hand so that the longitudinal direction of an IC card may turn up after inserting an IC card as shown in Fig.31 (a), In or any [at the time of having in a hand so that the longitudinal direction of an IC card may become width after inserting an IC card as shown in Fig.31 (b)] case, It can hold only single hand and, moreover, the slide knob 2805 for application selection can be operated by the digiti manus holding a terminal.
[0070]Since it will become difficult to read a printable character sequence if a character string is displayed on the longitudinal direction of a display part when it has in a hand so that the longitudinal direction of an IC card may become width as shown in Fig.31 (b), the terminal for IC cards can be constituted so that it may be possible to eliminate this. In this case, the terminal for IC cards provides the display part 3201 which made the aspect ratio of the display part small and in which a lateral display is possible like the modification shown in Fig.32, and is constituted. And a character string is rotated 90 degree and it displays on a transverse direction.

What is necessary is to provide a rotational menu at the last of the menu displayed, and for lower, following, and OK button 2804 just to be made to perform control of this rotation.
[0071]Time can be displayed on LCD unit 3004, or it can also prevent from displaying nothing on it in the state of usually carrying around, also in a 4th embodiment of the present invention described by the above-mentioned. As already described, the upper, front, and Cancel button 2806, Have a function of the C button in a first embodiment, and lower, following, and OK button 2804, Since it has a function of the OK button in a first embodiment, the operation after choosing application with the slide knob 2805, Since operation of the above-mentioned buttons 2806 and 2804 can perform like the case of a first embodiment, the description of operation is omitted here. A 4th embodiment described by the above-mentioned is made to perform the display of three lines to a liquid crystal display section.
[0072]Next, with reference to Fig.33, it describes about some of display examples by the display of three lines.
[0073]The example of the menu screen is shown in Fig.33 (a), and the mark which shows that the menu which scrolls a menu on left-hand side up and down, and is not displayed on it with the scroll knob 2805 can be displayed is displayed. And this example shows that the menu of alarm is selectable now. The mark which shows that there is the next page, for example, a setting screen, to the menu of a selective state is displayed on the right-hand side of a screen, and the following page can be displayed on it with the button 2804. The case of other below-mentioned examples of the meaning of the mark on the display screen mentioned above is also the same.
[0074]The display example at the time of carrying out selection decision of a money controlling function / the calculator function is shown in Fig.33 (b), and, by a diagram, the state where the used amount by the present of money, this used amount, etc. were displayed is shown. The display example at the time of carrying out selection decision of a clock function/the alarm function is shown in Fig.33 (c), and the present time and the present date are displayed, and it is shown that alarm is set to ON. The display example at the time of carrying out selection decision of the simple schedule function is shown in Fig.33 (d), three schedules are displayed with time and the schedule at the time of the present is shown by the mark of alarm.
[0075]
[Effect of the Invention]As described above, according to the present invention, the terminal for IC cards which was excellent in portability by the small size for treating the multi application IC card which can be used common to various kinds of electronic-monetary systems, a credit card system, etc. can be provided.

[Translation done.]

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TECHNICAL FIELD

[Field of the Invention]The present invention relates to the terminal for IC cards, and relates to the terminal for IC cards which can treat the IC card in which two or more applications were stored especially.

[Translation done.]

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PRIOR ART

[Description of the Prior Art]In recent years, various kinds of electronic-monetary systems which use an IC card, and various kinds of credit card systems which use an IC card are proposed. The microprocessor to which the IC card used for these systems has a communication function in the inside, When it is given by a processing program, the balance of electronic money, and use of a card and the mark serve as a specified value, it has a memory by EEPROM etc. which store the point which can receive predetermined money and goods, and is constituted. And extraction and insertion of electronic money is possible for the IC card used for electronic money among other IC cards by using a terminal for exclusive use via the electronic-monetary system arbitrarily constituted via a communication line in the terminal with which a bank, a store, an individual residence, etc. are equipped so that connection is possible. The IC card used for a credit receives the check of the justification of the card from a credit company via the terminal with which a store etc. are equipped, and the above-mentioned point is stored after processing of merchandise purchase etc.
[0003]And the multi application IC card whose correspondence was enabled by the IC card of one sheet is also proposed to various kinds of systems which were mentioned above.
[0004]The technology described in JP,H11-39445,A etc. is known, for example as a prior art about the system which uses this kind of multi application IC card, and a multi application IC card.

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EFFECT OF THE INVENTION

[Effect of the Invention]As described above, according to the present invention, the terminal for IC cards which was excellent in portability by the small size for treating the multi application IC card which can be used common to various kinds of electronic-monetary systems, a credit card system, etc. can be provided.

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TECHNICAL PROBLEM

[Problem to be solved by the invention]A multi application IC card common to the electronic-monetary system of the various kinds proposed by the above-mentioned, and various kinds of credit card systems, Since what is necessary is just only considering using it at a financial institution, a store, etc. to walk around with the IC card of one sheet, it can be said that portability is dramatically good. However, the user has the demand of liking to check the information in an IC card, by the place where one has gone etc., for this reason it is small and the terminal excellent in portability is required.
[0006]There is the object of this invention in providing the terminal for IC cards which was excellent in portability by the small size for treating the multi application IC card which can be used common to various kinds of electronic-monetary systems mentioned above, a credit card system, etc.

[Translation done.]

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MEANS

[Means for solving problem]In the terminal for IC cards treating the multi application IC card which can use the aforementioned purpose common to an electronic-monetary system and two or more credit card systems according to the present invention, A terminal body part attaches to an arm with a belt, Or it is constituted by the clock type in which attaching to a bag by a catcher is possible, and a time stamp is possible, a display part is provided by the body part upper surface, a pivotable IC card loading slot is provided by the side surface, and it is attained by having enabled insertion of the IC card from two or more directions.
[0008]Again the aforementioned purpose by storing the contact on an IC card inside a body part, when an IC card is inserted in the entrance of the aforementioned IC card loading slot, By having a lid with the knob which opens a loading slot, by equipping the circumference of the aforementioned display part with a pivotable bezel part, and making the aforementioned body part upper part rotate a bezel part, It is attained by changing the available application stored in the aforementioned body part and the IC card.
[0009]In the terminal for IC cards treating the multi application IC card which can use the aforementioned purpose common to an electronic-monetary system and two or more credit card systems, It is attained, when the display part was provided by the terminal body part upper surface, the pivotable cylindrical part which has a rotary switch in a side surface was provided, the IC card loading slot was provided by the terminal body subordinate surface and it was constituted by the key case type.
[0010]By having stuck the label in which the aforementioned purpose described two or more applications in the above-mentioned pivotable cylindrical part, It is attained by that the display of the aforementioned display part can be reversed again by the above-mentioned pivotable cylindrical part's having been constituted by the double ring, and having equipped the end with the determination button further.
[0011]In the terminal for IC cards treating the multi application IC card which can use the aforementioned purpose common to an electronic-monetary system and two or more credit card systems, It is attained, when the terminal body part was constituted by the pendant type in the frame which constitutes a periphery, and the case provided by the upper and lower sides of this frame, the display part, the button type crosshair cursor, and the determination button were provided by the terminal body part upper surface and the IC card loading slot was provided by the terminal body part side surface.

[0012]
[Mode for carrying out the invention]Hereafter, the embodiment of the terminal for IC cards by the present invention is described in detail with Drawings.
[0013]The perspective view showing the appearance of the terminal for IC cards according [Fig.1] to the first embodiment of the present invention, The 4th page figure showing the appearance of the IC card terminal according [Fig.2] to a first embodiment, the cross sectional view of the terminal for IC cards according [Fig.3] to a first embodiment, and Fig.4 are exploded perspective views which describe the structure of the whole terminal for IC cards by a first embodiment.In Fig.1 - Fig.4, a main part upper case and 102 101 A rotation card slot,103 a bezel base part and 104 an OK button and 105 The C button, 106 a bezel part and 107 a function / application setting mark, and 108 An issuer application mark sticking part, 109 an application selection mark and 110 a LCD lens and 111 A main part lower case, 112 the lid for changing batteries, and 113 a belt mounting part and 114 A belt mounting hole, 201 a garbage extraction hole and 301 an LCD unit and 302 An LCD unit case, 303 a main substrate and 304 an interface board and 305 A contact ring part, 306 and 307 -- a rotation contact surface and 308 -- an IC contact part and 309 -- as for a rotation slot unit and 402, a rotation card slot and 311 are [a belt and 404] belt fitting pins a rotation lock button and 403 a rotatable base part and 401 a cell and 310.
[0014]The first embodiment of the present invention is applied to small clocks, such as a wrist watch, as shown in the top perspective view shown in Fig.1 (a), the back surface perspective view shown in Fig.1 (b), and the 4th page figure shown in Fig.2.And on the body part constituted with the main part upper case 101 and the main part lower case 111 as the terminal for graphic display IC cards is shown in Fig.1, The bezel base part 103 and the bezel part 106 which are constituted pivotable are provided, and the rotation card slot 310 which can insert the IC card which is not illustrated between the bezel base part 103 and the main part upper case 101 is formed, and it is constituted. OK button 104 and the C (clear) button 105 for operation are arranged at the position of the outside of the bezel base part 103 of the main part upper case 101, and the application selection mark 109 is arranged in the side surface of the bezel base part 103. The function / application setting mark 107, and the issuer application mark sticking part 108 for which the LCD lens 110 is arranged and the inner portion of the bezel part 103 formed circularly mentions the function later around the bezel part 103 are arranged. The lid 112 for changing batteries is provided by the main part lower case 111 by the side of the back surface, and the belt mounting part 113 which has the belt mounting hole 114 which connects the belt which is not illustrated is provided, and the terminal for graphic display IC cards is constituted. The dustpan broth hole 201 for garbage discharge is provided by the innermost part of the rotation card slot 310.
[0015]Inside the terminal for IC cards by the first embodiment of the present invention, As shown in the cross sectional view shown in Fig.3. The IC contact part 308 which makes connection between LCD unit 301, the main substrate 303 and the main substrate 303 which were stored in the LCD unit case 302, and the inserted IC card, the contact ring part 305 which makes connection between the main substrate 303 and other substrates, the rotation contact surfaces 306 and 307, The interface board 304, the cell 309, and the rotatable base part 311 are stored. The inside of the rotation card slot 310 is constituted as the rotation card slot 310.
[0016]Fig.4 shows the assembly situation of each component which constitutes the first embodiment of the present invention described by the above-mentioned as an exploded perspective view, and the portion to the rotatable base part 311 constitutes the rotation slot unit

401 from the LCD lens 110 in Fig.4. The component from the bezel part 106 of this rotation slot unit 401 to the rotation card slot 310, When changing the path of insertion of an IC card, it is constituted pivotable, and in the case of the application selection after card insertion, etc., the component from the bezel part 106 to the rotation contact surface 307 is pivotable.
[0017]It indicates Fig.4 that the terminal for IC cards is attached to the belt 403 so that it may be possible to usually use the first embodiment of the present invention as a wrist watch. Attachment to the belt 403 of the terminal for IC cards is performed by the belt mounting hole 114 and the belt fitting pin 404 of the belt mounting part 113 of the main part lower case 111 which were described by the above-mentioned.
[0018]The figure which describes the anticipated-use state of the terminal for IC cards and the insertion condition of an IC card according [Fig.5] to the first embodiment of the present invention, The figure described about the variation of the path of insertion of the state where Fig.6 attached the terminal for IC cards by the first embodiment of the present invention to the arm, and the IC card was inserted, and an IC card, The figure which Fig.7 describes about the path of insertion of a card slot, the figure which describes that Fig.8 rotates the bezel part 103 and chooses application,Fig.9 is a figure described about the composition of the water proof dustproof mechanism over a card slot, and a figure which Fig.10 describes about other examples of the path of insertion of an IC card.In Fig.5 - Fig.10, a catcher and 502 501 An IC card,As for a water proof dustproof lid knob and 902, 701 and 702 are [an up-and-down spring unit and 1001] the guides for insertion a vertical slide water proof dustproof lid and 903 a card end support component and 901, and other codes are the same as that of the case of Fig.1 - Fig.4.
[0019]The terminal for IC cards by the first embodiment of the present invention, When attached to the belt 403, as can be in the state where it is shown in Fig.5 (a), clock information is displayed on LCD unit 301, and it can usually be used as a wrist watch and it is shown in Fig.5 (b). It can be used by attaching to the catcher 501, being able to attach to the belt of a bag and trousers, etc. Also in this case, clock information can be displayed on LCD unit 301, and it can usually be used as a clock. The state where IC card 502 was inserted in the terminal for IC cards of the state as a wrist watch shown in Fig.5 (a) is shown in Fig.5 (c). Two sides of the corner of a card are positioned by the card end support components 701 and 702, IC card 502 is inserted, and the contact on a card is connected with the IC contact part 308.
[0020]The state where IC card 502 was inserted is shown in the terminal for IC cards in the state where the back side of the hand of the left arm was equipped, and IC card 502 is inserted in Fig.6 (a) from the upper right, and is inserted in it with 45 inclination to the direction of 12:00 of a clock. At this time, it will be placed on the back of a hand, and an IC card is held stably, and the portion which comes out to the outside of the terminal of IC card 502 does not become the obstacle of operation with the right hand. In Fig.6 (a), the rectangular head shown in the LCD lens 110 shows a position with IC card-like contact, and its dimension. IC card 502 can be inserted from a different direction by a unit of 90 degree to the path of insertion shown in Fig.6 (a), as shown in Fig.6 (b). When the direction of a shown in Fig.6 (b) is equivalent to the state of Fig.6 (a) and the back side of the hand of a right arm is equipped with the terminal for IC cards, the insertion from c is effective, the palm of the left arm -- when a side is equipped, the insertion from b is effective -- the palm of a right arm -- when a side is equipped, the insertion from d is effective.
[0021]The rotation card slot 310 in which IC card 502 is inserted, As shown in Fig.7, have the card end support components 701 and 702 which support two sides of IC card 502 inserted, and it is constituted, It can be rotated by rotation of the component which constitutes the rotation slot

unit 401 described by Fig.4, and can be set as one of two or more of the directions of card insertion described by Fig.6.And after the path of insertion is set up once, it is locked so that the path of insertion of IC card 502 may not change with rotation lock buttons 402. The portion with which the two card end support components 701 and 702 are not connected serves as an outside open hole, and serves as the garbage extraction hole 201 which this hole described by the above-mentioned. The garbage included in the inside of a slot is discharged by the insertion operation of a card at the time of insertion of an IC card.

[0022]It may be made to insert the path of insertion of IC card 502 not only from the example described by Fig.6 but from what kind of direction. However, when IC card 502 is inserted, it is required to be able to support and position by two sides of a card, as the IC card was mentioned above.

[0023]Next, with reference to Fig.8, it describes about changing application by rotating the bezel part 106. As described by Fig.1 and Fig.2, around the bezel part 106,The function / application setting mark 107, and the issuer application mark sticking part 108 are arranged, Application can be switched by rotating the bezel part 106 and positioning these one in the position of the application selection mark 109. By four somewhat large round marks which gave the slash being a function / application setting mark 107 in Fig.8, and positioning these one in the position of the application selection mark 109, The functions and applications which can choose the function with which a body part is equipped, and application and with which a body part is equipped are a clock function, an alarm function, a calculator function, simple game functions, fortune-telling, etc., for example. eight small round marks show -- it is the issuer application mark sticking part 108, and the application which it has in IC card 502 can be chosen by positioning these one in the position of the application selection mark 109. The applications which it has in an IC card are the personal information on the check of hysteresis information, such as monthly [to the balance confirmation of electronic money, and the purchase of goods], and a goods-purchased exception, money management information, settlement information, list of names, an address book, a telephone directory, etc., schedule information, private-information-proctection ID management information, etc., for example.

[0024]As various kinds of applications which were mentioned above were mentioned above, when it is chosen, the initial screen is displayed on the display screen of LCD unit 301. Subsequent operation is mentioned later. In the above-mentioned, the function / application setting mark 107 was described for providing four pieces and the eight issuer application mark sticking parts 108, but these numbers can be made into any number.

[0025]In the description to the above-mentioned, the rotation card slot 310 is outside open, and water, dust, etc. enter easily. The first embodiment of the present invention can provide the water proof dustproof lid of a sliding type at the entrance of the rotation card slot 310, in order to prevent such a thing. This water proof dustproof lid has the collar-like part material which plugs up the entrance and the garbage extraction hole 201 of the rotation card slot 310, as shown in Fig.9, It is constituted by the vertical slide water proof dustproof lid 901 constituted up and down with the up-and-down spring unit 903 so that a slide was possible, and the water proof dustproof lid knob 901 provided by the flange. In the state where the IC card is not inserted, it will be in the state where the entrance and the garbage extraction hole 201 of the rotation card slot 310 were closed by the collar-like part material of the vertical slide water proof dustproof lid 901 pushed up with the up-and-down spring unit 903, and entering of water, dust, etc. will be prevented. An IC card is inserted at the time of insertion of an IC card, depressing the water proof dustproof lid knob 901 by an IC card. That is, if the water proof dustproof lid knob 901 is

depressed by an IC card, the entrance and the garbage extraction hole 201 of the rotation card slot 310 will open, and it will become possible to insert an IC card easily.
[0026]Now, although described in the above-mentioned about some variations which insert IC card 502 from an oblique direction to the body part which constitutes the terminal for IC cards, the first embodiment of the present invention can insert IC card 502 from just beside [of a body part], as shown in Fig.10. In this case, the guide 1001 for insertion of linear shape is provided by the surface or the back surface of IC card 502 with convex for support in the guide for insertion, and the predetermined position of a card. Although not shown in a figure, inside the card slot of the terminal for IC cards, the slot which engages with this guide 1001 for insertion is provided.
[0027]Fig.11 is a figure which describes the modification of the first embodiment of the present invention described by the above-mentioned, and describes about the modification of this first embodiment hereafter.
[0028]Although many function / application setting mark 107, and the issue application mark sticking part 108 were provided in the bezel part 106, the first embodiment of the present invention mentioned above, As the modification shown in Fig.11 provides only the application selection mark 109 in the bezel part 106, it miniaturizes the bezel part 106. And it is made to display an application setting mark on the display part of an LCD unit.
[0029]The example which shows all the applications AP1-AP4, i.e., basic applications usable only at a body part, which can be displayed, and the applications C1-C8 currently held at the IC card to the display part is shown in Fig.11 (a). Such applications can be chosen by positioning in the position of the application which is having the application selection mark 109 which makes rotate the bezel part 106 and is provided by the bezel part 106 displayed. Fig.11 (b) shows the state at the time of initial use, and the usable applications AP1-AP4 are displayed only by a body part, and it shows that the application selection mark 109 is positioned in the position of AP4. And if the application selection mark 109 is positioned in the position of AP1 as shown in Fig.11 (c), an usable menu will be displayed by application AP1. And the C button 105 and OK button 104 function as buttons of up-and-down scrolling, and these menus become selectable. If one the C button 105 or OK button 104 after another which functions as a button of up-and-down scrolling is pushed, menus also including the menu which was not displayed since the display screen was small will be displayed cyclically. The selected menu is determined by the long aggressiveness of OK button 104, or serves as a display of the following screen of the menu.
[0030]in addition -- it is scrolling when a button is detached at the time of the usual up-and-down scrolling, in order to operate the long aggressiveness of a button -- opportunity Yoshiyuki ****** -- to make it like and what is necessary is just made to consider it as determination by long aggressiveness
[0031]IC card 502 is inserted and Fig.11 (d) shows the state where the application selection mark 109 was positioned in the position of the application C1 which shows the application currently held at the IC card, In the basic applications AP1-AP4, the usable application currently held at the IC card, and an illustrated example, the applications C1-C4 are displayed. In this example, that the mark of three angles of the position of the application C1 is displayed black shows that that application is what moves the application in an IC card to a body part, and saves it. And if the application selection mark 109 is positioned in the position of the application C1 currently displayed, as shown in Fig.11 (e), an usable menu will be displayed with the application C1. Selection of these menus and operation can be performed like Fig.11 (c).
[0032]The flow chart which Fig.12 describes about operation processing of the terminal for IC cards by the first embodiment of the present invention, and Fig.13 are figures which describe the

example of a display screen displayed in the middle of processing, hereafter, use Fig.12 and Fig.13 and describe about operation flows and the example of a display screen.The operation flows described by Fig.12 are the examples at the time of providing a function / application setting mark 107, and the issuer application setting mark 108 on the upper surface of the bezel part 106.

[0033](1) In the usual waiting state, as shown in Fig.13 (a), time shall be shown by the clock function which is basic applications. In this state, if a user inserts IC card 502 in a terminal, it will not illustrate to a display screen, but the display of "please rotate a bezel and choose application" is performed (Steps 1201-1203).

[0034](2) A user rotates a bezel after insertion of direct or an IC card from the screen of a waiting state, If the function / application setting mark 107 which is a selection mark of basic applications are positioned in the position of the application selection mark 109, the menu of a selection of function of the application will be displayed. The state of this display is what was described by Fig.11 (c) (Steps 1204-1206).

[0035](3) Choose one of the functions with the C button 105 and OK button 104, and determine by the long aggressiveness of OK button 104. Henceforth, it will be in the state where the display of the function is performed, and will be in a waiting state (Steps 1207, 1208, and 1201).

[0036](4) If a user rotates a bezel and positions the issue application setting mark 108 which is a selection mark of the application in a card in the position of the application selection mark 109, As shown in Fig.13 (b), the application name (brand) A, for example, CD shop etc., is displayed (Steps 1204, 1209, and 1210).

[0037](5) After indicating "insert a card" etc. and urging insertion of a card to it when the IC card is not inserted since this application is the application in the IC card inserted, it checks the existence of card insertion (Steps 1211 and 1212).

[0038](6) If the contents of the application downloaded from the card are in a main part when the card is not inserted with the check of Step 1212, as shown in Fig.13 (c), menus, such as the function of the application, for example, a game, and a shopping history, will be displayed. If the card is inserted, as shown in Fig.11 (d), menus, such as the application function in an IC card, for example, a balance display, and a point, will be displayed (Steps 1213 and 1214).

[0039](7) Carry out up-and-down scrolling with one of the menus displayed at Steps 1213 and 1214, the C button, and an OK button, choose, or display elimination and an end and choose (Step 1215).

[0040](8) When you would like to start the menu selected at Step 1215, Or when the display of elimination is chosen, the menu is determined by the long aggressiveness of an OK button, For example, it can be considered as a display as shown in Fig.13 (e), and the menu, for example, the screen of a game, can be displayed and performed, or the balance can be displayed (Steps 1216, 1217, 1219, and 1220).

[0041](9) After determination at Steps 1219 and 1220, Or since the menu which returns as it is canceled, and it returns to Step 1215 and it is shown in Fig.13 (f) after the end of a game and a balance display will be displayed if the long aggressiveness [the C button] in the middle of execution of a menu, By long aggressiveness [an OK button], it returns to the state of an application start of Step 1214 (Steps 1221 and 1222).

[0042](11) It can return to the display of the waiting state of Step 1201 by long aggressiveness [Step 1215 / displaying the menu of an end and / an OK button] (Steps 1218 and 1224).

[0043]Fig.14 is a flow chart described about operation processing of the terminal for IC cards by the modification of the first embodiment of the present invention, and describes about this

hereafter. The example described here is an example at the time of making small the bezel part described by Fig.11, and providing only an application selection mark in a bezel part, and since the most is the same as that of the flow shown in Fig.12 fundamentally, below, suppose it that only the portion which is different from the case of Fig.12 is described.
[0044]One of the points which are different from the flow of Fig.12 by the flow shown in Fig.14.The user in Step 1205 of Fig.12 rotates a bezel part, Instead of operation of positioning the function / application setting mark 107 which is a selection mark of basic applications in the position of the application selection mark 109, a user rotates a bezel part, It is the point made into the position of the selection mark of the basic applications currently displayed with the operation of Step 1401 in which the application selection mark 109 is positioned.
[0045]A user [in / in other one / Step 1209 of Fig.12] rotates a bezel, The issue application setting mark 108 which is a selection mark of the application in a card to the operation positioned in the position of the application selection mark 109 Instead of, It is the point which selectable application was displayed on the display part, and the user rotated the bezel part, and was made into the position of the application mark currently displayed with the operation of Steps 1402 and 1403 in which the application selection mark 109 is positioned.
[0046]The perspective view showing the appearance of the terminal for IC cards according [Fig.15] to the second embodiment of the present invention, The 4th page figure showing the appearance of the IC card terminal according [Fig.16] to a second embodiment, The cross sectional view of the terminal for IC cards according [Fig.17] to a second embodiment, the figure which Fig.18 describes about pasting of the application label to the terminal for IC cards by a second embodiment,The figure with which the figure, Fig.20, and Fig.21 which Fig.19 describes about the outside dimension of a second embodiment describe the modification of a second embodiment, and Fig.22 are figures described about reversal of a display.In Fig.15 - Fig.22, a main part upper case and 1502 1501 A main part lower case,An application change rotary switch and 1504 1503 A sub application change rotary switch, 1505 a determination button and 1506 a liquid crystal display section and 1507 A liquid-crystal-display flip vertical button, 1508 a battery lid and 1509 an IC card loading slot and 1510 An application setting mark, 1511 an application selection mark and 1701 a circuit board and 1702 A board part article, 1703 -- a liquid crystal window and 1704 -- as for a battery contact and 1708, IC card contact and 1706 are [a card slot lid and 1710] rotary switch contact and a determination button recognition part article a cell and 1709 a frame and 1707 a liquid crystal and 1705.
[0047]As the second embodiment of the present invention been the example which constituted the present invention as a key case type and shown in the perspective view of the whole shown in Fig.15, and the 4th page figure shown in Fig.16.It has the IC card loading slot 1509 which inserts an IC card in cylindrical [a part of], and has the appearance shape which attached four[which equip the upper surface with the liquid crystal display section 1506] -sided prisms. And the terminal for graphic display IC cards, The application change rotary switch 1503 and the sub application change rotary switch 1504 which made cylindrical shape the side surface of the longitudinal direction of the body part constituted with the main part upper case 1501 and the main part lower case 1502 are provided, The battery lid 1508 which has a strap hole is provided with and constituted by the short cylindrical part provided by the side surface of an opposite side.
[0048]And on the neighborhood upper surface of a bond part with the application change rotary switch 1503 of the main part upper case 1501, The application selection mark 1511 is attached and the plurality 1510, for example, six application setting marks, is attached to the circumference near the bond part with the body part of the application change rotary switch

1503. By rotating the application change rotary switch 1503 and positioning one of the application setting marks 1510 of these in the position of the application selection mark 1511, The application currently previously assigned to the application setting mark 1510 can be chosen. Thus, after choosing one application, usable sub application can be chosen in the application by rotating the sub application change rotary switch 1504.
[0049]On the upper surface of the body part constituted with the main part upper case 1501 and the main part lower case 1502, Reverse the liquid crystal display section 1506 and the direction of a printable character, and the C button in a first embodiment and the liquid-crystal-display flip vertical button 1507 which has an equivalent function are provided, The card slot 1509 is provided at the transverse-plane side of the doubling portion of the main part upper case 1501 and the main part lower case 1502, The determination button 1505 which has a function equivalent to the OK button in a first embodiment is provided by the side surface of the sub application change rotary switch 1504.
[0050]Inside the terminal for IC cards by the second embodiment of the present invention, As shown in the A-A section of the Fig.16 of Fig.17 (a) and Fig.17 (b), and a B-B section.The liquid crystal window 1703 and the liquid crystal 1704 which constitute the liquid crystal display section 1506, The circuit board 1701 with the IC card contact 1705 and the board part article 1702 for connection with the contact by the side of an IC card, The frame 1706 of two sheets which constitutes a card slot, and the circuit board 1701' with the board part article 1702' of one more sheet are arranged in order in the direction of at the bottom from the upper surface of the body part. Inside the application change rotary switch 1503, The switch contact and the determination button recognition part article 1710 of the two rotary switches 1503 and 1504 are provided, and the position inside the battery lid 1508 is further equipped with the battery contact 1707 and the cell 1708.
[0051]As shown in the Fig.17 (c) in which the state where the card slot 1509 was expanded is shown, in the entrance of the card slot 1509, The card slot lid 1709 is provided, and this lid 1709 is rotated by down [inside] in the direction shown in an arrow by insertion of an IC card, and enables insertion of a card. And in the state where the card is not inserted, it is held with power, such as a spring, at an illustrated position, the card slot 1509 is plugged up, and the lid 1709 is prevention ******** about entering of water, dust, etc.
[0052]Although the second embodiment of the present invention described by the above-mentioned assumed that the plurality 1510, for example, six application setting marks, is attached to the circumference near the bond part with the body part of the application change rotary switch 1503, Only by such a mark. [what kind of application is set up and] Although it cannot but understand at a glance but the application must be checked according to the state where it was chosen and displayed, in the embodiment of the present invention, He sticks the label in which an application name is shown on the circumference of the application change rotary switch 1503, and is trying to know the established state of application at a glance.
[0053]The example shown in Fig.18 (a) is an example which stuck the label which only described the small application name next to the axial direction of the application setting mark 1510. The example shown in Fig.18 (b) next to the axial direction of the application setting mark 1510, The mark which shows pasting ****** for the label which described the application name is previously provided as a label attachment guide by slot, a dent, printing, etc., and it is the example which stuck the label which described the application name here.
[0054]The Fig.19 which wrote the dimension in the front view shows size ** of the size of the terminal for IC cards by the second embodiment of the present invention described by the above-

mentioned. Since the dimensions of the IC card standardized in every direction are 85 mm x 54 mm, the body part of the terminal for IC cards by a second embodiment, Since the dimension of the transverse direction is 60 mm as shown in a figure, and the contact position on an IC card is in the portion from the edge of the longitudinal direction of an IC card to 21.5 mm, the dimension of the depth direction of a body part is constituted as 24 mm. Thereby, at the time of insertion of an IC card, the contact surface of an IC card is stored in a main part, and connection with an internal circuit is attained.

[0055]The relation between a body part and a cylindrical part is constituted so that a part of body part may project in one side of a cylindrical part, so that he can understand the second embodiment of the present invention described above from the front view, a perspective view, etc. The modification of this second embodiment is shown in Fig.20, and the relation between a body part and a cylindrical part constitutes this modification so that a part of body part may project on both sides of a cylindrical part. Also in this case, by supposing that it is the same as that of the case where the depth size and width dimension of a body part are described by Fig.19, at the time of insertion of an IC card, the contact surface of an IC card is stored in a main part, and connection with an internal circuit is attained.

[0056]The modification of the second embodiment shown in Fig.21 is an example which used as the multiple pillar the cylindrical part of the second embodiment described by the above-mentioned, and is a four-sided prism in an illustrated example. And as for this example, the application setting mark 1510 is provided by each surface of four angles. The modification as a multiple pillar can be constituted as eight-sided six-sided not only four illustrated angles but triangular prisms and a prism, and a prism, still larger multiple pillars, etc.

[0057]When the usual displaying condition displayed on the liquid crystal display section 1506 is shown in Fig.22 (a), this state has the battery lid side of the terminal for IC cards with the left hand and the rotor switches 1503 and 1504 are operated with the right hand, it is in the state where a character can be normally seen from a user. On the other hand, the state where reversed the character and it displayed is shown in Fig.22 (b). This state is in the state where a character can be normally seen from a user, when showing the information currently displayed on other persons, and it is effective, and it has the battery lid side of the terminal for IC cards with the right hand and the rotor switches 1503 and 1504 are operated with the left hand. The long aggressiveness of the liquid-crystal-display flip vertical button 1507 can perform the inversion of such a character.

[0058]Time can be displayed on the liquid crystal display section 1506, or it can also prevent from displaying nothing on it in the state of usually carrying around, also in the second embodiment of the present invention described by the above-mentioned. As already described, the liquid-crystal-display flip vertical button 1507, Also have a function of the C button in a first embodiment, and the determination button 1505, Since it has a function of the OK button in a first embodiment, the operation after choosing application with the rotary switches 1503 and 1504, Since operation of these buttons 1505 and 1507 can perform like the case of a first embodiment, the description of operation is omitted here. Since the second embodiment described by the above-mentioned has the small width of the liquid crystal display section 1506, it can perform only the display which is at most about two lines, but it can display required information by making it scroll one character string after another with the determination button 1505.

[0059]The perspective view showing the appearance of the terminal for IC cards according [Fig.23] to a 3rd embodiment of the present invention, The 3rd page figure showing the

appearance of the IC card terminal according [Fig.24] to a 3rd embodiment, the cross sectional view of the terminal for IC cards according [Fig.25] to a 3rd embodiment, the figure with which Fig.26 describes the modification of a 3rd embodiment, and Fig.27 are figures which describe the example of a display screen.In Fig.23 - Fig.26, a frame and 2302 2301 A main part upper case,2303 a liquid crystal display section and 2304 a card slot and 2305 A determination button, 2306 -- a button type crosshair cursor and 2307 -- the hole for straps, and 2308 -- as for a board part article and 2504, a main part lower case and 2502 are [contact and 2601] selection and a determination button a card insertion pilot switch and 2505 a circuit board and 2503 a strap and 2501.

[0060]A 3rd embodiment of the present invention is the example which constituted the present invention as a pendant type, as shown in the perspective view of the whole shown in Fig.23, and the 3rd page figure shown in Fig.24, it has the plane shape of long and slender elliptic form, and the whole form is formed with the swelling toward the central part.And the terminal for IC cards by a 3rd embodiment of the present invention, As shown in Fig.23 and Fig.25, the main part upper case 2301 and the main part lower case 2501 are attached to both sides of the frame 2301 which forms a periphery, 2307 is provided for the hole for straps by the end of the frame 2301, and the appearance is formed.The liquid crystal display section 2303 is arranged in the center of the upper surface of the main part upper case 2302, and the determination button 2305 which has a function of determination and release, and the button type crosshair cursor 2306 which has a function of selection and scrolling are arranged at the portion of the both sides of the liquid crystal display section 2303. A notch is provided by a part of longitudinal direction of a frame, and the card slot is formed between the main part upper case 2301 of this portion, and the main part lower case 2501. The sizes of a 3rd embodiment are 98 mm in dimension of a longitudinal direction, 35 mm in maximum width dimension, and 16 mm in width dimension as the near dimension is put in and shown in the 3rd [which is shown in Fig.24] page figure. The longitudinal direction dimension of the card slot 2304 is set as slightly larger width than the width dimension of 54 mm of an IC card. And only the dimension which the contact on the inserted IC card can connect to an internal circuit is required for a width dimension also in this case.

[0061]The modification of the second embodiment of the present invention shown in Fig.26, Instead of two buttons of the determination button 2305 and the button type crosshair cursor 2306 in the example shown in Fig.23 - Fig.25, the point of the frame 2301 is cut, and the selection and the determination button 2601 which performs the function of selection, scrolling, and determination and release are provided, and is constituted.Rotation and a depression are possible for this selection and determination button 2601, and it can make rotation able to perform selection of application, and scrolling, and can make a depression perform determination and release.

[0062]Next, it describes about operation and a display screen, referring to the example of the display screen shown in Fig.27.

[0063]Screen 1 shown in Fig.27 is a display example in the usual state which nothing has carried out, and is in the state which shows a date and time as two line displays in this example. The application with which the inside of a main part is equipped is sequentially displayed selectable by moving the button type crosshair cursor 2306 up and down, without inserting an IC card in this state. This example is shown as Screen 4, and the application currently displayed by pushing the determination button 2305 can be determined and used. Screen 5 shows the example of a screen at the time of carrying out selection decision of the application "speak with a pet" here. In

the case of two line displays, one sentence is displayed in 1 screen. moving the button type crosshair cursor 2306 up and down here -- the sentence order which shows the contents of the talk is sequentially displayed from a pet. In the case of one line display, the sentence before and behind one sentence which cannot be displayed in 1 screen can be displayed by moving the button type crosshair cursor 2306 to right and left. By the long aggressiveness of the determination button 2305, application can be ended and it can return to the state of Screen 1 to end operation of application. As a kind of application here, there are a word book, an address book, a telephone directory, etc., for example "today's fortune-telling" who shows in the figure, and besides "speaking with a pet."

[0064]If an IC card is inserted in the state of Screen 1, or a state like the state throat of Screens 4 and 5, the balance of the electronic money in an IC card currently held will be first displayed so that it may be shown as Screen 2. In this state, by moving the button type crosshair cursor 2306 up and down, the settlement-of-accounts history in various shops can be chosen sequentially, and can be displayed so that it may be stored in an IC card and may be shown in the usable application 3, for example, a screen. And if long aggressiveness [the state where any screen is displayed / the determination button 2305], it will return to the display of a card balance, or if an IC card is taken out, it will return to the state of the screen before IC card insertion. If long aggressiveness [the state where the balance display is performed / the determination button 2305], it will return to the state of the screen before IC card insertion.

[0065]The perspective view showing the appearance of the terminal for IC cards according [Fig.28] to a 4th embodiment of the present invention, The 5th page figure showing the appearance of the IC card terminal according [Fig.29] to a 4th embodiment, The cross sectional view of the terminal for IC cards according [Fig.30] to a 4th embodiment, the figure which describes the state where Fig.31 had a terminal for IC cards in the hand, the figure with which Fig.32 describes the modification of a 4th embodiment, and Fig.33 are figures which describe the example of a display screen.In Fig.28 - Fig.32, a main part upper case and 2802 2801 A main part lower case,2803 a LCD lens and 2804 lower, following and the OK button, and 2805 A slide knob, The upper, front and a Cancel button, and 2807 2806 A key case hole, 2808 -- a card slot and 3001 -- as for an LCD unit and 3005, a main substrate and 3003 are [a card case unit and 3201] display parts a battery part and 3006 a contact surface and 3004 a card guide plate and 3002.

[0066]A 4th embodiment of the present invention is formed in form which cut off some fans in which the lower surface side is broader than the upper surface side, as been the example constituted as a key case type and the present invention shown in the perspective view of the transverse plane shown in Fig.28 (a), the perspective view of the back surface shown in Fig.28 (b), and the 5th page figure shown in Fig.29.And the terminal for IC cards by this 4th embodiment, The LCD lens 2803 which a body part is formed with the main part upper case 2801 and the main part lower case 2802, and equips an inside with an LCD unit and constitutes a display part on the upper surface of the main part upper case 2801, Lower, following, OK button 2804, and the upper, front and the Cancel button 2806 which have a function equivalent to the C button and OK button in the first embodiment of the present invention are provided, The slide knob 2805 for application selection is provided and constituted by the portion which a part of upper case upper surface was hollowed, and was formed.

[0067]The terminal for graphic display IC cards forms the portion which hollowed the main part lower case 2802 by the side of the lower surface of the doubling part of the main part upper case 2801 and the main part lower case 2802 in the thickness of the IC card, The card slot 2808 is

formed here, and further, the key case hole 2807 is provided in a corner of a body part, and it is constituted. The sizes of this 4th embodiment are 75 mm in dimension of a longitudinal direction, 40 mm in maximum width dimension, and 12 mm in width dimension as the near dimension is put in and shown in the 5th [which is shown in Fig.29] page figure. The longitudinal direction dimension of the card slot 2808 is set as slightly larger width than the width dimension of 54 mm of an IC card. And only the dimension which the contact on the inserted IC card can connect to an internal circuit is required for the width dimension of a body part also in this case.

[0068]Inside the terminal for IC cards by a 4th embodiment of the present invention, The LCD lens 2803 and LCD unit 3004 which constitute a liquid crystal display section as shown in the cross sectional view of Fig.30, The main substrate 3002 with the contact surface 3003 for connection with the contact by the side of an IC card and the card guide plate 3001 which constitutes a card slot are arranged in order in the direction of at the bottom from the upper surface of the body part. The card case unit 3006 and the battery part 3005 are provided by a part of near upper surface inside a body part.

[0069]The state where it had a terminal for IC cards by a 4th embodiment in the hand is shown in Fig.31 (a) and Fig.31 (b). When it has a terminal for IC cards by a 4th embodiment in a hand so that the longitudinal direction of an IC card may turn up after inserting an IC card as shown in Fig.31 (a), In or any [at the time of having in a hand so that the longitudinal direction of an IC card may become width after inserting an IC card as shown in Fig.31 (b)] case, It can hold only single hand and, moreover, the slide knob 2805 for application selection can be operated by the digiti manus holding a terminal.

[0070]Since it will become difficult to read a printable character sequence if a character string is displayed on the longitudinal direction of a display part when it has in a hand so that the longitudinal direction of an IC card may become width as shown in Fig.31 (b), the terminal for IC cards can be constituted so that it may be possible to eliminate this. In this case, the terminal for IC cards provides the display part 3201 which made the aspect ratio of the display part small and in which a lateral display is possible like the modification shown in Fig.32, and is constituted. And a character string is rotated 90 degree and it displays on a transverse direction. What is necessary is to provide a rotational menu at the last of the menu displayed, and for lower, following, and OK button 2804 just to be made to perform control of this rotation.

[0071]Time can be displayed on LCD unit 3004, or it can also prevent from displaying nothing on it in the state of usually carrying around, also in a 4th embodiment of the present invention described by the above-mentioned. As already described, the upper, front, and Cancel button 2806, Have a function of the C button in a first embodiment, and lower, following, and OK button 2804, Since it has a function of the OK button in a first embodiment, the operation after choosing application with the slide knob 2805, Since operation of the above-mentioned buttons 2806 and 2804 can perform like the case of a first embodiment, the description of operation is omitted here. A 4th embodiment described by the above-mentioned is made to perform the display of three lines to a liquid crystal display section.

[0072]Next, with reference to Fig.33, it describes about some of display examples by the display of three lines.

[0073]The example of the menu screen is shown in Fig.33 (a), and the mark which shows that the menu which scrolls a menu on left-hand side up and down, and is not displayed on it with the scroll knob 2805 can be displayed is displayed. And this example shows that the menu of alarm is selectable now. The mark which shows that there is the next page, for example, a setting

screen, to the menu of a selective state is displayed on the right-hand side of a screen, and the following page can be displayed on it with the button 2804. The case of other below-mentioned examples of the meaning of the mark on the display screen mentioned above is also the same.
[0074]The display example at the time of carrying out selection decision of a money controlling function / the calculator function is shown in Fig.33 (b), and, by a diagram, the state where the used amount by the present of money, this used amount, etc. were displayed is shown. The display example at the time of carrying out selection decision of a clock function/the alarm function is shown in Fig.33 (c), and the present time and the present date are displayed, and it is shown that alarm is set to ON. The display example at the time of carrying out selection decision of the simple schedule function is shown in Fig.33 (d), three schedules are displayed with time and the schedule at the time of the present is shown by the mark of alarm.

[Translation done.]

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2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1]It is a perspective view showing the appearance of the terminal for IC cards by the first embodiment of the present invention.
[Drawing 2]It is a 4th page figure showing the appearance of the IC card terminal by a first embodiment.
[Drawing 3]It is a cross sectional view of the terminal for IC cards by a first embodiment.
[Drawing 4]It is an exploded perspective view which describes the structure of the whole terminal for IC cards by a first embodiment.
[Drawing 5]It is a figure which describes the anticipated-use state of the terminal for IC cards and the insertion condition of an IC card by the first embodiment of the present invention.
[Drawing 6]It is a figure described about the variation of the path of insertion of the state where attached the terminal for IC cards by the first embodiment of the present invention to the arm, and the IC card was inserted, and an IC card.
[Drawing 7]It is a figure described about the path of insertion of a card slot.
[Drawing 8]It is a figure which describes rotating the bezel part 103 and choosing application.
[Drawing 9]It is a figure described about the composition of the water proof dustproof mechanism over a card slot.
[Drawing 10]It is a figure described about other examples of the path of insertion of an IC card.

[Drawing 11]It is a figure which describes the modification of the first embodiment of the present invention.
[Drawing 12]It is a flow chart described about operation processing of the terminal for IC cards by the first embodiment of the present invention.
[Drawing 13]It is a figure which describes the example of a display screen displayed in the middle of processing.
[Drawing 14]It is a flow chart described about operation processing of the terminal for IC cards by the modification of the first embodiment of the present invention.
[Drawing 15]It is a perspective view showing the appearance of the terminal for IC cards by the second embodiment of the present invention.
[Drawing 16]It is a 4th page figure showing the appearance of the IC card terminal by a second embodiment.
[Drawing 17]It is a cross sectional view of the terminal for IC cards by a second embodiment.
[Drawing 18]It is a figure described about pasting of the application label to the terminal for IC cards by a second embodiment.
[Drawing 19]It is a figure described about the outside dimension of a second embodiment.
[Drawing 20]It is a figure which describes the modification of a second embodiment.
[Drawing 21]It is a figure which describes other modifications of a second embodiment.
[Drawing 22]It is a figure described about reversal of a display.
[Drawing 23]It is a perspective view showing the appearance of the terminal for IC cards by a 3rd embodiment of the present invention.
[Drawing 24]It is a 3rd page figure showing the appearance of the IC card terminal by a 3rd embodiment.
[Drawing 25]It is a cross sectional view of the terminal for IC cards by a 3rd embodiment.
[Drawing 26]It is a figure which describes the modification of a 3rd embodiment.
[Drawing 27]It is a figure which describes the example of a display screen.
[Drawing 28]It is a perspective view showing the appearance of the terminal for IC cards by a 4th embodiment of the present invention.
[Drawing 29]It is a 5th page figure showing the appearance of the IC card terminal by a 4th embodiment.
[Drawing 30]It is a cross sectional view of the terminal for IC cards by a 4th embodiment.
[Drawing 31]It is a figure which describes the state where it had a terminal for IC cards in the hand.
[Drawing 32]It is a figure which describes the modification of a 4th embodiment.
[Drawing 33]It is a figure which describes the example of a display screen.
[Explanations of letters or numerals]
101 Main part upper case
103 Bezel base part
104 OK button
105 The C button
106 Bezel part
107 A function / application setting mark
108 Issuer application mark sticking part
109 Application selection mark
110 LCD lens
111 Main part lower case

112 The lid for changing batteries
113 Belt mounting part
114 Belt mounting hole
201 Garbage extraction hole
301 LCD unit
302 LCD unit case
303 Main substrate
304 Interface board
305 Contact ring part
306 and 307 Rotation contact surface
308 IC contact part
309 Cell
310 Rotation card slot
311 Rotatable base part
401 Rotation slot unit
402 Rotation lock button
403 Belt
404 Belt fitting pin
501 Catcher
502 IC card
701 and 702 Card end support component
901 Water proof dustproof lid knob
902 Vertical slide water proof dustproof lid
903 Up-and-down spring unit
1001 The guide for insertion
1501 Main part upper case
1502 Main part lower case
1503 Application change rotary switch
1504 Sub application change rotary switch
1505 Determination button
1506 Liquid crystal display section
1507 Liquid-crystal-display flip vertical button
1508 Battery lid
1509 IC card loading slot
1510 Application setting mark
1511 Application selection mark
1701 Circuit board
1702 Board part article
1703 Liquid crystal window
1704 Liquid crystal
1705 IC card contact
1706 Frame
1707 Battery contact
1708 Cell
1709 Card slot lid
1710 Rotary switch contact and a determination button recognition part article

2301 Frame
2302 Main part upper case
2303 Liquid crystal display section
2304 Card slot
2305 Determination button
2306 Button type crosshair cursor
2307 The hole for straps
2308 Strap
2501 Main part lower case
2502 Circuit board
2503 Board part article
2504 Card insertion pilot switch
2505 Contact
2601 Selection and a determination button
2801 Main part upper case
2802 Main part lower case
2803 LCD lens
2804 Lower, following, and the OK button
2805 Slide knob
2806 The upper, front, and a Cancel button
2807 Key case hole
2808 Card slot
3001 Card guide plate
3002 Main substrate
3003 Contact surface
3004 LCD unit
3005 Battery part
3006 Card case unit
3201 Display part

[Translation done.]

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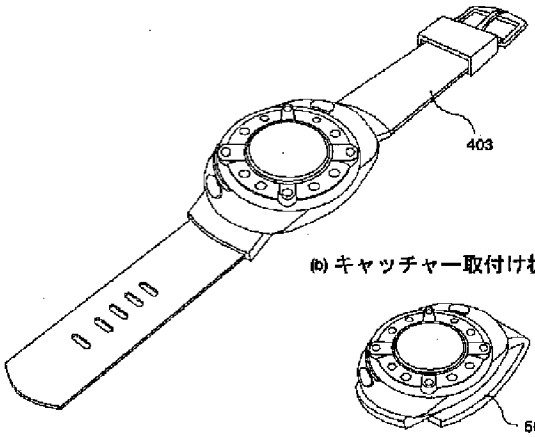
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2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DRAWINGS

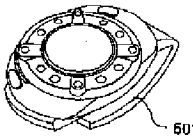
[Drawing 5]

図5

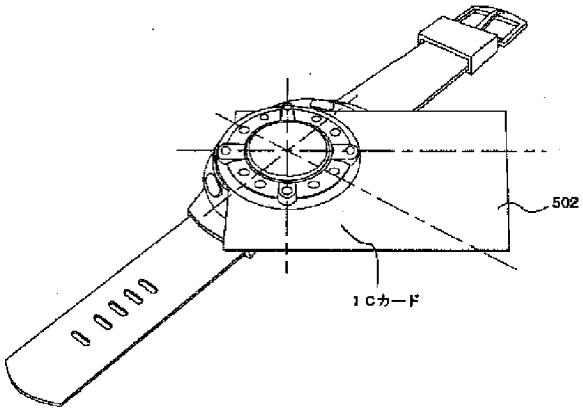
(a) ベルト取付け状態



(b) キャッチャー取付け状態

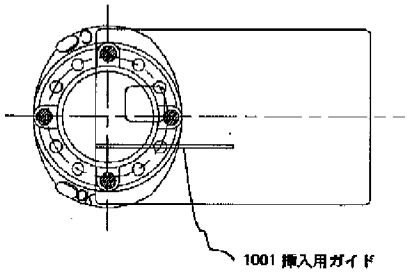


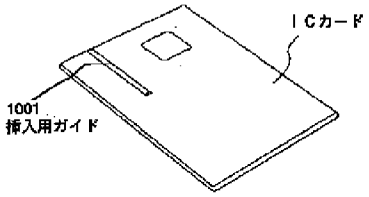
(c) カード挿入状態



[Drawing 10]

図１０

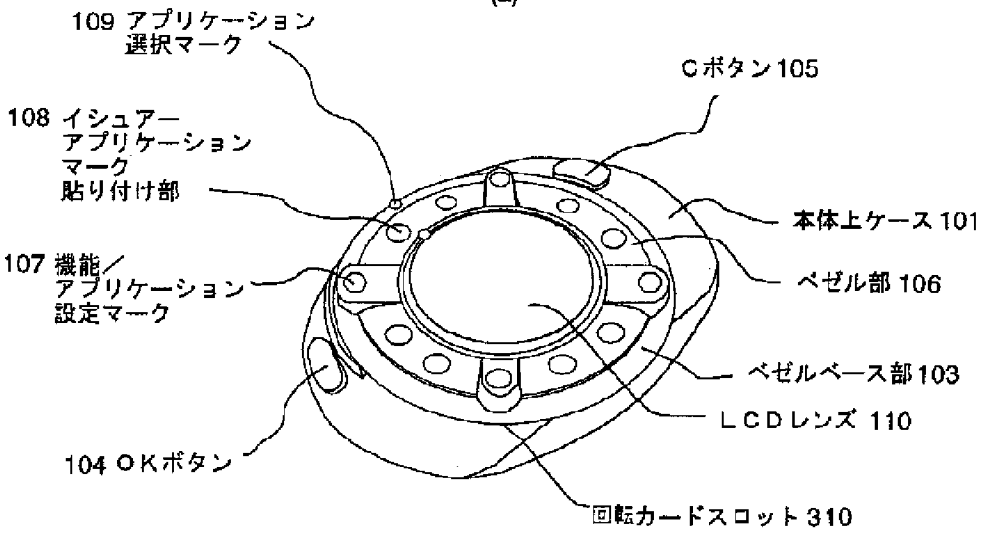




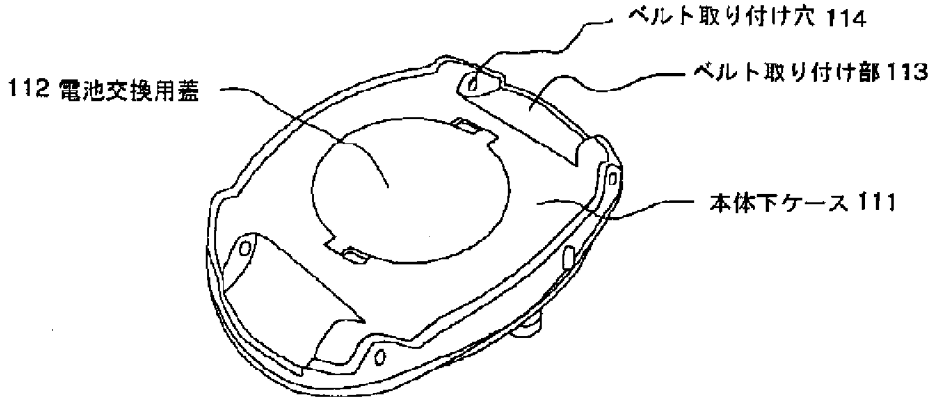
[Drawing 1]

図1

(a)

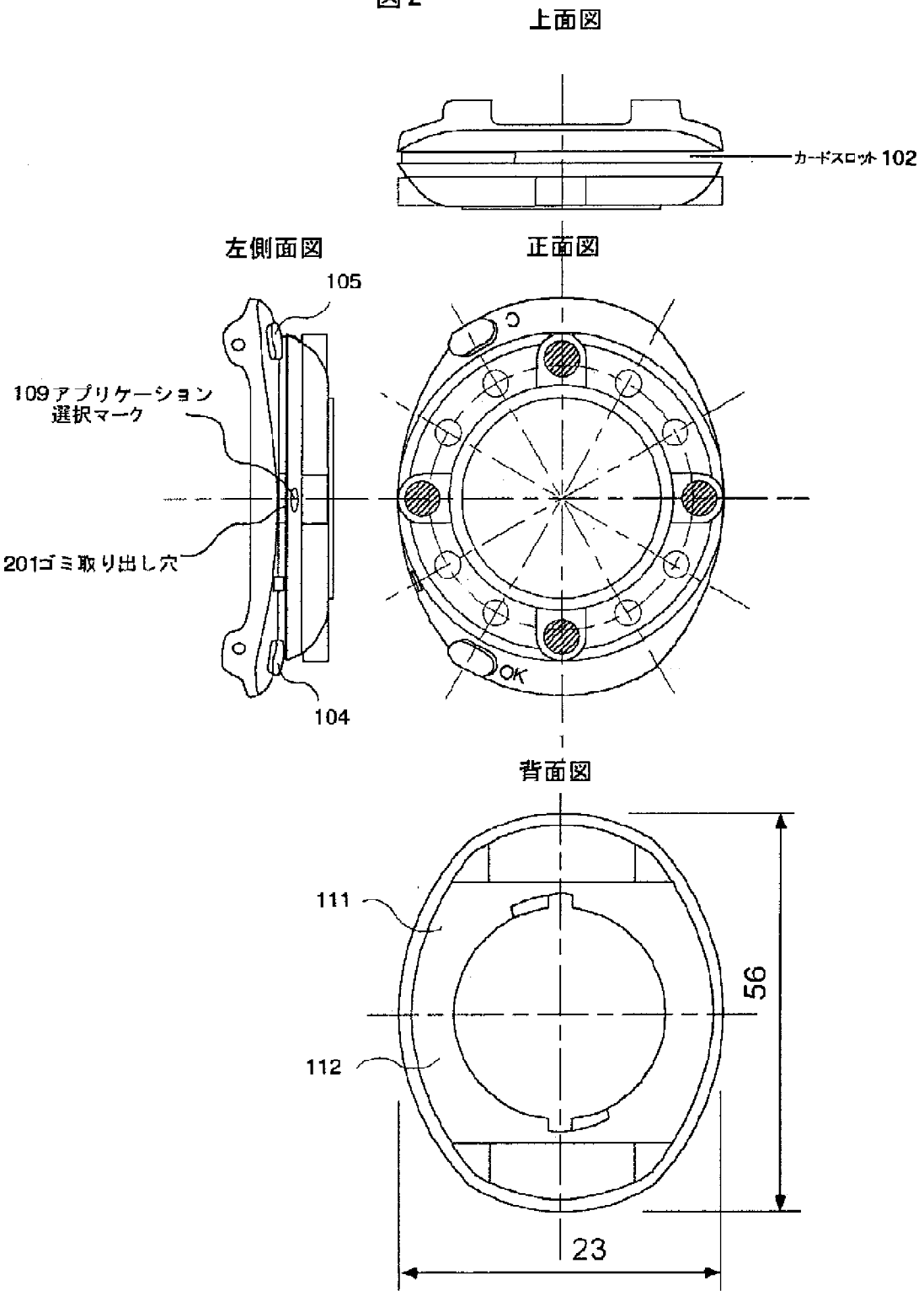


(b)



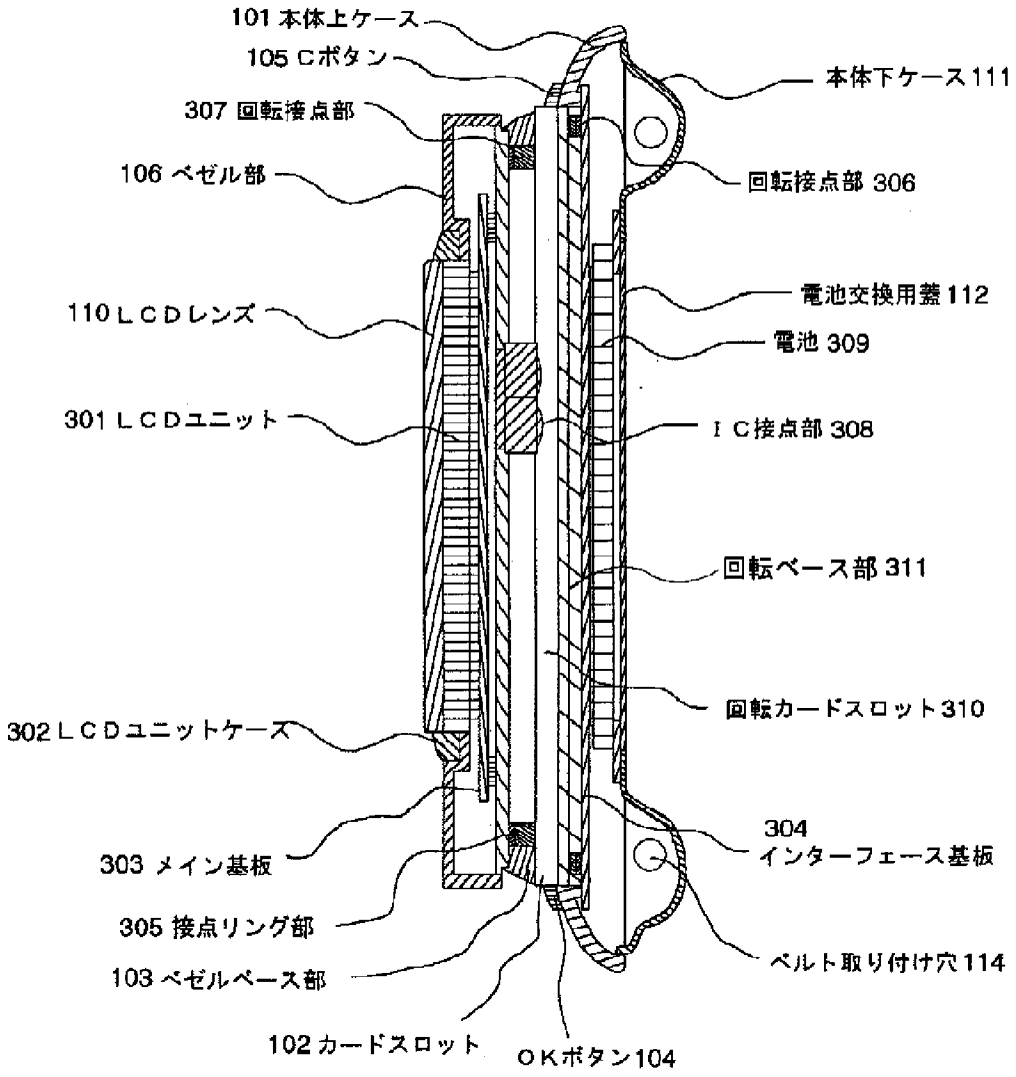
[Drawing 2]

図 2


上面図
カードスロット 102
左側面図
正面図
105
109アプリケーション
選択マーク
201ゴミ取り出し穴
104
OK
背面図
111
112
56
23

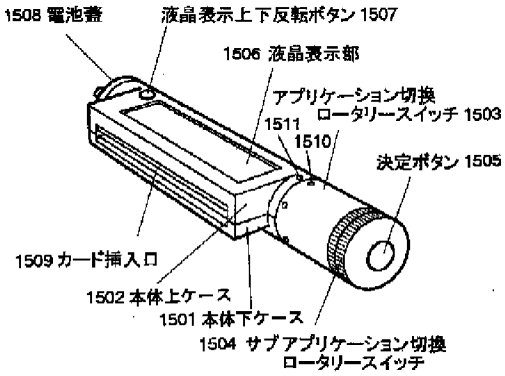
[Drawing 3]

図3



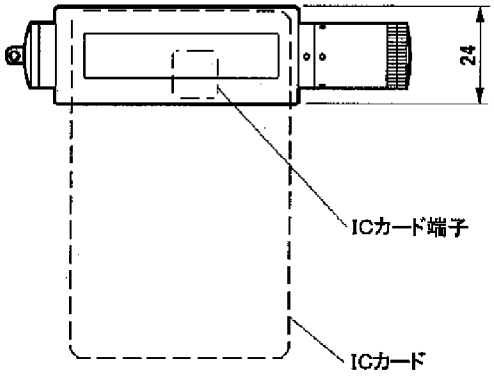
[Drawing 15]

図１５



[Drawing 20]

図２０



[Drawing 4]

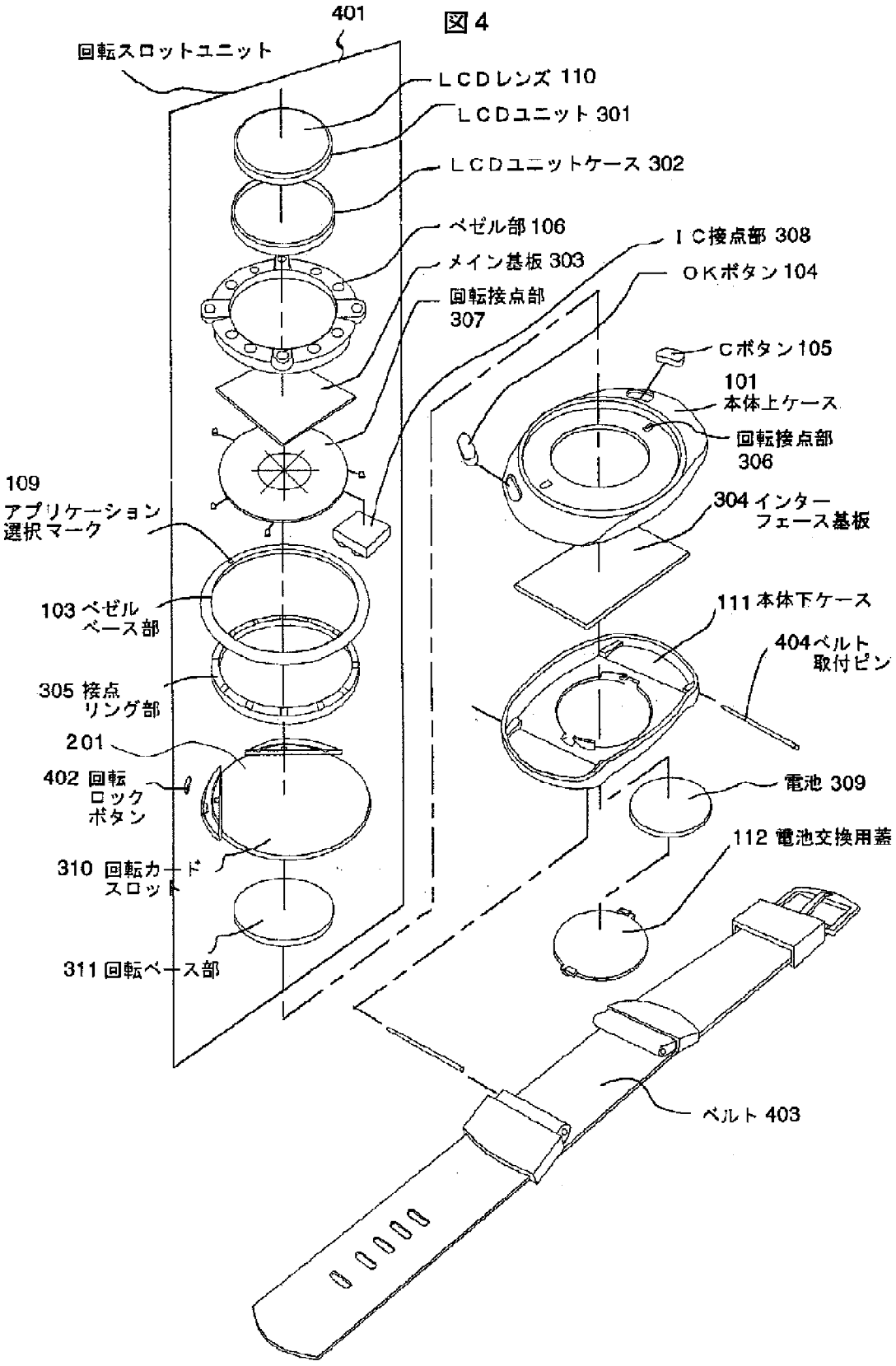
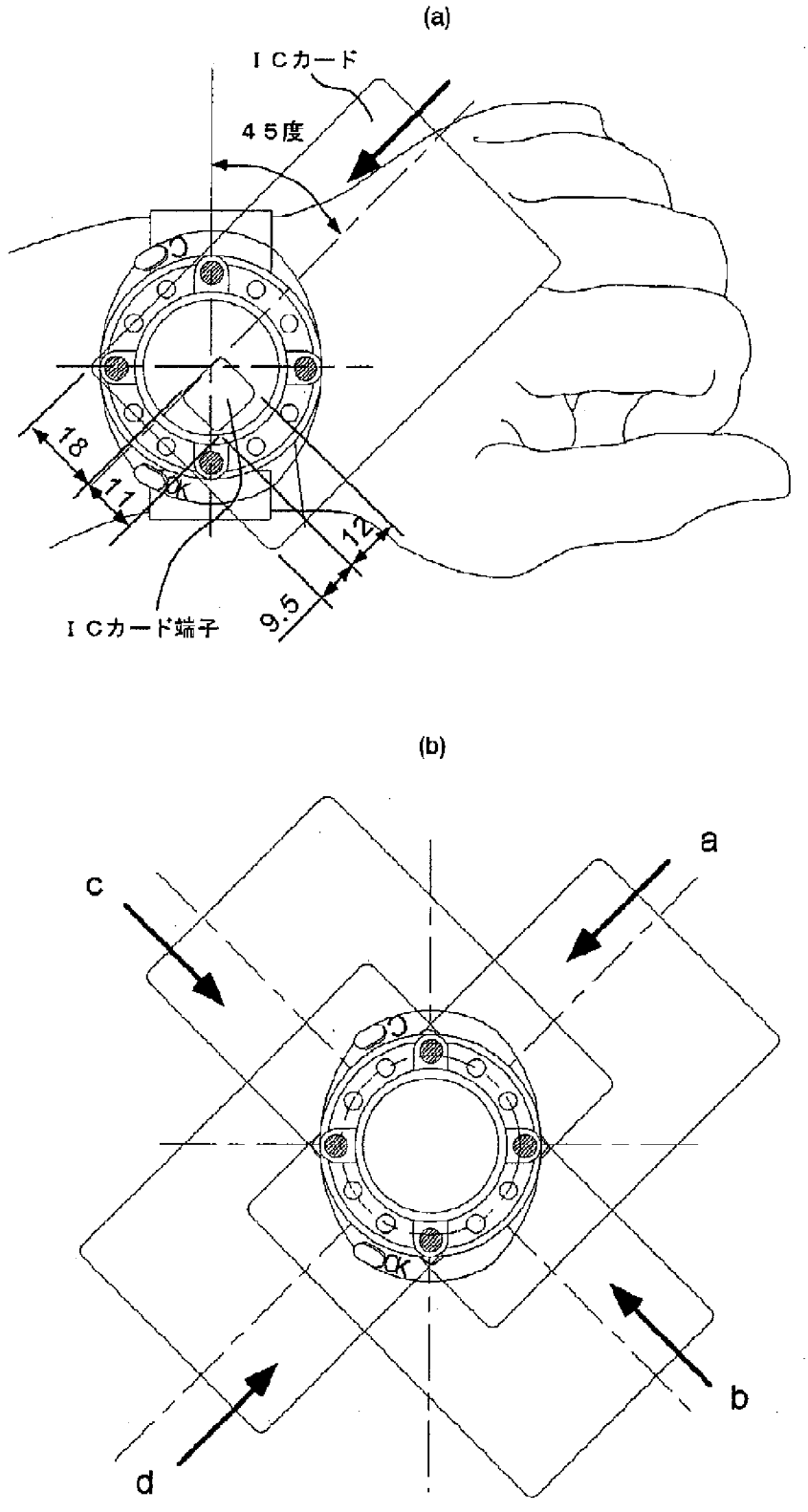

401
回転スロットユニット
LCDレンズ 110
LCDユニット 301
LCDユニットケース 302
ベゼル部 106
メイン基板 303
回転接点部 307
IC接点部 308
OKボタン 104
Cボタン 105
101 本体上ケース
回転接点部 306
304 インターフェース基板
109 アプリケーション選択マーク
103 ベゼルベース部
111 本体下ケース
404 ベルト取付ピン
305 接点リング部
201
402 回転ロックボタン
電池 309
112 電池交換用蓋
310 回転カードスロット
311 回転ベース部
ベルト 403

図4

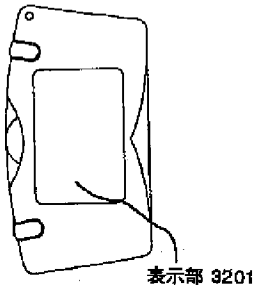
[Drawing 6]

図６



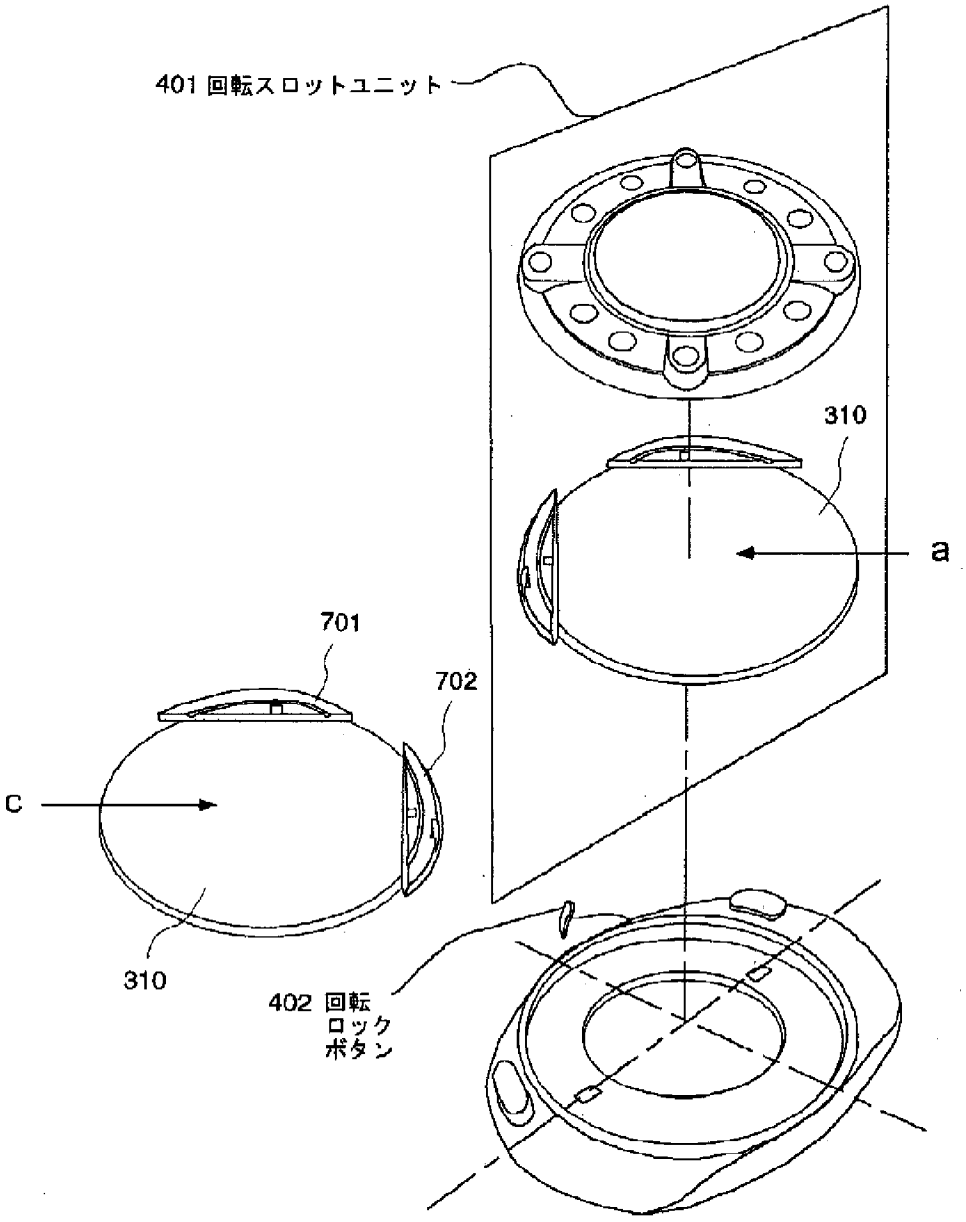
[Drawing 32]

図３２



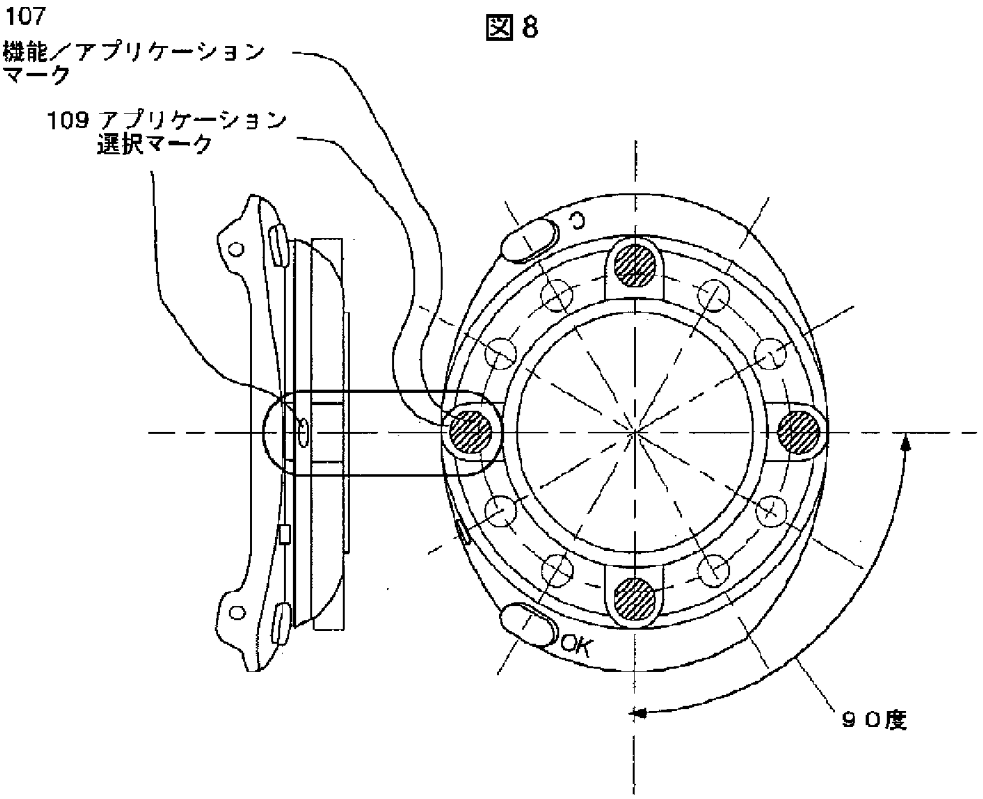
[Drawing 7]

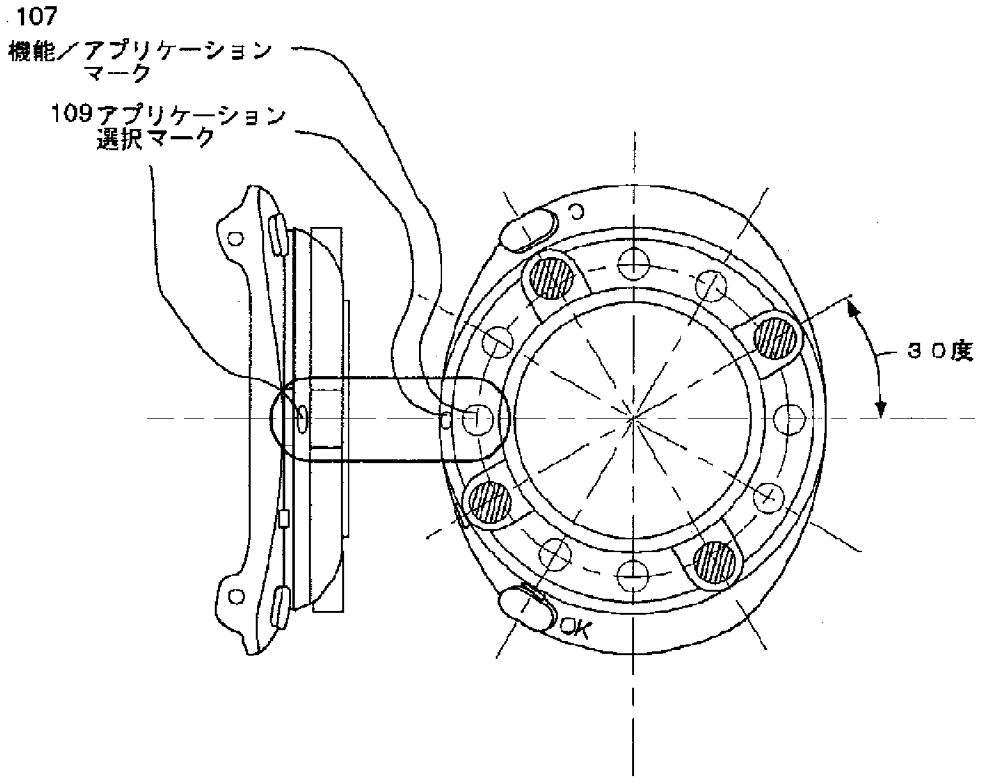
図7



[Drawing 8]

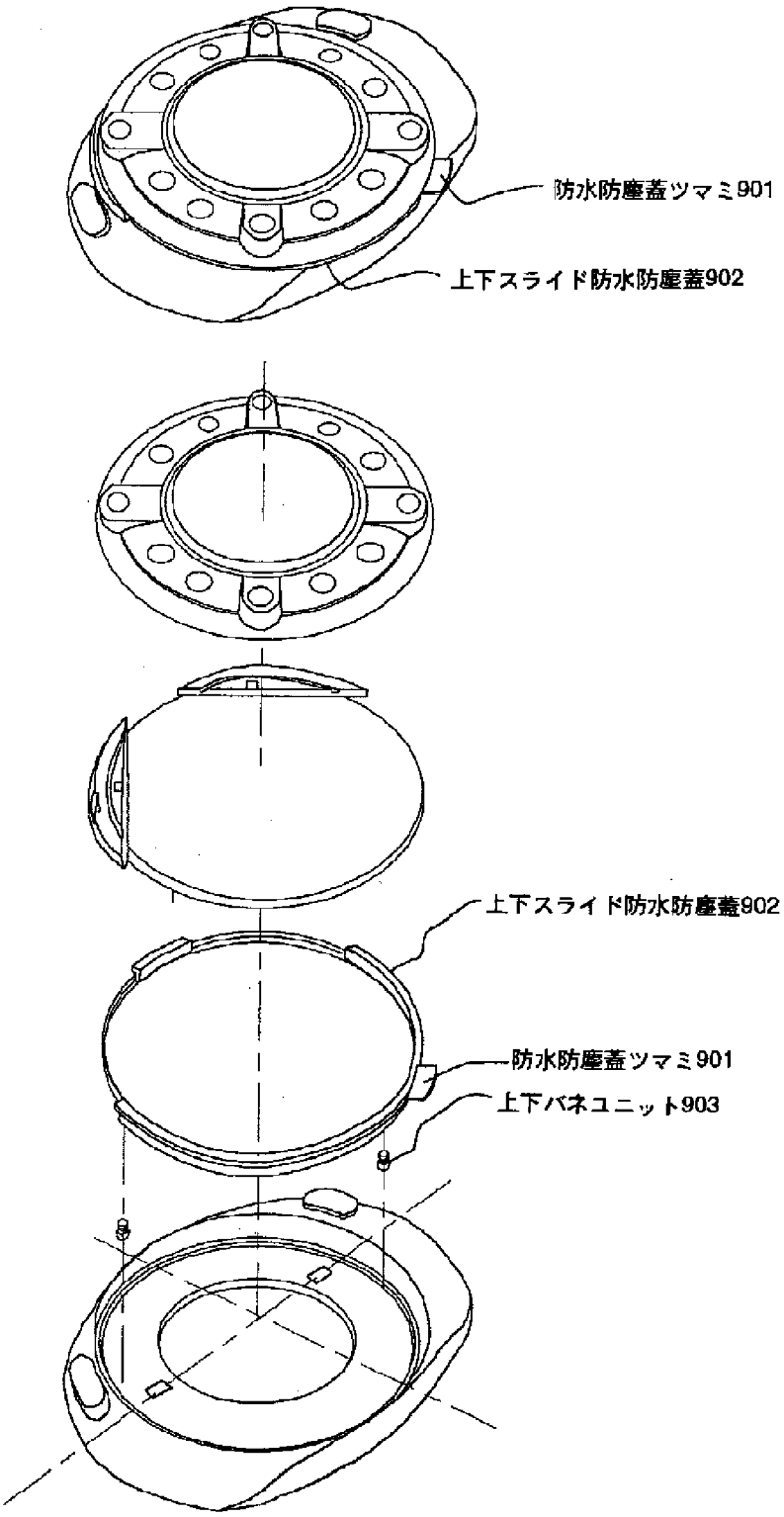
図８


107
機能／アプリケーション
マーク
109 アプリケーション
選択マーク
OK
９０度


107
機能／アプリケーション
マーク
109アプリケーション
選択マーク
OK
３０度

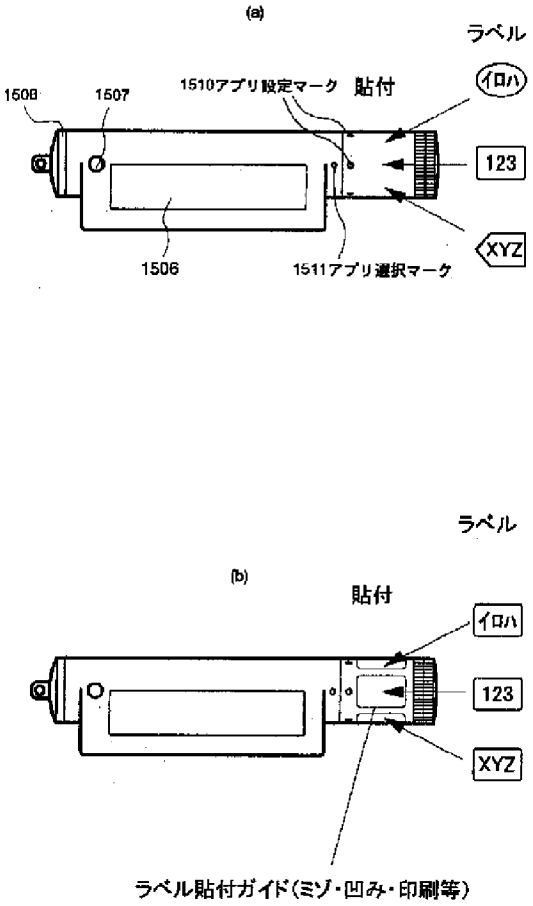
[Drawing 9]

図 9



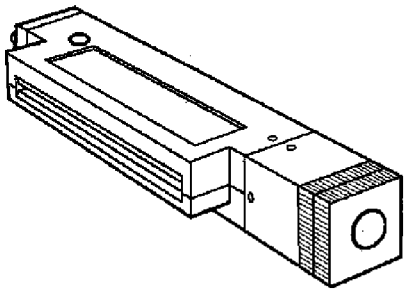
[Drawing 18]

図１８



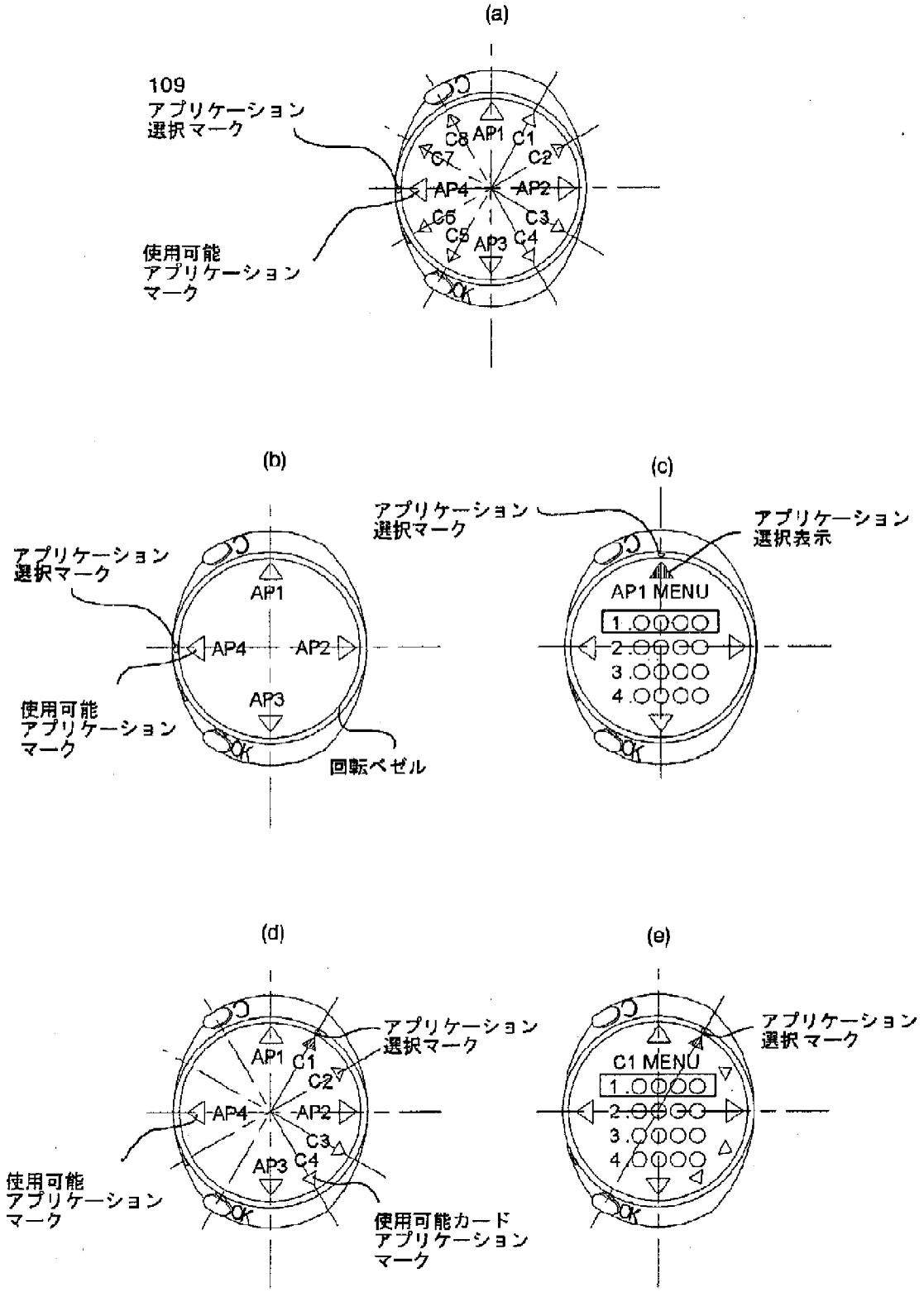
[Drawing 21]

図２１



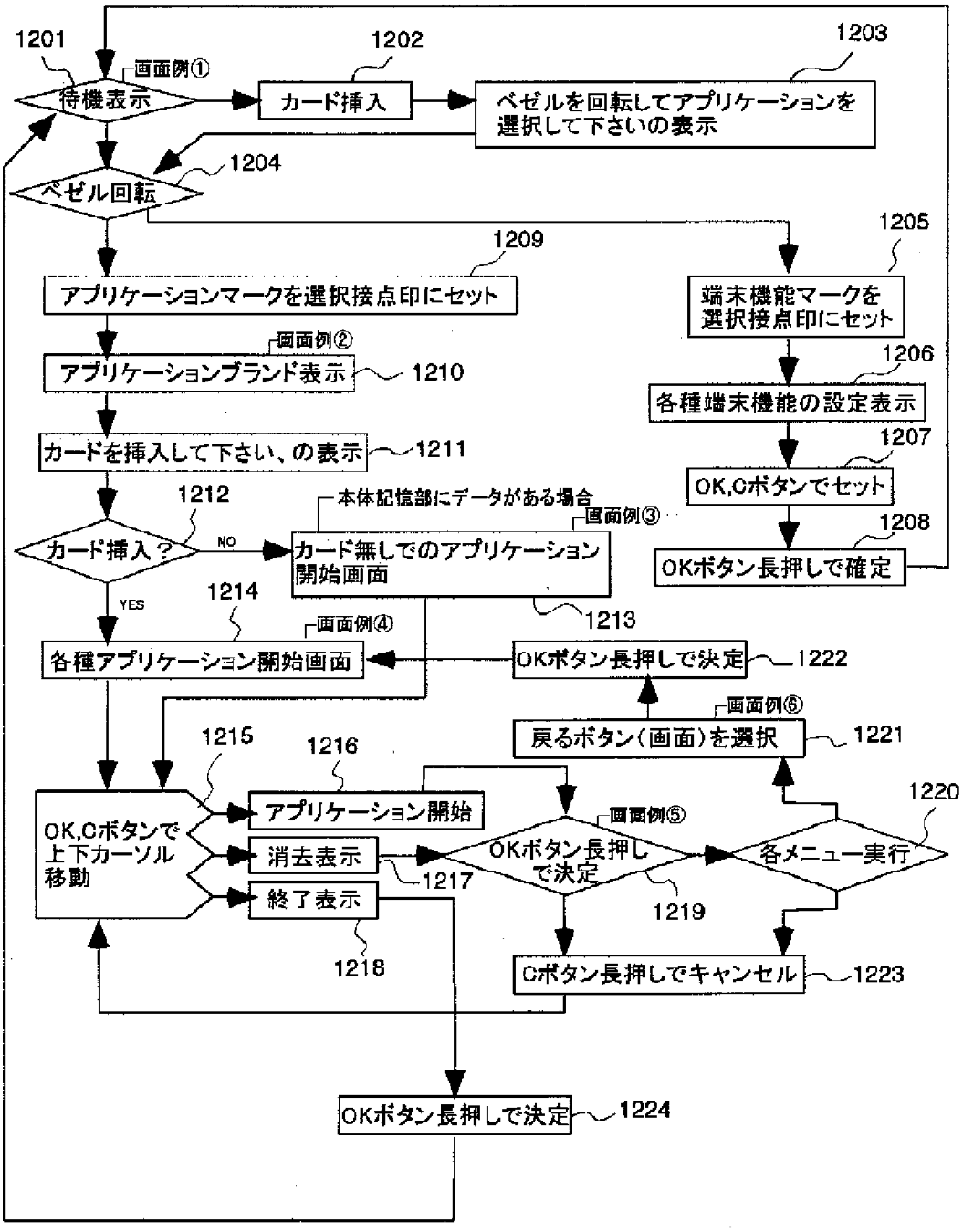
[Drawing 11]

図１１



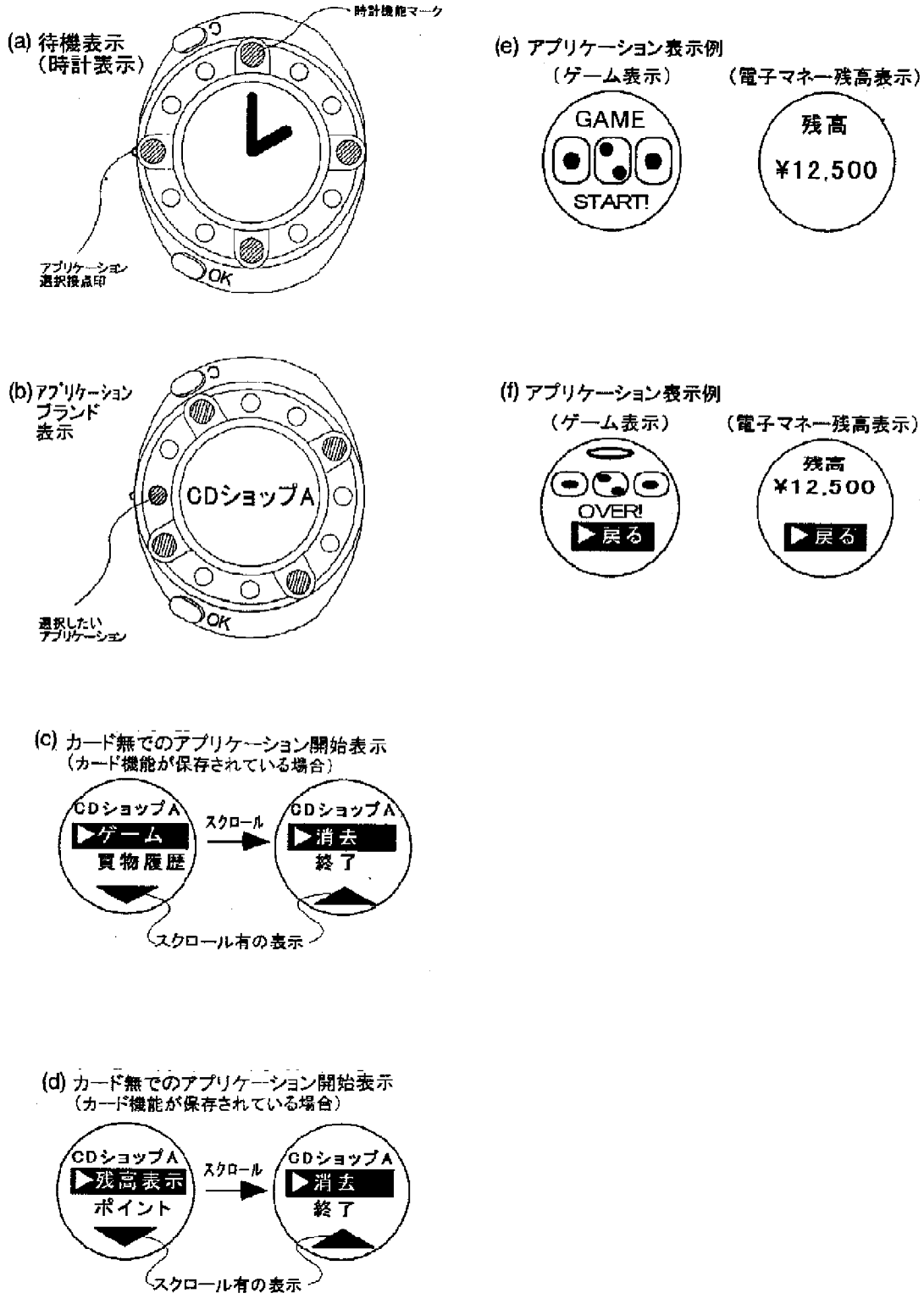
[Drawing 12]

図１２



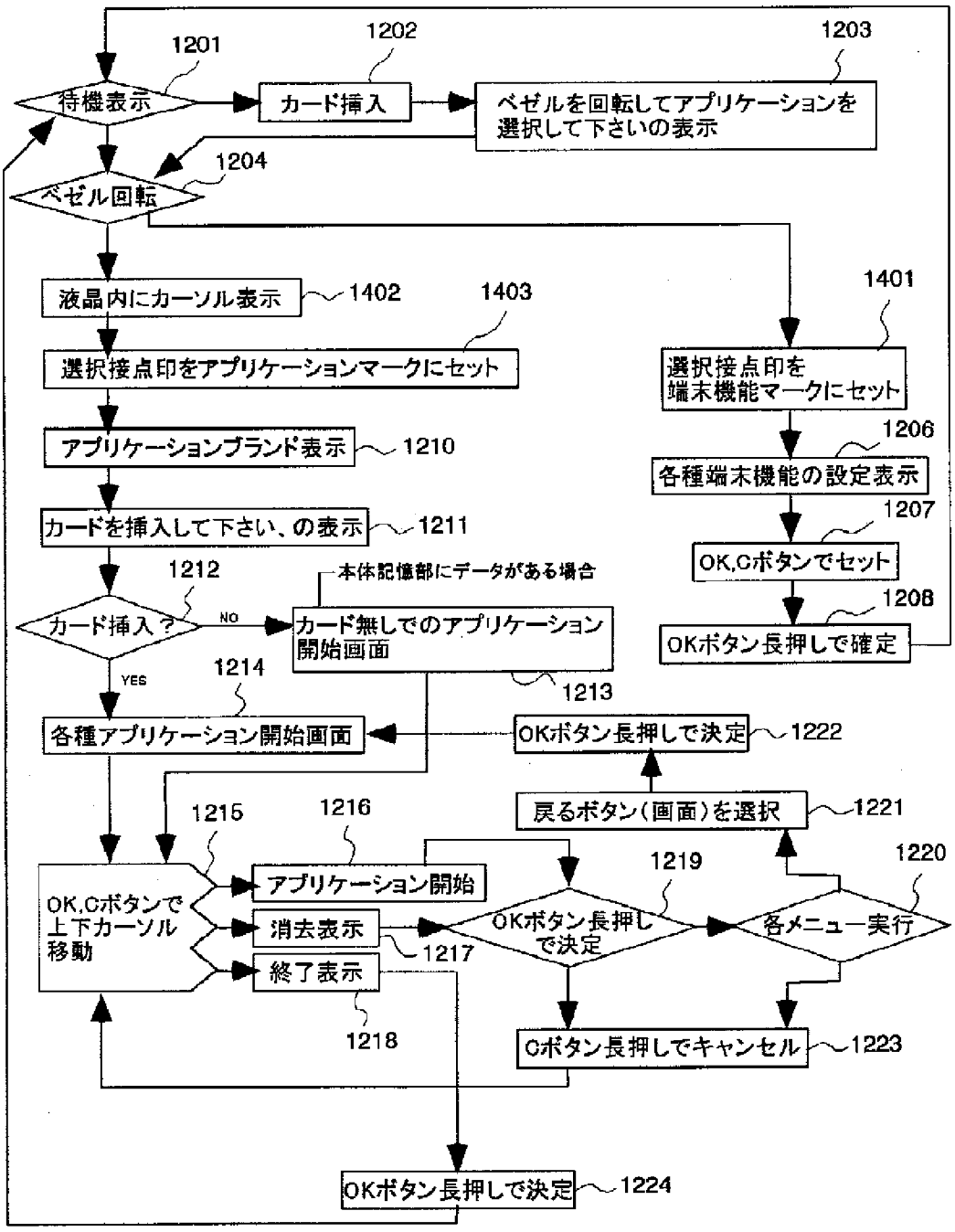
[Drawing 13]

図１３



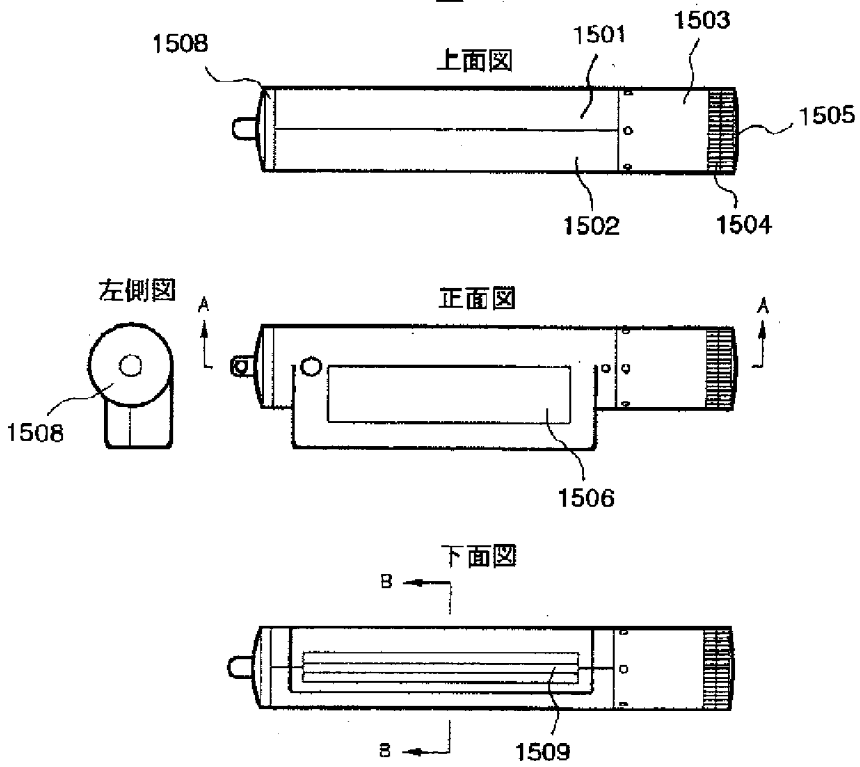
[Drawing 14]

図１４



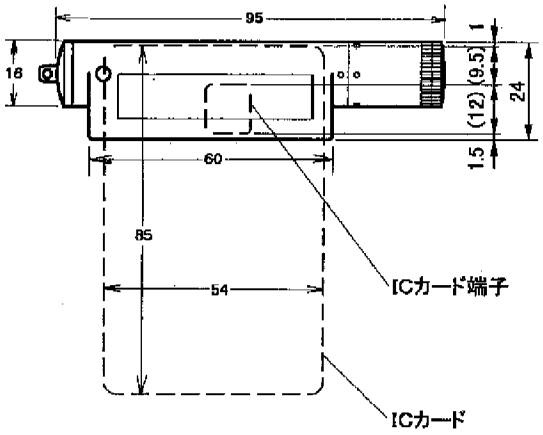
[Drawing 16]

図１６



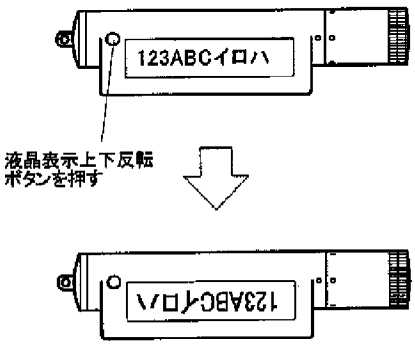
[Drawing 19]

図１９



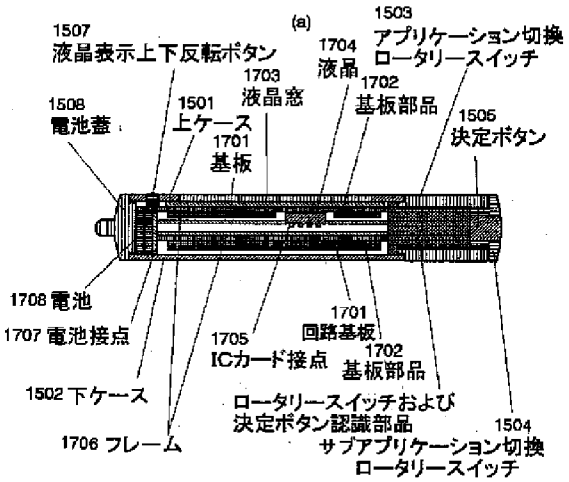
[Drawing 22]

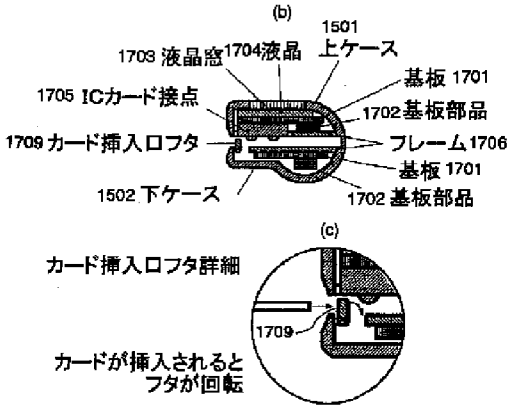
図２２



[Drawing 17]

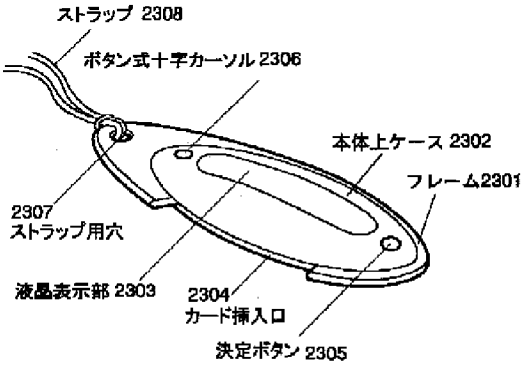
図１７





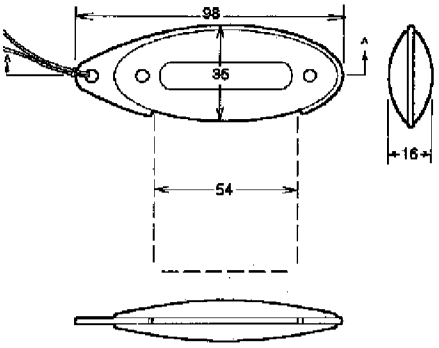
[Drawing 23]

図２３



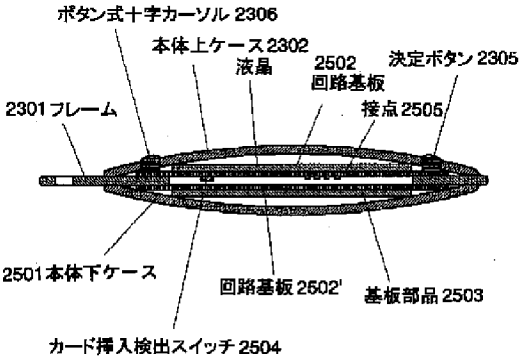
[Drawing 24]

図２４



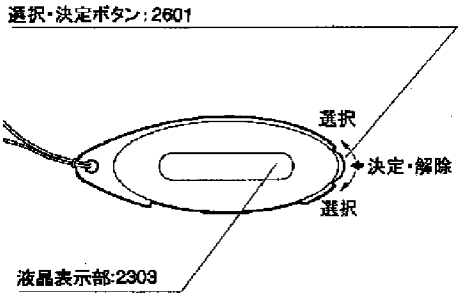
[Drawing 25]

図２５



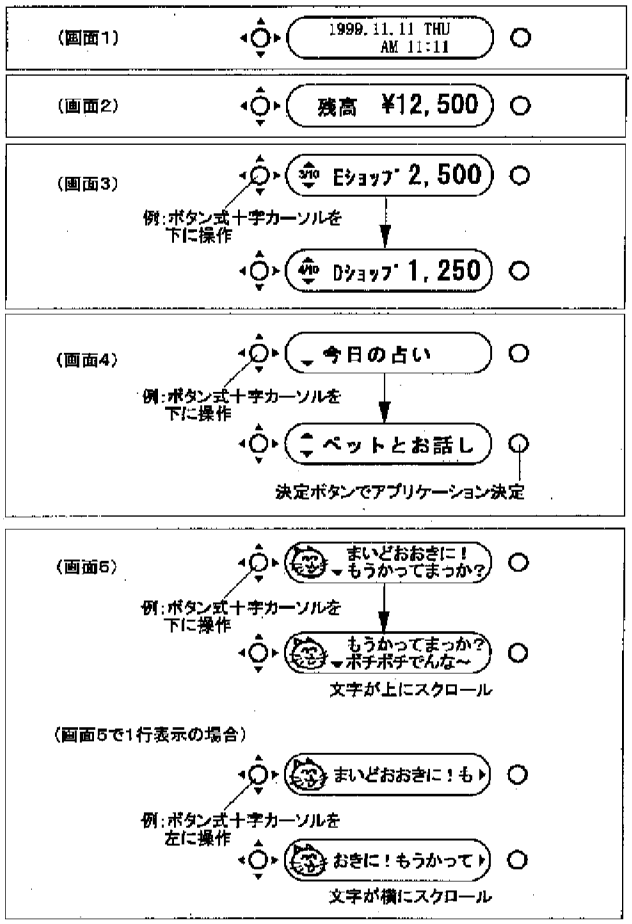
[Drawing 26]

図２６



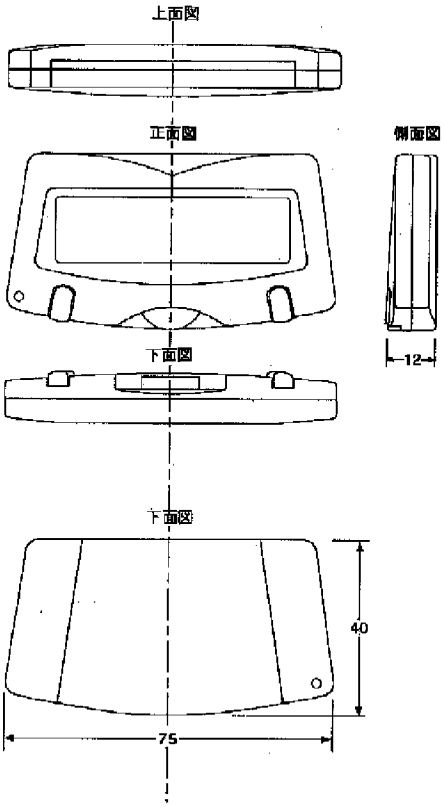
[Drawing 27]

図２７



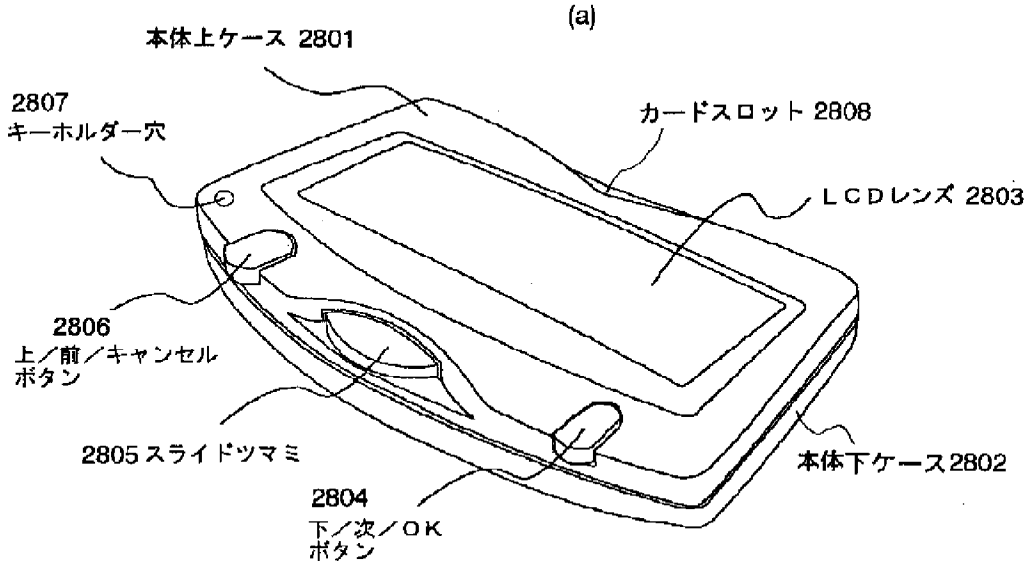
[Drawing 29]

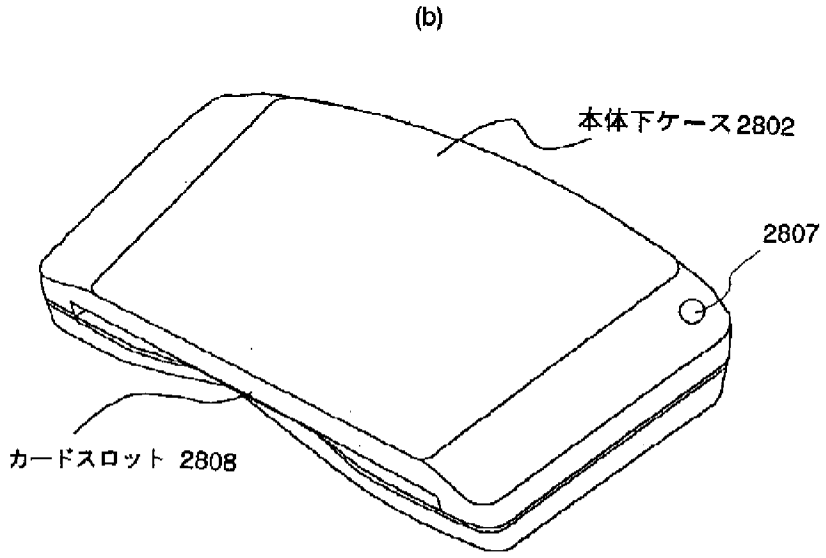
図２９



[Drawing 28]

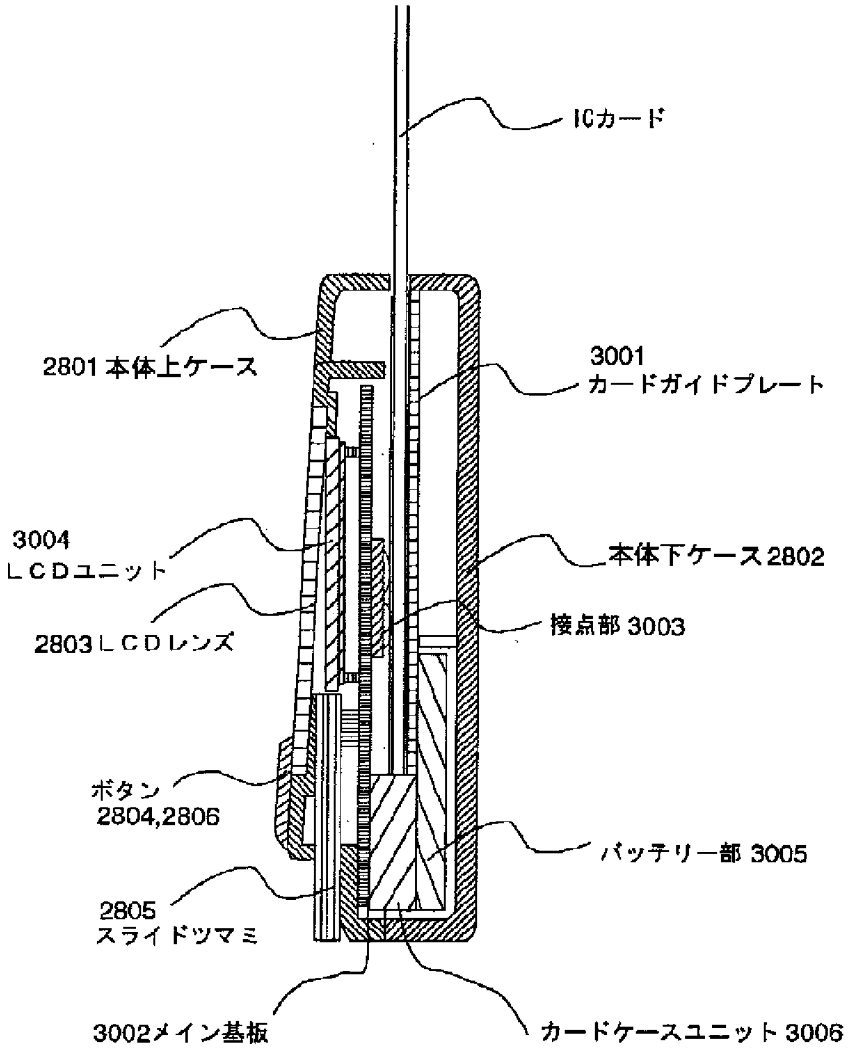
図２８





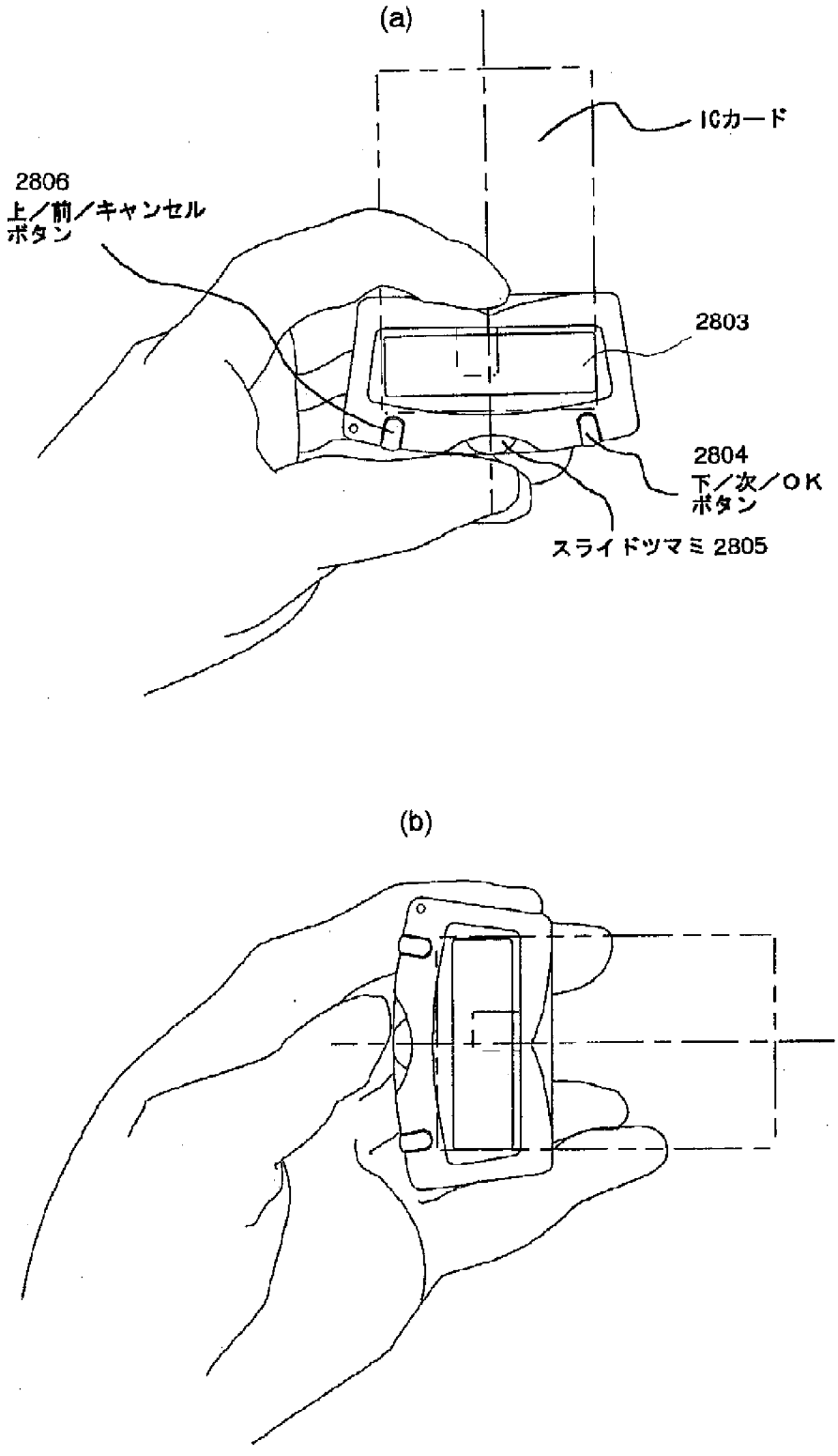
[Drawing 30]

図３０



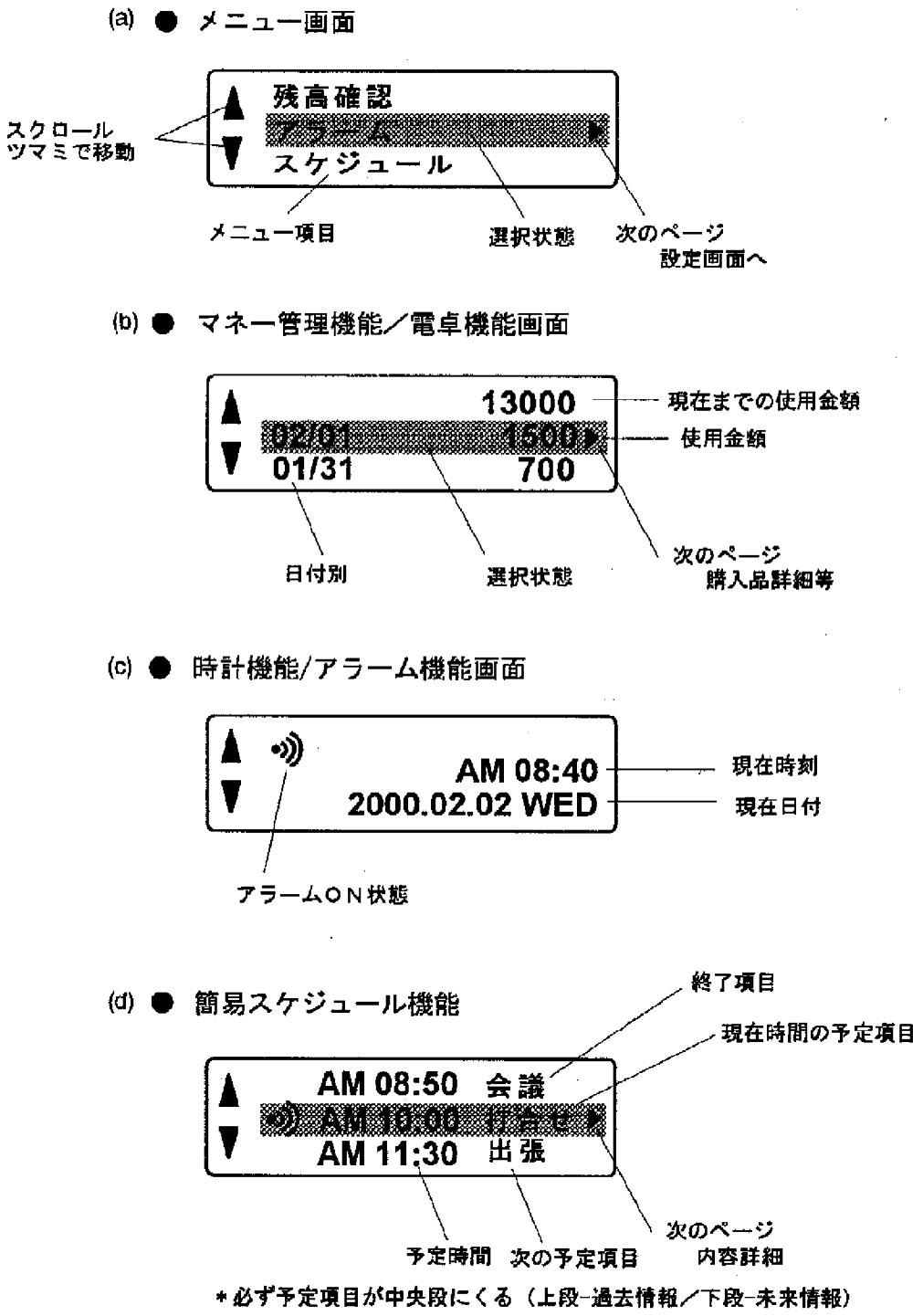
[Drawing 31]

図３１



[Drawing 33]

図３３



[Translation done.]

(19)日本国特許庁(JP)　(12)公開特許公報(A)　(11)特許出願公開番号
特開2005-159741
(P2005-159741A)
(43)公開日　平成17年6月16日(2005.6.16)

(51)Int.Cl.[7]		F I			テーマコード（参考）
H04M	1/02	H04M	1/02	C	5C022
H04N	5/225	H04N	5/225	Z	5K023

審査請求 未請求　請求項の数 7　OL　（全 15 頁）

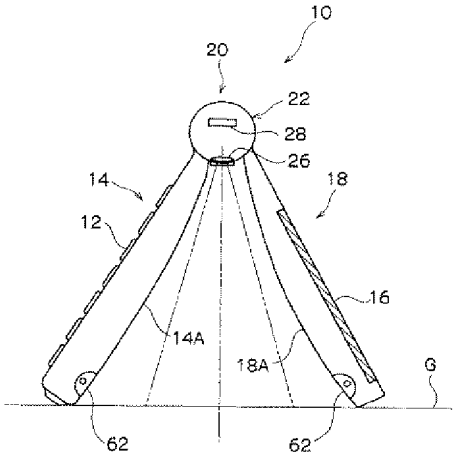
(21)出願番号　特願2003-395738 (P2003-395738)
(22)出願日　平成15年11月26日 (2003.11.26)

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Fターム(参考)　5C022 AA00　AC01　AC06　AC77
5K023 AA07　DD08　KK01　MM00

(54)【発明の名称】カメラ付携帯機器

(57)【要約】
【目的】　接写撮影が可能な開閉式のカメラ付携帯機器のヒンジ部の機構の複雑化を防止する。
【構成】　カメラ付携帯電話１０では、操作部１２が備えられた第１筐体１４とモニタ１６が備えられた第２筐体１８が１軸式のヒンジ部２０によって開閉可能に連結されている。ヒンジ部２０は、第１筐体１４と第２筐体１８を１８０度を越えて回転可能としているので、ヒンジ部２０を上向きにし、且つ、操作部１２とモニタ１６を外向きにして第１筐体１４と第２筐体１８を平面G上に倒立できる。
【選択図】　図９



【特許請求の範囲】
【請求項1】
操作部を備えた第１筐体と、
モニタを備えた第２筐体と、
前記操作部と前記モニタを開閉可能に前記第１筐体と前記第２筐体を連結するヒンジ部と、
前記ヒンジ部に配設されたカメラと、
を備えるカメラ付携帯機器であって、
前記第１筐体と前記第２筐体が重ね合わされて前記操作部と前記モニタが内側を向いた形態と、前記第１筐体と前記第２筐体が開かれて前記操作部と前記モニタが外側を向いた形態の２つの形態に変更可能に構成されたことを特徴とするカメラ付携帯機器。
【請求項2】
前記ヒンジ部が、前記第１筐体と前記第２筐体とが重ね合わされた状態から前記第２筐体を１８０度以上回転してロックでき、
前記カメラが、前記ヒンジ部回りに回動可能とされていることを特徴とする請求項１に記載のカメラ付携帯機器。
【請求項3】
前記ヒンジ部が、前記第１筐体と前記第２筐体とが重ね合わされた状態から前記第２筐体を１８０度以上回転してロックでき、
前記カメラが、前記第２筐体が１８０度以上回転されると前記第１筐体と前記第２筐体との内側の被写体に面することを特徴とする請求項１に記載のカメラ付携帯機器。
【請求項4】
前記第２筐体が１８０度より大きく開かれたことを検出する検出手段と、
前記検出手段から検出信号を受信すると前記カメラの撮影モードを、前記第２筐体と前記第１筐体との内側の被写体を接写可能とする接写モードに切換える制御手段と、
を有することを特徴とする請求項２又は３に記載のカメラ付携帯機器。
【請求項5】
１８０度より大きく開かれた前記第２筐体と前記第１筐体との内側に位置する前記カメラの撮像レンズを、前記第２筐体と前記第１筐体との内側の被写体を接写可能とする接写状態に切換える切換え手段を有することを特徴とする請求項２又は３に記載のカメラ付携帯機器。
【請求項6】
前記切換え手段は、
１８０度より大きく開かれた前記第２筐体と前記第１筐体との内側に位置する前記カメラの前記撮像レンズの前面に配置され、前記第２筐体と前記第１筐体との内側の被写体を接写可能とする接写用レンズを有することを特徴とする請求項５に記載のカメラ付携帯機器。
【請求項7】
前記切換え手段は、
１８０度より大きく開かれた前記第２筐体と前記第１筐体との内側に位置する前記カメラの前記撮像レンズを、前記第２筐体と前記第１筐体との内側の被写体を接写可能とする接写位置まで移動させる移動手段を有することを特徴とする請求項５に記載のカメラ付携帯機器。

【発明の詳細な説明】
【技術分野】
【0001】
本発明は、開閉式の携帯機器であって、ヒンジ部にカメラが配設されたカメラ付携帯機器に関する。
【背景技術】
【0002】

従来からカメラ付携帯電話によって机上に置かれた被写体を接写するための構成が考案されている（例えば、特許文献１、又は２参照）。

【0003】

特許文献１では、折り曲げ可能とされたアンテナを机上に当接させてカメラと被写体との距離を合わせるという構成が開示されている。この構成ではカメラがモニタの裏面に設けられ、キーボードを備えた第１筐体とモニタを備えた第２筐体が約１８０度開かれた状態で被写体を接写するので、モニタが上向きになる。このため、モニタで被写体を確認しながら接写できるという利点を有するが、携帯電話は撮影者が保持していなければならず、携帯電話が被写体に対して傾いてしまうとカメラと被写体との距離が狂ってしまう。従って、接写撮影時の安定性に問題があった。

【0004】

また、特許文献２では、上記第１、第２筐体が１８０度未満開かれた状態で、ヒンジ部を上向きにして第１、第２筐体を机上に倒立させることによって、ヒンジ部に配設されたカメラと被写体との距離を合わせるという接写撮影時の安定性が高い構成が開示されている。この構成では、第１、第２筐体を机上に倒立させた状態でモニタが外を向いており、モニタで被写体を確認しながら接写撮影を行うことができるようになっている。

【0005】

しかし、第１筐体と第２筐体を連結するヒンジ部は、第１、第２筐体を１８０度以上開くことができなかった。このため、ヒンジ部を、第１、第２筐体を開閉するための開閉軸と、モニタを裏返すための回転軸との２軸構成にしなければならず、機構が複雑になるという問題があった。

【特許文献1】特開２０００－３５８２２５号公報

【特許文献2】特開２００３－１６３８２４号公報

【発明の開示】

【発明が解決しようとする課題】

【0006】

本発明は上記事実を考慮してなされたものであり、接写をする形態に変化する開閉式のカメラ付携帯機器において、接写撮影時の安定性を高めると共に、ヒンジ部の機構の複雑化を防止することを目的とする。

【課題を解決するための手段】

【0007】

請求項１に記載のカメラ付携帯機器は、操作部を備えた第１筐体と、モニタを備えた第２筐体と、前記操作部と前記モニタを開閉可能に前記第１筐体と前記第２筐体を連結するヒンジ部と、前記ヒンジ部に配設されたカメラと、を備えるカメラ付携帯機器であって、前記第１筐体と前記第２筐体が重ね合わされて前記操作部と前記モニタが内側を向いた形態と、前記第１筐体と前記第２筐体が開かれて前記操作部と前記モニタが外側を向いた形態の２つの形態に変更可能に構成されたことを特徴とする。

【0008】

請求項１に記載のカメラ付携帯機器では、操作部が第１筐体に備えられ、モニタが第２筐体に備えられている。この第１筐体と第２筐体は、ヒンジ部によって操作部とモニタを開閉可能に連結されている。

【0009】

このカメラ付携帯電話は、第１筐体と第２筐体が重ね合わされて操作部とモニタが内側を向いた形態と、第１筐体と第２筐体が開かれて操作部とモニタが外側を向いた形態の２つの形態に変更可能に構成されている。

【0010】

このため、第１筐体と第２筐体との内側に存在する被写体をモニタで確認し、操作部を操作しながら撮影できる。

【0011】

請求項２に記載のカメラ付携帯機器は、請求項１に記載のカメラ付携帯機器であって、

前記ヒンジ部が、前記第１筐体と前記第２筐体とが重ね合わされた状態から前記第２筐体を１８０度以上回転してロックでき、前記カメラが、前記ヒンジ部回りに回動可能とされていることを特徴とする。

【0012】

請求項２に記載のカメラ付携帯機器では、操作部が第１筐体に備えられ、モニタが第２筐体に備えられている。この第１筐体と第２筐体は、ヒンジ部によって操作部とモニタを開閉可能に連結されている。

【0013】

第２筐体は、ヒンジ部によって第１筐体と重ね合わされた状態から１８０度以上回転してロックできる。このため、ヒンジ部を上向きにして第１筐体と第２筐体を平面に倒立させることができる。また、この状態で、モニタは外側を向き、カメラはヒンジ部回りを回動可能とされている。これによって、カメラを第１筐体と第２筐体との内側に存在する被写体に合わせ、被写体をモニタで確認しながら撮影できる。

【0014】

このように、１軸式のヒンジ部の回転の自由度を高くすることによって、モニタを裏返すための回転軸が不要となり、ヒンジ部の機構の複雑化が防止されている。

【0015】

請求項３に記載のカメラ付携帯機器は、請求項１に記載のカメラ付携帯機器であって、前記ヒンジ部が、前記第１筐体と前記第２筐体とが重ね合わされた状態から前記第２筐体を１８０度以上回転してロックでき、前記カメラが、前記第２筐体が１８０度以上回転されると前記第１筐体と前記第２筐体との内側の被写体に面することを特徴とする。

【0016】

請求項３に記載のカメラ付携帯機器では、請求項２と同様、第２筐体を、ヒンジ部によって第１筐体と重ね合わされた状態から１８０度以上回転してロックできる。そして、カメラは、第２筐体が１８０度以上回転されると第１筐体と第２筐体との内側に存在する被写体に面する。

【0017】

このため、第２筐体を１８０度以上回転した後にカメラの位置を調整する必要がないので、即座に第１筐体と第２筐体の内側の被写体を撮影できる。

【0018】

請求項４に記載のカメラ付携帯機器は、請求項２又は３に記載のカメラ付携帯機器であって、前記第２筐体が１８０度より大きく開かれたことを検出する検出手段と、前記検出手段から検出信号を受信すると前記カメラの撮影モードを、前記第２筐体と前記第１筐体との内側の被写体を接写可能とする接写モードに切換える制御手段と、を有することを特徴とする。

【0019】

請求項４に記載のカメラ付携帯機器では、第２筐体が１８０度より大きく開かれると検出手段によって検出され、制御手段が、検出手段からの検出信号を受信するとカメラの撮影モードを接写モードに切換える。これによって、第２筐体を開くだけで自動的に被写体を接写できるようになる。

【0020】

請求項５に記載のカメラ付携帯機器は、請求項２又は３に記載のカメラ付携帯機器であって、１８０度より大きく開かれた前記第２筐体と前記第１筐体との内側に位置する前記カメラの撮像レンズを、前記第２筐体と前記第１筐体との内側の被写体を接写可能とする接写状態に切換える切換え手段を有することを特徴とする請求項２又は３に記載のカメラ付携帯機器。

【0021】

請求項５に記載のカメラ付携帯機器では、第２筐体が１８０度より大きく開かれると、切換え手段が、第２筐体と第１筐体との間に位置するカメラの撮影レンズを、第２筐体と第１筐体との内側の被写体を接写可能とする接写状態に切換える。これによって、第２筐

体と第１筐体との間の被写体が接写可能となる。
【0022】
請求項６に記載のカメラ付携帯機器は、請求項５に記載のカメラ付携帯機器であって、前記切換え手段は、１８０度より大きく開かれた前記第２筐体と前記第１筐体との内側に位置する前記前記カメラの前記撮像レンズの前面に配置され、前記第２筐体と前記第１筐体との内側の被写体を接写可能とする接写用レンズを有することを特徴とする。
【0023】
請求項６に記載のカメラ付携帯機器では、第２筐体を１８０度より大きく開き、接写用レンズをカメラの撮像レンズの前面に配置することによって、第２筐体と第１筐体との内側の被写体が接写可能となる。
【0024】
請求項７に記載のカメラ付携帯機器は、請求項５に記載のカメラ付携帯機器であって、１８０度より大きく開かれた前記第２筐体と前記第１筐体との内側に位置する前記カメラの前記撮像レンズを、前記第２筐体と前記第１筐体との内側の被写体を接写可能とする接写位置まで移動させる移動手段を有することを特徴とする。
【0025】
請求項７に記載のカメラ付携帯機器では、第２筐体が１８０度より大きく開かれると、カメラの撮像レンズが移動手段によって接写位置まで移動される。これによって、第２筐体を１８０度以上開くだけで自動的に第１筐体と第２筐体との内側の被写体を接写できるようになる。
【発明の効果】
【0026】
本発明は上記構成にしたので、接写撮影をする形態に変化する開閉式のカメラ付携帯機器において、接写撮影時の安定性を高めると共に、ヒンジ部の機構の複雑化を防止できる。
【発明を実施するための最良の形態】
【0027】
以下に図面を参照しながら本実施形態について説明する。
【0028】
図１に示すように、カメラ付携帯電話１０は、操作部１２が備えられた第１筐体１４と、モニタ１６が備えられた第２筐体１８が、ヒンジ部２０によって開閉可能に連結されて構成されている。第１筐体１４と第２筐体１８を閉じた状態でモニタ１６と操作部１２は内側に収まる。
【0029】
ヒンジ部２０の中央部には回転可能とされたカメラユニット２２が配設されている。図２に示すように、カメラユニット２２は、円筒形状のケーシング２４の表面に撮像レンズ２６が配設され、ケーシング２４内にＣＣＤ２８が配設されている。ＣＣＤ２８は、撮像面の中央部を撮像レンズ２６の光軸に合わされている。
【0030】
ケーシング２４の両端部は径が細くなった回転軸２４Ａとされており、この回転軸２４Ａを回転可能に支持する軸受３０が第１筐体１４の端面に形成されている。回転軸２４Ａの円周面には、ラッチ３２が設けられている。ラッチ３２は、回転軸２４Ａの軸方向に延出する板バネで、三角形状に折り曲げられた先端部３２Ａを回転軸２４Ａの円周面から突出させている。
【0031】
また、軸受３０の内周面にはラッチ３２を係止する係止溝３０Ａ、３０Ｂ、３０Ｃが形成されている。係止溝３０Ａは、第１筐体１４の操作部１２側に形成されており、図３（Ａ）に示すように、ラッチ３２が係止溝３０Ａに係止されると撮像レンズ２６はユーザーの方向を向く。これによって、自分を撮影する自分撮りが可能となる。
【0032】

また、図３（Ｂ）に示すように、カメラユニット２２を時計周り方向（図中矢印Ａ方向に回転させると、ラッチ３２は軸受３０の内周面によって回転軸２４Ａの円周面内に押し込まれる。

【0033】

また、図３（Ｃ）に示すように、係止溝３０Ｂは、係止溝３０Ａと約１８０度の間隔で形成されている。ラッチ３２は、この係止溝３０Ｂの位置まで回転軸２４Ａが回転されると弾性力で回転軸２４Ａの円周面から突出し、係止溝３０Ｂに係止される。この状態で、撮像レンズ２６は撮影者の反対側、即ち通常の被写体側を向く。これによって、撮影者の前に存在する被写体を撮影可能となる。

【0034】

さらに、図３（Ｄ）に示すように、係止溝３０Ｃは、係止溝３０Ａと係止溝３０Ｂと約９０度の間隔（係止溝３０Ａと係止溝３０Ａとの中間）で形成されている。この係止溝３０Ｃにラッチ３２が係止されると撮像レンズ２６は後述する接写撮影対象の被写体側を向く。これによって、接写撮影が可能となる。

【0035】

そして、図４、図５に示すように、軸受３０を挟み込む２個の第１円筒体３４が第２筐体１８の端面に形成され、第１円筒体３４を挟み込む２個の第２円筒体３６が第１筐体１４の端面に形成されている。第１円筒体３４は軸方向の一端部（軸受３０側）が底面３４Ｂとされた底付円筒体であり、第２円筒体３６は、軸方向の両端部が開口された円筒体である。

【0036】

このような第１円筒体３４と第２円筒体３６には、ヒンジ３８、３９が挿入され、第１筐体１４と第２筐体１８が開閉可能となる。図中左側に配設されるヒンジ３８は、第１ヒンジ４０と、第２ヒンジ４２と、回転軸４４と、圧縮コイルバネ４６とで構成されている。また、図中右側に配設されるヒンジ３９は、第１ヒンジ４０と、第２ヒンジ４１と、回転軸４４と、圧縮コイルバネ４４とで構成されている。なお、符号が同一である第１ヒンジ４０、回転軸４２、圧縮コイルバネ４４は共通の部品である。

【0037】

第１ヒンジ４０は、円筒形状をしており、第１円筒体３４に挿入される。第１ヒンジ４０の円周面には軸方向に延出する２本のキー溝４０Ａが１８０度の間隔で形成され、第１円筒体３４の内周面には２本のキー３４Ａが１８０度間隔で形成されている。これによって、第１ヒンジ４０は、第１円筒体３４内で回転不能となる。

【0038】

また、第２ヒンジ４２は、第１ヒンジ４０と同径の円筒形状をしており、図中左側の第２円筒体３６に挿入される。第２ヒンジ４２の円周面には軸方向に延出する２本のキー溝４２Ａが１８０度の間隔で形成され、第２円筒体３６の内周面には、２本のキー溝４２Ａが係合する２本のキー３６Ａが１８０度の間隔で形成されている。これによって、第２ヒンジ４２は、左側の第２円筒体３６内で回転不能となっている。

【0039】

そして、ヒンジ３９の第２ヒンジ４１は、第１ヒンジ４０と同径の円筒形状をしており、図中右側の第２円筒体３６に挿入される。第２ヒンジ４１の円周面には軸方向に延出する２本のキー溝４１Ａが１８０度の間隔で形成され、第２円筒体３６の内周面に１８０度の間隔で形成された２本のキー３６Ａに係合している。これによって、第２ヒンジ４１は、右側の第２円筒体３６内で回転不能となっている。

【0040】

また、回転軸４４は、軸方向の一端部にネジ部４４Ａが形成され、軸方向の他端部に笠部４４Ｂが形成されている。この回転軸４４は、ヒンジ３８の第１ヒンジ４０と第２ヒンジ４２、及びヒンジ３９の第１ヒンジ４０と第２ヒンジ４１をそれぞれ貫通し、ネジ部４４Ａを第１円筒体３４の底面３４Ｂに螺合している。

【0041】

また、圧縮コイルバネ４６は、第２ヒンジ４２と笠部４４Ｂとの間、及び第２ヒンジ４１と笠部４４Ｂとの間にそれぞれ配設され、第２ヒンジ４１、４２をそれぞれ第１ヒンジ４０へ付勢している。

【0042】

また、第１ヒンジ４０と第２ヒンジ４２との当接面４０Ｂ、４２Ｂにはそれぞれ、カム４３とカム４５が形成されている。カム４３は、断面形状がテーパー状の突起で、カム４５は、カム４３と係合する断面形状がテーパー状の溝である。

【0043】

図６に示すように、カム４３は、当接面４０Ｂの端面から孔４０Ｃを通って反対側の端面まで延出している。そして、２個のキー３４Ａは、第２筐体１８の厚み方向に沿って配設され、カム４３は、２個のキー溝４０Ａの配列方向と約９０の角度を持つ径方向へ延出している。即ち、第１ヒンジ４０が第１円筒体３４内に挿入された状態で、カム４３は、第２筐体の厚み方向と略直交する方向に延出している。

【0044】

また、図７に示すように、カム４５は、当接面４２Ｂの端面から孔４２Ｃを通って反対側の端面まで延出する３本の第１カム４５Ａ、第２カム４５Ｂ、及び第３カム４５Ｃとで構成されている。２個のキー３６Ａは、第１筐体１４の厚み方向に沿って配列され、第１カム４５Ａは、２個のキー溝４２Ａの配列方向と約９０度の角度を持って径方向へ延出している。即ち、第２ヒンジ４２が図中左側の第２円筒体３６内に挿入された状態で、第１カム４５Ａは、第１筐体１４の厚み方向と略直交する方向に延出している。

【0045】

そして、第２カム４５Ｂは、第１カム４５Ａに対して半時計回り方向に約３０度の角度を持って延出し、第３カム４５Ｃは、第２カム４５Ｂに対して半時計周り方向に約３０度の角度を持って延出している。

【0046】

また、図４、図５に示すように、ヒンジ３９の第１ヒンジ４０と第２ヒンジ４１との当接面４０Ｂ、４１Ｂにはそれぞれ、カム４３とカム４７が形成されている。カム４３は上述した通りである。

【0047】

カム４７は、カム４３と係合する断面形状がテーパー状の溝で、図７に示すように、当接面４１Ｂの端面から孔４１Ｃを通って反対側の端面まで延出する３本の第１カム４７Ａ、第２カム４７Ｂ、及び第３カム４７Ｃとで構成されている。第１カム４７Ａは、２個のキー溝４１Ａの配列方向と約９０度の角度を持って径方向へ延出している。即ち、第２ヒンジ４１が図中右側の第２円筒体３６内に挿入された状態で、第１カム４５Ａは、第１筐体１４の厚み方向と略直交する方向に延出している。

【0048】

そして、第２カム４７Ｂは、第１カム４７Ａに対して時計回り方向に約３０度の角度を持って延出し、第３カム４７Ｃは、第２カム４７Ｂに対して時計周り方向に約３０度の角度を持って延出している。

【0049】

第１筐体１４と第２筐体１８を閉じた状態で、ヒンジ３８の第１ヒンジ４０のカム４３は第２ヒンジ４２の第１カム４５Ａに係合する。また、ヒンジ３９の第１ヒンジ４０のカム４３は第２ヒンジ４１の第１カム４７Ａに係合する。この状態で、第２ヒンジ４２が圧縮コイルバネ４６によって第１ヒンジ４０に付勢されているので、ヒンジ３８、３９にはロックがかかり、第１筐体１４と第２筐体１８とのガタツキが無くなる。

【0050】

そして、閉じた状態から第２筐体１８を開くと、ヒンジ３８のカム４５の傾斜面がカム４３の傾斜面に押され、また、ヒンジ３９のカム４７の傾斜面がカム４３の傾斜面に押される。これによって、ヒンジ３８のカム４３とカム４５、及びヒンジ３９のカム４３とカム４７の係合が解除され、ヒンジ３８、及びヒンジ３９は回転可能となる。

【0051】
そして、閉じた状態から第２筐体１８を１２０度開くと、ヒンジ３８の第１ヒンジ４０のカム４３は第２ヒンジ４２の第３カム４５Ｃに係合する。また、ヒンジ３９の第１ヒンジ４０のカム４３は第２ヒンジ４１の第３カム４７Ｃに係合する。
【0052】
そして、さらに第２筐体１８を３０度開き、１５０度（第２回転位置）まで開いた状態にすると、ヒンジ３８の第１ヒンジ４０のカム４３は第２ヒンジ４２の第２カム４５Ｂに係合する。また、ヒンジ３９の第１ヒンジ４０のカム４３は第２ヒンジ４１の第２カム４７Ｂに係合する。図１に示すように第２筐体１８を１５０度（第２回転位置）まで開いた状態、若しくは更に第２筐体１８を３０度開き、１８０度（第２回転位置）まで開いた状態で、カメラ付携帯電話１０は、通話や通常の撮影を行う形態となる。この形態で、第１筐体１４と第２筐体１８は、ヒンジ３８、３９によってロックされているので、通話や通常の撮影を支障無く行うことができる。
【0053】
そして、第２筐体１８を３００度（第１回転位置）まで開くと、ヒンジ３８の第１ヒンジ４０のカム４３は第２ヒンジ４２の第３カム４５Ｃに係合し、ヒンジ３９の第１ヒンジ４０のカム４３は第２ヒンジ４１の第３カム４７Ｃに係合する。これによって、図８、図９に示すように、第１筐体１４と第２筐体１８は、閉じた状態から３００度開かれた状態でロックされるので、第１筐体１４と第２筐体をヒンジ部２０を上向きにして平面Ｇ上に倒立させることが可能となる。
【0054】
この状態で、操作部１２とモニタ１６は外側を向いており、さらに、カメラユニット２２は、上述したように第１筐体１４と第２筐体１８との内側の中心でロックされるようになっている。このため、平面Ｇ上の被写体をモニタ１６を確認しながら操作部１２を操作して撮影可能である。
【0055】
このように、ヒンジ部２０の回転の自由度を高めることによって、モニタ１６を裏返すための回転軸が不要となり、ヒンジ部２０を１軸式にすることができる。これによって、ヒンジ部２０の機構の複雑化を防止できる。
【0056】
図１０には、本実施形態のカメラ付携帯電話１０のカメラユニット２２を操作するための回路構成を示すブロック図が示されている。
【0057】
カメラ付携帯電話１０には、撮像レンズ２６、ＣＣＤ２８、映像信号処理手段４８、メモリコントローラ５０、及びメモリ５２が備えられている。撮像レンズ２６を経由してＣＣＤ２８上に結像された被写体像は、ＣＣＤ２８によってアナログ画像信号に変換される。そして、ＣＣＤ２８から出力されたアナログ画像信号は、映像信号処理手段４８でアナログ信号処理、Ａ／Ｄ変換、及びデジタル信号処理される。デジタル信号処理されたデジタル画像データは、メモリコントローラ５０によって圧縮されてメモリ５２に記録される。尚、撮影モードによっては、圧縮の過程を省いてメモリ５２に直接記録しても良い。そして、メモリ５２に格納されたデジタル画像データはモニタ１６に読み出され、モニタ１６に被写体像が映し出される。
【0058】
また、カメラ付携帯電話１０には、カメラ付携帯電話１０全体の制御を司るシステムコントローラ５４が備えられている。操作部１２を操作して所望の撮影状態に設定し、シャッタボタン５６（図１、図８参照）を押下することによって、写真撮影が行われる。
【0059】
また、カメラ付携帯電話１０には、撮像レンズ２６をズーム駆動するズームモータ５８、第２筐体１８が３００度（第１回転位置）まで開かれたことを検出する検出手段６０、及びライト６２が設けられている。

【0060】
図１１に示すように、検出手段６０は、第２筐体１８側の第１円筒体３４の外周面に形成された検出用突起６４と、第１筐体１４の裏面１４Ａに設けられ、検出用突起６４によって押圧されて導通される検出用接点６６とで構成されている。
【0061】
図１１（Ａ）に示すように、第２筐体１８が第１回転位置まで回転されると、図１１（Ｂ）に示すように、検出用突起６４が検出用接点６６を押圧し、それまで離れていた検出用接点６６を接続させる。そして、検出用接点６６が接続されるとシステムコントローラ５４へ検出信号が送信される。システムコントローラ５４は、検出信号を受信するとズームモータ５８を駆動させ、撮像レンズ２６のサーチ範囲をマクロ領域に変更し、撮影モードをマクロ（接写）撮影モードに切換える。そして、第１筐体１４の裏面１４Ａ、及び第２筐体１８の裏面１８Ａに設けられたライト６２を点灯させる。
【0062】
これによって、第１筐体１４と第２筐体１８が倒立された平面Ｇ上で、第１筐体１４と第２筐体１８の間に位置する被写体を接写可能となる。また、第１筐体１４と第２筐体１８をヒンジ部２０を上向きにして平面Ｇ上に倒立させて接写を行うので、被写体とカメラとの距離が一定となり、安定した接写撮影を行うことができる。さらに、ライト６２の照明によって明るい接写画像が得られる。
【0063】
次に、第２実施形態について説明する。なお、第１実施形態と同様の構成には同一の符号を付し、説明は省略する。
【0064】
図１２に示すように、カメラ付携帯電話１００では、第１筐体１４の操作部１２が設けられた面の裏面１４Ａには接写用レンズ１０２が設けられている。この接写用レンズ１０２は、ヒンジ１０４によって第１筐体１４の裏面１４Ａの収納部１４Ｂに出し入れができるようになっている。
【0065】
図１３に示すように、第２筐体１８を第１回転位置まで回転させ、カメラユニット２２を第１筐体１４と第２筐体１８との内側の中心まで回転させる。そして、接写用レンズ１０２を収納部１４Ｂから展開し、カメラユニット２２の撮像レンズ２６に前面に配置する。これによって、平面Ｇ上で第１筐体１４と第２筐体１８との内側に位置する被写体のピントが合い、接写可能となる。
【0066】
次に、第３実施形態について説明する。なお、第１、第２実施形態と同様の構成には同一の符号を付し、説明は省略する。
【0067】
図１４に示すように、カメラ付携帯電話２００では、カメラユニット２０２の撮像レンズ２６がレンズ鏡筒２０４に収納されている。また、円筒体２０６がケーシング２４に一体で形成されており、レンズ鏡筒２０４は、円筒体２０６によって撮像レンズ２６の光軸方向に移動可能に支持されている。また、レンズ鏡筒２０４は、引張コイルバネ２０８によって軸方向のＣＣＤ２８側の端部を支持されている。
【0068】
そして、第１、第２実施形態と同様の構成によって回転可能とされたカメラユニット２０２を、撮像レンズ２６が第１筐体１４に接近する方向（図中矢印Ａ方向）へ回転させると、図１５に示すように、第１筐体１４の裏面１４Ａに形成されたカム２１０が、レンズ鏡筒２０４の先端部に形成された笠部２０４Ａに当接する。これによって、レンズ鏡筒２０４が押し出されて、撮像レンズ２６が平面Ｇ上の被写体にピントが合う接写位置まで移動される。
【0069】
なお、第１乃至第３実施形態では、カメラユニット２２をヒンジ部２０回りに回動可能

としたが、図９に示すように、第２筐体１８が閉じた状態から約３００度開かれると撮像撮像レンズ２６が第１筐体１４と第２筐体１８との内側の被写体に面するように、カメラユニット２２をヒンジ部２０に固定しても良い。また、カメラユニット２２が第２筐体１８の回転と連動して回転し、第２筐体１８が閉じた状態から約３００度開かれると撮像レンズ２６が第１筐体１４と第２筐体１８との内側の被写体に面する位置まで回転されるようにしても良い。

【0070】

また、第１乃至第３実施形態では、第２筐体１８がヒンジ部２０によってロックされる角度を１２０度、１５０度、１８０度、３００度としたが、この角度は適宜選択可能である。

【0071】

また、第１乃至第３実施形態では、ＣＣＤ２８をヒンジ部２０に配設したが、ＣＣＤ２８を配設した位置に反射ミラーを配置して撮像レンズ２６を通過した光の進路を屈折させ、第１筐体１４若しくは第２筐体１８に配設されたＣＣＤ２８に入射させるようにしても良い。

【0072】

さらに、第１乃至第３実施形態では、本発明をカメラ付携帯電話を例に取って説明したが、ヒンジ部にカメラを備える開閉式（折り畳み式）の他のカメラ付携帯機器、例えば、ノートパソコンやＰＤＡ等にも適用可能である。

【図面の簡単な説明】

【0073】

【図1】第１実施形態のカメラ付携帯電話を示す斜視図である。

【図2】第１実施形態のカメラ付携帯電話のヒンジ部とカメラユニットを示す分解斜視図である

【図3】（Ａ）、（Ｂ）、（Ｃ）、（Ｄ）は、第１実施形態のカメラ付携帯電話のカメラユニットが回転する状態を示す断面図である。

【図4】第１実施形態のカメラ付携帯電話のヒンジ部を示す分解斜視図である。

【図5】第１実施形態のカメラ付携帯電話のヒンジ部を示す断面図である。

【図6】（Ａ）、（Ｂ）は第１実施形態のカメラ付携帯電話のヒンジ部を示す断面図である。

【図7】（Ａ）、（Ｂ）は第１実施形態のカメラ付携帯電話のヒンジ部を示す断面図である。

【図8】第１実施形態のカメラ付携帯電話の接写撮影の形態を示す斜視図である。

【図9】第１実施形態のカメラ付携帯電話の接写撮影の形態を示す側面図である。

【図10】第１実施形態のカメラ付携帯電話のカメラユニットを操作するための回路構成を示すブロック図である。

【図11】（Ａ）、（Ｂ）は、第１実施形態のカメラ付携帯電話の第２筐体の回転位置を検出する検出手段を示す断面図である。

【図12】第２実施形態のカメラ付携帯電話を示す側断面図である。

【図13】第２実施形態のカメラ付携帯電話を示す側断面図である。

【図14】第３実施形態のカメラ付携帯電話を示す側断面図である。

【図15】第３実施形態のカメラ付携帯電話を示す側断面図である。

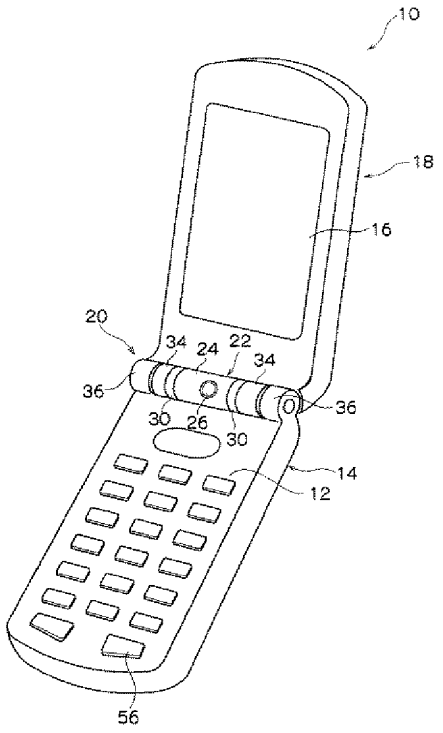
【符号の説明】

【0074】

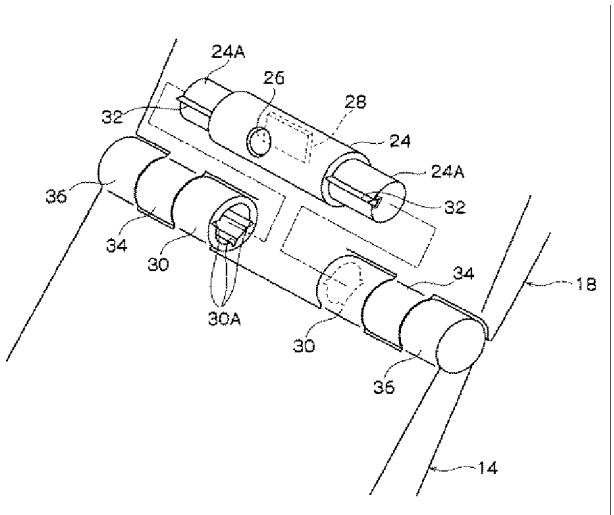
１０　カメラ付携帯電話（カメラ付携帯機器）
１２　操作部
１４　第１筐体
１６　モニタ
１８　第２筐体
２０　ヒンジ部

２２　カメラユニット（カメラ）
２６　撮像レンズ
５４　システムコントローラ（制御手段）
６０　検出手段
６４　検出用突起（検出手段）
６６　検出用接点（検出手段）
１００　カメラ付携帯電話（カメラ付携帯機器）
１０２　接写用レンズ
２００　カメラ付携帯電話（カメラ付携帯機器）
２０２　カメラユニット（カメラ）
２０４　レンズ鏡筒（移動手段）
２０６　円筒体（移動手段）
２０８　引張コイルバネ（移動手段）
２１０　カム（移動手段）

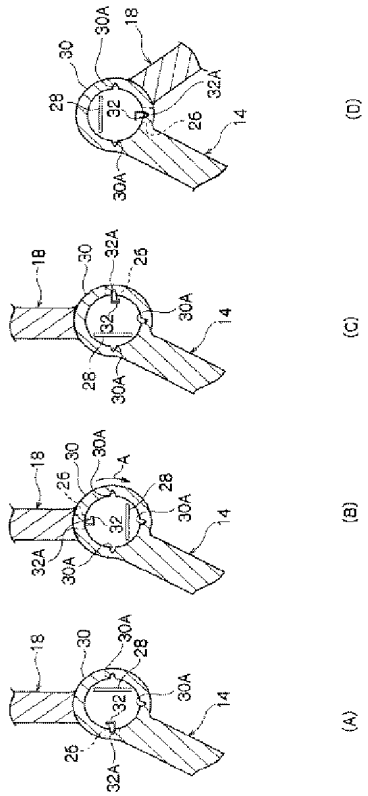
【図1】



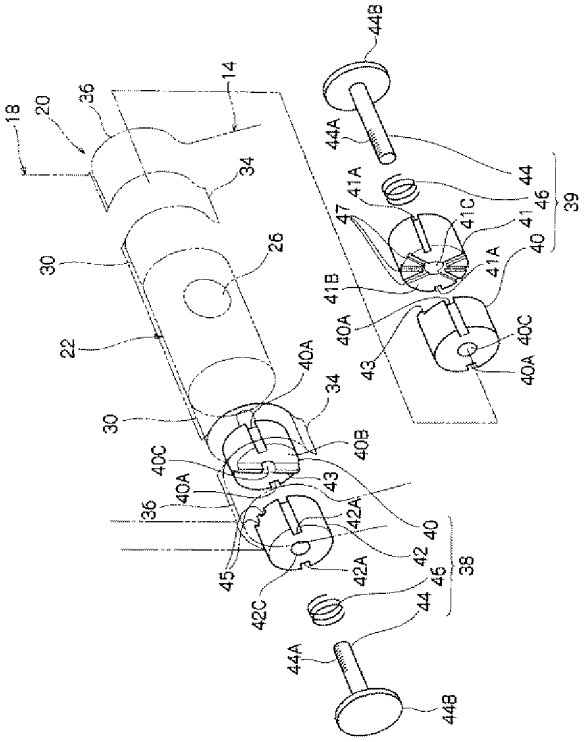
【図2】



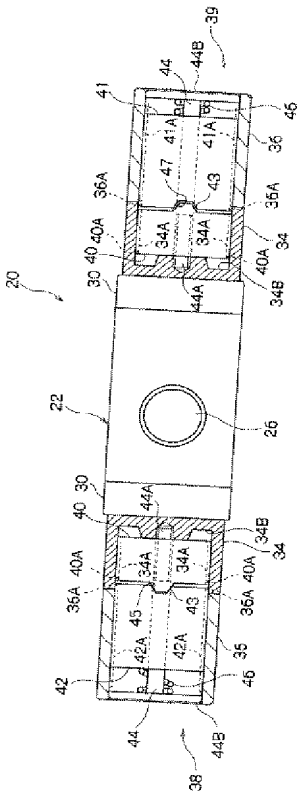
【図3】



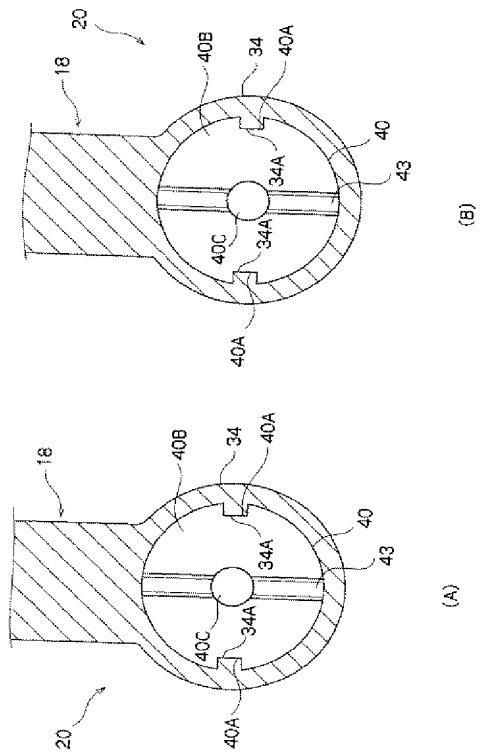
【図4】



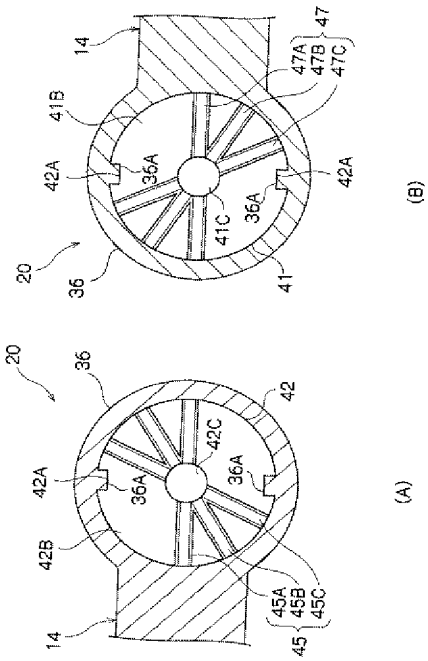
【図5】



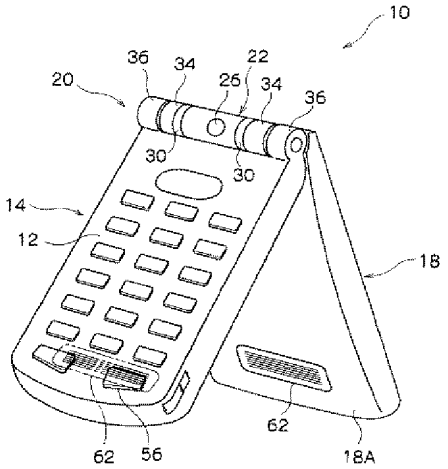
【図6】



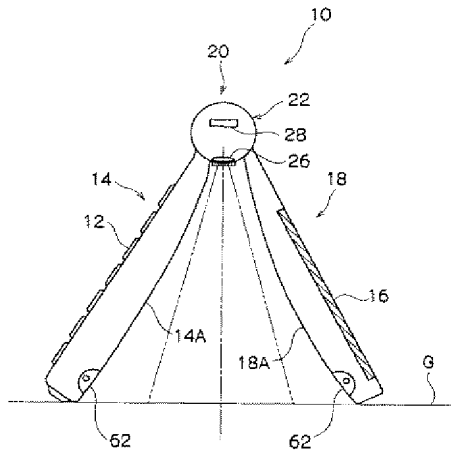
【図7】


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47A
47B
47C
41B
42A
36A
41C
36A
42A
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41
(B)
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36
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42C
42A
36A
36A
42B
45A
45B
45C
14
45
(A)

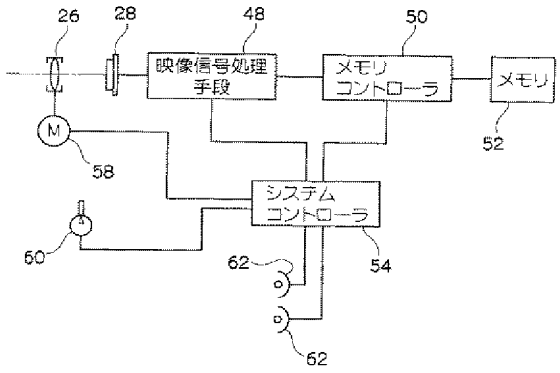
【図8】


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18A

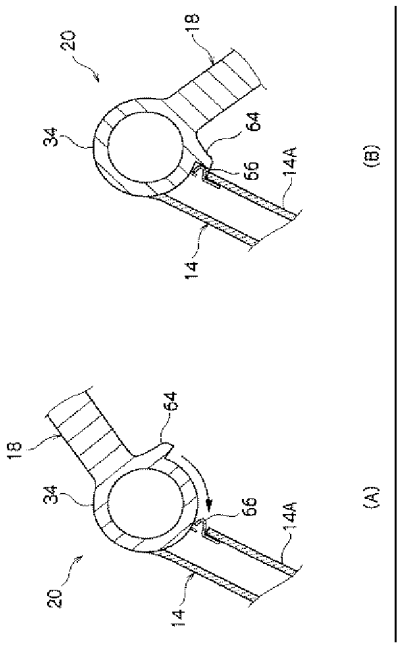
【図9】


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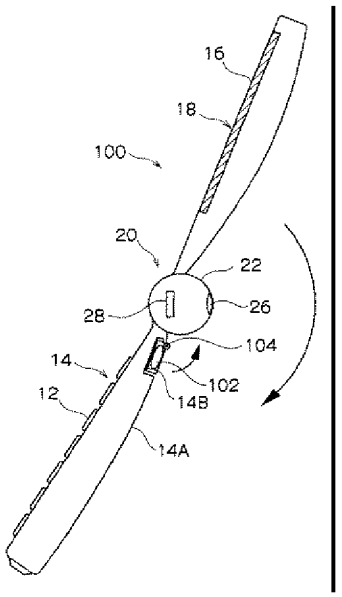
【図10】


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映像信号処理手段
メモリコントローラ
メモリ
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M
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システムコントローラ
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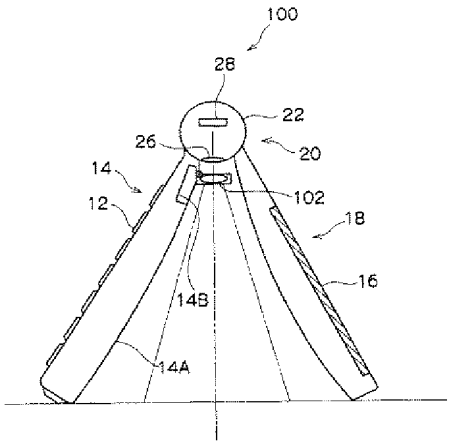
【図11】



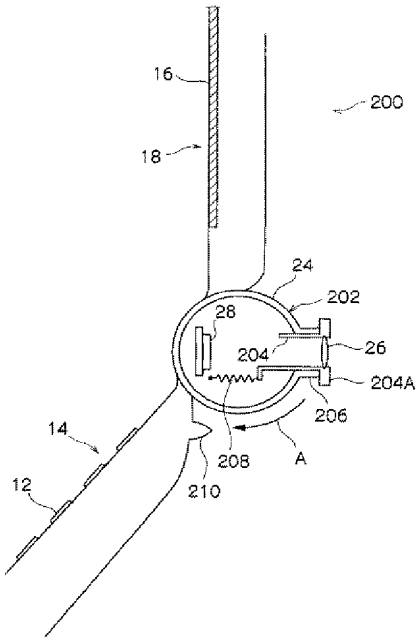
【図12】



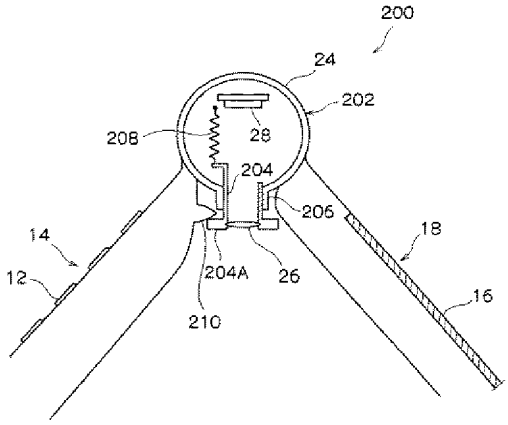
【図13】



【図14】



【図15】



US 20050134717A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2005/0134717 A1**

Misawa (43) **Pub. Date: Jun. 23, 2005**

(54) **PORTABLE DEVICE WITH CAMERA**

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(73) Assignee: **Fuji Photo Film Co., Ltd.**, Minami-Ashigara-shi (JP)

(21) Appl. No.: **10/992,338**

(22) Filed: **Nov. 19, 2004**

(30) **Foreign Application Priority Data**

Nov. 26, 2003 (JP) 2003-395738

Publication Classification

(51) **Int. Cl.**[7] **H04N 5/222**

(52) **U.S. Cl.** **348/333.06**

(57) **ABSTRACT**

A portable telephone with a camera which is capable of close-up photography. A first casing body is equipped with a control portion and a second casing body is equipped with a monitor. The first and second casing bodies are openably/closeably joined by a uni-axial hinge portion. The hinge portion enables rotation of the first casing body and second casing body by more than 180°. The first casing body and second casing body can be invertedly stood on a flat surface with the hinge portion oriented upward and the control portion and the monitor facing outward.

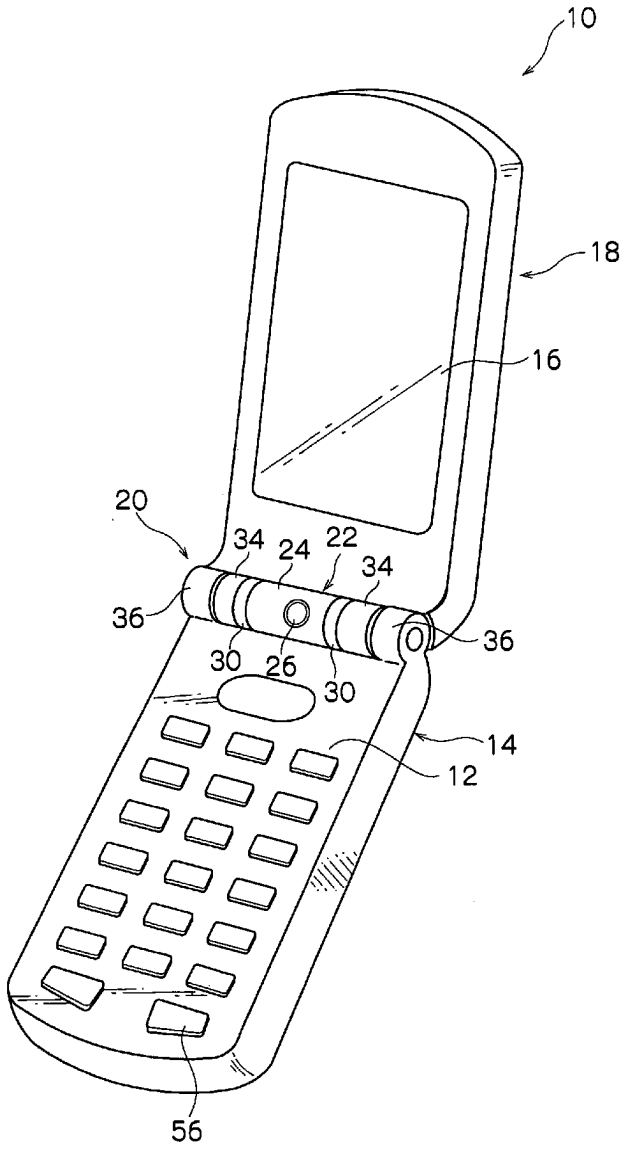


FIG.1

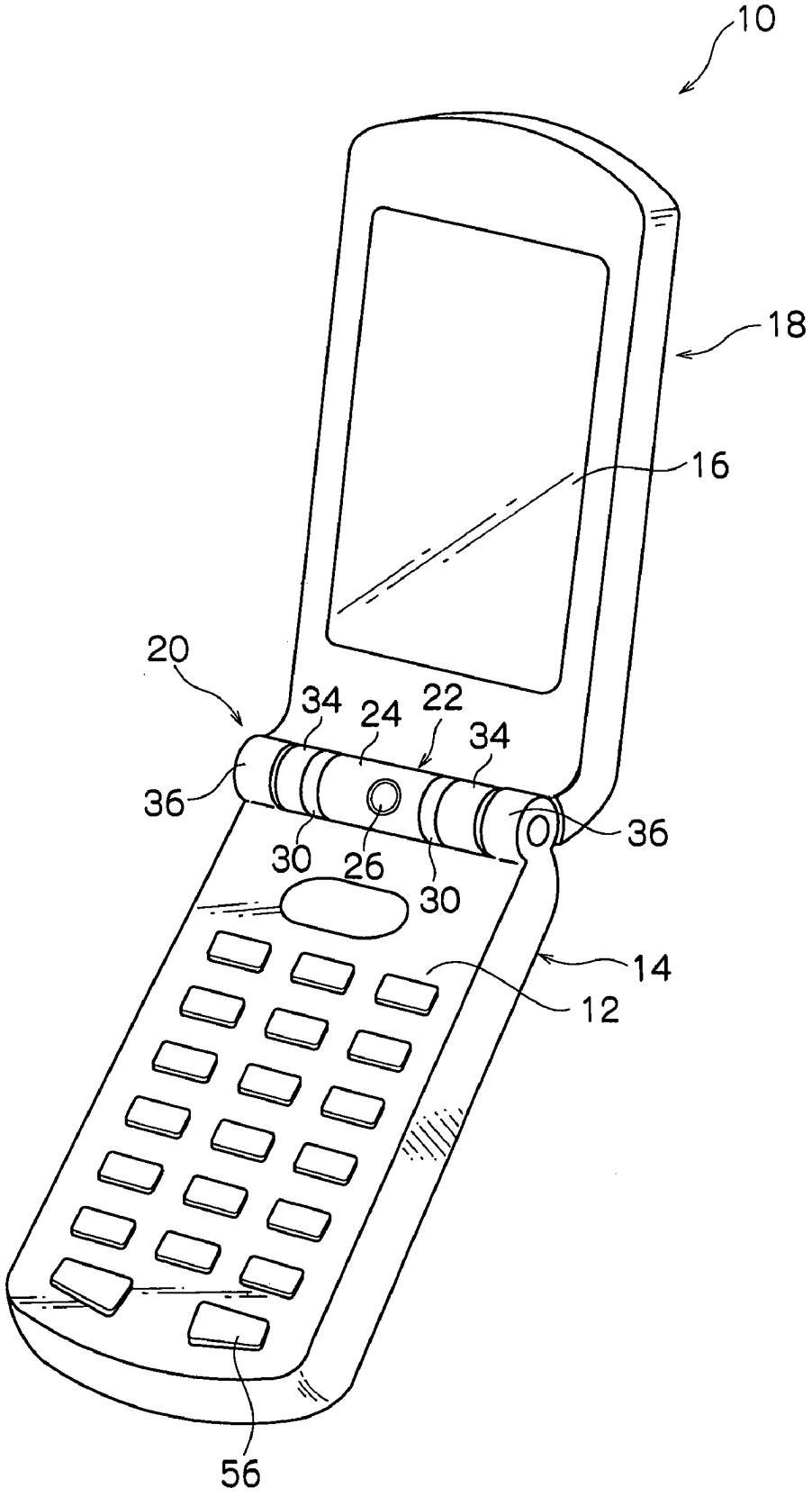


FIG.2

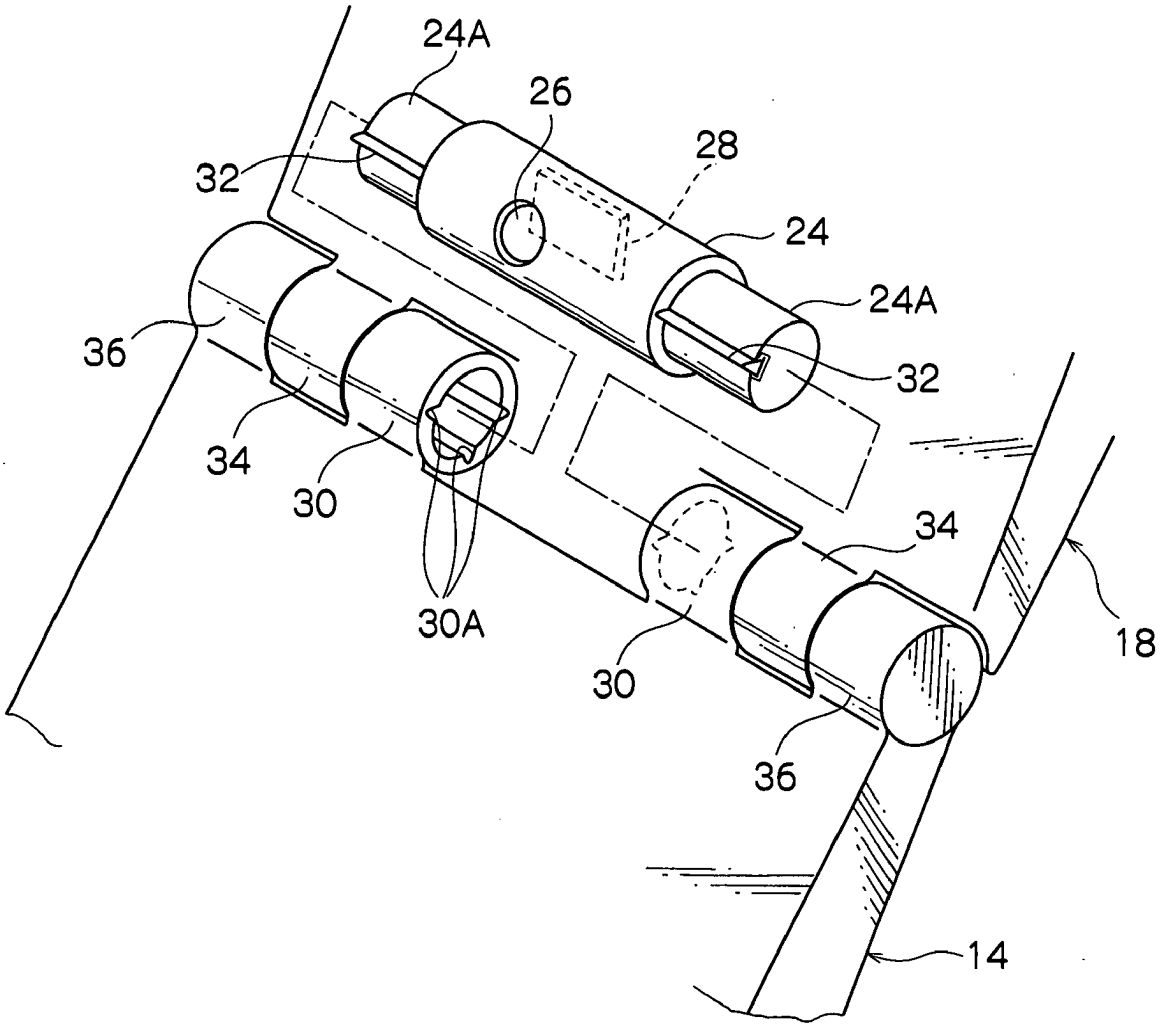


FIG.3D

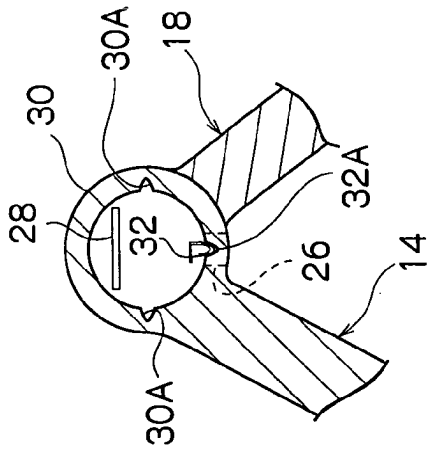


FIG.3C

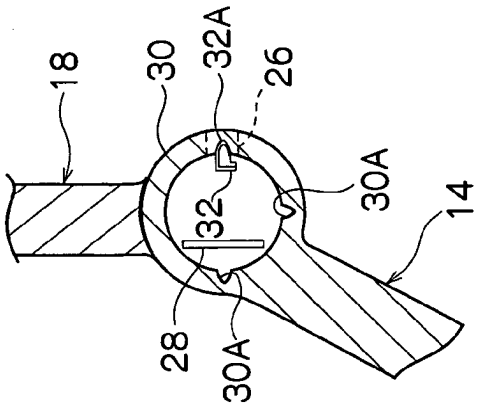


FIG.3B

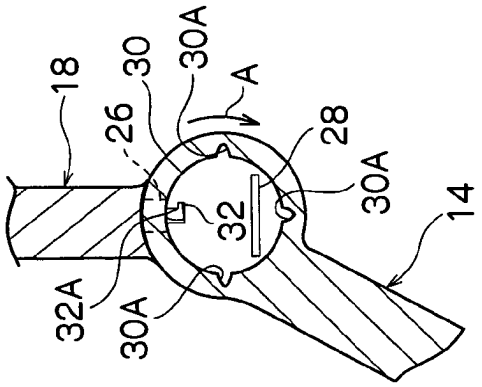
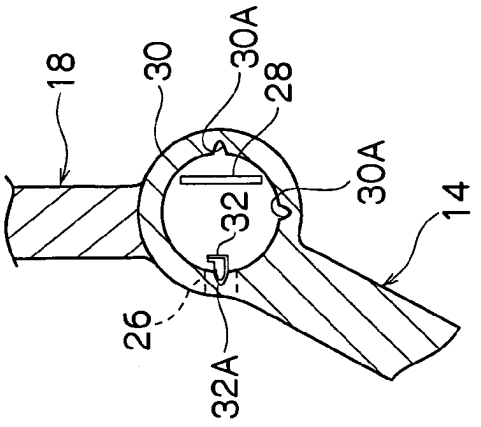


FIG.3A



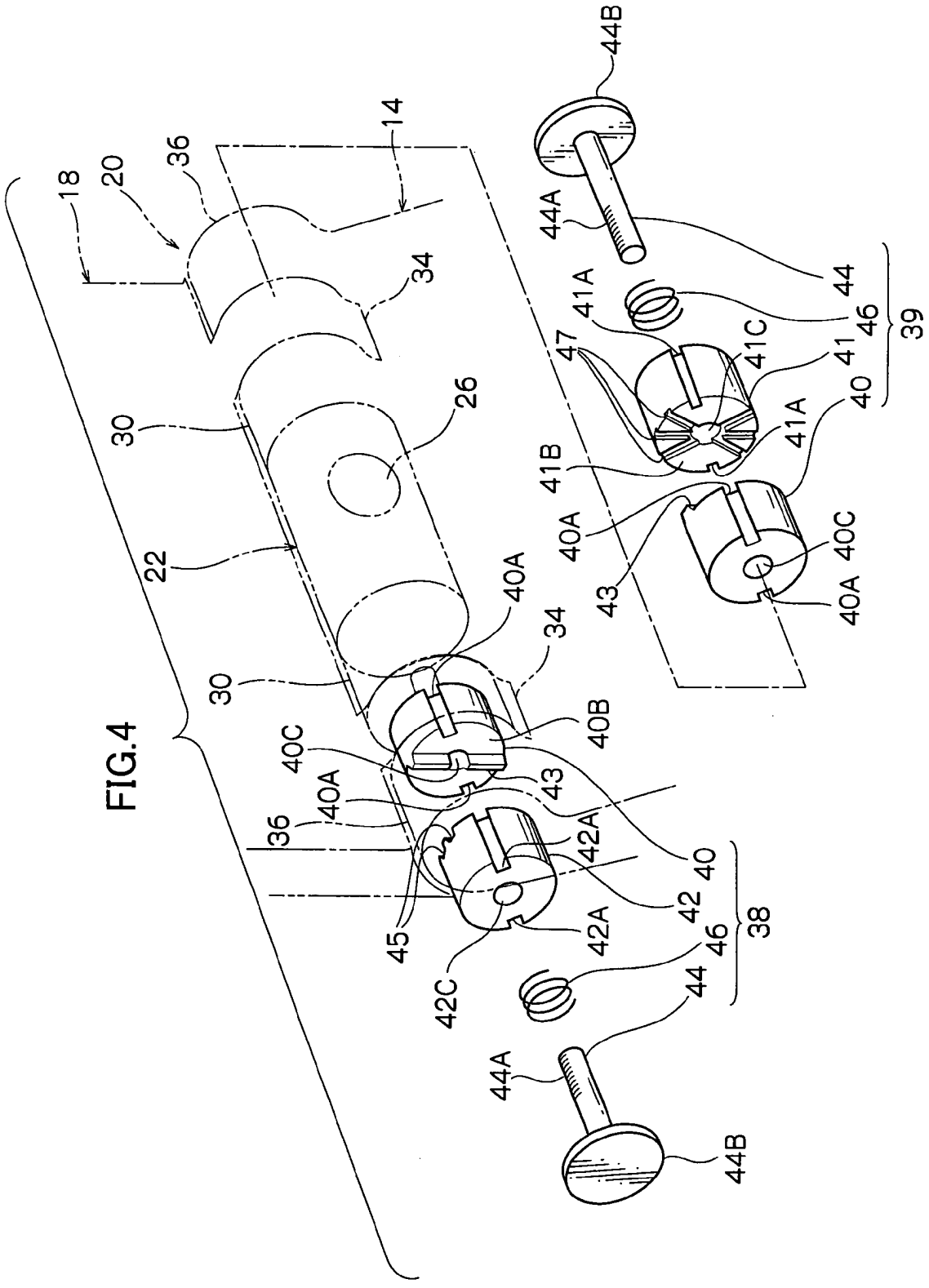

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FIG.4

FIG.5

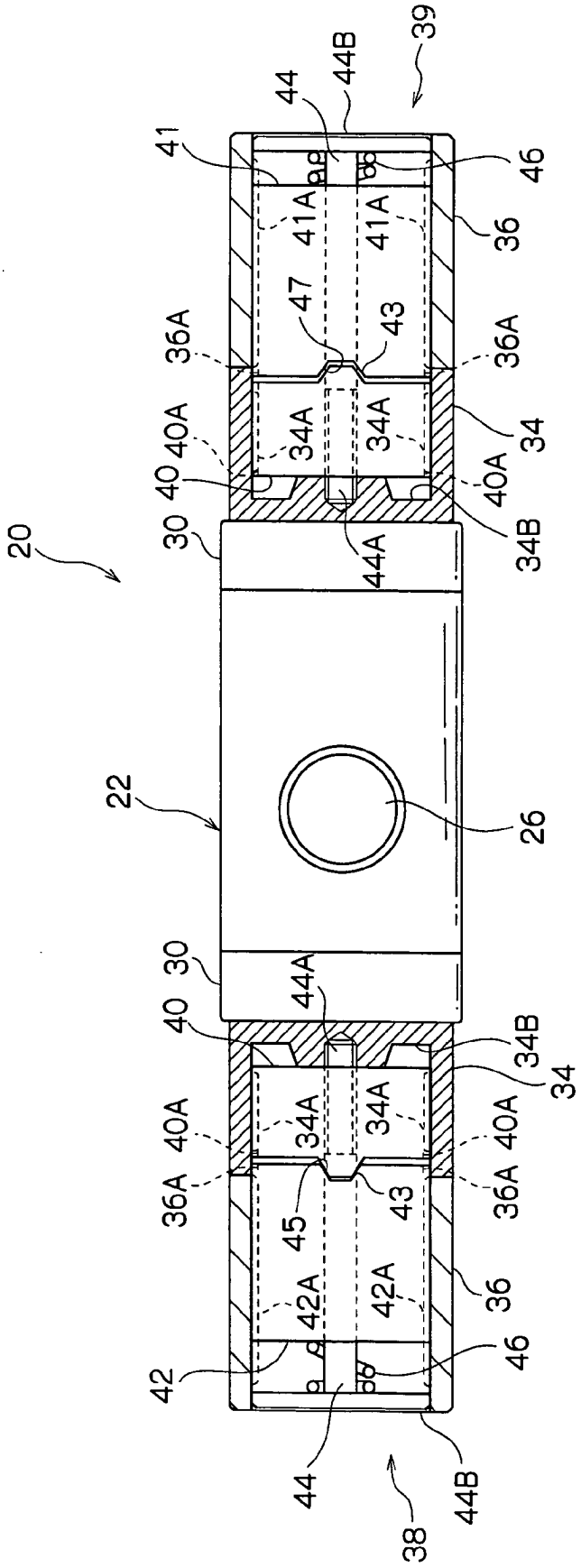

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FIG.6B

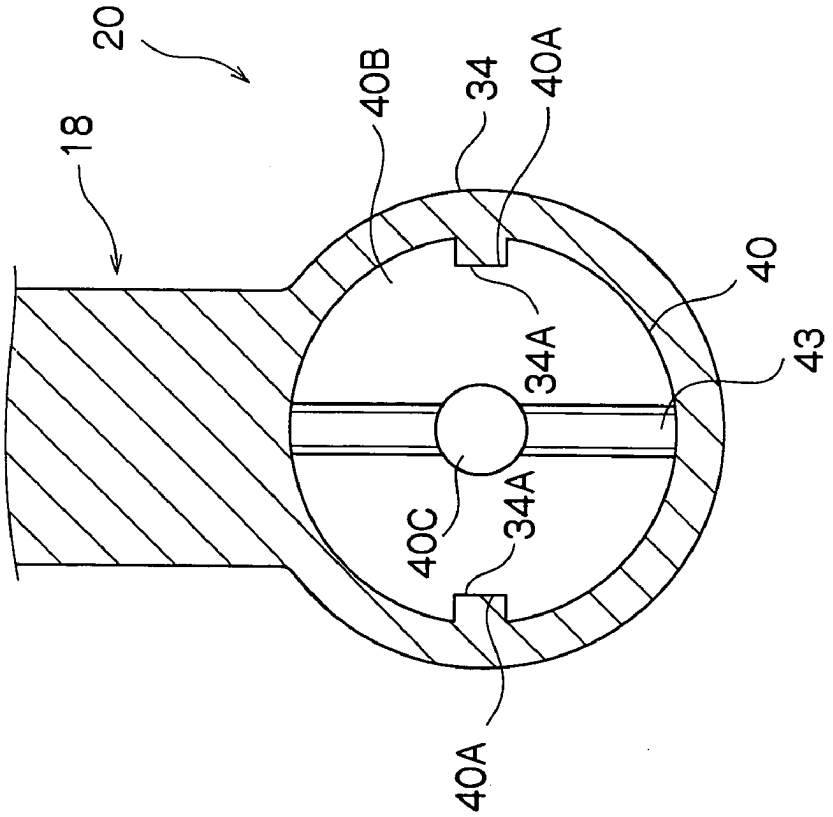

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34A
40C
34A
40A

FIG.6A

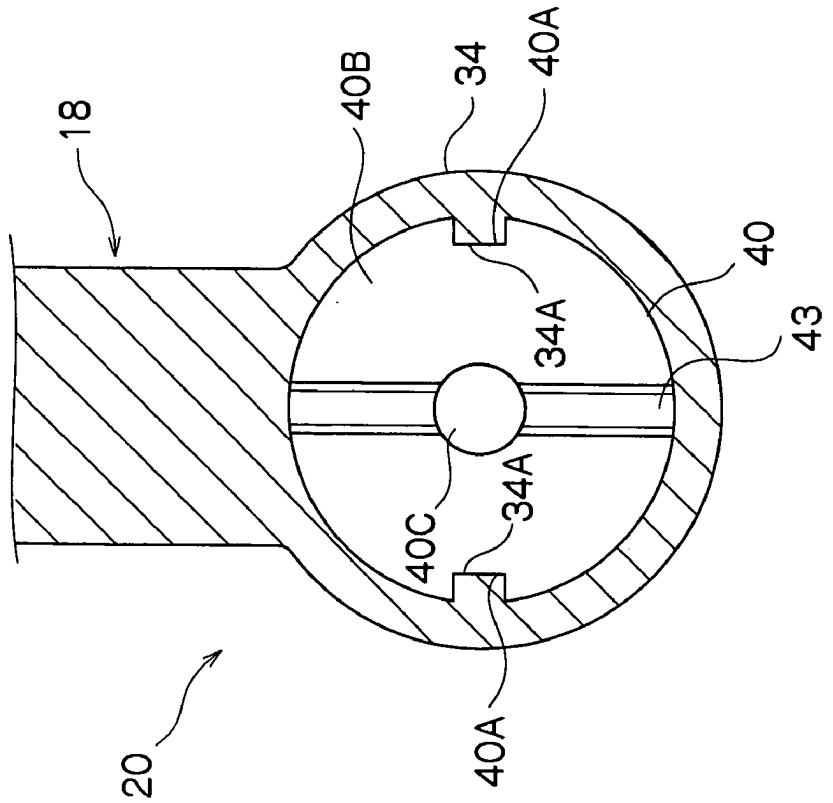

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40A
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34A
40C
34A
40A
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FIG.7B

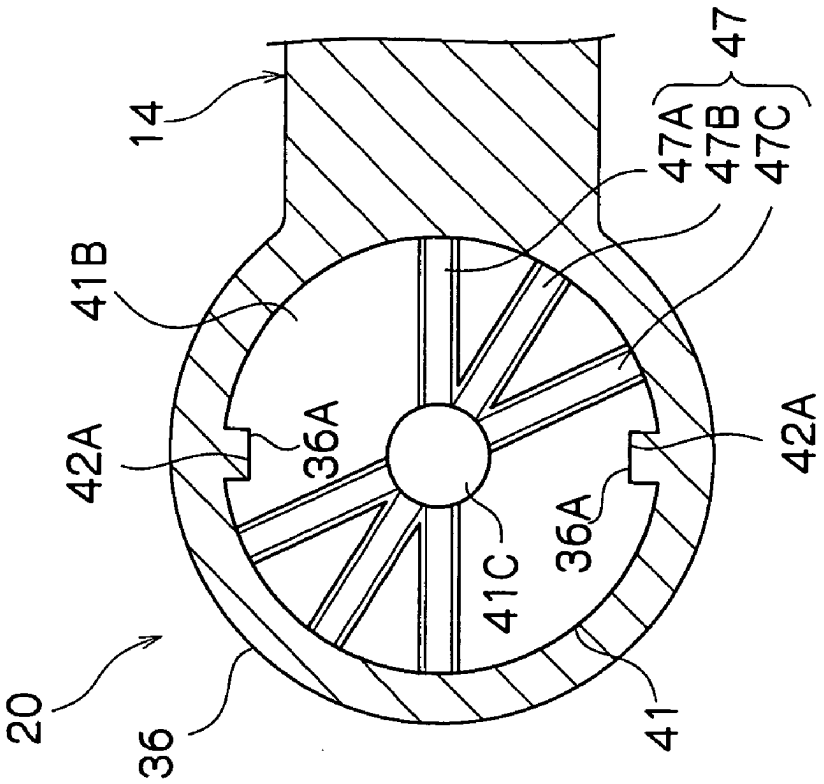

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47A
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47C
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42A
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41C
36A
42A
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FIG.7A

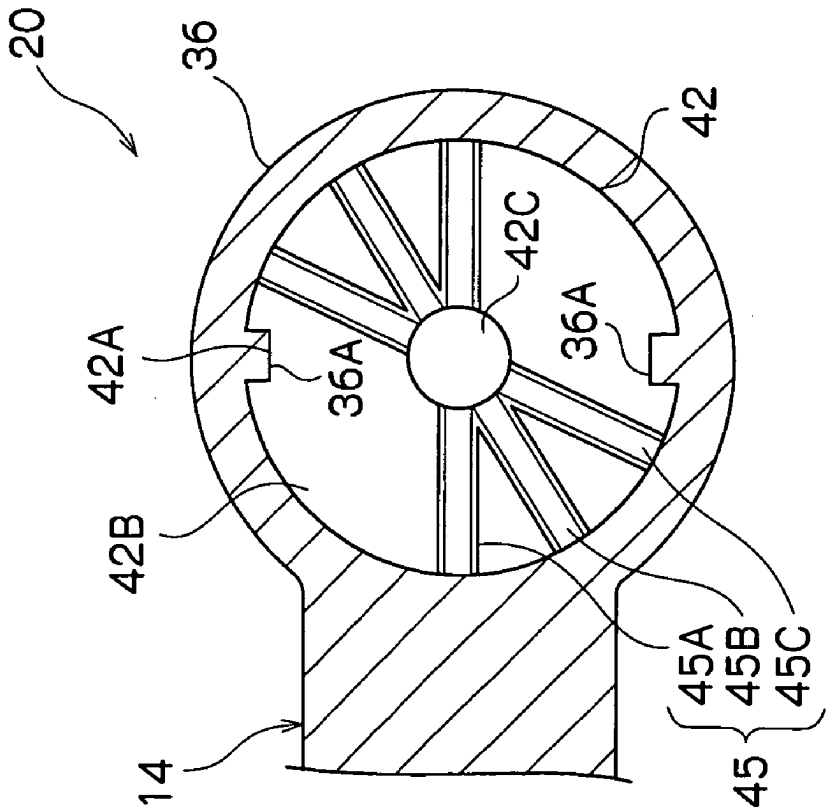

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42C
42A
36A
36A
42B
45A
45B
45C
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FIG.8

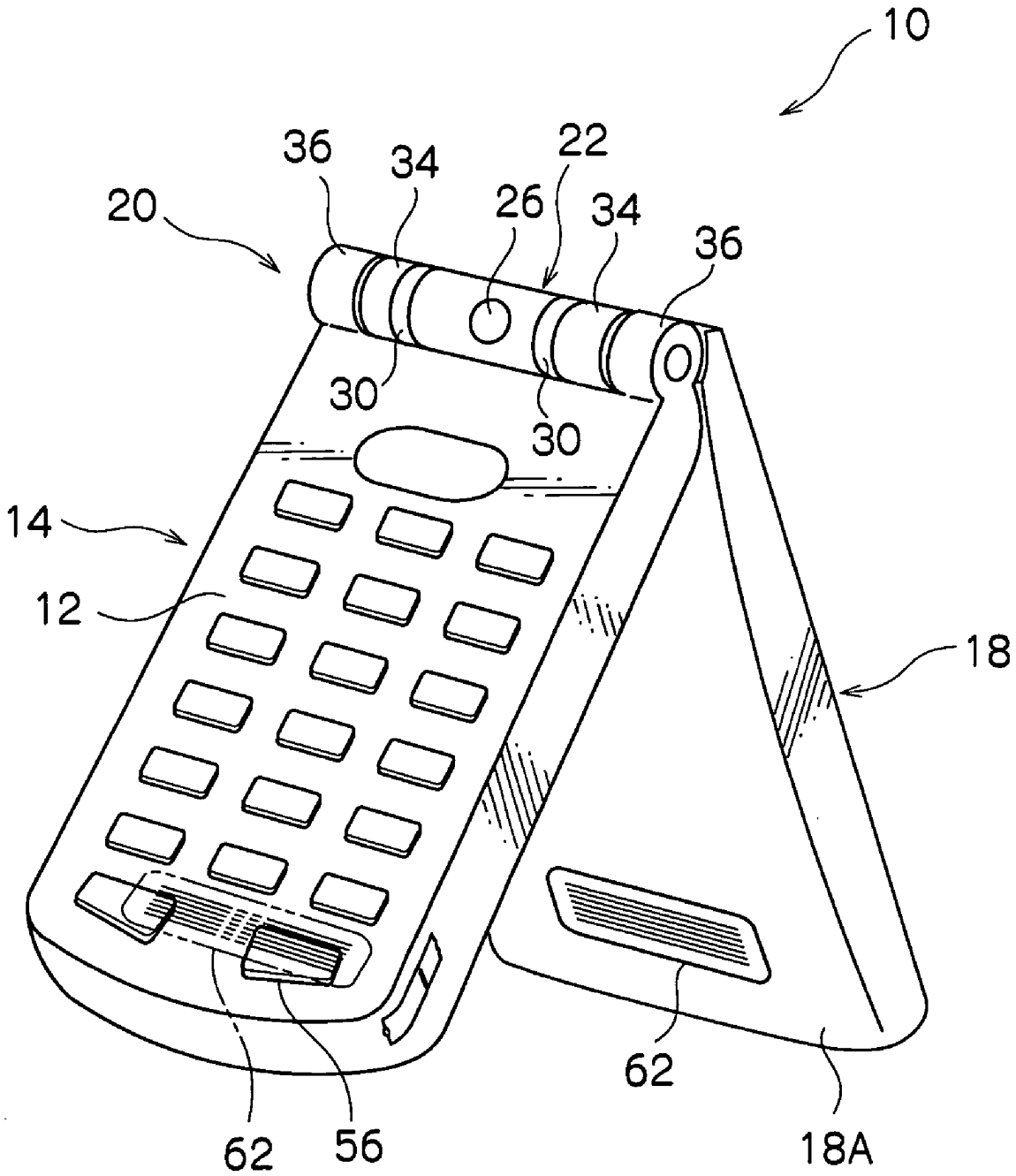


FIG.9

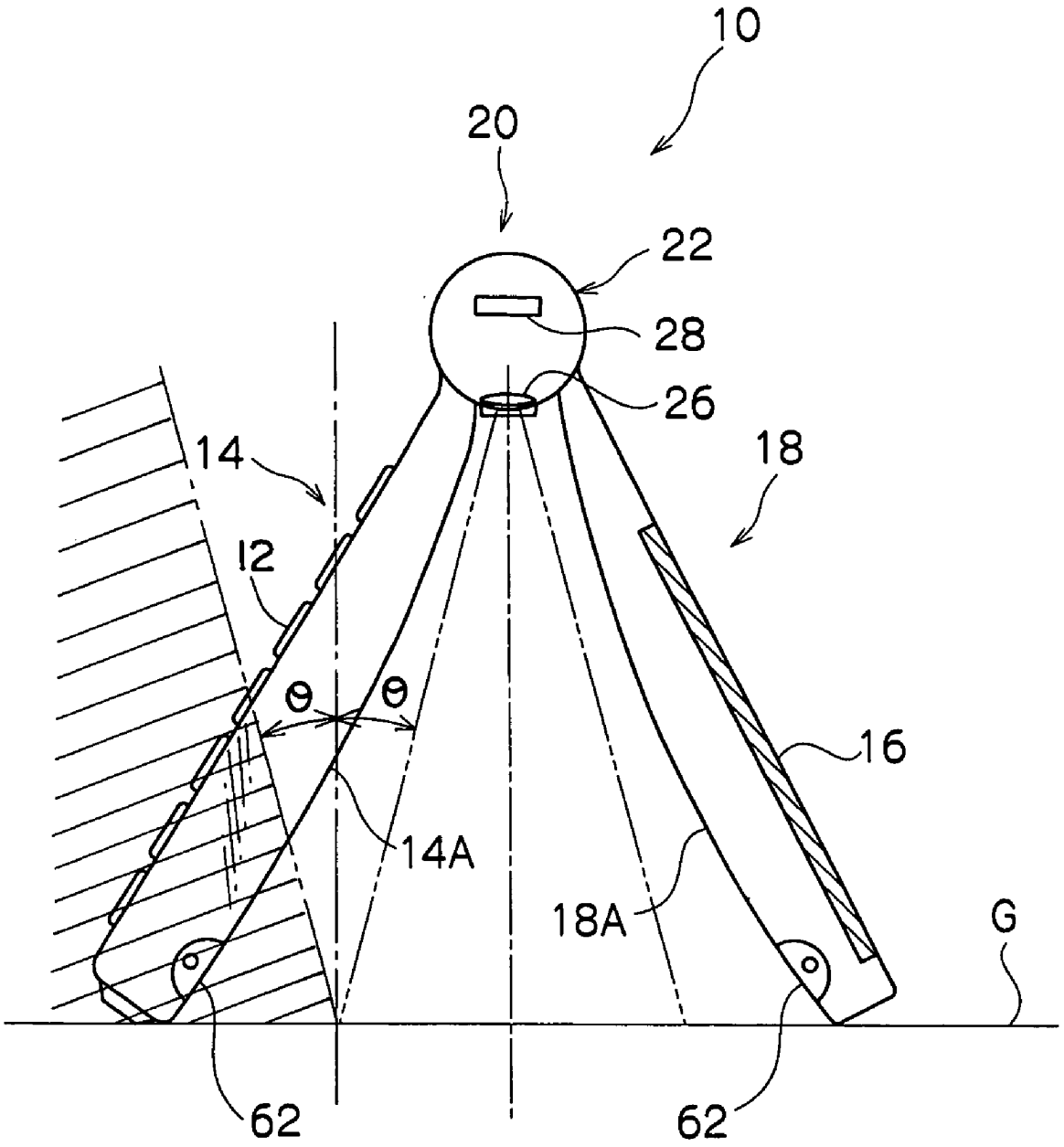


FIG.10

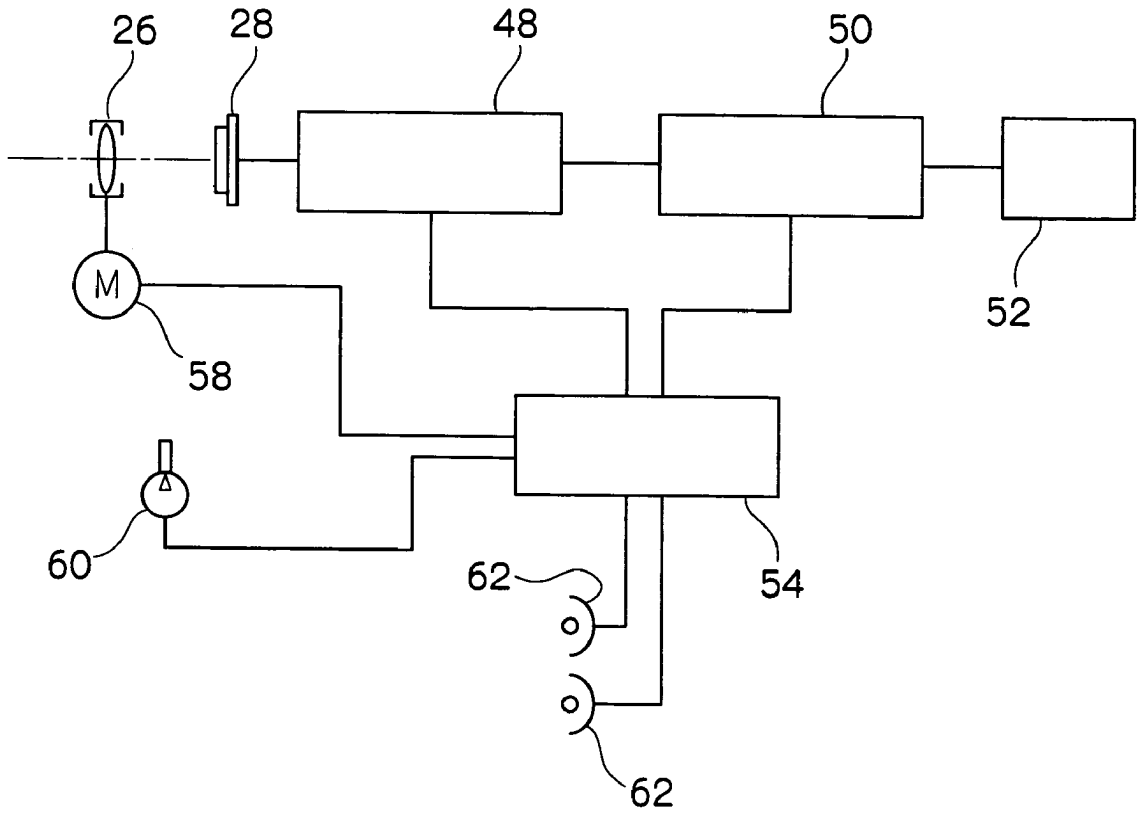


FIG.11B

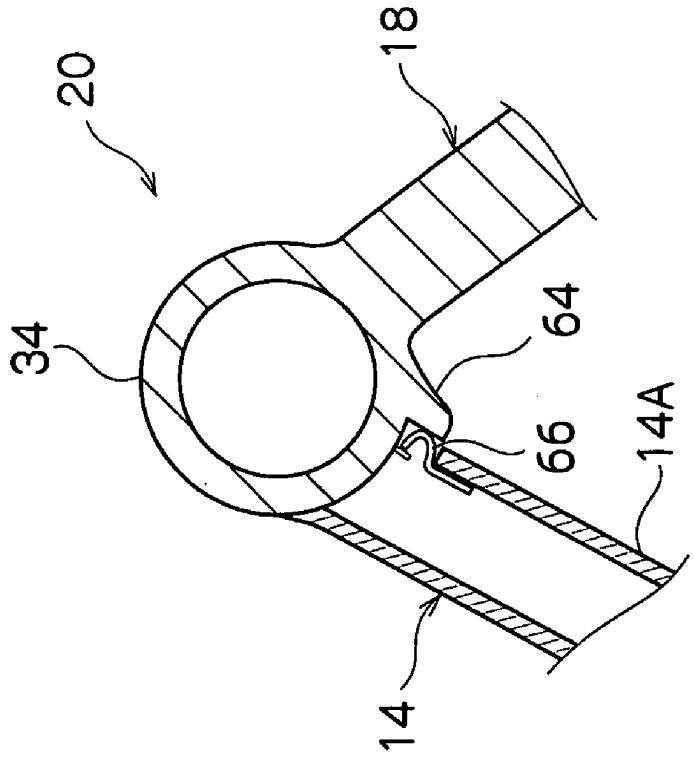


FIG.11A

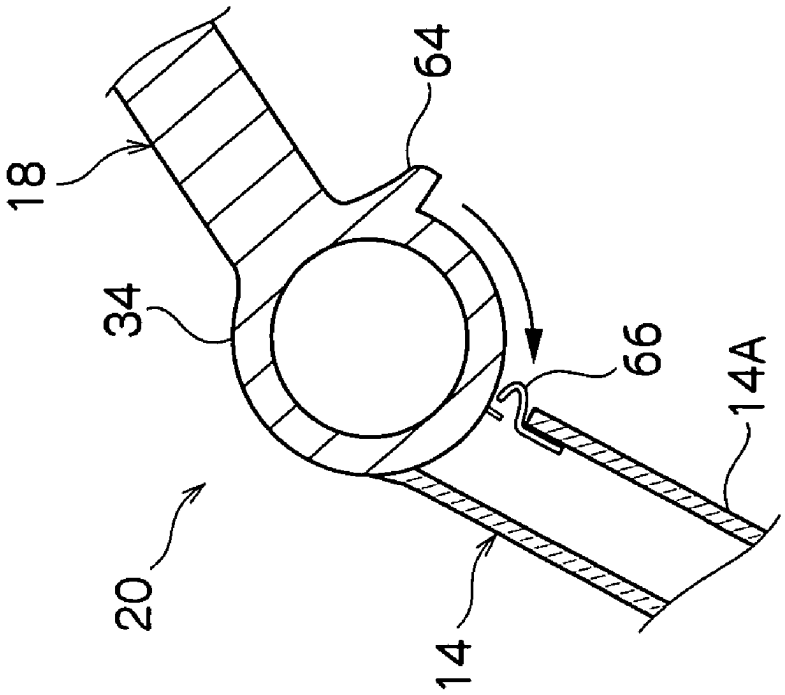


FIG.12

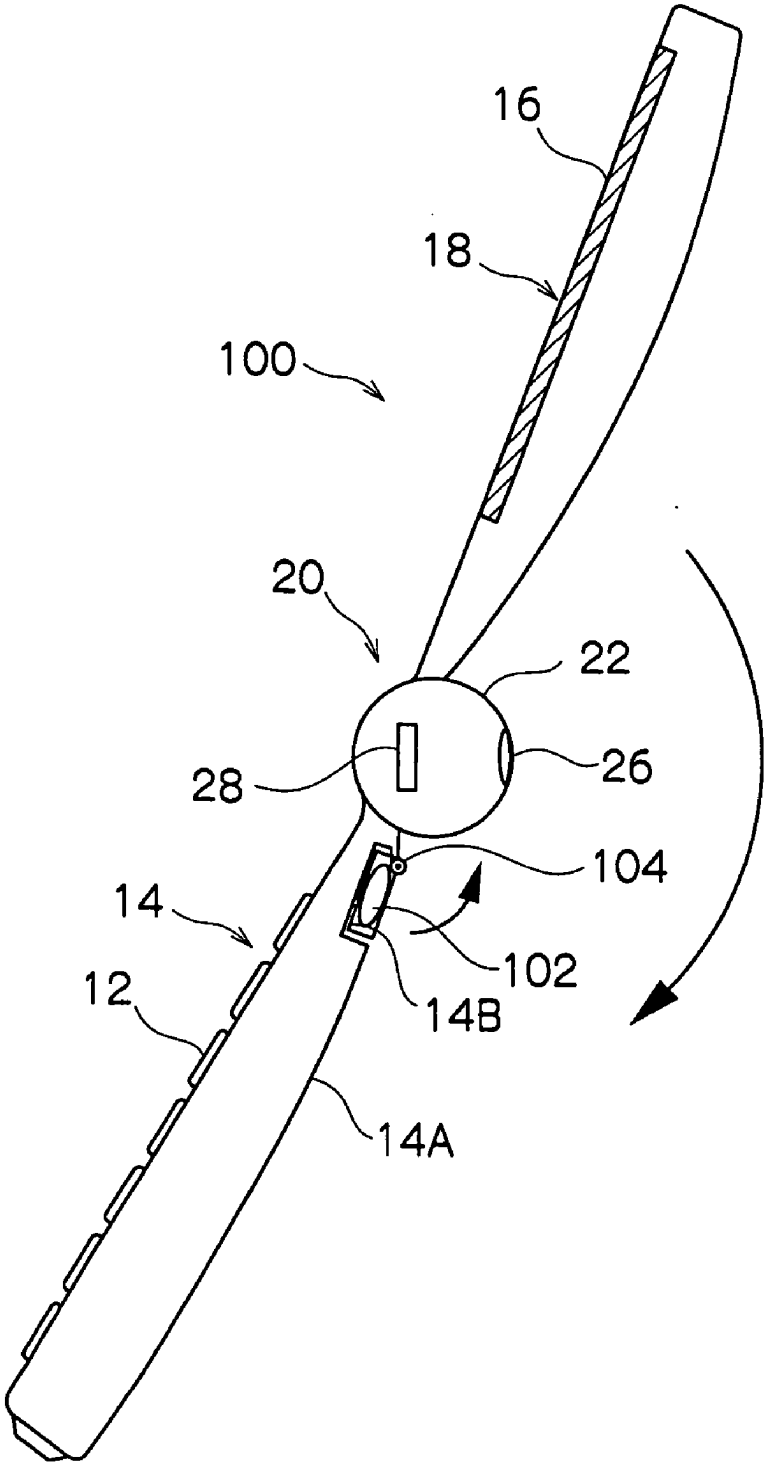


FIG.13

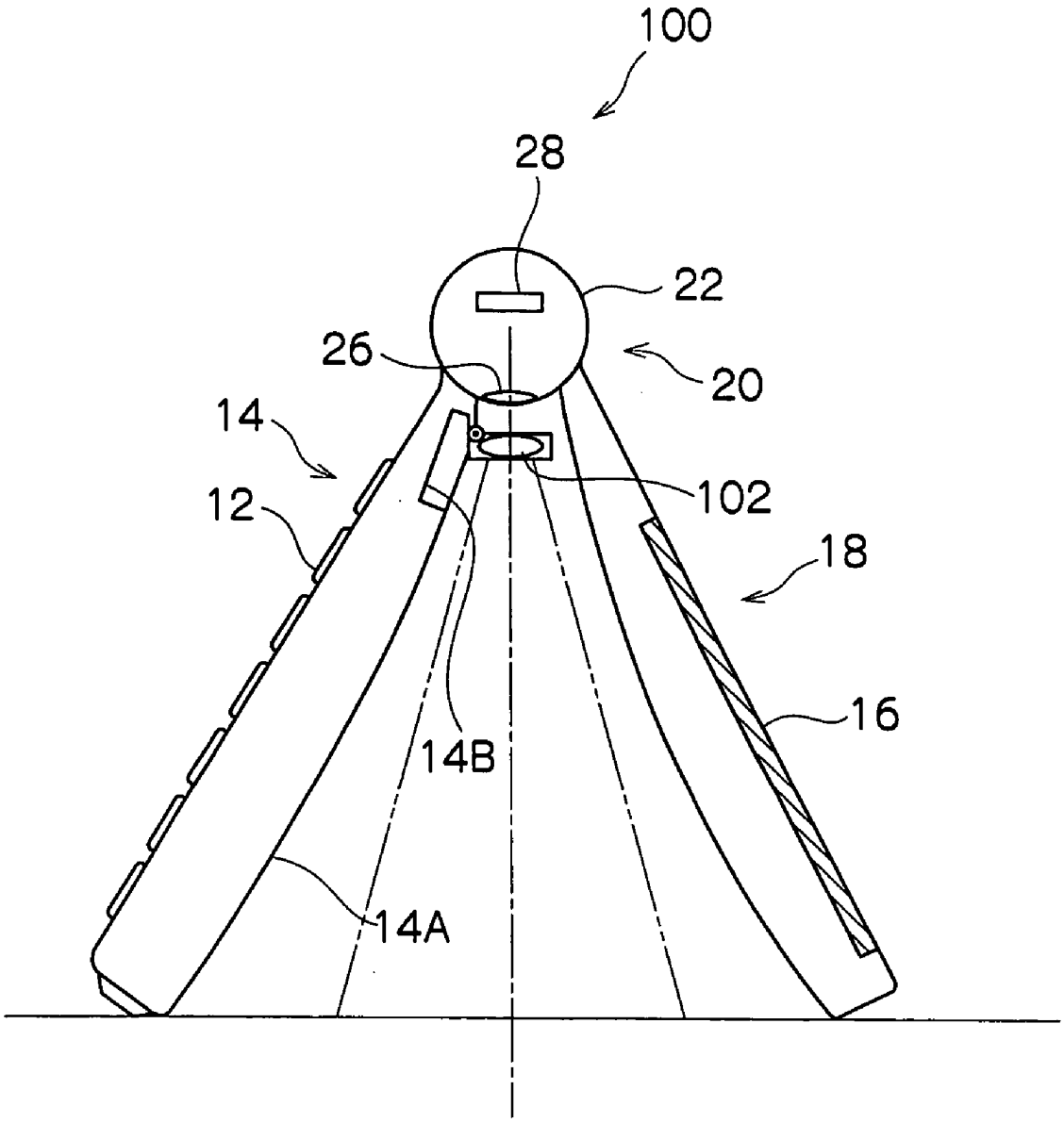


FIG.14

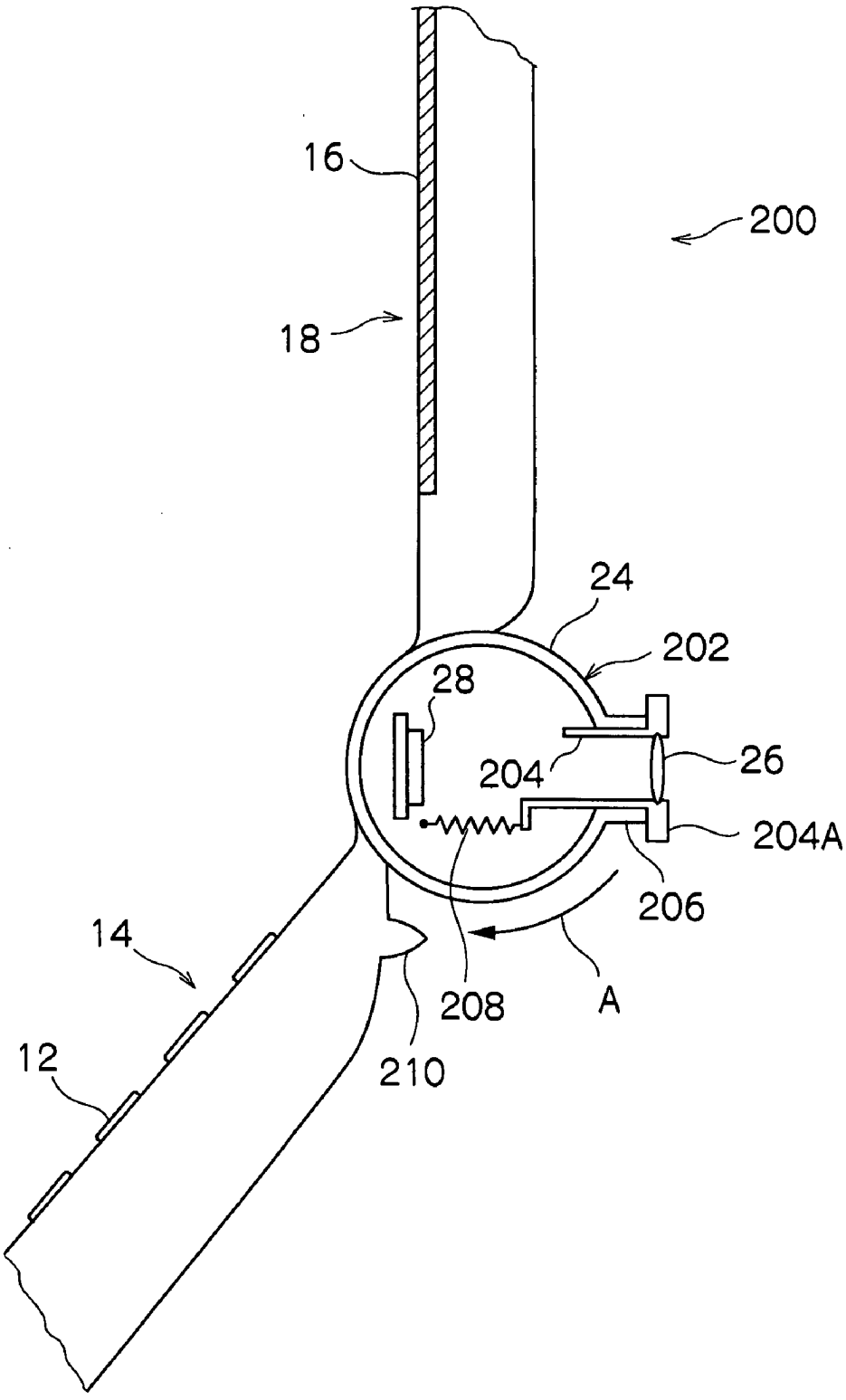
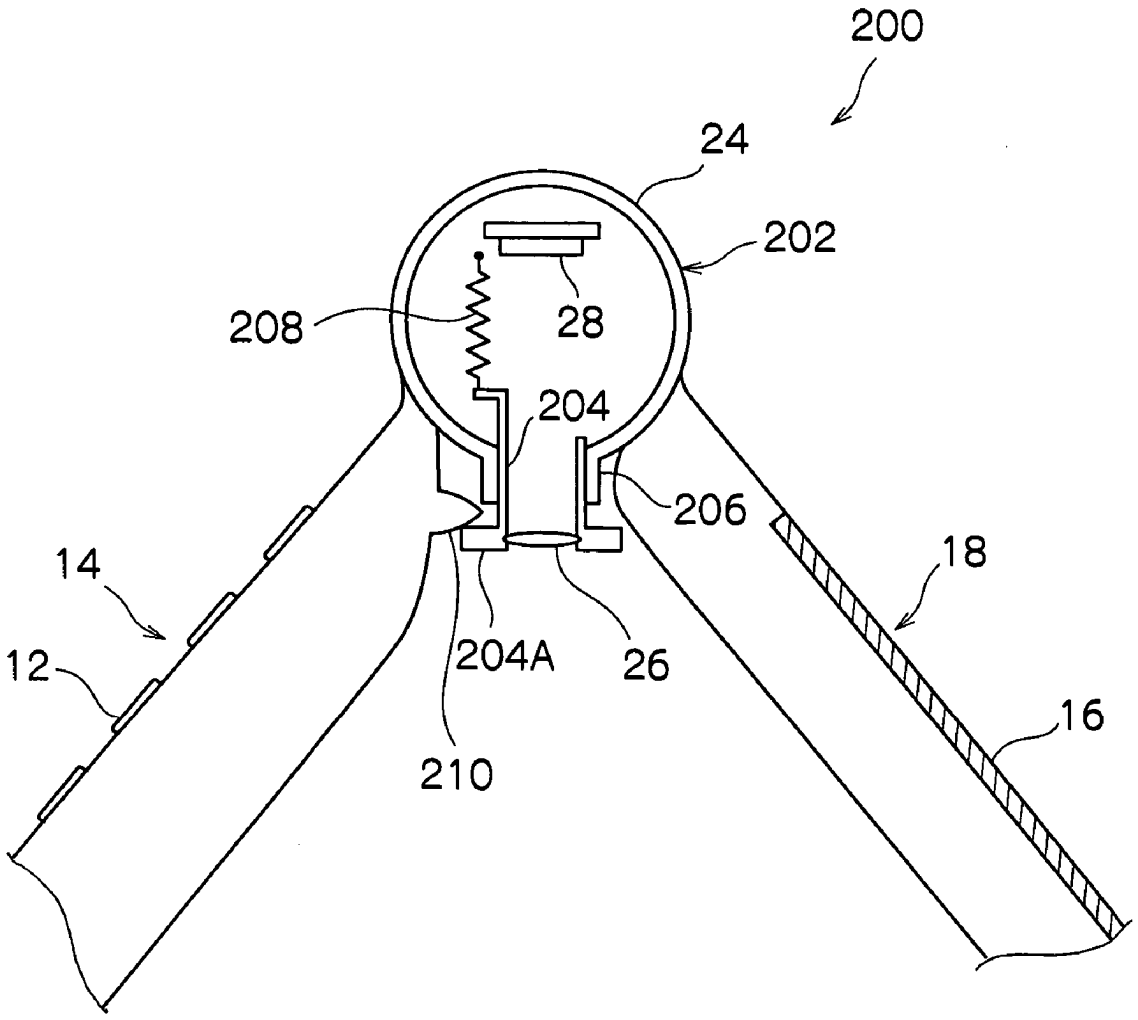


FIG.15



PORTABLE DEVICE WITH CAMERA

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims priority under 35 USC 119 from Japanese Patent Application No. 2003-395738, the disclosure of which is incorporated by reference herein.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention relates to a portable device incorporating a camera.

[0004] 2. Description of the Related Art

[0005] Heretofore, portable telephones incorporating cameras, for close-up photography of subjects placed on tabletops, have been proposed.

[0006] For example, Japanese Patent Application Laid-Open (JP-A) No. 2000-358225 has disclosed a structure in which an antenna, which can be folded up, is abutted against a tabletop and sets a distance between a camera and a subject. In this structure, the camera is provided at a rear face of a monitor, a first casing is equipped with a keyboard, and a second casing is equipped with the monitor. The first casing and second casing are opened out to approximately 180° and a subject is photographed in this opened state. The monitor is oriented upward, so it is possible to take a close-up photograph while checking the subject with the monitor.

[0007] However, it is necessary for a camera operator to hold the portable telephone firmly, and the distance between the camera and the subject will vary greatly if the portable telephone is inclined even slightly relative to the subject. That is, there are concerns about steadiness at times of close-up photography.

[0008] Further, JP-A No. 2003-163824 has disclosed a structure in which two casings joined by a hinge are opened out to a certain angle of less than 180°. In this state, a hinge portion is oriented upward and the structure is invertedly stood on a tabletop, which sets a distance between a camera provided at the hinge portion and a subject. With this structure, steadiness at times of close-up photography is high. Moreover, a monitor faces outward in the state in which the casings are invertedly stood on the tabletop, and it is possible to perform close-up photography while checking the subject with the monitor.

[0009] However, the hinge portion cannot open the two casings beyond 180°. Therefore, it is necessary for the hinge portion to have a bi-axial structure, with an opening/closing axis for opening out and closing up the two casings and a rotation axis for turning the monitor around. Thus, a mechanism of the hinge portion is likely to be complicated.

SUMMARY OF THE INVENTION

[0010] The present invention has been devised in consideration of the circumstances described above, and an object of the present invention is to provide an opening/closing-type portable device with a camera, which portable device alters to a shape for close-up photography, raises steadiness at times of close-up photography, and avoids complication of a mechanism of a hinge portion.

[0011] In order to achieve the object described above, according to a first aspect of the present invention, a portable device with a camera is provided, the device including: (a) a first casing body including one surface, at which a control portion is provided, and an opposite surface; (b) a second casing body including one surface, at which a monitor is provided, and an opposite surface; (c) a hinge portion joining the first casing body and the second casing body such that the first casing body and the second casing body are rotatable relative to one another about the hinge; and (d) the camera, which is provided at the hinge portion, (e) the portable device can be put into a first state, in which the first casing body and the second casing body are superposed such that the one face of the first casing body and the one face of the second casing body oppose one another, and a second state, in which the first casing body and the second casing body are relatively rotated from the first state by a predetermined angle about an axis of the hinge portion such that the opposite surface of the first casing body and the opposite surface of the second casing body nearly oppose one another.

[0012] The foregoing, and other objects, features and advantages of the present invention will be apparent to one skilled in the art from the following descriptions of preferred embodiments of the present invention, as illustrated in the accompanying drawings, and the attached claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] **FIG. 1** is a perspective view showing a portable telephone incorporating a camera of a first embodiment of the present invention.

[0014] **FIG. 2** is an exploded perspective view of a hinge portion and a camera unit of the portable telephone with camera of the first embodiment.

[0015] **FIGS. 3A, 3B**, 3C and 3D are sectional views showing states of an operation in which the camera unit of the portable telephone with camera of the first embodiment rotates.

[0016] **FIG. 4** is an exploded perspective view showing the hinge portion of the portable telephone with camera of the first embodiment.

[0017] **FIG. 5** is a sectional view showing the hinge portion of the portable telephone with camera of the first embodiment.

[0018] **FIGS. 6A and 6B** are sectional views showing the hinge portion of the portable telephone with camera of the first embodiment.

[0019] **FIGS. 7A and 7B** are sectional views showing the hinge portion of the portable telephone with camera of the first embodiment.

[0020] **FIG. 8** is a perspective view showing a state of close-up photography of the portable telephone with camera of the first embodiment.

[0021] **FIG. 9** is a side view showing the state of close-up photography of the portable telephone with camera of the first embodiment.

[0022] **FIG. 10** is a block diagram showing structure of a circuit for controlling the camera unit of the portable telephone with camera of the first embodiment.

[0023] **FIGS. 11A and 11B** are sectional diagrams showing sensing means for detecting a position of rotation of a second casing body of the portable telephone with camera of the first embodiment.

[0024] **FIG. 12** is a sectional side view of principal components showing a state in which a portable telephone incorporating a camera of a second embodiment is opened out.

[0025] **FIG. 13** is a sectional side view of principal components showing a state in which the portable telephone with camera of the second embodiment is folded over backward.

[0026] **FIG. 14** is a sectional side view of principal components of a portable telephone incorporating a camera of a third embodiment.

[0027] **FIG. 15** is a sectional side view of principal components showing a state in which the portable telephone with camera of the third embodiment is folded over backward.

DETAILED DESCRIPTION OF THE INVENTION

[0028] Below, a plurality of embodiments of a portable device incorporating a camera relating to the present invention will be described in detail with reference to the drawings.

[0029] Referring to **FIG. 1**, at a portable telephone with a camera **10** of a first embodiment, a first casing body **14** and a second casing body **18** are openably/closeably joined by a hinge portion **20**. The first casing body **14** is provided with a control portion **12**, and the second casing body **18** is provided with a monitor **16**. In a state in which the first casing body **14** and second casing body **18** are closed up, the monitor **16** and the control portion **12** are accommodated at inner sides of the first casing body **14** and second casing body **18**, and are close to and facing one another.

[0030] A camera unit **22** is rotatably provided at a central portion of the hinge portion **20**. As shown in **FIG. 2**, at the camera unit **22**, an imaging lens **26** is provided at a front face of a circular tube-form casing **24**, and a CCD **28** is provided inside the casing **24**. A central portion of an image pickup surface of the CCD **28** is aligned with an optical axis of the imaging lens **26**.

[0031] Portions at two end portions of the casing **24** are formed with narrower diameters to serve as rotation shafts **24**A. Bearings **30**, which are formed at an end face of the first casing body **14**, rotatably support these rotation shafts **24**A. Latches **32** are provided at circumferential faces of the rotation shafts **24**A. At the latches **32**, distal end portions **32**A thereof, which are folded over in triangular forms, are caused to protrude from the circumferential faces of the rotation shafts **24**A by plate springs, which extend in the axial direction of the rotation shafts **24**A.

[0032] Anchoring grooves **30**A, **30**B and **30**C, which engage with the latches **32**, are formed at inner circumferential faces of the bearings **30**. The anchoring grooves **30**A are formed at the control portion **12** side of the first casing body **14**. As is shown in **FIG. 3A**, when the latches **32** are engaged with the anchoring grooves **30**A, the imaging lens **26** is oriented toward a user. Thus, a "self-portrait", in which a camera user photographs him/herself, is possible.

[0033] As shown in **FIG. 3B**, when the camera unit **22** is rotated in a clockwise direction (the direction of arrow A in the drawing), the latches **32** are pushed into the circumferential faces of the rotation shafts **24**A by the inner circumferential faces of the bearings **30**.

[0034] As shown in **FIG. 3C**, the anchoring grooves **30**B are formed at an interval of approximately 180° from the anchoring grooves **30**A. When the rotation shafts **24**A are rotated to the positions of these anchoring grooves **30**B, the latches **32** are protruded from the circumferential faces of the rotation shafts **24**A by resilient force and are engaged with the anchoring grooves **30**B. In this state, the imaging lens **26** is oriented to the opposite side from the operator, that is, toward usual photographic subjects. Hence, it is possible to photograph subjects which are located in front of the camera user.

[0035] As shown in **FIG. 3D**, the anchoring grooves **30**C are formed at intervals of approximately 90° from the anchoring grooves **30**A and the anchoring grooves **30**B (intermediate to the anchoring grooves **30**A and **30**B). When the latches **32** are engaged with these anchoring grooves **30**C, the imaging lens **26** is oriented toward subjects which are the targets of close-up photography, as described later. Hence, close-up photography is possible.

[0036] As shown in **FIGS. 4 and 5**, two first tubular bodies **34** are formed at an end face of the second casing body **18**, and the bearings **30** are disposed between the two first tubular bodies **34**. Two second tubular bodies **36** are formed at end faces of the first casing body **14**, and the first tubular bodies **34** are disposed between the two second tubular bodies **36**. The first tubular bodies **34** are tubular bodies with bases, with axial direction one end portions thereof (at the respective bearing 30 sides) serving as base faces **34**B. The second tubular bodies **36** are tubular bodies of which both end portions in the axial direction are open.

[0037] Hinges **38** and **39** are inserted into the first tubular bodies **34** and second tubular bodies **36**, enabling opening/closing of the first casing body **14** and second casing body **18**. The hinge **38**, which is disposed at the left side in the drawings, is structured by a first hinge **40**, a second hinge **42**, a rotation shaft **44** and a compression coil spring **46**. The hinge **39**, which is disposed at the right side in the drawings, is structured by another first hinge **40**, a second hinge **41**, another rotation shaft **44** and another compression coil spring **46**. Note that the components assigned the same reference numerals, i.e., the first hinges **40**, the rotation shafts **44** and the compression coil springs **46**, are common components.

[0038] Each first hinge **40** has a circular tube form and is inserted into the first tubular body **34**. Two key grooves **40**A, which extend in the axial direction at a circumferential face of the first hinge **40**, are formed with a spacing of 180°. Two keys **34**A, which are formed at an inner circumferential face of the first tubular body **34**, are formed with a spacing of 180° and engage with the key grooves **40**A. Accordingly, the first hinges **40** are non-rotatable in the first tubular bodies **34**.

[0039] The second hinge **42** has a circular tube form with the same diameter as the first hinge **40**, and is inserted into the second tubular body **36** at the left side of the drawings. Two key grooves **42**A, which extend in the axial direction at a circumferential face of the second hinge **42**, are formed with a spacing of 180°. Two keys **36**A, which engage with the two key grooves **42**A, are formed with a spacing of 180° at an inner circumferential face of the second tubular body **36**. Accordingly, the second hinge **42** is non-rotatable in the second tubular body **36**.

[0040] The second hinge **41** of the hinge **39** has a circular tube form with the same diameter as the first hinge **40**, and is inserted into the second tubular body **36** at the right side of the drawings. Two key grooves **41**A, which extend in the axial direction at a circumferential face of the second hinge **41**, are formed with a spacing of 180°, and engage with two more keys **36**A, which are formed with a spacing of 180° at the inner circumferential face of the second tubular body **36**. Accordingly, the second hinge **41** is non-rotatable in the right-side second tubular body **36**.

[0041] At each rotation shaft **44**, a screw portion **44**A is formed at one axial direction end portion and a head portion **44**B is formed at the other axial direction end portion. The rotation shafts **44** pass through the first hinge **40** and second hinge **42** of the hinge **38**, and the first hinge **40** and second hinge **41** of the hinge **39**, respectively, and the rotation shafts **44** screw into the base faces **34**B of the first tubular bodies **34**.

[0042] The compression coil springs **46** are disposed between the second hinge **42** and the corresponding head portion **44**B and between the second hinge **41** and the corresponding head portion **44**B, respectively, and urge the second hinge **41** and the second hinge **42**, respectively, towards the first hinges **40**.

[0043] A cam **43** and cams **45** are formed at, respectively, an abutting face **40**B of the first hinge **40** and an abutting face **42**B of the second hinge **42**. The cam **43** is a protrusion with a taper form in cross-section, and the cams **45** are grooves with taper forms in cross-section, which engage with the cam **43**.

[0044] As shown in **FIGS. 6A and 6B**, the cam **43** extends from an end face of the abutting face **40**B to an end face at an opposite side of the abutting face **40**B, transiting across a hole **40**C. The two keys **34**A are arranged along a direction of thickness of the second casing body **18**, and the cam **43** extends in a radial direction with an angle of approximately 90° to a direction of arrangement of the two key grooves **40**A. That is, in the state in which the first hinge **40** is inserted into the first tubular body **34**, the cam **43** extends in a direction substantially intersecting the thickness direction of the second casing body **18**.

[0045] As shown in **FIG. 7A**, the cams **45** are structured by three cams, a first cam **45**A, a second cam **45**B and a third cam **45**C, which extend from an end face of the abutting face **42**B to an end face at an opposite side of the abutting face **42**B, transiting across a hole **42**C. The two keys **36**A are arranged along a direction of thickness of the first casing body **14**, and the first cam **45**A extends in a radial direction with an angle of approximately 90° to a direction of arrangement of the two key grooves **42**A. That is, in the state in which the second hinge **42** is inserted into the second tubular body **36** at the left side of **FIGS. 4 and 5**, the first cam **45**A extends in a direction substantially intersecting the thickness direction of the first casing body **14**.

[0046] The second cam **45**B extends at an angle approximately 30° in an anti-clockwise direction of the drawing relative to the first cam **45**A, and the third cam **45**C extends at an angle approximately 30° in the anti-clockwise direction relative to the second cam **45**B.

[0047] As shown in **FIGS. 4 and 5**, another cam **43** and cams **47** are formed at, respectively, another abutting face **40**B of the first hinge **40** of the hinge **39** and an abutting face **41**B of the second hinge **41**. This cam **43** is as described above.

[0048] The cams **47** are grooves with taper forms in cross-section, which engage with the cam **43**. As shown in **FIG. 7A**, the cam **47** is structured by three cams, a first cam **47**A, a second cam **47**B and a third cam **47**C, which extend from an end face of the abutting face **41**B to an end face at an opposite side of the abutting face **41**B, transiting across a hole **41**C. The first cam **47**A extends in a radial direction with an angle of approximately 90° to a direction of arrangement of the two key grooves **41**A. That is, in the state in which the second hinge **41** is inserted into the second tubular body **36** at the right side of **FIGS. 4 and 5**, the first cam **47**A extends in a direction substantially intersecting the thickness direction of the first casing body **14**.

[0049] The second cam **47**B extends at an angle approximately 30° in a clockwise direction of the drawing relative to the first cam **47**A, and the third cam **47**C extends at an angle approximately 30° in the clockwise direction relative to the second cam **47**B.

[0050] In the state in which the first casing body **14** and second casing body **18** are closed up, the cam **43** of the first hinge **40** of the hinge **38** engages with the first cam **45**A of the second hinge **42**, and the cam **43** of the first hinge **40** of the hinge **39** engages with the first cam **47**A of the second hinge **41**. In this state, the second hinges **41** and **42** are urged against the first hinges **40** by the compression coil springs **46**, the hinges **38** and **39** are locked, and there is no looseness between the first casing body **14** and the second casing body **18**.

[0051] When the second casing body **18** is opened out from the closed state, an angled surface of the first cam **45**A of the hinge **38** pushes against an angled surface of the corresponding cam **43**, and an angled surface of the first cam **47**A of the hinge **39** pushes against an angled surface of the corresponding cam **43**. As a result, engagements of the first cam **45**A with the cam **43** of the hinge **38** and of the first cam **47**A with the cam **43** of the hinge **39** are released, and the hinge **38** and hinge **39** become rotatable.

[0052] When the second casing body **18** has opened to 120° from the closed state, the cam **43** of the first hinge **40** of the hinge **38** engages with the third cam **45**C of the second hinge **42**, and the cam **43** of the first hinge **40** of the hinge **39** engages with the third cam **47**C of the second hinge **41**.

[0053] When the second casing body **18** opens a further 30° and reaches a state of having been opened to 150° (another rotation position), the cam **43** of the first hinge **40** of the hinge **38** engages with the second cam **45**B of the second hinge **42**, and the cam **43** of the first hinge **40** of the

hinge **39** engages with the second cam **47**B of the second hinge **41**. In the state in which the second casing body **18** has been opened to 150° (another rotation position) as shown in **FIG. 1**, or a state in which the second casing body **18** has opened a further 30° to 180° (another rotation position), the portable telephone with camera **10** is in a condition for performing telephone calls, usual photography and the like. In this state, the first casing body **14** and the second casing body **18** are locked by the hinges **38** and **39**. Thus, telephone calls, usual photography, etc. can be performed without difficulty.

[**0054**] When the second casing body **18** is opened to 300° (a first rotation position), the cam **43** of the first hinge **40** of the hinge **38** engages with the third cam **45**C of the second hinge **42**, and the cam **43** of the first hinge **40** of the hinge **39** engages with the third cam **47**C of the second hinge **41**. As a result, as shown in **FIGS. 8 and 9**, the first casing body **14** and the second casing body **18** are locked in a state which is opened by 300° from the closed state. Hence, the first casing body **14** and second casing body **18** can be invertedly stood on a flat surface G with the hinge portion **20** oriented upward.

[**0055**] In this state, the control portion **12** and the monitor **16** face to outer sides. Further, the camera unit **22** is locked centrally to inner sides of the first casing body **14** and the second casing body **18**, as described earlier. Consequently, it is possible to operate the control portion **12** and photograph a subject on the flat surface G while checking the subject with the monitor **16**.

[**0056**] Thus, because a degree of freedom of rotation of the hinge portion **20** is raised, a rotation axis for turning the monitor **16** around is not necessary, and it is possible for the hinge portion **20** to have a uni-axial form. Consequently, complication of the structure of the hinge portion **20** can be avoided.

[**0057**] **FIG. 10** shows a block diagram representing structure of a circuit for controlling the camera unit **22** of the portable telephone with camera **10** of the present embodiment.

[**0058**] The portable telephone with camera **10** is equipped with the imaging lens **26**, the CCD **28**, image signal processing means **48**, a memory controller **50** and memory **52**. A subject which is focused through the imaging lens **26** onto the CCD **28** is converted to analog image signals by the CCD **28**. Then, the analog image signals, which are outputted from the CCD **28**, are subjected to analog signal processing, A/D conversion and digital signal processing by the image signal processing means **48**. The digital image data that has been subjected to the digital signal processing is compressed by the memory controller **50** and recorded at the memory **52**. Depending on a photography mode, the compression process may be omitted and the data recorded directly to the memory **52**. Hence, the digital image data stored at the memory **52** is read out to the monitor **16**, and an image of the subject is displayed at the monitor **16**.

[**0059**] The portable telephone with camera **10** is equipped with a system controller **54** which oversees control of the portable telephone with camera **10** as a whole. Taking of a photograph is implemented by operating the control portion **12** to set desired photography conditions and pressing a shutter button **56** (see **FIGS. 1 and 8**).

[**0060**] A zoom motor **58**, sensing means **60** and lights **62** are provided at the portable telephone with camera **10**. The zoom motor **58** drives the imaging lens **26** for zooming, and the sensing means **60** detects when the second casing body **18** has been opened to 300° (the first rotation position).

[**0061**] As shown in **FIGS. 11A and 11B**, the sensing means **60** is structured by a detection protrusion **64** and a detection contact **66**. The detection protrusion **64** is formed at an outer peripheral surface of the first tubular body **34** of the second casing body **18**, and the detection contact **66** is provided at a rear face **14**A of the first casing body **14** and conducts electricity when pressed by the detection protrusion **64**.

[**0062**] When the second casing body **18** is rotated as shown in **FIG. 11A** to the first rotation position, the detection protrusion **64** pushes against the detection contact **66**, as shown in **FIG. 11B**, and the detection contact **66**, which has been open hitherto, is closed. Hence, a detection signal that the detection contact **66** has closed is sent to the system controller **54**. When the system controller **54** receives the detection signal, the system controller **54** drives the zoom motor **58**, alters a searching range of the imaging lens **26** to a macro region, and switches the photography mode to a macro (close-up) photography mode. Further, the lights **62**, which are provided at the rear face **14**A of the first casing body **14** and a rear face **18**A of the second casing body **18**, are lit up.

[**0063**] In consequence, close-up photography of a subject which is located between the first casing body **14** and the second casing body **18** on the flat surface G on which the first casing body **14** and second casing body **18** are invertedly standing is possible. Moreover, because the first casing body **14** and second casing body **18** are inverted on the flat surface G with the hinge portion **20** oriented upward for performing close-up photography, a distance between subjects and the camera is constant, and it is possible to perform stable close-up photography. Furthermore, because of the illumination of the lights **62**, bright close-up images can be obtained.

[**0064**] The first casing body **14** and the second casing body **18** are equipped at their respective tips with the lights **62** such that, when the first casing body **14** and the second casing body **18** are inverted on the flat surface G with the hinge portion **20** oriented upward, the lights **62** are located within a hatched (or shaded) area as shown in **FIG. 9**.

[**0065**] In a case in which a light is located within such a hatched area, alight beam, which has been discharged from the light and subsequently reflected from the surface G, does not enter the CCD **28**. Namely, the possibility of reflectance (or flashing) of the light beam (on a photograph, a display or the like) can be prevented.

[**0066**] Next, a second embodiment of the present invention will be described. Note that portions and components that are the same as in the first embodiment are assigned the same reference numerals, and descriptions thereof are omitted as appropriate.

[**0067**] As shown in **FIG. 12**, a portable telephone with a camera **100** is provided with a close-up photography lens **102** at the rear face **14**A, which is a face of the first casing body **14** opposite to a face of the first casing body **14** at which the control portion **12** is provided. This close-up

photography lens **102** can be moved, by a hinge **104**, into and out of an accommodation portion **14**B of the rear face **14**A of the first casing body **14**.

[**0068**] As shown in **FIG. 13**, the second casing body **18** is rotated to the first rotation position and the camera unit **22** is rotated to the center at the inner sides of the first casing body **14** and the second casing body **18**. Further, the close-up photography lens **102** folds out from the accommodation portion **14**B and is disposed at a front face side of the imaging lens **26** of the camera unit **22**. In consequence, a subject disposed on the flat surface G at the inner sides of the first casing body **14** and second casing body **18** will be in focus, and close-up photography is possible.

[**0069**] Next, a third embodiment of the present invention will be described. Note that portions and components that are the same as in the first or second embodiment are assigned the same reference numerals, and descriptions thereof are omitted as appropriate.

[**0070**] As shown in **FIG. 14**, at a portable telephone with a camera **200**, the imaging lens **26** of a camera unit **202** is accommodated in a lens barrel **204**. A cylindrical body **206** is formed integrally with the casing **24**. The lens barrel **204** is supported by the cylindrical body **206** to be movable in an optical axis direction of the imaging lens **26**. An end portion of the lens barrel **204** at the CCD **28** side thereof in the optical axis direction is supported by an extension coil spring **208**.

[**0071**] The camera unit **202** is formed to be rotatable by a structure similar to that of the first and second embodiments. A cam **210** is formed at the rear face **14**A of the first casing body **14**, and a brim portion **204**A is formed at a distal end portion of the lens barrel **204**. When the camera unit **202** is rotated in a direction such that the imaging lens **26** approaches the first casing body **14** (the direction of arrow A in the drawing), the cam **210** abuts against the brim portion **204**A, as shown in **FIG. 15**. As a result, the lens barrel **204** is pushed outward and the imaging lens **26** is moved to a close-up position at which a subject on the flat surface G will be in focus.

[**0072**] In the first to third embodiments, the camera unit **22** (or **202**) is formed to be rotatable by turning at the hinge portion **20**. However, the camera unit **22** (or **202**) may be fixed at the hinge portion **20** such that, when the second casing body **18** is opened approximately 300° from the closed state as shown in **FIG. 9**, the imaging lens **26** faces a subject at the inner sides of the first casing body **14** and the second casing body **18**. Alternatively, the camera unit **22** (or **202**) may rotate in conjunction with rotation of the second casing body **18** such that, when the second casing body **18** is opened approximately 300° from the closed state, the imaging lens **26** is rotated to a position that faces a subject at the inner sides of the first casing body **14** and the second casing body **18**.

[**0073**] Further, although the angles at which the second casing body **18** is locked by the hinge portion **20** in the first to third embodiments are 120°, 150°, 180° and 300°, such angles can be selected as is appropriate.

[**0074**] Further again, in the first to third embodiments, the CCD **28** is disposed at the hinge portion **20**. However, a reflection mirror may be disposed at the position at which the CCD **28** is disposed in the above embodiments, with the CCD **28** being disposed at the first casing body **14** or the second casing body **18**. The reflection mirror deflects the path of light that has passed through the imaging lens **26** to make the light incident on the CCD **28**.

[**0075**] Further yet, in the first to third embodiments, the present invention has been described taking a portable telephone incorporating a camera as an example. However, the present invention is also applicable to other opening/closing-type (folding-type) portable devices incorporating cameras in which the cameras are provided at hinge portions, such as, for example, notebook computers, PDAs (personal digital assistants) and so forth.

[**0076**] With the structures described above, the present invention is capable, in an opening/closing-type portable device incorporating a camera, which portable device alters to a shape for performing close-up photography, of raising stability at times of close-up photography, while avoiding complication of structure of a hinge portion.

What is claimed is:

1. A portable device with a camera, the device comprising:

(a) a first casing body including one surface, at which a control portion is provided, and an opposite surface;

(b) a second casing body including one surface, at which a monitor is provided, and an opposite surface;

(c) a hinge portion joining the first casing body and the second casing body such that the first casing body and the second casing body are rotatable relative to one another about the hinge; and

(d) the camera, which is provided at the hinge portion,

(e) the portable device can be put into a first state, in which the first casing body and the second casing body are superposed such that the one face of the first casing body and the one face of the second casing body oppose one another, and a second state, in which the first casing body and the second casing body are relatively rotated from the first state by a predetermined angle about an axis of the hinge portion such that the opposite surface of the first casing body and the opposite surface of the second casing body nearly oppose one another.

2. The portable device of claim 1, wherein the camera is rotatable about the axis of the hinge portion.

3. The portable device of claim 1, wherein the predetermined angle is at least 180°.

4. The portable device of claim 1, wherein the hinge portion is capable of temporarily fixing the first casing body and the second casing body relative to one another in the second state.

5. The portable device of claim 1 wherein, in the second state, the camera is capable of capturing a subject disposed between the opposite surfaces of the first casing body and the second casing body.

6. The portable device of claim 1, further comprising a detection portion capable of detecting when the first casing body and the second casing body are in the second state.

7. The portable device of claim 6, further comprising a control section which, in response to a detection signal from the detection portion, switches a photography mode of the camera to a close-up photography mode.

8. The portable device of claim 7, wherein the camera comprises an imaging lens.

9. The portable device of claim 8, wherein the control section comprises a zoom motor for altering a searching range of the imaging lens to a macro region.

10. The portable device of claim 8, wherein the camera comprises a close-up photography lens which can be disposed at a front face side of the imaging lens.

11. The portable device of claim 10, wherein the close-up photography lens is provided in a protruding condition and can be accommodated at the opposite surface of one of the casing bodies.

12. The portable device of claim 8, further comprising a movement apparatus capable of moving the imaging lens to a predetermined close-up photography position.

13. The portable device of claim 1, wherein the hinge portion is capable of temporarily fixing the first casing body and the second casing body at a plurality of angular positions relative to one another.

14. The portable device of claim 1, wherein the camera comprises a CCD.

15. The portable device of claim 14, wherein the CCD is disposed inside one of the first casing body and the second casing body.

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(19)日本国特許庁（ＪＰ）　(12) **公開特許公報（Ａ）**　(11)特許出願公開番号

特開平10－111658

(43)公開日　平成10年(1998)４月28日

(51)Int.Cl.[6]	識別記号	ＦＩ
Ｇ０９Ｆ　9/00	３１２	Ｇ０９Ｆ　9/00　３１２

審査請求　未請求　請求項の数９　ＯＬ　（全 10 頁）

(21)出願番号　特願平8－267235

(22)出願日　平成８年(1996)10月８日

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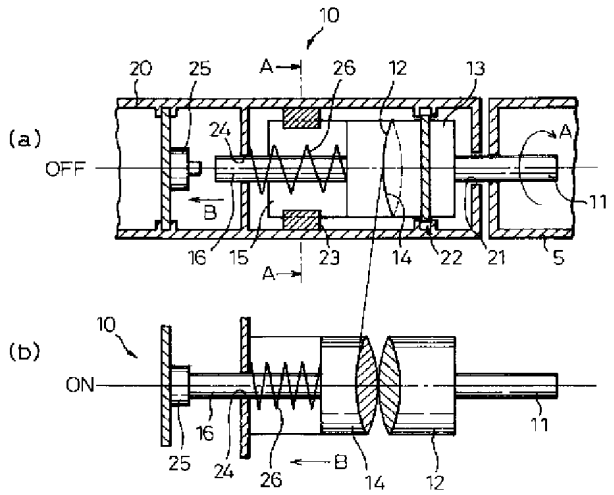
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(54)【発明の名称】　小型携帯用情報処理装置

(57)【要約】

【課題】　小型携帯用情報処理装置に関し、ペン操作等を全くする必要がなく、機器本体に対して液晶表示部を回転させてその装置の使用形態を変更する際に自動的に液晶表示部の画面の向きを変更するようにする。

【解決手段】　機器本体と、該機器本体に対して回転可能に取付けられた表示部と、前記機器本体に対する該表示部の回転を検出する手段と、該検出手段の検出結果により前記表示部の画面の向きを切り換える手段とを含んで成る。



3…液晶表示部
5…ヒンジ部材
10…スイッチ機構
11…軸
12…カム
13…フランジ
14…カム受け
15…ガイド板
16…軸
20…スイッチ本体
21…軸受部
22…環状ガイド溝
23…軸方向ガイド溝
24…軸受部
25…スイッチ素子
26…スプリング

【特許請求の範囲】
【請求項１】　機器本体と、該機器本体に対して回転可能に取付けられた表示部と、前記機器本体に対する該表示部の回転を検出する手段と、該検出手段の検出結果により前記表示部の画面の向きを切り換える手段とを含んで成ることを特徴とする小型携帯用情報処理装置。
【請求項２】　前記表示部は前記機器本体との間に設けた少なくとも１つのピボット軸を中心に３６０°回転可能で、該ピボット軸を中心とする前記表示部と前記機器本体との間の相対的な回転によりＯＮ／ＯＦＦするスイッチを設けたことを特徴とする請求項１に記載の装置。
【請求項３】　前記スイッチは、表示部が機器本体に対して閉じられた状態から３６０°に近い角度回転した時点でスイッチＯＮ／ＯＦＦの動作をするように構成されていることを特徴とする請求項２に記載の装置。
【請求項４】　前記スイッチは、前記ピボット軸を中心として相対回転する一方の部材にカムを設け、他方の部材に該カムに常時接触し且つ該カムの回転に応じて軸方向に移動するカム受けを設け、該カム受けの軸方向の移動によりスイッチＯＮ／ＯＦＦ動作をするように構成されていることを特徴とする請求項２又は３に記載の装置。
【請求項５】　前記スイッチは、前記ピボット軸を中心として相対回転する一方の部材にカムを設け、他方の部材に該カムに常時接触し且つ該カムの回転に応じて軸方向に移動するカム受けを設け、前記カムと前記カム受けの一方の側に凹部、他方の側に凸部を設け、カム受けが軸方向に移動してスイッチ素子に接触した後、前記凹部と凸部とが嵌合してカム受けがスイッチ素子から離れるように構成したことを特徴とする請求項２又は３に記載の装置。
【請求項６】　前記スイッチは、前記ピボット軸を中心として相対回転する一方の部材に突起部を設け、他方の部材に該突起の回転方向の移動により動作するセンサスイッチを設けたことを特徴とする請求項２又は３に記載の装置。
【請求項７】　前記スイッチは、前記機器本体に対する表示部の回転位置を磁気的又は光学的に検出するスイッチであることを特徴とする請求項２又は３に記載の装置。
【請求項８】　前記表示部は、文字又は図形等の表示機能と接触による情報入力機能とを有する液晶タッチパネルを具備することを特徴とする請求項１～７のいずれか１項に記載の装置。
【請求項９】　前記機器本体部はキーボード部を有し、該機器本体に対する前記表示部の相対回転により、前記キーボード部をロック又は機能停止状態とすることを特徴とする請求項１～８のいずれか１項に記載の装置。
【発明の詳細な説明】
【０００１】
【発明の属する技術分野】本発明は小型携帯用情報処理装置に関する。特に本発明は、携帯用の卓上電子計算機（電卓）、コンピュータ、ワードプロセッサ、電子手帳等の小型携帯用装置であって、液晶等からなる画面表示部を有する小型携帯用の情報処理装置に関する。
【０００２】
【従来の技術】この種の携帯用装置において、小型化・軽量化・携帯性に加えてペン等で操作する際に操作し易い装置が要求されている。このため、機器本体の側にキーボード部を設け、タッチパネル式の入力部を兼ねる液晶表示部が機器本体にヒンジにより枢動可能に連結され、この液晶表示部を機器本体に対し３６０°回転可能としたものがある。この装置では、液晶表示部を見ながらキーボード部で操作することもでき、或いは液晶表示部を機器本体に対し３６０°回転させて液晶表示部を直接ペン等で入力操作することもできるようになっている。
【０００３】図１６（ａ）、（ｂ）に従来のこの種の携帯用装置を斜視図で示し、（ａ）はキーボード部で操作するべく液晶表示部を開放した状態、（ｂ）は液晶表示部を３６０°回転させて液晶表示面を上側にしてペン入力を可能にした状態をそれぞれ示す。図において、１は機器本体、２は機器本体の上面に設けられたキーボード部、３は表示面がタッチパネルで構成されたカバー兼用の液晶表示部、４はペン、５はヒンジ部材で２つのピボット軸５ａ及び５ｂを有する。
【０００４】図示のように、液晶表示部３は２つのピボット軸５ａ、５ｂを有するヒンジ部材５により機器本体１に連結されている。詳しくは、液晶表示部３の後縁にヒンジ部材５はその一方の側のピボット軸５ａが連結され、このヒンジ部材５の他方のピボット軸５ｂが機器本体１の後縁に連結されている。そして、図１６（ａ）に示すように、液晶表示部３をキーボード部２に対して所定の角度（鈍角）となる位置では、液晶表示部３を見ながらキーボード部２で入力操作をすることができる。また、図１６（ｂ）に示すように、液晶表示部３を機器本体１に対し閉じた状態から３６０°回転させて液晶表示部３の裏面を機器本体１の裏面に接触する状態とし、タッチパネルの液晶表示部３をペン４で入力できる位置とすることもできる。
【０００５】液晶表示部３は略長方形の形態であるが、図１６（ａ）の状態では図示のように装置を横長の形態として液晶表示部３を見ながらキーボード部２により指で操作するのが好適であり、また図１６（ｂ）の状態では装置を縦長の形態として液晶表示部３をペン等で操作するのが好適である。そこで、従来、図１７（ａ）及び（ｂ）に示すように、液晶表示部３に画面切り換え部７を設け、ペン４の先端でこの画面切り換え部７を軽く押圧することで、液晶表示部３の画面を約９０°回転させて向きを切り換える。もう一度画面切り換え部７を押圧

すると、元の状態の戻るようになっている。また、キーボード部２をロックする場合も、同様にロック用のマーク（図示せず）を押圧することにより、キーボード部をロック又は機能停止の状態とされ、もう一度押圧することによりキーボード部のロック又は機能停止が解除されるようになっていた。

【０００６】また、他の従来例として特開昭６２－６２９８号公報、特開昭６２－１７７８６号公報には、マトリックスパネル（液晶表示部）を機器本体に対して３６０°回転可能とし、マトリックスパネルに当たる光量により透過光反射型と透過直視型のいずれかに切り換えるようにした小型画像表示装置が開示されている。

【０００７】

【発明が解決しようとする課題】図１６及び図１７に示した従来の情報処理装置によると、液晶表示部３の画面を切り換えるのにその都度ペン４の先端で画面上の切り換え部７を押圧しなければならず、また元の画面の状態に戻す際もその都度ペン４の先端で画面上の切り換え部７を押圧しなければならず、操作が煩わしく面倒であった。

【０００８】また、特開昭６２－６２９８号公報、特開昭６２－１７７８６号公報に記載された従来例では、マトリックスパネル（液晶表示部）に当たる光量により透過光反射型と透過直視型のいずれかに自動的に変わるようになっているが、小型画像表示装置の使用形態によって画面の向きが変更するものではない。したがって、本発明は、ペン操作等を全くする必要がなく、機器本体に対して液晶表示部を回転させてその装置の使用形態を変更する際に自動的に液晶表示部の画面の向きを変更することのできる小型携帯用情報処理装置を提供することを課題とする。

【０００９】更に、本発明は、機器本体に対して液晶表示部を回転させてその装置の使用形態を変更する際に自動的に、機器本体側のキーボード等の所定部分をロック又は機能停止することのできる小型携帯用情報処理装置を提供することを課題とする。

【００１０】

【課題を解決するための手段】上記の課題を達成するために、本発明によれば、機器本体と、該機器本体に対して回転可能に取付けられた表示部と、前記機器本体に対する該表示部の回転を検出する手段と、該検出手段の検出結果により前記表示部の画面の向きを切り換える手段とを含んで成ることを特徴とする小型携帯用情報処理装置が提供される。これによれば、表示部を機器本体に対して回転させ、その使用形態を変更した際は自動的に表示部の画面を切り換えることができ、操作が簡便化される。

【００１１】前記表示部は前記機器本体との間に設けた少なくとも１つのピボット軸を中心に３６０°回転可能で、該ピボット軸を中心とする前記表示部と前記機器本体との間の相対的な回転によりＯＮ／ＯＦＦするスイッチを設けたことを特徴とする。これによれば、スイッチのＯＮ／ＯＦＦにより自動的に表示部の画面の切り換えが行われる。

【００１２】前記スイッチは、表示部が機器本体に対して閉じられた状態から３６０°に近い角度回転した時点でスイッチＯＮ／ＯＦＦの動作をするように構成されていることを特徴とする。これによれば、例えば、表示部の画面でのみ入力操作する状態となれば、自動的に表示部の画面の切り換えが行われる。前記スイッチは、前記ピボット軸を中心として相対回転を生ずる一方の部材にカムを設け、他方の部材に該カムに常時接触し且つ該カムの回転に応じて軸方向に移動するカム受けを設け、該カム受けの軸方向の移動によりスイッチＯＮ／ＯＦＦの動作をするように構成されていることを特徴とする。

【００１３】この場合において、前記カムと前記カム受けの一方の側に凹部、他方の側に凸部を設け、カム受けが軸方向に移動してスイッチ素子に接触した後、前記凹部と凸部とが嵌合してカム受けがスイッチ素子から離れるように構成することもできる。これによれば、カム受けが一旦スイッチ素子に接触した後、スイッチ素子から離れるので、カム受けとスイッチ素子との接触の都度ＯＮ／ＯＦＦが切り換わるようにされる。

【００１４】前記スイッチは、前記ピボット軸を中心として相対回転を生ずる一方の部材に突起部を設け、他方の部材に該突起の回転方向の移動により動作するセンサスイッチを設けたことを特徴とする。前記スイッチは、前記機器本体に対する表示部の回転位置を磁気的又は光学的に検出するスイッチであることを特徴とする。これによれば、機械的なスイッチ機構を用いないので、機構部分や可動部分の少ないスイッチを得られる。

【００１５】前記表示部は、文字又は図形等の表示機能と接触による情報入力機能とを有する液晶タッチパネルを具備することを特徴とする。機器本体側にキーボード等の入力手段がある場合は、タッチパネルとキーボードの両方からの入力操作が可能となる。前記機器本体部はキーボード部を有し、該機器本体に対する前記表示部の相対回転により、前記キーボード部をロック又は機能停止状態とすることを特徴とする。これによれば、表示部を機器本体に対して回転させ、その使用形態を変更した際は自動的に所定部分の機能が停止されるので、例えばキーボード等に不用意に触れた場合に生ずるような誤操作等を未然に防止するすることができる。

【００１６】

【発明の実施の形態】以下、図１～図７を参照して本発明の小型携帯用情報処理装置の第１実施形態について詳細に説明する。まず、図１及び図２は装置全体の斜視図で、図１はキーボード部で操作するべく液晶表示部を開放した状態、図２は液晶表示部を３６０°回転させて液晶表示面に対するペン入力を可能にした状態をそれぞれ

示す。これらの図において、１は機器本体、２は機器本体の上面に設けられたキーボード部、３は表示面がタッチパネルで構成されたカバー兼用の液晶表示部、４はペン、５はヒンジ部材で２つのヒンジ軸５ａ及び５ｂを有する。

【００１７】液晶表示部３は、図１６に示した従来例と同様、２つのピボット軸５ａ、５ｂを有するヒンジ部材５により機器本体１に連結されている。詳しくは、液晶表示部３の後縁にヒンジ部材５はその一方の側のピボット軸５ａが連結され、このヒンジ部材５の他方のピボット軸５ｂが機器本体１の後縁に連結されている。そして、図１に示すように、液晶表示部３をキーボード部２に対して所定の角度（鈍角）となる位置では、液晶表示部３を見ながらキーボード部２で入力操作をすることができる。また、図２に示すように、液晶表示部３を機器本体１に対し閉じた状態から３６０°回転させて液晶表示部３の裏面を機器本体１の裏面に接触する状態とし、液晶表示部３をタッチパネルとして機能させペン４で直接液晶表示部３に対して入力できる位置とすることもできる（図２では液晶表示部３のタッチパネル画面は裏面にある）。

【００１８】液晶表示部３は略長方形の形態であるが、図１の状態では装置を横長の形態として液晶表示部３を見ながらキーボード部２により指で操作するのが好適であり、また図２の状態では装置を縦長の形態として液晶表示部３をペン等で操作するのが好適である。図３（ａ）、（ｂ）は、液晶表示部３を機器本体１に対して閉じている不使用の状態（ａ）から、２つのピボット軸５ａ、５ｂを有するヒンジ部材５により機器本体１に対して矢印Ａ方向に３６０°回転させて液晶表示部をペン入力が可能な状態とする（ｂ）過程を示す。これらの図から理解されるように、液晶表示部３が機器本体１に対して３６０°回転される間に、ヒンジ部材５の各ピボット軸５ａ、５ｂはヒンジ部材５に対してそれぞれ１８０°づつ回転する。

【００１９】図４は本発明の第１実施形態に係る液晶表示部の画面の向きを変えるためのスイッチ機構を示す断面図であり、（ａ）はスイッチＯＦＦの状態、（ｂ）はスイッチＯＮの状態を示す。このスイッチ機構１０は例えば液晶表示部３とヒンジ部材５との間のヒンジ軸５ａの部分に形成することができる。スイッチ機構１０は液晶表示部３の側に固定されている本体部２０、ヒンジ部材５の側に固定されている回転部、この回転部の回転に応じて軸方向に移動するスライド部から成る。回転部は、ヒンジ部材５に固定して設けられる軸１１、この軸１１の先端に固定して設けられるカム１２、このカム１２の回転を許容し軸方向の移動を阻止するためのフランジ１３からなる。スライド部は、カム１２に接触するカム受け１４、このカム受け１４に固定され且つこのこのカム受け１４の軸方向の移動を許容し回転を阻止するガイド板１５、カム受け１４に固定された軸１６から成る。なお、ガイド板１５は、図５に示すように、軸１６との干渉を避けるために軸心からオフセットした位置に設けられている。

【００２０】また、本体部２０は、軸１１を回転可能に支承する軸受部２１、フランジ１３を回転可能に案内し且つ軸方向の移動を阻止する環状のガイド溝２２、ガイド板１５を軸方向に移動可能に案内し且つ回転を阻止する軸方向ガイド溝２３、軸１６の軸方向の移動を許容するように支承する軸受部２４、軸１６の軸方向の移動によりこの軸１６に接触してスイッチ機能を果たすスイッチ素子２５を具備する。また、カム受け１４を常時カム１２に接触して状態の保つためのスプリング２６が軸受部２４の壁部とカム受け１４との間に軸１６に沿って設けられている。

【００２１】前述のように、液晶表示部３を機器本体１に対し閉じた状態から３６０°回転させると、ヒンジ部材５の各ピボット軸５ａ、５ｂはそれぞれ１８０°づつ回転する。また、カム１２とカム受け１４の当接面は互いに傾斜した面又は螺旋状の面を有する。したがって、この動作の間にカム１２はカム受け１４に関し、１８０°回転する。カム受け１４はその回転が阻止されているので、カム１２により軸方向に押されて図の矢印Ｂ方向に軸方向に移動し、１８０°に近い所定角度回転すると、軸１６の先端がスイッチ素子２５と接触し、図４（ｂ）に示すようにスイッチＯＮとなる。液晶表示部３を機器本体１に対し元の状態、例えば図１の状態に戻す際はこのスイッチはＯＦＦとなる。

【００２２】なお、このスイッチ機構１０は、ヒンジ部材５の液晶表示部３側のピボット軸５ａではなく、機器本体１側ののピボット軸５ｂに適用することも可能である。また、スイッチ機構の本体部２０と、回転部（カム１２）とを逆に配置する、例えば、本体部２０をヒンジ部材５の側とし、回転部（カム１２）を液晶表示部３又は機器本体１の側とすること可能である。

【００２３】なお、液晶表示部３を機器本体１に対し３６０°回転させる際に、ヒンジ部材５の２つのピボット軸５ａ、５ｂの一方が先に１８０°回転し、他方（このスイッチ機構１０を組み込む側）がその後１８０°回転し、逆方向に回転させる時はこの他方が先に、前記一方が後に回転するように各ピボット軸５ａ、５ｂの回転トルクを調整しておくことも可能である。

【００２４】図６は、図４に示したカム１２とカム受け１４の変形例を示すものである。カム１２とカム受け１４の当接面は互いに傾斜した面又は螺旋状の面を有する点は同じであるが、この変形例では、カム１２とカム受け１４の一方に凹部１２ａ、他方に凸部１４ａを対応して設け、軸１６の先端が一旦スイッチ素子２５に接触した後は凹部１２ａと凸部１４ａとが互いに係合して軸１６の先端がスイッチ素子２５から離れる構造とした。こ

の場合のカム１２のスイッチ本体１０に対する回転角と軸１６のストロークとの関係を図６（ｂ）に示す。ただし、軸１６の先端が一旦スイッチ素子２５に接触した後に同スイッチ素子２５から離れても、スイッチはＯＮの状態を持続する。逆の動作をする場合は、カム１２の凹部１２ａとカム受け１４の凸部１４ａとは互いに乗り越えて、軸１６の先端が一旦スイッチ素子２５に接触してスイッチをＯＦＦとし、その後は同スイッチ素子２５から離れる。この場合も、軸１６が一旦スイッチ素子２５に接触した後のそこから離れてもＯＦＦの状態を持続する。

【００２５】スイッチ機構１０がＯＦＦの状態では、液晶表示部３の画面は図１に示すように横長の形態となる。したがって、図の状態のように、液晶表示部３を見ながらキーボード部２により指で操作するのが好適である。一方、スイッチ機構１０がＯＮの状態では、液晶表示部３の画面は図２に示すように縦長の形態となる。したがって、タッチパネルの液晶表示部３をペン等で操作するのが好適な状態となる（なお、図２では液晶表示部３は裏面にある）。

【００２６】図７は上述した実施形態の動作を示すフローチャートである。まず、この装置の主電源（図示せず）をＯＮ（ステップ101 ）として、画面切り換え用スイッチ１０の状態を見る（ステップ102 ）。スイッチが接触している時（ステップ103）は画面切り換え信号を送り（ステップ104 ）、液晶表示部３の画面が９０°回転し（ステップ105 ）、その他の必要な処理を行って（ステップ106 ）、ステップ102 を戻る。スイッチが接触していない時は画面の状態を最初に見た状態のままとし（ステップ107 ）、他の必要な処理を行い（ステップ106 ）、ステップ102 に戻る。

【００２７】次に、図８～図１５を参照して本発明の小型携帯用情報処理装置の第２実施形態について詳細に説明する。図８は液晶表示部３を機器本体１に対して３６０°回転させて液晶表示面を上側にしてペン入力を可能にした状態、図９及び図１０は液晶表示部３を閉じた状態を示す。図９（ｂ）は図９（ａ）のＣの部分の拡大斜視図である。

【００２８】図９（ａ）及び（ｂ）に示すように、液晶表示部３の裏面（表示画面とは反対側）にはヒンジ部材５の近傍位置にセンサスイッチ３０が設けられている。一方、回転側であるヒンジ部材５にはセンサスイッチ３０の接触部３１に干渉する軌跡の位置に突起部３２を形成する。図９及び図１０に示すように、液晶表示部３を機器本体１に対して閉じた状態では、センサスイッチ３０の接触部３１とヒンジ部材５の突起部３２との間は１８０°近く離れた角度の関係にあって、突起部３２は接触部３１と干渉せず、したがってスイッチはＯＦＦの状態である。

【００２９】図１１及び図１２は、それぞれ図９及び図１０に対応する図であるが、液晶表示部３を機器本体１に対して図９及び図１０の閉位置から、３４６°回転させた状態（機器本体１と液晶表示部３との間は１４°の状態）を示す。この状態では、センサスイッチ３０の接触部３１とヒンジ部材５の突起部３２との間は図９及び図１０の閉位置から１８０°近くまで回転した状態であり、突起部３２はセンサスイッチ３０の接触部３１を押圧し、スイッチをＯＮとした状態である。

【００３０】センサスイッチ３０がＯＮ、ＯＦＦの切り換えを行う時の機器板１に対する液晶表示部３の角度は、突起部３２の位置を変えることで適宜選定することができる。例えば、図１３は、図１１及び図１２の状態から液晶表示部３を機器本体１に対して更に回転させ角度を３５５°回転させた状態（機器本体１と液晶表示部３との間を５°とした状態）でスイッチが切り換えが行われるようにした。また、図１４は、図１１及び図１２の状態から液晶表示部３と機器本体１との間が３５°となった時に、突起部３２がセンサスイッチ３０の接触部３１に接触し、スイッチが切り換えが行われるようにした。

【００３１】なお、前述の第１実施形態と同様に、センサスイッチ３０及び突起部３２をそれぞれ機器本体１側、ヒンジ部材５側に設けることも可能である。また、センサスイッチ３０をヒンジ部材５側に、突起部３２を液晶表示部３又は機器本体１の側に設けることも可能である。センサスイッチ３０がＯＮの状態では例えばキーボードロックが実行され、センサスイッチ３０がＯＦＦの状態ではキーボードロックが解除される。なお、キーボードロックをかける際は、機器本体１のキーボード部２（図２）のすべてのキーを一斉に機能停止となるようにしても良いが、一部のキーのみが機能停止となるようにしても良い。

【００３２】或いはまた、キーボードロックを実行する代わりに、装置に対するある種の行動、例えば、ペン入力、キーボードによる信号入力の全部又は一部を無視したり、或いは画面表示の全部又は一部を機能停止する、その他種々の状態にすることができる。図１５は上述した第２実施形態の動作を示すフローチャートである。まず、この装置の主電源（図示せず）をＯＮ（ステップ201 ）として、キーボード入力ロックスイッチ１０の状態を見る（ステップ202 ）。スイッチが接触している時（ステップ203 ）はキーボード入力ロック信号を送り（ステップ204 ）、キーボード入力ロックを実行し、（ステップ205 ）、画面での操作のみが可能な状態となり（ステップ206 ）、その他の処理を実行して（ステップ207 ）、ステップ202を戻る。スイッチが接触していない時はキーボード入力ロックを実行せず、したがってキーボード及び画面の両者で入力が可能な状態とし（ステップ208 ）、他の必要な処理を行い（ステップ207 ）、ステップ202 に戻る。

【００３３】以上、添付図面を参照して本発明の実施形態について詳細に説明したが、本発明は上記の実施形態に限定されるものではなく、本発明の精神ないし範囲内において種々の形態、変形、修正等が可能であることに留意すべきである。例えば、スイッチ機構は、前述のように、機械的なスイッチではなく、例えば機器本体に対する液晶表示部の相対的な回転位置を磁気的又は光学的に検出するスイッチであっても良い。この場合は、機械的なスイッチ機構を用いないので、機構部分や可動部分の少ないスイッチとなる。

【００３４】

【発明の効果】以上に説明したような、本発明によれば、機器本体に対して液晶表示部を回転させてその装置の使用形態を変更する際は、ペン操作等の特別の煩わしい操作をすることなく、自動的に液晶表示部の画面の向きを変更する。したがって、掌の上に装置をもって液晶表示部を回転させて縦長の状態とすると、そのまま画面による操作が開始でき、極めて簡単で迅速に操作を行うことができる。

【００３５】また、機器本体に対して液晶表示部を回転させてその装置の使用形態を変更する際に自動的に、機器本体側のキーボード等の所定部分の機能を停止できる。したがって、画面による操作中に何かがキーボードに触れて誤操作を生ずる等の不具合を解消することができる。

【図面の簡単な説明】

【図１】本発明の第１実施形態の装置で液晶表示部を開放した状態の斜視図である。

【図２】図１の装置で液晶表示部を３６０°回転させた状態の斜視図である。

【図３】液晶表示部を機器本体１に対して閉じている不使用の状態（ａ）及び３６０°回転させてペン入力の可能な状態（ｂ）を示す。

【図４】本発明の第１実施形態の画面切り換えスイッチ機構を示す断面図であり、（ａ）はスイッチＯＦＦの状態、（ｂ）はスイッチＯＮの状態を示す。

【図５】図４のＡ－Ａ断面図である。

【図６】図４に示したカムとカム受けの変形例（ａ）及びその動作（ｂ）を示す。

【図７】第１実施形態の動作を示すフローチャートである。

【図８】本発明の第２実施形態で液晶表示部を機器本体に対して３６０°回転させた状態の斜視図である。

【図９】第２実施形態で液晶表示部を閉じた状態の斜視図（ａ）、及びＣの部分の拡大斜視図（ｂ）である。

【図１０】第２実施形態で液晶表示部を閉じた状態の側面図である。

【図１１】図９（ａ）及び（ｂ）に対応する図であるが、液晶表示部と機器本体との間の角度を変えた状態を示す。

【図１２】図１１の状態の側面図である。

【図１３】図１２の状態から更に角度を変えた場合の側面図である。

【図１４】図１３の状態から更に角度を変えた場合の側面図である。

【図１５】本発明の第２実施形態の動作を示すフローチャートである。

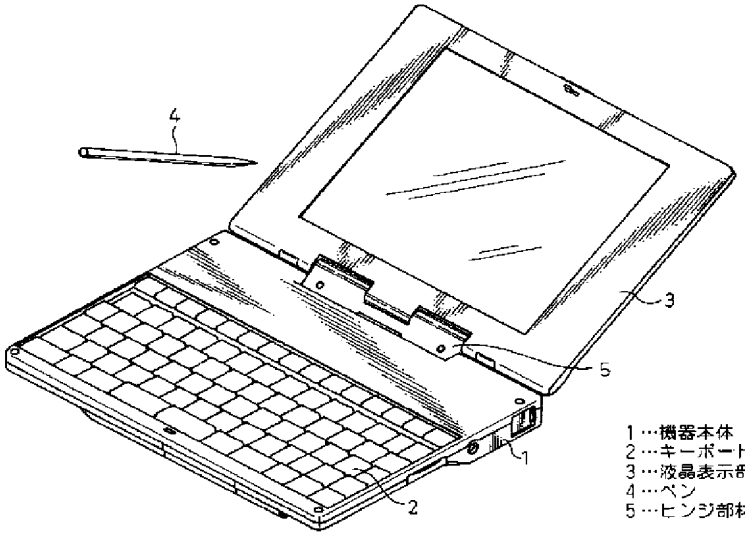
【図１６】従来の携帯用装置を斜視図で、液晶表示部を開放した状態（ａ）及び液晶表示部を３６０°回転させた状態（ｂ）を示す。

【図１７】液晶表示部の画面を９０°回転させる前（ａ）及び後（ｂ）の状態を示す。

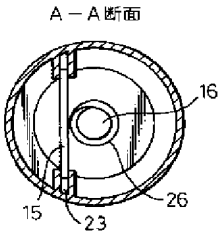
【符号の説明】

１…機器本体
２…キーボード部
３…液晶表示部
４…ペン
５…ヒンジ部材
１０…スイッチ機構
１１…軸
１２…カム
１３…フランジ
１４…カム受け
１５…ガイド板
１６…軸
２０…スイッチ本体
２１…軸受部
２２…環状ガイド溝
２３…軸方向ガイド溝
２４…軸受部
２５…スイッチ素子
２６…スプリング
３０…センサスイッチ
３１…接触部
３２…突起部

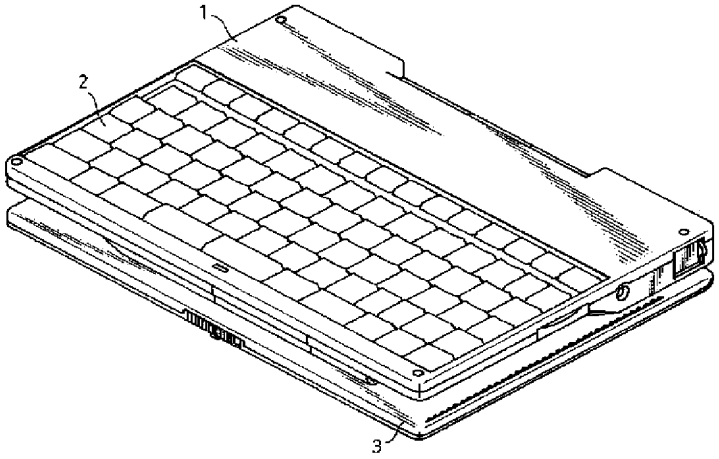
【図１】



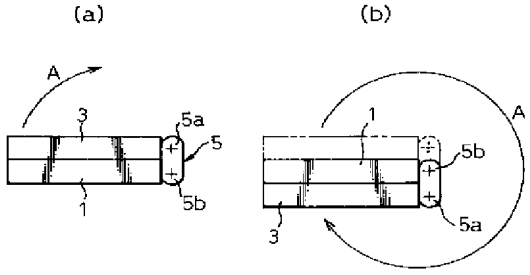
【図５】



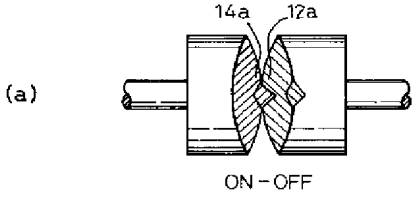
【図２】



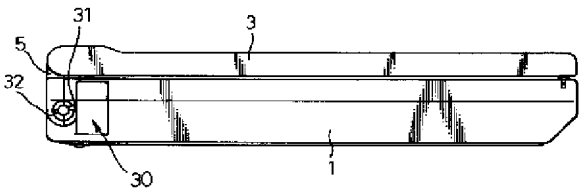
【図３】



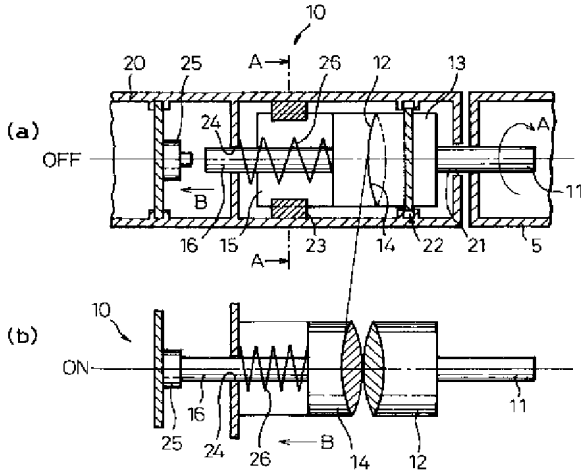
【図６】



【図１０】

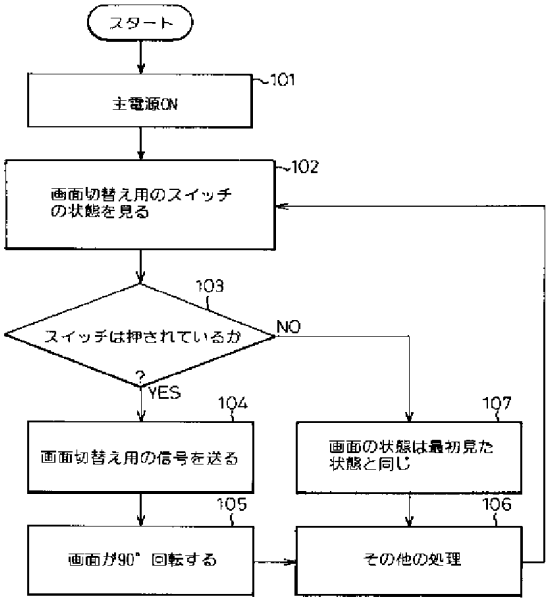


【図４】



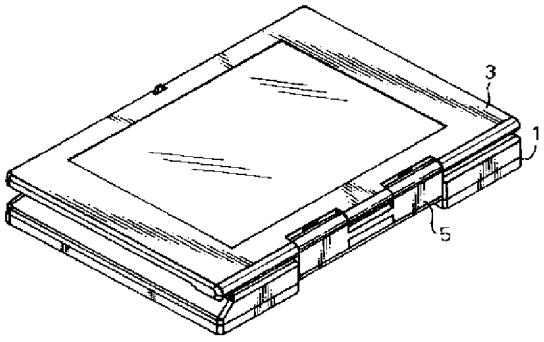
3…液晶表示部　16…軸
5…ヒンジ部材　20…スイッチ本体
10…スイッチ機構　21…軸受部
11…軸　22…環状ガイド溝
12…カム　23…軸方向ガイド溝
13…フランジ　24…軸受部
14…カム受け　25…スイッチ素子
15…ガイド板　26…スプリング

【図７】



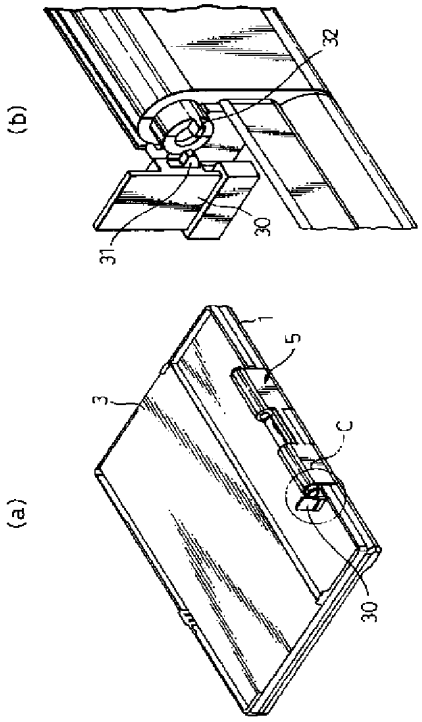
【図８】

液晶部を360°回転させた状態の使用例



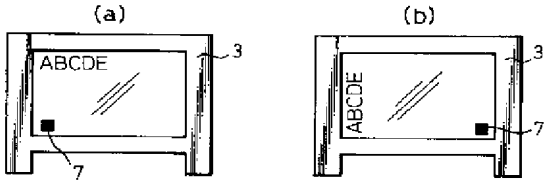
【図９】

液晶部を閉じた状態での突起物とセンサーの位置関係



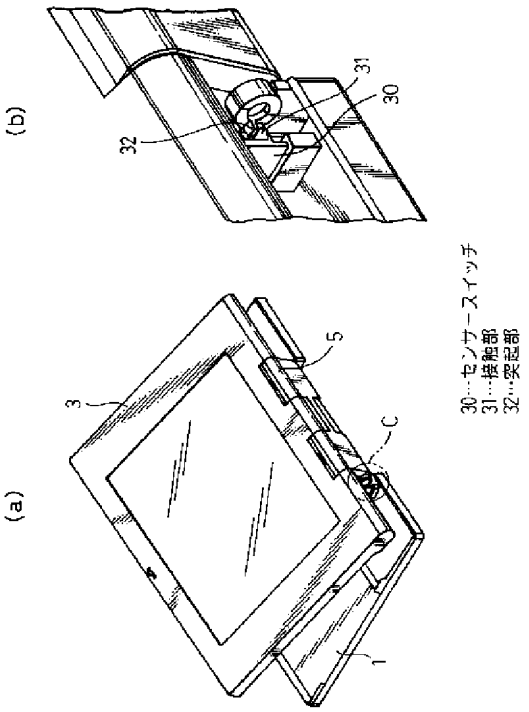
30…センサースイッチ
31…接触部
32…突起部

【図１７】

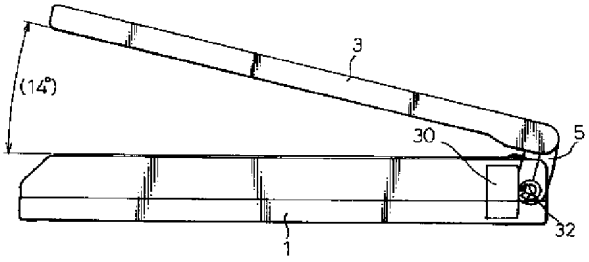


【図１１】

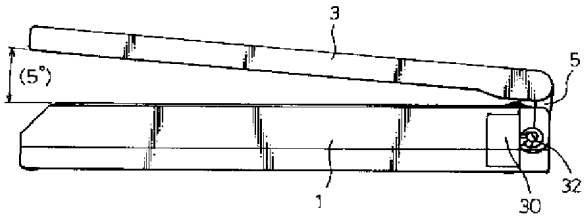
液晶部が回転してセンサーと接触した状態



【図１２】

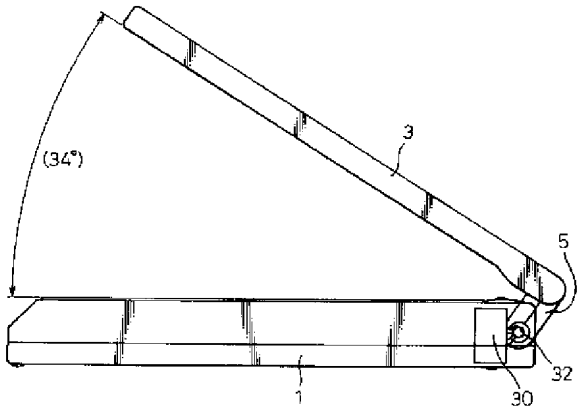


【図１３】

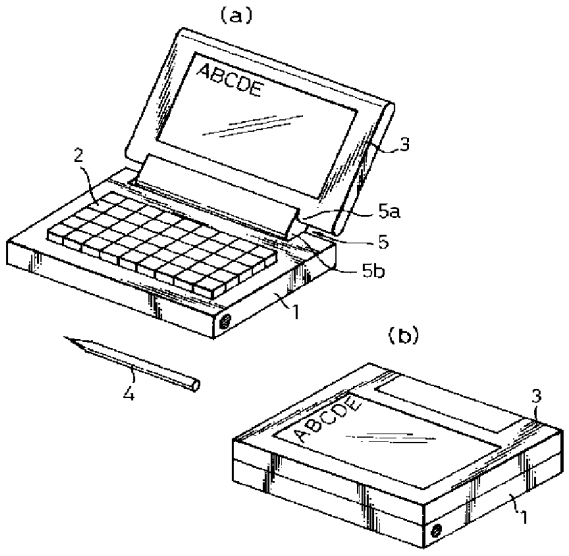


【図１４】

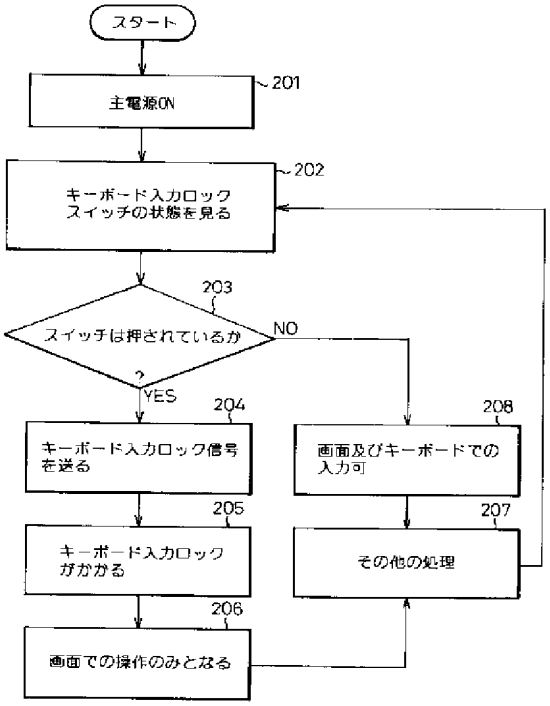
図13の状態から突起物の位置を変えた状態



【図１６】



【図１５】


スタート
主電源ON
201
キーボード入力ロック
スイッチの状態を見る
202
203
スイッチは押されているか
NO
YES
204
キーボード入力ロック信号
を送る
205
キーボード入力ロック
がかかる
206
画面での操作のみとなる
208
画面及びキーボードでの
入力可
207
その他の処理

No documents available for this priority number.

Espacenet

Bibliographic data: JP10111658 (A) — 1998-04-28

SMALL-SIZED PORTABLE INFORMATION PROCESSOR

Inventor(s): NOBUCHI ATSUNOBU; KAMIARI HIDEAKI; GOTO KATSUICHI ± (NOBUCHI ATSUNOBU, ; KAMIARI HIDEAKI, ; GOTO KATSUICHI)

Applicant(s): FUJITSU LTD ± (FUJITSU LTD)

Classification: - international: ***G06F1/16; G09F9/00;*** *H01H3/16;* (IPC1-7): G09F9/00
- cooperative: **G06F1/1618; G06F1/1677; G06F1/1681;** G06F2200/1614; H01H3/162

Application number: JP19960267235 19961008

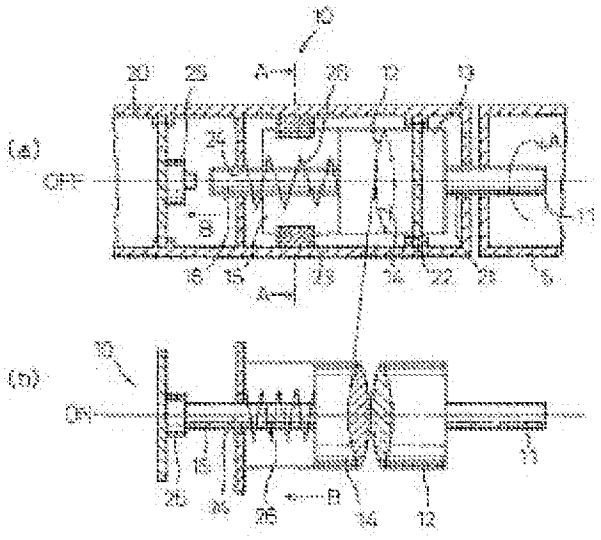
Priority number (s): JP19960267235 19961008

Also published as: JP3676891 (B2) GB2318195 (A) US6492974 (B1)

Abstract of JP10111658 (A)

PROBLEM TO BE SOLVED: To automatically switch a picture of a display part when the use mode of the display part is revised without a need for pen operation, etc., and to simplify the operation by rotatably attaching the display part to an equipment main body, detecting the rotation of the display part for the equipment main body and switching the direction of the picture of the display part. SOLUTION: When the liquid crystal display part is 360 deg. rotated from the state closed for the equipment main body, respective pivot axes of a hinge member 5 are rotated by 180 deg. each respectively, and a cam 12 of a switch mechanism 10 formed on a hinge shaft part between the liquid crystal display part and the hinge member is 180 deg. rotated for a cam reception 14.; Then, the cam reception 14 is moved in the axial direction by the cam 12, and the tip of the shaft 16 is in contact with a switch element 25, and the switch is turned on. Further, when the liquid crystal display part is turned to an original state for the equipment main body, the switch is turned off. In the state that the switch mechanism 10 is turned off, the picture of the liquid crystal display part becomes a long sideways mode, and in the state that the switch mechanism 10 is turned on, the picture of the liquid crystal display part becomes a vertically long mode.

Last updated: 19.12.2012 Worldwide
Database 5.8.4; 92p



No documents available for this priority number.

Espacenet

Bibliographic data: JP6090200 (A) — 1994-03-29

PORTABLE RADIO TELEPHONE SET

Inventor(s): NISHIYAMA TAKANORI; YANAGISAWA KAZUNORI; ITAKURA SAKAE ± (NISHIYAMA TAKANORI, ; YANAGISAWA KAZUNORI, ; ITAKURA SAKAE)

Applicant(s): HITACHI LTD ± (HITACHI LTD)

Classification: - international: ***G06F3/023; G06F3/033; H04M1/00; H04M1/02; H04M1/03; H04M1/247; H04M1/2745; H04M1/725; H04Q7/32;*** *H01H25/00; H01H3/16;* (IPC1-7): H04B7/26; H04M1/03

- cooperative: **G06F3/0236**; **G06F3/0362**; **H04M1/0214**; **H04M1/0218**; **H04M1/0247**; **H04M1/233**; **H04M1/274525**; **H04M1/274558**; **H04M1/72519**; **H04M1/72583**; H01H2019/146; H01H2223/05; H01H25/008; H01H3/162; H04M1/725; H04M2250/70

Application number: JP19920239735 19920908

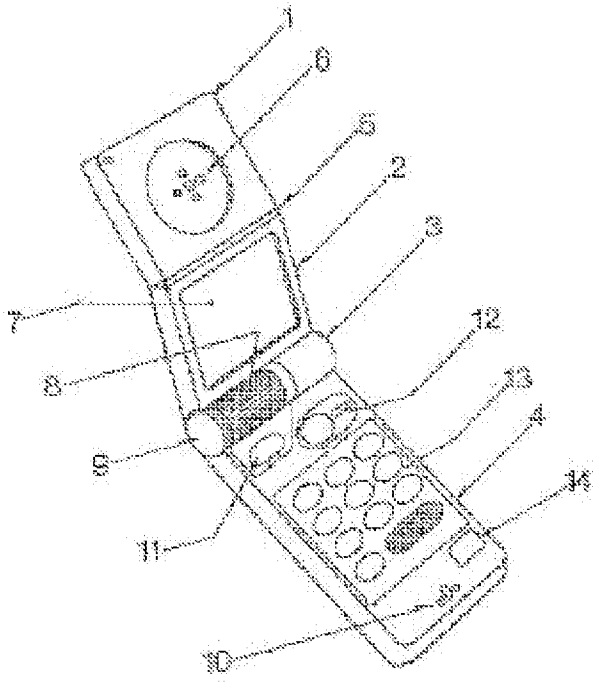
Priority number(s): JP19920239735 19920908

Also published as: JP3268467 (B2) EP0588210 (A1) EP0588210 (B1) US2002025830 (A1) US6628970 (B2) more

Abstract of JP6090200 (A)

PURPOSE:To facilitate various operations especially required for radio call with the finger of a single hand whit holding a telephone set itself with the single hand. CONSTITUTION:A functional selection dial 8 which functions as the one for reception voice sound volume adjustment in a radio call state and functions as the one to select every kind of set in a non-radio call state is provided in such a way that it can freely be turned in a vertical direction at a joint part 3 for housing/folding so as to easily enable access with the finger of the single hand in a state where it is hold with the single hand. Also, when the telephone set is provided so as to be operated from internal and external sides, the reception voice sound volume adjustment in the radio call state can be performed.

Last updated: 19.12.2012 Worldwide
Database 5.8.4; 93p



No documents available for this priority number.

Espacenet

Bibliographic data: JP6090200 (A) — 1994-03-29

PORTABLE RADIO TELEPHONE SET

Inventor(s): NISHIYAMA TAKANORI; YANAGISAWA KAZUNORI; ITAKURA SAKAE ± (NISHIYAMA TAKANORI, ; YANAGISAWA KAZUNORI, ; ITAKURA SAKAE)

Applicant(s): HITACHI LTD ± (HITACHI LTD)

Classification: - international: ***G06F3/023; G06F3/033; H04M1/00; H04M1/02; H04M1/03; H04M1/247; H04M1/2745; H04M1/725; H04Q7/32;*** *H01H25/00; H01H3/16;* (IPC1-7): H04B7/26; H04M1/03

- cooperative: **G06F3/0236**; **G06F3/0362**; **H04M1/0214**; **H04M1/0218**; **H04M1/0247**; **H04M1/233**; **H04M1/274525**; **H04M1/274558**; **H04M1/72519**; **H04M1/72583**; H01H2019/146; H01H2223/05; H01H25/008; H01H3/162; H04M1/725; H04M2250/70

Application number: JP19920239735 19920908

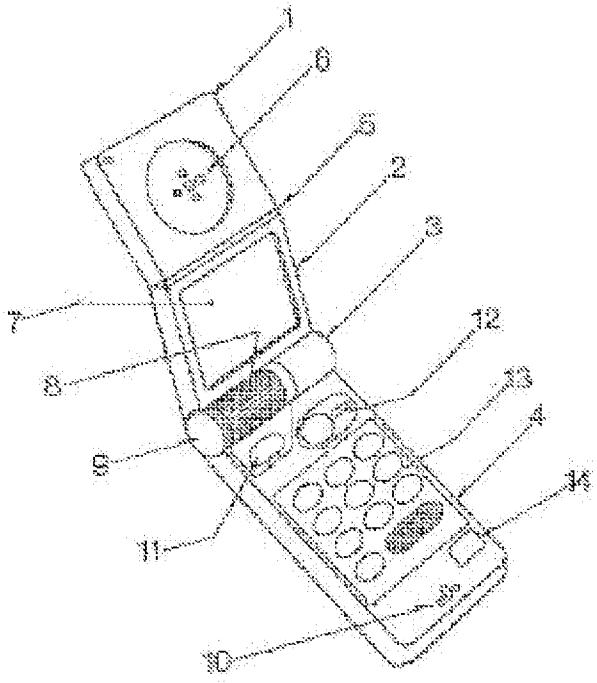
Priority number(s): JP19920239735 19920908

Also published as: JP3268467 (B2) EP0588210 (A1) EP0588210 (B1) US2002025830 (A1) US6628970 (B2) more

Abstract of JP6090200 (A)

PURPOSE:To facilitate various operations especially required for radio call with the finger of a single hand whit holding a telephone set itself with the single hand. CONSTITUTION:A functional selection dial 8 which functions as the one for reception voice sound volume adjustment in a radio call state and functions as the one to select every kind of set in a non-radio call state is provided in such a way that it can freely be turned in a vertical direction at a joint part 3 for housing/folding so as to easily enable access with the finger of the single hand in a state where it is hold with the single hand. Also, when the telephone set is provided so as to be operated from internal and external sides, the reception voice sound volume adjustment in the radio call state can be performed.

Last updated: 19.12.2012 Worldwide
Database 5.8.4; 93p



No documents available for this priority number.

Espacenet

Bibliographic data: JP2004302179 (A) — 2004-10-28

PORTABLE INFORMATION EQUIPMENT AND PICTURE DISPLAY METHOD

Inventor(s): OSHIMA TETSUYA; HIROTA SHOICHI; KANEKO HIRONORI; EDO SUSUMU; SEKIGUCHI YOSHIFUMI; SUGITA TATSUYA; KOMURA SHINICHI; KAWASAKI MASAHIRO ± (OSHIMA TETSUYA, ; HIROTA SHOICHI, ; KANEKO HIRONORI, ; EDO SUSUMU, ; SEKIGUCHI YOSHIFUMI, ; SUGITA TATSUYA, ; KOMURA SHINICHI, ; KAWASAKI MASAHIRO)

Applicant(s): HITACHI LTD ± (HITACHI LTD)

Classification: **- international:** ***G06F1/16; G06F3/023; G09F9/00; G09F9/40; G09G3/20; G09G3/34; G09G3/36; G09G5/00;*** *G06F3/14; G06F3/147;* (IPC1-7): G06F3/023; G09F9/00; G09F9/40; G09G3/20; G09G3/34; G09G3/36; G09G5/00

- cooperative: **G06F1/162; G06F1/1626; G06F1/1635; G06F1/1637; G06F1/1647; G06F1/165; G06F1/1677; G06F1/1684;** G06F2200/1632; G06F2200/1634; G06F3/1423; G06F3/147; G09G2340/14

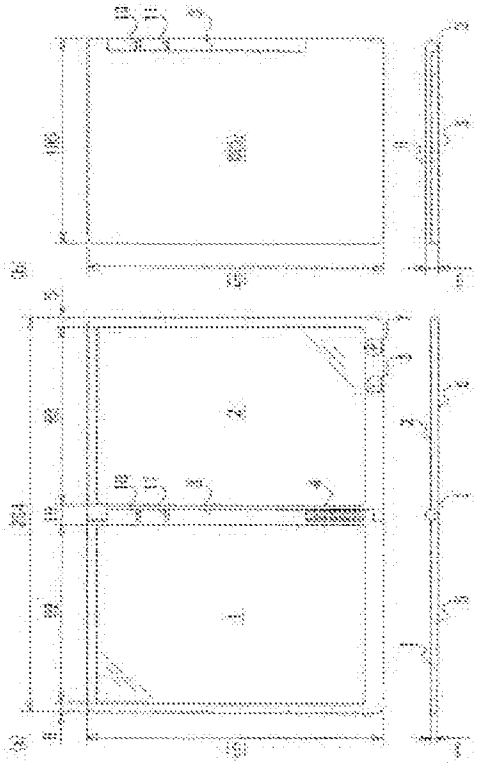
Application number: JP20030095476 20030331

Priority number(s): JP20030095476 20030331

Also published as: US2004207568 (A1)

Abstract of JP2004302179 (A)

PROBLEM TO BE SOLVED: To provide portable information equipment and a picture display method with which operability is improved and handleability enhanced by using a display device performing high definition display of type quality and performing a component arrangement conscious of human engineering. ; SOLUTION: In the portable information equipment, frames 5, 6 on which the display device having main displays 1, 2 performing the high definition display of type quality is mounted are supported freely openably and closably on a connection part 3. The connection part 3 is constituted with a hinge mechanism, the main displays 1, 2 are set in the spread space state and are used by making the connection part 3 a fulcrum and the main displays 1, 2 are overlapped, closed, and folded in two by making the connection part 3 the fulcrum, and can be carried. By rotating a jog dial 4, pictures displayed on the main displays 1, 2 can be changed. A power source switch 7 and a function switch 8 as the necessary switches are mounted on the end part of the frame 6. ; COPYRIGHT: (C)2005,JPO&NCIPI



Last updated: 19.12.2012 Worldwide Database 5.8.4; 93p

No documents available for this priority number.

Espacenet

Bibliographic data: JP2004302179 (A) — 2004-10-28

PORTABLE INFORMATION EQUIPMENT AND PICTURE DISPLAY METHOD

Inventor(s): OSHIMA TETSUYA; HIROTA SHOICHI; KANEKO HIRONORI; EDO SUSUMU; SEKIGUCHI YOSHIFUMI; SUGITA TATSUYA; KOMURA SHINICHI; KAWASAKI MASAHIRO ± (OSHIMA TETSUYA, ; HIROTA SHOICHI, ; KANEKO HIRONORI, ; EDO SUSUMU, ; SEKIGUCHI YOSHIFUMI, ; SUGITA TATSUYA, ; KOMURA SHINICHI, ; KAWASAKI MASAHIRO)

Applicant(s): HITACHI LTD ± (HITACHI LTD)

Classification: **- international:** ***G06F1/16; G06F3/023; G09F9/00; G09F9/40; G09G3/20; G09G3/34; G09G3/36; G09G5/00;*** *G06F3/14; G06F3/147;* (IPC1-7): G06F3/023; G09F9/00; G09F9/40; G09G3/20; G09G3/34; G09G3/36; G09G5/00

- cooperative: **G06F1/162; G06F1/1626; G06F1/1635; G06F1/1637; G06F1/1647; G06F1/165; G06F1/1677; G06F1/1684;** G06F2200/1632; G06F2200/1634; G06F3/1423; G06F3/147; G09G2340/14

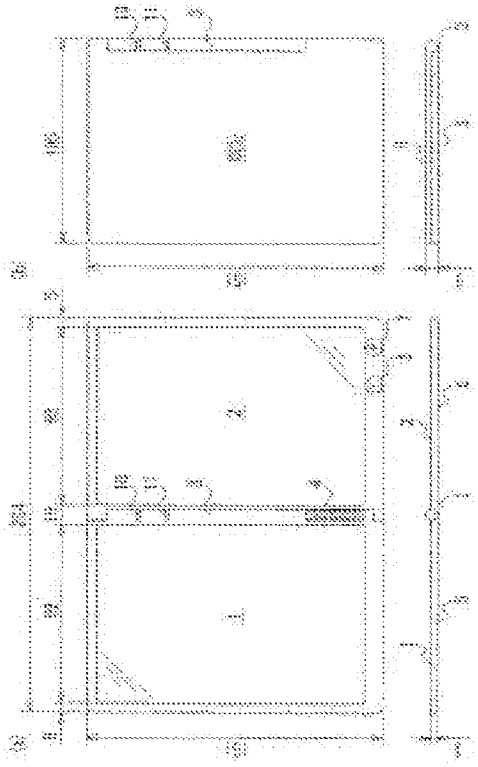
Application number: JP20030095476 20030331

Priority number(s): JP20030095476 20030331

Also published as: US2004207568 (A1)

Abstract of JP2004302179 (A)

PROBLEM TO BE SOLVED: To provide portable information equipment and a picture display method with which operability is improved and handleability enhanced by using a display device performing high definition display of type quality and performing a component arrangement conscious of human engineering. ; SOLUTION: In the portable information equipment, frames 5, 6 on which the display device having main displays 1, 2 performing the high definition display of type quality is mounted are supported freely openably and closably on a connection part 3. The connection part 3 is constituted with a hinge mechanism, the main displays 1, 2 are set in the spread space state and are used by making the connection part 3 a fulcrum and the main displays 1, 2 are overlapped, closed, and folded in two by making the connection part 3 the fulcrum, and can be carried. By rotating a jog dial 4, pictures displayed on the main displays 1, 2 can be changed. A power source switch 7 and a function switch 8 as the necessary switches are mounted on the end part of the frame 6. ; COPYRIGHT: (C)2005,JPO&NCIPI



Last updated: 19.12.2012 Worldwide Database 5.8.4; 93p

[19]中华人民共和国国家知识产权局

[51]Int. Cl[7]
G06F 3/00
G06F 3/033 G06F 1/16

[12]发明专利申请公开说明书

[21]申请号 99803247.6

[43]公开日 2001年4月18日

[11]公开号 CN 1292112A

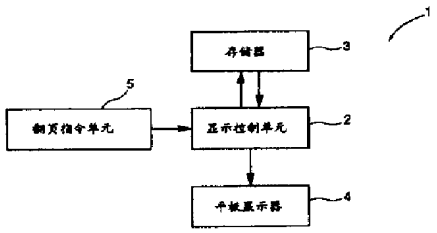
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[30]优先权
[32]1998.2.25 [33]JP [31]43210/1998
[32]1998.3.23 [33]JP [31]73794/1998
[86]国际申请 PCT/JP99/00661 1999.2.15
[87]国际公布 WO99/44117 日 1999.9.2
[85]进入国家阶段日期 2000.8.23
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空闲茂起
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代理人 马 莹

权利要求书5页 说明书22页 附图页数27页

[54]发明名称 显示装置

[57]摘要

一种能够达到给人好像真正翻页的感觉来翻页的显示装置,包括用于存储信息 的存储器;用于显示信息的显示器;用于检测指令单元本身倾斜的情况,输出 指示该倾斜方向的检测信号的翻页指令单元;以及用于从翻页指令单元接收指 令,以便根据所述倾斜的方向从存储器中读取下页或上页的信息,并且在显示 器上显示读取的信息的显示控制单元。



ISSN1008-4274

权 利 要 求 书

1. 一种显示装置，包括:

信息存储装置，用于存储信息;

信息显示装置，用于显示信息;

翻页指令装置，用于检测翻页指令装置自己的倾斜，以输出指示倾斜方向的检测信号; 以及

显示控制装置，用于从所述翻页指令装置接收指令，以便根据倾斜方向从所述信息存储装置读取下页或前页信息，并在所述信息显示装置上显示读取的信息。

2. 如权利要求 1 所述的显示装置，其中

所述翻页指令装置具有覆盖了一层薄膜的表面。

3. 一种显示装置，包括:

信息存储装置，用于存储信息;

信息显示装置，用于显示信息;

翻页指令装置，用于检测指针移动的方向，以便输出指示移动方向的检测信号; 以及

显示控制装置，用于从所述翻页指令装置接收指令，以便根据指针移动的方向从所述信息存储装置读取下页或前页的信息，并在所述信息显示装置上显示读取的信息。

4. 如权利要求 3 所述的显示装置，其中

所述翻动指令装置包含用于覆盖所述信息显示装置的透明触摸板。

5. 如权利要求 3 所述的显示装置，其中

所述显示控制装置包括用于从所述翻页指令装置接收指令，以便根据指针移动的方向以及该指针与所述翻页指令单元接触的时间段从所述的信息存储装置中读取确定页的信息，并在所述信息显示装置上显示读取的信息的装置。

6. 一种显示装置，包括:

信息存储装置，用于存储信息;

信息显示装置，用于显示信息;

翻页指令装置，用于检测被指针接触的位置，以便输出指示触摸位置的

检测信号；以及

显示控制装置，用于从所述翻页指令装置接收指令，以便根据被指针接触的位置变化，从所述信息存储装置中读取下页或前页的信息，并在所述显示装置上显示读取的信息。

7. 一种显示装置，包括：

信息存储装置，用于存储信息；

由至少两个可打开和可关闭的屏幕构成的信息显示装置，用于显示信息；

翻页指令装置，用于检测所述显示装置的开/关操作，以输出检测信号；以及

显示控制装置，用于从翻页指令装置接收指令，以便根据被检测到的开/关操作，切换被显示在所述显示装置上的信息。

8. 如权利要求 7 所述的显示装置，其中

由至少两个屏幕形成的所述信息显示装置安装成面对面。

9. 如权利要求 7 所述的显示装置，其中

所述翻页指令装置包含至少两个被分别装在由至少两个屏幕的所述信息显示装置上的翻页指令装置，以及

所述显示控制装置包含用于从所述至少两个翻页指令装置中接收指令，以便依据每个翻页指令装置输出的检测信号在不同方向上切换信息的装置。

10. 一种显示装置包括：

信息存储装置，用于存储信息；

信息显示装置，用于显示信息；

声音输出装置，用于输出声音；

翻页指令装置，用于发送指令，以便切换在所述显示装置上显示的信息；

显示控制装置，用于从所述翻页指令装置接收指令，以便切换在所述显示装置上显示的信息；以及

连接到所述显示控制装置的声音输出控制装置，用于根据显示在所述显示装置上的信息切换从所述声音输出装置中输出翻纸的声音。

11. 如权利要求 10 所述的显示装置，其中

所述声音输出控制装置包含连接到所述显示控制装置的装置，用于根据显示在所述显示装置上的信息切换从所述声音输出装置中输出翻纸的声音，并依据显示在所述信息显示装置上的信息的切换速度输出不同的声音。

12. 如权利要求 10 所述的显示装置，其中

所述声音输出装置由至少两个声音输出装置形成，以及

所述声音输出控制装置包含连接到所述显示控制装置的装置，用于根据显示在所述显示装置上的信息切换从所述声音输出装置中输出翻纸的声音，并依据切换信息的方向，改变从所述多个声音输出装置中输出的音量大小。

13. 一种显示装置，包括:

信息存储装置，用于存储信息;

由至少两个可打开和可关闭的屏幕构成的信息显示装置，用于显示信息;

转动角度检测装置，用于检测所述显示装置的转动角度; 以及

连接到所述转动角度检测装置的显示控制装置，用于根据所述信息显示装置的转动角度控制是否所述显示装置提供显示;

14. 如权利要求 13 所述的显示装置，其中

所述转角检测装置包括:

配置在所述信息显示装置的屏幕之一上的一个开关; 以及

配置在所述信息显示装置的另一个屏幕之上的开关挤压器，它的定位要使得当所述信息显示装置的转角等于预定角度时，能够挤压所述开关，以及

所述显示控制装置包括连接到所述开关上的装置，用于根据所述开关的输出控制所述显示装置是否提供显示。

15. 如权利要求 13 所述的显示装置，其中

所述转角检测装置包括:

配置在所述信息显示装置的屏幕之一上的多个开关; 以及

配置在所述信息显示装置的另一个屏幕之上的多个开关挤压器，它的定位要使得当所述信息显示装置的转角等于预定角度时，能够分别挤压所述多个开关，以及

所述显示控制装置包括连接到所述多个开关上的装置，用于根据所述多个开关的输出控制所述显示装置是否提供显示。

16. 如权利要求 13 所述的显示装置，其中

所述转角检测装置包括:

配置在所述信息显示装置的屏幕之一上的一个开关；以及

配置在所述信息显示装置的另一个屏幕之上的多个开关挤压器，它的定位要使得当所述信息显示装置的转角等于预定角度时，能够挤压所述开关，以及

所述显示控制装置包括连接到所述开关上的装置，用于根据所述开关的输出控制所述显示装置是否提供显示。

17. 如权利要求 13 所述的显示装置，还包括翻页指令装置，用于发送指令，以便切换显示在所述信息显示装置上的信息，其中

所述显示控制装置包含:

连接到所述转动角度检测装置的装置，用于根据所述信息显示装置的转动角度控制是否所述显示装置提供显示；以及

连接到所述翻页指令装置的装置，用于根据所述翻页指令装置的输出，对应于所述信息显示装置提供显示的屏幕数按单元切换信息。

18. 如权利要求 17 所述的显示装置，其中

所述显示控制装置还包含用于压缩的装置，若所述信息显示装置提供显示的屏幕数量减少，那么在提供显示的屏幕数量减少之前，压缩显示在所述信息显示装置上的信息，并在所述信息显示装置提供显示的屏幕上显示压缩过的信息。

19. 如权利要求 13 所述的显示装置，还包括固定装置，用于把所述信息显示装置固定在预定范围的一个旋转角上。

20. 如权利要求 19 所述的显示装置，还包括防滑装置，所述的装置配置在接触板底部的部分，用于防止固定在预定范围的一个旋转角度上的信息显示装置的滑动。

21. 一种显示装置，包括:

信息存储装置，用于存储信息;

由至少两个可打开和可关闭的屏幕构成的信息显示装置，用于显示信息;

由至少两个分别配置在所述信息显示装置屏幕上的组件形成的接触面积检测装置，用于检测被指针接触的所述信息显示装置上的面积；以及

连接到所述接触面积检测装置的显示控制装置，用于根据由指针接触的所述接触面积检测装置的面积，控制是否所述显示装置提供显示。

22. 如权利要求 21 所述的显示装置，其中

所述显示控制装置包括使所述信息显示装置的屏幕不提供显示的装置，该屏幕对应于被指针接触的面积是最大的的所述接触面积检测装置的一部分。

23. 如权利要求 21 所述的显示装置，其中

所述显示控制装置包括:

用于根据由指针接触的所述接触面积检测装置的面积，控制是否所述显示装置提供显示的装置；以及

用于从所述信息存储装置中，根据接触所述检测装置的指针的移动方向读取下页或前页的信息，并在所述信息显示装置上显示读取的信息的第一装置。

24. 如权利要求 23 所述的显示装置，其中

所述第一装置包括用于根据由指针接触的所述接触面积检测装置的面积，控制是否所述显示装置提供显示，根据接触所述检测装置的指针的移动方向，把对应于所述信息显示装置提供显示的屏幕数作为一个单元，从所述信息存储装置中读取下页或前页的信息并在所述信息显示装置上显示读取的信息的装置。

25. 如权利要求 23 所述的显示装置，其中

所述显示控制装置还包含用于压缩的装置，若所述信息显示装置提供显示的屏幕数量减少，那么在提供显示的屏幕数量减少之前，压缩显示在所述信息显示装置上的信息，并在所述信息显示装置提供显示的屏幕上显示压缩过的信息。

说　明　书

显示装置

技术领域

本发明涉及显示装置，具体地讲，本发明涉及能够通过使用象书一样可打开显示数据，并能允许用户以用户真正翻页的感觉翻页的显示装置。

背景技术

显示电子书籍等的传统的便携式显示装置通过按向前页按钮或向后页按钮来翻页。

日本专利第 258076 号（日本专利公开号 2-230313）公开了一种浏览装置，它通过用户转动转动检测器发出指令来翻页。这份日本专利也公开了用于通过压力检测器翻页的指令。根据这份日本专利，浏览的方向和速度由正向浏览压力检测器和负向浏览压力检测器之间的压力差确定。以上这份专利还公开了用于通过使用曲率检测器和开关翻页的指令。根据这份专利，浏览的速度基于被曲率检测器检测到的曲率大小计算，而浏览的方向基于开关的状态确定。

日本专利公开号 2-148257 公开了一种便携式文件处理器，具有一个相当于一页的显示屏幕。这种处理器通过按向前页键以使得相当于一页的显示数据从存储器 3 中读出，并且读出的显示数据存储在显示缓冲存储器 3。因此，相当于一页的显示数据被存储在显示缓冲存储器 3 中，以便显示一页数据到显示屏上。这样，用户可以象用户通过翻页来读书一样地来读文件。

日本专利公开号 63-116287 公开了一种显示装置，它有两个可打开的显示屏幕。用户可以通过操作一个输入键来翻页。

以上提到的浏览装置通过按一个按钮或转动一个滚轮（roller）来翻页，它不同于一般的书或杂志翻页。既然这样，电子书籍不能以给人一种真正地翻由纸张、塑料等印制的书或杂志的书页的感觉那样来读。

如果不用手指等触摸按钮或滚轮就能够翻页，那将是很方便的。

以上的浏览装置和便携式文件处理器只有一个显示屏幕，这不便于装置的使用。

虽然以上所述的显示装置具有两个显示屏幕，但作为一个整体该屏幕不能被背靠背地折叠起来使用。结果，该显示装置占较大的地方，使它难于握在手上，从而产生关于便携性的问题。即使显示装置能够背靠背地折叠起来，但数据总是还显示在不被用户观看的那个屏幕上，引起信息泄漏以及电源浪费。

此外，既然以上的显示装置不能够背靠背地折叠起来，如果本装置用于玩比赛性游戏，例如，那种一个玩家最好不示出自己的牌的游戏，则该玩家就不能对对家隐瞒其牌的秘密。

发明的公开

因此本发明的一个目的是提供一种能够翻电子书籍的页的显示装置，以给人一种由纸张、塑料等印制的书或杂志的页真正翻动感觉。

本发明的另一个目的是提供一种能够翻页的显示装置，这种装置通过同一种操作不但能够给人一种书页真正翻动的感觉，而且还有一页一页地翻页和连续地翻页的能力。

本发明的再另一个目的是提供一种显示装置，即使用户不移动象手和手指这样的指针到按钮，也能够翻页。

本发明的另外一个目的是提供一个能够被折叠成背对背形式，并且能够握在手中的显示装置，它具有尺寸小、携带方便、耗能低并且适合于玩比赛性游戏。

本发明的再另外一个目的是提供一种显示装置，它在防止信息泄漏方面具有优势，并且能耗低。

根据发明的一方面，显示装置包括：存储器，用于存储信息；显示器，用于显示信息；翻页指令单元，用于检测指令单元自己倾斜的情况，以输出一个指示该倾斜方向的检测信号；以及显示控制单元，用于从翻页指令单元接收指令，以便根据所述倾斜的方向从存储器中读取下一页或上一页的信息，并且在显示器上显示读取的信息。

响应于用户的手指或手在翻页指令单元之上的滑动，显示控制单元翻一

页。这样，用户能够以好像用户是在真正地用手翻一页纸一样地翻页。

根据发明的另一方面，显示装置包括：存储器，用于存储信息；显示器，用于显示信息；翻页指令单元，用于检测指针移动方向，以输出一个指示该移动方向的检测信号；以及显示控制单元，用于从翻页指令单元接收指令，以便根据所述移动的方向从存储器中读取下一页或上一页的信息，并且在显示器上显示读取的信息。

响应于如用户的手指或手这样的指针在翻页指令单元之上的移动，显示控制单元翻一页。这样，用户能够以好像用户是在真正地用手翻一页纸一样地翻页。

显示控制单元最好包括用于从翻页指令单元接收指令的单元，以便从根据指针移动的方向和指针接触翻页指令单元的时间长度确定的一页的存储器信息中，读取下一页或上一页的信息，并且在显示器上显示读取的信息。

显示控制单元根据指针接触翻页指令单元的时间长度变化将要翻的页数。这样，书页能以同样的操作一页一页地翻页，也能连续地翻页。

根据发明的再另一方面，显示装置包括：存储器，用于存储信息；显示器，用于显示信息；翻页指令单元，用于检测被指针接触的位置，以输出一个指示触摸位置的检测信号；以及显示控制单元，用于从翻页指令单元接收指令，以便根据被指针接触的位置变化，从存储器中读取下一页或上一页的信息，并且在显示器上显示读取的信息。

用户能够通过用指针接触翻页指令单元两次来翻一页。翻页的方向根据触摸位置的变化确定。这样，用户能够以好像用户是在真正地用手翻一页纸一样地翻页。

根据发明的另外一方面，显示装置包括：存储器，用于存储信息；由至少两个可打开和可关闭的屏幕构成的显示器，用于显示信息；翻页指令单元，用于检测显示器的开/关操作，以输出一个检测信号；以及显示控制单元，用于从翻页指令单元接收指令，以便根据被检测到的开/关操作，切换被显示在显示器上的信息。

用户能够通过显示器的开/关操作翻页。这样，在手握显示装置的同时，还能够不移动象手和手指之类的指针到按钮就翻页。

根据发明的再另外一方面，显示装置包括：存储器，用于存储信息；显示器，用于显示信息；音箱，用于输出声音；翻页指令单元，用于发送一个

指令，以便切换在显示器上显示的信息；显示控制单元，用于从翻页指令单元接收指令，以便切换在显示器上显示的信息；以及连接到显示控制单元的声音输出控制单元，用于根据显示在显示器上的切换信息从音箱中输出翻纸的声音。

声音输出控制单元在翻页的同时输出翻纸的声音。这样，用户能够以好像用户在翻一页纸一样的感觉翻页。

音箱最好由至少两个扬声器构成。声音输出单元包括和显示控制单元相连的电路，以根据显示在显示器上的切换信息从扬声器中输出翻纸的声音，并且根据切换信息的方向，在变化声音输出的音量的同时，从至少两个扬声器中输出声音。

根据用户翻页的方向，翻纸的声音以移动声音的中心的方式产生。这样，用户能够以好像用户在真正地翻一页纸一样的感觉翻页。

根据发明的再另外一方面，显示装置包括：存储器，用于存储信息；由至少两个可打开和可关闭的屏幕构成的显示器，用于显示信息；转动角度检测单元，用于检测显示器的转动角度；以及连接到转动角度检测单元的显示控制单元，用于根据显示器的转动角度控制是否该显示器提供显示。

显示控制单元在用户背靠背地折叠显示器时，能够产生一个控制来促使不被用户观看的屏幕不提供显示。因此，可以提供一种在防止信息泄漏方面有优势的显示装置。也可以降低显示装置的能耗。此外，还可以提供一种更加便携，具有能够由用户自由转动，以使得即使显示装置所占的地方减少用户也能够观看显示的显示器之优势的显示装置。

该显示装置最好包括一个固定单元，用于把显示器固定在预定范围的一个转动角度上。

用户能够把显示器固定在预定范围的一个转动角度上。这样，用户能够玩不允许用户的牌泄漏给对家的比赛性游戏。

根据发明的再另外一方面，显示装置包括：存储器，用于存储信息；由至少两个可打开和可关闭的屏幕构成的显示器，用于显示信息；有至少两个对应于各自的显示屏幕配置的组成部件构成的图形输入板单元，用于检测指针接触的显示器的面积；以及连接到图形输入板的显示控制单元，用于根据指针接触的图形输入板单元的面积控制是否显示器提供显示。

显示控制单元根据诸如手指之类的指针接触的图形输入板单元的面

积，确定显示器屏幕中的那一个被用户观看，以便于在不被观看的屏幕上不提供显示。因此，可以提供一种在防止信息泄漏方面有优势的显示装置。也可以降低显示装置的能耗。

附图的简要描述

图 1 示出的是本发明的第一实施例的显示装置的结构方框图。

图 2 示出本发明的第一实施例的显示装置的外观。

图 3 是翻页指令单元的截面图。

图 4 是翻页指令单元的等效电路图。

图 5 示出的是本发明的第二实施例的显示装置的结构方框图。

图 6 示出本发明的第二实施例的显示装置的外观。

图 7 和 8 示出的是翻页处理的流程图。

图 9 示出具有触摸位置的检测器的显示装置的外观。

图 10 图解表示触摸板的翻页有效区。

图 11 示出的是本发明的第三实施例的显示装置的结构方框图。

图 12 示出本发明的第三实施例的显示装置的外观。

图 13 示出倾斜检测器的结构。

图 14 示出的是翻页处理的流程图。

图 15 示出的是本发明的第四实施例的显示装置的结构方框图。

图 16 示出本发明的第四实施例的显示装置的外观。

图 17 示出的是声音输出处理的流程图。

图 18 示出的是本发明的第五实施例的显示装置的结构方框图。

图 19 示出本发明的第五实施例的显示装置的外观。

图 20 从侧面示出了显示装置。

图 21 示出了开关和开关挤压器的结构。

图 22 示出了施加到图 21 所示的开关上的压力和该开关的状态。

图 23 图解表示翻页指令单元。

图 24 示出了开关和开关挤压器的结构。

图 25 示出了施加到图 24 所示的开关上的压力和该开关的状态。

图 26 示出了通过图 25 中形成的开关状态产生的开关的状态。

图 27 和 28 图解表示翻页指令单元。

图 29 示出的是本发明的第六实施例的显示装置的结构方框图。

图 30 示出了第一开关和第一开关挤压器的结构。

图 31A 示出了第一开关的一种状态。

图 31B 示出了第二开关的一种状态。

图 32 图解表示第一和第二开关的状态之间的关系，以及在平板显示器 4A 和 4B 上的显示状态。

图 33 是本发明的第七实施例的显示装置的结构方框图。

图 34 示出了一个开关与第一和第二开关挤压器的结构。

图 35 是本发明的第八实施例的显示装置的结构方框图。

图 36 示出本发明的第八实施例的显示装置的外观。

图 37A 示出了开着的显示装置的外观。

图 37B 图解表示手指接触被背靠背地折叠起来的平板显示器的区域。

图 38 从侧面示出了关着时显示装置。

图 39 图解表示在开关状态、指针和平板显示器 4A 和 4B 之间的接触状态以及在平板显示器 4A 和 4B 上的显示状态之间的关系。

图 40 是本发明的第十实施例的显示装置的结构方框图。

图 41 示出了第三开关的状态。

图 42 图解表示在第一到第三开关的状态与在平板显示器 4A 和 4B 上的显示状态之间的关系。

图 43 示出了被背靠背地折叠起来的平板显示器 4A 和 4B 的外观。

图 44 示出了第三开关和第三开关挤压器的结构。

图 45 示出了具有一个带钉的平板显示器和一个带挂钩的平板显示器的显示装置的外观。

图 46 示出了一种显示装置的外观，该显示装置被施加了一层防滑外壳。

图 47 示出了一种显示装置的外观，该显示装置安装在一个用于防滑的底座上。

图 48 是本发明的第十一实施例的显示装置的结构方框图。

图 49 示出了一个开关和第一到第三开关挤压器的结构。

实现本发明的最佳实施例

第一实施例

参考图 1，第一实施例的显示装置 1 包括：存储器 3，它由象半导体存储器、硬盘、MO（Magneto-Optical，磁光盘）那样的磁性存储装置构造而成，用于存储图像信息、字符信息等；平板显示器 4，它由液晶板、PDP（Plasma Display Panel，等离子体显示板）等构造而成，用于显示图像信息、字符信息等；显示控制单元 2，用于控制存储在存储器 3 中的图像信息、字符信息等的读取，以及读取的信息在平板显示器 4 上的显示；翻页指令单元 5，用于从用户那里接收翻页指令，以便指示显示控制单元 2 翻页。

这以后所述的用户包括除了动物如人类之外的软件动作者（software agent），诸如机器人之类的人造肢体。

参考图 2，显示装置 1 采用两个平板显示器 4 和两个翻页指令单元 5。平板显示器 4 的数量和翻页指令单元 5 的数量都不限制成二，可以是一个，也可以至少三个。如果平板显示器 4 和翻页指令单元 5 的数量都是两个或者更多，那么它们可以被构造成在它们不被使用和打开成使用状态时，该显示器和指令单元被折叠起来。虽然图 2 示出了放成背靠背的平板显示器 4，但这安排不因此限制成这种形式。

翻页指令单元 5 安排在显示装置 1 的一条边上。显示控制单元 2 和存储器 3 装在显示装置 1 中。

图 3 是图 2 中的翻页指令单元 5 沿线 III-III 的截面图。翻页指令单元 5 由以下部分构造而成：支撑轴 5d，围绕 5d 转动的柱状形物体之中的开关 5c，触点 5a’和 5b’。开关 5c 在两个边上有触点 5a 和 5b。在图 3 中的开关 5c 绕着支撑轴 5d 反时针转动，以允许触点 5a 和 5a’实现相互接触。在图 3 中，开关 5c 绕着支撑轴 5d 顺时针转动允许触点 5b 和 5b’处于相互接触状态。开关 5c 由弹簧支撑（未显示），并且当触点不相互接触时，是稳定的。开关 5c 的表面被覆盖上一层橡胶件、硅、塑料等薄膜 5e。因此，翻页指令单元 5 被加固，任何电器损害都可以避免，并且象灰尘之类的外部物质不能进入显示装置 1。

图 4 是翻页指令单元 5 的等效电路图。该指令单元被构造成满足：当触点 5b 和 5b’相互接触时，触点 5a 和 5a’互相不接触。当所有触点都不相

互接触时，时常是稳定状态。当触点 5a 和 5a’成为相互接触时，在 5a”点的电压变化。当触点 5b 和 5b’成为相互接触时，在 5b”点的电压变化。显示控制单元 2 通过在点 5a”和点 5b”的电压变化来检测翻页的指令。

再参考图 3，用户在翻页指令单元 5 的左上角和右下角之内滑动手指或手。因此 5c 被转动。这里的“滑动”词也指在接近 5a 和 5b 的任何位置，用手指或手按。换句话说，这个词指的是一个类似于用手翻用纸印刷的书的操作。开关 5c 的转动促使在 5a”或 5b”点的电压变化，因此显示控制单元 2 能够检测到用户想要的方向。

例如，当用户在左边翻页指令单元 5 右上方内滑动手指或手时，显示控制单元 2 朝前翻页。当用户在右边翻页指令单元 5 左上方内滑动手指或手时，显示控制单元 2 往回翻页。因此，用户能够像用户真正在用手翻纸一样执行翻页。

当用户在左边翻页指令单元 5 左下方内滑动手指或手时，显示控制单元 2 往回翻页。当用户在右边翻页指令单元 5 右下方内滑动手指或手时，显示控制单元 2 朝前翻页。通过显示控制单元 2 的这样一个控制，使得用户通过仅仅一个指令单元 5 就能够朝前和往回翻页。因此，用户能够用一只手翻页。

第二实施例

参考图 5，第二实施例的显示装置 11 包括：类似于第一实施例中的存储器 3；类似于第一实施例中的平板显示器 4；显示控制单元 12，用于控制存储在存储器 3 中的图像信息、字符信息等的读取，以及读取的信息在平板显示器 4 上的显示；以及触摸板 15，摆成完全覆盖平板显示器 4，以接收从用户那里来的翻页指令，并送一个指令给显示控制单元 12 以便翻页。

参考图 6，第二实施例中的显示装置 11 包括两个平板显示器 4 和两个触摸板 15。两组平板显示器 4 和触摸板 15 背靠背地安排。平板显示器 4 和触摸板 15 的数量不限制为两个，可以是一个，也可以至少三个。显示控制单元 12 和存储器 3 被装在显示装置 11 中。

触摸板 15 是一个检测由象手指和笔一样的指针接触的位置的检测器。显示控制单元 12 根据指针接触触摸板的时间长度，改变翻页的页数。

参考图 7，描述了由显示控制单元 12 执行的翻页控制处理。这里所指的书被假定显示在右边的平板显示器 4 上的、页码较小的一页是垂直书写的。如果显示在右边的平板显示器 4 上、页码较小的一页是水平书写的，则前后

方向互相交换。

显示控制单元 12 确定是否触摸板 15 检测到用象手指和笔之类的指针的接触（S11）。如果触摸板 15 没有检测到与指针的接触（在 S11 中“否”），则显示控制单元 12 重复 S11 中的处理，直到触摸板 15 检测到与指针的接触。

当触摸板 15 检测到与指针的接触（在 S11 中“是”），则显示控制单元 12 确定指针在触摸板 15 上移动的方向（S12）。如果指针从左到右移动（在 S12 中“左到右”），则显示控制单元 12 在朝前方向翻一页（S13）。在这以后，显示控制单元 12 确定指针与触摸板 15 之间的接触是延续了一个预定的时间长度还是更长（S14），如果指针与触摸板 15 之间的接触时间小于一个预定的时间长度（在 S14 中“否”），则显示控制单元 12 重复 S14 中的处理。如果指针与触摸板 15 之间的接触时间至少是预定的时间长度（在 S14 中“是”），则显示控制单元 12 再在朝前方向翻一页（S13）。当指针离开触摸板 15 时（在 S14 中“离开触摸板 15”），由显示控制单元 12 执行的处理结束。

如果指针从右到左移动（在 S12 中“右到左”），则显示控制单元 12 在朝后方向翻一页（S15）。在这以后，显示控制单元 12 确定指针与触摸板 15 之间的接触是延续了一个预定的时间长度还是更长（S16），如果指针与触摸板 15 之间的接触时间小于一个预定的时间长度（在 S16 中“否”），则显示控制单元 12 重复 S16 中的处理。如果指针与触摸板 15 之间的接触时间至少是预定的时间长度（在 S16 中“是”），则显示控制单元 12 再在朝后方向翻一页（S13）。当指针离开触摸板 15 时（在 S16 中“离开触摸板 15”），由显示控制单元 12 执行的处理结束。

参考图 8，显示控制单元 12 可以控制以下描述的翻页。根据图 7 图解的处理实例，用户通过用指针接触触摸板 15 和移动与触摸板 15 接触的指针，指定朝前或朝后的方向。根据在图 8 中图解的处理实事例。朝前或朝后的方向通过移动指针，而又不使指针接触触摸板 15 来指定。

显示控制单元 12 确定是否触摸板 15 检测到与指针的接触（S40）。如果触摸板 15 没有检测到与指针的接触（在 S40 中“否”），显示控制单元 12 重复 S40 中的处理，直到触摸板 15 检测到与指针的接触为止。

如果触摸板 15 检测到与指针的接触（在 S40 中“是”），显示控制单元 12 记录下接触的位置，并且确定在触摸板 15 和指针之间是否存在第二次接触（S41）。如果在一个预定的时间段或更长的时间段之内没有第二次接触（在

S41 中“在预定时间之内没有任何”），显示控制单元 12 的处理结束。

当触摸板 15 检测到与指针的第二次接触（在 S41 中“是”）时，显示控制单元 12 根据第一和第二次触摸位置之间的差计算指针移动的方向，以确定移动的方向（S42）。如果指针从左到右移动（在 S42 中“左到右”），则显示控制单元 12 在朝前方向翻一页（S43）。在这以后，显示控制单元 12 确定指针与触摸板 15 之间的接触是否延续了一个预定的时间长度或更长（S44），如果指针与触摸板 15 之间的接触时间小于一个预定的时间长度（在 S44 中“否”），则显示控制单元 12 重复 S44 中的处理。如果指针与触摸板 15 之间的接触时间至少是预定的时间长度（在 S44 中“是”），则显示控制单元 12 再在朝前方向翻一页（S43）。当指针离开触摸板 15 时（在 S44 中“离开触摸板 15”），由显示控制单元 12 执行的处理结束。

如果指针从右到左移动（在 S42 中“右到左”），则显示控制单元 12 在朝后方向翻一页（S45）。在这以后，显示控制单元 12 确定指针与触摸板 15 之间的接触是否延续了一个预定的时间长度或更长（S46），如果指针与触摸板 15 之间的接触时间小于一个预定的时间长度（在 S46 中“否”），则显示控制单元 12 重复 S46 中的处理。如果指针与触摸板 15 之间的接触时间至少是预定的时间长度（在 S46 中“是”），则显示控制单元 12 再在朝后方向翻一页（S43）。当指针离开触摸板 15 时（在 S46 中“离开触摸板 15”），由显示控制单元 12 执行的处理结束。

当采用图 6 所示的、具有两屏幕结构的显示装置 11 时，指针与触摸板 15 之间的第一和第二次接触可以对同一触摸板 15 产生影响。作为选择，指针在第一次接触时可以与左触摸板 15 接触，而在第二次接触时与右触摸板 15 接触。通过这样的操作，用户能够以好像用户翻用纸印刷的书一样的感觉翻页。

如果第一次接触的位置十分接近第二次接触的位置，特别地，例如，两次触摸位置之间的距离是 10mm 或更小，且同时允许指针与触摸板 15 接触，那么显示控制单元 12 可以确定用户移动指针位置，并且根据图 7 所示的流程图执行翻页处理。

参考图 9，用现在正被笔记本式个人电脑用作指针装置的触摸位置检测器 16 替代触摸板 15。既然这样，触摸位置检测器 16 与平板显示器 14 分开安排。

参考图 10，触摸板 15 可以有一部分作为翻页有效区 15a，用户可以仅仅通过翻页有效区 15a 发出翻页指令。既然这样，能够防止由于手指的偶然接触引起的错误操作。虽然图 10 中的翻页有效区 15a 形状是一个三角形，但形状并不限于此，可以是另一个多边形、弧形、圆形等。翻页有效区 15a 的位置不限于左下角和右下角，可以在相当于触摸板的底部三分之一的带状区域之内。

如以上描述的那样，用户可以通过用指针接触或移动指针变化一页。因此，用户能够以好像用户翻用纸印刷的书一样的感觉翻页。

将要翻动的页数根据指针与触摸板 15 之间的接触时间长度变化。因此，同一种操作既能达到一页一页地翻页，也能达到连续地翻页的目的。

此外，翻页有效区 15a 的安排能够防止由手指偶然接触引起的错误操作。

第三实施例

参考图 11，根据第三实施例的显示控制单元 21 包括：类似于第一实施例的存储器 3；类似于第一实施例中的平板显示器 4；显示控制单元 22，用于控制图像信息、字符信息等存储在存储器 3 中信息的读取操作，以及读取的信息在平板显示器 4 上显示操作，以及倾斜度检测器 25，用于发送翻页指令给显示控制单元 22。

参考图 12，根据第三实施例的显示控制单元 21 包括：两个平板显示器 4 和两个倾斜度检测器 25，并且平板显示器 4 和倾斜度检测器 25 的两组面对面安排。显示控制器 22 和存储器 3 装在显示装置内。倾斜度检测器 25 的位置不限于图 12 所示的那样。但从倾斜度检测器 25 的特性考虑，检测器尽可以远离平板显示器 4 的转轴。

参考图 13，倾斜度检测器 25 包括：一个中空的柱体 25d；一个被包在柱体 25d 之中的导电球 25c；以及安装在柱体 25d 的上部的电极 25a 和 25b。如图 13 所示，当倾斜度检测器 25 处于正常状态时（“关”状态），球 25c 位于柱体 25d 的下部，球 25c 与电极 25a 和 25b 不接触。整个检测器的转动和倾斜引起球 25c 在柱体 25d 中移动，并接触到安装在柱体 25d 的上部的电极 25a 和 25b。结果，电流在电极 25a 和 25b 之间流动，从而检测到倾斜度检测器 25 的倾斜度（“开”状态）。

这里假设，当显示控制单元 121 是如图 12 所示的开状态时，左和右边

的倾斜度检测器 25 都是处于“关”状态。如果平板显示器 4 中的一个是固定的，而别的平板显示器 4 被关闭接着又打开，则斜度检测器 25 之一进入“开”状态。然后显示控制单元 22 能够检测右和左边平板显示器 4 中的那一个被打开和关闭。

参考图 14，描述了由显示控制单元进行的翻页控制处理。在图 14 所示的处理中，假设这里所指的书显示在右边的平板显示器 4 上的、页码较小的一页是垂直书写的。

显示控制单元 22 一直等待到斜度检测器 25 进入“开”状态（S21）为止。当斜度检测器 25 的状态变成“开”（在 S21 中“开”）时，显示控制单元确定右和左斜度检测器 25 中的那一个处于“开”（S22），如果左边的斜度检测器 25 处于“开”（S22 中“左”），则显示控制单元 22 一直等待到斜度检测器 25 进入“关”状态（S23）为止。当斜度检测器 25 的状态变成“关”（在 S25 中处于“关”）时，显示控制单元 22 控制在朝前方向翻一页。

如果右边的斜度检测器 25 变成“开”（S23 中“右”），则显示控制单元 22 一直等待到右边的斜度检测器 25 变成“关”状态（S25）。当右边的斜度检测器 25 的状态变成“关”（在 S25 中处于“关”）时，显示控制单元 22 控制在朝后方向翻一页。

因此，用户能够通过打开和关闭显示装置来翻页。故在用户手握显示装置 21 的同时，不用移动手或手指到按钮就能翻页。

第四实施例

参考图 15，根据第四实施例的显示装置 31 包括：由象硬盘、MO 这样的磁性存储装置构造而成的存储器 33，用于存储图像信息、字符信息、音频信息等；类似于第一实施例中的平板显示器 4；显示控制器 32，用于控制存储在存储器 3 中的图像信息、字符信息等的读取，以及读取的信息在平板显示器 4 上的显示；类似于第二实施例中的触摸板 15；以及音频控制器 36，用于读取存储在存储器 3 中的声音信息，以便在显示控制器 32 翻动有在平板显示器 4 上显示的信息的页时，经音箱 37 输出翻一页纸的声音。音频控制器 36 根据翻页的速度输出不同的声音。

参考图 16，根据第四实施例的显示装置 31 包括：两个平板显示器 4 和两个触摸板 15，并且平板显示器 4 和触摸板 15 的两组面对面安排。此外，两个扬声器 37 分别摆在显示装置 31 的左右两边。显示控制器 32、音频控制

器 36 和存储器 33 装在 31 内。可以使用通用的开关等代替触摸板 15。

显示控制器 32 以类似于根据以结合图 7 和 8 描述过的第二实施例的显示装置 1 中的显示控制单元 12 中使用的方式控制翻页。故该控制的描述不再在这里重复。显示控制器 32 从触摸板 15 来的、关于指针与触摸板 15 之间的接触信息，提供给声音控制单元 36。

参考图 17，描述了由声音控制单元 36 进行的声音输出控制处理。音频控制器 36 确定由触摸板 15 翻页的指令指的是正常翻页还是高速翻页（S31）。正常翻页意味着仅仅翻一页，而高速翻页意味着连续翻页或者同时翻作为一个单位的几页。如果翻页指令指的是正常翻页（S31 处于“正常”），则音频控制器 36 从存储器 33 中读取声音样本 A（S32）。如果翻页指令指的是高速翻页（S31 处于“高速”），则音频控制器 36 从存储器 33 中读取声音样本 B（S33）。声音样本 A 产生慢慢翻一页纸的声音，而声音样本 B 产生闪过和跳越多页的声音。

在 S32 和 S33 中的处理之后，音频控制器 36 确定将要朝那一个方向上翻页。如果正在翻的页的方向是从左到右（在 S34 中“左到右”），则在 S32 和 S33 的处理中读取的声音数据以声音中心被从左到右（S35）移动方式输出。如果正在翻的页的方向是从右到左（在 S34 中“右到左”），则在 S32 和 S33 的处理中读取的声音数据以声音中心被从右到左（S35）移动方式输出。这里，从左到右移动声音中心指的是输出声音的操作，它首先从左扬声器 37 发出较大的声音音量，然后左扬声器 37 的声音音量逐渐减小，而又扬声器 37 的音量增大。从右到左移动声音中心指的是相反方式的操作。

正如以上所讨论的那样，显示装置 31 在翻页操作的同时输出翻纸的声音，并且根据将要翻的页数输出不同的声音。这样，用户能够以好像用户翻用纸印刷的书一样的感觉翻页。

另外，显示装置 31 按照翻页的方向改变输出声音的平衡。从而用户能够好像真正发书籍一样地翻页。

第五实施例

参考图 18，根据第五实施例的显示装置包括：存储器 3；平板显示器 4；开关 46，用于检测平板显示器 4 的打开程度（转动角度）；开关挤压器 47，用于挤压开关 46；显示控制单元 42，用于控制图像信息、字符信息等存储在存储器 3 中信息的读取，以及读取的信息在平板显示器 4 上显示，并且根

据开关 46 的状态控制平板显示器 4 显示/不显示；以及翻页指令单元 45，用于从用户那里接收翻页指令并发送翻页指令给显示控制单元 42。该显示装置还包括显示缓冲存储器（未显示），用于保存将要在平板显示器 4 显示的数据。

参考图 19，该显示装置有两个平板显示器 4A 和 4B。这两个平板显示器 4A 和 4B 通过铰链 51 连接，使得显示器 4A 和 4B 能够绕相当于一本书的装订边部分的转轴 53 转动，在这里如果没有特别的说明，为了在平板显示器 4A 和 4B 上显示页数据，它们要被通电。

参考图 20，平板显示器 4A 包括底板 56A 和在底板 56A 上形成的显示表面 54A。平板显示器 4B 包括底板 56B 和在底板 56B 上形成的显示表面 54B。开关 46 配置在底板 56B 上。底板 56A 连接到铰链 51 上，以便能够绕转轴 53 转动。开关 46 的顶部被挤压，以使得开关 46 处于“开”状态，如果没有压力加到开关 46，则它处于“关”状态。在图 20 中，被示出的平板显示器 4 的转动角度为 0°。

参考图 21，开关挤压器 47 形成在铰链 51 周围。当铰链 51 以图 21 中的箭头所指方向转动（顺时针）时，促使开关挤压器 47 和开关 46 在角度范围为 200°到 300°时相互接触，以使得开关挤压器 47 挤压开关 46。注意：200°角允许平板显示器 4A 被确认成翻到平板显示器 4B 的背面。360°角意味着平板显示器 4A 和平板显示器 4B 背靠背放置。

虽然平板显示器 4A 和 4B 能够互相作相对转动，但为了方便，平板显示器 4B 在这里是作为水平放置来描述的，而平板显示器 4A 是转动的。

参考图 22，铰链 51 的转动角度和施加到开关 46 上的压力之间的关系使用实线示出。压力能够根据一个预定的阈值数字化，以得到由虚线表示的关系。然后能够确定开关 46 的状态（“开”或者“关”状态）。

当开关 46 处于“开”状态时，显示控制单元 42 使平板显示器 4A 和 4B 中的一个不提供显示。

参考图 23，翻页指令单元 45 分别嵌入平板显示器 4A 和 4B 的翻页指令单元 45A 和 45B。翻页指令单元 45A 和 45B 由图形输入装置（触摸板）构成。每个翻页指令单元 45A 和 45B 的每一个都相当于在这样的位置处形成的一个三角形区域，该位置就是翻拿在手中的小册子的书页的手指所在的位置。

当用户在这个区域内从左到右移动他的手指，而且允许该手指接触该区

域时，翻页指令单元 45 输出一个用于向前翻页的信号。显示控制单元 42 接收该信号并从存储器 3 中读取下一页的页数据，以便得到正要向前翻的那一页并更新在平板显示器 4A 和 4B 的显示。当用户以相反的方向移动他的手指时，翻页指令单元 45 输出一个用于向后翻页的信号。显示控制单元 42 接收该信号并从存储器 3 中读取前一页的页数据，以便得到正在向回翻的那一页并更新在平板显示器 4A 和 4B 的显示。

手指移动的方向能够通过跟踪考虑了时间的接触的位置来检测。翻页指令单元 45 可以构造在平板显示器 4A 和 4B 的整个表面之上。但为了避免由于手指等的接触引起的误操作，翻页指令单元 45 能够构造在如图 23 所示的平板显示器 4A 和 4B 的特殊区域中。

当平板显示器 4A 和 4B 两者都处于显示状态时，显示控制单元 42 一次可以翻两页，而当平板显示器 4A 和 4B 中只有一个处于显示状态时，显示控制单元 42 一次翻一页，既然这样，如果以上提到的显示缓冲区能够存储相当于两页的数据，那么显示控制单元 42 一次从存储器 3 中读去两页数据，并且把这些数据写入显示缓冲存储器中。如果以上提到的显示缓冲区能够存储相当于一页的数据，那么显示控制单元 42 一次从存储器 3 中读去一页数据，并且把这些数据写入显示缓冲存储器中。

如果已经给出显示的平板显示器 4A 和 4B 两者之一停止提供显示，那么显示控制单元 42 可以把相当于当前显示的两页的数据压缩成一页数据，并重写显示缓冲存储器的内容，以便在处于显示状态的平板显示器 4A 或者 4B 上显示该压缩数据。页压缩是众所周知的技术。例如，如果显示信息仅仅是文本信息，页压缩能够通过减小字符尺寸来获得。如果显示信息是图像数据，页压缩能够通过稀疏该数据来实现。

将要显示的页数据压缩可以只在已经给出显示的平板显示器 4A 和 4B 两者之一停止提供显示时进行。在这以后，当翻页指令发出时，显示控制单元 42 不压缩数据并且一页一页地翻页。

正如图 23 所时，既然翻页指令单元 45A 和 45B 对称地安排，所以无论显示装置是拿在右手还是拿在左手中，或者由右撇子还是左撇子拿着，都能方便地翻页。

开关挤压器 47 的变形

参考图 24，开关挤压器 47 可以只在相应于铰链 51 的转动角度接近 200°

的位置处配置。

参考图 25，铰链 51 的转动角度和施加到开关 46 上的压力之间的关系由实线示出。压力能够根据一个预定的阈值数字化，以得到由虚线表示的关系，因此能够确定开关 46 的状态（“开”状态或者“关”状态）。参考图 26，开关 46 还包括一个电路，用于形成由图 25 中的虚线表示的信号，并在开关 46 处于角度范围 200°到 360°中时输出变成“开”状态的信号。当铰链的转动角度由小于 200°变化到大于 200°时，也就是相当于图 5 中由虚线表示的信号的上升段时，该电路提供“开”输出，而当铰链的转动角度由大于 200°变化到小于 200°时，也就是相当于图 5 中由虚线表示的信号的下降段时，该电路提供“关”输出。这样的电路能够容易地通过著名的触发电路构造而成。

翻页指令单元 45 的第一种变形

参考图 27，翻页指令单元 45 可以配置在相当于在平板显示器 4A 和 4B 的底部约四分之一的区域中。

翻页指令单元 45 的第二种变形

参考图 28，翻页指令单元 45 可以配置在平板显示器 4A 和 4B 的两边和类似于图 23 中的三角区域上。

如上所述的显示装置具有能够自由地由用户在 0°到 360°范围内打开的平板显示器 4A 和 4B。因此即使被显示装置占用的地方减小，用户也能够看到平板显示器 4A 和 4B。这样能够提供一种十分便捷的显示装置。

此外，这种显示装置具有能够背靠背地折叠起来的平板显示器 4A 和 4B。以上各点产生的优势是：即使平板显示器 4A 和 4B 有大显示面积，用户也能够用一只手支撑该显示装置。

此外，这种具有能够背靠背地折叠起来的平板显示器 4A 和 4B 的显示装置允许平板显示器 4A 和 4B 之一给出显示，而平板显示器 4A 和 4B 中的另一个不给出显示。因此即使在拥挤的地方，例如有轨电车里，页数据也不会被别人偷看到。故能够提供一种防止信息泄漏性能极好的显示装置。在降低能耗方面也有效果。

此外，当显示装置拿在一只手中时，翻页指令单元 45A 和 45B 放在相应于手指的放置位置的地方。故用户能够用一只手翻页显示装置。

翻页指令单元 45A 和 45B 对称地安排，所以无论显示装置被拿在右手还是拿在左手中，用户都能方便地翻页。此外，无论用户是右撇子还是左撇子，

用户都能方便而且类似地翻页。

第六实施例

参考图 29，根据第六实施例的显示装置包括：存储器 3；平板显示器 4；第一和第二开关 76A 和 76B，用于检测平板显示器 4 的打开程度（转动角度）；第一和第二开关挤压器 77A 和 77B，用于分别按压第一和第二开关 76A 和 76B；显示控制单元 72，用于控制图像信息、字符信息等存储在存储器 3 中信息的读取，以及控制是否在平板显示器 4 上给出显示；以及翻页指令单元 45。

参考图 30，该第一开关挤压器 77A 配置在图 19 的铰链 51 的 0°附近转动角处。参考图 31A，第一开关 76A 当铰链 51 的旋转角度超过 0°时，变成“开”状态。

该第二开关挤压器 77B 和第二开关 76B 被构造成和结合图 24 所描述的开关挤压器 47 和开关 46 类似。因此，这部分的描述不再重复。参考图 31B，的铰链 51 的 0°附近转动角处。参考图 31A，当铰链 51 的转动角度处于 200°到 360°范围中时，第二开关 76B 变成“开”状态。

参考图 32，显示控制单元 72 接收第一和第二开关 76A 和 76B 的输出，以便控制平板显示器 4A 和 4B 显示/不显示。当第一和第二开关 76A 和 76B 都处于“开”状态时，即铰链 51 的转动角度处于 200°到 360°范围中时，显示控制单元 72 使平板显示器 4A 不显示，而不使平板显示器 4B 显示。而当第一开关 76A 处于“开”状态，第二开关 76B 处于“关”状态时，即铰链 51 的转动角度处于 0°到 200°范围时，显示控制单元 72 允许平板显示器 4A 和平板显示器 4B 都提供显示。当第一开关 76A 处于“关”状态，即平板显示器 4 关闭时，显示控制单元 72 使平板显示器 4A 和平板显示器 4B 都不提供显示。

以上所述的显示装置能够有第五实施例中所拥有的类似效果。

第七实施例

参考图 33，根据第七实施例的显示装置 包括：存储器 3；平板显示器 4；开关 46；第一和第二开关挤压器 77A 和 77B；以及翻页指令单元 45。

参考图 34，第一和第二开关挤压器 77A 和 77B 被分别地配置在铰链 51 的转动角接近于 0°和接近于 200°的地方。开关 46 提供如图 31A 和 31B 所示的输出。因此，显示控制单元 82 以类似于结合图 32 描述的第六实施例的显示控制单元 72 方式，控制平板显示器 4A 和 4B 显示/不显示。

以上所述的显示装置能够有第五实施例中所拥有的类似效果。

第八实施例

参考图 35，根据第八实施例的显示装置 包括：存储器 3；平板显示器 4；显示控制单元 83，用于控制图像信息、字符信息等存储在存储器 3 中信息的读取，以及控制平板显示器 4 显示/不显示；以及翻页指令单元 45。静电耦合型、压敏型或集成显示器（display-integrated）型图形输入装置（未显示）嵌入在平板显示器 4 种。当象手指那样的指针接触到平板显示器 4 的表面时，指示触摸位置的信号被施加给显示控制单元 83。

参考图 36，平板显示器 4A 和 4B 通过铰链 52 可转动地耦合在一起。

图 37A 示出了被打开的显示装置，左手拇指正接触到平板显示器 4A，而右手拇指正接触到平板显示器 4B。显示装置由手掌或别的手指支撑。在这种状态下，接触平板显示器 4A 和 4B 的手指面积几乎相等。

图 37B 示出当平板显示器 4A 和 4B 之一被转动到与另一个背靠背并且显示装置由一只手拿着时，被手指接触的、平板显示器 4A 和 4B 上的区域 88A 和 88B。通常，用户拿显示装置，使得正支持着的平板显示器 4A 右手指接触到的区域 88A 的面积大于由手指在当前看到的平板显示器 4B 上接触到的区域 88B 的面积。这是由于用户试图以这样一种方式支撑平板显示器 4B，以获得尽可以大的显示面积，也试图通过保护正支撑的平板显示器 4A 中，由手指接触的区域 88A 的更大面积来稳定地支撑显示装置。

如果平板显示器 4A 和 4B 之一有一个接触区域面积至少大于别的平板显示器的接触面积 20%，并且接触时间延续一个预定的时间（例如 3 秒）或更长，那么显示控制单元 83 示的平板显示器的一个具有更大的接触面积不提供显示，而另一个拥有更小的接触面积提供显示。此外，如果平板显示器 4A 拥有几乎等于由指针接触的平板显示器 4B 中的区域的面积的、由指针接触的区域面积，并且接触状态延续一个预定的时间长度，那么显示控制器 83 允许平板显示器 4A 和 4B 给出显示。

用于检测触摸位置的图形输入装置可以位于除平板显示器 4A 和 4B 内部或者表面之上的区域以外的任何区域。

以上描述的显示装置基于由象手指那样的指针接触的平板显示器 4A 和 4B 中的区域的面积，确定平板显示器 4A 和 4B 中的哪一个由用户观看。然后可以只允许被用户观看的平板显示器 4A 或 4B 提供显示，不被用户观看的平

板显示器 4A 或 4B 不提供显示。因此能够获得关于防止信息泄漏和降低能耗的优点。其他优点类似第五实施例中的。

第九实施例

根据第九实施例的显示装置有类似于根据第五实施例、结合图 18 所描述的显示装置的功能块结构。因此，他的描述不再在这里重复。类似于结合第八实施例描述过的图形输入装置被嵌入平板显示器 4 中。

参考图 38，平板显示器 4A 和 4B 由铰链 51 象图 19 所示的那样耦合在一起。开关挤压器 47 构造在铰链 51 上、当平板显示器 4A 和 4B 形成 200°角时，促使挤压器 47 挤压开关 46 的位置处。

开关 46 在当由平板显示器 4A 和 4B 形成的角小于 200°时处于“关”状态，而当该角度等于或者大于 200°时处于“开”状态。

显示控制单元 42 根据图 39 控制平板显示器 4A 和 4B 的显示/不显示。当开关 46 处于“开”状态（由平板显示器 4A 和 4B 形成的角至少为 200°），并且被指针接触的平板显示器 4A 和 4B 上各自区域的面积之间的差等于或者小于一个预定值时，显示控制单元 42 判定用户观看平板显示器 4A 和 4B 的两个显示面 54A 和 54B，因此允许平板显示器 4A 和 4B 都提供显示。如果开关 46 处于“开”状态，并且被指针接触的平板显示器 4A 和 4B 上各自区域的面积之间的差大于一个预定值，则显示控制单元 42 判定用户仅仅观看平板显示器 4B 的显示面 54B，并使得平板显示器 4A 不提供显示，而只有平板显示器 4B 提供显示。如果开关 46 处于“关”状态，则显示控制单元 42 判定用户观看平板显示器 4A 和 4B 各自的显示面 54A 和 54B 两者，并使得平板显示器 4A 和 4B 都提供显示，而不管接触面积的差的大小。

因此，以上所述的显示装置有类似于根据第五实施例的显示装置的效果。

第十实施例

参考图 40，根据第十实施例的显示装置包括：存储器 3；平板显示器 4；第一、第二和第三开关 76A、76B 和 76C，用于检测平板显示器 4 的打开程度（转动角度）；第一、第二和第三开关挤压器 77A、77B 和 77C，用于给第一、第二和第三开关 76A、76B 和 76C 挤压；显示控制单元 102，用于控制图像信息、字符信息等存储在存储器 3 中信息的读取，以及控制平板显示器 4 显示/不显示；翻页指令单元 45；以及由键盘、功能键、操纵杆、图形输入装置

等构成的信息输入单元 102，用于给显示装置输入信息。

第一和第二开关 76A 和 76B 具有类似于结合第六实施例描述的那种结构，并且当平板显示器 4 的转动角度大于 0°和等于或小于 360°时，第一开关 76A 变成“开”状态。当平板显示器 4 的转动角度范围在 200°至 360°之间时，第二开关 76B 变成“开”状态。参考图 41，第三开关挤压器 77C 类似于结合图 21 描述的开关挤压器 47、被构造在铰链 51 周围，以使得当平板显示器 4 的转动角度范围在 300°至 350°之间时，第三开关 76C 变成“开”状态。

显示控制单元 102 根据图 42 控制平板显示器 4A 和 4B 是否提供显示。特别地，如果由平板显示器 4A 和 4B 形成的角度大于 0°和等于或小于 200°，那么第一开关 76A 变成“开”状态，而第二和第三开关 76B 和 76C 变成“关”状态。然后显示控制单元 102 判定用户观看两个平板显示器 4A 和 4B，并且允许两个平板显示器 4A 和 4B 提供显示。

如果由平板显示器 4A 和 4B 形成的角度大于 200°和等于或小于 300°，那么第一和第二开关 76A 和 76B 变成“开”状态，而第三开关 76C 变成“关”状态。然后显示控制单元 102 判定用户仅仅观看平板显示器 4B，并且使得平板显示器 4A 不提供显示，而仅仅平板显示器 4B 提供显示。

参考图 43，如果由平板显示器 4A 和 4B 形成的角度超过 300°和等于或小于 350°，那么第一、第二和第三开关 76A 至 76C 全部变成“开”状态。然后显示控制单元 102 判定用户玩比赛性等，并折叠显示器装置，以使得不显示用户的牌给对家，因此允许平板显示器 4A 和 4B 均提供显示。

如果由平板显示器 4A 和 4B 形成的角度为 0°，那么第一、第二和第三开关 76A 至 76C 全部变成“关”状态。然后显示控制单元 102 判定用户关闭显示装置，并促使使平板显示器 4A 和 4B 均不提供显示。

参考图 44，第三开关形成一个允许第三开关挤压器 77C 装入的形状。因此，当第三开关 76C 处于“开”状态，即由平板显示器 4A 和 4B 形成的角度处于特殊范围 300°至 350°时，平板显示器 4A 和 4B 均被固定。这样，用户能够方便地享受比赛性游戏等。为了取消这种固定状态，用户可以使用比平常大些的力转动平板显示器 4A 和 4B。

参考图 45，平板显示器 4A 可以有一个销钉 116，而平板显示器 4B 可以有一个挂钩 118。通过适当地确定挂钩 118 的长度和销钉 116 的位置，当挂钩 118 挂到销钉 116 上时，通过由平板显示器 4A 和 4B 形成的角度能够被设

置在一个特殊范围 300°至 350°中。

参考图 46，当平板显示器 4A 和 4B 立在使用的平面上时，平板显示器 4A 和 4B 的每一个中与该平面相连的一边，套一层具有大摩擦系数的材料，如用于防止显示装置滑动的橡胶件 120。

参考图 47，为了防止显示装置的滑动，平板显示器 4A 和 4B 可以安装在使用的底座 122 中。底座被包上一层具有大摩擦系数的材料，如用于防止底座 122 的滑动的橡胶件 124。

如果由平板显示器 4A 和 4B 形成的角度大于 350°和等于或小于 360°，那么第一和第二开关 76A 和 76B 变成“开”状态，而第三开关 76C 变成“关”状态。然后显示控制单元 102 判定用户让平板显示器 4A 和 4B 背靠背，以便仅仅看平板显示器 4B，并且因此来促使平板显示器 4A 不提供显示，而仅仅平板显示器 4B 提供显示。

以上描述的显示装置示的用户能够享受比赛性游戏，而不会把用户的牌泄漏给对家。

平板显示器 4A 和 4B 经过用于防滑的处理，因此，用户能够舒适地执行游戏等的操作。

别的效果类似于第五实施例中的显示装置的效果。

第十一实施例

参考图 48，根据第十一实施例的显示装置包括：存储器 3；平板显示器 4；开关 46，用于检测平板显示器 4 的打开程度（转动角度）；第一、第二和第三开关挤压器 77A、77B 和 77C，用于给开关 46 挤压；显示控制单元 112，用于控制图像信息、字符信息等存储在存储器 3 中信息的读取，以及控制平板显示器 4 显示/不显示；翻页指令单元 45；以及由键盘、功能键、操纵杆、图形输入装置等构成的信息输入单元 1 存储器 3，用于给显示装置输入信息。

参考图 49，第一和第二开关挤压器 77A 和 77B 构造在铰链 51 的周围，以使得当铰链 51 的转动角度分别为 0°和 200°时，挤压开关 46。第三开关挤压器 77C 构造在铰链 51 的周围，以使得当铰链 51 的转动角度为 300°至 350°时，挤压开关 46。开关 46 提供如图 31A、31B 和 41 所示的输出。因此显示控制单元 112 类似于根据图 42 描述的第十实施例的显示装置中的显示控制单元 102 地，控制平板显示器 4A 和 4B 的显示/不显示。

这种显示装置能够获得类似于第五实施例中的显示装置的效果。

工业实用性

如上所述，本发明的显示装置允许象真正地翻一页纸一样来翻页，在防止信息泄漏方面有优势，并且具有小能耗的优势。因此，这种显示装置适合用于制造一种给出和在正常读书时一样的感觉的信息访问。

说 明 书 附 图

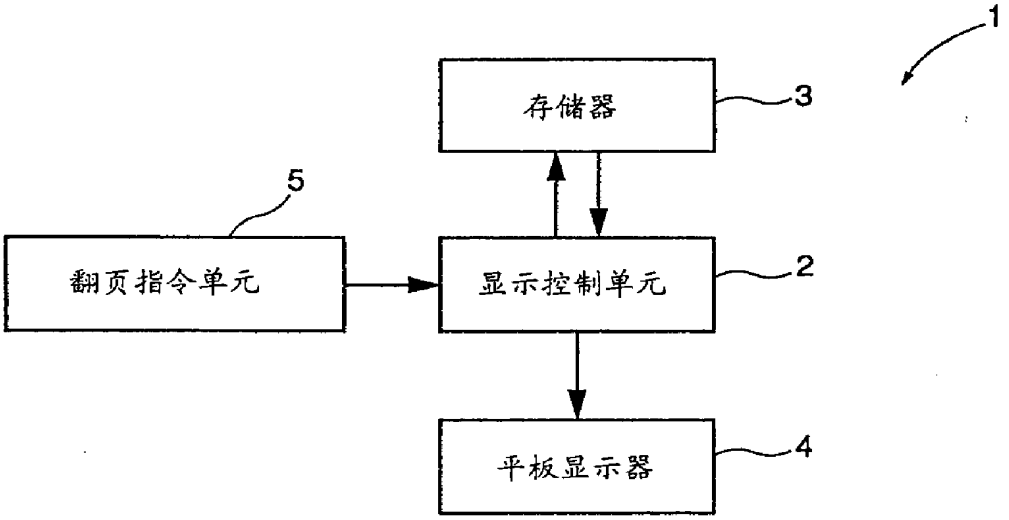


图 1

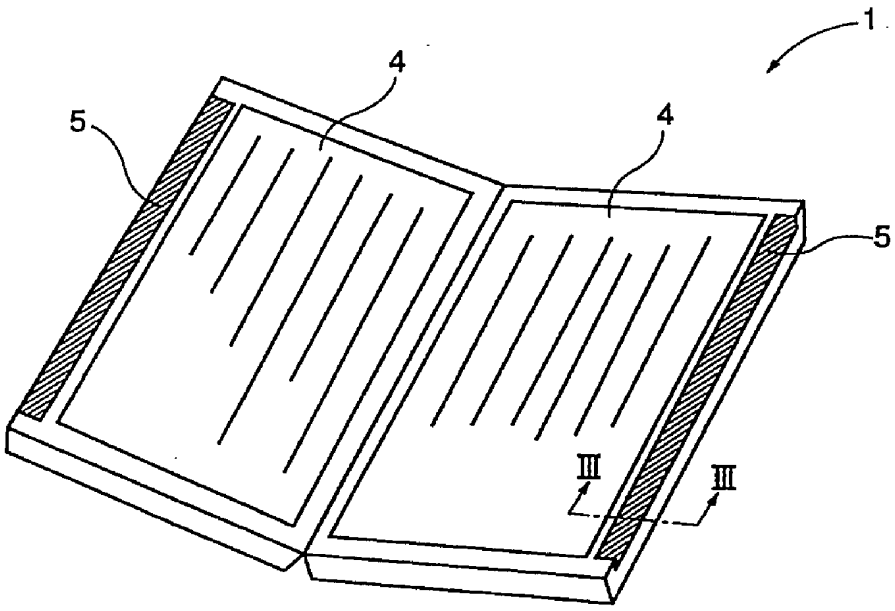


图 2

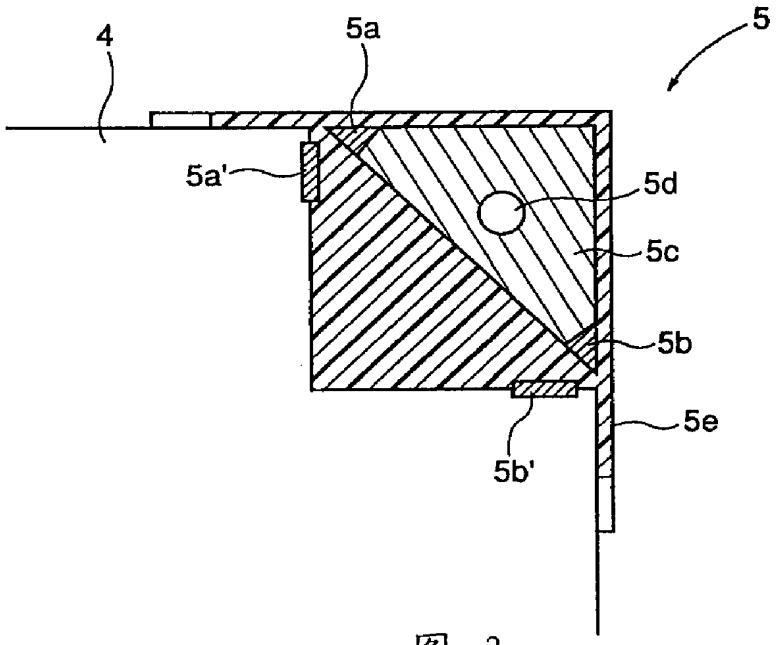


图 3

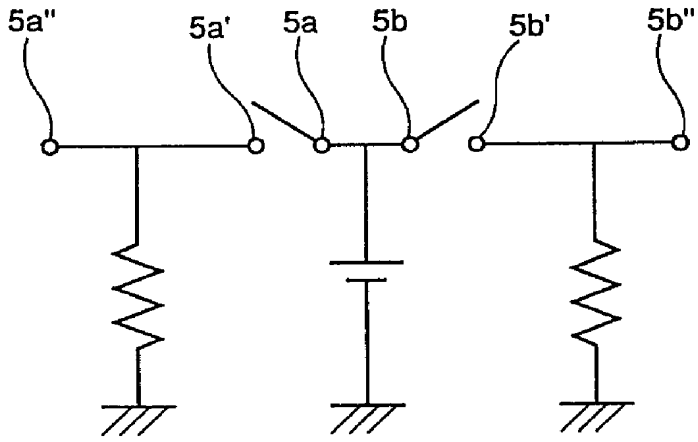


图 4

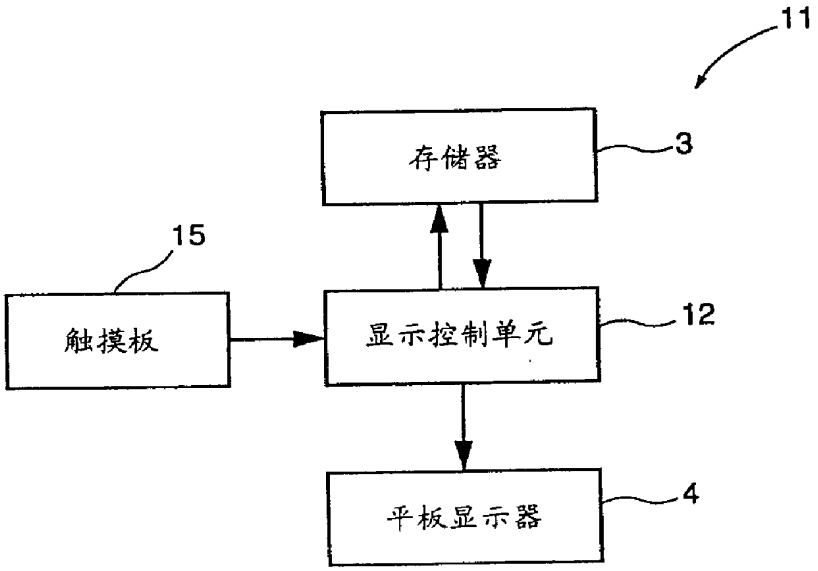


图 5

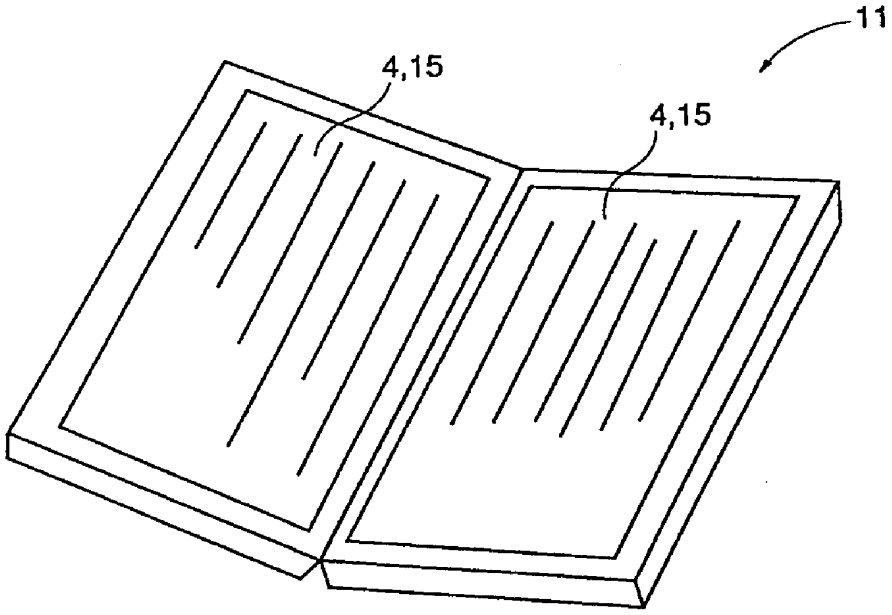


图 6

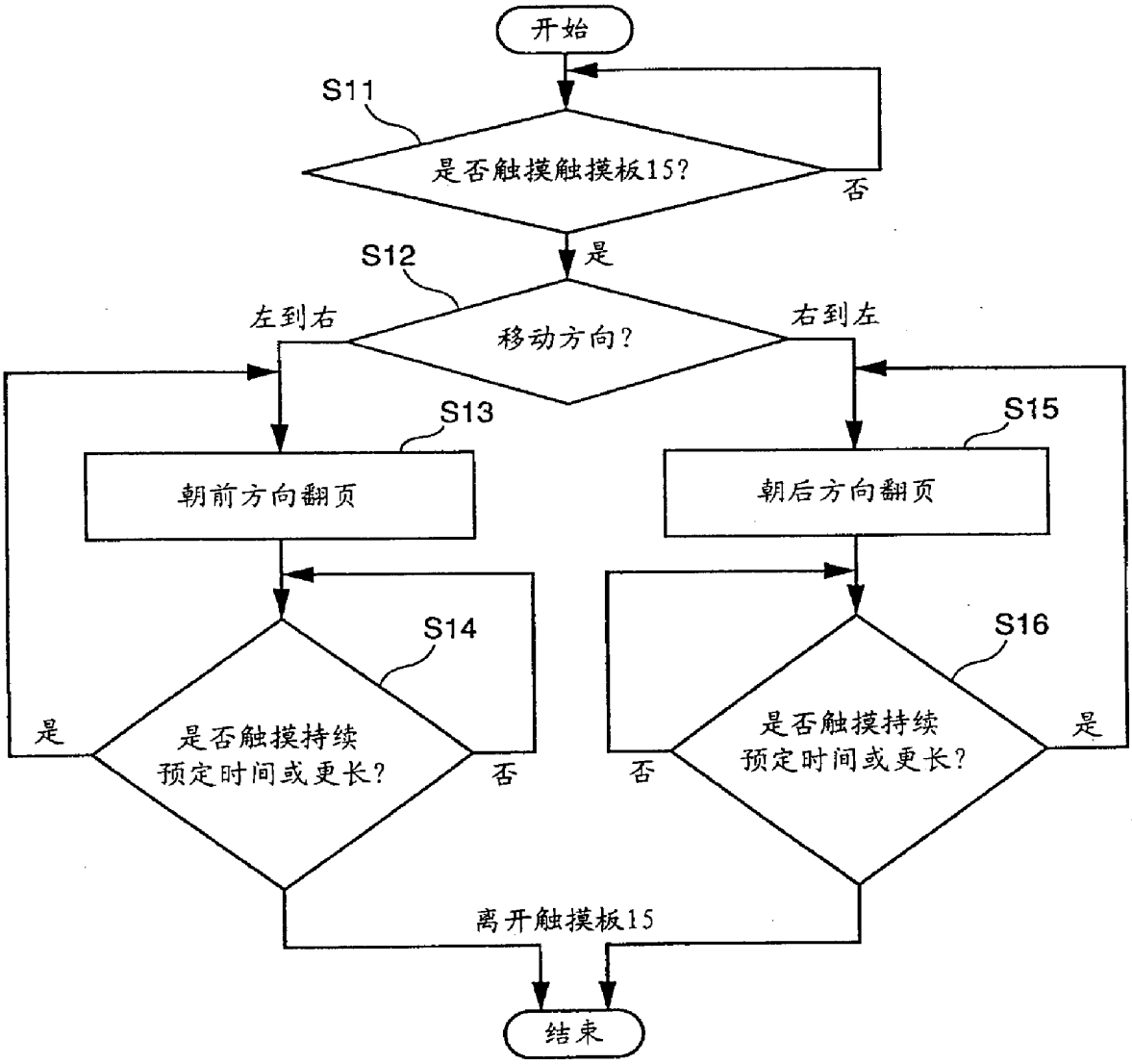

开始
S11
是否触摸触摸板15?
否
是
S12
左到右
移动方向?
右到左
S13
朝前方向翻页
S15
朝后方向翻页
S14
是否触摸持续
预定时间或更长?
是
否
S16
是否触摸持续
预定时间或更长?
否
是
离开触摸板15
结束

图 7

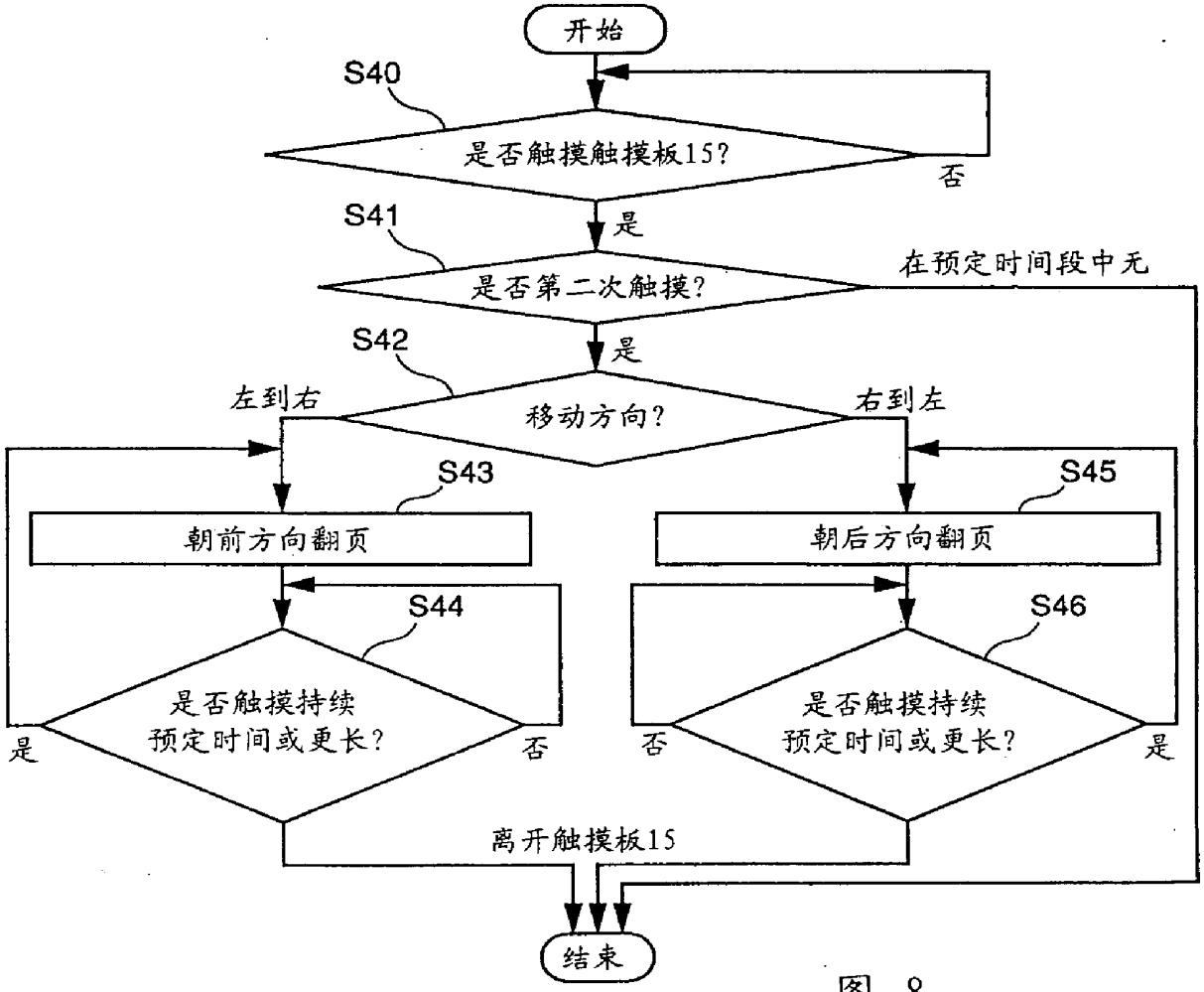
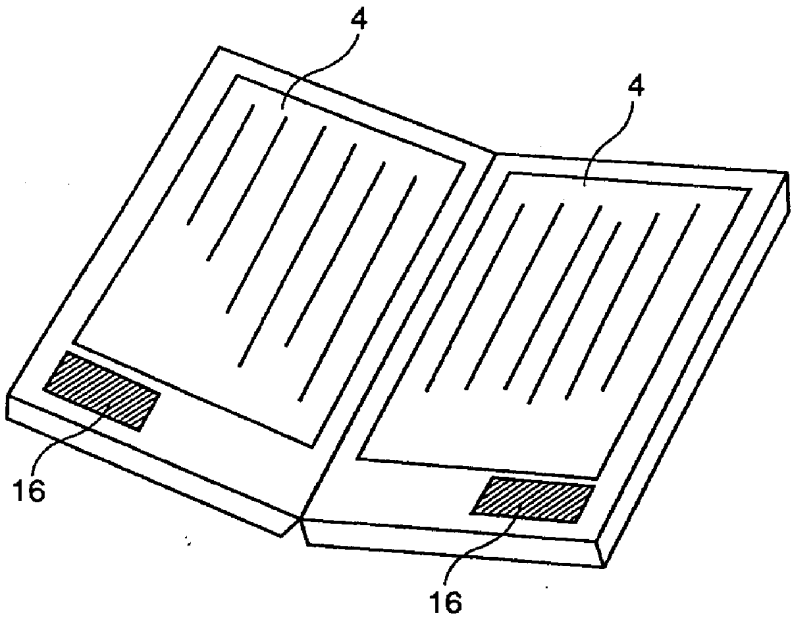

开始
S40
是否触摸触摸板15?
否
是
S41
是否第二次触摸?
在预定时间段中无
是
S42
移动方向?
左到右
右到左
S43
朝前方向翻页
S45
朝后方向翻页
S44
是否触摸持续
预定时间或更长?
是
否
S46
是否触摸持续
预定时间或更长?
否
是
离开触摸板15
结束

图 8

图 9


4
4
16
16

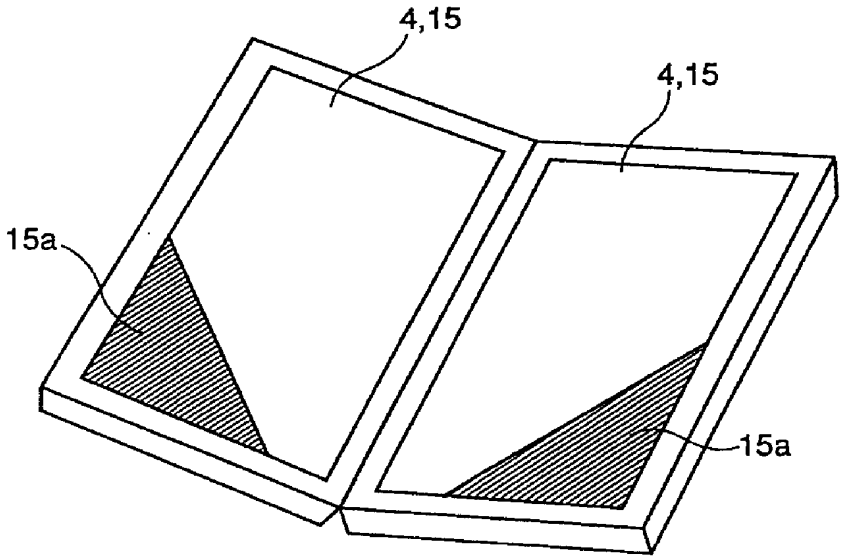


图 10

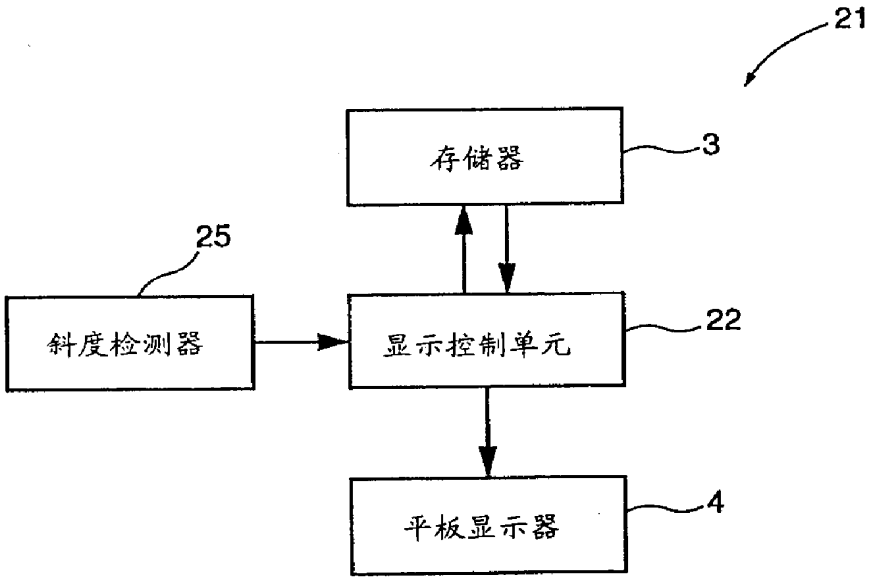


图 11

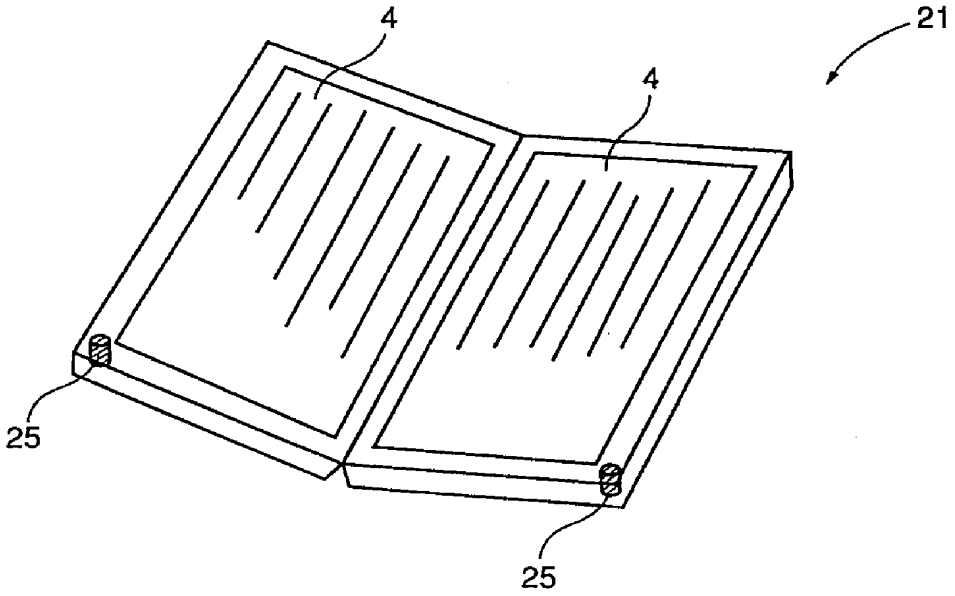


图 12

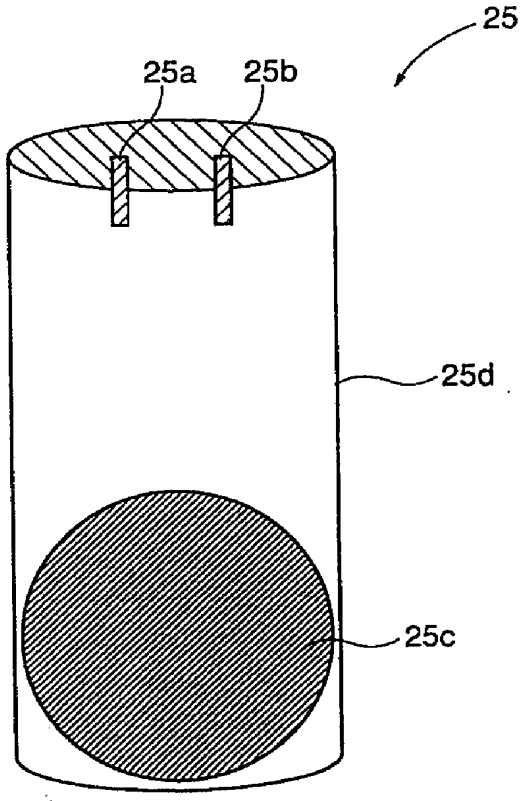


图 13

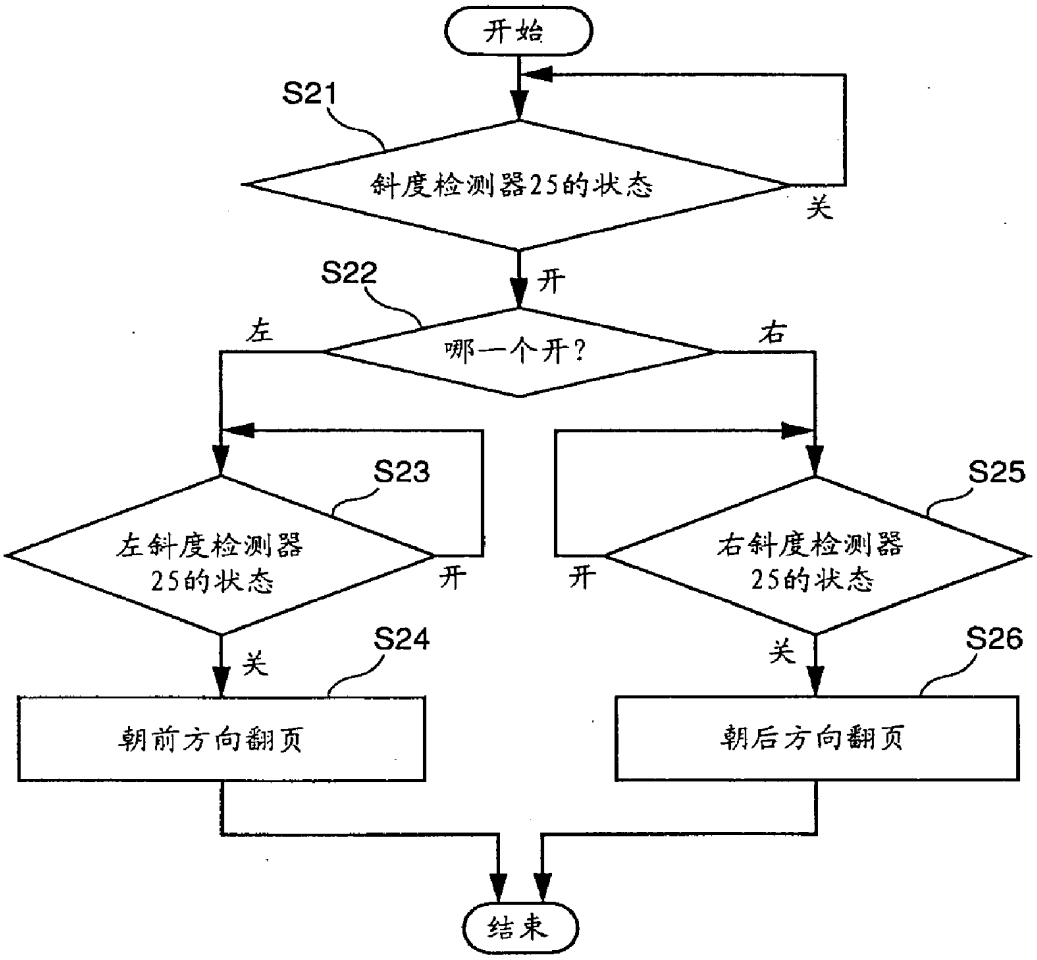

开始
S21
斜度检测器25的状态
关
开
S22
左
哪一个开?
右
S23
左斜度检测器
25的状态
开
S25
开
右斜度检测器
25的状态
关
S24
关
S26
朝前方向翻页
朝后方向翻页
结束

图 14

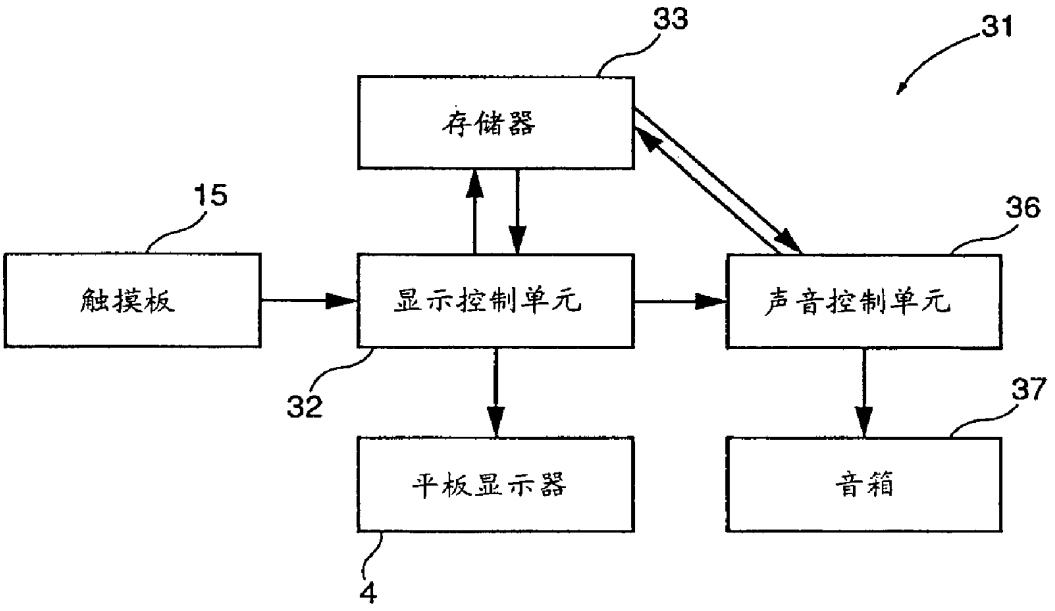

33
31
存储器
15
36
触摸板
显示控制单元
声音控制单元
32
37
平板显示器
音箱
4

图 15

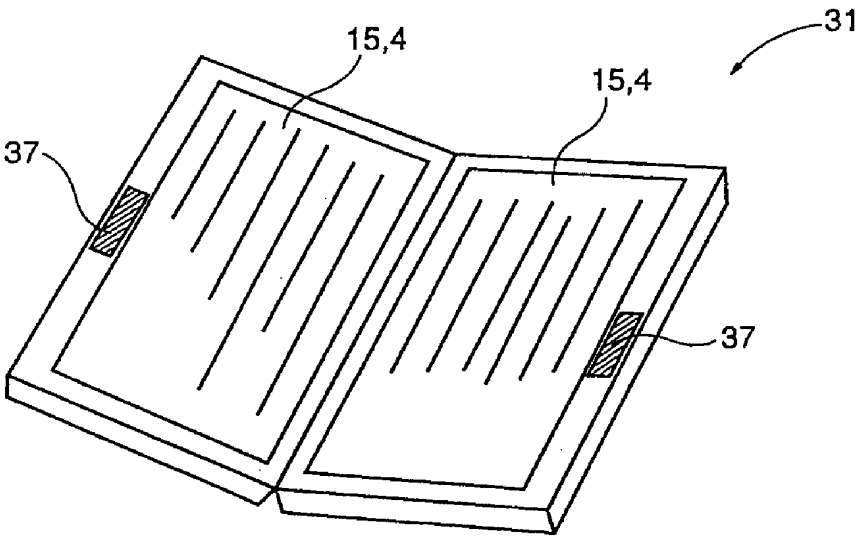

31
15,4
15,4
37
37

图 16

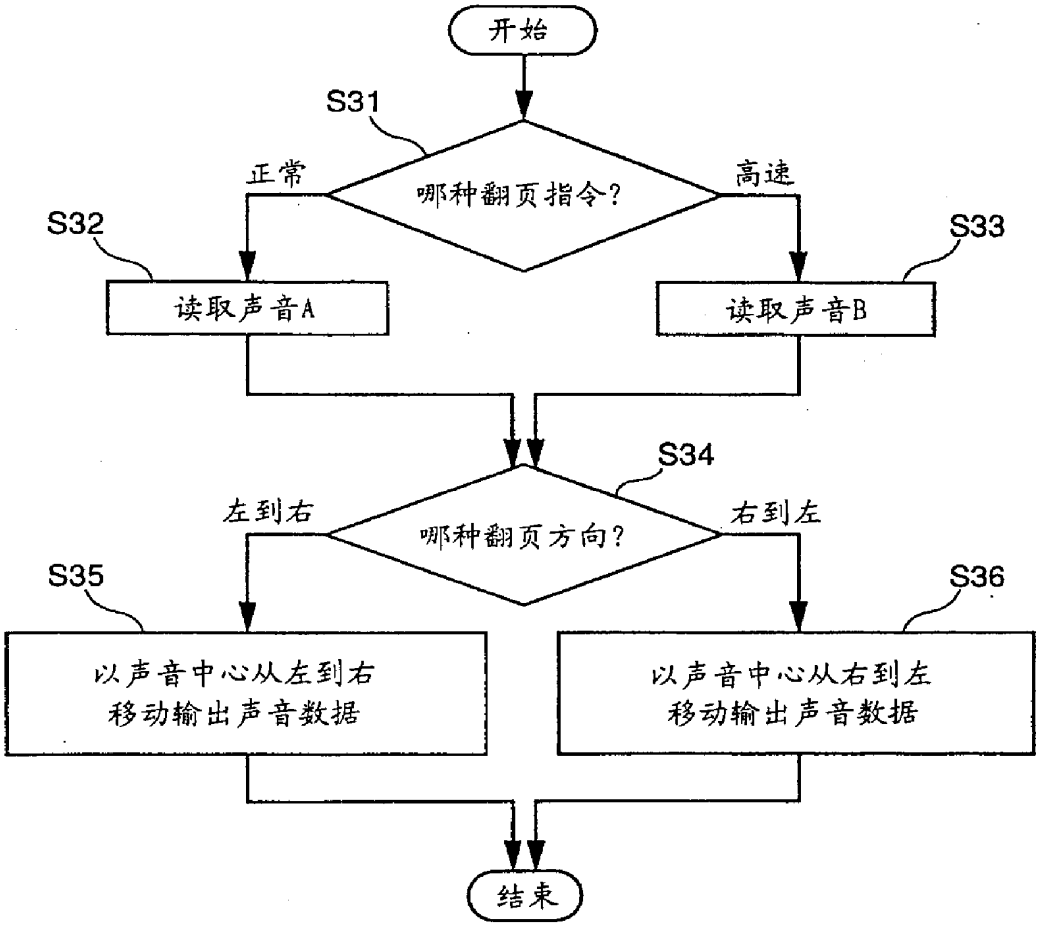

开始
S31
正常
哪种翻页指令?
高速
S32
S33
读取声音A
读取声音B
S34
左到右
哪种翻页方向?
右到左
S35
S36
以声音中心从左到右
移动输出声音数据
以声音中心从右到左
移动输出声音数据
结束

图 17

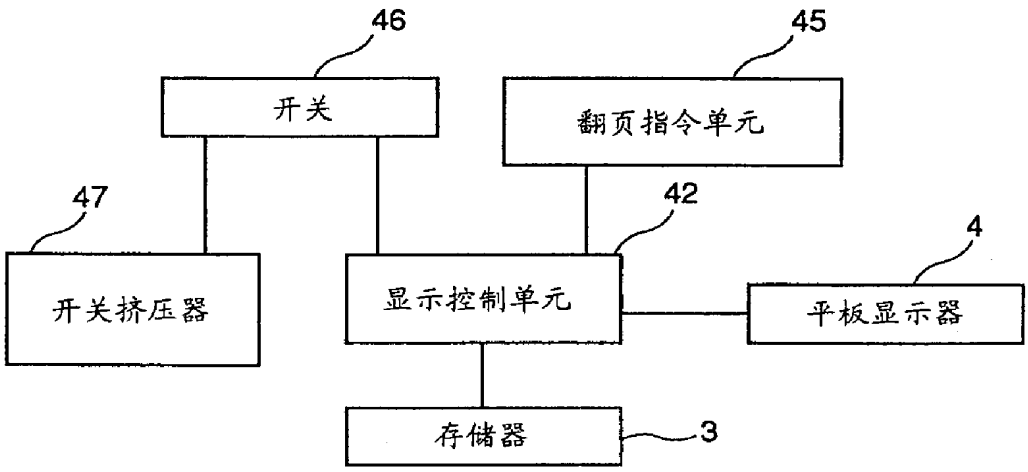


图 18

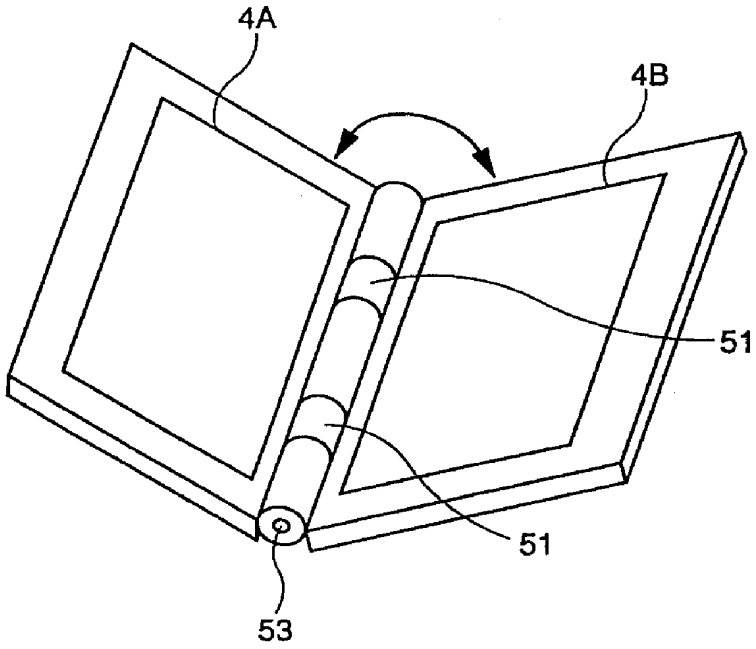


图 19

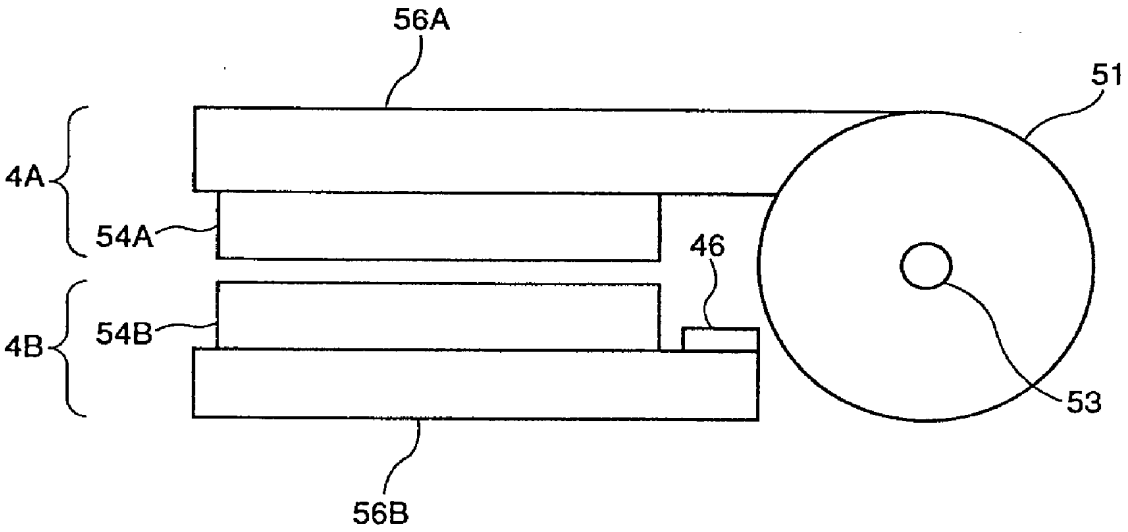


图 20

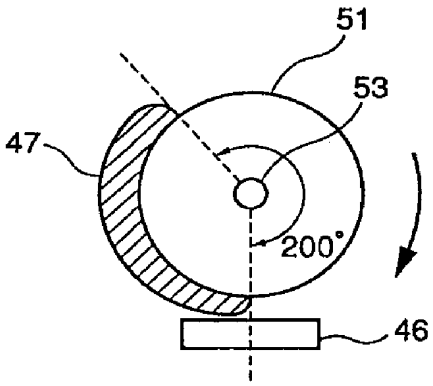


图 21

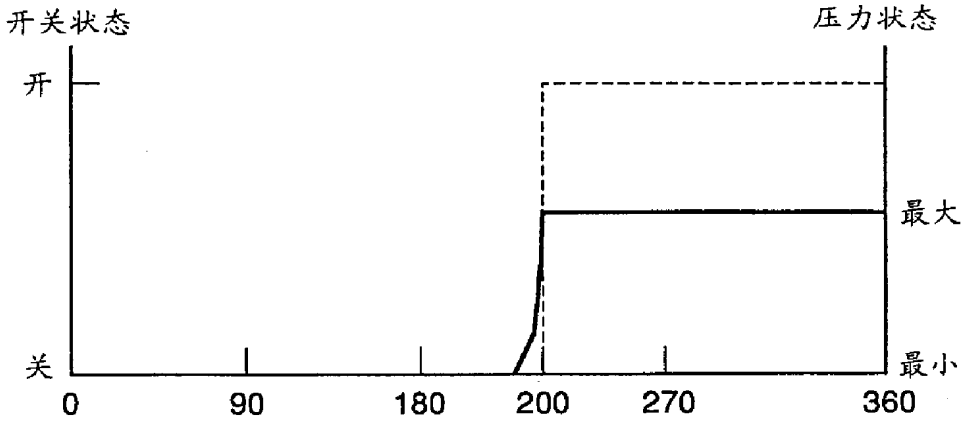


图 22

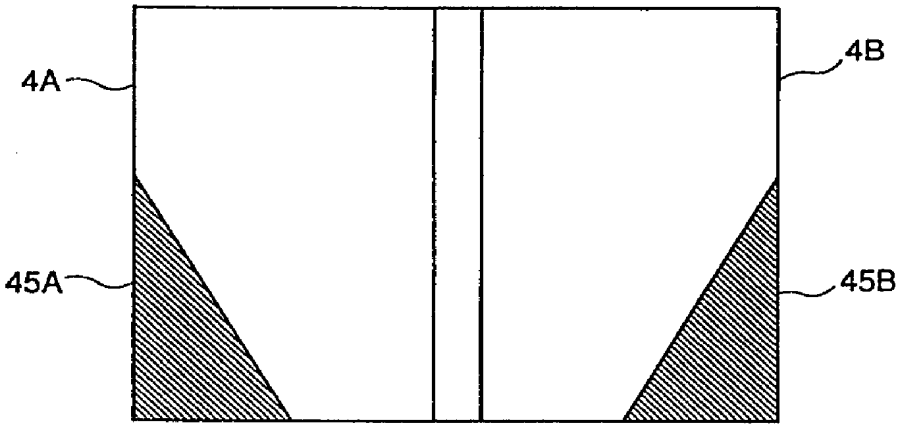


图 23

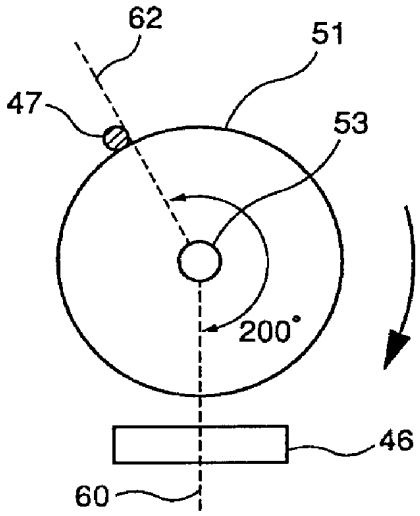


图 24

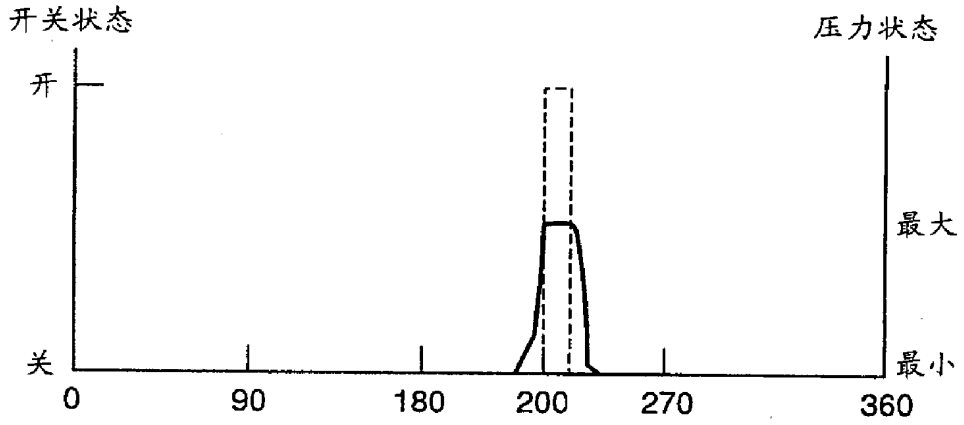

开关状态
压力状态
开
关
最大
最小
0
90
180
200
270
360

图 25

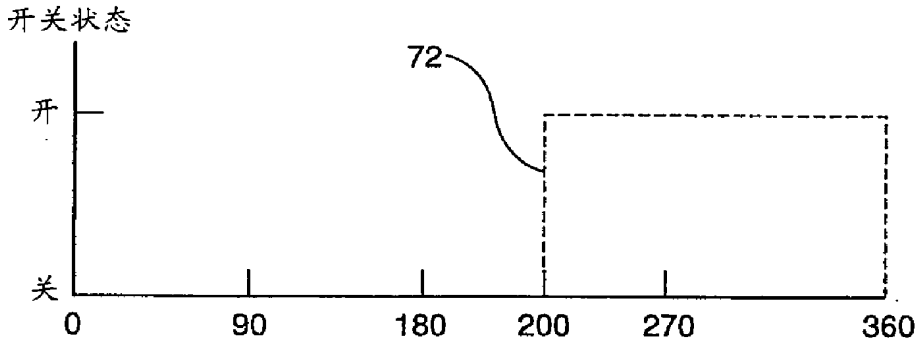

开关状态
72
开
关
0
90
180
200
270
360

图 26

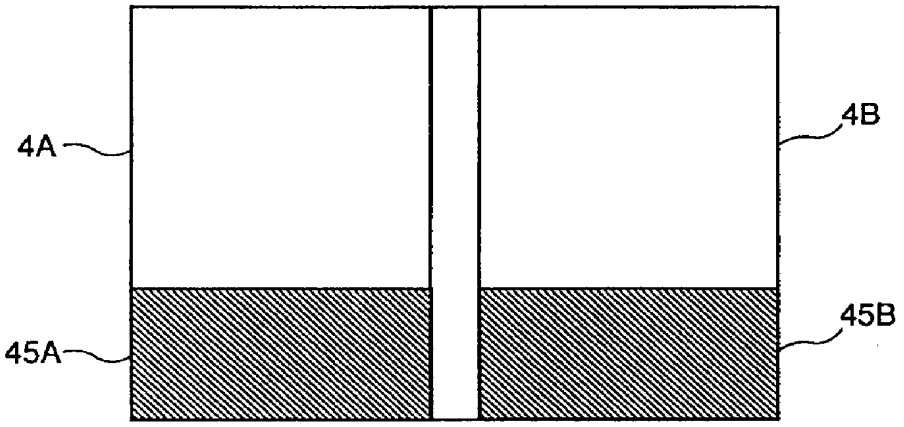


图 27

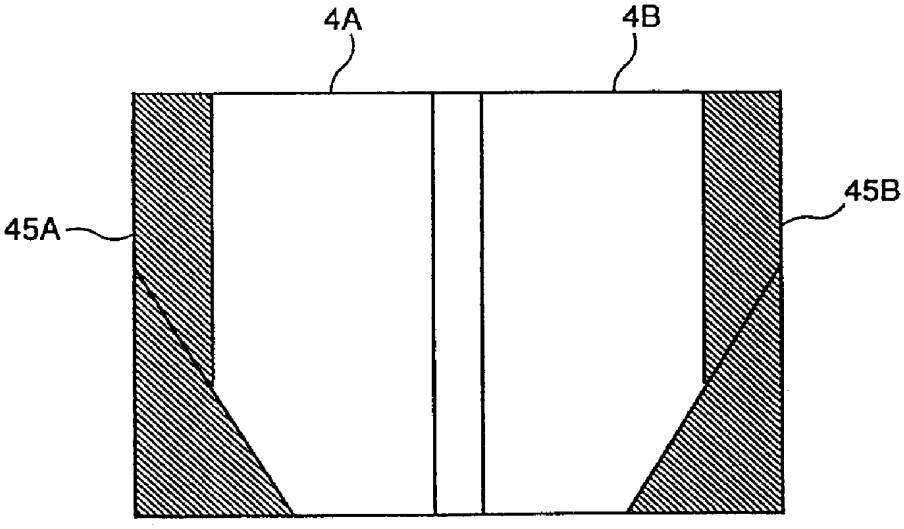


图 28

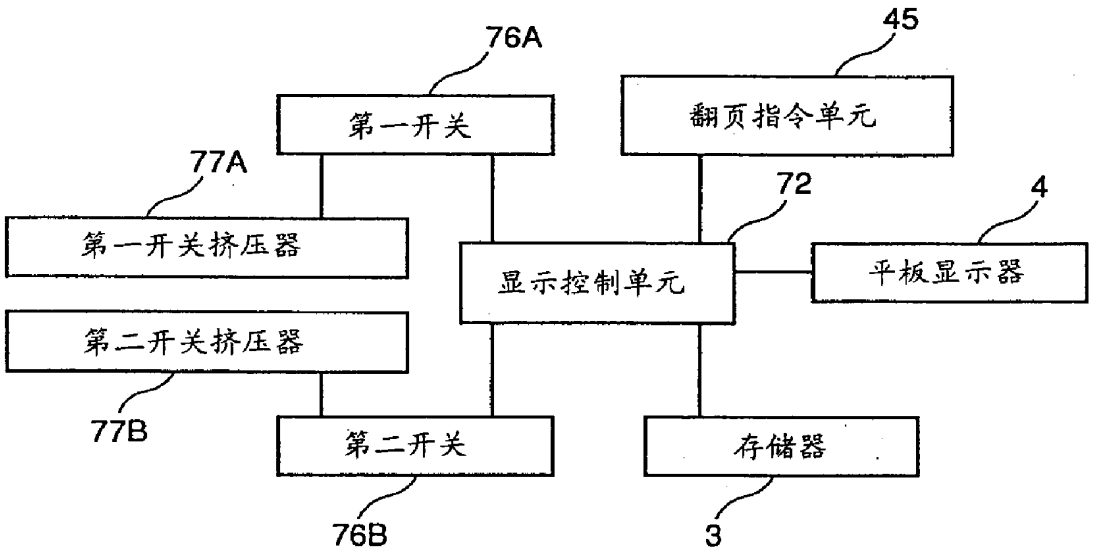

76A
45
第一开关
翻页指令单元
77A
72
4
第一开关挤压器
显示控制单元
平板显示器
第二开关挤压器
77B
第二开关
存储器
76B
3

图 29

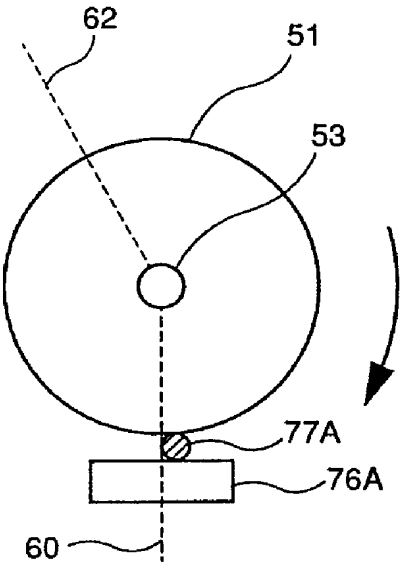

62
51
53
77A
76A
60

图 30

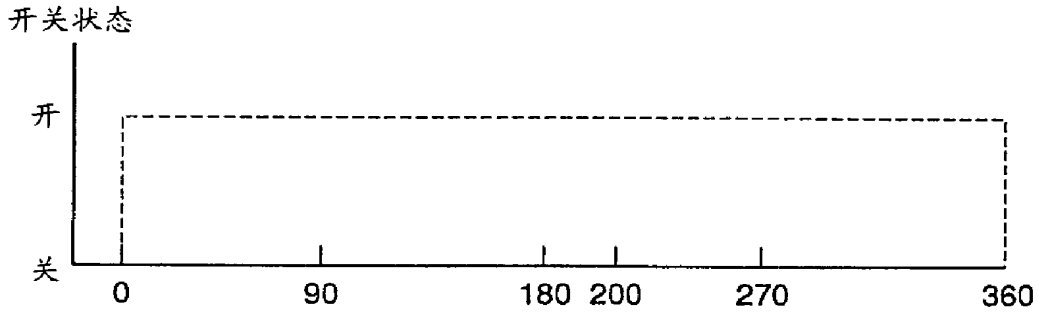


图 31A

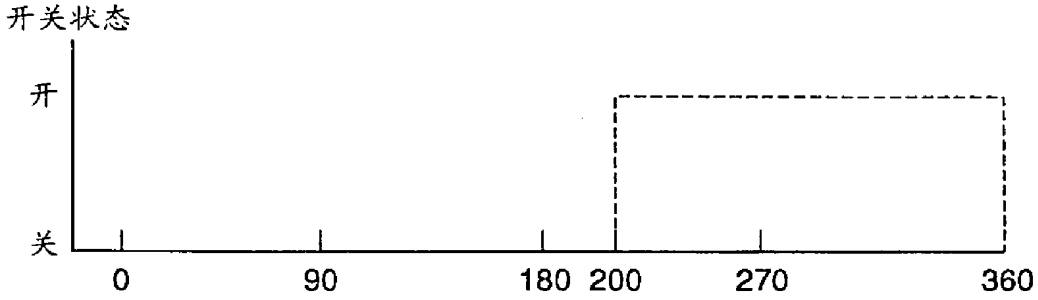


图 31B

第一开关的状态	第二开关的状态	平板显示器4A的状态	平板显示器4B的状态
开	开	不显示	显示
开	关	显示	显示
关	开	不显示	不显示
关	关	不显示	不显示

图 32

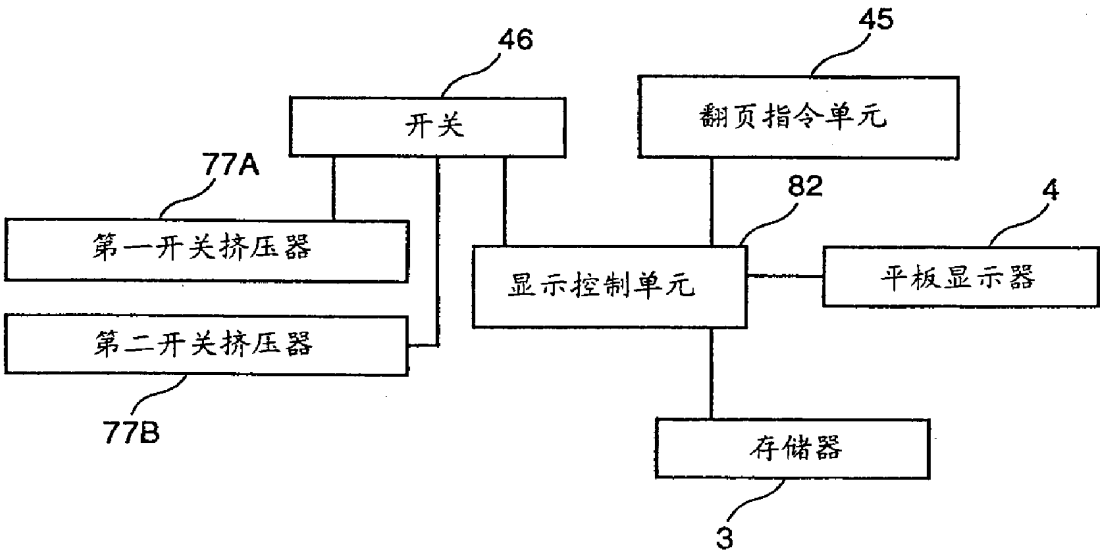

46
45
开关
翻页指令单元
77A
82
4
第一开关挤压器
显示控制单元
平板显示器
第二开关挤压器
77B
存储器
3

图 33

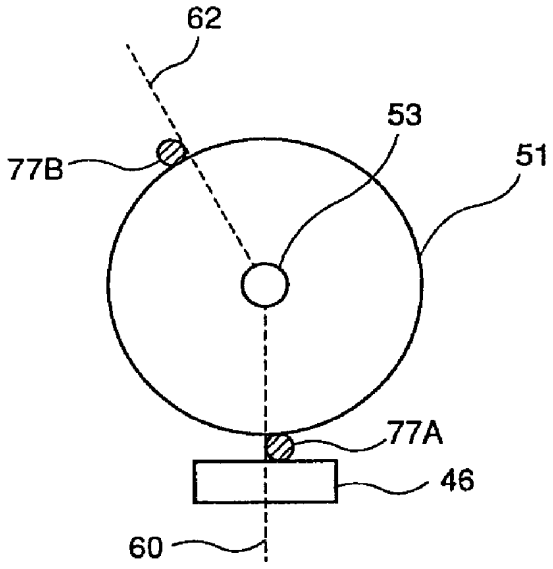

62
53
77B
51
77A
46
60

图 34

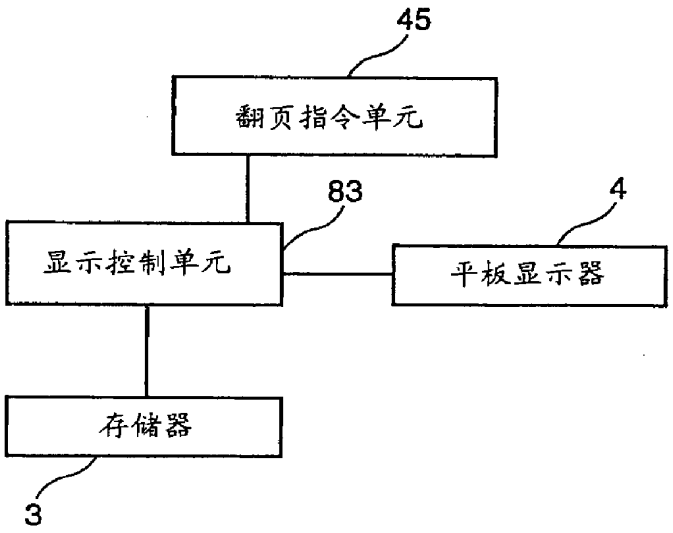


图 35

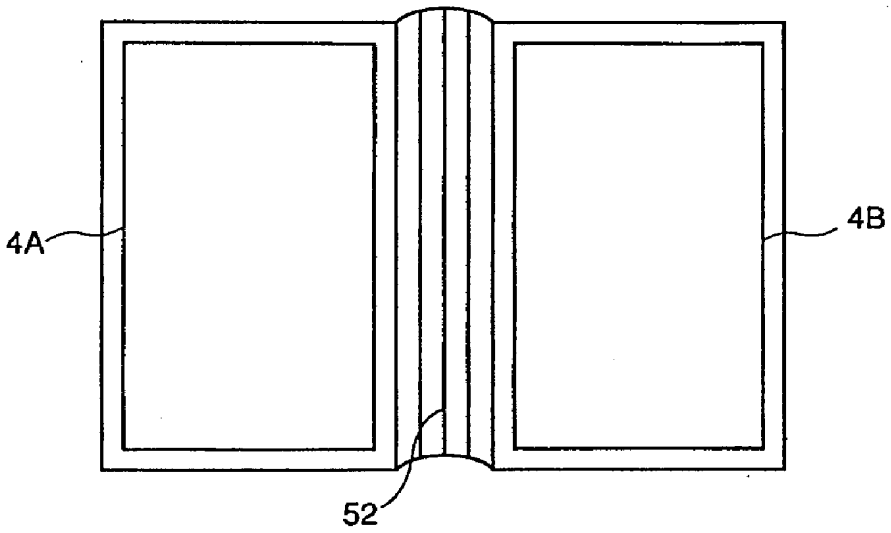


图 36

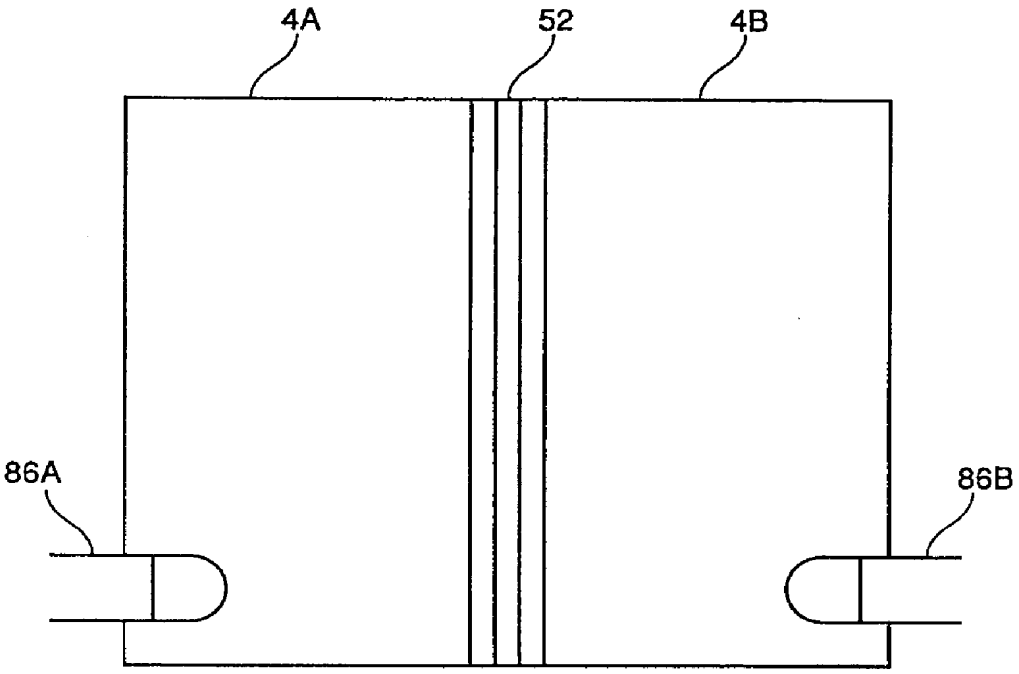


图 37A

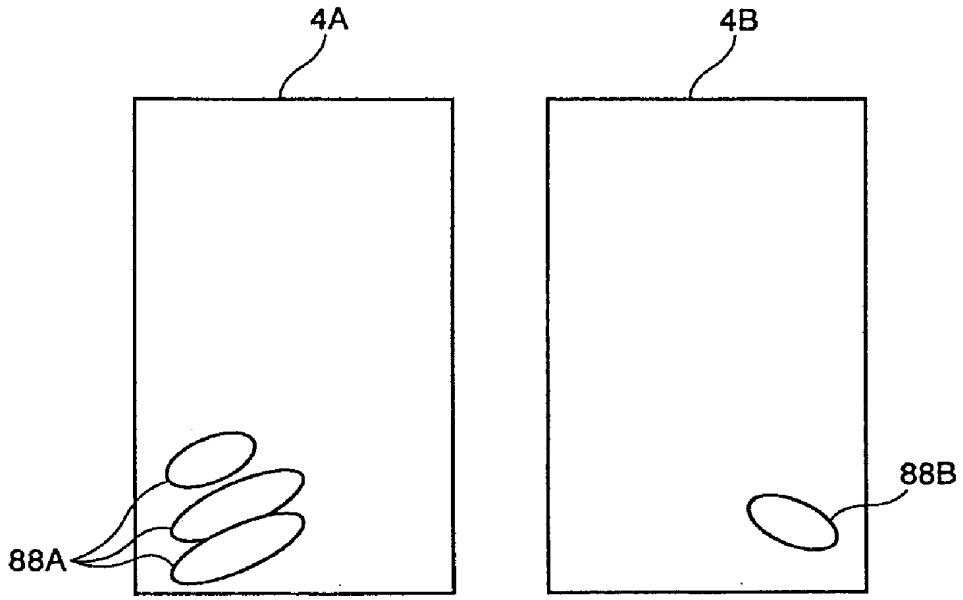


图 37B

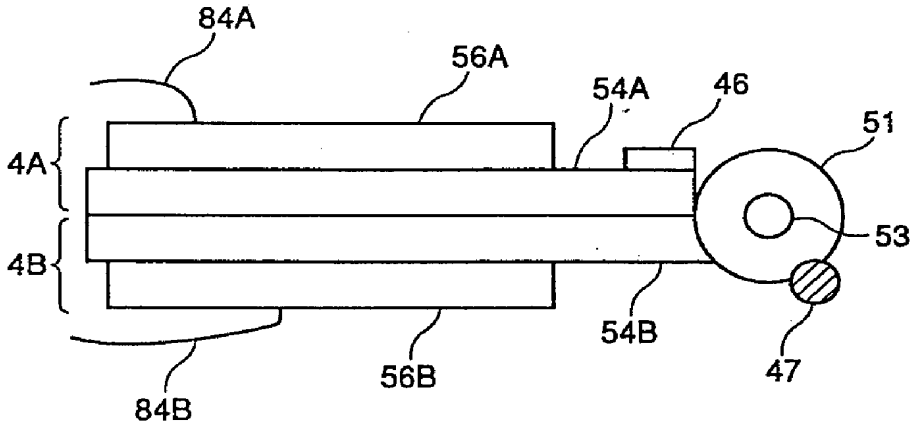


图 38

开关状态	触摸状态	平板显示器 4A的状态	平板显示器 4B的状态
开	一致	显示	显示
开	不一致	不显示	显示
关	一致	显示	显示
关	不一致	显示	显示

图 39

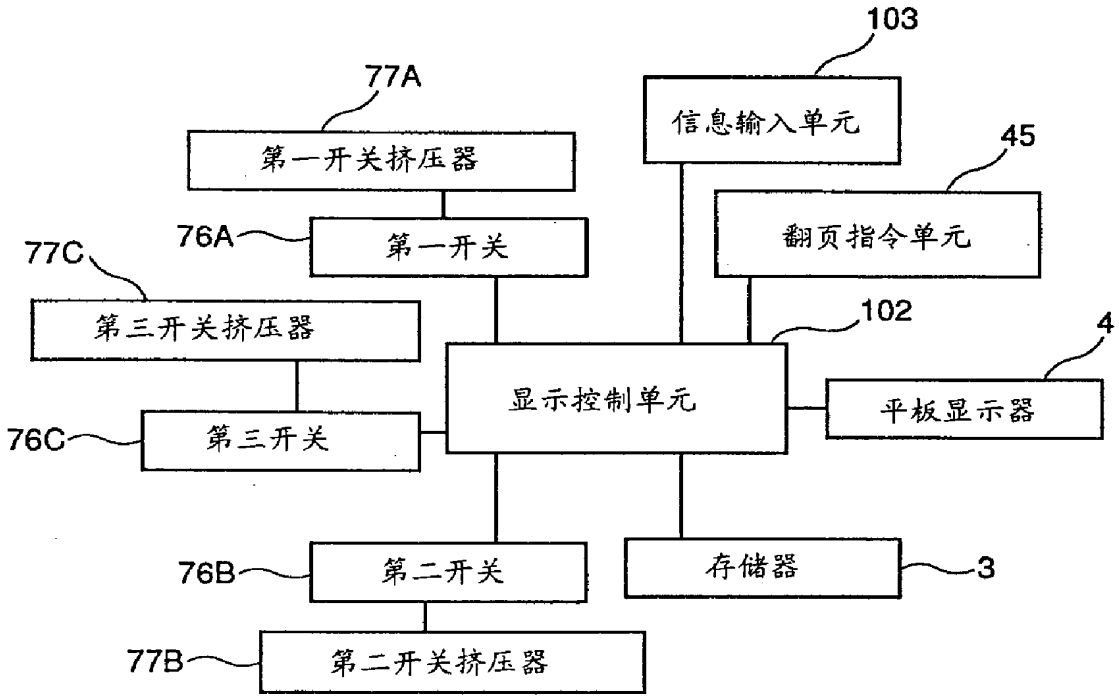

103
77A
信息输入单元
第一开关挤压器
45
翻页指令单元
76A
第一开关
77C
第三开关挤压器
102
4
显示控制单元
平板显示器
76C
第三开关
76B
第二开关
存储器
3
77B
第二开关挤压器

图 40

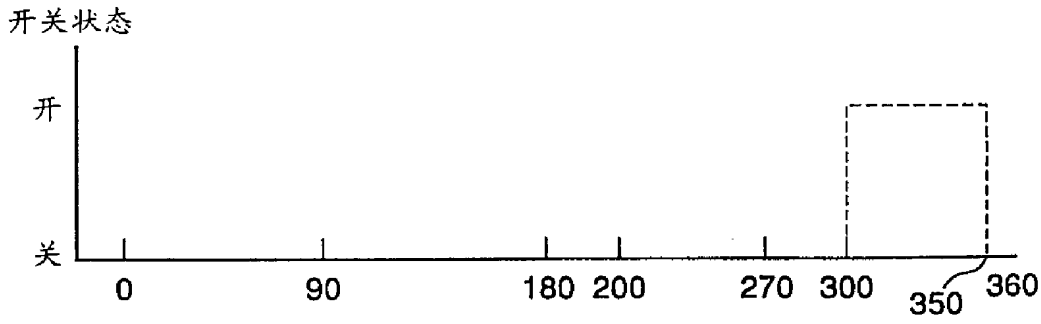

开关状态
开
关
0
90
180
200
270
300
350
360

图 41

第一开关状态	第二开关状态	第三开关状态	平板显示器 4A的状态	平板显示器 4B的状态
关	开	关	不显示	不显示
关	开	开	不显示	不显示
关	关	开	不显示	不显示
关	关	关	不显示	不显示
开	开	开	显示	显示
开	开	关	不显示	显示
开	关	关	显示	显示
开	关	开	显示	显示

图 42

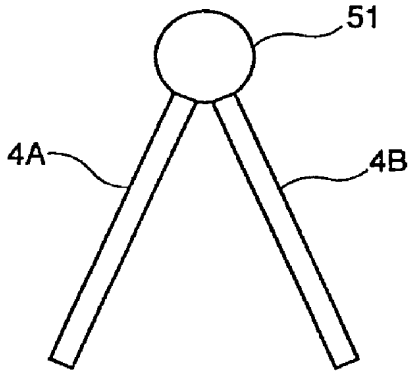


图 43

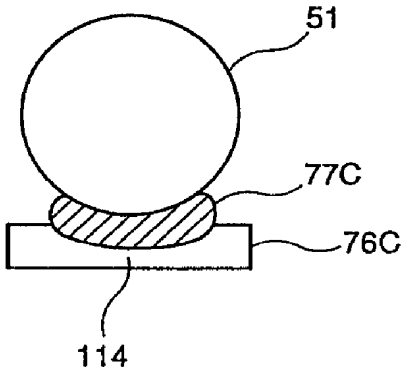


图 44

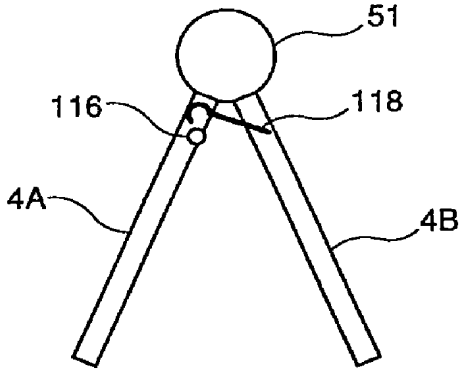


图 45

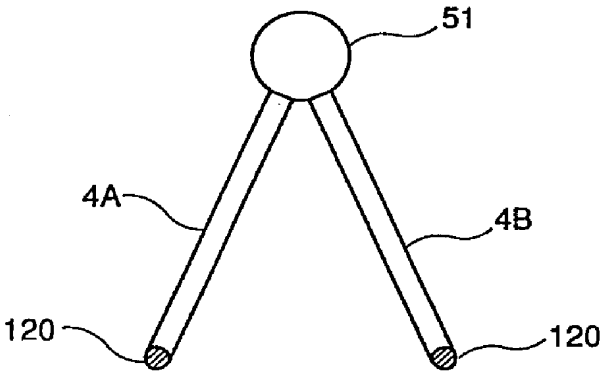


图 46

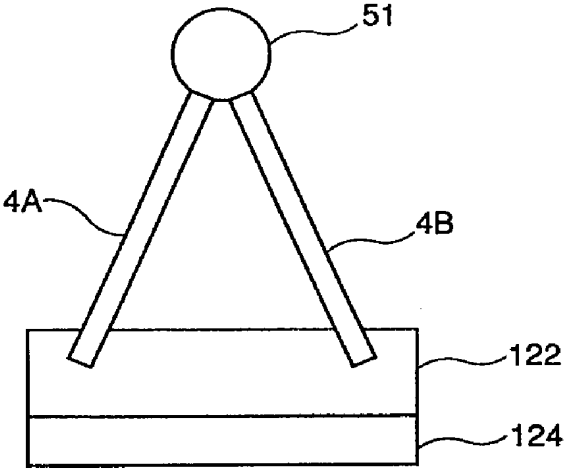


图 47

06.08.23

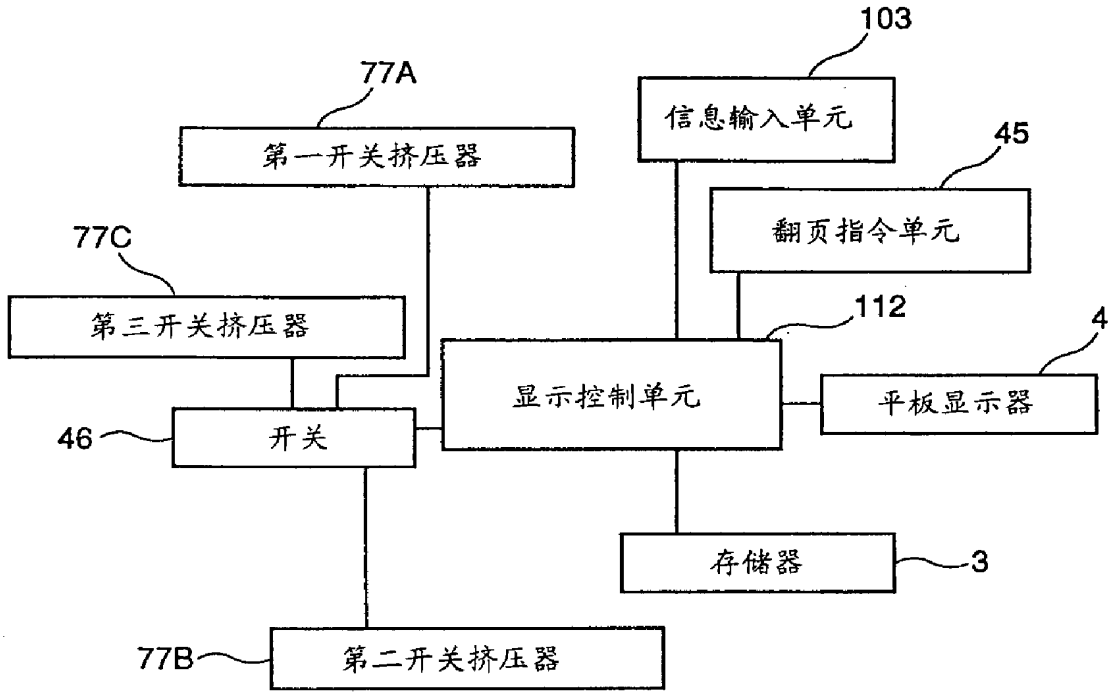


图 48

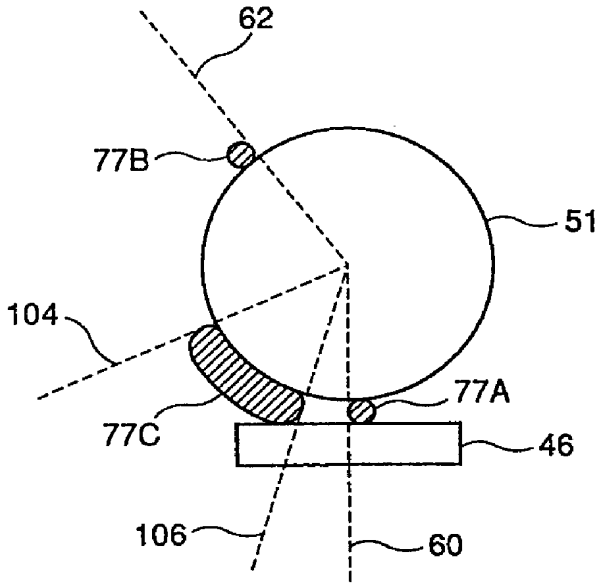


图 49

Notice

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DESCRIPTION CN1292112

Technical Field

The present invention relates to a display device, specifically, the present invention relates can be like a book by using can

Open the display data and allows the user to display device users really flip the page feeling.

Background Art

A conventional portable display apparatus press the Prev button or rearwardly page display electronic books, etc.

Button to turn the pages.

Japanese Patent No. 258076 (Japanese Patent Publication No. 2-230313) discloses a browser installed

Set it to issue commands to page through the user rotates the rotation detector.

This Japanese patent also discloses the use of

On an instruction by the pressure detector flip.

According to Japanese Patent browse the direction and speed by

To browse the pressure between the pressure detector to the browser of the pressure detector and negative Poor OK.

Above this patent

Also disclosed for the page by using the a curvature detector and a switch instruction.

According to this patent, the browser

Speed calculated based on the curvature of the curvature detector detected size, while browsing the direction based on the switching

Status determination.

Japanese Patent Publication No. 2-148257 discloses a portable document processor having a phase

When in a display screen.

This processor through the display to the previous page key to making it equivalent to a

The data read out from the memory 3 and reads out the display data stored in the display buffer memory 3.

Because

Here, equivalent to the one of the display data is stored in the display buffer memory 3, in order to display a number of pages

According to the display.

In this way, users like the user through flip to reading as to read the file.

Japanese Patent Publication No. 63-116287 discloses a display device, which has two open display

The display screen.

The user can input by operating a key to flip.

Above mentioned device is turned by pressing a button or turn a wheel (roller)

Page, which is different from a book or magazine page.

In this case, e-books are not giving a true

Positive to turn the pages of the printed book or magazine by the paper, plastics, etc. feeling as to read.

If you do not have a finger touch button or scroll wheel to be able to flip, it would be very convenient.

The above browsing means and the portable document processor only one display screen, which is not convenient means

Use.

Although the above-described display device has two display screens, but as a whole of the screen are not

Can be folded back to back up and use.

As a result, the display device is accounted for a larger place, making it difficult to grip

In the hand, resulting in the problem of portability.

Even if the display apparatus can be folded back to back from

, But the data is always also cause information leakage users to watch on the screen, as well as electric

Source of waste.

In addition, since the above display apparatus can not be folded back to back up, if the means for

Playing game sex games, for example, the kind of a player is best not shown his cards game, the players

It can not be a secret to conceal its brand of home.

Disclosure of the Invention

Accordingly, an object of the present invention is to provide a way to turn the page of the electronic book display apparatus in order to

Printed, such as paper, plastic sheet or magazine page real by giving a flip feeling.

It is another object of the present invention to provide a flip display device, which through the same

An operation will not only be able to give people the feeling really ruffled a book page, but a page flip

And the ability to continuously flip.

Still another object of the present invention is to provide a display device, even if the user does not move as hand and hand

Refers to such a pointer to the button, it is possible to flip.

Another object of the present invention is to provide a can be folded back to back, form, and can

Display device in hand, it has a small size, easy to carry, low energy consumption and suited to play the game

Sex games.

Is another object of the present invention further provides a display device, it is to prevent information leakage

Advantages, and low energy consumption.

According to an aspect of the invention, the display device comprising: a memory for storing information; display,

For displaying information; the flip instruction unit, for detecting an instruction unit own inclined to output

A detection signal; indicates that the direction of inclination, and a display control unit for the instruction unit from the flip

Receiving instructions, in order to read from the memory according to the direction of said inclined Next or Previous Letter

Interest rates, and the read information is displayed on the display.

In response to the sliding of the user's finger or hand on top of the flip instruction unit, the display control unit to turn a

Page.

In this way, the user can be if the user is a real hand turn pages to flip.

In accordance with another aspect of the invention, the display apparatus comprising: a memory for storing information; monitors

For displaying information; next page instruction unit, for detecting a pointer moving direction, and to output an indication to the

The moving direction of the detection signal;, and a display control unit for the instruction unit receives an instruction from the next page,

In order according to the direction of movement to the next or previous page read from the memory information, and in significant

The indicator displayed on the information read.

In response to such a movement of the pointer such as a user's finger or hand on top of the next page instruction unit, the display

The control unit turned one.

In this way, the user is able to if the user is in really hand turned one page

The land next page.

The display control unit preferably includes a unit for the instruction from the the flip instruction unit receives, from the root

A storage determined by the length of time of the instruction unit according to the direction of pointer movement in contact and pointer flip

The device information, the reading of the information of the next or previous page, and the read information is displayed on the display.

Display control unit according to the pointer contact with the flip instruction unit changes in the length of time of the page to be turned

Number.

Thus, pages can be one in the same operation as a flip, also can continuously Goto.

According to another aspect of the invention, further, the display device including: a memory for storing information; display

For displaying information; flip instruction unit, for detecting the position of the pointer in contact, to output a

Two directions of the touch position detection signal; as well as a display control unit for the unit receives from the flip instruction

Instructions so that, based on a change of position of the pointer contact, read from the memory Next or Previous of

Information, and the read information is displayed on the display.

User contact page by using a pointer the instruction unit twice to turn a.

Page according to the direction of

Determined by the change of the touch position.

In this way, the user is able to if the user is really hand turned one page

Like to flip.

According to another aspect of the invention, the display device comprising: a memory for storing information; from to

At least two openable and closable screen configuration of a display for displaying information; flip instruction single

Element for detecting ON / OFF operation of the monitor, to output a detection signal; and a display control unit

Element for flip instruction unit receives an instruction, so that according to the ON / OFF operation is detected, the switching

Is displayed on the display of the information.

The user can display the ON / OFF operation flip.

Thus, the display device at the same time in the hand,

Can not move like hands and fingers like a pointer to the button on the next page.

According to the further of the present invention, on the other hand, the display device comprising: a memory for storing information; significant

Shown, for displaying information; speaker, for outputting sound; flip instruction unit for transmitting a

Instructions, in order to switch the display of the information on the display; display control unit for single flip instruction

Receives an instruction to switch the display of the information on the display; well connected to the display control unit

The sound output control unit, for turning paper based on the switching information is displayed on the display output from the speakers

Sound.

The sound output control unit in the next page while the voice output reversing sheet.

In this way, the user can be good

Feeling like the user to turn pages flip.

The speaker is preferably constituted by at least two speakers.

A sound output unit and a display control unit phase

A circuit connected to the output from the speaker based on the switching information is displayed on the display turned paper sound,

And according to the direction of the switching information, the output changing sound volume at the same time, from at least two speakerphones

Sound output device.

According to the direction of the next page by the user, the voice of the inverted paper generated in the manner of moving the center of the sound.

This

Like the user if the user really turn a sheet of paper the same feeling flip.

According to the further of the present invention, on the other hand, the display apparatus comprising: a memory for storing information; by

At least two openable and closable screen configuration of a display for displaying information; rotational angle of the subject

Measurement means for the rotational angle of the detection display; well connected to the display of the rotation angle detection unit

A control unit to control whether the display is used according to the rotational angle of the display provides a display.

The display control unit when the user back to back folding the monitor, it is possible to generate a control to induce

The screen is not viewed by the user does not provide a display.

Therefore, in the prevention of information leakage can be provided a

Have the advantage of the display device.

Can also reduce the energy consumption of the display device.

Can also provide a more

Plus portable, capable by the user freely rotatable, so that even if the display apparatus accounts for fewer places

Households are also able to watch the display apparatus of the advantages of the display monitor.

The display device preferably includes a fixing unit for the monitor is fixed in a predetermined range of a

A rotation angle.

The user can mount the monitor in a predetermined range of a rotational angle.

Thus, the user can

Play the license does not allow the user to leak to the game home game.

According to the further of the present invention, on the other hand, the display apparatus comprising: a memory for storing information; by

At least two openable and closable screen configuration of a display for displaying information; has at least two

Graphical input panel unit constituted by the configuration of the component parts corresponding to the respective display screen, means for detecting

A needle contact area of the display; as well as the display control unit connected to the tablet for

Control whether the display the tablet unit area pointer contact display.

Display the graphic input of the control unit according to the pointer such as a finger in contact the surface of the plate element

Plot, to determine that one of the monitor screen being viewed by the user, in order to not be viewed on the screen does not

Providing display.

Therefore, it is possible to provide a display device has an advantage in the prevention of information leakage.

Also

Can reduce the energy consumption of the display device.

BRIEF DESCRIPTION

Figure 1 shows a block diagram showing a configuration of a display device of the first embodiment of the present invention.

Figure 2 is a diagram showing the appearance of a display device of the first embodiment of the present invention.

Figure 3 is a sectional view of the flip instruction unit.

Figure 4 is an equivalent circuit diagram of the flip instruction unit.

Shown in Figure 5 is a block diagram showing a configuration of a display device of the second embodiment of the present invention.

Figure 6 illustrates the appearance of a display device of the second embodiment of the present invention.

Figures 7 and 8, shown is a flowchart of the page turning processing.

Figure 9 illustrates the appearance of the display apparatus having a touch position of the detector.

Figure 10 diagrammatically represents the flip effective region of the touchpad.

Figure 11 shows a block diagram showing a configuration of the display device of the third embodiment of the present invention.

Figure 12 illustrates the appearance of the display apparatus of the third embodiment of the present invention.

Figure 13 illustrates the structure of the tilt detector.

Figure 14 is a diagram showing a page turning processing flowchart.

Shown in Figure 15 is a block diagram showing a configuration of the display device of the fourth embodiment of the present invention.

Figure 16 illustrates the appearance of the display apparatus of the fourth embodiment of the present invention.

Figure 17 illustrates a flowchart of processing of the sound output.

Shown in Figure 18 is a block diagram showing a configuration of the display device of the fifth embodiment of the present invention.

Figure 19 is a diagram showing the appearance of the display device of the fifth embodiment of the present invention.

Figure 20 shown from the side of the display device.

Figure 21 illustrates the structure of the switch and the switch extrusion.

Figure 22 shows a state that is applied to the pressure on the switch shown in Figure 21 and the switch.

Figure 23 illustrates that the next page of the instruction unit.

Figure 24 illustrates the structure of the switch and the switch extrusion.

Figure 25 shows a state applied to the pressure on the switch shown in Figure 24, and the switch.

Figure 26 shows the state of the switch that generated by the switching state is formed in Figure 25.

Figures 27 and 28 are a graphical representation of the flip instruction unit.

Figure 29 shows a block diagram showing a configuration of a sixth embodiment of the display device of the present invention.

Figure 30 shows the structure of the first switch and the first switch extruder.

Figure 31A shows a state of the first switch.

Figure 31B shows a state of the second switch.

Figure 32 diagrammatically shows the relationship between the first and second state of the switch, as well as in flat panel displays

4A and 4B, the display on the state.

Figure 33 is a block diagram showing a configuration of the seventh embodiment of the present invention the display device.

Figure 34 is a diagram showing the structure of a switch with a first and second switch extrusion device.

Figure 35 is a block diagram showing a configuration of the display apparatus of the eighth embodiment of the present invention.

Figure 36 shows the appearance of the display apparatus of the eighth embodiment of the present invention.

Figure 37A shows the appearance of the display device of the open.

Figure 37B diagrammatic representation of the area of finger contact with the flat panel display is folded back to back.

Figure 38 from the side shows a closed when the display device.

Figure 39 a graphical representation of the shape of the contact in the switch status, pointers, and the flat panel display 4A and 4B

State as well as the relationship between the display state on the flat panel display 4A and 4B.

Figure 40 is a block diagram showing a configuration of the display device of the tenth embodiment of the present invention.

Figure 41 shows the state of the third switch.

Figure 42 is a diagrammatic representation in the first to third switching state in the flat panel display 4A and 4B

The relationship between the state is displayed.

Figure 43 shows the appearance of the flat panel display is folded back to back, 4A and 4B.

Figure 44 shows the structure of the third switch and the third switch extruder.

Figure 45 shows a flat panel display with a nail and a flat panel display with a hook

The appearance of the display apparatus.

Figure 46 shows the appearance of a display device, the display device is applied to a layer of non-slip outer

Shell.

Figure 47 is a diagram showing an appearance of a display device, the display device installed in a non-slip

Base.

Figure 48 is a block diagram showing a structure of a display device of the eleventh embodiment of the present invention.

Figure 49 is a diagram showing the structure of a switch and the first to third switching extruder.

Preferred embodiment of the present invention is implemented

First Example

Referring to Figure 1, the first embodiment of the display device 1 includes: a memory 3, which consists of as the semiconductor memory

Memory, hard disk, MO (Magneto-Optical, magneto-optical disc) as a magnetic storage device is configured

Into, for storing image information, character information, etc.; flat panel display 4 by the liquid crystal panel, a PDP (the Plasma

Display Panel, the plasma display panel) and the like constructed from, for displaying image information, character

Information, etc.; display control unit 2, for controlling the image information stored in the memory 3, character information

Information, etc. read, and the read information is displayed on the flat panel display 4; flip instruction unit 5,

Flip instructions for receiving from the user, the display control unit 2 so as to indicate the next page.

After this the user includes in addition to the the software dynamic of animals such as humans outside (software

agent), such as robots like artificial limbs.

Referring to Figure 2, the display device 1 of the display 4 of the two plates and two flip instruction unit 5.

The number of the flat panel display 4 and flip instruction do not limit the number of unit 5 into two, may be one,

Can also be at least three.

If the number of flat panel displays and flip instruction unit 5 are two or

More, then they can be configured when they are not being used, and open into a use state of the display

And instruction unit is folded up.

Although Figure 2 illustrates a flat display put into a back-to-back 4, but

This arrangement is not limiting this form.

The flip instruction unit 5 is arranged in an edge of the display device 1.

The display control unit 2 and the memory

3 is mounted on the display device 1.

Figure 3 is a a cross-sectional view of the flip instruction unit 5 in Figure 2 along the line III-III.

Page instruction unit

5 constructed from the following parts: a support shaft 5d, around the switch 5d rotating columnar-shaped object being

5c, the contacts 5a 'and 5b'.

The switch 5c on two opposite sides of the contacts 5a and 5b.

In Figure 3 in the open

OFF 5c, 5d around the supporting shaft is rotated counterclockwise to allow the contacts 5a and 5a 'to achieve mutual contact.

In

In Figure 3, the switch 5c around the supporting shaft 5d rotated clockwise to allow contact 5b and 5b ', in a mutually connected

Touch state.

The switch 5c is supported by a spring (not shown), and when the contacts are not in contact with each other, are stable

's.

The surface of the switch 5c is covered film on the layer of pieces of rubber, silicon, plastics, etc. 5E.

Therefore, flip

The instruction unit 5 is reinforcement, any electrical damage could have been avoided, and external substances like dust like

Can not enter the display device 1.

Figure 4 is a next page equivalent circuit diagram of the instruction unit 5.

The instruction unit is configured so as to satisfy: when the touch

Point 5b and 5b 'contact with each other, the contacts 5a and 5a' mutual contact.

When all the contacts are not relative

Contact with each other, often is a stable state.

When the mutual contact of contacts 5a and 5a 'Be, 5a "point

A voltage change.

When the mutual contact, contact 5b and 5b ', 5b "point of the voltage change.

Noticeable

The display control unit 2 is detected by a voltage change at the point 5a "and point 5b" flip

instruction.

Referring again to Figure 3, the user flip instruction unit 5, the upper left and lower right corner of the sliding finger or

Hand.

Therefore 5c is rotated.

Here term also refers to "slide" in close 5a and 5b any position,

With your fingers or hands on.

In other words, the term refers to a similar hand turned the paper printed book

Operation.

The rotation of the switch 5c procure a voltage change in the point 5a "5b", and thus the display control unit

2 is able to detect the user in the desired direction.

For example, when the user on the left page instruction unit 5 upper right slide within the fingers or hands, the display control

System unit to move forward flip.

Slide your finger or hand 5 top left of the page on the right when the user command unit

, The display control unit 2 back flip.

Therefore, users like real paper in hand turned

Perform next page.

When the user on the left page instruction unit 5 lower left slide within the fingers or hands, the display control unit

2 back flip.

When the user is on the right page instruction unit 5 bottom right of the slide your finger or hand,

the display

Control unit forward flip.

By the display control unit 2, such a control allows the user through the

Only one instruction unit 5 will be able to flip forward and back.

Therefore, the user can with one hand and flip.

Second Example

Referring to Figure 5, a second embodiment of a display device 11 includes: similar to the first embodiment of the deposit

Reservoir 3; similar to the first embodiment of the flat panel display 4; the display control unit 12 for controlling the

The picture information, character information and the like stored in the memory 3 to read, and to read the information in the Tablet

Display on the monitor 4; completely cover the flat panel display touchpad 15, placed into a 4, to receive from the

User to flip instruction, and send an instruction to the display control unit 12 in order to flip.

With reference to Figure 6, a second embodiment of the display device 11 in the embodiment includes a display 4, and two of the two plates

Touchpad 15.

15 back-to-back arrangement of the two sets of flat panel displays 4 and touchpad.

Flat display 4 and

The number of the touch panel 15 is not limited to two, and may be one, can also be at least three.

Display control

Unit 12 and the memory 3 is mounted on the display device 11.

The touchpad 15 is a detector detecting the position of contact by the pointer as a finger and a pen like.

The display control unit 12 is changed according to the length of time of the pointer is contacting the touch panel, the number of pages of the next page.

Referring to Figure 7, described by the display control unit 12 performs the flip control process.

Referred to here

The book was supposed to display on the right of the flat panel display 4, page numbers, the smaller one is written vertically.

If the display in the right flat panel displays 4, page numbers, the smaller one is the level of writing, before and after

The direction of mutual exchange.

Display control unit 12 determines whether the touch panel 15 detects a pointer like a finger and a pen or the like

Contact (S11).

If the touch pad 15 does not detect contact with the pointer ("NO" in S11),

Then the display control unit 12 repeats S11, the processing, until the touch pad 15 into contact with the pointer is detected.

When the touchpad 15 detects the contact with the pointer ("Yes" in S11), the display control unit

12 determines the pointer in the touch panel 15, the moving direction (S12).

If the pointer moves from left to right (in

S12 is "left to right"), and then turned in the forward direction, the display control unit 12 a (S13).

After this,

Display control unit 12 determines that the contact between the pointer with the touchpad 15 is a continuation of a predetermined time

The length or longer (S14), if the contact time between the pointer and the touch pad 15 is less than a predetermined

The length of time ("NO" in S14), the display processing in the control unit 12 repeats S14.

As

The contact time between the fruit pointer with a touch pad 15 is at least a predetermined length of time (in S14

"Yes"), then the display control unit 12 is then turned in the forward direction, a (S13).

When the pointer away from the touch

The plate 15 (in S14 touchpad 15 "), by the display control unit 12 executes the process ends.

If the pointer is right-to-left movement (in S12 "right to left"), the display control unit 12 in the

Turned a backwards direction (S15).

After this, the display control unit 12 determines that the pointer and the touch pad 15

The contact between the continuation of a predetermined length of time or longer (S16), if the pointer with the touch

The contact time between the plate 15 is less than a predetermined length of time ("NO" in S16), the display

The control processing unit 12 repeats S16.

If the pointer with the touch panel 15 between the contact time of at least

Is a predetermined length of time ("YES" in S16), the display control unit 12 and the rearward facing direction Total

A (S13).

When the pointer touchpad 15:00 (in S16 touchpad 15 ") by

The display control unit 12 executes the process ends.

Referring to Figure 8, the display control unit 12 may control the following description of the flip.

According to Figure 7 illustrates

Processing example, the user through the pointer is contacting the touch panel 15 and the moving contact with the touch panel 15 pointer,

Specifies the forward or backward direction.

According to the the processing practical cases illustrated in Figure 8.

Forward or rearward side

By moving the pointer, without the pointer contact with the touch pad 15 to specify.

The display control unit 12 determines whether the touch panel 15 detects contact (S40) with the pointer.

If

Touchpad 15 does not detect contact with the pointer (in S40, "NO"), the display control unit 12 by weight

Complex S40, processing until the touch panel 15 detects the contact with the pointer up.

If the touch pad 15 detects the contact with the pointer ("Yes" in S40), the display control unit

12 records the contact position, and determines whether there is between the touch panel 15 and the pointer to the second pick

Touch (S41).

If no second contact (in a predetermined time period or longer period of time within

S41 "No"), the end of the processing of the control unit 12 is displayed within a predetermined time.

When the touch pad 15 is detected with the pointer of the second contact ("Yes" in S41), the display control

Process unit 12 according to the direction of movement of a difference between the calculated first

and second touch position pointer to ensure

Set the moving direction (S42).

If the pointer moves from left to right (in S42, "left to right"), an explicit

The display control unit 12 is turned in the forward direction, a (S43).

After this, the display control unit 12 determines

The contact between the pointer and the touch pad 15 whether to extend a predetermined length of time or longer (S44),

If the contact time between the pointer and the touch pad 15 is less than a predetermined length of time (in S44

"No"), the display processing in the control unit 12 repeats S44.

If the pointer with the touchpad 15

The contact time is at least a predetermined length of time ("YES" in S44), the display control unit 12

Turn a page in the forward direction (S43).

When the pointer touchpad 15:00 ("left touch in S44

Moban 15 "), by the display control unit 12 executes the processing ends.

If the pointer is right-to-left movement (in S42, the "right to left"), the display control unit 12 in the

Turned a backwards direction (S45).

After this, the display control unit 12 determines that the pointer and the touch pad 15

Whether the contact between the continuation of a predetermined length of time or longer (S46), if the pointer with the touch

The contact time between the plate 15 is less than a predetermined length of time ("NO" in S46), the display

The control processing unit 12 repeats S46.

If the pointer with the touch panel 15 between the contact time of at least

Is a predetermined length of time ("YES" in S46), the display control unit 12 and the rearward facing direction Total

A (S43).

When the pointer touchpad 15:00 (in S46 touchpad 15 ") by

The display control unit 12 executes the process ends.

When the display device 11 shown in Figure 6, having a two-screen structure, the pointer and touchpad

15 between the first and second contact may be the same of the touchpad 15 impact.

Alternatively, means

The needle in the first contact with the left touch pad 15 contacts, while in the second contact with the right touchpad

15 contacts.

Through this operation, the user is able to if the user turned the same feeling of paper printed book

Next page.

If the first contact position is very close to the second contact position, in particular, for example, two

Times the distance between the touch position is 10 mm or smaller, and at the same time allows the pointer contact with the touch panel 15,

Then the display control unit 12 may determine that the user moves the pointer position, and according to the flow shown in Figure 7

Perform flip chart processing.

Reference to Figure 9, with the current being a notebook-type personal computer is used as a

touch position detection of the pointer device

16 alternative touchpad 15.

In this case, the touch position detector 16 and the flat panel display 14 is separated

Arrangements.

Referring to Figure 10, the touchpad 15 can have as part of a page active area 15a, the user can only

Only effective area by page 15a the issue next page directive.

Since this way, it is possible to prevent accidental finger

An erroneous operation caused by the contact.

Although the shape of the flip effective region 15a in Figure 10 is a triangle,

But the shape is not limited to this, and may be another polygon, arc, circle, etc..

Flip the effective area 15a

The position is not limited to the lower left and right, one-third of the strip can be equivalent to the bottom of the touchpad

Within the region.

Such as described above, the user can by using the pointer to the touch or move the pointer changes a.

Because

Here, the user is able to if the user turned the same feeling of paper printed book pages.

Will flip the pages according to the change in length of the contact time between the pointer and the touch pad 15.

Therefore,

The same kind of operation can achieve a one page can achieve the purpose of the continuous

page.

In addition, the flip-effective area 15a arrangements to prevent erroneous operation caused by casual contact fingers

For.

Third Example

Referring to Figure 11, the display control unit 21 according to the third embodiment including: similar to the first embodiment

The example of the memory 3; similar to the first embodiment of a flat panel display; the display control unit 22, with

The reading of the information for controlling the picture information, character information, etc. is stored in the memory 3 in operation, and a reading

The information is displayed on the flat panel display 4 operation, and the inclination of the detector 25 for transmitting page refers

Order to the display control unit 22.

Referring to Figure 12, according to a third embodiment of the display control unit 21 includes: two flat display 4

And two tilt detector 25, and the flat panel display 4 and the inclination of the detector 25 the two groups face

Surface arrangements.

The display controller 22 and the memory 3 is mounted in the display device.

The bits of the inclination of the detector 25

Set is not limited to, as shown in Figure 12.

From the characteristics of the inclination of the detector 25 is considered, the detector as possible

4 shaft away from the flat panel display.

Referring to Figure 13, the tilt detector 25 comprising: a hollow cylinder 25d; one package

Cylinder 25d of the conductive balls 25c; and electrodes 25a and 25b are mounted on the upper portion of the cylinder 25d.

Shown in Figure 13, when the inclination of the detector 25 is in the normal state ("off" state), the ball 25c

In the lower portion of the cylinder 25d, the ball 25c and the electrodes 25a and 25b are not in contact.

Rotation of the entire detector and

Due to tilting of the ball 25c is moved in the cylinder 25d and come into contact with an electrode mounted on the upper portion of the cylinder 25d

25a and 25b.

Result, the current flowing between the electrodes 25a and 25b, thereby detecting the inclination seized

The inclination of the measuring device 25 ("open" state).

Assumed here that, when the display control unit 121 is the open state shown in Figure 12, left and right

Inclination detector 25 are in the "off" state.

If the flat panel display 4 is a solid

Given, while the other flat panel display 4 is closed, turn opened, then one of the slope detector 25 to enter

"On" state.

Then the display control unit 22 is able to detect that the right and left flat-panel display 4

An open and close.

Referring to Figure 14, describes the processing of the flip control by the display control unit.

Shown in Figure 14

Processing referred to herein, it is assumed that book are displayed on the right side of the tablet on the display 4, page numbers, smaller

A vertical writing.

The display control unit 22 has been waiting to skew detector 25 into the "on" state (S21)

Ended.

When the state of the slope detector 25 becomes "ON" ("ON" in S21), the display control unit

Determine the right and left inclination of the detector 25 that is in the "open" (S22), if the left gradient

The detector 25 is in the "open" left "(S22), the display control unit 22 waits until the inclination seized

Measurement device 25 into the "off" state (S23).

When the state of the slope detector 25 becomes "OFF" (in

S25, is in the "Off"), the display control unit 22 controls a turning in the forward direction.

If the right side of the slope of the detector 25 becomes "ON" (S23 "right"), the display control unit

22 waits until the right side of the slope of the detector 25 becomes "OFF" state (S25).

When the inclination to the right

When the status of the detector 25 becomes "OFF" ("off") in S25, the display control unit 22 controls the

System moving in the direction of turn one.

Therefore, the user can open and close the display device to flip.

So in a user holding the display device

Set to 21 at the same time, do not move the hand or fingers to the button will be able to turn the

pages.

A fourth embodiment

Referring to Figure 15, according to the fourth embodiment of the display device 31 includes: image hard disk, MO such

Magnetic storage device constructed from a memory 33 for storing image information, character information, audio

Information, etc.; similar to the first embodiment of a flat panel display; display controller 32 for controlling the deposit

The picture information, character information and the like stored in the memory 3 to read, and to read the information in the flat panel display

Diagram 4 on the display; similar to the second embodiment of the touchpad 15; audio controller 36,

For reading data stored in the memory 3 of the sound information for the display controller 32 is turning in flat

When the page of information is displayed on the panel display 4 turn a sheet of paper, by the speaker 37 outputs sound.

Audio control

Made 36 different sounds flip speed output.

With reference to Figure 16, according to the fourth embodiment of the display device 31 includes: two flat display 4 and

Two touchpad 15, and the two groups of the flat-panel display 4 and the touch panel 15 is face to face arranged.

In addition,

Two loudspeakers 37 are placed in the left and right sides of the display device 31, respectively.

A display controller 32, the audio control

36 and the memory 33 is mounted on the inner 31.

Can use the generic switch instead of the touchpad 15.

Display controller 32 in a manner similar according to the described in conjunction with Figure 7 and 8, a second embodiment of explicit

The display device 1 of the display control unit 12 used in the control page.

The control description is not

Repeat here.

From the touch panel 15 to display controller 32, the pointer with the touchpad of 15

The contact between the information provided to the sound control unit 36.

With reference to Figure 17, describes the sound output control process carried out by the voice control unit 36.

Audio frequency

The controller 36 determines that the instruction refers to the flip by the touchpad 15 is normal flip or high-speed flip

(S31).

Normal page means just turned one, while the high-speed flip means continuous page, or both

Turned a few pages as a unit.

If the flip instruction refers to the normal flip (S31 is "normal"),

The audio controller 36 is read from the memory 33 the voice samples A (S32).

If the page directive refers to the

Is a high-speed page (S31 in the "high-speed"), the audio controller 36 to read from the memory 33 sound

Sample B (S33).

Sound sample A voice slowly turned a page, while the sound sample B flash

Over and skip the voice of a multi-page.

After the processing in S32 and S33, the audio controller 36 determines a direction to be chaona

Next page.

If the orientation of the page is being turned from left to right (in S34 "left to right"), then in S32

The sound data is read and the process of S33 of the sound center left to right (S35) moves lose

A.

If the orientation of the page is being turned from right to left (in S34, the "right to left"), then in S32, and

The processing of S33 of the read audio data to the sound center is from right to left (S35) mobile means output.

Here, the moving sound from left to right center refers to the operation of the output sound, it first left speaker 37

Send a large volume of the sound, the sound volume of the left speaker 37 is then gradually reduced, but the speaker

37 volume increases.

Right-to-left mobile voice center is the opposite way of operating.

As discussed above, the display device 31 is output while the flip operation reversing sheet acoustic

Different voices sound output, and based on the number of pages to turn.

Thus, the user is able to if the user turned

The same feeling of paper printed book page.

In addition, the display device 31 is changed in accordance with the next page in the direction the

balance of the output sound.

Whereby the user can

Enough like real hair books page.

The fifth embodiment

With reference to Figure 18, according to the fifth embodiment of the display device comprising: a memory 3; flat panel display 4;

Switch 46, for detecting a flat panel display 4, the opening degree (rotation angle); switch extruder 47

For extrusion switch 46; display control unit 42 for controlling the image information, character information, etc. is stored

In the read information in the memory 3, and the read information is displayed on the flat panel display 4, and the root

According to the state control of the switch 46 of the flat-panel display 4 display / not display; flip instruction unit 45, with

Flip command is received from the user and sends the next page instruction to the display control unit 42.

The display device

Further comprising a display buffer memory (not shown), is used to hold in the flat panel display 4, the number displayed in

It is.

Referring to Figure 19, the display device has two flat panel displays. 4A and 4B.

These two flat panel displays

4A and 4B by a hinge 51 is connected, so that the monitor 4A and 4B can be about the equivalent of one of the binding of the book

The side portion of the rotary shaft 53 is rotated, if not particularly described here, to the flat panel

display 4A

And 4B display the page data, which is to be energized.

Referring to Figure 20, the flat panel display 4A includes a bottom plate 56A and is formed on the bottom plate 56A of the display table

Surface 54A.

The flat panel display 4B includes a bottom plate 56B and the display surface 54B is formed on the base plate 56B.

The switch 46 is disposed on the base plate 56B.

The bottom plate 56A is connected to the hinge 51, and around the shaft 53 in order to be able to

Rotation.

The top of the switch 46 is squeezed, so that the switch 46 is in the "on" state, if no pressure

The force is applied to the switch 46, then it is in the "off" state.

In Figure 20 is shown a flat panel display 4

A rotation angle is 0 °.

Referring to Figure 21, the switch extrusion 47 is formed around the hinge 51.

When the hinge 51 in Fig 21

Arrow the direction of rotation (clockwise), prompting switch extruder 47 and the switch 46 is in the angle range

Contact with each other for 200 ° to 300 °, so that the switch extrusion 47 is extruded switch 46.

Note: 200 °

The angle allows the flat panel display 4A to be recognized into a turn to the back surface of the flat panel display 4B.

360 ° angle means flat

4B back-to-back of the the board monitor 4A and flat panel displays placed.

While flat panel displays 4A and 4B to each other for relative rotation, but for convenience, the flat panel display

Up 4B here are placed horizontally to be described herein, while the flat panel display 4A is rotated.

Referring to Figure 22, the rotational angle of the hinge 51, and applied to the relationship between the pressure on the switch 46

Shown by solid lines.

The pressure can be digitized according to a predetermined threshold value, to obtain a relationship indicated by dashed lines

Department.

Then be able to determine the switch 46 state ("ON" or "OFF" state).

When the switch 46 is in the "on" state, the display control unit 42 so that the flat panel display. 4A and 4B

One does not provide the display.

Referring to Figure 23, flip instruction unit 45 are respectively embedded in the flat panel display. 4A and 4B flip instruction

Units 45A and 45B.

Flip instruction units 45A and 45B are constituted by a graphic input device (touch panel).

Each flip instruction unit 45A and 45B are each equivalent is formed at such a position at a

The triangular region, the position is turned to hold the location of the finger of the hands of the booklet pages of the book.

When the user moves his finger from left to right in this region, and allows the finger contact area

Domain when the the flip command unit 45 outputs a signal for page forward.

The display control unit 42 is connected

The signal received and the page data for the next page is read from the memory 3, so as to obtain about Backward which

The page and updates the display of the flat panel display 4A and 4B.

When the user moves his finger in the opposite direction

The when, flip instruction unit 45 outputs a signal Pagedown.

The display control unit 42 receives

Page data of the previous page of the signal and read from the memory 3, so that one is being turned back

And profile in a display of the flat panel display 4A and 4B.

The direction of movement of the finger can be considered by tracking the time of contact position detection.

Page refers to

So that the unit 45 may be configured in a flat panel display 4A and 4B over the entire surface.

However, in order to avoid

To a malfunction caused by the contact of a finger or the like, the flip instruction unit 45 shown in Figure 23 can be constructed in the

Flat panel displays, 4A and 4B and the special area.

When the flat panel display 4A and 4B are both in the display state, the display control unit 42 is once

Can be turned to two, while the flat panel display 4A and 4B is only one in a display state, the display control

System unit 42 once turned a In this case, if the above-mentioned display buffer capable of storing phase

In two of the data, then the display control unit 42 time go two data read from the memory 3

And these data written into the display buffer memory.

If the above-mentioned display buffer be able to deposit

The reservoir is equivalent to the one of the data, then the display control unit 42 the time is read from the memory 3 to a Pages

Data, and the data written in the display buffer memory.

If you have given display flat panel display 4A and 4B either stop the display,

The display control unit 42 may be equivalent to the currently displayed page of data compression into a data, and

Rewrite of display buffer memory contents, so that in the display state of the flat panel display 4A or 4B

Is displayed on the compressed data.

Page compression is a well known technique.

For example, if the display information is merely

The text information, page compression can be obtained by reducing the character size.

If the display information is the number of images

According to page compression can be achieved by thinning the data.

Page data compression to be displayed only in a flat panel display has been given of the display 4A and 4B two

By one stop providing display.

After this, the display control unit, when the flip instruction issuing

42 non-compressed data and a page to page.

As Figure 23, since the next page instruction unit 45A and 45B symmetrically arranged, so no matter

Display device is in your right hand or to get in the left hand, or by right-handed or left-handed holding a can

Convenient to flip.

The deformation of the switch extruder 47

Referring to Figure 24, switches the extruder 47 may be only in the rotational angle corresponding to the hinge 51 to close to 200 °

At the position of configuration.

Referring to Figure 25, the rotational angle of the hinge 51, and the relationship between the pressure to the switch 46 is applied by

The solid line shows.

The pressure can be digitized according to a predetermined threshold value, to obtain a relationship indicated by dashed lines

System and therefore be able to determine the status (of the switch 46 "on" state or "OFF" state).

Referring to Figure 26,

The switch 46 also includes a circuit for forming the signal represented by the dashed line in Figure 25, and in the switch

46 is in the angle range of 200 ° to 360 ° when the output becomes "on" state of the signal.

When the transfer of the hinge

Activity angle changes by less than 200 ° to more than 200 °, that is equivalent to the letter indicated by the dotted line in Figure 5

When the number of the rising section, the circuit provides the output of the "open", and when the rotation angle of the hinge formed from greater than 200 °

Changes to less than 200 °, which is equivalent to the falling section of the signal represented by

the dotted line in Figure 5, the

The circuit provides the output of the "OFF".

Such a circuit can be easily constructed from a flip-flop circuit through the famous.

Flip a first modification of the instruction unit 45

Referring to Figure 27, the flip instruction unit 45 may be configured corresponding to the flat panel display. 4A and 4B

About a quarter of the bottom region.

Flip a second deformation of the instruction unit 45

Referring to Figure 28, the flip instruction unit 45 may be disposed at both sides of the flat panel display 4A and 4B and

Similar to FIG triangular region 23.

The display device as described above, having can be freely opened by the user within the range of 0 ° to 360 °

A flat panel display, 4A and 4B.

Therefore, even if display means the place occupied by reduced, the user can see

To the flat panel display 4A and 4B.

This display device can provide a very convenient.

Furthermore, this display device has a flat panel display that can be folded back to back up 4A and 4B.

The advantage of above points is: even if the flat panel display has a large display area 4A and 4B, the user can

Enough for a hand to support the display device.

In addition, such a flat panel display can be folded back to back up the display device 4A and 4B

The set allows the flat panel display one of 4A and 4B shows the display, while the other in the flat panel display 4A and 4B

Not a given show.

Therefore, even in a crowded place, such as the streetcar, the page data will not be

The others stole see.

Therefore possible to provide an excellent display means to prevent information leakage performance.

In reducing energy

The Consume aspects are also effective.

Furthermore, when the display device and hold it in one hand, flip instruction units 45A and 45B are placed in the appropriate

Finger placement.

So the user can use one hand to flip the display device.

Page instruction units 45A and 45B are arranged symmetrically, so regardless of the display device in my right hand.

Take in the left hand, the user can easily flip.

In addition, regardless of whether the user is right-handed or left-handed,

The user can be convenient and similar to flip.

A sixth embodiment

Referring to Figure 29, according to the sixth embodiment of the display device comprising: a memory 3; flat panel display 4;

First and second switches 76A and 76B, for detecting the degree of opening (the rotational angle) of the flat panel display 4;

First and second switches extruder 77A and 77B, for pressing the first and second switches 76A

and

76B; the display control unit 72 for controlling the image information, character information, etc. is stored in the memory 3.

Reading of the information, as well as control whether the display is given in the flat panel display 4; flip instruction unit

45.

Referring to Figure 30, the first switch extruder 77A is disposed in the vicinity of 0 ° of the hinge 51 of Figure 19 rotated

Corner.

Referring to FIG 31A, the first switch 76A when the rotation angle of the hinge 51 is more than 0 °, into the "open"

Status.

The second switch extruder 77B and the second switch 76B is configured so as to be described and with reference to Fig 24 of the

Switching extruder 47 and is similar to the switch 46.

Therefore, this part of the descriptions are not repeated.

Referring to Figure 31B,

The hinge 51 is near 0 ° to turn the corner.

Referring to Figure 31A, when the rotational angle of the hinge 51 in the 200 °

Into the range of 360 ° when the second switch 76B is turned into the "ON" state.

Referring to Figure 32, the display control unit 72 receives the first and second switches 76A and 76B output,

In order to control the flat panel display 4A and 4B show / display.

When the first and second switches 76A and 76B

Are in the "on" state, i.e., the rotational angle of the hinge 51 is in the range of 200 ° to 360 °,

The display control unit 72 causes the flat panel display 4A does not display, instead of the flat panel display 4B shows.

And when

The first switch 76A is in the "on" state, the second switch 76B is in the "off" state, i.e., the hinge 51

When the rotational angle is 0 ° to 200 ° range, the display control unit 72 allows the flat panel display. 4A peace

The board monitor 4B display.

When the first switch 76A is in the "off" state, i.e. the plate display 4

Is turned off, the display control unit 72, 4A, the flat panel displays, and flat panel display 4B do not provide display.

The above-described display device can have a fifth embodiment has a similar effect in the Examples.

Seventh embodiment

Referring to Figure 33, according to the seventh embodiment of the display device comprising: a memory 3; flat panel display 4;

Switch 46; the first and second switches extruder 77A and 77B; flip instruction unit 45.

Referring to Figure 34, the first and second switches extruder 77A and 77B are respectively arranged at the hinge 51

Rotational angle close to 0 ° and approximately 200 °.

The switch 46 shown in Figures 31A and 31B

Output.

Thus, the display control unit 82 is similar to the binding Figure 32 described in the sixth

embodiment of the display

The display control unit 72, control the flat panel display, 4A and 4B display / no display.

The above-described display device can have a fifth embodiment has a similar effect in the Examples.

Eighth embodiment

Referring to Figure 35, according to the eighth embodiment of the display device comprising: a memory 3; flat panel display;

The display control unit 83 for controlling the image information, character information, etc. stored in the memory 3 information

Read, and control the display of flat-panel display 4 / no display; flip instruction unit 45.

Electrostatic coupling

Aggregate type, pressure-sensitive type or an integrated display (display-integrated) type pattern input means (not

Shown) are embedded in the four kinds of flat panel displays.

When contact like finger as a pointer to the table of flat panel displays

Surface, the directions of the touch position signal is applied to the display control unit 83.

Referring to Figure 36, a flat panel display. 4A and 4B via a hinge 52 is rotatably coupled together.

Figure 37A illustrates a display device to be opened, the left thumb is come into contact with the flat panel display. 4A

Right thumb was exposed to flat panel displays 4B.

The display device is supported by the palm of your hand or other fingers.

In this

State, the contact of the finger area of the flat panel display 4A and 4B is almost equal.

Figure 37B illustrates when the flat panel display. 4A and 4B is rotated to the back to back with one another and substantially

The display device by the one hand holding the finger contact, 4A and 4B, a region on the flat panel display 88A

And 88B.

Typically, the user to take the display device, so that is supporting the flat panel display 4A the right hand finger contacts

To the region 88A of the area is larger than the area to the contact by the finger in the currently seen on the flat panel display 4B

Area domains 88B.

This is because the user attempt is supported in such a manner that the flat panel display 4B, eligible

Obtained can do a large display area, but also tried are supporting a flat panel display by protecting 4A, by hand

Refers to the area of contact 88A of the larger area to stably support the display device.

If the flat panel display 4A and 4B one has a contact area of at least greater than the other flat panel display

Illustrates a contact area of 20%, and the contact time is continued for a predetermined time (e.g. 3 seconds) or more

Long, then the display control unit 83 shows a flat panel display having a greater contact area without mentioning

For display, while the other has a smaller contact area to provide display.

In addition, if the flat panel display 4A

Have almost equal to the area of the region of the pointer contact with a flat panel display 4B, contact by the pointer

The size of the area, and the contact state continues for a predetermined length of time, then the

display controller 83

Flat panel display 4A and 4B show the display are allowed.

A graphical input device for detecting a touch position may be located at the top of a flat panel display. 4A and 4B the internal

Or any region other than the region above the surface.

Like finger as a pointer contact of the above-described display device is based on a flat panel display. 4A and

4B in the area of the region to determine which one of the flat panel display 4A and 4B viewed by the user.

Then

Provides a display of the tablet can only be allowed to be viewed by the user display device 4A or 4B, not to be viewed by the user level

The plate display device 4A or 4B does not provide display.

Therefore able to obtain to prevent information leaks and reduce energy consumption.

Advantages.

Other advantages similar to the fifth embodiment.

Ninth embodiment

Similar according to the ninth embodiment of the display device according to the fifth embodiment, in conjunction with FIG 18 described

Function block configuration of the display apparatus.

Therefore, his descriptions are not repeated here.

Similar to the combination of

Described in the eighth embodiment of the graphical input device is embedded in a flat-panel display 4.

Referring to Figure 38, the flat panel display. 4A and 4B by the hinge 51 as shown in Figure 19, as coupler in an

Onwards.

The switch extrusion 47 is constructed in the hinge 51 to form an angle of 200 °, when the flat panel display 4A and 4B,

Prompting the extrusion 47 is extruded at a position of the switch 46.

The switch 46 is in the "off" when the angle formed by the flat panel display 4A and 4B is smaller than 200 °

State, while when the angle is equal to or greater than 200 ° is in the "on" state.

The display control unit 42 according to Figure 39 controls the display of the flat panel display 4A and 4B / no display.

When the switch 46 is in the "on" state of at least 200 ° (the angle formed by the flat panel display 4A and 4B).

And by the pointer in contact with the flat panel display 4A and 4B, the difference between the area of the respective regions is equal to or

Less than a predetermined value, the display control unit 42 determines that a user viewing a flat panel display 4A and 4B

Two display surfaces 54A and 54B, thus allowing the flat panel display. 4A and 4B are provided display.

If open

The switch 46 is in the "ON" state, and a flat panel display of the pointer contact respective regions 4A and 4B

A difference between the area is greater than a predetermined value, display control unit 42 determines that the user merely viewing flat

The display surface of the panel display 4B, 54B, and such that the flat panel display 4A does not provide the display, whereas only Tablet

Monitor 4B offers.

If the switch 46 is in the "off" state, then the display control unit 42 contracting

Given user to see the flat panel display 4A and 4B, each of the display surface 54A and 54B of both, and makes the tablet

Monitor 4A and 4B are provided in the display, regardless of the magnitude of the difference of the area of contact.

Therefore, the above-described display device are similar to the efficiency of the display device according to a fifth embodiment of the

Fruit.

Tenth embodiment

With reference to Figure 40, according to the tenth embodiment of the display device comprising: a memory 3; flat panel display 4;

The first, second and third switch 76A, 76B, and 76C, for the degree of opening of the detector flat panel display 4

(Rotation angle); first, second and third switching extruder 77A, 77B and 77C, are used to first,

Second and third switches 76A, 76B, and 76C extrusion; the display control unit 102 for controlling the image-

Interest, character information, etc. stored in the flat panel display 4 of the reading of the information of the memory 3, and a control display

/ No display; the flip instruction unit 45; as well as by the keyboard, the function keys, a joystick, graphic input means

Etc. constituting the information input unit 102, to the display device the input information.

First and second switches 76A and 76B having a similar combination of a sixth embodiment described kind Results

Structure, and when the rotational angle of the flat panel display 4 is greater than 0 ° and equal to

or less than 360 °, the first switch

76A becomes "on" state.

When the rotational angle of the flat panel display 4 in the range between 200 ° to 360 °,

The second switch 76B into the "on" state.

Referring to Figure 41, the third switch extrusion 77C similar binding

Switches described in Figure 21 the extruder 47, is configured around the hinge 51, so that when the flat panel display 4

The rotational angle range between 300 ° to 350 °, the third switch 76c is turned into the "ON" state.

The display control unit 102 control the flat panel display according to Figure 42, 4A and 4B, whether to provide a display.

In particular, if the angle formed by the flat panel display 4A and 4B is greater than 0 ° and equal to or less than 200 °,

Then the first switch 76A is turned into the "ON" state, while the second and the third switch 76B and 76C becomes "OFF"

Status.

Then the display control unit 102 determines that the user views the two flat panel displays. 4A and 4B, and

Allow two flat monitor 4A and 4B provides a display.

If the angle formed by the flat panel display 4A and 4B is greater than 200 ° and equal or less than 300 °,

Mody first and second switches 76A and 76B into the "on" state, and the third switch 76c becomes "off"

Status.

And display control unit 102 determines that the user merely viewing flat panel display 4B, and

makes flat

Panel display 4A provides the display, but only the flat panel display 4B provides a display.

Referring to Figure 43, if the angle formed by the flat panel display. 4A and 4B over 300 ° and equal to or smaller

At 350 °, then the first, second and third switches 76A to 76C are all "on" state.

Then

The display control unit 102 determines that the user is playing a game resistance, etc., and folding the display apparatus, so that not displayed

User card to the family, thus allowing flat panel displays 4A and 4B provide a display.

If the angle formed by the flat panel display 4A and 4B is 0 °, then the first, second and third opening

Off 76A to 76C all become the "off" state.

And display control unit 102 determines that the user is significantly off

Display device, and 4A and 4B are not to provide the display and prompted to make flat panel displays.

Referring to Figure 44, the third switch is formed shapes allow to third switching extruder 77C loaded.

Because

Here, when the third switch 76c is in the "on" state, i.e. the angle formed by the flat panel display 4A and 4B

In a special range from 300 ° to 350 °, a flat panel display. 4A and 4B are fixed.

Thus, the user can

Enough to easily enjoy the game sex games.

Users can use To cancel this fixed state than usual

The bigger the force of rotation of the flat panel display device 4A and 4B.

With reference to Figure 45, a flat panel display. 4A may have a pin 116, while the flat panel display 4B

There is a hook 118.

When hanging by appropriately determining the position of the length of the hook 118 and pins 116,

When the hook 118 is linked to the pin 116, can be set by the angle formed by the flat panel display 4A and 4B

Disposed in a special range from 300 ° to 350 °.

Referring to Figure 46, when the flat panel display 4A and 4B are established in the use of the plane, the flat panel display 4A

And 4B each one connected to one side of the plane, sets of layer material having a large coefficient of friction, such as

For preventing the slide display apparatus of the rubber member 120.

Referring to Figure 47, in order to prevent sliding of the display device, flat panel display, 4A and 4B may be mounted on

Using the base 122.

Cradle is wrapped in a layer having a large friction coefficient materials, such as for preventing the bottom

Block 122 of the sliding of the rubber member 124.

If the angle formed by the flat panel display 4A and 4B is greater than 350 ° and equal or less than 360 °,

Mody first and second switches 76A and 76B into the "on" state, and the third switch 76c becomes "off"

Status.

Then the display control unit 102 determines that the user allows the flat panel display 4A and 4B are back to back, so

Just look of the flat panel display 4B, and therefore to urge the flat panel display 4A does not provide the display, but only

4B provides display of flat panel displays.

The user of the display apparatus shown in the above described games, without the user will be able to enjoy the game sexual licensing

Leaked to the home.

Flat panel display 4A and 4B after processing for a non-slip, therefore, the user can comfortably perform

The operation of the games.

The other effects similar to the effect of the fifth embodiment of the display apparatus.

Eleventh embodiment

Referring to Figure 48, according to the eleventh embodiment of the display device comprising: a memory 3; flat panel display

4; switch 46, for detecting a flat panel display 4 opening degree (rotation angle); first, second, and

Third switching extruders 77A, 77B, and 77C, have been used to switch 46 extrusion; display control unit 112,

Stored in the reading of the information of the memory 3, and a control level for controlling the image information, character information, etc.

Board display 4 display / non-display; flip instruction unit 45; well as by the keyboard, function keys, joystick,

A graphical input device and the like of the information input unit 1, memory 3, for the input signal to the display device

Interest rates.

Referring to Figure 49, the first and second switches extruder 77A and 77B configured in the periphery of the hinge 51,

Such that when the rotational angle of the hinge 51 are 0 ° and 200 °, the pressing switch 46.

Third switch squeeze

Pressure device 77C configured around the hinge 51, so that when the rotational angle of the hinge 51 to 300 ° to 350 °

, The pressing switch 46.

The switch 46 shown in Figure 31A, 31B and 41, the output shown.

Therefore show

The control unit 112 is similar to that according to Figure 42 depicts a tenth embodiment of a display device in a display control

Unit 102, control the flat panel display 4A and 4B and the display / no display.

Such a display device can be obtained effects similar to the fifth embodiment of the display device.

Industrial Applicability

As described above, the display device of the present invention allows the like actually turning a sheet of paper to next page, in the anti-

Stop information leaks advantage, and has the advantages of small energy consumption.

Therefore, such a display device is suitable

For manufacture of information access to a given and in the normal reading when the feeling.

TERMINAL DISCLAIMER TO OBVIATE A PROVISIONAL DOUBLE PATENTING REJECTION OVER A PENDING "REFERENCE" APPLICATION	Attorney Docket No.: L2039-700433

In re Application of: Noah B. Guyot et al.

Application No.: 12/611,282

Filed: November 3, 2009

For: METHODS AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT

LITL LLC the owner* of 100 percent interest in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application, which would extend beyond the expiration date of the full statutory term defined in 35 U.S.C. 154 and 173 as shortened by any terminal disclaimer filed prior to the grant of any patent granted on pending **reference** application serial number 12/611,282 , filed on April 1, 2009

The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and any patent granted on the **reference** application are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the owner does not disclaim the terminal part of any patent granted on the instant application that would extend to the expiration date of the full statutory term as defined in 35 U.S.C. 154 and 173 of any patent granted on the **reference** application, as shortened by any terminal disclaimer filed prior to the grant of any patent on the **reference** application expires for failure to pay a maintenance fee, is held unenforceable, is found invalid by a court of competent jurisdiction, is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321, has all claims canceled by a reexamination certificate, is reissued, or is in any manner terminated prior to the expiration of its full statutory term as shortened by any terminal disclaimer filed prior to its grant.

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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/Matthew H. Grady/ — Signature

April 11, 2013 — Date

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Form PTO/SB/96 may be used for making this statement. See MPEP § 324.

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Dated: April 11, 2013 Electronic Signature for Matthew H. Grady: /Matthew H. Grady/

Electronic Patent Application Fee Transmittal

Application Number:	12611282
Filing Date:	03-Nov-2009
Title of Invention:	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT
First Named Inventor/Applicant Name:	Robert Sanford Havoc Pennington
Filer:	Matthew H. Grady
Attorney Docket Number:	L2039-700433

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Statutory or Terminal Disclaimer	1814	1	160	160
		Total in USD ($)		**160**

Electronic Acknowledgement Receipt

EFS ID:	15497035
Application Number:	12611282
International Application Number:	
Confirmation Number:	2160
Title of Invention:	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT
First Named Inventor/Applicant Name:	Robert Sanford Havoc Pennington
Customer Number:	37462
Filer:	Matthew H. Grady
Filer Authorized By:	
Attorney Docket Number:	L2039-700433
Receipt Date:	11-APR-2013
Filing Date:	03-NOV-2009
Time Stamp:	17:15:34
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$160
RAM confirmation Number	4387
Deposit Account	502762
Authorized User	

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Terminal Disclaimer Filed	1583108_1-Terminal_Disclaimer_1.pdf	22119 c73f8ac0226cd03ba307df77efdc2a56c2222410	no	1
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30292 340d83c53a2644e205e4db26743892b4b77a1a43	no	2
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Application Number	Application/Control No.	Applicant(s)/Patent under Reexamination	
	12/611,282	PENNINGTON ET AL.	

Document Code - DISQ	Internal Document – DO NOT MAIL

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Date Filed : April 11, 2013	This patent is subject to a Terminal Disclaimer	

Approved/Disapproved by:

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NOTICE OF ALLOWANCE AND FEE(S) DUE

37462 7590 04/29/2013

LANDO & ANASTASI, LLP
ONE MAIN STREET, SUITE 1100
CAMBRIDGE, MA 02142

EXAMINER
LEE, TING ZHOU

ART UNIT	PAPER NUMBER
2173	

DATE MAILED: 04/29/2013

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/611,282	11/03/2009	Robert Sanford Havoc Pennington	L2039-700433	2160

TITLE OF INVENTION: METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1780	$300	$0	$2080	07/29/2013

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

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If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

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(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/611,282	11/03/2009	Robert Sanford Havoc Pennington	L2039-700433	2160

TITLE OF INVENTION: METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1780	$300	$0	$2080	07/29/2013

EXAMINER	ART UNIT	CLASS-SUBCLASS
LEE, TING ZHOU	2173	715-810000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
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3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

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(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

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- ❑ Issue Fee
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❑ Applicant certifying micro entity status. See 37 CFR 1.29	NOTE: Absent a valid certification of Micro Entity Status (see form PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
❑ Applicant asserting small entity status. See 37 CFR 1.27	NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
❑ Applicant changing to regular undiscounted fee status.	NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/611,282	11/03/2009	Robert Sanford Havoc Pennington	L2039-700433	2160

37462 7590 04/29/2013

LANDO & ANASTASI, LLP
ONE MAIN STREET, SUITE 1100
CAMBRIDGE, MA 02142

EXAMINER	
LEE, TING ZHOU	

ART UNIT	PAPER NUMBER
2173	

DATE MAILED: 04/29/2013

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 847 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 847 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No.	Applicant(s)	
	12/611,282	PENNINGTON ET AL.	
	Examiner	Art Unit	
	TING LEE	2173	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to _____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *1-27*.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 11/3/10, 11/3/10, 2/25/11, 9/28/11, 11/28/11, 5/18/12, 8/22/12, 11/28/12 & 4/2/13
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *4/16/13* .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

/TING LEE/
Primary Examiner, Art Unit 2173

Examiner-Initiated Interview Summary	Application No.	Applicant(s)	
	12/611,282	PENNINGTON ET AL.	
	Examiner	Art Unit	
	TING LEE	2173	

All participants (applicant, applicant's representative, PTO personnel):

(1) *TING LEE*. (3)_____.

(2) *Matthew Grady (Reg. No. 52,957)*. (4)_____.

Date of Interview: *11 April 2013*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☐102 ☐103 ☒Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *1 and 25-27*.

Identification of prior art discussed: *N/A*.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

The examiner contacted the applicant's representative to discuss possible changes to the claim language in order to place the application in condition for allowance. The examiner and the applicant's representative agreed upon a set of amended claim language and the applicant's representative authorized the amendment (reflected in the current office action included with the interview summary).

Applicant recordation instructions: It is not necessary for applicant to provide a separate record of the substance of interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/TING LEE/ Primary Examiner, Art Unit 2173	

DETAILED ACTION

1. Claims 1-27 are pending in the application.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Matthew H. Grady (Reg. No. 52,957) on 04/11/2013.

3. The application is amended as follows:

a. Claim 1 is amended as follows:

Claim 1. A method for accessing and managing digital media libraries on a streamlined computing device with a plurality of selectable I/O profiles, the method comprising:

displaying a graphical user interface on ~~a~~ the computing device, wherein the graphical user interface comprises at least a plurality of views of digital media content;

providing for transition between the plurality of views in response to selection of an I/O profile;

providing for transition between the plurality of views in response to activation of a view selector component configured to permit a user to select one of the plurality of views, wherein providing for the transition between the plurality of views in response to selection of the I/O profile includes:

permitting the user to rotate a display component of the computing device about a longitudinal axis running along an interface between the display component and a base of the streamlined computing device;

wherein rotating the display component about the longitudinal axis from a closed mode to a first physical orientation configures the computing device into a laptop mode having a first physical configuration of the display component and the base, with one of the plurality of views as a default display; and

wherein rotating the display component about the longitudinal axis from the closed mode to a second physical orientation configures the computing device into another display mode having a second physical configuration of the display component and the base, with another one of the plurality of views as the default display;

associating at least one of a plurality of visual representations with digital media content;

executing the association with the at least one of the plurality of visual representations with digital media content in response to selection;

transitioning a display on the computing device to a view of the digital media content in response to the act of executing the association; and

providing for display of user digital media content and referenced digital media content in the view of the digital media content.

b. Claim 25 is amended as follows:

Claim 25. The method according to claim 1, ~~wherein the act of providing for transition between the plurality of views in response to selection of an I/O profile includes:~~

~~permitting the user to rotate a display element about a longitudinal axis running along an interface between the display component and a base of the streamlined computing device;~~

wherein rotating the display component about the longitudinal axis up to approximately 180 degrees from the closed mode and configures the ~~portable computer~~ computing device into a laptop mode with one of the plurality of views as a default display; and

wherein rotating the display component about the longitudinal axis configures the computing device into the another display mode with another one of the plurality of views as the default display, and includes rotating the display component beyond approximately 180 degrees from the closed mode ~~configures~~ to configure the ~~portable computer~~ computing device into an easel mode with another one of the plurality of views as ~~a~~ the default display.

c. Claim 26 is amended as follows:

Claim 26. A non-transitory computer-readable medium having computer-readable instructions stored thereon that as a result of being executed by a computer, instruct the computer to perform the method for accessing and managing digital media libraries on a streamlined computing device with a plurality of selectable I/O profiles, wherein the method comprises:

displaying a graphical user interface on ~~a~~ the computing device, wherein the graphical user interface comprises at least a plurality of views of digital media content;

providing for transition between the plurality of views in response to selection of an I/O profile, wherein providing for the transition between the plurality of views in response to selection of the I/O profile includes:

permitting the user to rotate a display component of the computing device about a longitudinal axis running along an interface between the display component and a base of the streamlined computing device;

wherein rotating the display component about the longitudinal axis from a closed mode to a first physical orientation configures the computing device into a

laptop mode having a first physical configuration of the display component and the base with one of the plurality of views as a default display; and

wherein rotating the display component about the longitudinal axis from the closed mode to a second physical orientation configures the computing device into another display mode having a second physical configuration of the display component and the base with another one of the plurality of views as the default display;

providing for transition between the plurality of views in response to activation of a view selector component configured to permit a user to select one of the plurality of views;

associating at least one of a plurality of visual representations with digital media content;

executing the association with the at least one of the plurality of visual representations with digital media content in response to selection;

transitioning a display on the computing device to a view of the digital media content in response to the act of executing the association; and

providing for display of user digital media content and referenced digital media content in the view of the digital media content.

d. Claim 27 is amended as follows:

Claim 27. A system for accessing and managing digital media libraries with a plurality of selectable I/O profiles, the system comprising:

a display component configured to display a graphical user interface on a computing device, wherein the graphical user interface comprises at least a plurality of views of digital media content, wherein the plurality of views include at least one of a plurality of visual representations;

an execution component configured to transition the graphical user interface between the plurality of views in response to selection of an I/O profile, wherein selecting the I/O profile includes:

responding to user rotation of a display component of the computing device about a longitudinal axis running along an interface between the display component and a base of the streamlined computing device;

responding to rotation of the display component about the longitudinal from a closed mode to a first physical orientation configures the computing device into a laptop mode having a first physical configuration of the display component and the base with one of the plurality of views as a default display; and

responding to rotation of the display component about the longitudinal axis from the closed mode to a second physical orientation configures the computing device into another display mode having a second physical configuration of the display component and the base with another one of the plurality of views as the default display;

a view selector component configured to transition between the plurality of views in response to activation;

a storage component configured to store an association between at least one of a plurality of visual representations and digital media content;

wherein the execution component is further configured to execute the association with the at least one of the plurality of visual representations with digital media content in response to selection and transition the display to a view of the digital media content in response to the act of executing the association; and

wherein the display component is configured to display user digital media content and referenced digital media content in the view of the digital media content.

Allowable Subject Matter

4. Claims 1-27 are allowed.

5. The following is an examiner's statement of reasons for allowance: The present invention teaches the management of a plurality of views of digital media content based on selection of an I/O profile. The claims are allowable in view of the present examiner's amendment. The closest prior art, Riley et al. U.S. Publication 2009/0019383 (hereinafter "Riley") teaches all of the limitations of the independent claims, except that the transition between the plurality of views in also in response to selection of an I/O profile, wherein selecting the I/O profile includes: responding to user rotation of a display component of the computing device about a longitudinal axis running along an interface between the display component and a base of the streamlined computing device; responding to rotation of the display component about the longitudinal from a closed mode to a first physical orientation configures the computing device into a laptop mode having a first physical configuration of the display component and the base with one of the plurality of views as a default display; and responding to rotation of the display component about the longitudinal axis from the closed mode to a second physical orientation configures the computing device into another display mode having a second physical configuration of the display component and the base with another one of the plurality of views as the default display, as presently amended. Therefore, the prior art fails to anticipate or render obvious the above limitations.

6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TING LEE whose telephone number is (571) 272-4058. The examiner can normally be reached on Tuesday 9am-3pm, Thursday 9am-3pm and Friday 4pm-8pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kieu Vu can be reached on (571) 272-4057. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TING LEE/
Primary Examiner, Art Unit 2173

Notice of References Cited	Application/Control No. 12/611,282	Applicant(s)/Patent Under Reexamination PENNINGTON ET AL.	
	Examiner TING LEE	Art Unit 2173	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2005/0091596	04-2005	Anthony et al.	715/712
*	B	US-6,097,389	08-2000	Morris et al.	715/804
*	C	US-7,366,994	04-2008	Loui, Alexander C.	715/764
*	D	US-2009/0019383	01-2009	Riley et al.	715/764
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	12611282
Filing Date	2009-11-03
First Named Inventor	Robert Sanford Havoc Pennington
Art Unit	2629
Examiner Name	Hjerpe, Richard A.
Attorney Docket Number	L2039-700630

U.S.PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	7061472	B1	2006-06-13	Schweizer et al.	
	2	6661426	B1	2003-12-09	Jetha et al.	
	3	4939514		1990-07-03	Shinichi Miyazakia	
	4	5200913		1993-04-06	Jeff C. Hawkins et al.	
	5	5268817		1993-12-07	Shigenori Miyagawa et al.	
	6	5796575		1998-08-18	Sergey Gary Podwalny et al.	
	7	5949643		1999-09-07	Jeffrey Batio	
	8	5987704		1999-11-23	John G. Tang	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /TL/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	First Named Inventor	Robert Sanford Havoc Pennington
	Art Unit	2629
	Examiner Name	Hjerpe, Richard A.
	Attorney Docket Number	L2039-700630

	9	6005767		1999-12-21	Edmund Ku et al.	
	10	6223393	B1	2001-05-01	Eric Andrew Knopf	
	11	6262885		2001-07-17	Philip George Emma et al.	
	12	6266236	B1	2001-07-24	Edmund Ku et al.	
	13	6275376		2001-08-14	Joung-Nam Moon	
	14	6343006		2002-01-29	Jerry Moscovitch et al.	
	15	6377444		2003-04-23	Scott D. Price et al.	
	16	6510049	B2	2003-01-21	John B. Rosen	
	17	6628267	B2	2003-09-03	John Peter Karidis et al.	
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	19	6771494	B2	2004-08-03	Kenji Shimano	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /TL/

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	Examiner Name	Hjerpe, Richard A.
	Attorney Docket Number	L2039-700630

	20	6788527	B2	2004-09-07	Paul J. Doczy et al.	
	21	6829140	B2	2004-12-07	Kenji Shimano et al.	
	22	6944012	B2	2005-09-13	Paul J. Doczy et al.	
	23	6963485	B2	2005-11-08	Seung-man Hong	
	24	7072179	B1	2006-07-04	Michael A. Curran et al.	
	25	7239508	B2	2007-07-03	David A. Ferrucei	
	26	D416003		1999-11-02	Sonja Sciefer et al.	
	27	7250207	B1	2007-07-31	Gary W. Heal et al.	
	28	6659516	B2	2003-12-09	Shyune-Yang Wang et al.	
	29	3468576		1969-09-23	G.E. Beyer et al.	
	30	5825352		1998-10-20	Stephen J. Bisset et al.	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /TL/

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	First Named Inventor	Robert Sanford Havoc Pennington
	Art Unit	2629
	Examiner Name	Hjerpe, Richard A.
	Attorney Docket Number	L2039-700630

	31	5841631		1998-11-24	Seong S. Shin et al.	
	32	6323846	B1	2001-11-27	Wayne Westerman et al.	

If you wish to add additional U.S. Patent citation information please click the Add button.

U.S.PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20070182663	A1	2007-08-09	Biech	
	2	20050210399	A1	2005-09-22	Filner et al.	
	3	20050257400	A1	2005-11-24	Sommerer	
	4	20070138806	A1	2007-06-21	Chris Ligtenberg et al.	
	5	20080042987	A1	2008-02-21	Wayne Westerman et al.	
	6	20090303676	A1	2009-12-10	Behar	
	7	20090300511	A1	2009-12-03	Behar	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /TL/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	Attorney Docket Number	L2039-700630

	8	20090244832	A1	2009-10-01	Yves Behar	
	9	20090244012		2009-10-01	Yves Behar	

If you wish to add additional U.S. Published Application citation information please click the Add button.

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	10-2000-0036647	KR	A	2000-07-05	Itcen Communication Co.		☐

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	1	http://laptop.org/en/laptop/start/ebook.shtml accessed on September 29, 2008	☐

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	12611282
Filing Date	2009-11-03
First Named Inventor	Robert Sanford Havoc Pennington
Art Unit	2629
Examiner Name	SHALWALA, BIPIN H
Attorney Docket Number	L2039-700630

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	5926364		1999-07-20	Karidis	
	2	6144358		2000-11-07	Narayanaswamy et al.	
	3	6341061		2002-01-22	Eisbach et al.	
	4	6437974		2002-08-20	Liu	
	5	6492974		2002-12-10	Nobuchi et al.	
	6	6882335		2005-04-19	Saarinen	
	7	6295038		2001-09-25	Rebeske	
	8	7698407		2010-04-13	Mattox, Jr. et al.	

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	1	20050221865		2005-10-06	Nishiyama et al.	
	2	20080024465		2008-01-31	Hawkins et al.	

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	1	Miller, M., "Creating a Digital Home Entertainment System with Windows Media Center" , Apr 2006, Que.	☐

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CERTIFICATION STATEMENT

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☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Matthew H. Grady/	Date (YYYY-MM-DD)	2011-09-28
Name/Print	Matthew H. Grady	Registration Number	52957

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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Filing Date	2009-11-03
First Named Inventor	Noah B. Guyot
Art Unit	2629
Examiner Name	G. Sitta
Attorney Docket Number	L2039-700433

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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	1	20080235594		2008-09-25	Bhumkar et al.	

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CONFIRMATION NO. 2160

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
12/611,282	11/03/2009 RULE	715	2173	L2039-700433

APPLICANTS

Robert Sanford Havoc Pennington, Asheville, NC;
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Yves Behar, Oakland, CA;
Joshua Morenstein, San Francisco, CA;
Christopher Hibmacronan, Oakland, CA;
Naoya Edahiro, San Francisco, CA;

**** CONTINUING DATA ***************************

This application is a CIP of 12/170,951 07/10/2008
which claims benefit of 61/041,365 04/01/2008
This application 12/611,282 11/03/2009
is a CIP of 12/170,939 07/10/2008 PAT 8289688
which claims benefit of 61/041,365 04/01/2008
This application 12/611,282 11/03/2009
is a CIP of 12/416,479 04/01/2009
which claims benefit of 61/041,365 04/01/2008
and is a CIP of 12/170,951 07/10/2008
which claims benefit of 61/041,365 04/01/2008
and said 12/416,479 04/01/2009
is a CIP of 12/170,939 07/10/2008 PAT 8289688
which claims benefit of 61/041,365 04/01/2008

**** FOREIGN APPLICATIONS ***************************

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Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /TING ZHOU LEE/ Examiner's Signature	☐ Met after Allowance Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		NC	37	27	3

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LANDO & ANASTASI, LLP
ONE MAIN STREET, SUITE 1100
CAMBRIDGE, MA 02142
UNITED STATES

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	"20100174993" and (software)	US-PGPUB; USPAT	OR	OFF	2013/04/02 14:11
L2	1	"20090303676".pn. and (laptop easel)	US-PGPUB; USPAT	OR	OFF	2013/04/02 14:15
L3	1	"20090303676".pn. and (degree "180" rotat$3).clm.	US-PGPUB; USPAT	OR	OFF	2013/04/02 14:16
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L5	11	guyot-noah.in.	US-PGPUB; USPAT	OR	OFF	2013/04/02 14:21
L6	8	kuo-daniel.in.	US-PGPUB; USPAT	OR	OFF	2013/04/02 14:21
L7	0	hayes-jenea.in.	US-PGPUB; USPAT	OR	OFF	2013/04/02 14:21
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L9	0	fore-david.in.	US-PGPUB; USPAT	OR	OFF	2013/04/02 14:22
L10	14	chuang-john.in.	US-PGPUB; USPAT	OR	OFF	2013/04/02 14:22
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L15	38	morenstein-joshua.in.	US-PGPUB; USPAT	OR	OFF	2013/04/02 14:22
L16	20	hibmacronan-christopher.in.	US-PGPUB;	OR	OFF	2013/04/02 14:23

			USPAT			
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L18	0	pennington-robert.in.	US-PGPUB; USPAT	OR	OFF	2013/04/02 14:23
L19	3	(1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18) and ((view) and (mode) and rotat$3 and (axis)).clm.	US-PGPUB; USPAT	OR	OFF	2013/04/02 14:24
L20	606	(associat$3 correspond$3 correlat$3) with (view$3 display$3 GUI interface) with (mode layout) with (profile preference setting) with user	US-PGPUB; USPAT	OR	OFF	2013/04/02 14:38
L21	209	(rotat$3 spin$4) with (display monitor screen) with (degree axis) with (view layout mode) with (default chang$4 switch$3 togg$4)	US-PGPUB; USPAT	OR	OFF	2013/04/02 14:43
L22	1356	(rotat$3 spin$4) with (display monitor screen) with (degree axis) with (view layout mode)	US-PGPUB; USPAT	OR	OFF	2013/04/02 14:43
L23	5	20 and 21	US-PGPUB; USPAT	OR	OFF	2013/04/02 14:44
L24	9	20 and 22	US-PGPUB; USPAT	OR	OFF	2013/04/02 14:44
S1	6	("5436954" "7035665" "7869834" "20060238439" "20030107603" "20050083642").pn.	US-PGPUB; USPAT	OR	OFF	2013/03/28 09:46
S2	64	("7061472" "6661426" "4939514" "5200913" "5268817" "5796575" "5949643" "5987704" "6005767" "6223393" "6262885" "6266236" "6275376" "6343006" "6377444" "6510049" "6628267" "6697055" "6771494" "6788527" "6829140" "6944012" "6963485" "7072179" "7239508" "7250207" "6659516" "3468576" "5825352" "5416003" "5841631" "6323846" "20070182663" "20050210399" "20050257400" "20070138806" "20080042987" "20090303676" "20090300511" "20090244832" "20090244012" "6343006" "20050146845" "20060126284" "20080062625" "20050221865" "20080024465" "5926364" "6144358" "6341061" "6437974" "6492974" "6882335" "6295038" "7698407" "20070242421" "20080024388" "20080158795" "20090190295" "6693652" "7756928" "20070240076" "20090150826" "20010032320" "20080235594").pn.	US-PGPUB; USPAT	OR	OFF	2013/03/28 09:55
S3	0	(switch$3 toggl$3 transition$3) with (album) with (timeline) with (view mode) with (content media picture photo)	US-PGPUB; USPAT	OR	OFF	2013/03/28 09:56
S4	1	(switch$3 toggl$3 transition$3) with (album) with (timeline) with (view mode)	US-PGPUB; USPAT	OR	OFF	2013/03/28 09:56
S5	3	("2010/0174993").URPN.	USPAT	OR	OFF	2013/03/28 09:56

S6	28	(switch$3 toggl$3 transition$3) with (album) with (content picture photo media) with (view mode)	US-PGPUB; USPAT	OR	OFF	2013/03/28 09:57
S7	0	S2 and S6	US-PGPUB; USPAT	OR	OFF	2013/03/28 09:58
S8	7	(timeline) with (album) with (content picture photo media) with (view mode)	US-PGPUB; USPAT	OR	OFF	2013/03/28 10:03
S9	14	(timeline) with (album) with (content picture photo media) with (display$3 view mode)	US-PGPUB; USPAT	OR	OFF	2013/03/28 10:04
S10	2	(time near line) with (album picture photo content) with (month year)	US-PGPUB; USPAT	OR	OFF	2013/03/28 10:06
S11	647	display$3 with (content data media object picture photo) with (user) with (profile preference) with (mode view)	US-PGPUB; USPAT	OR	OFF	2013/03/28 10:09
S12	138694	(toggl$3 switch$3 chang$3 alternat$3) with (content data media object picture photo) with (mode view)	US-PGPUB; USPAT	OR	OFF	2013/03/28 10:10
S13	145083	(toggl$3 switch$3 chang$3 alternat$3) with (content data media object picture photo) with (mode layout view)	US-PGPUB; USPAT	OR	OFF	2013/03/28 10:10
S14	721	display$3 with (content data media object picture photo) with (user) with (profile preference) with (mode layout view)	US-PGPUB; USPAT	OR	OFF	2013/03/28 10:11
S15	215	S13 and S14	US-PGPUB; USPAT	OR	OFF	2013/03/28 10:12
S16	3901	715/810.ccls.	US-PGPUB; USPAT	OR	OFF	2013/03/28 10:12
S17	8	S15 and S16	US-PGPUB; USPAT	OR	OFF	2013/03/28 10:12
S18	11	icon with timeline with (month year)	US-PGPUB; USPAT	OR	OFF	2013/03/28 10:16
S19	1	"20050091596".pn. and (view select$3)	US-PGPUB; USPAT	OR	OFF	2013/03/28 10:35
S20	2027	(display present$3) with (view layout mode) with (content media data object picture photo) with (user) with (setting profile preference)	US-PGPUB; USPAT	OR	OFF	2013/03/28 10:39
S21	392	(display present$3) with (view layout mode) with (content media data object picture photo) with (user) with (setting profile preference) with (correspond$4 accord$4 bas$3)	US-PGPUB; USPAT	OR	OFF	2013/03/28 10:39
S22	6	S21 and (time near line)	US-PGPUB; USPAT	OR	OFF	2013/03/28 10:40
S23	41	S20 and (time near line)	US-PGPUB; USPAT	OR	OFF	2013/03/28 10:41

S24	9	("2006/0036960").URPN.	USPAT	OR	OFF	2013/03/28 10:47
S25	13	("20020075322" | "20050210409" | "20050283798" | "20060036960" | "20060265249" | "20080126979" | "20080208791" | "20080244453" | "20080294663" | "20100107117" | "20110216067" | "7725492" | "8065604").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/03/28 10:48
S26	14	("20030030673" | "5283864" | "5303388" | "5644692" | "5911138" | "6202061" | "6243091" | "6246406" | "6414677" | "6486895" | "6493006" | "6545687" | "6570582" | "6667751").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/03/28 10:54
S27	34	("20020075322" | "4567610" | "5083860" | "5164831" | "5493677" | "5539841" | "5576759" | "5594807" | "5598557" | "5719643" | "5751378" | "5805746" | "5809161" | "5809202" | "5842194" | "5872859" | "5982369" | "6012091" | "6021231" | "6097389" | "6204840" | "6301586" | "6311189" | "6335742" | "6351556" | "6396963" | "6408301" | "6486896" | "6545660" | "6564209" | "6567980" | "6606411" | "6784925" | "6865297").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/03/28 10:57
S28	5	("7366994").URPN.	USPAT	OR	OFF	2013/03/28 11:02
S29	7298	(toggl$3 switch$3) with (multiple plural$3 two both) with (view mode) with (content media picture photo object data)	USPAT	OR	OFF	2013/03/28 11:27
S30	964	(toggl$3 switch$3) with (multiple plural$3 two both) with (mode) with (content media picture photo object data) with (view$3 display$3)	USPAT	OR	OFF	2013/03/28 11:28
S31	1938	(toggl$3 switch$3) with (multiple plural$3 two both) with (mode) with (content media picture photo object data) with (view$3 display$3)	US-PGPUB; USPAT	OR	OFF	2013/03/28 11:28
S32	1	S31 and (timeline near mode)	US-PGPUB; USPAT	OR	OFF	2013/03/28 11:29
S33	13	S31 and S16	US-PGPUB; USPAT	OR	OFF	2013/03/28 11:29
S34	1	(switch$3 toggl$3 transition$3) with (album) with (timeline histogram)	US-PGPUB; USPAT	OR	OFF	2013/03/28 11:33
S35	1	(switch$3 toggl$3 transition$3 chang$3 flip$4) with (album) with (timeline histogram) with (mode view)	US-PGPUB; USPAT	OR	OFF	2013/03/28 11:33
S36	21	(switch$3 toggl$3 transition$3 chang$3 flip$4) with (album photo picture media folder) with (timeline histogram) with (mode view)	US-PGPUB; USPAT	OR	OFF	2013/03/28 11:33
S37	0	"6097389".pn. and remote	USPAT	OR	OFF	2013/04/02 09:25
S38	15	("7366994" "20050091596") and remote	US-PGPUB;	OR	OFF	2013/04/02 09:27

			USPAT			
S39	10	("7366994" "20050091596") and (profile preference)	US-PGPUB; USPAT	OR	OFF	2013/04/02 09:31
S40	1	"20100174993" and ("I/O profile")	US-PGPUB; USPAT	OR	OFF	2013/04/02 09:34
S41	2	("7061472" "5436954").pn.	US-PGPUB; USPAT	OR	OFF	2013/04/02 09:41
S42	3	("7061472" "5436954" "20080235594").pn.	US-PGPUB; USPAT	OR	OFF	2013/04/02 09:44
S43	2193	(toggl$3 transition$3 switch$3 chang$3) with (mode layout view setting) with (profile preference) with user	US-PGPUB; USPAT	OR	OFF	2013/04/02 09:46
S44	531	(toggl$3 transition$3 switch$3 chang$3) with (mode layout view setting) with (profile preference) with user with (display GUI interface)	US-PGPUB; USPAT	OR	OFF	2013/04/02 09:46
S45	131	S44 and ("715"/$.ccls. "345"/$.ccls.)	US-PGPUB; USPAT	OR	OFF	2013/04/02 09:48
S46	1	"20100174993".pn. and ("digital media content")	US-PGPUB; USPAT	OR	OFF	2013/04/02 10:13
S47	1	"20090019383".pn. and (remote)	US-PGPUB; USPAT	OR	OFF	2013/04/02 10:15
S48	1	"20090019383".pn. and (GUI thumbnail icon)	US-PGPUB; USPAT	OR	OFF	2013/04/02 10:26
S49	1	"20090019383".pn. and (profile preference setting thumbnail icon)	US-PGPUB; USPAT	OR	OFF	2013/04/02 10:30
S50	1	"20090019383".pn. and (time icon thumbnail "visual representation")	US-PGPUB; USPAT	OR	OFF	2013/04/02 10:35
S51	1	"20090019383".pn. and ("graphical representation")	US-PGPUB; USPAT	OR	OFF	2013/04/02 10:36
S52	1	"20100174993" and (signal carrier wave transmission medium)	US-PGPUB; USPAT	OR	OFF	2013/04/02 10:56
S53	1	"20100174993" and ("display component")	US-PGPUB; USPAT	OR	OFF	2013/04/02 10:58
S54	1	"8289688".pn.	USPAT	OR	OFF	2013/04/02 11:09
S55	759	(chang$3 modif$6 switch$3 toggl$3) with (display$3 interface GUI) with (mode layout) with (physical)	US-PGPUB; USPAT	OR	OFF	2013/04/02 11:29
S56	0	(chang$3 modif$6 switch$3 toggl$3) with (display$3 interface GUI view$3) with (mode layout) with (laptop easel) with (default)	US-PGPUB; USPAT	OR	OFF	2013/04/02 11:30
S57	0	(chang$3 modif$6 switch$3 toggl$3) with	US-	OR	OFF	2013/04/02

		(display$3 interface GUI view$3 layout) with (mode) with (laptop easel) with (default)	PGPUB; USPAT			11:30
S58	5	(chang$3 modif$6 switch$3 toggl$3) with (display$3 interface GUI view$3 layout) with (mode) with (physical) with (default)	US-PGPUB; USPAT	OR	OFF	2013/04/02 11:30
S59	2	(chang$3 modif$6 switch$3 toggl$3) with (display$3 interface GUI view$3 layout) with (mode) with (rotat$3) with (default) with (device comput$4)	US-PGPUB; USPAT	OR	OFF	2013/04/02 11:31
S60	8012	345/156.ccls.	US-PGPUB; USPAT	OR	OFF	2013/04/02 11:36
S61	1510	361/679.02.ccls.	US-PGPUB; USPAT	OR	OFF	2013/04/02 11:36
S62	3905	715/810.ccls.	US-PGPUB; USPAT	OR	OFF	2013/04/02 11:36
S63	4435	715/764.ccls.	US-PGPUB; USPAT	OR	OFF	2013/04/02 11:36
S64	19	S55 and (S60 S61 S62 S63)	US-PGPUB; USPAT	OR	OFF	2013/04/02 11:36
S65	7	(rotat$3) with (screen display monitor) with (laptop computer device phone) with (default) with (mode setting)	US-PGPUB; USPAT	OR	OFF	2013/04/02 11:39
S66	155	(rotat$3) with (screen display monitor) with (laptop computer device phone) with (default predetermin$3 predefin$4) with (mode setting)	US-PGPUB; USPAT	OR	OFF	2013/04/02 11:39
S67	8	S66 and (S60 S61 S62 S63)	US-PGPUB; USPAT	OR	OFF	2013/04/02 11:41
S68	3	((laptop) and (easel) and (mode) and (rotat$3) and (display interface GUI) and (view layout) and (media)).clm.	US-PGPUB; USPAT	OR	OFF	2013/04/02 11:43

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Issue Classification	Application/Control No. 12/611,282	Applicant(s)/Patent under Reexamination PENNINGTON ET AL.
	Examiner TING LEE	Art Unit 2173

ISSUE CLASSIFICATION

ORIGINAL		INTERNATIONAL CLASSIFICATION											
CLASS	SUBCLASS	CLAIMED					NON-CLAIMED						
715	810	G	06	F	3	/048					/		
CROSS REFERENCES		G	09	G	5	/00					/		
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)												
715	764	G	06	F	1	/16					/		
345	156					/					/		
361	679.02					/					/		
						/					/		
						/					/		

(Assistant Examiner) (Date)	/Ting Lee/ 4/16/13	Total Claims Allowed: 27	
(Legal Instruments Examiner) (Date)	(Primary Examiner) (Date)	O.G. Print Claim(s) 26	O.G. Print Fig. 18A

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1		31		61		91		121		151		181
2	2		32		62		92		122		152		182
3	3		33		63		93		123		153		183
4	4		34		64		94		124		154		184
5	5		35		65		95		125		155		185
6	6		36		66		96		126		156		186
7	7		37		67		97		127		157		187
8	8		38		68		98		128		158		188
9	9		39		69		99		129		159		189
10	10		40		70		100		130		160		190
11	11		41		71		101		131		161		191
12	12		42		72		102		132		162		192
13	13		43		73		103		133		163		193
14	14		44		74		104		134		164		194
15	15		45		75		105		135		165		195
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20	18		48		78		108		138		168		198
21	19		49		79		109		139		169		199
22	20		50		80		110		140		170		200
23	21		51		81		111		141		171		201
18	22		52		82		112		142		172		202
19	23		53		83		113		143		173		203
24	24		54		84		114		144		174		204
25	25		55		85		115		145		175		205
26	26		56		86		116		146		176		206
27	27		57		87		117		147		177		207
	28		58		88		118		148		178		208
	29		59		89		119		149		179		209
	30		60		90		120		150		180		210

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(Not for submission under 37 CFR 1.99)

Application Number	12611282
Filing Date	2009-11-03
First Named Inventor	Noah B. Guyot
Art Unit	N/A
Examiner Name	Not Yet Assigned
Attorney Docket Number	L2039-700433

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	1	20070242421		2007-10-18	Goschin et al.	
	2	20080024388		2008-01-31	Bruce	
	3	20080158795		2008-07-03	Aoki et al.	
	4	20090190295		2009-07-30	Chin et al.	

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	Art Unit	N/A
	Examiner Name	Not Yet Assigned
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Examiner Signature	/Ting Lee/	Date Considered	04/16/2013

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	Art Unit	N/A
	Examiner Name	Not Yet Assigned
	Attorney Docket Number	L2039-700433

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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Matthew H. Grady/	Date (YYYY-MM-DD)	2012-05-18
Name/Print	Matthew H. Grady	Registration Number	52957

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Filing Date	2009-11-03
First Named Inventor	Noah B. Guyot
Art Unit	2629
Examiner Name	G. Sitta
Attorney Docket Number	L2039-700433

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6693652		2004-02-17	Barrus et al.	
	2	7756928		2010-07-13	Meenan et al.	

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	1	20070240076		2007-10-11	Astala et al.	
	2	20090150826		2009-06-11	Lyndersay et al.	
	3	20010032320		2001-10-18	Abdelnur et al.	

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12611282
	Filing Date	2009-11-03
	First Named Inventor	Noah B. Guyot
	Art Unit	2629
	Examiner Name	G. Sitta
	Attorney Docket Number	L2039-700433

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☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

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A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Matthew H. Grady/	Date (YYYY-MM-DD)	2012-08-22
Name/Print	Matthew H. Grady	Registration Number	52957

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Search Notes	Application/Control No.	Applicant(s)/Patent under Reexamination	
	12/611,282	PENNINGTON ET AL.	
	Examiner	Art Unit	
	TING LEE	2173	

SEARCHED			
Class	Subclass	Date	Examiner
715	810	4/2/2013	TL
715	764	4/2/2013	TL
345	156	4/2/2013	TL
361	679.02	4/2/2013	TL

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner
see attached search report		4/2/2013	TL

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR
NPL	3/28/2013	TL
EAST (search report included)	3/28/13 AND 4/2/2013	TL

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First Named Inventor	Robert Sanford Havoc Pennington
Art Unit	2629
Examiner Name	Hjerpe, Richard A.
Attorney Docket Number	L2039-700630

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6661426	B1	2003-12-09	Jetha	
	2	D593085		2008-03-12	Behar	
	3	D593091		2008-03-13	Behar	
	4	D593086		2008-07-15	Behar	
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	9	D462069	S	2002-08-27	Gatto	
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	19	D504128		2005-04-19	Maskatia	

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	22	D518042		2006-03-28	Kanayama	
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	28	5712760		1998-01-27	Coulon	
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	30	6464195		2002-10-15	Hildebrandt	

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	40	D513509		2006-01-10	Kawa	
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	42	D523429		2006-06-20	Lin	
	43	6067224		2000-05-23	Nobuchi	
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	55	6628267	B2	2003-09-30	Karidis	
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	60	6859219	B1	2005-02-22	Sall	
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	1	EP0588210	EP		1993-03-23	Hitachi		☐
	2	DE19952486	DE		2001-05-03	Schweizer		☐

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Examiner Name	LEE, TING ZHOU
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	1	7467356		2008-12-16	Gettman et al.	
	2	6972752		2005-12-06	Nako et al.	

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	1	20020010707		2002-01-24	CHANG et al.	
	2	20040001049		2004-01-01	Oakley	
	3	20070247446		2007-10-25	Orsley et al.	
	4	20050134717		2005-06-23	Misawa	

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	Examiner Name	LEE, TING ZHOU
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	5	20040207568		2004-10-21	Ooshima et al.	
	6	20090322790		2009-12-31	Behar et al.	

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	1	6-242853	JP	A	1994-09-02	Hitachi Ltd et al.		☒
	2	6-259166	JP	A	1994-09-16	Hitachi Ltd		☒
	3	8-179851	JP	A	1996-07-12	Toshiba Corp		☒
	4	5-197507	JP	A	1993-08-06	Hitachi Ltd		☒
	5	1292112	CN	A	2001-04-18	Sharp Kk		☒
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	8	2005-159741	JP	A	2005-06-16	Fuji Photo Film Co Ltd		☒
	9	10-111658	JP	A	1998-04-28	Fujitsu Ltd		☒
	10	6090200	JP	A	1994-03-29	HITACHI LTD		☒
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A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Matthew H. Grady/	Date (YYYY-MM-DD)	2013-04-02
Name/Print	Matthew H. Grady	Registration Number	52957

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /TL/

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	12611282
Filing Date	2009-11-03
First Named Inventor	Robert Sanford Havoc Pennington
Art Unit	2629
Examiner Name	
Attorney Docket Number	L2039-700630

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6343006	B1	2002-01-29	Moscovitch	

If you wish to add additional U.S. Patent citation information please click the Add button. Add

U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20050146845	A1	2005-07-07	Moscovitch	
	2	20060126284	A1	2006-06-15	Moscovitch	
	3	20080062625	A1	2008-03-13	Batio	

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FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /TL/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12611282
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	First Named Inventor	Robert Sanford Havoc Pennington
	Art Unit	2629
	Examiner Name	
	Attorney Docket Number	L2039-700630

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NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		☐

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EXAMINER SIGNATURE

Examiner Signature	/Ting Lee/	Date Considered	04/16/2013

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /TL/

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(**Not for submission under 37 CFR 1.99)**

Application Number	12611282
Filing Date	2009-11-03
First Named Inventor	Noah B. Guyot
Art Unit	N/A
Examiner Name	Not Yet Assigned
Attorney Docket Number	L2039-700630

U.S.PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	5436954		1995-07-25	Nishiyama et al.	
	2	7035665		2006-04-25	Kido et al.	
	3	7869834		2011-01-11	Seol et al.	

If you wish to add additional U.S. Patent citation information please click the Add button.

U.S.PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20060238439		2006-10-26	Fuller et al.	
	2	20030107603		2003-06-12	Clapper	
	3	20050083642		2005-04-21	Senpuku et al.	

If you wish to add additional U.S. Published Application citation information please click the Add button.

FOREIGN PATENT DOCUMENTS

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /TL/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	12611282
	Filing Date	2009-11-03
	First Named Inventor	Noah B. Guyot
	Art Unit	N/A
	Examiner Name	Not Yet Assigned
	Attorney Docket Number	L2039-700630

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		☐

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	/Ting Lee/	Date Considered	04/16/2013

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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(**Not for submission under 37 CFR 1.99)**

Application Number	12611282
Filing Date	2009-11-03
First Named Inventor	Noah B. Guyot
Art Unit	N/A
Examiner Name	Not Yet Assigned
Attorney Docket Number	L2039-700630

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Matthew H. Grady/	Date (YYYY-MM-DD)	2011-11-28
Name/Print	Matthew H. Grady	Registration Number	52957

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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/611,282	11/03/2009	Robert Sanford Havoc Pennington	L2039-700433	2160

37462 7590 05/30/2013

LANDO & ANASTASI, LLP
ONE MAIN STREET, SUITE 1100
CAMBRIDGE, MA 02142

EXAMINER	
LEE, TING ZHOU	

ART UNIT	PAPER NUMBER
2173	

NOTIFICATION DATE	DELIVERY MODE
05/30/2013	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@LALaw.com
gengelson@LALaw.com

Examiner-Initiated Interview Summary	Application No.	Applicant(s)	
	12/611,282	PENNINGTON ET AL.	
	Examiner	Art Unit	
	TING LEE	2173	

All participants (applicant, applicant's representative, PTO personnel):

(1) *TING LEE*. (3)_____.

(2) *Matthew H. Grady (Reg. No. 52,957)*. (4)_____.

Date of Interview: *23 May 2013*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☐102 ☐103 ☒Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *None*.

Identification of prior art discussed: *None*.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

The examiner contacted the applicant's representative to discuss the Abstract. The Abstract is over the 250 word limit and the applicant's representative agreed to revise the Abstract to meet the requirements. We agreed that the examiner will issue a Supplemental Examiner's Amendment with those revisions to the Abstract.

Applicant recordation instructions: It is not necessary for applicant to provide a separate record of the substance of interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☒ Attachment

/TING LEE/ Primary Examiner, Art Unit 2173	

Supplemental Notice of Allowability	Application No. 12/611,282	Applicant(s) PENNINGTON ET AL.	
	Examiner TING LEE	Art Unit 2173	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to _____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *1-27*.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *5/23/2013* .
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

/TING LEE/
Primary Examiner, Art Unit 2173

SUPPLEMENTAL EXAMINER'S AMENDMENT

1. The claims remain amended according to the Examiner's Amendment/Notice of Allowance issued on 04/29/2013. A supplemental examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Matthew H. Grady (Reg. No. 52,957) on 05/23/2013.

2. The ABSTRACT is amended as follows:

~~Various aspects and embodiments are directed to a streamlined computer device and a graphical user interface that organizes interface elements into views of computer content for presentation to a user. Various views of digital media content permits users to easily and efficiently access various digital media content. Different views are used to provide an interface that is responsive to configurations of the device and responsive to activity being performed by the user. Aspects include permitting the user to maintain and manage digital media content libraries. According to some embodiments, the libraries comprise user digital media content and references digital media content. Functionality~~ A streamlined computer device can include functionality provided to a user ~~can be~~ tailored to the type of content displayed, accessed and/or managed~~. According to various aspects, methods and systems are provided for accessing and managing digital media libraries on a streamlined computing device with~~ and can include a plurality selectable I/O profiles. According to some embodiments, the methods may include displaying a GUI on a device, wherein the GUI comprises at least a plurality of views of digital media content, providing for transition between the plurality of views in response to selection of an I/O profile and in response to activation of a view selector component by a user, executing an

association with the at least one of the plurality of visual representations with digital media content in response to selection, transitioning a display on the computing device to a view of the digital media content, and providing for display of user digital media content and referenced digital media content in the view of the digital media content.

3. The claims remain allowable for the reasons stated in the Examiner's Amendment/Notice of Allowance issued on 04/29/2013

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TING LEE whose telephone number is (571) 272-4058. The examiner can normally be reached on Tuesday 9am-3pm, Thursday 9am-3pm and Friday 4pm-8pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kieu Vu can be reached on (571) 272-4057. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TING LEE/
Primary Examiner, Art Unit 2173

PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	12611282	Filing Date	2009-11-03	Docket Number (if applicable)	L2039-700433	Art Unit	2173
First Named Inventor	Noah B. Guyot			Examiner Name	T. Z. Lee		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ☐ Other _____

☒ Enclosed

- ☐ Amendment/Reply
- ☒ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____ (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

☒ **The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**
The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 50/2762

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Signature of Registered U.S. Patent Practitioner			
Signature	/Matthew H. Grady/	Date (YYYY-MM-DD)	2013-07-29
Name	Matthew H. Grady	Registration Number	52957

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4).

Dated: July 29, 2013
Electronic Signature for Matthew H. Grady: /Matthew H. Grady/

Docket No.: L2039-700433
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of: Noah B. Guyot et al.	Allowed: April 29, 2013
Application No.: 12/611,282	Confirmation No.: 2160
Filed: November 3, 2009	Art Unit: 2173
For: METHODS AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT	Examiner: T. Z. Lee

INFORMATION DISCLOSURE STATEMENT (IDS)

MS RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Madam:

Pursuant to 37 C.F.R. § 1.56, 1.97 and 1.98, the attention of the Patent and Trademark Office is hereby directed to the references listed on the attached PTO/SB/08. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

This Information Disclosure Statement, pursuant to 37 C.F.R. § 1.114(c), accompanies the Request for Continued Examination (37 C.F.R. § 1.114) submitted herewith.

In accordance with 37 C.F.R. § 1.98(a)(2)(ii), Applicant has not submitted copies of U.S. patents and U.S. patent applications. The following documents cited in the attached form PTO/SB/08:

Doc Number	Ctry	Non-Patent Literature Documents
11-296259	JP	
2006-227409	JP	
		International Search Report from a commonly owned PCT application PCT/US09/39117

are not supplied because they were previously cited by or submitted to the Office in prior application number 12/170951 filed July 10, 2008 and relied upon in this application for an earlier filing date under 35 U.S.C. § 120.

Applicant would like to draw the examiner's attention to the search report from commonly owned PCT Application No. PCT/US2009/39117.

For relevance of the non English references, English Abstracts were provided in prior application number 12/170951 filed July 10, 2008 and relied upon in this application for an earlier filing date under 35 U.S.C. § 120.

In accordance with 37 C.F.R. § 1.97(g), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 C.F.R. § 1.56(a) exists. In accordance with 37 C.F.R. § 1.97(h), the filing of this Information Disclosure Statement shall not be construed to be an admission that any patent, publication or other information referred to therein is "prior art" for this invention unless specifically designated as such.

It is submitted that the Information Disclosure Statement is in compliance with 37 C.F.R. § 1.98 and the Examiner is respectfully requested to consider the listed references.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 50/2762, under Order No. L2039-700433.

Dated: July 29, 2013

Respectfully submitted,

Electronic signature: /Matthew H. Grady/
Matthew H. Grady
Registration No.: 52,957
LANDO & ANASTASI LLP
Riverfront Office Park
One Main Street
Suite 1100
Cambridge, Massachusetts 02142
(617) 395-7000
Attorney for Applicant

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	12611282
Filing Date	2009-11-03
First Named Inventor	Noah B. Guyot
Art Unit	2173
Examiner Name	T. Z. Lee
Attorney Docket Number	L2039-700433

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

If you wish to add additional U.S. Patent citation information please click the Add button. Add

U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20040212602		2004-10-28	Nako et al.	
	2	20080174570		2008-07-24	Jobs et al.	

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	11-296259	JP		1999-10-29	CANON INC.		☐
	2	2006-227409	JP		2006-08-31	NIKON CORP.		☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12611282
	Filing Date	2009-11-03
	First Named Inventor	Noah B. Guyot
	Art Unit	2173
	Examiner Name	T. Z. Lee
	Attorney Docket Number	L2039-700433

If you wish to add additional Foreign Patent Document citation information please click the Add button			Add
NON-PATENT LITERATURE DOCUMENTS			Remove
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	International Search Report from a commonly owned PCT application PCT/US09/39117	☐
If you wish to add additional non-patent literature document citation information please click the Add button			Add

EXAMINER SIGNATURE			
Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12611282
	Filing Date	2009-11-03
	First Named Inventor	Noah B. Guyot
	Art Unit	2173
	Examiner Name	T. Z. Lee
	Attorney Docket Number	L2039-700433

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Matthew H. Grady/	Date (YYYY-MM-DD)	2013-07-29
Name/Print	Matthew H. Grady	Registration Number	52957

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	12611282
Filing Date:	03-Nov-2009
Title of Invention:	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT
First Named Inventor/Applicant Name:	Robert Sanford Havoc Pennington
Filer:	Matthew H. Grady
Attorney Docket Number:	L2039-700433

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Request for Continued Examination	1801	1	1200	1200
		Total in USD ($)		**1200**

Electronic Acknowledgement Receipt

EFS ID:	16438776
Application Number:	12611282
International Application Number:	
Confirmation Number:	2160
Title of Invention:	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT
First Named Inventor/Applicant Name:	Robert Sanford Havoc Pennington
Customer Number:	37462
Filer:	Matthew H. Grady
Filer Authorized By:	
Attorney Docket Number:	L2039-700433
Receipt Date:	29-JUL-2013
Filing Date:	03-NOV-2009
Time Stamp:	14:02:56
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$1200
RAM confirmation Number	260
Deposit Account	502762
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	Request_for_Continued_Examination_Fillable_PDF_1.PDF	697705 000e31e9ccca4d418dc42e58870c4c05c04dd77a	no	3
Warnings:					
Information:					
2	Transmittal Letter	Information_Disclosure_Statement_3.pdf	24905 dfb81e67398c1afc3d73e962cc365f318bbc80bc	no	3
Warnings:					
Information:					
3	Information Disclosure Statement (IDS) Form (SB08)	L2039-700433-IDS-Fillable.pdf	612271 37561175a388c96c009c8d8580e1891f2c0e54ea	no	4
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	30416 295730d4e69d96c065894670d16f183fe33595a1	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1365297		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

37462 7590 08/27/2013

LANDO & ANASTASI, LLP
ONE MAIN STREET, SUITE 1100
CAMBRIDGE, MA 02142

EXAMINER
LEE, TING ZHOU

ART UNIT	PAPER NUMBER
2173	

DATE MAILED: 08/27/2013

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/611,282	11/03/2009	Robert Sanford Havoc Pennington	L2039-700433	2160

TITLE OF INVENTION: METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1780	$300	$0	$2080	11/27/2013

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

37462 7590 08/27/2013
LANDO & ANASTASI, LLP
ONE MAIN STREET, SUITE 1100
CAMBRIDGE, MA 02142

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/611,282	11/03/2009	Robert Sanford Havoc Pennington	L2039-700433	2160

TITLE OF INVENTION: METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1780	$300	$0	$2080	11/27/2013

EXAMINER	ART UNIT	CLASS-SUBCLASS
LEE, TING ZHOU	2173	715-810000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. The following fee(s) are submitted:
- ❑ Issue Fee
- ❑ Publication Fee (No small entity discount permitted)
- ❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ❑ A check is enclosed.
- ❑ Payment by credit card. Form PTO-2038 is attached.
- ❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29	NOTE: Absent a valid certification of Micro Entity Status (see form PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
❑ Applicant asserting small entity status. See 37 CFR 1.27	NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
❑ Applicant changing to regular undiscounted fee status.	NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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UNITED STATES PATENT AND TRADEMARK OFFICE

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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/611,282	11/03/2009	Robert Sanford Havoc Pennington	L2039-700433	2160

37462 7590 08/27/2013

LANDO & ANASTASI, LLP
ONE MAIN STREET, SUITE 1100
CAMBRIDGE, MA 02142

EXAMINER	
LEE, TING ZHOU	

ART UNIT	PAPER NUMBER
2173	

DATE MAILED: 08/27/2013

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 847 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 847 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 12/611,282	Applicant(s) PENNINGTON ET AL.	
	Examiner TING LEE	Art Unit 2173	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *7/29/2013*.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on_____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *1-27*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov .
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 7/29/13
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
5. ☐ Examiner's Amendment/Comment
6. ☒ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/TING LEE/
Primary Examiner, Art Unit 2173

DETAILED ACTION

1. The Request for Continued Examination (RCE) filed on 07/29/2013 under 37 CFR 1.53(d) based on parent Application No. 12/611,282 is acceptable and a RCE has been established. An action on the RCE follows.

2. Claims 1-27 remain pending in the application.

3. The claims remain amended according to the Notice of Allowance (see the Examiner's Amendment section) mailed on 04/29/2013.

Allowable Subject Matter

4. Claims 1-27 are allowed.

5. The following is an examiner's statement of reasons for allowance: The claims are allowable for the same reasons indicated in the Notice of Allowance (see section 5) issued on 04/29/2013.

6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TING LEE whose telephone number is (571) 272-4058. The examiner can normally be reached on Tuesday 9am-3pm, Thursday 9am-3pm and Friday 4pm-8pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kieu Vu can be reached on (571) 272-4057. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TING LEE/
Primary Examiner, Art Unit 2173

Issue Classification	Application/Control No. 12/611,282	Applicant(s)/Patent under Reexamination PENNINGTON ET AL.
	Examiner TING LEE	Art Unit 2173

ISSUE CLASSIFICATION

ORIGINAL		INTERNATIONAL CLASSIFICATION											
CLASS	SUBCLASS	CLAIMED					NON-CLAIMED						
715	810	G	06	F	3	/048					/		
CROSS REFERENCES		G	09	G	5	/00					/		
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)												
715	764	G	06	F	1	/16					/		
345	156					/					/		
361	679.02					/					/		
						/					/		
						/					/		

(Assistant Examiner) (Date)	/Ting Lee/ 8/12/13 (Primary Examiner) (Date)	Total Claims Allowed: 27	
(Legal Instruments Examiner) (Date)		O.G. Print Claim(s): 26	O.G. Print Fig.: 18A

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☒ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1		31		61		91		121		151		181
2	2		32		62		92		122		152		182
3	3		33		63		93		123		153		183
4	4		34		64		94		124		154		184
5	5		35		65		95		125		155		185
6	6		36		66		96		126		156		186
7	7		37		67		97		127		157		187
8	8		38		68		98		128		158		188
9	9		39		69		99		129		159		189
10	10		40		70		100		130		160		190
11	11		41		71		101		131		161		191
12	12		42		72		102		132		162		192
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16	16		46		76		106		136		166		196
17	17		47		77		107		137		167		197
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21	19		49		79		109		139		169		199
22	20		50		80		110		140		170		200
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27	27		57		87		117		147		177		207
	28		58		88		118		148		178		208
	29		59		89		119		149		179		209
	30		60		90		120		150		180		210

Search Notes	Application/Control No.	Applicant(s)/Patent under Reexamination	
	12/611,282	PENNINGTON ET AL.	
	Examiner	Art Unit	
	TING LEE	2173	

SEARCHED			
Class	Subclass	Date	Examiner
715	810	8/12/2013	TL
715	764	8/12/2013	TL
345	156	8/12/2013	TL
361	679.02	8/12/2013	TL

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner
see attached search report		8/12/2013	TL

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR
updated NPL search	8/12/2013	TL
updated EAST search (report included)	8/12/2013	TL

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	12611282
Filing Date	2009-11-03
First Named Inventor	Noah B. Guyot
Art Unit	2173
Examiner Name	T. Z. Lee
Attorney Docket Number	L2039-700433

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

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U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20040212602		2004-10-28	Nako et al.	
	2	20080174570		2008-07-24	Jobs et al.	

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FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	11-296259	JP		1999-10-29	CANON INC.		☐
	2	2006-227409	JP		2006-08-31	NIKON CORP.		☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /TL/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12611282
	Filing Date	2009-11-03
	First Named Inventor	Noah B. Guyot
	Art Unit	2173
	Examiner Name	T. Z. Lee
	Attorney Docket Number	L2039-700433

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NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	International Search Report from a commonly owned PCT application PCT/US09/39117	☐

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature	/Ting Lee/	Date Considered	08/12/2013

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /TL/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12611282
	Filing Date	2009-11-03
	First Named Inventor	Noah B. Guyot
	Art Unit	2173
	Examiner Name	T. Z. Lee
	Attorney Docket Number	L2039-700433

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Matthew H. Grady/	Date (YYYY-MM-DD)	2013-07-29
Name/Print	Matthew H. Grady	Registration Number	52957

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2	("20040212602" "20080174570").pn.	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:25
L2	4077	715/810.ccls.	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:31
L3	4587	715/764.ccls.	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:31
L4	8504	345/156.ccls.	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:31
L5	1624	361/679.02.ccls.	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:31
L6	4	day-matthew.in.	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:32
L7	11	guyot-noah.in.	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:32
L8	8	kuo-daniel.in.	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:32
L9	0	hayes-jenea.in.	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:32
L10	0	tan-aaron.in.	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:32
L11	0	fore-david.in.	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:32
L12	14	chuang-john.in.	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:32
L13	10	bambacus-chris.in.	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:32
L14	9	eliason-eben.in.	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:32
L15	9	moody-chris.in.	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:33
L16	92	behar-yves.in.	US-PGPUB;	OR	OFF	2013/08/12 10:33

			USPAT			
L17	39	morenstein-joshua.in.	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:33
L18	21	hibmacronan-christopher.in.	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:33
L19	28	edahiro-naoya.in.	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:33
L20	0	pennington-robert.in.	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:33
L21	4728	((display$3 view default) and (mode orientation) and (rotat$3) and (axis)).clm.	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:34
L22	12	(6 7 8 9 10 11 12 13 14 15 16 17 18 19) and 21	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:34
L23	519	(associat$3 correspond$3 correlat$3) with (view display GUI interface) with (layout mode orientation) with (profile preference setting) with user	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:35
L24	17124	(rotat$3 spin$4) with (display monitor screen) with (view layout mode orientation)	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:36
L25	31	23 and 24	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:36
L26	2776	display$3 with (content data media object picture photo) with user with (profile preference setting default) with (mode view orientation)	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:37
L27	3027	display$3 with (content data media object picture photo) with user with (profile preference setting default) with (mode view orientation layout)	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:38
L28	1819	(rotat$3 chang$3 switch$3 spin$4 toggl$3) with (content data media object picture photo) with user with (profile preference setting default) with (mode view orientation layout)	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:38
L29	109	(2 3 4 5) and 26	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:39
L30	115	(2 3 4 5) and 27	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:39
L31	36	(2 3 4 5) and 28	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:39
L32	21	(physical) with (rotat$3 spin$) with (mode orientation layout) with (screen view) with (chang$3 switch$3)	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:41
L33	0	(physical) with (rotat$3 spin$) with (monitor device screen display) with (laptop computer device phone) with (default) with (mode view setting orientation)	US-PGPUB; USPAT	OR	OFF	2013/08/12 10:42

8/ 12/ 2013 10:43:02 AM

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

37462 7590 08/27/2013
LANDO & ANASTASI, LLP
ONE MAIN STREET, SUITE 1100
CAMBRIDGE, MA 02142

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/611,282	11/03/2009	Robert Sanford Havoc Pennington	L2039-700433	2160

TITLE OF INVENTION: METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1780	$300	$0	$2080	11/27/2013

EXAMINER	ART UNIT	CLASS-SUBCLASS
LEE, TING ZHOU	2173	715-810000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Lando & Anastasi LLP
2
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: LITL, LLC

(B) RESIDENCE: (CITY and STATE OR COUNTRY): Boston, MA 02116

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

☒ Issue Fee
☒ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**

☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 50/2762 (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29	NOTE: Absent a valid certification of Micro Entity Status (see form PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
☐ Applicant asserting small entity status. See 37 CFR 1.27	NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
☐ Applicant changing to regular undiscounted fee status.	NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature /Matthew H. Grady/ Date November 13, 2013

Typed or printed name Matthew H. Grady Registration No. 52,957

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Electronic Patent Application Fee Transmittal

Application Number:	12611282
Filing Date:	03-Nov-2009
Title of Invention:	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT
First Named Inventor/Applicant Name:	Robert Sanford Havoc Pennington
Filer:	Matthew H. Grady
Attorney Docket Number:	L2039-700433

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Publ. Fee- Early, Voluntary, or Normal	1504	1	300	300
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl Issue Fee	1501	1	1780	1780

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**2080**

Electronic Acknowledgement Receipt

EFS ID:	17386240
Application Number:	12611282
International Application Number:	
Confirmation Number:	2160
Title of Invention:	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT
First Named Inventor/Applicant Name:	Robert Sanford Havoc Pennington
Customer Number:	37462
Filer:	Matthew H. Grady
Filer Authorized By:	
Attorney Docket Number:	L2039-700433
Receipt Date:	13-NOV-2013
Filing Date:	03-NOV-2009
Time Stamp:	11:04:53
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$2080
RAM confirmation Number	11726
Deposit Account	502762
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	L2039-700433-Issue-Fee.pdf	300944 71796d638a385ed738ccb5f7f3bac0a3a2c14fe1	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	32214 ff4f1ec1c448e23d113d24d2a9850bf235b1f5ee	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	333158		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/611,282	12/17/2013	8612888	L2039-700433	2160

37462 7590 11/26/2013

LANDO & ANASTASI, LLP
ONE MAIN STREET, SUITE 1100
CAMBRIDGE, MA 02142

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 937 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Robert Sanford Havoc Pennington, Asheville, NC;
Matthew David Day, Seoul, KOREA, REPUBLIC OF;
Noah Bruce Guyot, Mill Valley, CA;
Daniel Kuo, San Francisco, CA;
Jenea Boshart Hayes, Castro Valley, CA;
Aaron Tang, Somerville, MA;
David Livingstone Fore, Oakland, CA;
John Chuang, Brookline, MA;
Chris Bambacus, Framingham, MA;
Eben Eliason, Providence, RI;
Chris Moody, Boulder, CO;
Yves Behar, Oakland, CA;
Joshua Morenstein, San Francisco, CA;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4).

Dated: February 18, 2014
Electronic Signature for Matthew H. Grady: /Matthew H. Grady/

Docket No.: L2039-700433
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Letters Patent of:
Robert Sanford Havoc Pennington et al.

Patent No.: 8,612,888

Issued: December 17, 2013

For: METHODS AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Madam:

APPLICATION FOR PATENT TERM ADJUSTMENT UNDER 37 C.F.R. § 1.705(b)

This is an Application for Patent Term Adjustment ("Application") and, specifically, a request for reconsideration of the patent term adjustment of 937 days indicated on the issued patent. As required under 37 C.F.R. § 1.705(b), also included herewith is the fee set forth in § 1.18(e), as; and a statement of the facts involved, specifying (i) the correct patent term adjustment and the basis or bases under § 1.702 for the adjustment; (ii) the relevant dates as specified in §§ 1.703(a) through (e) for which an adjustment is sought and the adjustment as specified in § 1.703(f) to which the patent is entitled; (iii) whether the patent is subject to a terminal disclaimer and any expiration date specified in the terminal disclaimer; and (iv) any circumstances during the prosecution of the underlying application resulting in the patent that constitute a failure to engage in reasonable efforts to conclude processing or examination of such application as set forth in § 1.704.

Applicant hereby requests that the Patent Term Adjustment ("PTA") for the above-identified patent, as provided by the USPTO on PAIR and listed on the face of the issued patent

be reconsidered. It is Applicant's good faith belief that the PTA, and particularly the "B Delay" calculated by the USPTO and listed on PAIR, is incorrect.

Applicant submits that the PTA should be at least **1049 days**, as opposed to the 937 days calculated by the USPTO and listed on the face of the patent. The basis for Applicant's calculation is set forth below.

"Three Year Delay" pursuant to 35 U.S.C. § 154(b)(1)(B), interpreted in 37 C.F.R. § 1.702(b)

Under 37 C.F.R. § 1.702(b) ("B Delay"), Applicant should be entitled to an additional period of 112 days of PTA. Specifically, Applicant is entitled to an adjustment for the period of time beginning on the day after the date that is three years after the filing date and ending on the date that the patent issues, not including any time consumed by continued examination of the application under 35 U.S.C. § 132(b).

Applicant submits that the USPTO erred, as a matter of law, in determining the amount of B Delay. As a result, the USPTO failed to grant Applicant an additional 112 days of PTA due as B Delay.

Under 35 U.S.C. § 154(b)(1)(B)(1) "B delay" does not include "any time consumed by continued examination of the application requested by the applicant under section 132(b)." As exemplified in 37 C.F.R. § 1.703(b)(1), the USPTO interprets this statutory provision to exclude from "B delay," "[t]he number of days, if any, in the period beginning on the date on which a request for continued examination of the application under 35 U.S.C. § 132(b) was filed and **ending on the date the patent was issued**…."

The Federal Circuit recently rejected the USPTO's interpretation of 35 U.S.C. § 154(b)(1)(B)(1) in *Novartis v. Lee*, No. 2013-1160, -1179 (Fed. Cir. Jan. 15, 2014). The Federal Circuit concluded that the "time consumed by continued examination" is the "time up to allowance but not later…." Slip Opinion at 16.

As a result, the period between the date of the notice of allowance and the date the patent issued should be included as "B Delay."

The USPTO relied on its legally incorrect method in calculating the patent term adjustment applicable to this patent. If this adjustment had instead been calculated in

accordance with the Federal Circuit's decision in *Novartis*, Applicant would have received the additional 103 days of PTO that it now seeks in this petition, as demonstrated below.

On November 3, 2009 Applicant filed.

On July 29, 2013 Applicant requested continued examination.

On August 27, 2013 a notice of allowance was mailed.

On December 17, 2013 the patent issued.

The patent issued 409 days beyond the three year allotment. The period from the request for continued examination to the notice of allowance was 30 days, which is the properly determined period of "time consumed by continued examination" according to the Federal Circuit *Novartis* decision. Subtracting the time consumed by continued examination results in 379 days of B Delay that should be added to the PTA (instead of 267 as calculated by the USPTO).

If one adds the A Delay of 847 days (as determined by the USPTO) and the B Delay of 379 days, then subtracts the 177days of overlap (as calculated by the USPTO) (0 days of Application Delay – as calculated by the USPTO), the correct total amount of PTA is 1049 days.

CONCLUSION

The original PTA determination was 973 days (with 267 days of B Delay). Hence, it is believed that the patent is entitled to an additional 112 days of PTA.

In view of the foregoing it is respectfully requested that this Application for Patent Term Adjustment be favorably considered and that a corrected Determination of Patent Term Adjustment be issued.

Applicant respectfully submits that the above-referenced patent is not subject to a terminal disclaimer.

Pursuant to 35 U.S.C. § 154(b)(4)(A), Applicant reserves the right to file a civil action against the Director in the United States District Court for the Eastern District of Virginia should the Director deny the present request for revision of Patent Term Adjustment.

In accordance with 37 C.F.R. § 1.705(b)(1), please charge the fee set forth in 37 C.F.R. § 1.18(e) as well any necessary extension fee as set forth in 37 C.F.R. §1.136(a), and any other necessary charges, or any credits, to Deposit Account No. 50/2762 (Ref. L2093-700433).

Dated: February 18, 2014

Respectfully submitted,

Electronic signature: /Matthew H. Grady/
Matthew H. Grady
Registration No.: 52,957
Edward J. Russavage
Registration No.: 43,069
LANDO & ANASTASI LLP
Riverfront Office Park
One Main Street
Suite 1100
Cambridge, Massachusetts 02142
(617) 395-7000
Attorneys for Applicant

Electronic Patent Application Fee Transmittal

Application Number:	12611282
Filing Date:	03-Nov-2009
Title of Invention:	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT
First Named Inventor/Applicant Name:	Robert Sanford Havoc Pennington
Filer:	Matthew H. Grady
Attorney Docket Number:	L2039-700433

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Application for patent term adjustment	1455	1	200	200
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**200**

Electronic Acknowledgement Receipt

EFS ID:	18226976
Application Number:	12611282
International Application Number:	
Confirmation Number:	2160
Title of Invention:	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT
First Named Inventor/Applicant Name:	Robert Sanford Havoc Pennington
Customer Number:	37462
Filer:	Matthew H. Grady
Filer Authorized By:	
Attorney Docket Number:	L2039-700433
Receipt Date:	18-FEB-2014
Filing Date:	03-NOV-2009
Time Stamp:	14:49:26
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Petition for review by the Office of Petitions.	Response_to_Non-Final_Office_Action_Under_37_CFR_1111.pdf	38975 16b2748f866b86496f556e12b6f914f962b8d4bf	no	4

Warnings:	
Information:	

2	Fee Worksheet (SB06)	fee-info.pdf	30514 61a54e61aa05337274feb5844054e88b86202142	no	2

Warnings:	
Information:	
Total Files Size (in bytes):	69489

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4).

Dated: February 18, 2014
Electronic Signature for Matthew H. Grady: /Matthew H. Grady/

Docket No.: L2039-700433
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Letters Patent of:
Robert Sanford Havoc Pennington et al.

Patent No.: 8,612,888

Issued: December 17, 2013

For: METHODS AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Madam:

SECOND APPLICATION FOR PATENT TERM ADJUSTMENT UNDER 37 C.F.R. § 1.705(b)

Please do not enter or act upon the Petition filed on February 18, 2014 with EFS ID 18226976 (submitted in error). In the alternative, please withdraw the first Petition filed on February 18, 2014 with EFS ID 18226976. Please review the current Second Application for Patent Term Adjustment (submitted with a corrected statement regarding the filing of a Terminal Disclaimer in the current case).

This is an Application for Patent Term Adjustment ("Application") and, specifically, a request for reconsideration of the patent term adjustment of 937 days indicated on the issued patent. As required under 37 C.F.R. § 1.705(b), also included herewith is the fee set forth in § 1.18(e), as; and a statement of the facts involved, specifying (i) the correct patent term adjustment and the basis or bases under § 1.702 for the adjustment; (ii) the relevant dates as specified in §§ 1.703(a) through (e) for which an adjustment is sought and the adjustment as specified in § 1.703(f) to which the patent is entitled; (iii) whether the patent is subject to a

terminal disclaimer and any expiration date specified in the terminal disclaimer; and (iv) any circumstances during the prosecution of the underlying application resulting in the patent that constitute a failure to engage in reasonable efforts to conclude processing or examination of such application as set forth in § 1.704.

Applicant hereby requests that the Patent Term Adjustment ("PTA") for the above-identified patent, as provided by the USPTO on PAIR and listed on the face of the issued patent be reconsidered. It is Applicant's good faith belief that the PTA, and particularly the "B Delay" calculated by the USPTO and listed on PAIR, is incorrect.

Applicant submits that the PTA should be at least **1049 days**, as opposed to the 937 days calculated by the USPTO and listed on the face of the patent. The basis for Applicant's calculation is set forth below.

"Three Year Delay" pursuant to 35 U.S.C. § 154(b)(1)(B), interpreted in 37 C.F.R. § 1.702(b)

Under 37 C.F.R. § 1.702(b) ("B Delay"), Applicant should be entitled to an additional period of 112 days of PTA. Specifically, Applicant is entitled to an adjustment for the period of time beginning on the day after the date that is three years after the filing date and ending on the date that the patent issues, not including any time consumed by continued examination of the application under 35 U.S.C. § 132(b).

Applicant submits that the USPTO erred, as a matter of law, in determining the amount of B Delay. As a result, the USPTO failed to grant Applicant an additional 112 days of PTA due as B Delay.

Under 35 U.S.C. § 154(b)(1)(B)(1) "B delay" does not include "any time consumed by continued examination of the application requested by the applicant under section 132(b)." As exemplified in 37 C.F.R. § 1.703(b)(1), the USPTO interprets this statutory provision to exclude from "B delay," "[t]he number of days, if any, in the period beginning on the date on which a request for continued examination of the application under 35 U.S.C. § 132(b) was filed and **ending on the date the patent was issued**...."

The Federal Circuit recently rejected the USPTO's interpretation of 35 U.S.C. § 154(b)(1)(B)(1) in *Novartis v. Lee*, No. 2013-1160, -1179 (Fed. Cir. Jan. 15, 2014). The Federal

Circuit concluded that the "time consumed by continued examination" is the "time up to allowance but not later…." Slip Opinion at 16.

As a result, the period between the date of the notice of allowance and the date the patent issued should be included as "B Delay."

The USPTO relied on its legally incorrect method in calculating the patent term adjustment applicable to this patent. If this adjustment had instead been calculated in accordance with the Federal Circuit's decision in *Novartis*, Applicant would have received the additional 103 days of PTO that it now seeks in this petition, as demonstrated below.

On November 3, 2009 Applicant filed.

On July 29, 2013 Applicant requested continued examination.

On August 27, 2013 a notice of allowance was mailed.

On December 17, 2013 the patent issued.

The patent issued 409 days beyond the three year allotment. The period from the request for continued examination to the notice of allowance was 30 days, which is the properly determined period of "time consumed by continued examination" according to the Federal Circuit *Novartis* decision. Subtracting the time consumed by continued examination results in 379 days of B Delay that should be added to the PTA (instead of 267 as calculated by the USPTO).

If one adds the A Delay of 847 days (as determined by the USPTO) and the B Delay of 379 days, then subtracts the 177days of overlap (as calculated by the USPTO) (0 days of Application Delay – as calculated by the USPTO), the correct total amount of PTA is 1049 days.

CONCLUSION

The original PTA determination was 973 days (with 267 days of B Delay). Hence, it is believed that the patent is entitled to an additional 112 days of PTA.

In view of the foregoing it is respectfully requested that this Application for Patent Term Adjustment be favorably considered and that a corrected Determination of Patent Term Adjustment be issued.

Applicant respectfully submits that the above-referenced patent is subject to a terminal disclaimer over U.S. Patent Application 12/611,282 filed on 4/1/2009 (the current Application & Patent).

Pursuant to 35 U.S.C. § 154(b)(4)(A), Applicant reserves the right to file a civil action against the Director in the United States District Court for the Eastern District of Virginia should the Director deny the present request for revision of Patent Term Adjustment.

In accordance with 37 C.F.R. § 1.705(b)(1), please charge the fee set forth in 37 C.F.R. § 1.18(e) as well any necessary extension fee as set forth in 37 C.F.R. §1.136(a), and any other necessary charges, or any credits, to Deposit Account No. 50/2762 (Ref. L2093-700433).

Dated: February 18, 2014

Respectfully submitted,

Electronic signature: /Matthew H. Grady/
Matthew H. Grady
Registration No.: 52,957
Edward J. Russavage
Registration No.: 43,069
LANDO & ANASTASI LLP
Riverfront Office Park
One Main Street
Suite 1100
Cambridge, Massachusetts 02142
(617) 395-7000
Attorneys for Applicant

Electronic Patent Application Fee Transmittal

Application Number:	12611282
Filing Date:	03-Nov-2009
Title of Invention:	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT
First Named Inventor/Applicant Name:	Robert Sanford Havoc Pennington
Filer:	Matthew H. Grady
Attorney Docket Number:	L2039-700433

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Application for patent term adjustment	1455	1	200	200
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**200**

Electronic Acknowledgement Receipt

EFS ID:	18229614
Application Number:	12611282
International Application Number:	
Confirmation Number:	2160
Title of Invention:	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT
First Named Inventor/Applicant Name:	Robert Sanford Havoc Pennington
Customer Number:	37462
Filer:	Matthew H. Grady
Filer Authorized By:	
Attorney Docket Number:	L2039-700433
Receipt Date:	18-FEB-2014
Filing Date:	03-NOV-2009
Time Stamp:	16:16:27
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$200
RAM confirmation Number	3044
Deposit Account	502762
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Petition for review by the Office of Petitions.	Response_to_Non-Final_Office_Action_Under_37_CFR_1111.pdf	39862 0ef31c0100518131244728d4f2e77c896019baf5	no	4
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30514 d16ebf4b2392aab20e316055cfbf4696a15b5cb4	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	70376		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

MAILED
FEB 19 2015
OFFICE OF PETITIONS

LANDO & ANASTASI, LLP
ONE MAIN STREET, SUITE 1100
CAMBRIDGE, MA 02142

Inventors: Pennington et al.	:	
Patent No. 8,612,888	:	REDETERMINATION OF PATENT
Issue Date: December 17, 2013	:	TERM ADJUSTMENT
Application No. 12/611,282	:	
Filing Date: November 3, 2009	:	
Attorney Docket No. L2039-700433	:	

The instant redetermination of the patent term adjustment ("PTA") set forth on the patent is being issued in response to the request filed pursuant to 37 C.F.R. § 1.705 on February 18, 2014, which requests the United States Patent and Trademark Office ("Office") adjust the PTA from 937 days to 1,049 days.

The Office's redetermination of the PTA indicates the correct PTA is **1,022** days.

This redetermination of the PTA is NOT a "Director's decision on the applicant's request for reconsideration" within the meaning of 35 U.S.C. § 154(b)(4), and the issuance of this redetermination does not start the 180-day period set forth in 35 U.S.C. § 154(b)(4) to commence a civil action.

Relevant Procedural History

The patent issued with a PTA determination of 937 days on December 17, 2013. The instant request seeking an adjustment of 1,049 days was timely filed with the required fee of $200 on February 18, 2014.

Decision

The PTA set forth on the patent is based on the following determinations previously made by the Office:

(1) The period of delay under 35 U.S.C. § 154(b)(1)(A) ("A Delay") is 847 days;
(2) The period of delay under 35 U.S.C. § 154(b)(1)(B) ("B Delay") is 267 days;
(3) The period of delay under 35 U.S.C. § 154(b)(1)(C) ("C Delay") is 0 days;

(4) The number of days of overlapping delay ("Overlap") between the periods of A Delay, B Delay, and C Delay is 177 days; and
(5) The period of delay under 35 U.S.C. § 154(b)(2)(C) ("Applicant Delay") is 0 days.

The PTA to be set forth on a patent is the sum of the days of A Delay, B Delay, and C Delay reduced by the number of days of Overlap and Applicant Delay. In other words, the following formula may be used to calculate the PTA:

PTA = A Delay + B Delay + C Delay – Overlap –Applicant Delay

The patent sets forth a PTA of 937 days (847 days of A Delay + 267 days of B Delay + 0 days of C Delay - 177 days of Overlap - 0 days of Applicant Delay).

The request asserts the Office incorrectly calculated the period of B Delay, and as a result, incorrectly calculated the PTA set forth on the patent. The request states the correct period of B Delay is 379 days and the correct PTA is 1,049 days.

As will be discussed, the correct PTA is 1,022 days (847 days of A Delay + 379 days of B Delay + 0 days of C Delay - 177 days of Overlap - 27 days of Applicant Delay).

A Delay

The request does not dispute the Office's prior determination that the period of A Delay is 847 days. The Office has recalculated the period of A Delay as part of the Office's redetermination of the PTA and confirmed the period of A Delay is 847 days.

B Delay

The request asserts the correct period of B Delay is 379 days, not 267 days as previously calculated by the Office.

The Office has determined the correct period of B Delay is 379 days. In other words, the Office agrees with the calculation of the period of B Delay set forth in the request.

C Delay

The request does not dispute the Office's prior determination the period of C Delay is 0 days. The Office has recalculated the period of C Delay as part of the Office's redetermination of the PTA and confirmed the period of C Delay is 0 days.

Overlap

The request does not dispute the Office's prior determination that the number of days of Overlap is 177 days. The Office has recalculated the number of days of Overlap as part of the Office's redetermination of the PTA and confirmed the number of days of Overlap is 177 days.

Applicant Delay

The request does not dispute the Office's prior determination that the period of Applicant Delay is 0 days. The Office has recalculated the period of Applicant Delay as part of the Office's redetermination of the PTA and determined the correct period of Applicant Delay is 27 days.

A reduction in patent term adjustment for Applicant Delay is warranted under 37 C.F.R. § 1.704(b) if a reply is not filed within three months of the date the Office issues a communication, which requires the submission of a reply. Specifically, 37 C.F.R. § 1.704(b) states,

> [A]n applicant shall be deemed to have failed to engage in reasonable efforts to conclude processing or examination of an application for the cumulative total of any periods of time in excess of three months that are taken to reply to any notice or action by the Office making any rejection, objection, argument, or other request, measuring such three-month period from the date the notice or action was mailed or given to the applicant, in which case the period of adjustment set forth in § 1.703 shall be reduced by the number of days, if any, beginning on the day after the date that is three months after the date of mailing or transmission of the Office communication notifying the applicant of the rejection, objection, argument, or other request and ending on the date the reply was filed. The period, or shortened statutory period, for reply that is set in the Office action or notice has no effect on the three-month period set forth in this paragraph.

The Office issued a Notice to File Missing Parts on November 19, 2009, and a reply to the notice was filed more than three months later on March 18, 2010. The prior facts warrant entry of a reduction in patent term adjustment under 37 C.F.R. § 1.704(b) in the amount of 27 days, which is the number of days beginning on the day after the date three months after the Office issued the notice (February 20, 2010) and ending on the date the reply was filed (March 18, 2010).

In view of the prior discussion, the correct period of Applicant Delay is 27 days.

Conclusion

The correct PTA is 1,022 days (847 days of A Delay + 379 days of B Delay + 0 days of C Delay - 177 days of Overlap - 27 days of Applicant Delay).

A request for reconsideration of the instant redetermination of PTA may be filed if patentee disagrees with the Office's determination the correct PTA is 1,022 days. Such a request must be filed within TWO MONTHS of the issuance date of the instant redetermination of PTA. Extensions of the two-month time period may be obtained under 37 C.F.R. § 1.136(a). The request for reconsideration does not need to include a fee if the request is filed within two months of the issuance date of the instant redetermination. If the request is filed more than two months after the issuance date of this decision, the request must include the appropriate extension of time fee. If a request for reconsideration is not filed within the maximum extendable period to file the request, the Office will *sua sponte* issue a certificate of correction adjusting the PTA to 1,022 days.

Further correspondence with respect to this matter may be submitted as follows:

By Internet: A request for reconsideration may be filed electronically using EFS Web.[1] Document Code "PET.OP" should be used if the request is filed electronically.

By mail: Mail Stop Petition
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

By facsimile: (571) 273-8300
Attn: Office of Petitions

By hand: U.S. Patent and Trademark Office
Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Telephone inquiries specific to this decision should be directed to Attorney Advisor Steven Brantley at (571) 272-3203.

Charles Steven Brantley
Attorney Advisor
Office of Petitions

Enclosure: Draft Certificate of Correction

[1] General Information concerning EFS Web can be found at http://www.uspto.gov/patents/process/file/efs/index.jsp.

DRAFT COPY

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO.	:	8,612,888 B2
APPLICATION NO.	:	12/611,282
DATED	:	December 17, 2013
INVENTOR(S)	:	Pennington et al.

It is certified that an error appears (or errors appear) in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the Title page,

[*] Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 937 days.

This patent is subject to a terminal disclaimer.

Delete the phrase "by 937 days" and insert -- by 1022 days--

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO.	: 8,612,888 B2
APPLICATION NO.	: 12/611282
DATED	: December 17, 2013
INVENTOR(S)	: Pennington et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the Title Page:

The first or sole Notice should read --

Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1022 days.

Signed and Sealed this
Fourth Day of August, 2015

Michelle K. Lee

Michelle K. Lee
Director of the United States Patent and Trademark Office

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	FILE WRAPPER LOCATION
12/611,282	8612888	2173	9200

OC000000080412640

Correspondence Address/Fee Address Change

The following fields have been set to Customer Number 23628 on 02/05/2016

- **Correspondence Address**
- **Maintenance Fee Address**

The address of record for Customer Number 23628 is:

23628
WOLF GREENFIELD & SACKS, P.C.
600 ATLANTIC AVENUE
BOSTON, MA 02210-2206

PTO/SB/80 (11-08)
Approved for use through 11/30/2011. OMB 0651-0035
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(b).

I hereby appoint:

[X] Practitioners associated with the Customer Number: 23628

OR

[ ] Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(b).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(b) to:

[X] The address associated with Customer Number: 23628

OR

[ ] Firm or Individual Name					
Address					
City		State		Zip	
Country					
Telephone		Email			

Assignee Name and Address:

LiTL LLC
501 Boylston Street
Boston, MA 02116

A copy of this form, together with a statement under 37 CFR 3.73(b) (Form PTO/SB/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(b) may be completed by one of the practitioners appointed in this form if the appointed practitioner is authorized to act on behalf of the assignee, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature	Kristin A Carroll	Date	2/24/2012
Name	Kristin Carroll	Telephone	617-535-8000
Title	General Counsel		

Electronic Acknowledgement Receipt

EFS ID:	25246472
Application Number:	12611282
International Application Number:	
Confirmation Number:	2160
Title of Invention:	METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT
First Named Inventor/Applicant Name:	Robert Sanford Havoc Pennington
Customer Number:	23628
Filer:	Edward J. Russavage/Sara Sikorski
Filer Authorized By:	Edward J. Russavage
Attorney Docket Number:	L2039-700433
Receipt Date:	18-MAR-2016
Filing Date:	03-NOV-2009
Time Stamp:	18:18:21
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Assignee showing of ownership per 37 CFR 3.73	L203970014US00-373-EJR.pdf	21061 d958ae04afb29e59466ceeab9201b30f582c3033	no	1

Warnings:	
Information:	

2	Power of Attorney	L203990000US00-prePOA-EJR.pdf	326446 11ff6f04a180721786985cac1b8da2341fc5a7d1	no	1

Warnings:	
Information:	
Total Files Size (in bytes):	347507

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/96 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: AQUENT LLC

Application No./Patent No.: 8,612,888 Filed/Issue Date: December 17, 2013

Titled: METHOD AND APPARATUS FOR MANAGING DIGITAL MEDIA CONTENT

LiTL LLC (Name of Assignee) , a Corporation (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. [x] the assignee of the entire right, title, and interest in;

2. [ ] an assignee of less than the entire right, title, and interest in
(The extent (by percentage) of its ownership interest is _____ %); or

3. [ ] an assignee of an undivided interest in the entirety of (a complete assignment from one of the joint inventors was made) the patent application/patent identified above by virtue of either:

A. [ ] An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____ , Frame _____ , or for which a copy thereof is attached.

OR

B. [x] A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: GUYOT et al. To: AQUENT, LLC
The document was recorded in the United States Patent and Trademark Office at
Reel 024116 , Frame 0477 , or for which a copy thereof is attached.

2. From: AQUENT, LLC To: LITL LLC
The document was recorded in the United States Patent and Trademark Office at
Reel 024484 , Frame 0783 , or for which a copy thereof is attached.

3. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at
Reel _____ , Frame _____ , or for which a copy thereof is attached.

[ ] Additional documents in the chain of title are listed on a supplemental sheet(s).

[x] As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (*i.e.*, a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Edward J. Russavage/	3/17/2016
Signature	Date
Edward J. Russavage	Attorney for Assignee
Printed or Typed Name	Title

Certificate of Electronic Filing Under 37 CFR 1.8

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4).

Dated: March 18, 2016 Electronic Signature for Sara A. Sikorski: /Sara A. Sikorski/

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/611,282	11/03/2009	Robert Sanford Havoc Pennington	L2039-700433

CONFIRMATION NO. 2160

23628
WOLF GREENFIELD & SACKS, P.C.
600 ATLANTIC AVENUE
BOSTON, MA 02210-2206

POWER OF ATTORNEY NOTICE

OC000000081825189

Date Mailed: 03/31/2016

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 03/18/2016.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/hachristian/

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/611,282	11/03/2009	Robert Sanford Havoc Pennington	L2039-700433

CONFIRMATION NO. 2160

23628
WOLF GREENFIELD & SACKS, P.C.
600 ATLANTIC AVENUE
BOSTON, MA 02210-2206

POA ACCEPTANCE LETTER

OC000000081826024

Date Mailed: 03/31/2016

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 03/18/2016.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/hachristian/

Trials@uspto.gov
571-272-7822

Paper: 6
Entered: November 4, 2021

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LENOVO (UNITED STATES) INC.,
Petitioner,

v.

LITL LLC,
Patent Owner.

IPR2021-00821
Patent 8,612,888 B2

Before MICHELLE N. ANKENBRAND, GARTH D. BAER, and BRIAN D. RANGE, *Administrative Patent Judges*.

BAER, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Lenovo (United States) Inc. ("Petitioner") filed a Petition (Paper 1, "Pet.") requesting an *inter partes* review of claims 1–9, 15–22, and 24–27 of U.S. Patent No. 8,612,888 B2 (Ex. 1001, "the '888 patent"). LiTL LLC ("Patent Owner") filed a Preliminary Response. Paper 5 ("Prelim. Resp.").

We have authority to determine whether to institute an *inter partes* review. *See* 35 U.S.C. § 314; 37 C.F.R. § 42.4(a) (2020). The standard for institution is set forth in 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted unless "there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." As discussed below, we determine that Petitioner does not show a reasonable likelihood of prevailing with respect to any of the challenged claims. Accordingly, we deny institution of an *inter partes* review.

II. BACKGROUND

A. Related Matters

The parties identify the following as a related matter: *LiTL LLC v. Lenovo (United States), Inc. and Lenovo (Beijing) Limited*, 1:20-cv-00689-RGA (D. Del.). Pet. 2; Paper 4, 1.

B. The '888 Patent (Ex. 1001)

The '888 patent is titled "Method and Apparatus for Managing Digital Media Content." Ex. 1001, code (54). Figure 1 of the '888 patent, reproduced below, illustrates a portable computer in laptop mode. *Id.* at 12:31–39.

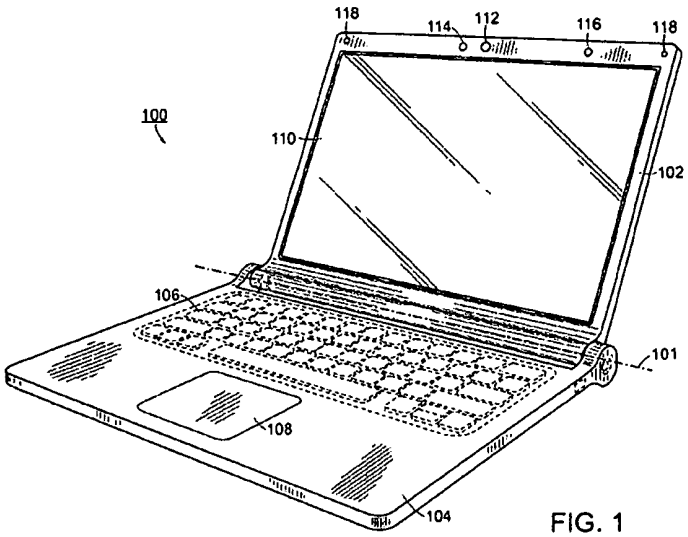


FIG. 1

According to the '888 patent, the computer includes "a graphical user interface that organizes interface elements into views of computer content for presentation to a user." *Id.* at 2:47–50. The '888 patent further explains that "[d]ifferent views are used to provide an interface that is responsive to configurations of the device." *Id.* at 2:52–53.

The specification discloses a number of different "views," including a time view and an album view, among others. *Id.* at 21:11–13. Figure 8, reproduced below, illustrates a time view. *Id.* at 23:43–44.

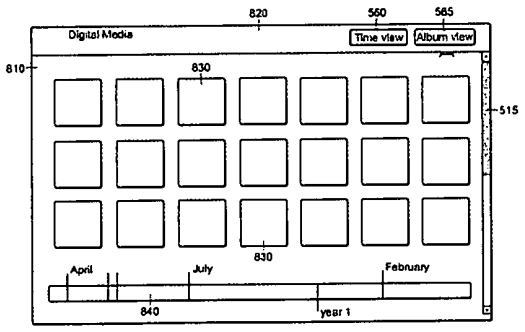


FIG. 8

Figure 5 (reproduced below) illustrates album view. *Id.* at 21:35–36.

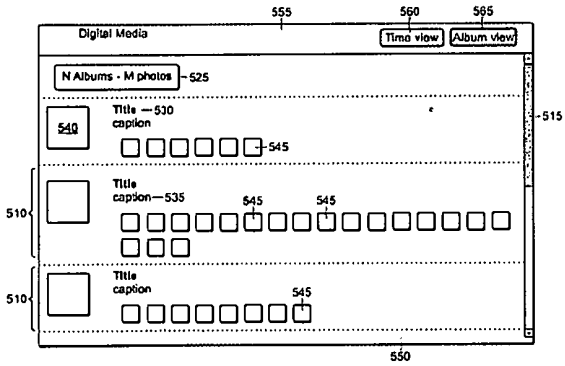


FIG. 5

C. Challenged Claims

Of challenged claims 1–9, 15–22, and 24–27, claims 1, 26, and 27 are independent. Claim 1 is exemplary of the claimed subject matter and is reproduced below.

> 1. A method for accessing and managing digital media libraries on a streamlined computing device with a plurality of selectable I/O profiles, the method comprising:
>
> displaying a graphical user interface on the computing device, wherein the graphical user interface comprises at least a plurality of views of digital media content;
>
> providing for transition between the plurality of views in response to selection of an I/O profile;
>
> providing for transition between the plurality of views in response to activation of a view selector component configured to permit a user to select one of the plurality of views, wherein providing for the transition between the plurality of views in response to selection of the I/O profile includes:
>
> permitting the user to rotate a display component of the computing device about a longitudinal axis running along an interface between the display component and a base of the streamlined computing device;
>
> wherein rotating the display component about the longitudinal axis from a closed mode to a first physical orientation configures the computing device into a laptop mode having a

first physical configuration of the display component and the base, with one of the plurality of views as a default display; and

wherein rotating the display component about the longitudinal axis from the closed mode to a second physical orientation configures the computing device into another display mode having a second physical configuration of the display component and the base, with another one of the plurality of views as the default display;

associating at least one of a plurality of visual representations with digital media content;

executing the association with the at least one of the plurality of visual representations with digital media content in response to selection;

transitioning a display on the computing device to a view of the digital media content in response to the act of executing the association; and

providing for display of user digital media content and referenced digital media content in the view of the digital media content.

Ex. 1001, 47:54–48:28.

D. Asserted Grounds of Unpatentability

Petitioner asserts the challenged claims are unpatentable based on the following grounds:

Claim(s) Challenged	35 U.S.C. §[1]	References/Basis
1–4, 6–8, 15–16, 24–27	103	Shimura,[2] Tsuji,[3] Aldrich[4]
5	103	Shimura, Aldrich, Biggs[5]
9, 18, 19	103	Shimura, Tsuji, Aldrich, Chao[6]
22	103	Shimura, Tsuji, Aldrich, Kurtz[7]
20	103	Shimura, Tsuji, Aldrich, Choi[8]
17, 21	103	Shimura, Tsuji, Aldrich, Choi, Manolis[9]

Pet. 3. Petitioner supports the asserted grounds with the Declaration of Jean Renard Ward. Ex. 1012.

III. DISCUSSION

A. Level of Ordinary Skill in the Art

Petitioner contends that a person of ordinary skill in the art ("POSITA")

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[1] The Leahy-Smith America Invents Act ("AIA") amended 35 U.S.C. § 103. *See* Pub. L. No. 112-29, 125 Stat. 284, 285–88 (2011). As the application that issued as the '888 patent was filed before the effective date of the relevant amendments, the pre-AIA version of § 103 applies.

[2] JP1994-242853 (H6-242853), published Sept. 2, 1994 (Ex. 1003). We refer to the Certified English translation (Ex. 1004, "Shimura").

[3] US 2005/0062715 A1, published Mar. 24, 2005 (Ex. 1005, "Tsuji").

[4] US 2006/0265390 A1, published Nov. 23, 2006 (Ex. 1006, "Aldrich").

[5] US 2004/0172451 A1, published Sept. 2, 2004 (Ex. 1007, "Biggs").

[6] US 7,970,240 B1, June 28, 2011 (Ex. 1008, "Chao").

[7] US 2004/0189694 A1, published Sept. 30, 2004 (Ex. 1009, "Kurtz").

[8] US 7,778,973 B2, Aug. 17, 2010 (Ex. 1010, "Choi").

[9] US 7,243,079 B1, July 10, 2007 (Ex. 1011, "Manolis").

> would have had at least a Bachelor's degree in Electrical Engineering, Computer Engineering, or Computer Science, plus two to three years of work experience in designing hardware and/or software aspects of the User Interface (UI) for computing devices, including the user interface employed and displayed by the operating system and its organization of content and functionality, and Web applications programming and technologies. Alternatively, the POSITA would have received a graduate degree such as a Master's or PhD degree with at least one year of work experience related to hardware and/or software design aspects of the UI for computing devices, including the user interface employed and displayed by the operating system and its organization of content and functionality, and Web applications programming and technologies.

Pet. 14 (citing Ex. 1012 ¶ 26).

Patent Owner does not dispute Petitioner's asserted level of ordinary skill in the art. *See generally* Prelim. Resp.

We find, based on the current record, that Petitioner's contention is reasonable. For purposes of this Decision, we adopt the level of ordinary skill in the art Petitioner proposes.

B. Claim Construction

Petitioner proposes a claim construction for "view selector component," "aggregation component," and "execution component." Pet. 14–12. We determine we need not explicitly construe those terms to determine whether to institute an *inter partes* review. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) ("we need only construe terms 'that are in controversy, and only to the extent necessary to resolve the controversy'" (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

We determine, however, that we need to construe "a plurality of views of digital media content" (as recited in all independent challenged claims).

As Patent Owner explains, the '888 patent discusses views extensively. *See* Prelim. Resp. 38–39 (providing numerous citations to the '888 patent). In particular, the '888 patent describes many examples of views that each organize content in a different way. *See, e.g.*, Ex. 1001, Figs. 5 (album view), 7A (single album view), 8 (time view), 16 (a view including cards); *see also id.* at 21:35–23:58 (describing the '888 patent's figures). We agree with Patent Owner that, when discussing views, the '888 patent consistently refers to different ways of organizing content. *See* Prelim. Resp. 35–44; *see also, e.g.*, Ex. 1001, 21:14–15 (explaining that "[e]ach view may offer the user particular interaction options, features and benefits"), 21:16–19 (time view organizing content chronologically), 21:19-22 (album view organizing content by album), 22:59-64 (single album view showing previews of photographs). But, as Patent Owner notes, "[t]he specification never describes two orientations of the same organization of displayed content as different 'views.'" Prelim. Resp. 37. Instead, the '888 patent separately addresses the display's "orientation," which, according to the specification, is achieved simply by rotating the display. Ex. 1001, 10:27–30 ("the plurality of orientations comprises a first orientation relative to the longitudinal axis and a second orientation relative to the longitudinal axis,"), 10:46–49 "(the second orientation is 90 degrees relative to the first orientation, and . . . the third orientation is 180 degrees relative to the first orientation"), 10:57–11:8 (characterizing the display's "orientation" as a "degree of rotation"). The '888 patent also expressly distinguishes between displayed content and its orientation in describing that "display content and/or display orientation of the portable computer may vary when the portable computer is configured from the laptop mode into the easel mode."

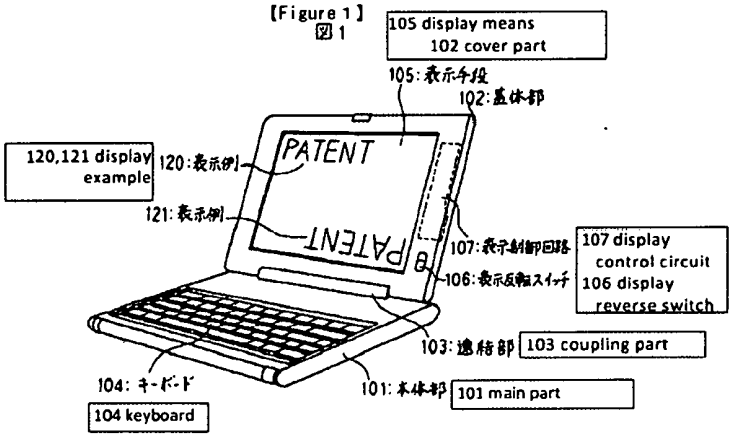
Id. at 37:6–9. The '888 patent, however, does not refer to merely changing the visual display's orientation as changing views.

"[T]he specification 'is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.'" *Philips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005). Consistent with the '888 patent's specification, for purposes of this Decision, we construe "a plurality of views of digital media content" as referring to a plurality of ways of organizing visual representations of computer content. The recitation is distinct from merely changing the display's orientation.

C. Analysis

1. Overview of Shimura (Exs. 1003 and 1004)

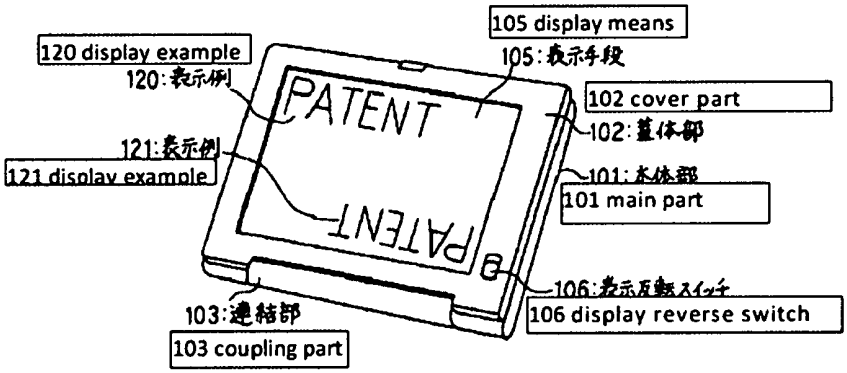
All grounds rely on Shimura. Shimura is a Japanese patent application publication (Ex. 1003), for which Petitioner provided a certified English translation (Ex. 1004). Shimura relates to a personal computer that "can adopt a mode suitable for a user environment centered on a pen input operation and a mouse input operation while retaining a mode which can use a keyboard." Ex. 1004, code (57). Figure 1 of Shimura, reproduced below, illustrates an example of the personal computer. *Id.*



As shown in Figure 1, the personal computer includes main part 101 provided with keyboard 104 on the front; cover part 102 provided with display 105 on the front; and coupling mechanism 103, which enables the opening and closing of computer parts 101 and 102 and is used to couple one end of main part 101 and one end of cover part 102 with display 105 such that cover part 102 faces main part 101. *Id.* Coupling mechanism 103 is structured so that it can also open cover part 102 so that the orientation of cover part 102 exceeds 180° relative to main part 101. *Id.* Figure 4 of Shimura, reproduced below, shows an inclined view of the personal computer, with main part 101 rotated nearly 360° with respect to cover part 102. *Id.* ¶¶ 16–17, Fig. 4.

[Figure 4]

図4



As shown in Figure 4, coupling mechanism 103 enables the rotation of cover part 102 with respect to main part 101. *Id.* ¶¶ 12–13. Coupling mechanism 103 is fastened by hinges to main part 101 and cover part 102. *Id.* ¶ 12.

2. Overview of Tsuji (Ex. 1005)

Tsuji is a US patent application publication that relates to a portable computer including: a housing with a top surface; a keyboard placed on the top surface of the housing; a display unit with a front surface and a rear

surface, supported by the housing and "rotated between a closed position in which the keyboard is covered and an open position in which the keyboard is exposed"; a sensor which senses an angle formed between the front surface of the display unit and the top surface of the housing; and a display device in the display unit to display a screen image in one of "a first orientation in which a bottom-end portion of the screen image is located toward the housing and a second orientation in which a top-end portion of the screen image is located toward the housing in accordance with the angle sensed by the sensor." Ex. 1005 ¶¶ 3, 10. Tsuji's Figures 1, 2, and 5, reproduced below, illustrate the portable computer with its display in various positions. *Id.* ¶¶ 13–15.

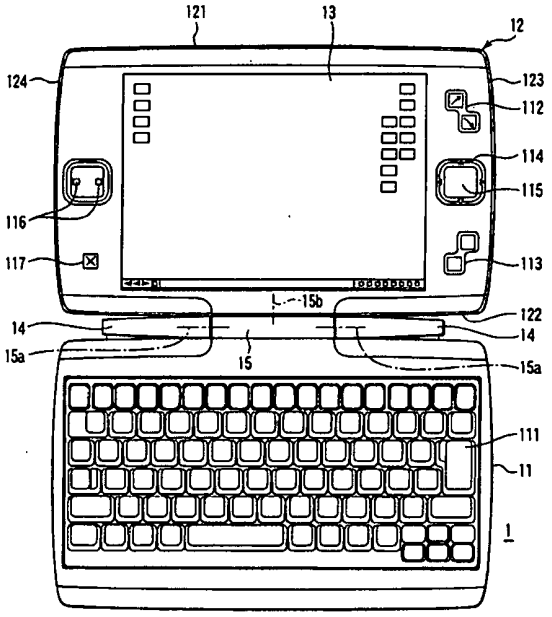


FIG. 1

Figure 1 illustrates a portable computer including display unit 12 that can rotate around first central axis 15a that extends in parallel to the outer

surface of computer main body 11, and can also rotate around second central axis 15b perpendicular to first central axis 15a. *Id.* ¶¶ 13, 31–33.

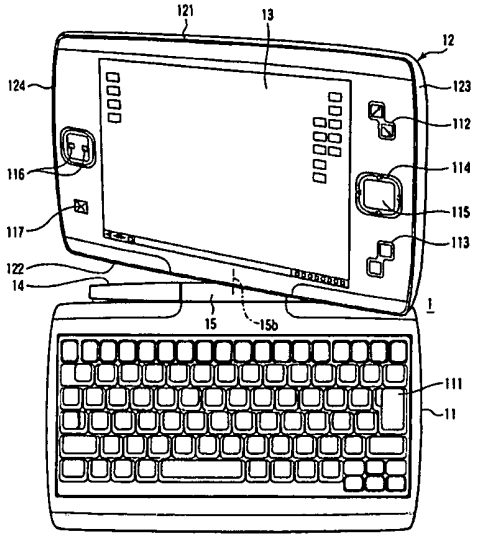


FIG. 2

Figure 2 illustrates the portable computer with display unit 12 rotated around second central axis 15b, display unit 12 rotatable 360° around second central axis 15b in the horizontal direction with respect to the outer surface of computer main body 11. *Id.* ¶¶ 14, 33.

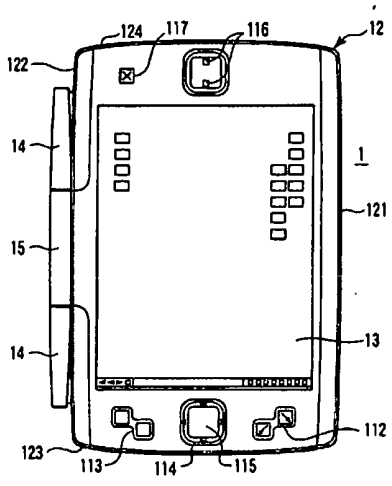


FIG. 5

Figure 5 illustrates the portable computer with display unit 12 set to a PDA style by rotating the display unit 180° around second central axis 15b in a horizontal direction so that the display unit is accessible in a second open position. *Id.* ¶¶ 17, 33–34.

Figure 14 of Tsuji, reproduced below, illustrates a control operation for an automatic image rotating function the portable computer shown in Figure 1 performs. *Id.* ¶ 26.

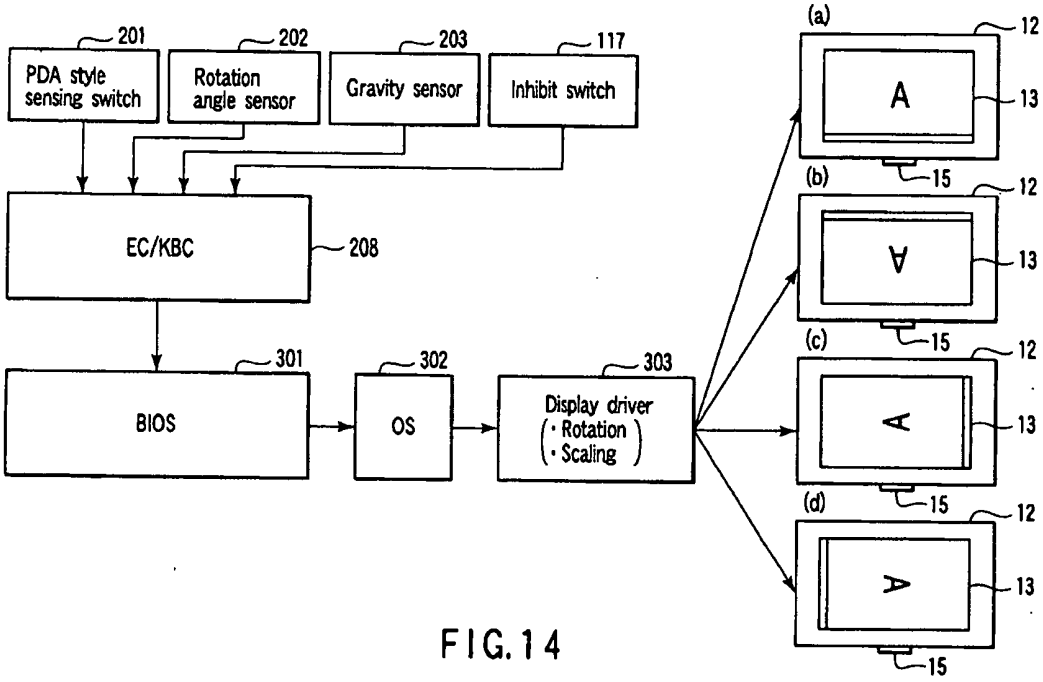


FIG. 14

BIOS (Basic Input Output System) program 301 shown in Figure 14 acquires values from a sensing switch, a rotation angle sensor, and a gravity sensor to determine whether the portable computer is used in a PC style (as shown in Figure 1, reproduced above) or in a PDA style (as shown in Figure 5, reproduced above). *Id.* ¶¶ 34, 64, 69–71. When the computer is used in PC style, BIOS 301 performs control to change the orientation of a screen image in response to a signal from rotation angle sensor 202. *Id.* ¶ 70. When the

computer is used in PDA style, BIOS 301 performs control to change the orientation of a screen image in response to a signal from gravity sensor 203. *Id.* BIOS 301 then informs display driver 303 of the orientation of the screen image to be displayed on the computer's LCD and the aspect ratio of the screen image, and display driver 303 performs an operation for rotating the screen image displayed on the computer's LCD and a scaling operation for varying the aspect ratio in response to an instruction from BIOS 301. *Id.* Display driver 303 then sets the orientation of the screen image displayed on the LCD in one of four orientations (a), (b), (c) and (d). *Id.* ¶ 71.

3. Overview of Aldrich (Ex. 1006)

Aldrich discloses a file selection interface that can be integrated with an operating system and/or an Internet browser. Ex.1006 ¶ 21, 44–48. Aldrich further discloses a GUI that includes a display panel populated with image files. *Id.* ¶ 51.

4. Obviousness Analysis

Based on the present record, Petitioner does not demonstrate a reasonable likelihood of showing any of challenged claims 1–9, 15–22, and 24–27 would have been obvious over the asserted prior art. Independent claims 1, 26 and 27 recite "wherein the graphical user interface comprises at least a plurality of views of digital media content." Ex. 1001, 47:58–59, 50:66–67, 51:41–52:1. The independent claims further require transitioning "between the plurality of views." *Id.* at 47:60, 51:1, 52:4–5. For all of its asserted grounds, Petitioner asserts that the prior art teaches a plurality of views because "[t]he Shimura-Tsuji Computer can orient the displayed content in either a normal view in the laptop mode or an inverted view in the easel mode based on the outputs of the rotation angle and gravity sensors."

Pet. 50; *see id.* at 82, 84. Petitioner further asserts that in its proffered combination, "image files . . . would be displayed in either a normal view in the laptop mode or an inverted view in the easel mode, thereby disclosing 'the graphical user interface comprising at least a plurality of views of digital media content.'" *Id.* at 50–51; *see id.* at 82, 84. Similarly, Petitioner explains that its asserted prior-art combination teaches transitioning between views because "[w]hen a user configures the Shimura-Tsuji-Aldrich Computing System between the laptop and easel modes, the displayed content . . . would 'transition between the plurality of views [normal and inverted views] in response." *Id.* at 51. In short, Petitioner relies only on different orientations of the same displayed content to meet the claimed plurality of views. Thus, on the current record, Petitioner has not made a sufficient showing that the asserted combination of Shimura, Tsuji and Aldrich teach or suggest the claimed plurality of views of digital media content and transitioning between those views, as required in all independent challenged claims.

IV. CONCLUSION

For the reasons above, we determine that Petitioner has not established a reasonable likelihood that it would prevail in showing that at least one of the challenged claims is unpatentable.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that the Petition is denied, and we do not institute an *inter partes* review of any claim of the '888 patent based on a ground asserted in the Petition.

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AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the District of Delaware on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
	2/1/2023	for the District of Delaware

PLAINTIFF	DEFENDANT
LiTL LLC	ASUSTeK Computer Inc., ASUS Global Pte. Ltd., and ASUS Technology Pte. Limited

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	8,289,688	10/16/2012	LiTL LLC
2	8,624,844	1/7/2014	LiTL LLC
3	9,563,229	2/7/2017	LiTL LLC
4	10,289,154	5/14/2019	LiTL LLC
5	9,003,315	4/7/2015	LiTL LLC

See attached Addendum

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

Addendum to Patent/Trademark Report – (LiTL LLC v. ASUSTeK Computer Inc., et al.)

List of Additional Patents

Patent Number	Date of Patent	Holder of Patent
9,880,715	01/30/2018	LiTL LLC
10,564,818	2/18/2020	LiTL LLC
8,612,888	12/17/2013	LiTL LLC