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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/240,501	10/03/2005	Marcelo Varanda	2173-264

CONFIRMATION NO. 2624

89653
MOFFAT-RIM
11 HOLLAND AVE., SUITE 715
Ottawa, ON K1Y 4S1
CANADA

POWER OF ATTORNEY NOTICE

OC000000066693737

Date Mailed: 01/09/2024

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 12/27/2023.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71.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**.

/atesfai/

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/240,501	10/03/2005	Marcelo Varanda	10412-US-DIV

CONFIRMATION NO. 2624

192641
Botos Churchill IP Law LLP - Malik
430 Mountain Avenue
Suite 401
New Providence, NJ 07974

POA ACCEPTANCE LETTER

OC000000066693766

Date Mailed: 01/09/2024

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 12/27/2023.

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**.

/atesfai/

PTO/AIA/96 (08-12)
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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(c)

Applicant/Patent Owner: MALIKIE INNOVATIONS LIMITED

Application No./Patent No.: 11/240,501 Filed/Issue Date: 10/03/2005

Titled: METHOD OF OPERATING A HANDHELD DEVICE FOR DIRECTIONAL INPUT

MALIKIE INNOVATIONS LIMITED, a Corporation

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☑ The assignee of the entire right, title, and interest.

2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):

   ☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.

   ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

   Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (*e.g.*, bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

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.

B. ☑ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: VARANDA, MARCELO To: RESEARCH IN MOTION LIMITED

   The document was recorded in the United States Patent and Trademark Office at
   Reel 017611, Frame 0512, or for which a copy thereof is attached.

2. From: RESEARCH IN MOTION LIMITED To: BLACKBERRY LIMITED

   The document was recorded in the United States Patent and Trademark Office at
   Reel 034045, Frame 0741, or for which a copy thereof is attached.

This collectionof information is required by 37CFR 3.73(b). The informationis required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application.Confidentiality isgoverned by 35U.S.C. 122 and37 CFR 1.11and 1.14.This collection is estimated to take 12 minutes to complete, including gathering,preparing, and submitting the completed applicationform 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 besent 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 COMPLETEDFORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA22313-1450** .

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/AIA/96 (08-12)
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STATEMENT UNDER 37 CFR 3.73(c)

3. From: BLACKBERRY LIMITED To: OT PATENT ESCROW, LLC

The document was recorded in the United States Patent and Trademark Office at
Reel 063471, Frame 0474, or for which a copy thereof is attached.

4. From: BLACKBERRY LIMITED To: MALIKIE INNOVATIONS LIMITED

The document was recorded in the United States Patent and Trademark Office at
Reel 064066, Frame 0001, or for which a copy thereof is attached.

5. From: OT PATENT ESCROW, LLC To: MALIKIE INNOVATIONS LIMITED

The document was recorded in the United States Patent and Trademark Office at
Reel 064015, Frame 0001, or for which a copy thereof is attached.

6. From: BLACKBERRY LIMITED To: OT PATENT ESCROW, LLC

The document was recorded in the United States Patent and Trademark Office at
Reel 064806, Frame 0669, or for which a copy thereof is attached.

☑ Additional documents in the chain of title are listed on a supplemental sheet(s).

☑ As required by 37 CFR 3.73(c)(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.

/Richard J. Botos/	2023-12-27
Signature	Date
Richard J. Botos	32,016
Printed or Typed Name	Title or Registration Number

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requiresthat you begiven certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirementsof the Act, please be advised that: (1)the general authority for the collectionof this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary;and (3) the principalpurpose for whichthe informationis used by the U.S. Patent and Trademark Office is to process and/or examine your submission related toa patent application or patent. If you do not furnishthe requested information, the U.S. Patent and Trademark Officemay not be able to process and/or examine yoursubmission, which may result in termination of proceedings orabandonment of the application or expiration of the patent.

Theinformation 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 forthe 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 recordrelated 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 recordfrom 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/AIA/96 (08-12)
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SUPPLEMENTAL SHEET

STATEMENT UNDER 37 CFR 3.73(c)

7. From: ___OT PATENT ESCROW, LLC___ To: __MALIKIE INNOVATIONS LIMITED____

The document was recorded in the United States Patent and Trademark Office at

Reel _064807____, Frame __0001___, or for which a copy thereof is attached.

☒ As required by 37 CFR 3.73(c)(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.

/Richard J. Botos/	2023-12-27
Signature	Date
Richard J. Botos	32,016
Printed or Typed Name	Title or Registration Number

UNITED STATES
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Alexandria, VA 22313 - 1450
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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
11/240,501	**12/27/2023 01:31:10 PM Z ET**	**2173-264**

Title of Invention

METHOD OF OPERATING A HANDHELD DEVICE FOR DIRECTIONAL INPUT

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	8115731
CONFIRMATION #	2624	FILED BY	Prince Samuel
PATENT CENTER #	63761512	FILING DATE	10/03/2005
CUSTOMER #	89653	FIRST NAMED INVENTOR	Marcelo Varanda
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Richard Botos

Documents

TOTAL DOCUMENTS: 3

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
11240501_aia0082.pdf	3	Power of Attorney	1023 KB
aia0096.pdf	3	Assignee showing of ownership per 37 CFR 3.73	188 KB
SUPPLEMENTAL SHEET_373.pdf	1	Assignee showing of ownership per 37 CFR 3.73	159 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)

11240501_aia0082.pdf	2C66DCD858D2860C83751EC67E5E9DCCEEAA9A60839169F0 D44BC398D35685AED66FFF6827C869E278C9C05B4CED7B50 AA908E20779CBCFE5E500309DC56423F
aia0096.pdf	6688D64B788F0AFA661A03DB1EE79D9D2E566C129A1F09603 8833EEF84F40ABC8D3E4433BCD1FBEB02666F5F6FAC3643C5 14328F069FBF99E5899C3B001FC122
SUPPLEMENTAL SHEET_373.pdf	A399F6DE16E55E21A8AC30B186E88A61E64C28FCB35B5BEF3 B05CD16CF5704AF518696A2D8694650871439BA2731C90DE81 55E3AD68EE2D3A7D8B9E57C88D1EB

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 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.

Nintendo Exhibit 1003
Page 008

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82A (07-13)
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TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	11/240,501
Filing Date	10/03/2005
First Named Inventor	Marcelo Varanda
Title	METHOD OF OPERATING A HANDHELD DEVICE FOR DIRECTIONAL INPUT
Art Unit	2629
Examiner Name	2624
Attorney Docket Number	10412-US-DIV

SIGNATURE of Applicant or Patent Practitioner

Signature	/Richard J. Botos/	Date (Optional)	2023-12-27
Name	Richard J. Botos	Registration Number	32,016
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)			

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ *Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. 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 3 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.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/AIA/80 (07-17)
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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(c).

I hereby appoint:

[x] Practitioners associated with Customer Number: 192641

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(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:

[x] The address associated with Customer Number: 192641

OR

[ ]

Firm or individual name	Botos Churchill IP Law, LLP	
Address	430 Mountain Ave., Suite 401	
City New Providence	State NJ	Zip 07974
Country USA		
Telephone (908) 738-1770	Email pto@bciplaw.com	

Assignee name and address: Manicie Innovations Limited
The Glass Houses GH2 92 Georges Street Lower
Dun Laoghaire, Dublin, A96 VR66

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of the practitioners appointed in this form, 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 Angela Quinlan	Date 13th June 2023
Name ANGELA QUINLAN	Telephone +353 87 9171202
Title MANAGING DIRECTOR	

This collection of information is required by 37 CFR 1.31, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public, which is to update (and by the USPTO to process) the file of a patent or reexamination proceeding. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 18 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.**

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 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.

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.
11/240,501	02/14/2012	8115731	2173-264	2624

89653 7590 01/25/2012

MOFFAT-RIM
427 Laurier Avenue W.
Suite 1200
Ottawa, ON K1R 7Y2
CANADA

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 872 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):

Marcelo Varanda, Ottawa, CANADA;

IR103 (Rev. 10/09)

Electronic Acknowledgement Receipt

EFS ID:	11781215
Application Number:	11240501
International Application Number:	
Confirmation Number:	2624
Title of Invention:	METHOD OF OPERATING A HANDHELD DEVICE FOR DIRECTIONAL INPUT
First Named Inventor/Applicant Name:	Marcelo Varanda
Customer Number:	89653
Filer:	Joseph Louis Ulvr
Filer Authorized By:	
Attorney Docket Number:	2173-264
Receipt Date:	06-JAN-2012
Filing Date:	03-OCT-2005
Time Stamp:	17:17:52
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$2040
RAM confirmation Number	4544
Deposit Account	
Authorized User	

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)	10412-US-DIV_2012-01-06_IssueFeePayment.pdf	220241 e0f4356c7d0bca0ecfc2860c2971db2d07f64974	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	31649 2de487bacca3c17f139f224902f1e51e1cd03a94	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	251890	

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.

Electronic Patent Application Fee Transmittal

Application Number:	11240501
Filing Date:	03-Oct-2005
Title of Invention:	METHOD OF OPERATING A HANDHELD DEVICE FOR DIRECTIONAL INPUT
First Named Inventor/Applicant Name:	Marcelo Varanda
Filer:	Joseph Louis Ulvr
Attorney Docket Number:	2173-264

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:				
Utility Appl issue fee	1501	1	1740	1740
Publ. Fee- early, voluntary, or normal	1504	1	300	300

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**2040**

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)

MOFFAT-RIM
427 Laurier Avenue W.
Suite 1200
Ottawa, ON K1R 7Y2
CANADA

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.
11/240,501	10/03/2005	Marcelo VARANDA	2173-264	2624

TITLE OF INVENTION:

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	No	$1740	$300	$2040	01/30/2012

EXAMINER	ART UNIT	CLASS-SUBCLASS

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 Moffat & Co.
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)
Research In Motion Limited	Waterloo, CA

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 enclosed:

☑ Issue Fee
☑ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _

4b. Payment of Fee(s):

☐ A check in the amount of the fee(s) is enclosed.
☑ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number

5. **Change in Entity Status** (from status indicated above)

☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.
☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

The Director of the USPTO is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above.
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 /JOSEPH L. ULVR/ Date January 6, 2012

Typed or printed name Joseph L. Ulvr Registration No. 57696

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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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.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99**)		
	Application Number	11240501
	Filing Date	2005-10-03
	First Named Inventor	VARANDA, Marcelo
	Art Unit	2674
	Examiner Name	
	Attorney Docket Number	2173-264

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
/KBL/	1	D278341		1985-04-09	Scheid	
/KBL/	2	D293241		1987-12-15	Wan et al	
/KBL/	3	D313413		1991-01-01	Langton	
/KBL/	4	5184830		1993-02-09	Okada et al	
/KBL/	5	5217295		1993-06-08	Tortola et al	
/KBL/	6	5367298		1994-11-22	Axthelm	
/KBL/	7	D357253		1995-04-11	Wong	
/KBL/	8	5410141		1995-04-25	Koenck et al	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	11240501
	Filing Date	2005-10-03
	First Named Inventor	VARANDA, Marcelo
	Art Unit	2674
	Examiner Name	
	Attorney Docket Number	2173-264

/KBL/	9	5426449		1995-06-20	Danziger	
/KBL/	10	5436954		1995-07-25	Nishiyama et al	
/KBL/	11	5457454		1995-10-10	Sugano	
/KBL/	12	5500643		1996-03-19	Grant	
/KBL/	13	5606712		1997-02-25	Hidaka	
/KBL/	14	5611031		1997-03-11	Hertzfeld et al.	
/KBL/	15	D383756		1997-09-16	Henderson et al.	
/KBL/	16	5672108		1997-09-30	Lam et al.	
/KBL/	17	D386497		1997-11-18	Huslig et al.	
/KBL/	18	5737394		1998-04-07	Anderson et al.	
/KBL/	19	D397369		1998-08-25	Rissman	

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	Filing Date	2005-10-03
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	Art Unit	2674
	Examiner Name	
	Attorney Docket Number	2173-264

/KBL/	20	D397728		1998-09-01	Yuen et al.	
/KBL/	21	D399537		1998-10-13	Chi et al.	
/KBL/	22	5818437		1998-10-06	Grover et al.	
/KBL/	23	5825353		1998-10-20	Will	
/KBL/	24	D403362		1998-12-29	Fai	
/KBL/	25	5893798		1999-04-13	Stambolic et al.	
/KBL/	26	5915228		1999-06-22	Kunihiro et al.	
/KBL/	27	5920308		1999-07-06	Kim	
/KBL/	28	5931873		1999-08-03	Cisar	
/KBL/	29	5963197		1999-10-05	Bacon et al.	
/KBL/	30	5974238		1999-10-26	Chase, Jr.	

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	First Named Inventor	VARANDA, Marcelo
	Art Unit	2674
	Examiner Name	
	Attorney Docket Number	2173-264

/KBL/	31	5982520		1999-11-09	Weiser et al.	
/KBL/	32	5995026		1999-11-30	Sellers	
/KBL/	33	6006351		1999-12-21	Peretz et al.	
/KBL/	34	6014429		2000-01-11	LaPorta et al.	
/KBL/	35	6023779		2000-02-08	Fullam et al.	
/KBL/	36	6047047		2000-04-04	Aldridge et al.	
/KBL/	37	6052070		2000-04-18	Kivela et al.	
/KBL/	38	6094197		2000-07-25	Buxton et al.	
/KBL/	39	6102594		2000-08-15	Strom	
/KBL/	40	6103979		2000-08-15	Motoyama et al.	
/KBL/	41	6107997		2000-08-22	Ure	

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	First Named Inventor	VARANDA, Marcelo
	Art Unit	2674
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/KBL/	42	6148261		2000-11-14	Obradovich et al.	
/KBL/	43	6157323		2000-12-05	Tso et al.	
/KBL/	44	6212412		2001-04-03	Rogers et al.	
/KBL/	45	6243789		2001-06-05	Hasbun et al.	
/KBL/	46	6297795		2001-10-02	Kato et al.	
/KBL/	47	6201554		2001-03-13	Lands, Robert M.	

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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
/KBL/	1	20020093483		2002-07-18	Kaplan, Alan Edward	
/KBL/	2	20030038778		2003-02-27	Noguera, Gritsko Perez	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	11240501
	Filing Date	2005-10-03
	First Named Inventor	VARANDA, Marcelo
	Art Unit	2674
	Examiner Name	
	Attorney Docket Number	2173-264

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]
/KBL/	1	0760291	EP		1997-03-05	Palmer, Mathew Richard et al		☐
/KBL/	2	9937025	WO		1999-07-22	Strauch, Gary, J. et al.		☐
/KBL/	3	0030381	WO		2000-05-25	Fascenda, Anthony, C. et al		☐

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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	/Kenneth B Lee Jr/	Date Considered	12/07/2011

*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	11240501
	Filing Date	2005-10-03
	First Named Inventor	VARANDA, Marcelo
	Art Unit	2674
	Examiner Name	
	Attorney Docket Number	2173-264

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.

☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☑ None

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	/JOSEPH L. ULVR/	Date (YYYY-MM-DD)	2006-05-30
Name/Print	Joseph L. Ulvr	Registration Number	57696

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 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.

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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	11378364
	Filing Date	2006-03-20
	First Named Inventor	EMERY, Jeffrey et al
	Art Unit	2618
	Examiner Name	
	Attorney Docket Number	2173-319

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
/KBL/	1	5224151		1993-06-29	BOWEN, Donald J. et al	
/KBL/	2	5712911		1998-01-27	HER, Ju-Won	
/KBL/	3	6411828		2002-06-25	LANDS, Robert Michael et al	
/KBL/	4	6453041		2002-09-17	ERYLIMAZ, Erol	
/KBL/	5	6587553		2003-07-01	SHAFFER, Shmuel et al	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	11378364
	Filing Date	2006-03-20
	First Named Inventor	EMERY, Jeffrey et al
	Art Unit	2618
	Examiner Name	
	Attorney Docket Number	2173-319

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							☐

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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	/Kenneth B Lee Jr/	Date Considered	12/07/2011

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	11378364
	Filing Date	2006-03-20
	First Named Inventor	EMERY, Jeffrey et al
	Art Unit	2618
	Examiner Name	
	Attorney Docket Number	2173-319

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.

☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☑ None

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	/JOSEPH L. ULVR/	Date (YYYY-MM-DD)	2006-05-30
Name/Print	Joseph L. Ulvr	Registration Number	57696

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.

PTO/SB/08a (08-03)
Approved for use through 07/31/2006. 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	11240501
	Filing Date	2005-10-03
	First Named Inventor	VARANDA, Marcelo
	Art Unit	2674
	Examiner Name	
	Attorney Docket Number	2173-264

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
/KBL/	1	6573883		2003-06-03	Bartlett	
/KBL/	2	4425488		1984-01-10	Moskin et al	
/KBL/	3	3876850		1975-04-08	Amberny	
/KBL/	4	6590573		2003-07-08	Geshwind	
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					
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]

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	11240501
	Filing Date	2005-10-03
	First Named Inventor	VARANDA, Marcelo
	Art Unit	2674
	Examiner Name	
	Attorney Docket Number	2173-264

	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	/Kenneth B Lee Jr/	Date Considered	12/07/2011

*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	11240501
	Filing Date	2005-10-03
	First Named Inventor	VARANDA, Marcelo
	Art Unit	2674
	Examiner Name	
	Attorney Docket Number	2173-264

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☐ See attached certification statement.

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Signature	/JOSEPH L. ULVR/	Date (YYYY-MM-DD)	2006-05-30
Name/Print	Joseph L. Ulvr	Registration Number	57696

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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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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.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11240501	VARANDA, MARCELO
	Examiner	Art Unit
	KENNETH B LEE JR	2629

SEARCHED			
Class	Subclass	Date	Examiner
345	156-172	10/2011	KBL
178	Class Search	10/2011	KBL
200	61.52	10/2011	KBL
434	38	10/2011	KBL
250	231.12,236	10/2011	KBL
356	154	10/2011	KBL

SEARCH NOTES		
Search Notes	Date	Examiner
US-PGPUB;USPAT;USOCR;EPO;JPO	10/2011	KBL
Inventor Search (Varanda)	10/2011	KBL

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner
345	156,157	10/2011	KBL

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	44648	(345/156-172).CCLS. or ("178").CLAS.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2011/10/21 21:00
L2	0	1 and (graphical adj element icon) near5 (inclination)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2011/10/21 21:01
L3	27	1 and (element icon) near5 (inclination)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2011/10/21 21:01
L5	2	1 and (user adj2 interface) same (inclination) same (directional adj3 input)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2011/10/21 21:21
L6	3	(user adj2 interface) same (inclination) same (directional adj3 input)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2011/10/21 21:22
L7	36	1 and (user adj2 interface) same (directional adj3 input)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2011/10/21 21:25
L8	36	1 and (user adj2 interface) same (directional adj3 input)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2011/10/21 21:25
L9	0	(user adj2 interface) same (directional adj3 input) same (tilt)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2011/10/21 21:46
L10	37	(user adj2 interface) same (directional) same (tilt)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2011/10/21 21:46
L11	19	((MARCELO) near2 (VARANDA)).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2011/10/21 22:10
L12	8899	(345/156,157).CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2011/10/21 22:17
L13	0	12 and (handheld and display and directional and input and inclination and orientation and processor and memory and operating and system).clm.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2011/10/21 22:18
L14	0	12 and (handheld and display and	US-PGPUB;	OR	OFF	2011/10/21

		directional and input and inclination and orientation).clm.	USPAT; USOCR; EPO; JPO			22:19
L15	1	12 and (handheld and display and directional and input and processor and memory and operating and system).clm.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2011/10/21 22:20
L16	0	12 and (handheld and display and directional and input and processor and memory and operating and system and orientation).clm.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2011/10/21 22:21
L17	1	12 and (handheld and display and directional and input and processor and memory and operating and system and inclination).clm.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2011/10/21 22:21

10/21/2011 11:02:02 PM
C:\Users\klee1\Documents\EAST\Workspaces\11240501.wsp

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11240501	VARANDA, MARCELO
	Examiner	**Art Unit**
	KENNETH B LEE JR	2629

ORIGINAL		INTERNATIONAL CLASSIFICATION										
CLASS	SUBCLASS	CLAIMED					NON-CLAIMED					
345	156	G	0	9	G	5 / 00 (2006.0)						

CROSS REFERENCE(S)					
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				
345	157				

☐ 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	Final	Original
1	1														
2	2														
3	5														
4	9														
5	10														
6	11														
7	12														
8	13														
9	14														
10	16														
11	18														
12	19														
13	20														
14	21														
15	22														

/KENNETH B LEE JR/ Examiner.Art Unit 2629	10/21/2011	**Total Claims Allowed:** 15	
(Assistant Examiner)	(Date)		
/KEVIN M NGUYEN/ Primary Examiner.Art Unit 2629	10/23/2011	O.G. Print Claim(s) 1	O.G. Print Figure 1
(Primary Examiner)	(Date)		

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
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www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

89653 7590 10/28/2011

MOFFAT-RIM
427 Laurier Avenue W.
Suite 1200
Ottawa, ON K1R 7Y2
CANADA

EXAMINER	
LEE JR, KENNETH B	
ART UNIT	PAPER NUMBER
2629	

DATE MAILED: 10/28/2011

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/240,501	10/03/2005	Marcelo Varanda	2173-264	2624

TITLE OF INVENTION: METHOD OF OPERATING A HANDHELD DEVICE FOR DIRECTIONAL INPUT

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1740	$300	$0	$2040	01/30/2012

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 SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

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.

PTOL-85 (Rev. 02/11)

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)

89653 7590 10/28/2011

MOFFAT-RIM
427 Laurier Avenue W.
Suite 1200
Ottawa, ON K1R 7Y2
CANADA

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.
11/240,501	10/03/2005	Marcelo Varanda	2173-264	2624

TITLE OF INVENTION: METHOD OF OPERATING A HANDHELD DEVICE FOR DIRECTIONAL INPUT

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nonprovisional	NO	$1740	$300	$0	$2040	01/30/2012

EXAMINER	ART UNIT	CLASS-SUBCLASS
LEE JR, KENNETH B	2629	345-157000

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)

❑ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.

❑ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

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.
11/240,501	10/03/2005	Marcelo Varanda	2173-264	2624

89653 7590 10/28/2011

MOFFAT-RIM
427 Laurier Avenue W.
Suite 1200
Ottawa, ON K1R 7Y2
CANADA

EXAMINER	
LEE JR, KENNETH B	

ART UNIT	PAPER NUMBER
2629	

DATE MAILED: 10/28/2011

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 608 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 608 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.

PTOL-85 (Rev. 02/11)

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)	
	11/240,501	VARANDA, MARCELO	
	Examiner	Art Unit	
	KENNETH B. LEE JR	2629	

-- 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 *remarks filed 8/26/2011*.

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 *1,2,5,9-14,16,18-22 (renumbered to 1-15)*.

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 _____ .
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

/KEVIN M NGUYEN/
Primary Examiner, Art Unit 2629

DETAILED ACTION

Allowable Subject Matter

1. Claims 1, 2, 5, 9-14, 16 and 18-22 are allowed.

2. The following is an examiner's statement of reasons for allowance:

Regarding claim 1, none of the prior art, either singularly or in combination, teaches or fairly suggests a handheld computing device with the specific combination with the specific elements including: an internally located directional input device providing a directional input signal, the directional input signal corresponding to an axis of inclination of the handheld computing device and indicating the orientation; a second directional input device providing a second directional input signal, the second directional input signal indicating an amount of displacement; a processor coupled to the internally located directional input device and the second directional input device and operable to receive and process the directional input signal in conjunction with the second directional input signal; and a memory subsystem, the memory storing an operating system executed by the processor to display on the display a graphical user interface for controlling the operation of the handheld computing device, wherein the graphical user interface provides a graphical element; wherein the operating system comprises processor-executable instructions that cause the graphical to move by the amount of displacement in a direction substantially parallel or substantially perpendicular to the orientation.

Regarding claims 2, 5, 9-14, 16 and 18-22, they are dependent upon the allowable claim above and are allowable based on dependency.

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 KENNETH B. LEE JR whose telephone number is (571)270-3147. The examiner can normally be reached on Mon. - Fri. 7:30AM - 4:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexander Eisen can be reached on 571-272-7687. 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.

KENNETH B LEE JR
Examiner
Art Unit 2629

KBL

/KEVIN M NGUYEN/
Primary Examiner, Art Unit 2629

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11240501	VARANDA, MARCELO
	Examiner	**Art Unit**
	KENNETH B LEE JR	2629

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	08/28/2008	03/17/2009	07/16/2009	01/06/2010	06/08/2010	11/03/2010	02/24/2011	06/23/2011	10/21/2011
1	1	✓	✓	✓	✓	✓	✓	✓	✓	=
2	2	✓	✓	✓	✓	✓	✓	✓	✓	=
	3	✓	✓	✓	-	-	-	-	-	-
	4	✓	✓	✓	-	-	-	-	-	-
3	5	✓	✓	✓	✓	✓	✓	✓	✓	=
	6	✓	✓	✓	-	-	-	-	-	-
	7	✓	✓	✓	-	-	-	-	-	-
	8	✓	✓	✓	-	-	-	-	-	-
4	9	✓	✓	✓	✓	✓	✓	✓	✓	=
5	10	✓	✓	✓	✓	✓	✓	✓	✓	=
6	11	✓	✓	✓	✓	✓	✓	✓	✓	=
7	12	✓	✓	✓	✓	✓	✓	✓	✓	=
8	13	✓	✓	✓	✓	✓	✓	✓	✓	=
9	14	✓	✓	✓	✓	✓	✓	✓	✓	=
	15	✓	✓	✓	✓	-	-	-	-	-
10	16	✓	✓	✓	✓	✓	✓	✓	✓	=
	17	✓	-	-	-	-	-	-	-	-
11	18	✓	✓	✓	✓	✓	✓	✓	✓	=
12	19	✓	✓	✓	✓	✓	✓	✓	✓	=
13	20	✓	✓	✓	✓	✓	✓	✓	✓	=
14	21	✓	✓	✓	✓	✓	✓	✓	✓	=
15	22		✓	✓	✓	✓	✓	✓	✓	=

REMARKS

The Applicant would like to thank the Examiner for his attention to this application.

35 U.S.C. 103

Claims 1, 16, 18 and 22 stand rejected under 35 U.S.C. 103(a) as being obvious in view of Motosyuku and Hinckley. The applicant notes that the Office Action states that these claims are "rejected under 35 U.S.C. 102(b) as being anticipated by Motosyuku and Hinckley". However, as the rejection is made under a "35 U.S.C. 103" heading and the rejection is based on multiple references, the applicant will assume that this rejection is in fact meant to be under 35 U.S.C. 103(a). If this assumption is incorrect, the applicant kindly requests to be advised.

Reconsideration of the rejection based on the following comments is respectfully urged.

The Office Action provides that Motosyuku fails to disclose *a second directional input device providing a second directional input signal, the second direction input signal* ***indicating an amount of displacement.*** [Emphasis added.] However, the Office Action further provides that Motosyuku does disclose that *the operating system comprises processor-executable instructions that cause the graphical element to* ***move by the amount of displacement*** *in a direction substantially parallel or substantially perpendicular to the orientation.* [Emphasis added.]

Clearly however, if Motosyuku does not teach the second directional input device which provides the "amount of displacement", Motosyuku also fails to teach that the "amount of displacement" is used in any way whatsoever.

In fact, and as previously argued by the applicant, Motosyuku only teaches that scrolling occurs based on the orientation of the mobile device, so long as a boolean switched is pressed. In particular, Motosyuku teaches, at column 4, lines 8 to 22, that:

> Conversely, in the presence of the "ON" input, the flow of the scroll process is shifted to the tilt angle correction step 603. At this tilt angle correction step 603, the processing unit 101 makes a correction in which the tilt angle read from the tilt sensor 104 (FIG. 1) immediately after the "ON" input of the scroll start switch 110 is set at 0 (in other words, set as a reference angle) Owing to the correction the extent in degrees of the upward or downward tilt of the small-sized information processor 301 (FIG. 3) relative to the tilt angle thereof assumed immediately after the "ON" input of the scroll start switch can be detected by subsequent steps 604 and 605 or 606. Therefore, the display screen 203 (FIG. 4 or FIG. 5) can be scrolled with respect to any desired angle assumed when the switch 110 is initially depressed.

Accordingly, Motosyuku first reads the device's tilt "immediately after the "ON" input of the scroll start switch", and computes the device's angle relative to this initial tilt.

Motosyuku further teaches, at column 4, lines 41 to 53, that:

> On condition that the tilt angle has been decided as being less than 10°, the pointer value 201 (in FIG. 2) is incremented by M (at the step 607) so as to scroll the display screen 203 (in FIG. 4) up one line. In contrast, on condition that the tilt angle has been decided as being at least 10°, the pointer value 201 is incremented by 2M (at the step 608) so as to scroll the display screen 203 up two lines. Regarding the magnitude M, the display screen 203 is scrolled up one line by submitting the pointer value 201 to the increment of this magnitude (+M) and is scrolled down one line by submitting the pointer value 201 to the decrement of this magnitude (-M).

Thus, according to Motosyuku, the amount by which the display screen is scrolled depends entirely on the tilt angle – namely the angle between the device's tilt "immediately after the "ON" input of the scroll start switch" and the current tilt.

Accordingly, Motosyuku does not teach that the "graphical element" moves by an "amount of displacement" taken from a second directional input device as claimed, but by an "amount of displacement" which is a function of the "tilt angle".

Notably, this deficiency of Motosyuku is not cured by Hinckley. Although Hinckley teaches a second direction input signal indicating an amount of displacement, Hinckley fails to teach that a graphical element moves by the amount of displacement in a direction substantially parallel or substantially perpendicular to the orientation of the device, as claimed. Rather, the second direction input signal taught by Hinckley is converted in a context variable which is accessible by applications (see column 6, lines 8 to 31).

Hinckley does provide examples of how the context variables can be used by applications, however, none of these examples includes a graphical element moved by an amount of displacement [read from a second directional input device] in a direction substantially parallel or perpendicular to the orientation of the device [read from a first directional input device]. Notably, the example titled "Tilt Scrolling", described at column 10, line 60, discloses the same functionality as Motosyuku.

The Office Action further provides that "it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Hinckley to modify Motosyuku". However, Motosyuku's teachings on how scrolling is achieved based on device inclination are heavily dependant on the need for a boolean input – specifically, Motosyuku's method requires an indication to start scrolling (and to capture the initial tilt of the device) as well as an indication to stop scrolling.

Accordingly, and as would be appreciated by those skilled in the art, and as demonstrated by Hinckley's teachings, adding a second directional input device does not lead to the claimed subject matter, because it is entirely unclear how the second directional input signal could be used within Motosyuku's teachings. Neither Motosyuku nor Hinckley provide any teachings or suggestions on how the second directional input signal could be incorporated in Motosyuku's teachings.

In fact, as the "Tilt Scrolling" example of Hinckley clearly demonstrates, the combination of Motosyuku and Hinckley produces no more than what Motosyuku had

already disclosed. More specifically, even with the availability of multiple directional input signals in Hinckley, Hinckley's teachings with respect to "Tilt Scrolling" are exactly the same as Motosukuku's. Accordingly, even in combination, Motosyuku and Hinckley fail to disclose the claimed subject matter.

As both Motosyuku and Hinckley fail to teach that the operating system comprises processor-executable instructions that cause the graphical element to move by the amount of displacement in a direction substantially parallel or substantially perpendicular to the orientation, as claimed, claim 1 and its dependent claims are respectfully submitted to be allowable over Motosyuku and Hinckley.

Claims 2, 5 and 11-14 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Hinckley and Moskin.

Claims 9 and 10 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Hinckley, Moskin and Amberny.

Claim 19 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Hinckley and Kaplan.

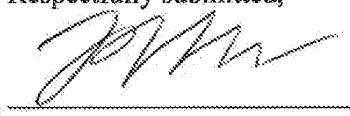
Claim 20 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Hinckely and Bartlett.

Claim 21 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Geshwind.

However, as none of Moskin, Amberny, Kaplan, Bartlett or Geshwind overcome the deficiencies of Motosyuku and Hinckley with respect to claim 1 discussed above, claims 2, 5, 9-14, and 19 to 21 are submitted to be allowable over the cited art and withdrawal of the rejection is respectfully urged.

Based on the above submissions and amendments, reconsideration leading to allowance is respectfully urged.

Respectfully submitted,



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306916

Electronic Acknowledgement Receipt

EFS ID:	10820210
Application Number:	11240501
International Application Number:	
Confirmation Number:	2624
Title of Invention:	Method of operating a handheld device for directional input
First Named Inventor/Applicant Name:	Marcelo Varanda
Customer Number:	89653
Filer:	Joseph Louis Ulvr
Filer Authorized By:	
Attorney Docket Number:	2173-264
Receipt Date:	26-AUG-2011
Filing Date:	03-OCT-2005
Time Stamp:	10:06:01
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		2173-264_ExecutedResponse_August2011.pdf	404840 241adda34a0d86380fdf71b33d2f49bed36ff7e	yes	10

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	5
	Applicant Arguments/Remarks Made in an Amendment	6	10
Warnings:			
Information:			
	Total Files Size (in bytes):	404840	

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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Marcelo VARANDA
Serial No.:	11/240,501
Filed:	October 3, 2005 (10/03/2005)
Title:	**METHOD OF OPERATING A HANDHELD DEVICE FOR DIRECTIONAL INPUT**
Art Unit:	2629
Examiner:	LEE JR., Kenneth B.
Docket No.:	2173-264

August 25, 2011

Mail Stop Amendments
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE WITHOUT AMENDMENTS

Dear Sir:

This is in response to the Official Action mailed July 1, 2011.

Claims begin on page 2.

Remarks begin on page 6.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. 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 displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/240,501	10/03/2005	

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	08/26/2011	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 15	Minus	** 22	= 0	X $ =		OR	X $52=	0
	Independent (37 CFR 1.16(h))	* 1	Minus	***3	= 0	X $ =		OR	X $220=	0
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	RATE ($)	ADDITIONAL FEE ($)
	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))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L 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.

Legal Instrument Examiner:
/WANDA MITCHELL/

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.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Listing of Claims:

1. (previously presented) A handheld computing device, comprising:

a display;

an internally located directional input device providing a directional input signal, the directional input signal corresponding to an axis of inclination of the handheld computing device and indicating an orientation;

a second directional input device providing a second directional input signal, the second directional input signal indicating an amount of displacement;

a processor coupled to the internally located directional input device and the second directional input device and operable to receive and process the directional input signal in conjunction with the second directional input signal; and

a memory subsystem, the memory storing an operating system executed by the processor to display on the display a graphical user interface for controlling the operation of the handheld computing device, wherein the graphical user interface provides a graphical element;

wherein the operating system comprises processor-executable instructions that cause the graphical element to move by the amount of displacement in a direction substantially parallel or substantially perpendicular to the orientation.

2. (previously presented) The handheld computing device of claim 1, wherein the internally-located directional input device comprises:

a primary contact positionally fixed in the handheld computing device;

at least one directional contact positionally fixed in the handheld computing device and operatively connected to the primary contact;

circuit closing means, movable on, and in electrical contact with, the primary contact, the circuit closing means moving in response to inclination of the handheld computing device in the direction of any one of the at least one directional contact, between a neutral position in which the primary contact and the any one of the at least

one directional contact form an open circuit, and an active position in which the primary contact and the any one of the at least one directional contact form a closed circuit; and

a direction interpreter, operatively connected to the primary contact and the at least one directional contact, for generating the directional input signal.

3. (canceled)

4. (canceled)

5. (previously presented) The handheld computing device of claim 2, wherein the directional input signal is uniquely associated with the direction of the inclination.

6. (canceled)

7. (canceled)

8. (canceled)

9. (previously presented) The handheld computing device of claim 2, wherein each of the at least one directional contact are further connected to adjacent directional contacts to create a plurality of secondary open circuits, each of the plurality of secondary open circuits closable by the circuit closing means in response to inclination of the handheld to a junction of adjacent directional contacts.

10. (original) The handheld computing device of claim 9, wherein the direction interpreter generates the directional input when one of the secondary open circuits is closed.

11. (original) The handheld computing device of claim 2, further including a base, electrically connected to the primary contact, for supporting the circuit closing means in response to movement between the neutral position and the active position.

12. (original) The handheld computing device of claim 11, wherein the base biases the circuit closing means to the neutral position.

13. (original) The handheld computing device of claim 2, wherein the circuit closing means is a ball bearing.

14. (original) The handheld computing device of claim 2, wherein the circuit closing means is a mercury contact.

15. (canceled)

16. (original) The handheld computing device of claim 1, wherein the graphical element is a pointer.

17. (canceled)

18. (original) The handheld computing device of claim 1, wherein the processor is configured to detect movement patterns from the directional input signal and wherein the graphical element is further responsive to the detected movement patterns.

19. (original) The handheld computing device of claim 18, wherein the graphical element is configured to accelerate in response to a detected movement pattern.

20. (original) The handheld computing device of claim 18, wherein the graphical element is configured to perform a selection function in response to the detected movement pattern.

21. (original) The handheld computing device of claim 20, wherein the detected movement pattern is a flick of the wrist.

22. (previously presented) The handheld computing device of claim 1, wherein the second directional input device is selected from the group consisting of a button; a roller; a touch surface; and a thumbwheel.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11240501	VARANDA, MARCELO
	Examiner	**Art Unit**
	KENNETH B LEE JR	2629

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	08/28/2008	03/17/2009	07/16/2009	01/06/2010	06/08/2010	11/03/2010	02/24/2011	06/23/2011	
	1	✓	✓	✓	✓	✓	✓	✓	✓	
	2	✓	✓	✓	✓	✓	✓	✓	✓	
	3	✓	✓	✓	-	-	-	-	-	
	4	✓	✓	✓	-	-	-	-	-	
	5	✓	✓	✓	✓	✓	✓	✓	✓	
	6	✓	✓	✓	-	-	-	-	-	
	7	✓	✓	✓	-	-	-	-	-	
	8	✓	✓	✓	-	-	-	-	-	
	9	✓	✓	✓	✓	✓	✓	✓	✓	
	10	✓	✓	✓	✓	✓	✓	✓	✓	
	11	✓	✓	✓	✓	✓	✓	✓	✓	
	12	✓	✓	✓	✓	✓	✓	✓	✓	
	13	✓	✓	✓	✓	✓	✓	✓	✓	
	14	✓	✓	✓	✓	✓	✓	✓	✓	
	15	✓	✓	✓	✓	-	-	-	-	
	16	✓	✓	✓	✓	✓	✓	✓	✓	
	17	✓	-	-	-	-	-	-	-	
	18	✓	✓	✓	✓	✓	✓	✓	✓	
	19	✓	✓	✓	✓	✓	✓	✓	✓	
	20	✓	✓	✓	✓	✓	✓	✓	✓	
	21	✓	✓	✓	✓	✓	✓	✓	✓	
	22		✓	✓	✓	✓	✓	✓	✓	

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/240,501	10/03/2005	Marcelo Varanda	2173-264	2624

89653 7590 07/01/2011

MOFFAT-RIM
427 Laurier Avenue W.
Suite 1200
Ottawa, ON K1R 7Y2
CANADA

EXAMINER	
LEE JR, KENNETH B	
ART UNIT	**PAPER NUMBER**
2629	

NOTIFICATION DATE	DELIVERY MODE
07/01/2011	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):

joe.ulvr@moffatco.com
portfolioprosecution@rim.com

Office Action Summary	Application No.	Applicant(s)	
	11/240,501	VARANDA, MARCELO	
	Examiner	Art Unit	
	KENNETH B. LEE JR	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 May 2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,5,9-14,16 and 18-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,5,9-14,16 and 18-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ 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:

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)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 16, 18, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Motosyuku et al. (hereinafter "Motosyuku"), US Patent #5,602,566, in view of Hinckley (US 7,289,102, see previous office action filed 7/21/2009).

Regarding claim 1, Motosyuku discloses a handheld computing device (small-sized information processor, 301), comprising: a display (display unit, 106; fig. 1); an internally located directional input device providing a directional input signal (tilt sensor, 104; fig. 1), the directional input signal corresponding to an axis of inclination of the handheld computing device and indicating an orientation (col. 3, lines 11-14; 30-32; 45-55; fig. 3); a processor coupled to the internally located directional input device and the second directional input device and operable to receive and process the directional input signal in conjunction with the second directional input signal (processing unit, 101; fig. 1); and a memory subsystem, the memory storing an operating system executed by the processor to display on the display a graphical user interface for controlling the operating of the handheld computing device (storage unit, 103; display storage unit, 105; fig. 1), wherein the graphical user interface provides a graphical element (pointer, 107; fig. 1); wherein the operating system comprises processor-executable instructions

that cause the graphical element to move by the amount of displacement in a direction substantially parallel or substantially perpendicular to the orientation (col. 3, line 57 - col. 4, line 29; figs. 3-5) (the scroll means scrolls the display screen of the display device on the basis of the relative direction and angle; col. 2, lines 3-20).

Motosyuku discloses a second directional input device (input unit 102) but fails to disclose a second directional input device providing a second directional input signal, the second directional input signal indicating an amount of displacement.

Hinckley discloses a second directional input device providing a second directional input signal, the second directional input signal indicating an amount of displacement (figs. 10-11; item 1106).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Hinckley to modify Motosyuku.

The motivation for doing so would have been to provide a device that uses tilt direction as well as directional inputs.

Regarding claim 16, Motosyuku discloses wherein the graphical element is a pointer (fig. 1).

Regarding claim 18, Motosyuku discloses wherein the processor is configured to detect movement patterns from the directional input signal and wherein the graphical element is further responsive to the detected movement patterns (col. 3, line 45 – col. 4, line 2).

Regarding claim 22, Motosyuku discloses wherein the second directional input device is selected from the group consisting of a button; a roller; a touch surface; and a thumbwheel (col. 3, lines 32-33).

3. Claims 2, 5, and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Hinckley, and further in view of Moskin (see previous rejection).

Regarding claim 2, Motosyuku and Hinckley fail to disclose wherein the internally-located directional input device comprises: a primary contact positionally fixed in the handheld device; at least one directional contact positionally fixed in the handheld computing device and operatively connected to the primary contact; circuit closing means, movable on, and in electrical contact with, the primary contact, the circuit closing means moving in response to inclination of the handheld computing device in the direction of any one of the at least one directional contact, between a neutral position in which the primary contact and the any one of the at least one directional contact form an open circuit, and an active position in which the primary contact and the any one of the at least one directional contact form a closed circuit; and a directional interpreter, operatively connected to the primary contact and the at least one directional contact, for generating the directional input signal.

Regarding claim 2, Moskin discloses a multi-position tilt switch comprising a primary contact (base or 107 in figs. 8 and 9) positionally fixed in a portable device, at least one directional contact (contact 101, fig. 8) operatively connected to the primary contact, a circuit closing means (113) for movement in response to inclination of the

portable device to form an open circuit or a closed circuit between the primary contact and the at least one directional contact, and a directional interpreter for generating the directional input when the closed circuit is formed (column 4, line 64 - column 5, line 27).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Moskin to modify Motosyuku and Hinckley.

The motivation for doing so would have been to provide a multi-position tilt input device that is inexpensive and reliable.

Therefore, it would have been obvious to combine Moskin with Motosyuku and Hinckley to obtain the invention as specified in claim 2.

Regarding claim 5, Motosyuku discloses wherein the directional input signal is uniquely associated with the direction of the inclination (figs. 3-5).

Regarding claims 11 and 12, figs. 8 and 9 of Moskin discloses the device including a base for supporting the circuit closing means (113) in response to movement between the neutral position and the active position and the base biases the circuit closing means to the neutral position (109).

Regarding claim 13, fig. 2 of Moskin discloses the circuit closing means is a ball bearing (39).

Regarding claim 14, fig. 8 of Moskin discloses the circuit closing means is a mercury contact (113).

4. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Hinckley in view of Moskin, and further in view of Amberny, US Patent #3,876,850.

Regarding claim 9, Motosyuku, Moskin and Hinckley fail to disclose the circuit closing means having two adjacent directional contacts are operatively connected to close the open circuit in response to the inclination of the device.

Amberny discloses a mercury device comprising a plurality of radial contacts; two or three adjacent of the plurality of contacts are connected by the mercury to form a closed circuit (abstract; fig. 3).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Amberny to modify Motosyuku, Moskin and Hinckley.

The motivation for doing so would have been to enable complex switching to be carried out and to provide a correspondingly large number of switching states (column 1, lines 30-35).

Therefore, it would have been obvious to combine Amberny with Motosyuku, Moskin and Hinckley to obtain the invention as specified in claim 9.

Regarding claim 10, Moskin discloses the input device having direction interpreter means. Moskin as modified by Motosyuku and Amberny would include the direction interpreter means for generating directional input for each active position of the circuit closing means as claimed.

5. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Hinckley, and further in view of Kaplan (see previous rejection).

Motosyuku and Hinckley fail to disclose wherein the graphical element is configured to accelerate in response to a detected movement pattern.

Regarding claim 19, Kaplan discloses wherein the cursor is configured to accelerate in response to a detected movement pattern (0018-0019).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention as disclosed in Kaplan to modify Motosyuku and Hinckley.

The motivation for doing so would have been to provide a device with more ease of use (col. 1, lines 25-35).

Therefore, it would have been obvious to combine Kaplan with Motosyuku and Hinckley to obtain the invention as specified in claim 19.

6. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Hinckley, and further in view of Bartlett, US Patent #6,573,883.

Regarding claim 20, Motosyuku and Hinckley fail to disclose wherein the graphical element is configured to accelerate in response to a detected movement pattern.

Bartlett discloses the graphical element is configured to perform a selection function in response to the detected movement pattern (column 3, lines 22-37).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Bartlett to modify Motosyuku and Hinckley.

The motivation for doing so would have been to provide a computing device without the use of buttons for command input (column 2, lines 19-22).

Therefore, it would have been obvious to combine Bartlett with Motosyuku and Hinckley to obtain the invention as specified in claim 20.

7. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Hinckley, and further in view of Geshwind, US Patent #6,590,573.

Regarding claim 21, Motosyuku and Hinckley fail to disclose wherein the detected movement pattern is a flick of the wrist.

Geshwind discloses a “wrist flick" would be used to implement a number of useful functions (column 24, lines 51-53).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Geshwind to modify Motosyuku and Hinckley.

The motivation for doing so would have been to allow the user to manipulate the device options faster and easily (column 24, lines 55-60).

Therefore, it would have been obvious to combine Geshwind with Motosyuku and Hinckley to obtain the invention as specified in claim 21.

Response to Arguments

8. Applicant's arguments with respect to claims 1, 2, 5, 9-14, 16 and 18-22 have been considered but are moot in view of the new ground(s) of rejection presented above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENNETH B. LEE JR whose telephone number is (571)270-3147. The examiner can normally be reached on Mon. - Fri. 7:30AM - 4:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexander Eisen can be reached on 571-272-7687. 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.

KENNETH B LEE JR

Examiner
Art Unit 2629

/KEVIN M NGUYEN/
Primary Examiner, Art Unit 2629

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. 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 displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/240,501	10/03/2005	

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	05/19/2011	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 15	Minus	** 22	= 0	X $ =		OR	X $52=	0
	Independent (37 CFR 1.16(h))	* 1	Minus	***3	= 0	X $ =		OR	X $220=	0
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	RATE ($)	ADDITIONAL FEE ($)
	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))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L 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.

Legal Instrument Examiner:
/ROZENIA HARMON/

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.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Acknowledgement Receipt

EFS ID:	10129225
Application Number:	11240501
International Application Number:	
Confirmation Number:	2624
Title of Invention:	Method of operating a handheld device for directional input
First Named Inventor/Applicant Name:	Marcelo Varanda
Customer Number:	89653
Filer:	Joseph Louis Ulvr
Filer Authorized By:	
Attorney Docket Number:	2173-264
Receipt Date:	19-MAY-2011
Filing Date:	03-OCT-2005
Time Stamp:	16:07:21
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		2173-264_ExecutedResponse_May2011.pdf	320186 40c8d7401e25cdc37eb10c11600e2deba5837cfd	yes	8

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	5
	Applicant Arguments/Remarks Made in an Amendment	6	8
Warnings:			
Information:			
	Total Files Size (in bytes):	320186	

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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Marcelo VARANDA
Serial No.:	11/240,501
Filed:	October 3, 2005 (10/03/2005)
Title:	**METHOD OF OPERATING A HANDHELD DEVICE FOR DIRECTIONAL INPUT**
Art Unit:	2629
Examiner:	LEE JR., Kenneth B.
Docket No.:	2173-264

May 19, 2011

Mail Stop Amendments
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE WITHOUT AMENDMENTS

Dear Sir:

This is in response to the Official Action mailed March 2, 2011.

Claims begin on page 2.

Remarks begin on page 6.

REMARKS

The Applicant would like to thank the Examiner for his attention to this application.

35 U.S.C. 102(b)

Claims 1, 16, 18, and 22 stand rejected under 35 U.S.C. 102(b) as being anticipated by Motosyuku. Reconsideration of the rejection based on the following comments is respectfully urged.

The Office Action provides that Motosyuku teaches that the second direction input signal indicates an amount of displacement. The applicant respectfully disagrees.

In particular, the embodiment reflected in the present claims is described in paragraphs [0045], [0046] and [0047] of the present application.

This embodiment allows for cursor movement in two dimensions. Specifically, it allows for movement in two dimensions because it combines two directional inputs: a first directional input which corresponds to an axis of inclination, and a second input which corresponds to an amount of displacement. As would be appreciated by those skilled in the art, the first directional input provides a direction, and the second directional input provides a distance. This allows the user to move the cursor anywhere in a two-dimensional field.

In contrast, Motosyuku's teachings only allows for scrolling movement in one dimension. Specifically, Motosyuku allows for movement in only one dimension because, contrary to the present claims, it combines one directional input with a boolean input. Thus, according to Motosyuku, the directional input is translated into a scroll command, as long as the boolean input is 'true'.

Since Motosyuku's one directional input is translated into a scroll command, the specific inclination is ignored, and rather it is determined whether the mobile device generally leans to one side or another. If the switch 110 is pressed, the scroll command is activated, and if the switch 110 is not pressed, the scroll command is deactivated.

Thus Motosyuku's teachings only allow scrolling in one dimension. This is in part because Motosyuku lacks the second directional input signal indicating an amount of displacement as claimed. Rather, the second input of Motosyuku is a boolean input, which can only take values of 'true' or 'false'. Such a boolean value is incapable of capturing an "amount of displacement".

The Office Action further provides that Motosyuku teaches "wherein the operating system comprises processor-executable instructions that cause the graphical element to move by the amount of displacement in a direction substantially parallel or substantially perpendicular to the orientation". The applicant respectfully disagrees.

Rather, Motosyuku only teaches that based on a first reading of the device inclination taken when the switch 110 is pressed, and a current reading of the device inclination, it is determined whether the device is tilted generally upwards or downwards.

In contrast, the present claims require that a cursor be moved in the exact direction of the axis of inclination or in a direction perpendicular to the axis of inclination.

Moreover, the distance of the movement is determined, according to the present claims, based on the amount of displacement indicated by the second directional input device. In contrast, according to Motosyuku, the distance of the movement is determined based on whether the tilt angle is less than, or greater then 10 degrees (Column 4, lines 36-53). As the tilt angle is determined from the first directional input device, Motosyuku does not teach that the distance of the movement is based on an amount of displacement indicated by the second directional input device as claimed.

Accordingly, Motosyuku fails to teach the subject matter of amended claim 1 and withdrawal of the rejection is respectfully urged.

35 U.S.C. 103(a)

Claims 2, 5 and 11-14 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Moskin.

Claims 9 and 10 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Moskin and Amberny.

Claim 19 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Kaplan.

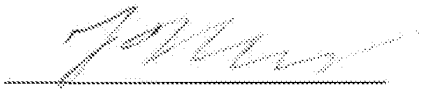
Claim 20 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Bartlett.

Claim 21 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Geshwind.

However, as none of Moskin, Amberny, Kaplan, Bartlett or Geshwind overcome the deficiencies of Motosyuku with respect to claim 1 discussed above, claims 2, 5, 9-14, and 19 to 21 are submitted to be allowable over the cited art and withdrawal of the rejection is respectfully urged.

Based on the above submissions and amendments, reconsideration leading to allowance is respectfully urged.

Respectfully submitted,



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297820

Listing of Claims:

1. (previously presented) A handheld computing device, comprising:

a display;

an internally located directional input device providing a directional input signal, the directional input signal corresponding to an axis of inclination of the handheld computing device and indicating an orientation;

a second directional input device providing a second directional input signal, the second directional input signal indicating an amount of displacement;

a processor coupled to the internally located directional input device and the second directional input device and operable to receive and process the directional input signal in conjunction with the second directional input signal; and

a memory subsystem, the memory storing an operating system executed by the processor to display on the display a graphical user interface for controlling the operation of the handheld computing device, wherein the graphical user interface provides a graphical element;

wherein the operating system comprises processor-executable instructions that cause the graphical element to move by the amount of displacement in a direction substantially parallel or substantially perpendicular to the orientation.

2. (previously presented) The handheld computing device of claim 1, wherein the internally-located directional input device comprises:

a primary contact positionally fixed in the handheld computing device;

at least one directional contact positionally fixed in the handheld computing device and operatively connected to the primary contact;

circuit closing means, movable on, and in electrical contact with, the primary contact, the circuit closing means moving in response to inclination of the handheld computing device in the direction of any one of the at least one directional contact, between a neutral position in which the primary contact and the any one of the at least

one directional contact form an open circuit, and an active position in which the primary contact and the any one of the at least one directional contact form a closed circuit; and

a direction interpreter, operatively connected to the primary contact and the at least one directional contact, for generating the directional input signal.

3. (canceled)

4. (canceled)

5. (previously presented) The handheld computing device of claim 2, wherein the directional input signal is uniquely associated with the direction of the inclination.

6. (canceled)

7. (canceled)

8. (canceled)

9. (previously presented) The handheld computing device of claim 2, wherein each of the at least one directional contact are further connected to adjacent directional contacts to create a plurality of secondary open circuits, each of the plurality of secondary open circuits closable by the circuit closing means in response to inclination of the handheld to a junction of adjacent directional contacts.

10. (original) The handheld computing device of claim 9, wherein the direction interpreter generates the directional input when one of the secondary open circuits is closed.

11. (original) The handheld computing device of claim 2, further including a base, electrically connected to the primary contact, for supporting the circuit closing means in response to movement between the neutral position and the active position.

12. (original) The handheld computing device of claim 11, wherein the base biases the circuit closing means to the neutral position.

13. (original) The handheld computing device of claim 2, wherein the circuit closing means is a ball bearing.

14. (original) The handheld computing device of claim 2, wherein the circuit closing means is a mercury contact.

15. (canceled)

16. (original) The handheld computing device of claim 1, wherein the graphical element is a pointer.

17. (canceled)

18. (original) The handheld computing device of claim 1, wherein the processor is configured to detect movement patterns from the directional input signal and wherein the graphical element is further responsive to the detected movement patterns.

19. (original) The handheld computing device of claim 18, wherein the graphical element is configured to accelerate in response to a detected movement pattern.

20. (original) The handheld computing device of claim 18, wherein the graphical element is configured to perform a selection function in response to the detected movement pattern.

21. (original) The handheld computing device of claim 20, wherein the detected movement pattern is a flick of the wrist.

22. (previously presented) The handheld computing device of claim 1, wherein the second directional input device is selected from the group consisting of a button; a roller; a touch surface; and a thumbwheel.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/240,501	10/03/2005	Marcelo Varanda	2173-264	2624

89653 7590 03/02/2011

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EXAMINER	
LEE JR, KENNETH B	
ART UNIT	**PAPER NUMBER**
2629	

NOTIFICATION DATE	DELIVERY MODE
03/02/2011	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):

joe.ulvr@moffatco.com
portfolioprosecution@rim.com

Office Action Summary	Application No.	Applicant(s)	
	11/240,501	VARANDA, MARCELO	
	Examiner	Art Unit	
	KENNETH B. LEE JR	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 February 2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,5,9-14,16 and 18-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,5,9-14,16 and 18-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ 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:

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)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/1/2011 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 16, 18, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Motosyuku et al. (hereinafter "Motosyuku"), US Patent #5,602,566.

Regarding claim 1, Motosyuku discloses **a handheld computing device** (small-sized information processor, 301), **comprising: a display** (display unit, 106; fig. 1); **an internally located directional input device providing a directional input signal** (tilt sensor, 104; fig. 1), **the directional input signal corresponding to an axis of inclination of the handheld computing device and indicating an orientation** (col. 3, lines 11-14; 30-32; 45-55; fig. 3); **a second directional input device** (second

directional input device is read as item 102) **providing a second directional input signal** (input unit, 102; fig. 1) (once input device is pressed, it then sends a second directional input signal based on the relative direction and angle of the display unit; it serves as the initial tilt direction and angle; col. 2, lines 3-20), **the second directional input signal indicating an amount of displacement** (col. 3, lines 26-44; fig. 3); **a processor coupled to the internally located directional input device and the second directional input device and operable to receive and process the directional input signal in conjunction with the second directional input signal** (processing unit, 101; fig. 1); **and a memory subsystem, the memory storing an operating system executed by the processor to display on the display a graphical user interface for controlling the operating of the handheld computing device** (storage unit, 103; display storage unit, 105; fig. 1), **wherein the graphical user interface provides a graphical element** (pointer, 107; fig. 1); **wherein the operating system comprises processor-executable instructions that cause the graphical element to move by the amount of displacement in a direction substantially parallel or substantially perpendicular to the orientation** (col. 3, line 57 - col. 4, line 29; figs. 3-5) (the scroll means scrolls the display screen of the display device on the basis of the relative direction and angle; col. 2, lines 3-20).

Regarding claim 16, Motosyuku discloses wherein the graphical element is a pointer (fig. 1).

Regarding claim 18, Motosyuku discloses wherein the processor is configured to detect movement patterns from the directional input signal and wherein the graphical

element is further responsive to the detected movement patterns (col. 3, line 45 – col. 4, line 2).

Regarding claim 22, Motosyuku discloses wherein the second directional input device is selected from the group consisting of a button; a roller; a touch surface; and a thumbwheel (col. 3, lines 32-33).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 2, 5, and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Moskin (see previous rejection).

Regarding claim 2, Motosyuku fails to disclose wherein the internally-located directional input device comprises: a primary contact positionally fixed in the handheld device; at least one directional contact positionally fixed in the handheld computing device and operatively connected to the primary contact; circuit closing means, movable on, and in electrical contact with, the primary contact, the circuit closing means moving in response to inclination of the handheld computing device in the direction of any one of the at least one directional contact, between a neutral position in which the primary contact and the any one of the at least one directional contact form an open circuit, and an active position in which the primary contact and the any one of the at least one

directional contact form a closed circuit; and a directional interpreter, operatively connected to the primary contact and the at least one directional contact, for generating the directional input signal.

Regarding claim 2, Moskin discloses a multi-position tilt switch comprising a primary contact (base or 107 in figs. 8 and 9) positionally fixed in a portable device, at least one directional contact (contact 101, fig. 8) operatively connected to the primary contact, a circuit closing means (113) for movement in response to inclination of the portable device to form an open circuit or a closed circuit between the primary contact and the at least one directional contact, and a directional interpreter for generating the directional input when the closed circuit is formed (column 4, line 64 - column 5, line 27).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Moskin to modify Motosyuku.

The motivation for doing so would have been to provide a multi-position tilt input device that is inexpensive and reliable.

Therefore, it would have been obvious to combine Moskin with Motosyuku to obtain the invention as specified in claim 2.

Regarding claim 5, Motosyuku discloses wherein the directional input signal is uniquely associated with the direction of the inclination (figs. 3-5).

Regarding claims 11 and 12, figs. 8 and 9 of Moskin discloses the device including a base for supporting the circuit closing means (113) in response to movement

between the neutral position and the active position and the base biases the circuit closing means to the neutral position (109).

Regarding claim 13, fig. 2 of Moskin discloses the circuit closing means is a ball bearing (39).

Regarding claim 14, fig. 8 of Moskin discloses the circuit closing means is a mercury contact (113).

6. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Moskin, and further in view of Amberny, US Patent #3,876,850.

Regarding claim 9, Motosyuku and Moskin fail to disclose the circuit closing means having two adjacent directional contacts are operatively connected to close the open circuit in response to the inclination of the device.

Amberny discloses a mercury device comprising a plurality of radial contacts; two or three adjacent of the plurality of contacts are connected by the mercury to form a closed circuit (abstract; fig. 3).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Amberny to modify Lands, Kaplan, Moskin, and Hinckley.

The motivation for doing so would have been to enable complex switching to be carried out and to provide a correspondingly large number of switching states (column 1, lines 30-35).

Therefore, it would have been obvious to combine Amberny with Motosyuku and Moskin to obtain the invention as specified in claim 9.

Regarding claim 10, Moskin discloses the input device having direction interpreter means. Moskin as modified by Motosyuku and Amberny would include the direction interpreter means for generating directional input for each active position of the circuit closing means as claimed.

7. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Kaplan (see previous rejection).

Motosyuku fails to disclose wherein the graphical element is configured to accelerate in response to a detected movement pattern.

Regarding claim 19, Kaplan discloses wherein the cursor is configured to accelerate in response to a detected movement pattern (0018-0019).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention as disclosed in Kaplan to modify Motosyuku.

The motivation for doing so would have been to provide a device with more ease of use (col. 1, lines 25-35).

Therefore, it would have been obvious to combine Kaplan with Motosyuku to obtain the invention as specified in claim 19.

8. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Bartlett, US Patent #6,573,883.

Regarding claim 20, Motosyuku fails to disclose wherein the graphical element is configured to accelerate in response to a detected movement pattern.

Bartlett discloses the graphical element is configured to perform a selection function in response to the detected movement pattern (column 3, lines 22-37).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Bartlett to modify Motosyuku.

The motivation for doing so would have been to provide a computing device without the use of buttons for command input (column 2, lines 19-22).

Therefore, it would have been obvious to combine Bartlett with Motosyuku to obtain the invention as specified in claim 20.

9. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Geshwind, US Patent #6,590,573.

Regarding claim 21, Motosyuku fails to disclose wherein the detected movement pattern is a flick of the wrist.

Geshwind discloses a “wrist flick" would be used to implement a number of useful functions (column 24, lines 51-53).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Geshwind to modify Motosyuku.

The motivation for doing so would have been to allow the user to manipulate the device options faster and easily (column 24, lines 55-60).

Therefore, it would have been obvious to combine Geshwind with Motosyuku to obtain the invention as specified in claim 21.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENNETH B. LEE JR whose telephone number is (571)270-3147. The examiner can normally be reached on Mon. - Fri. 7:30AM - 4:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexander Eisen can be reached on 571-272-7687. 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.

/Kenneth B. Lee Jr./
Examiner
Art Unit 2629

/Kevin M Nguyen/
Primary Examiner, Art Unit 2629

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11240501	VARANDA, MARCELO
	Examiner	**Art Unit**
	KENNETH B LEE JR	2629

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	08/28/2008	03/17/2009	07/16/2009	01/06/2010	06/08/2010	11/03/2010	02/24/2011		
	1	✓	✓	✓	✓	✓	✓	✓		
	2	✓	✓	✓	✓	✓	✓	✓		
	3	✓	✓	✓	-	-	-	-		
	4	✓	✓	✓	-	-	-	-		
	5	✓	✓	✓	✓	✓	✓	✓		
	6	✓	✓	✓	-	-	-	-		
	7	✓	✓	✓	-	-	-	-		
	8	✓	✓	✓	-	-	-	-		
	9	✓	✓	✓	✓	✓	✓	✓		
	10	✓	✓	✓	✓	✓	✓	✓		
	11	✓	✓	✓	✓	✓	✓	✓		
	12	✓	✓	✓	✓	✓	✓	✓		
	13	✓	✓	✓	✓	✓	✓	✓		
	14	✓	✓	✓	✓	✓	✓	✓		
	15	✓	✓	✓	✓	-	-	-		
	16	✓	✓	✓	✓	✓	✓	✓		
	17	✓	-	-	-	-	-	-		
	18	✓	✓	✓	✓	✓	✓	✓		
	19	✓	✓	✓	✓	✓	✓	✓		
	20	✓	✓	✓	✓	✓	✓	✓		
	21	✓	✓	✓	✓	✓	✓	✓		
	22		✓	✓	✓	✓	✓	✓		

Listing of Claims:

1. (currently amended) A handheld computing device, comprising:

a display;

an internally located directional input device providing a directional input signal, the directional input signal corresponding to an axis of inclination of the handheld computing device and indicating an orientation;

a second directional input device providing a second directional input signal, the second directional input signal indicating ~~a degree~~ an amount of displacement;

a processor coupled to the internally located directional input device and the second directional input device and operable to receive and process the directional input signal in conjunction with the second directional input signal; and

a memory subsystem, the memory storing an operating system executed by the processor to display on the display a graphical user interface for controlling the operation of the handheld computing device, wherein the graphical user interface provides a graphical element;

wherein the operating system comprises processor-executable instructions that cause the graphical element to move ~~relative to the degree~~by the amount of displacement in a direction substantially parallel or substantially perpendicular to the orientation.

2. (previously presented) The handheld computing device of claim 1, wherein the internally-located directional input device comprises:

a primary contact positionally fixed in the handheld computing device;

at least one directional contact positionally fixed in the handheld computing device and operatively connected to the primary contact;

circuit closing means, movable on, and in electrical contact with, the primary contact, the circuit closing means moving in response to inclination of the handheld computing device in the direction of any one of the at least one directional contact, between a neutral position in which the primary contact and the any one of the at least

one directional contact form an open circuit, and an active position in which the primary contact and the any one of the at least one directional contact form a closed circuit; and

a direction interpreter, operatively connected to the primary contact and the at least one directional contact, for generating the directional input signal.

3. (canceled)

4. (canceled)

5. (previously presented) The handheld computing device of claim 2, wherein the directional input signal is uniquely associated with the direction of the inclination.

6. (canceled)

7. (canceled)

8. (canceled)

9. (previously presented) The handheld computing device of claim 2, wherein each of the at least one directional contact are further connected to adjacent directional contacts to create a plurality of secondary open circuits, each of the plurality of secondary open circuits closable by the circuit closing means in response to inclination of the handheld to a junction of adjacent directional contacts.

10. (original) The handheld computing device of claim 9, wherein the direction interpreter generates the directional input when one of the secondary open circuits is closed.

11. (original) The handheld computing device of claim 2, further including a base, electrically connected to the primary contact, for supporting the circuit closing means in response to movement between the neutral position and the active position.

12. (original) The handheld computing device of claim 11, wherein the base biases the circuit closing means to the neutral position.

13. (original) The handheld computing device of claim 2, wherein the circuit closing means is a ball bearing.

14. (original) The handheld computing device of claim 2, wherein the circuit closing means is a mercury contact.

15. (canceled)

16. (original) The handheld computing device of claim 1, wherein the graphical element is a pointer.

17. (canceled)

18. (original) The handheld computing device of claim 1, wherein the processor is configured to detect movement patterns from the directional input signal and wherein the graphical element is further responsive to the detected movement patterns.

19. (original) The handheld computing device of claim 18, wherein the graphical element is configured to accelerate in response to a detected movement pattern.

20. (original) The handheld computing device of claim 18, wherein the graphical element is configured to perform a selection function in response to the detected movement pattern.

21. (original) The handheld computing device of claim 20, wherein the detected movement pattern is a flick of the wrist.

22. (previously presented) The handheld computing device of claim 1, wherein the second directional input device is selected from the group consisting of a button; a roller; a touch surface; and a thumbwheel.

Electronic Patent Application Fee Transmittal	
Application Number:	11240501
Filing Date:	03-Oct-2005
Title of Invention:	Method of operating a handheld device for directional input
First Named Inventor/Applicant Name:	Marcelo Varanda
Filer:	Joseph Louis Ulvr
Attorney Docket Number:	2173-264
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($)
Miscellaneous:				
Request for continued examination	1801	1	810	810
		Total in USD ($)		**810**

Doc code: RCEX
Doc description: Request for Continued Examination (RCE)

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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REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	11/240,501	Filing Date	2005-10-03	Docket Number (if applicable)	2173-264	Art Unit	2629
First Named Inventor	Marcelo Varanda			Examiner Name	Kenneth B. Lee Jr.		

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 orde 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 _____

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

EFS - Web 2.1.15

PTO/SB/30EFS (07-09)
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Signature of Registered U.S. Patent Practitioner			
Signature	/JOSEPH L. ULVR/	Date (YYYY-MM-DD)	2011-02-01
Name	Joseph L. Ulvr	Registration Number	57696

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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
estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Tim
will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions fo
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.

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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 informatio 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.

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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 ma 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:	9355828
Application Number:	11240501
International Application Number:	
Confirmation Number:	2624
Title of Invention:	Method of operating a handheld device for directional input
First Named Inventor/Applicant Name:	Marcelo Varanda
Customer Number:	89653
Filer:	Joseph Louis Ulvr
Filer Authorized By:	
Attorney Docket Number:	2173-264
Receipt Date:	01-FEB-2011
Filing Date:	03-OCT-2005
Time Stamp:	16:58:05
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$810
RAM confirmation Number	3592
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1		2173-264_ExecutedResponse_01FEB2011.pdf	278383 74e0b6945e97a930a79027794c4a8aabb98adcb5	yes	8
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Amendment Submitted/Entered with Filing of CPA/RCE		1	1	
	Claims		2	5	
	Applicant Arguments/Remarks Made in an Amendment		6	8	
Warnings:					
Information:					
2	Request for Continued Examination (RCE)	2173-264_RequestforContinuedExamination.pdf	797981 c9b901d43c792d0645687d1ce554df5454dd5190	no	3
Warnings:					
Information:					
3	Fee Worksheet (PTO-875)	fee-info.pdf	29732 2bb6e17e0d6e973997836f5c7fdf2a9b93c7cbbb	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1106096		

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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Marcelo VARANDA
Serial No.:	11/240,501
Filed:	October 3, 2005 (10/03/2005)
Title:	**METHOD OF OPERATING A HANDHELD DEVICE FOR DIRECTIONAL INPUT**
Art Unit:	2629
Examiner:	LEE JR., Kenneth B.
Docket No.:	2173-264

February 1, 2011

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO OFFICE ACTION

Dear Sir:

This is in response to the Official Action mailed November 9, 2010.

A Request for Continued Examination is being filed herewith.

Claims begin on page 2.

Remarks begin on page 6.

REMARKS

The Applicant would like to thank the Examiner for his attention to this application.

35 U.S.C. 102(b)

Claims 1, 16, 18, and 22 stand rejected under 35 U.S.C. 102(b) as being anticipated by Motosyuku. Reconsideration of the rejection based on the following comments is respectfully urged.

The applicant's arguments filed on September, 9, 2010, to the effect that Motosyuku fails to teach a "second directional input signal indicating a degree of displacement" have been rejected. In particular, the Action provides, in the section *Response to Arguments*, that Motosyuku teaches a pushbutton switch which "allows for scrolling, which is a degree of displacement." The Action further provides that such teachings read on the claimed language of "indicating a degree of displacement".

The applicant respectfully disagrees. Rather, the applicant respectfully submits, the push button indicates whether the degree of displacement indicated by the first directional input of Motosyuku should affect scrolling.

Therefore, in an attempt to advance prosecution, claim 1 has been amended to recite that the second directional input signal indicates an amount of displacement, and that the graphical element moves by the amount of displacement. Support for this amendment is found, *inter alia*, at paragraphs [0045] to [0047] of the present application.

The applicant respectfully submits that as amended, claim 1 is allowable over Motosyuku. In particular, the applicant respectfully submits that however broadly construed, the pushbutton switch of Motosyuku does not indicate an "amount" of displacement, as an "amount" cannot be expressed as a boolean value.

Accordingly, Motosyuku fails to teach the subject matter of amended claim 1 and withdrawal of the rejection is respectfully urged.

35 U.S.C. 103(a)

Claims 2, 5 and 11-14 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Moskin.

Claims 9 and 10 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Moskin and Amberny.

Claim 19 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Kaplan.

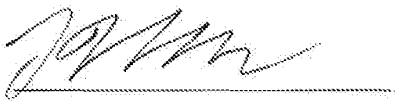
Claim 20 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Bartlett.

Claim 21 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Geshwind.

However, as none of Moskin, Amberny, Kaplan, Bartlett or Geshwind overcome the deficiencies of Motosyuku with respect to claim 1 discussed above, claims 2, 5, 9-14, and 19 to 21 are submitted to be allowable over the cited art and withdrawal of the rejection is respectfully urged.

Based on the above submissions and amendments, reconsideration leading to allowance is respectfully urged.

Respectfully submitted,



Joseph L. Ulvr
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Ottawa, ON K1R 7Y2
(613) 232-7302

288110

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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/240,501	10/03/2005	

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	02/01/2011	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 15	Minus	** 22	= 0	X $ =		OR	X $52=	0
	Independent (37 CFR 1.16(h))	* 1	Minus	***3	= 0	X $ =		OR	X $220=	0
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	RATE ($)	ADDITIONAL FEE ($)
	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))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L 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".

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Legal Instrument Examiner:
/ANTHONY WILLIAMS/

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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/240,501	10/03/2005	

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 11/09/2010

	(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 ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 15	Minus	** 22	= 0	X $ =		OR	X $52=	0
Independent (37 CFR 1.16(h))	* 1	Minus	***3	= 0	X $ =		OR	X $220=	0
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	RATE ($)	ADDITIONAL FEE ($)
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))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L 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.

Legal Instrument Examiner:
/DENISE HOPKINS/

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/240,501	10/03/2005	Marcelo Varanda	2173-264	2624

89653 7590 11/09/2010

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CANADA

EXAMINER	
LEE JR, KENNETH B	
ART UNIT	PAPER NUMBER
2629	

NOTIFICATION DATE	DELIVERY MODE
11/09/2010	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):

joe.ulvr@moffatco.com
portfolioprosecution@rim.com

Office Action Summary	Application No.	Applicant(s)	
	11/240,501	VARANDA, MARCELO	
	Examiner	Art Unit	
	KENNETH B. LEE JR	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 September 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,5,9-14,16 and 18-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,5,9-14,16 and 18-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ 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:

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)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 16, 18, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Motosyuku et al. (hereinafter "Motosyuku"), US Patent #5,602,566.

Regarding claim 1, Motosyuku discloses **a handheld computing device** (small-sized information processor, 301), **comprising: a display** (display unit, 106; fig. 1); **an internally located directional input device providing a directional input signal** (tilt sensor, 104; fig. 1), **the directional input signal corresponding to an axis of inclination of the handheld computing device and indicating an orientation** (col. 3, lines 11-14; 30-32; 45-55; fig. 3); **a second directional input device providing a second directional input signal** (input unit, 102; fig. 1), **the second directional input signal indicating a degree of displacement** (col. 3, lines 26-44; fig. 3); **a processor coupled to the internally located directional input device and the second directional input device and operable to receive and process the directional input signal in conjunction with the second directional input signal** (processing unit, 101; fig. 1); **and a memory subsystem, the memory storing an operating system executed by the processor to display on the display a graphical user interface for controlling the operating of the handheld computing device** (storage unit, 103;

display storage unit, 105; fig. 1), **wherein the graphical user interface provides a graphical element** (pointer, 107; fig. 1); **wherein the operating system comprises processor-executable instructions that cause the graphical element to move relative to the degree of displacement in a direction substantially parallel or substantially perpendicular to the orientation** (col. 3, line 57 - col. 4, line 29; figs. 3-5).

Regarding claim 16, Motosyuku discloses wherein the graphical element is a pointer (fig. 1).

Regarding claim 18, Motosyuku discloses wherein the processor is configured to detect movement patterns from the directional input signal and wherein the graphical element is further responsive to the detected movement patterns (col. 3, line 45 – col. 4, line 2).

Regarding claim 22, Motosyuku discloses wherein the second directional input device is selected from the group consisting of a button; a roller; a touch surface; and a thumbwheel (col. 3, lines 32-33).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2, 5, and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Moskin (see previous rejection).

Regarding claim 2, Motosyuku fails to disclose wherein the internally-located directional input device comprises: a primary contact positionally fixed in the handheld device; at least one directional contact positionally fixed in the handheld computing device and operatively connected to the primary contact; circuit closing means, movable on, and in electrical contact with, the primary contact, the circuit closing means moving in response to inclination of the handheld computing device in the direction of any one of the at least one directional contact, between a neutral position in which the primary contact and the any one of the at least one directional contact form an open circuit, and an active position in which the primary contact and the any one of the at least one directional contact form a closed circuit; and a directional interpreter, operatively connected to the primary contact and the at least one directional contact, for generating the directional input signal.

Regarding claim 2, Moskin discloses a multi-position tilt switch comprising a primary contact (base or 107 in figs. 8 and 9) positionally fixed in a portable device, at least one directional contact (contact 101, fig. 8) operatively connected to the primary contact, a circuit closing means (113) for movement in response to inclination of the portable device to form an open circuit or a closed circuit between the primary contact and the at least one directional contact, and a directional interpreter for generating the directional input when the closed circuit is formed (column 4, line 64 - column 5, line 27).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Moskin to modify Motosyuku.

The motivation for doing so would have been to provide a multi-position tilt input device that is inexpensive and reliable.

Therefore, it would have been obvious to combine Moskin with Motosyuku to obtain the invention as specified in claim 2.

Regarding claim 5, Motosyuku discloses wherein the directional input signal is uniquely associated with the direction of the inclination (figs. 3-5).

Regarding claims 11 and 12, figs. 8 and 9 of Moskin discloses the device including a base for supporting the circuit closing means (113) in response to movement between the neutral position and the active position and the base biases the circuit closing means to the neutral position (109).

Regarding claim 13, fig. 2 of Moskin discloses the circuit closing means is a ball bearing (39).

Regarding claim 14, fig. 8 of Moskin discloses the circuit closing means is a mercury contact (113).

5. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Moskin, and further in view of Amberny, US Patent #3,876,850.

Regarding claim 9, Motosyuku and Moskin fail to disclose the circuit closing means having two adjacent directional contacts are operatively connected to close the open circuit in response to the inclination of the device.

Amberny discloses a mercury device comprising a plurality of radial contacts; two or three adjacent of the plurality of contacts are connected by the mercury to form a closed circuit (abstract; fig. 3).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Amberny to modify Lands, Kaplan, Moskin, and Hinckley.

The motivation for doing so would have been to enable complex switching to be carried out and to provide a correspondingly large number of switching states (column 1, lines 30-35).

Therefore, it would have been obvious to combine Amberny with Motosyuku and Moskin to obtain the invention as specified in claim 9.

Regarding claim 10, Moskin discloses the input device having direction interpreter means. Moskin as modified by Motosyuku and Amberny would include the direction interpreter means for generating directional input for each active position of the circuit closing means as claimed.

6. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Kaplan (see previous rejection).

Motosyuku fails to disclose wherein the graphical element is configured to accelerate in response to a detected movement pattern.

Regarding claim 19, Kaplan discloses wherein the cursor is configured to accelerate in response to a detected movement pattern (0018-0019).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention as disclosed in Kaplan to modify Motosyuku.

The motivation for doing so would have been to provide a device with more ease of use (col. 1, lines 25-35).

Therefore, it would have been obvious to combine Kaplan with Motosyuku to obtain the invention as specified in claim 19.

7. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Bartlett, US Patent #6,573,883.

Regarding claim 20, Motosyuku fails to disclose wherein the graphical element is configured to accelerate in response to a detected movement pattern.

Bartlett discloses the graphical element is configured to perform a selection function in response to the detected movement pattern (column 3, lines 22-37).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Bartlett to modify Motosyuku.

The motivation for doing so would have been to provide a computing device without the use of buttons for command input (column 2, lines 19-22).

Therefore, it would have been obvious to combine Bartlett with Motosyuku to obtain the invention as specified in claim 20.

8. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Geshwind, US Patent #6,590,573.

Regarding claim 21, Motosyuku fails to disclose wherein the detected movement pattern is a flick of the wrist.

Geshwind discloses a “wrist flick" would be used to implement a number of useful functions (column 24, lines 51-53).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Geshwind to modify Motosyuku.

The motivation for doing so would have been to allow the user to manipulate the device options faster and easily (column 24, lines 55-60).

Therefore, it would have been obvious to combine Geshwind with Motosyuku to obtain the invention as specified in claim 21.

Response to Arguments

9. Applicant's arguments filed 9/9/2010 have been fully considered but they are not persuasive. Applicant argues that prior art fails to disclose a "second directional input device" which provides a "second directional input signal indicating a degree of displacement". Examiner, respectfully, disagrees. As claimed, Motosyuku reads on the limitation for the reasons stated by applicant. It is a pushbutton switch but it allows for scrolling, which is a degree of displacement. It "indicates" a degree of displacement. Examiner, would further like to point out that the claims must be given their broadest reasonable interpretation in light of the specification, but without reading limitations into the claims from the specification. If the applicant believes that the disclosed invention is distinguishable over the references of record, the distinguishing features of the invention should be explicitly incorporated into the claims. In any case, the rejection of claims 1, 2, 5, 9-14, 16 and 18-22 is maintained.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENNETH B. LEE JR whose telephone number is (571)270-3147. The examiner can normally be reached on Mon. - Fri. 7:30AM - 4:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexander Eisen can be reached on 571-272-7687. 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.

/Kenneth B. Lee Jr./
Examiner
Art Unit 2629

/Kevin M Nguyen/
Primary Examiner, Art Unit 2629

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11240501	VARANDA, MARCELO
	Examiner	**Art Unit**
	KENNETH B LEE JR	2629

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	08/28/2008	03/17/2009	07/16/2009	01/06/2010	06/08/2010	11/03/2010			
	1	✓	✓	✓	✓	✓	✓			
	2	✓	✓	✓	✓	✓	✓			
	3	✓	✓	✓	-	-	-			
	4	✓	✓	✓	-	-	-			
	5	✓	✓	✓	✓	✓	✓			
	6	✓	✓	✓	-	-	-			
	7	✓	✓	✓	-	-	-			
	8	✓	✓	✓	-	-	-			
	9	✓	✓	✓	✓	✓	✓			
	10	✓	✓	✓	✓	✓	✓			
	11	✓	✓	✓	✓	✓	✓			
	12	✓	✓	✓	✓	✓	✓			
	13	✓	✓	✓	✓	✓	✓			
	14	✓	✓	✓	✓	✓	✓			
	15	✓	✓	✓	✓	-	-			
	16	✓	✓	✓	✓	✓	✓			
	17	✓	-	-	-	-	-			
	18	✓	✓	✓	✓	✓	✓			
	19	✓	✓	✓	✓	✓	✓			
	20	✓	✓	✓	✓	✓	✓			
	21	✓	✓	✓	✓	✓	✓			
	22		✓	✓	✓	✓	✓			

Listing of Claims:

1. (previously presented) A handheld computing device, comprising:

a display;

an internally located directional input device providing a directional input signal, the directional input signal corresponding to an axis of inclination of the handheld computing device and indicating an orientation;

a second directional input device providing a second directional input signal, the second directional input signal indicating a degree of displacement;

a processor coupled to the internally located directional input device and the second directional input device and operable to receive and process the directional input signal in conjunction with the second directional input signal; and

a memory subsystem, the memory storing an operating system executed by the processor to display on the display a graphical user interface for controlling the operation of the handheld computing device, wherein the graphical user interface provides a graphical element;

wherein the operating system comprises processor-executable instructions that cause the graphical element to move relative to the degree of displacement in a direction substantially parallel or substantially perpendicular to the orientation.

2. (previously presented) The handheld computing device of claim 1, wherein the internally-located directional input device comprises:

a primary contact positionally fixed in the handheld computing device;

at least one directional contact positionally fixed in the handheld computing device and operatively connected to the primary contact;

circuit closing means, movable on, and in electrical contact with, the primary contact, the circuit closing means moving in response to inclination of the handheld computing device in the direction of any one of the at least one directional contact,

between a neutral position in which the primary contact and the any one of the at least one directional contact form an open circuit, and an active position in which the primary contact and the any one of the at least one directional contact form a closed circuit; and

a direction interpreter, operatively connected to the primary contact and the at least one directional contact, for generating the directional input signal.

3. (canceled)

4. (canceled)

5. (previously presented) The handheld computing device of claim 2, wherein the directional input signal is uniquely associated with the direction of the inclination.

6. (canceled)

7. (canceled)

8. (canceled)

9. (previously presented) The handheld computing device of claim 2, wherein each of the at least one directional contact are further connected to adjacent directional contacts to create a plurality of secondary open circuits, each of the plurality of secondary open circuits closable by the circuit closing means in response to inclination of the handheld to a junction of adjacent directional contacts.

10. (original) The handheld computing device of claim 9, wherein the direction interpreter generates the directional input when one of the secondary open circuits is closed.

11. (original) The handheld computing device of claim 2, further including a base, electrically connected to the primary contact, for supporting the circuit closing means in response to movement between the neutral position and the active position.

12. (original) The handheld computing device of claim 11, wherein the base biases the circuit closing means to the neutral position.

13. (original) The handheld computing device of claim 2, wherein the circuit closing means is a ball bearing.

14. (original) The handheld computing device of claim 2, wherein the circuit closing means is a mercury contact.

15. (canceled)

16. (original) The handheld computing device of claim 1, wherein the graphical element is a pointer.

17. (canceled)

18. (original) The handheld computing device of claim 1, wherein the processor is configured to detect movement patterns from the directional input signal and wherein the graphical element is further responsive to the detected movement patterns.

19. (original) The handheld computing device of claim 18, wherein the graphical element is configured to accelerate in response to a detected movement pattern.

20. (original) The handheld computing device of claim 18, wherein the graphical element is configured to perform a selection function in response to the detected movement pattern.

21. (original) The handheld computing device of claim 20, wherein the detected movement pattern is a flick of the wrist.

22. (previously presented) The handheld computing device of claim 1, wherein the second directional input device is selected from the group consisting of a button; a roller; a touch surface; and a thumbwheel.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Marcelo VARANDA
Serial No.:	11/240,501
Filed:	October 3, 2005 (10/03/2005)
Title:	**METHOD OF OPERATING A HANDHELD DEVICE FOR DIRECTIONAL INPUT**
Art Unit:	2629
Examiner:	LEE JR., Kenneth B.
Docket No.:	2173-264

September 9, 2010

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE WITHOUT AMENDMENTS

Dear Sir:

This is in response to the Official Action mailed June 15, 2010.

Claims begin on page 2.

Remarks begin on page 6.

REMARKS

The Applicant would like to thank the Examiner for his attention to this application.

Claims 1, 16, 18, and 22 stand rejected under 35 U.S.C. 102(b) as being anticipated by Motosyuku. Reconsideration of the rejection based on the following comments is respectfully urged.

The Examiner suggests that Motosyuku teaches a second directional input signal indicating a degree of displacement. Specifically, the Examiner suggests that the input unit 102 of Motosyuku corresponds to the claimed "second directional input device" which provides a "second directional input signal indicating a degree of displacement", as provided at column 3, lines 26 to 44, and at Figure 3 of Motosyuku.

In fact, the input unit 102 of Motosyuku is a binary input which is not suited to provide a signal "indicating a degree of displacement". As provided by Motosyuku at column 3, lines 32 to 38:

> The scroll start switch 110 is a pushbutton switch. This switch 110 maintains a command for scrolling the display screen 203 valid, as long as it is depressed. When the switch 110 is released from the depressed state, the scroll command is invalidated.

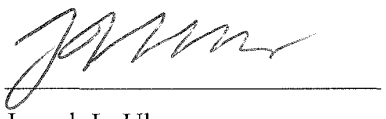
Thus, according to Motosyuku, when the switch 110 is depressed, the tilt of the device 301 scrolls the display 203. As would be appreciated by those skilled in the art, a binary input is not a directional input, and a binary signal (i.e., either 'ON' or 'OFF') does not indicate a degree of displacement.

Accordingly, Motosyuku fails to teach the subject matter of claim 1 and withdrawal of the objection is respectfully urged.

Similarly, for the above reasons, dependent claims 2 to 22 are submitted to be allowable over Motosyuku in combination with any one of Moskin, Amberny, Kaplan, Bartlett, and Geshwind.

Based on the above submissions and amendments, reconsideration leading to allowance is respectfully urged.

Respectfully submitted,



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Ottawa, ON K1R 7Y2
(613) 232-7302

272631

Electronic Acknowledgement Receipt	
EFS ID:	8386553
Application Number:	11240501
International Application Number:	
Confirmation Number:	2624
Title of Invention:	Method of operating a handheld device for directional input
First Named Inventor/Applicant Name:	Marcelo Varanda
Customer Number:	89653
Filer:	Joseph Louis Ulvr
Filer Authorized By:	
Attorney Docket Number:	2173-264
Receipt Date:	09-SEP-2010
Filing Date:	03-OCT-2005
Time Stamp:	16:50:01
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		2173-264-Executed-Response-9SEPT2010.pdf	456201 a9740e006d96cbdc3fc5715a5824fbb6354191e5	yes	7

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	5
	Applicant Arguments/Remarks Made in an Amendment	6	7
Warnings:			
Information:			
	Total Files Size (in bytes):	456201	

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.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/240,501	10/03/2005	Marcelo Varanda	2173-264	2624

89653 7590 06/15/2010

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427 Laurier Avenue W.
Suite 1200
Ottawa, ON K1R 7Y2
CANADA

EXAMINER	
LEE JR, KENNETH B	
ART UNIT	**PAPER NUMBER**
2629	

NOTIFICATION DATE	DELIVERY MODE
06/15/2010	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):

joe.ulvr@moffatco.com
portfolioprosecution@rim.com

PTOL-90A (Rev. 04/07)

Office Action Summary	Application No.	Applicant(s)	
	11/240,501	VARANDA, MARCELO	
	Examiner	Art Unit	
	KENNETH B. LEE JR	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 April 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,5,9-14,16 and 18-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,5,9-14,16 and 18-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ 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:

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)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/9/2010 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 16, 18, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Motosyuku et al. (hereinafter "Motosyuku"), US Patent #5,602,566.

Regarding claim 1, Motosyuku discloses **a handheld computing device** (small-sized information processor, 301), **comprising: a display** (display unit, 106; fig. 1); **an internally located directional input device providing a directional input signal** (tilt sensor, 104; fig. 1), **the directional input signal corresponding to an axis of inclination of the handheld computing device and indicating an orientation** (col. 3, lines 11-14; 30-32; 45-55; fig. 3); **a second directional input device providing a second directional input signal** (input unit, 102; fig. 1), **the second directional input**

signal indicating a degree of displacement (col. 3, lines 26-44; fig. 3); **a processor coupled to the internally located directional input device and the second directional input device and operable to receive and process the directional input signal in conjunction with the second directional input signal** (processing unit, 101; fig. 1); **and a memory subsystem, the memory storing an operating system executed by the processor to display on the display a graphical user interface for controlling the operating of the handheld computing device** (storage unit, 103; display storage unit, 105; fig. 1), **wherein the graphical user interface provides a graphical element** (pointer, 107; fig. 1); **wherein the operating system comprises processor-executable instructions that cause the graphical element to move relative to the degree of displacement in a direction substantially parallel or substantially perpendicular to the orientation** (col. 3, line 57 - col. 4, line 29; figs. 3-5).

Regarding claim 16, Motosyuku discloses wherein the graphical element is a pointer (fig. 1).

Regarding claim 18, Motosyuku discloses wherein the processor is configured to detect movement patterns from the directional input signal and wherein the graphical element is further responsive to the detected movement patterns (col. 3, line 45 – col. 4, line 2).

Regarding claim 22, Motosyuku discloses wherein the second directional input device is selected from the group consisting of a button; a roller; a touch surface; and a thumbwheel (col. 3, lines 32-33).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 2, 5, and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Moskin (see previous rejection).

Regarding claim 2, Motosyuku fails to disclose wherein the internally-located directional input device comprises: a primary contact positionally fixed in the handheld device; at least one directional contact positionally fixed in the handheld computing device and operatively connected to the primary contact; circuit closing means, movable on, and in electrical contact with, the primary contact, the circuit closing means moving in response to inclination of the handheld computing device in the direction of any one of the at least one directional contact, between a neutral position in which the primary contact and the any one of the at least one directional contact form an open circuit, and an active position in which the primary contact and the any one of the at least one directional contact form a closed circuit; and a directional interpreter, operatively connected to the primary contact and the at least one directional contact, for generating the directional input signal.

Regarding claim 2, Moskin discloses a multi-position tilt switch comprising a primary contact (base or 107 in figs. 8 and 9) positionally fixed in a portable device, at

least one directional contact (contact 101, fig. 8) operatively connected to the primary contact, a circuit closing means (113) for movement in response to inclination of the portable device to form an open circuit or a closed circuit between the primary contact and the at least one directional contact, and a directional interpreter for generating the directional input when the closed circuit is formed (column 4, line 64 - column 5, line 27).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Moskin to modify Motosyuku.

The motivation for doing so would have been to provide a multi-position tilt input device that is inexpensive and reliable.

Therefore, it would have been obvious to combine Moskin with Motosyuku to obtain the invention as specified in claim 2.

Regarding claim 5, Motosyuku discloses wherein the directional input signal is uniquely associated with the direction of the inclination (figs. 3-5).

Regarding claims 11 and 12, figs. 8 and 9 of Moskin discloses the device including a base for supporting the circuit closing means (113) in response to movement between the neutral position and the active position and the base biases the circuit closing means to the neutral position (109).

Regarding claim 13, fig. 2 of Moskin discloses the circuit closing means is a ball bearing (39).

Regarding claim 14, fig. 8 of Moskin discloses the circuit closing means is a mercury contact (113).

6. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Moskin, and further in view of Amberny, US Patent #3,876,850.

Regarding claim 9, Motosyuku and Moskin fail to disclose the circuit closing means having two adjacent directional contacts are operatively connected to close the open circuit in response to the inclination of the device.

Amberny discloses a mercury device comprising a plurality of radial contacts; two or three adjacent of the plurality of contacts are connected by the mercury to form a closed circuit (abstract; fig. 3).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Amberny to modify Lands, Kaplan, Moskin, and Hinckley.

The motivation for doing so would have been to enable complex switching to be carried out and to provide a correspondingly large number of switching states (column 1, lines 30-35).

Therefore, it would have been obvious to combine Amberny with Motosyuku and Moskin to obtain the invention as specified in claim 9.

Regarding claim 10, Moskin discloses the input device having direction interpreter means. Moskin as modified by Motosyuku and Amberny would include the direction interpreter means for generating directional input for each active position of the circuit closing means as claimed.

7. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Kaplan (see previous rejection).

Motosyuku fails to disclose wherein the graphical element is configured to accelerate in response to a detected movement pattern.

Regarding claim 19, Kaplan discloses wherein the cursor is configured to accelerate in response to a detected movement pattern (0018-0019).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention as disclosed in Kaplan to modify Motosyuku.

The motivation for doing so would have been to provide a device with more ease of use (col. 1, lines 25-35).

Therefore, it would have been obvious to combine Kaplan with Motosyuku to obtain the invention as specified in claim 19.

8. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Bartlett, US Patent #6,573,883.

Regarding claim 20, Motosyuku fails to disclose wherein the graphical element is configured to accelerate in response to a detected movement pattern.

Bartlett discloses the graphical element is configured to perform a selection function in response to the detected movement pattern (column 3, lines 22-37).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Bartlett to modify Motosyuku.

The motivation for doing so would have been to provide a computing device without the use of buttons for command input (column 2, lines 19-22).

Therefore, it would have been obvious to combine Bartlett with Motosyuku to obtain the invention as specified in claim 20.

9. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Motosyuku in view of Geshwind, US Patent #6,590,573.

Regarding claim 21, Motosyuku fails to disclose wherein the detected movement pattern is a flick of the wrist.

Geshwind discloses a “wrist flick" would be used to implement a number of useful functions (column 24, lines 51-53).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Geshwind to modify Motosyuku.

The motivation for doing so would have been to allow the user to manipulate the device options faster and easily (column 24, lines 55-60).

Therefore, it would have been obvious to combine Geshwind with Motosyuku to obtain the invention as specified in claim 21.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENNETH B. LEE JR whose telephone number is (571)270-3147. The examiner can normally be reached on Mon. - Fri. 7:30AM - 4:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Alexander Eisen can be reached on 571-272-7687. 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.

/Kevin M Nguyen/
Primary Examiner, Art Unit 2629

/Kenneth B. Lee Jr./
Examiner
Art Unit 2629

KBL

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11240501	VARANDA, MARCELO
	Examiner	Art Unit
	KENNETH B LEE JR	2629

SEARCHED			
Class	Subclass	Date	Examiner
345	156-172	6/2010	KBL
178	Class Search	6/2010	KBL
200	61.52	6/2010	KBL
434	38	6/2010	KBL
250	231.12,236	6/2010	KBL
356	154	6/2010	KBL

SEARCH NOTES		
Search Notes	Date	Examiner
US-PGPUB;USPAT;USOCR;EPO;JPO	6/2010	KBL

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11240501	VARANDA, MARCELO
	Examiner	**Art Unit**
	KENNETH B LEE JR	2629

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	08/28/2008	03/17/2009	07/16/2009	01/06/2010	06/08/2010				
	1	✓	✓	✓	✓	✓				
	2	✓	✓	✓	✓	✓				
	3	✓	✓	✓	-	-				
	4	✓	✓	✓	-	-				
	5	✓	✓	✓	✓	✓				
	6	✓	✓	✓	-	-				
	7	✓	✓	✓	-	-				
	8	✓	✓	✓	-	-				
	9	✓	✓	✓	✓	✓				
	10	✓	✓	✓	✓	✓				
	11	✓	✓	✓	✓	✓				
	12	✓	✓	✓	✓	✓				
	13	✓	✓	✓	✓	✓				
	14	✓	✓	✓	✓	✓				
	15	✓	✓	✓	✓	-				
	16	✓	✓	✓	✓	✓				
	17	✓	-	-	-	-				
	18	✓	✓	✓	✓	✓				
	19	✓	✓	✓	✓	✓				
	20	✓	✓	✓	✓	✓				
	21	✓	✓	✓	✓	✓				
	22		✓	✓	✓	✓				

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L5	2465	((200/61.52) or (434/38) or (250/231.12,236) or (356/154)).CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2010/06/08 18:32
S26	15643	(345/156-172).CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2010/05/06 16:09
S27	15714	(345/156-172).CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2010/05/20 18:33
S28	18	S27 and (directional same input same device same tilt)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2010/05/20 18:35
S29	6	S27 and (directional same interpreter)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2010/05/20 18:45
S30	2	S27 and (directional same interpreter same inclination)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2010/05/20 18:46
S31	0	S27 and (directional same interpreter same tilt)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2010/05/20 18:46
S32	7	S27 and (directional same input same device same inclination)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2010/05/20 18:48
S33	5	S27 and (directional same input same device same accelerometer)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2010/05/20 18:51
S34	25	S27 and (input same device same tilt same selection same cursor)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2010/05/20 19:04

S35	41392	(345/156-172).CCLS. or ("178").CLAS.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2010/05/20 19:07
S36	25	S35 and (input same device same tilt same selection same cursor)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2010/05/20 19:07
S37	2	("4425488").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2010/05/20 19:53
S38	1	("7289102").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2010/05/20 19:54
S39	0	S35 and (input same device same tilt same thumbwheel)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2010/05/20 20:41
S40	13	S35 and (input same device same tilt same arrow$1)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2010/05/20 20:42
S41	117	S35 and (input same device same tilt same direction)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2010/05/20 20:44
S42	20	varanda-marcelo.in.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2010/05/20 20:58
S43	3	S27 and (handheld and device and directional and input and second and processor and memory and operating and system).clm.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2010/05/20 21:02
S44	1	S27 and (handheld and device and directional and input and second and processor and memory and operating and system and graphical and element).clm.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2010/05/20 21:04

S45	1	S27 and (handheld and device and directional and input and second and processor and memory and inclination).clm.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2010/05/20 21:05
S46	12	(("6765553") or ("5602566") or ("6624824") or ("4503299") or ("3601729") or ("4628160") or ("4023346") or ("3748415") or ("6392223") or ("6011254") or ("5373153")).PN.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2010/05/25 17:02
S47	1	("7607111").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2010/05/25 17:02

6/8/2010 8:02:50 PM
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Notice of References Cited	Application/Control No. 11/240,501	Applicant(s)/Patent Under Reexamination VARANDA, MARCELO	
	Examiner KENNETH B. LEE JR	Art Unit 2629	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-5,602,566	02-1997	Motosyuku et al.	345/156
	B	US-			
	C	US-			
	D	US-			
	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.

Electronic Acknowledgement Receipt	
EFS ID:	7389067
Application Number:	11240501
International Application Number:	
Confirmation Number:	2624
Title of Invention:	Method of operating a handheld device for directional input
First Named Inventor/Applicant Name:	Marcelo Varanda
Customer Number:	89653
Filer:	Joseph Louis Ulvr
Filer Authorized By:	
Attorney Docket Number:	2173-264
Receipt Date:	09-APR-2010
Filing Date:	03-OCT-2005
Time Stamp:	17:27:59
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$810
RAM confirmation Number	3879
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1		2173-264-Exectued-Response-9APR2010.pdf	463635 0804f9d672fb9cb4ebf96e22f85e3d5263f2bf38	yes	6
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Amendment Submitted/Entered with Filing of CPA/RCE		1	1	
	Claims		2	5	
	Applicant Arguments/Remarks Made in an Amendment		6	6	
Warnings:					
Information:					
2	Request for Continued Examination (RCE)	2173-264-RCE-9APR2010.pdf	797976 ba026bca083f05727cdaae9f07c6dacfafab44b7	no	3
Warnings:					
Information:					
3	Fee Worksheet (PTO-875)	fee-info.pdf	29730 9285057c7ed5e27f439b31786915fd8c289d744c	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1291341		

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.

Doc code: RCEX
Doc description: Request for Continued Examination (RCE)

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	11/240,501	Filing Date	2005-10-03	Docket Number (if applicable)	2173-264	Art Unit	2629
First Named Inventor	Marcelo Varanda			Examiner Name	LEE JR, KENNETH B		

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 orde 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 _____

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

EFS - Web 2.1.15

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.

Signature of Registered U.S. Patent Practitioner			
Signature	/JOSEPH L. ULVR/	Date (YYYY-MM-DD)	2010-04-09
Name	Joseph L. Ulvr	Registration Number	57696

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 t
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
estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Tim
will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions fo
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 informatio 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 ma 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 Patent Application Fee Transmittal	
Application Number:	11240501
Filing Date:	03-Oct-2005
Title of Invention:	Method of operating a handheld device for directional input
First Named Inventor/Applicant Name:	Marcelo Varanda
Filer:	Joseph Louis Ulvr
Attorney Docket Number:	2173-264
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($)
Miscellaneous:				
Request for continued examination	1801	1	810	810
		Total in USD ($)		**810**

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A handheld computing device, comprising:

a display;

an internally located directional input device providing a directional input signal, the directional input signal corresponding to an axis of inclination of the handheld computing device and indicating an orientation;

a second directional input device providing a second directional input signal, the second directional input signal indicating a degree of displacement;

a processor coupled to the internally located directional input device and the second directional input device and operable to receive and process the directional input signal in conjunction with ~~a~~ the second directional input signal ~~from the second directional input device~~; and

a memory subsystem, the memory storing an operating system executed by the processor to display on the display a graphical user interface for controlling the operation of the handheld computing device, wherein the graphical user interface provides a graphical element;

wherein the operating system comprises processor-executable instructions that cause the graphical element to move relative to the degree of displacement in a direction substantially parallel or substantially perpendicular to the orientation ~~in one of an axial constraining mode or an axial selecting mode, and wherein the graphical element moves in a direction substantially perpendicular to the axis of inclination in the axial constraining mode responsive to the second directional input signal, and moves in a~~

~~direction substantially corresponding to the axis of inclination in the axial selecting mode responsive to the second directional input signal~~.

2. (previously presented) The handheld computing device of claim 1, wherein the internally-located directional input device comprises:

a primary contact positionally fixed in the handheld computing device;

at least one directional contact positionally fixed in the handheld computing device and operatively connected to the primary contact;

circuit closing means, movable on, and in electrical contact with, the primary contact, the circuit closing means moving in response to inclination of the handheld computing device in the direction of any one of the at least one directional contact, between a neutral position in which the primary contact and the any one of the at least one directional contact form an open circuit, and an active position in which the primary contact and the any one of the at least one directional contact form a closed circuit; and

a direction interpreter, operatively connected to the primary contact and the at least one directional contact, for generating the directional input signal.

3. (canceled)

4. (canceled)

5. (previously presented) The handheld computing device of claim 2, wherein the directional input signal is uniquely associated with the direction of the inclination.

6. (canceled)

7. (canceled)

8. (canceled)

9. (previously presented) The handheld computing device of claim 2, wherein each of the at least one directional contact are further connected to adjacent directional contacts to create a plurality of secondary open circuits, each of the plurality of secondary open circuits closable by the circuit closing means in response to inclination of the handheld to a junction of adjacent directional contacts.

10. (original) The handheld computing device of claim 9, wherein the direction interpreter generates the directional input when one of the secondary open circuits is closed.

11. (original) The handheld computing device of claim 2, further including a base, electrically connected to the primary contact, for supporting the circuit closing means in response to movement between the neutral position and the active position.

12. (original) The handheld computing device of claim 11, wherein the base biases the circuit closing means to the neutral position.

13. (original) The handheld computing device of claim 2, wherein the circuit closing means is a ball bearing.

14. (original) The handheld computing device of claim 2, wherein the circuit closing means is a mercury contact.

15. (canceled)

16. (original) The handheld computing device of claim 1, wherein the graphical element is a pointer.

17. (canceled)

18. (original) The handheld computing device of claim 1, wherein the processor is configured to detect movement patterns from the directional input signal and wherein the graphical element is further responsive to the detected movement patterns.

19. (original) The handheld computing device of claim 18, wherein the graphical element is configured to accelerate in response to a detected movement pattern.

20. (original) The handheld computing device of claim 18, wherein the graphical element is configured to perform a selection function in response to the detected movement pattern.

21. (original) The handheld computing device of claim 20, wherein the detected movement pattern is a flick of the wrist.

22. (previously presented) The handheld computing device of claim 1, wherein the second directional input device is selected from the group consisting of a button; a roller; a touch surface; and a thumbwheel.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Marcelo VARANDA
Serial No.:	11/240,501
Filed:	October 3, 2005 (10/03/2005)
Title:	**METHOD OF OPERATING A HANDHELD DEVICE FOR DIRECTIONAL INPUT**
Art Unit:	2629
Examiner:	LEE JR., Kenneth B.
Docket No.:	2173-264

April 9, 2010

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO ADVISORY ACTION

Dear Sir:

This is in response to the Advisory Action mailed March 9, 2010.

Claim amendments begin on page 2.

Remarks begin on page 6.

Please note that a Request for Continued Examination is being filed herewith.

REMARKS

The Applicant would like to thank the Examiner for his attention to this application.

In the Advisory Action of March 9, 2010, the Examiner indicates that the Applicant makes valid arguments, but that the claims do not convey the subject matter in sufficient detail to overcome the prior art.

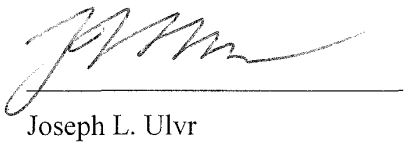
In response, claim 1 has been amended to more clearly emphasize the distinctions over the prior art. In particular, claim 1 now specifies that the directional input signal indicates an orientation, and the second directional input signal indicates a degree of displacement. Claim 1 was further amended to recite that the graphical element moves relative to the degree of displacement in a direction either parallel or perpendicular to the orientation provided by the directional input signal.

Support for these amendments is found at paragraphs [0045] to [0047] of the application as originally filed.

Claim 1 is submitted to be allowable over the prior art cited by the Examiner as none of the prior art teaches the above features.

Based on the above submissions, reconsideration leading to allowance is respectfully urged.

Respectfully submitted,



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248730

PTO/SB/06 (07-06)
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 11/240,501	Filing Date 10/03/2005	☐ To be Mailed

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

		(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
	04/09/2010	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
AMENDMENT	Total (37 CFR 1.16(i))	* 15	Minus	** 22	= 0	X $ =		OR	X $52=	0
	Independent (37 CFR 1.16(h))	* 1	Minus	***3	= 0	X $ =		OR	X $220=	0
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	**0**

		(Column 1)		(Column 2)	(Column 3)					
		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
AMENDMENT	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))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L 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.

Legal Instrument Examiner:
/KIMBERLY PANNELL/

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.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Marcelo VARANDA
Serial No.:	11/240,501
Filed:	October 3, 2005 (10/03/2005)
Title:	**METHOD OF OPERATING A HANDHELD DEVICE FOR DIRECTIONAL INPUT**
Art Unit:	2629
Examiner:	LEE JR., Kenneth B.
Docket No.:	2173-264

February 16, 2010

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE WITHOUT AMENDMENTS

Dear Sir:

This is in response to the Official Action mailed January 11, 2010.

Claim amendments begin on page 2.

Remarks begin on page 6.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/240,501	10/03/2005	Marcelo Varanda	2173-264	2624

89653 7590 03/09/2010

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CANADA

EXAMINER	
LEE JR, KENNETH B	
ART UNIT	PAPER NUMBER
2629	

MAIL DATE	DELIVERY MODE
03/09/2010	PAPER

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.

PTOL-90A (Rev. 04/07)

Advisory Action Before the Filing of an Appeal Brief	**Application No.**	**Applicant(s)**	
	11/240,501	VARANDA, MARCELO	
	Examiner	**Art Unit**	
	KENNETH B. LEE JR	2629	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 17 February 2010 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☐ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:
   a) ☐ The period for reply expires _____months from the mailing date of the final rejection.
   b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

   Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
   (b) ☐ They raise the issue of new matter (see NOTE below);
   (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
   The status of the claim(s) is (or will be) as follows:
   Claim(s) allowed: _____.
   Claim(s) objected to: _____.
   Claim(s) rejected: *1,2,5,9-16 and 18-22*.
   Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.
12. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____
13. ☐ Other: _____.

/Kevin Nguyen/
Primamry Examiner, Art Unit 2629

Kenneth B. Lee Jr.
Examiner
Art Unit: 2629

Continuation of 11. does NOT place the application in condition for allowance because: Applicant's arguments are not persuasive. As claimed, the prior art reads on applicant's invention. Applicant makes valid arguments, but the arguments are not conveyed clearly and in enough detail in the claims to overcome the prior art.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Marcelo VARANDA
Serial No.:	11/240,501
Filed:	October 3, 2005 (10/03/2005)
Title:	**METHOD OF OPERATING A HANDHELD DEVICE FOR DIRECTIONAL INPUT**
Art Unit:	2629
Examiner:	LEE JR., Kenneth B.
Docket No.:	2173-264

February 16, 2010

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE WITHOUT AMENDMENTS

Dear Sir:

This is in response to the Official Action mailed January 11, 2010.

Claim amendments begin on page 2.

Remarks begin on page 6.

REMARKS

The Applicant would like to thank the Examiner for his attention to this application.

The Examiner rejected claims 1, 2, 5, 11-16, 18, 19 and 22 under USC § 103 as being unpatentable over Lands, Kaplan, Hinckley and Moskin. The Examiner does not specify the patent number of Moskin and refers the applicant to the previous rejection. It is therefore assumed that Moskin referes to US Patent No. 4,425,488 to Moskin cited in the Office Action of July 21, 2009.

Reconsideration of the rejection based on the following comments is respectfully urged.

The Examiner concedes that Lands, Kaplan, and Hinckley fail to teach a "second directional input wherein the graphical element moves in a direction substantially corresponding to the axis of inclination in the axial selecting mode responsive to the second directional input signal". However, the Examiner suggests that Moskin discloses this feature, citing column 4, line 64, to column 5, line 27 of Moskin.

Moskin is directed at a "pistol grip" controller, including a directional input device, which consists of a plurality of stationary contacts and a moveable contact, all contained within a housing. This directional input device is the only directional input device disclosed by Moskin. Since Moskin's teachings are directed at a device having only one directional input device, it follows that Moskin fails to teach "a second directional input signal from the second directional input device" as claimed.

While the Examiner also suggests that Hinckley teaches a second directional input device, claim 1 actually recites a processor which is "operable to receive and process the directional input signal in conjunction with a second directional input signal **from the second directional input device**". [Emphasis added.] Therefore, whatever else Moskin teaches, it does not teach to "move a graphical element in a direction corresponding to the axis of inclination responsive to the second directional input signal" as claimed because

no "second directional input signal" can originate from a non-existent second directional input device.

The Examiner's position is that the directional contacts (99, 101, 103, 105) of Moskin correspond to the first and second directional input devices of claim 1. The applicant respectfully disagrees with the Examiner on this point.

In particular, claim 1 recites "an internally located directional input device providing a directional input signal, the directional input signal corresponding to an axis of inclination of the handheld computing device". Therefore, in the claimed system, the first directional input device provides an input signal which corresponds to the axis of inclination of the handheld device.

It is respectfully submitted that the arrangement of Moskin is equivalent to the first directional input device, as it also provides a signal which corresponds to the axis of inclination of the handheld device. In particular, Moskin states at column 5, lines 20-24:

> When a plurality of separate contacts are conductively coupled to the common contact 113, the closing of the plurality of contact circuits can be appropriately decoded or processed to indicate **direction of tilt**.
>
> [Emphasis added.]

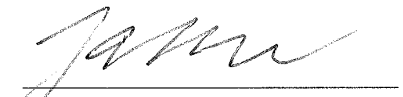
Therefore, Moskin teaches that if the moveable contact (113) touches more than one directional contact (99, 101, 103, 105) at a time, the axis of inclination can be approximated by averaging the directions corresponding to the directional contacts being touched.

However, the claimed system uses a second directional input device, which is independent from the first directional input device. In particular, according to the claimed system, the graphical element "moves in a direction substantially corresponding to the axis of inclination in the axial selecting mode **responsive to the second directional input signal**". [Emphasis added.] Therefore, in the claimed system, the graphical element does not move unless a second directional input signal is received from the second directional input device. Moreover, the movement of the graphical element is restricted to the axis of inclination as provided by the first directional input device.

In contrast, the only directional input signal in Moskin is that which corresponds to the device's axis of inclination. Therefore, Moskin fails to teach, as alleged by the Examiner, "a second directional input signal wherein the graphical element moves in a direction substantially corresponding to the axis of inclination in the axial selecting mode responsive to the second directional input signal." Accordingly, claims 1, 2, 5, 11-16, 18, 19 and 22 are submitted to be allowable over Lands, Kaplan, Hinckley and Moskin.

Based on the above submissions, reconsideration leading to allowance is respectfully urged.

Respectfully submitted,



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289979

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (previously presented) A handheld computing device, comprising:

a display;

an internally located directional input device providing a directional input signal, the directional input signal corresponding to an axis of inclination of the handheld computing device;

a second directional input device;

a processor coupled to the internally located directional input device and the second directional input device and operable to receive and process the directional input signal in conjunction with a second directional input signal from the second directional input device; and

a memory subsystem, the memory storing an operating system executed by the processor to display on the display a graphical user interface for controlling the operation of the handheld computing device, wherein the graphical user interface provides a graphical element;

wherein the operating system comprises processor-executable instructions that cause the graphical element to move in one of an axial constraining mode or an axial selecting mode, and wherein the graphical element moves in a direction substantially perpendicular to the axis of inclination in the axial constraining mode responsive to the second directional input signal, and moves in a direction substantially corresponding to the axis of inclination in the axial selecting mode responsive to the second directional input signal.

2. (previously presented) The handheld computing device of claim 1, wherein the internally-located directional input device comprises:

a primary contact positionally fixed in the handheld computing device;

at least one directional contact positionally fixed in the handheld computing device and operatively connected to the primary contact;

circuit closing means, movable on, and in electrical contact with, the primary contact, the circuit closing means moving in response to inclination of the handheld computing device in the direction of any one of the at least one directional contact, between a neutral position in which the primary contact and the any one of the at least one directional contact form an open circuit, and an active position in which the primary contact and the any one of the at least one directional contact form a closed circuit; and

a direction interpreter, operatively connected to the primary contact and the at least one directional contact, for generating the directional input signal.

3. (canceled)

4. (canceled)

5. (previously presented) The handheld computing device of claim 2, wherein the directional input signal is uniquely associated with the direction of the inclination.

6. (canceled)

7. (canceled)

8. (canceled)

9. (previously presented) The handheld computing device of claim 2, wherein each of the at least one directional contact are further connected to adjacent directional contacts to create a plurality of secondary open circuits, each of the plurality of secondary open

circuits closable by the circuit closing means in response to inclination of the handheld to a junction of adjacent directional contacts.

10. (original) The handheld computing device of claim 9, wherein the direction interpreter generates the directional input when one of the secondary open circuits is closed.

11. (original) The handheld computing device of claim 2, further including a base, electrically connected to the primary contact, for supporting the circuit closing means in response to movement between the neutral position and the active position.

12. (original) The handheld computing device of claim 11, wherein the base biases the circuit closing means to the neutral position.

13. (original) The handheld computing device of claim 2, wherein the circuit closing means is a ball bearing.

14. (original) The handheld computing device of claim 2, wherein the circuit closing means is a mercury contact.

15. (original)The handheld computing device of claim 1, wherein the graphical element changes position within the graphical user interface only in response to an inclination of the handheld computing device.

16. (original) The handheld computing device of claim 1, wherein the graphical element is a pointer.

17. (canceled)

18. (original) The handheld computing device of claim 1, wherein the processor is configured to detect movement patterns from the directional input signal and wherein the graphical element is further responsive to the detected movement patterns.

19. (original) The handheld computing device of claim 18, wherein the graphical element is configured to accelerate in response to a detected movement pattern.

20. (original) The handheld computing device of claim 18, wherein the graphical element is configured to perform a selection function in response to the detected movement pattern.

21. (original) The handheld computing device of claim 20, wherein the detected movement pattern is a flick of the wrist.

22. (previously presented) The handheld computing device of claim 1, wherein the second directional input device is selected from the group consisting of a button; a roller; a touch surface; and a thumbwheel.

Electronic Acknowledgement Receipt	
EFS ID:	7024272
Application Number:	11240501
International Application Number:	
Confirmation Number:	2624
Title of Invention:	Method of operating a handheld device for directional input
First Named Inventor/Applicant Name:	Marcelo Varanda
Customer Number:	89653
Filer:	Joseph Louis Ulvr
Filer Authorized By:	
Attorney Docket Number:	2173-264
Receipt Date:	17-FEB-2010
Filing Date:	03-OCT-2005
Time Stamp:	10:40:37
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		2173-264-Executed-Response-OA11JAN10.pdf	603068 28c1a8a0d91314ae4d58a37492e62c4b51c639f7	yes	8

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
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	Applicant Arguments/Remarks Made in an Amendment	2	8
Warnings:			
Information:			
	Total Files Size (in bytes):	603068	

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/06 (07-06)
Approved for use through 1/31/2007. 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 displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/240,501	10/03/2005	

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 01/02/2009

	(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 21	Minus	** 21	= 0	X $ =		OR	X $52=	0
Independent (37 CFR 1.16(h))	* 1	Minus	***3	= 0	X $ =		OR	X $220=	0
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

AMENDMENT 02/17/2010

	(Column 1)		(Column 2)	(Column 3)					
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 16	Minus	** 21	= 0	X $ =		OR	X $52 =	0
Independent (37 CFR 1.16(h))	* 1	Minus	*** 3	= 0	X $ =		OR	X $220 =	0
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

* 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.

Legal Instrument Examiner:
/DENISE HOPKINS/

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.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/240,501	10/03/2005	Marcelo Varanda	2173-264	2624

89653 7590 01/11/2010

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EXAMINER	
LEE JR, KENNETH B	

ART UNIT	PAPER NUMBER
2629	

MAIL DATE	DELIVERY MODE
01/11/2010	PAPER

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.

Office Action Summary	Application No.	Applicant(s)	
	11/240,501	VARANDA, MARCELO	
	Examiner	Art Unit	
	KENNETH B. LEE JR	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 October 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,5,9-16 and 18-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,5,9-16 and 18-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ 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:

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)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 2, 5, 11-16, 18, 19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lands, US Patent #6,201,554, in view of Kaplan, US Patent Application Publication #2002/0093483, and in further view of Hinckley et al., US Patent #7,289,102 (hereinafter "Hinckley"), and further in view of Moskin (see previous rejection).

Regarding claim 1, Lands discloses a hand-held data processing device (10), comprising a display (26); a processor (CPU 44) coupled to the display and the means for detecting directional input and operable to receive and process the directional input signal (fig. 2; Lands discloses a CPU that controls operations of the handheld device, column 4, lines 11-13; fig. 2); and a memory (45); the memory storing an operating system executed by the processor to display a graphical user interface for controlling the operation of the hand-held computing device (Lands discloses the CPU includes a memory that stores various applications and programs controlling the handheld device, column 4, lines 13-14; figs. 2, 3, 5, and 6).

Lands fails to disclose wherein the graphical user interface provides a graphical element responsive to the directional input signal processed by the processor and wherein the operating system comprises processor-executable instructions that cause

the graphical element to move in one of an axial constraining mode or an axial selecting mode, and wherein the graphical element moves in a direction substantially perpendicular to an axis of inclination in the axial constraining mode, and moves in a direction substantially corresponding to an axis of inclination in the axial selecting mode. Lands further fails to disclose **an internally located directional input device providing a directional input signal; a second directional input; and a processor coupled to the internally located directional input device and the second directional input and operable to receive and process the directional input signal in conjunction with a signal from the second directional input**.

Kaplan discloses a special orientation sensor within a hand-held electronic computing device for movement of a screen cursor (graphical element) in response to changes in the spatial orientation (inclination) of the computing device (0010-0012). (Fig. 1 of Kaplan discloses the electronic computing device in the form of a PDA. Kaplan also discloses the PDA includes accelerometers or tilt sensors, the processor responsive to the signals of the accelerometers converts those signals to cursor position signals (abstract; corresponds to graphical element moving in a direction substantially corresponding to an axis of inclination). Kaplan further discloses an internally located directional input device providing a directional input signal; a second directional input; and a processor coupled to the internally located directional input device and the second directional input and operable to receive and process the directional input signal in conjunction with a signal from the second directional input (Kaplan discloses a display control for hand-held devices that includes internally located orientation sensors (fig. 1.,

items 10 and 11), buttons (fig. 1., items 12, 13, 14) that read on applicant's second directional input, and a processor (fig. 5, item 17) that is coupled to the sensors as well as the buttons to process the directional input).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Kaplan to modify Lands.

The motivation for doing so would have been to provide a portable input device that is easily used with one-hand operation (Kaplan, 0003).

Therefore, it would have been obvious to combine Kaplan with Lands to obtain the invention as specified in claim 1.

Lands and Kaplan, in combination, fail to disclose a second directional input device.

Hinckley discloses an apparatus using multiple sensors in a device with a display that uses the tilting technology as well as directional input (figs. 10 and 11).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Hinckley to modify Lands and Kaplan.

The motivation for doing so would have been to provide a device that bases a display on the tilt angle (column 1, lines 55-60).

Therefore, it would have been obvious to combine Hinckley with Lands and Kaplan to obtain the invention as specified in claim 1.

Lands, Kaplan, and Hinckley fail to disclose a second directional input signal wherein the graphical element moves in a direction substantially corresponding to the

axis of inclination in the axial selecting mode responsive to the second directional input signal (Hinckley does, however, disclose a second directional input device).

Moskin discloses a second directional contact (contact 99, 103, or 105) and the direction interpreter generating a second directional input as claimed (col. 4, line 64 - col. 5, line 27).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Moskin to modify Lands, Kaplan, and Hinckley.

The motivation for doing so would have been to provide a multi-position tilt input device that is inexpensive and reliable.

Therefore, it would have been obvious to combine Moskin with Lands, Kaplan, and Hinckley to obtain the invention as specified in claim 1.

Regarding claim 2, Moskin discloses a multi-position tilt switch comprising a primary contact (base or 107 in figs. 8 and 9) positionally fixed in a portable device, at least one directional contact (contact 101, fig. 8) operatively connected to the primary contact, a circuit closing means (113) for movement in response to inclination of the portable device to form an open circuit or a closed circuit between the primary contact and the at least one directional contact, and a directional interpreter for generating the directional input when the closed circuit is formed (column 4, line 64 - column 5, line 27).

Regarding claim 5, Moskin discloses a second direction contact (99,103, or 105)) and the direction interpreter generating a second directional input as claimed (column 4, line 64 – column 5, line 27).

Regarding claims 11 and 12, figs. 8 and 9 of Moskin discloses the device including a base for supporting the circuit closing means (113) in response to movement between the neutral position and the active position and the base biases the circuit closing means to the neutral position (109).

Regarding claim 13, fig. 2 of Moskin discloses the circuit closing means is a ball bearing (39).

Regarding claim 14, fig. 8 of Moskin discloses the circuit closing means is a mercury contact (113).

Regarding claim 15 and 16, Kaplan discloses wherein the cursor (pointer) movement is only in response to the inclination of the hand-held computing device (0011).

Regarding claim 18, Kaplan discloses the processor is configured to detect movement patterns from the tilt or orientation signals and the cursor movement is responsive to the detected movement patterns (0017).

Regarding claim 19, Kaplan discloses wherein the cursor is configured to accelerate in response to a detected movement pattern (0018-0019).

Regarding claim 22, Kaplan discloses wherein the second directional input is a button (fig. 1).

3. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lands, Kaplan, Moskin, and Hinckley as applied to claims 6 and 9 above, and further in view of Amberny, US Patent #3,876,850.

Regarding claim 9, Lands, Kaplan, Moskin and Hinckley fail to disclose the circuit closing means having two adjacent directional contacts are operatively connected to close the open circuit in response to the inclination of the device.

Amberny discloses a mercury device comprising a plurality of radial contacts; two or three adjacent of the plurality of contacts are connected by the mercury to form a closed circuit (abstract; fig. 3).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Amberny to modify Lands, Kaplan, Moskin, and Hinckley.

The motivation for doing so would have been to enable complex switching to be carried out and to provide a correspondingly large number of switching states (column 1, lines 30-35).

Therefore, it would have been obvious to combine Amberny with Lands, Kaplan, Moskin, and Hinckley to obtain the invention as specified in claim 9.

Regarding claim 10, Lands and Moskin disclose the input device having direction interpreter means. Lands as modified by Moskin, Kaplan, Hinckley and Amberny would include the direction interpreter means for generating directional input for each active position of the circuit closing means as claimed.

4. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lands, Kaplan, Hinckley, and Moskin as applied to claim 1 above, and further in view of Bartlett, US Patent #6,573,883.

Regarding claim 20, Lands, Kaplan, Hinckley and Moskin fail to disclose wherein the graphical element is configured to accelerate in response to a detected movement pattern.

Bartlett discloses the graphical element is configured to perform a selection function in response to the detected movement pattern (column 3, lines 22-37).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Bartlett to modify Lands, Kaplan and Hinckley.

The motivation for doing so would have been to provide a computing device without the use of buttons for command input (column 2, lines 19-22).

Therefore, it would have been obvious to combine Bartlett with Lands, Kaplan, Hinckley, and Moskin to obtain the invention as specified in claim 20.

5. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lands, Kaplan, Hinckley, and Moskin as applied to claim 20 above, and further in view of Geshwind, US Patent #6,590,573.

Regarding claim 21, Lands, Kaplan, Hinckley and Moskin fail to disclose wherein the detected movement pattern is a flick of the wrist.

Geshwind discloses a “wrist flick" would be used to implement a number of useful functions (column 24, lines 51-53).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Geshwind to modify Lands, Kaplan, Hinckley and Moskin.

The motivation for doing so would have been to allow the user to manipulate the device options faster and easily (column 24, lines 55-60).

Therefore, it would have been obvious to combine Geshwind with Lands, Kaplan, Hinckley and Moskin to obtain the invention as specified in claim 21.

Response to Arguments

6. Applicant's arguments with respect to claims 1, 2, 5, 9-16, and 18-22 have been considered but are moot in view of the new ground(s) of rejection presented above.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENNETH B. LEE JR whose telephone number is (571)270-3147. The examiner can normally be reached on Mon. - Fri. 7:30AM - 4:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexander Eisen can be reached on 571-272-7687. 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.

/Kevin M Nguyen/
Primary Examiner, Art Unit 2629

Kenneth B. Lee Jr.
Examiner
Art Unit 2629

KBL

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11240501	VARANDA, MARCELO
	Examiner	**Art Unit**
	KENNETH B LEE JR	2629

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	08/28/2008	03/17/2009	07/16/2009	01/06/2010					
	1	✓	✓	✓	✓					
	2	✓	✓	✓	✓					
	3	✓	✓	✓	-					
	4	✓	✓	✓	-					
	5	✓	✓	✓	✓					
	6	✓	✓	✓	-					
	7	✓	✓	✓	-					
	8	✓	✓	✓	-					
	9	✓	✓	✓	✓					
	10	✓	✓	✓	✓					
	11	✓	✓	✓	✓					
	12	✓	✓	✓	✓					
	13	✓	✓	✓	✓					
	14	✓	✓	✓	✓					
	15	✓	✓	✓	✓					
	16	✓	✓	✓	✓					
	17	✓	-	-	-					
	18	✓	✓	✓	✓					
	19	✓	✓	✓	✓					
	20	✓	✓	✓	✓					
	21	✓	✓	✓	✓					
	22		✓	✓	✓					

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/240,501	10/03/2005	Marcelo Varanda	2173-264

CONFIRMATION NO. 2624

89653
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427 Laurier Avenue W.
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CANADA

POWER OF ATTORNEY NOTICE

OC000000038891235

Date Mailed: 11/24/2009

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 11/02/2009.

- 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).

/atesfai/

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

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/240,501	10/03/2005	Marcelo Varanda	2173-264

CONFIRMATION NO. 2624

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427 Laurier Avenue W.
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POA ACCEPTANCE LETTER

OC000000038891270

Date Mailed: 11/24/2009

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 11/02/2009.

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.

/atesfai/

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

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: RESEARCH IN MOTION LIMITED

Application No./Patent No.: 11240501 Filed/Issue Date: 10/03/2005

Titled: METHOD OF OPERATING A HANDHELD DEVICE FOR DIRECTIONAL INPUT

RESEARCH IN MOTION LIMITED , a CORPORATION

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.

states that it is:

1. ☒ 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. ☐ the 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 017611, Frame 0512, or for which a copy therefore is attached.

OR

B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. 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.

2. 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.

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).

☐ 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.

/JOSEPH L. ULVR/ 11/02/2009

Signature Date

Joseph L. Ulvr Agent of Record

Printed or Typed Name Title

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Electronic Acknowledgement Receipt

EFS ID:	6375023
Application Number:	11240501
International Application Number:	
Confirmation Number:	2624
Title of Invention:	Method of operating a handheld device for directional input
First Named Inventor/Applicant Name:	Marcelo Varanda
Customer Number:	89653
Filer:	Joseph Louis Ulvr
Filer Authorized By:	
Attorney Docket Number:	2173-264
Receipt Date:	02-NOV-2009
Filing Date:	03-OCT-2005
Time Stamp:	15:58:38
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(b).	264_sb0096.pdf	426842 b2c42b84611a5919684535 8af99a22782d51b7f1	no	2

Warnings:	
Information:	

2	Power of Attorney	RIM_Joint_POA.pdf	104355 1872bf2e64e5841ae3d5f49b86ea1da8b8892d05	no	1

Warnings:	
Information:	
Total Files Size (in bytes):	531197

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New International Application Filed with the USPTO as a Receiving Office
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PTO/SB/80 (11-08)
Approved for use through 11/30/2011. OMB 0651-0035
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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:

☑ Practitioners associated with the Customer Number: 89653

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:

☑ The address associated with Customer Number: 89653

OR

☐ Firm or Individual Name			
Address			
City		State	Zip
Country			
Telephone		Email	

Assignee Name and Address:

Research In Motion Limited
295 Phillip Street
Waterloo, Ontario, CANADA, N2L 3W8

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	[signature]	Date	9/16/09
Name	Brian Bidulka	Telephone	(519) 888-7465
Title	Chief Accounting Officer		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. 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 3 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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Electronic Acknowledgement Receipt	
EFS ID:	6304608
Application Number:	11240501
International Application Number:	
Confirmation Number:	2624
Title of Invention:	Method of operating a handheld device for directional input
First Named Inventor/Applicant Name:	Marcelo Varanda
Customer Number:	89653
Filer:	Joseph Louis Ulvr
Filer Authorized By:	
Attorney Docket Number:	2173-264
Receipt Date:	21-OCT-2009
Filing Date:	03-OCT-2005
Time Stamp:	16:28:33
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		2173-264_ExecutedResponse.pdf	3564893 881f03f013b0ca1ef5e817d20e4f0f2ebb94f37f	yes	8

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	5
	Applicant Arguments/Remarks Made in an Amendment	6	8
Warnings:			
Information:			
	Total Files Size (in bytes):	3564893	

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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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Marcelo VARANDA
Serial No.:	11/240,501
Filed:	October 3, 2005 (10/03/2005)
Title:	**METHOD OF OPERATING A HANDHELD DEVICE FOR DIRECTIONAL INPUT**
Art Unit:	2629
Examiner:	LEE JR., Kenneth B.
Docket No.:	2173-264

October 21, 2009

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO OFFICE ACTION

Dear Sir:

This is in response to the Official Action mailed July 21, 2009. Please amend the above captioned application, as follows.

Claim amendments begin on page 2.

Remarks begin on page 6.

REMARKS

The Applicant would like to thank the Examiner for his attention to this application.

The Examiner rejected claims 1, 15 16, 18, 19 and 22 under USC § 103 as being unpatentable over Lands, Kaplan, and Hinckley. In response, claim 1 has been amended to more clearly and patentably distinguish the present application from the prior art.

In particular, claim 1 has been amended to recite that the directional input signal corresponds to an axis of inclination of the handheld device. Support for this amendment is found at paragraph [0042] of the present description.

Claim 1 has been further amended to recite that the signal of the second directional input device is a second directional input signal. The applicant respectfully submits that this amendment does not modify the scope of claim 1, but that it improves the clarity and readability of claim 1.

Claim 1 has been further amended to recite that the graphical element is responsive to the axis of inclination and the second directional input signal. Support for this amendment is found at paragraphs [0045] to [0047] of the present description.

The Examiner suggests that that Hinckley overcomes the deficiencies of Lands and Kaplan regarding the limitation of claim 1 that the device includes two directional inputs. However, the applicant respectfully submits that even in combination, Lands, Kaplan and Hinckley fail to teach the limitation that "the operating system comprises processor-executable instructions that cause the graphical element to move in one of an axial constraining mode or an axial selecting mode, and wherein the graphical element moves in a direction substantially perpendicular to the axis of inclination in the axial constraining mode responsive to the second direction input signal, and moves in a direction substantially corresponding to the axis of inclination in the axial selecting mode responsive to the second directional input signal". In fact, neither Lands, Kaplan or Hinckley teach either the axial constraining mode or the axial selecting mode.

Specifically, the applicant notes that Lands is directed to a mobile device having means to detect the tilt of the device in relation to the direction of gravity, and which sets

various parameters in response to a mode selected by the user and the tilt of the device. In particular, Lands teaches that the user may select a mode for adjusting paging, volume control, brightness control and zooming, by pressing one of buttons 28, 30, 32 and 34. When the device is in one of these modes, tilting the device adjusts the parameter corresponding to the current mode.

The applicant further notes that Kaplan is directed to a mobile device having means to detect the tilt of the device, and where the tilt of the device moves a cursor as long as one of buttons 12, 13 and 14 is pressed.

The applicant also notes that Hinckley is directed to a mobile device having means to detect the tilt of the device, and where the tilt of the device is used to orient the display and the directional input 1106. As Hinckley teaches the use of the device's tilt in conjunction with a directional input, it is considered to be more relevant than Lands or Kaplan to the present application. However, for the following reasons, claim 1 is submitted to be allowable over Hinckley, either individually or in combination with Lands and Kaplan.

Claim 1 recites that in the axial constraining mode, the graphical element (or cursor) moves in a direction substantially perpendicular to the axis of inclination and that in the axial selecting mode, the graphical element moves in a direction substantially corresponding to the axis of inclination. Accordingly, a user may move the cursor to anywhere on the screen by inclining the device on an appropriate axis and a second directional input device having only one degree of freedom.

In contrast, the system according to Hinckley always necessitates that the second directional input device has two degrees of freedom. Specifically, in Figures 10 and 11 of Hinckley, the display of the device is shown as being either vertically oriented (Figure 10) or horizontally oriented (Figure 11). According to Hinckley, the second directional input 1106 is remapped to correspond to the orientation of the display.

However, the orientation of the device's display and the remapping of second directional input 1106 may only rotate by 90 degrees or multiples thereof, as per column 10, lines 9 to 27 of Hinckley. Therefore the device of Hinckley may not move the cursor anywhere on the screen with a second directional input having only one degree or

freedom, nor can it move the cursor in a direction which is neither vertical or horizontal. As such, Hinckley fails to teach either of the axial constraining mode or the axial selecting mode as recited in claim 1. Considering that Lands and Kaplan also fail to teach these modes, withdrawal of the objection is respectfully urged.

Similarly, dependent claims 2, 5, 9-16, and 18-22 are submitted to be allowable as neither Moskin, Amberny, Bartlett or Geshwind overcome the deficiencies of Lands, Kaplan and Hinckley discussed above, and withdrawal of the objection is respectfully urged.

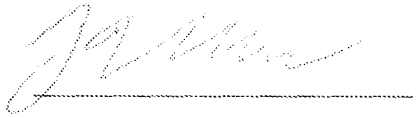
The applicant has also amended some of the dependent claims for greater clarity. In particular, claim 2 has been amended to recite "at least one directional contact" instead of "a directional contact". Claim 2 has been further amended to recite that the "circuit closing means mov[es] in response to inclination" instead of "for movement, in response to inclination". Claim 2 has also been amended to remove some redundant subject matter.

Claims 3, 4, 6, 7, and 8 have been cancelled.

Claims 5 and 9 have been amended for consistency with previous amendments.

Based on the above submissions and amendments, reconsideration leading to allowance is respectfully urged.

Respectfully submitted,



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"s"

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A handheld computing device, comprising:

a display;

an internally located directional input device providing a directional input signal, the directional input signal corresponding to an axis of inclination of the handheld computing device;

a second directional input device;

a processor coupled to the internally located directional input device and the second directional input device and operable to receive and process the directional input signal in conjunction with a second directional input signal from the second directional input device; and

a memory subsystem, the memory storing an operating system executed by the processor to display on the display a graphical user interface for controlling the operation of the handheld computing device, wherein the graphical user interface provides a graphical element ~~responsive to the directional input signal processed by the processor~~;

wherein the operating system comprises processor-executable instructions that cause the graphical element to move in one of an axial constraining mode or an axial selecting mode, and wherein the graphical element moves in a direction substantially perpendicular to ~~an~~ the axis of inclination in the axial constraining mode responsive to the second directional input signal, and moves in a direction substantially corresponding to ~~an~~ the axis of inclination in the axial selecting mode responsive to the second directional input signal.

2. (currently amended) The handheld computing device of claim 1, wherein the internally-located directional input device comprises:

a primary contact positionally fixed in the handheld computing device;

at least one directional contact positionally fixed in the handheld computing device and operatively connected to the primary contact;

circuit closing means, movable on, and in electrical contact with, the primary contact, ~~for movement,~~ the circuit closing means moving in response to inclination of the handheld computing device in the direction of ~~the~~ any one of the at least one directional contact, between a neutral position in which the primary contact and the any one of the at least one directional contact form an open circuit, and an active position in which the primary contact and the any one of the at least one directional contact form a closed circuit; and

a direction interpreter, operatively connected to the primary contact and the at least one directional contacts, for generating ~~a~~ the directional input signal ~~to processor for processing for the graphical user interface when the closed circuit is formed, the directional input signal causing the graphical element to change position within the graphical user interface~~.

3. (cancelled)

4. (cancelled)

5. (currently amended) The handheld computing device of claim 42, wherein the ~~generated second~~ directional input signal is uniquely associated with the direction of the inclination.

6. (cancelled)

7. (cancelled)

8. (cancelled)

9. (currently amended) The handheld computing device of claim ~~6~~2, wherein each of the at least one directional contacts are further connected to adjacent directional contacts to create a plurality of secondary open circuits, each of the plurality of secondary open circuits closable by the circuit closing means in response to inclination of the handheld to a junction of adjacent directional contacts.

10. (original) The handheld computing device of claim 9, wherein the direction interpreter generates the directional input when one of the secondary open circuits is closed.

11. (original) The handheld computing device of claim 2, further including a base, electrically connected to the primary contact, for supporting the circuit closing means in response to movement between the neutral position and the active position.

12. (original) The handheld computing device of claim 11, wherein the base biases the circuit closing means to the neutral position.

13. (original) The handheld computing device of claim 2, wherein the circuit closing means is a ball bearing.

14. (original) The handheld computing device of claim 2, wherein the circuit closing means is a mercury contact.

15. (original)The handheld computing device of claim 1, wherein the graphical element changes position within the graphical user interface only in response to an inclination of the handheld computing device.

16. (original) The handheld computing device of claim 1, wherein the graphical element is a pointer.

17. (cancelled)

18. (original) The handheld computing device of claim 1, wherein the processor is configured to detect movement patterns from the directional input signal and wherein the graphical element is further responsive to the detected movement patterns.

19. (original) The handheld computing device of claim 18, wherein the graphical element is configured to accelerate in response to a detected movement pattern.

20. (original) The handheld computing device of claim 18, wherein the graphical element is configured to perform a selection function in response to the detected movement pattern.

21. (original) The handheld computing device of claim 20, wherein the detected movement pattern is a flick of the wrist.

22. (previously presented) The handheld computing device of claim 1, wherein the second directional input device is selected from the group consisting of a button; a roller; a touch surface; and a thumbwheel.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. 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	Filing Date	☐ To be Mailed
11/240,501	10/03/2005	

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	10/21/2009	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 16	Minus	** 22	= 0	X $ =		OR	X $52=	0
	Independent (37 CFR 1.16(h))	* 1	Minus	***3	= 0	X $ =		OR	X $220=	0
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	RATE ($)	ADDITIONAL FEE ($)
	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))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L 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.

Legal Instrument Examiner:
/SHEILA CHAPMAN/

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APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	FILE WRAPPER LOCATION
11/240,501		2629	26L4

OC000000037282316

Correspondence Address/Fee Address Change

The following fields have been set to Customer Number 89653 on 08/06/2009

- **Correspondence Address**
- **Power of Attorney Address**

The address of record for Customer Number 89653 is:

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427 Laurier Avenue W.
Suite 1200
Ottawa, ON K1R 7Y2
CANADA

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11240501	VARANDA, MARCELO
	Examiner	Art Unit
	KENNETH B LEE JR	2629

SEARCHED			
Class	Subclass	Date	Examiner
345	156-158	7/2009	KBL

SEARCH NOTES		
Search Notes	Date	Examiner
US-PGPUB;USPAT;USOCR;EPO;JPO	7/2009	KBL

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L3	7565	(345/156,157,158).CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2009/07/15 23:25
L4	719	3 and (tilt)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2009/07/15 23:26
L5	13	4 and (directional adj input)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2009/07/15 23:26

7/16/2009 12:15:01 AM
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/240,501	10/03/2005	Marcelo Varanda	2173-264	2624

43563 7590 07/21/2009

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EXAMINER	
LEE JR, KENNETH B	
ART UNIT	PAPER NUMBER
2629	

MAIL DATE	DELIVERY MODE
07/21/2009	PAPER

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.

Office Action Summary	Application No.	Applicant(s)	
	11/240,501	VARANDA, MARCELO	
	Examiner	Art Unit	
	KENNETH B. LEE JR	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 June 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16 and 18-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16 and 18-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ 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:

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)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/25/2009 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 15, 16, 18, 19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lands, US Patent #6,201,554, in view of Kaplan, US Patent Application Publication #2002/0093483, and in further view of Hinckley et al., US Patent #7,289,102 (hereinafter "Hinckley").

Regarding claim 1, Lands discloses a hand-held data processing device (10), comprising a display (26); a processor (CPU 44) coupled to the display and the means for detecting directional input and operable to receive and process the directional input signal (fig. 2; Lands discloses a CPU that controls operations of the handheld device,

column 4, lines 11-13; fig. 2); and a memory (45); the memory storing an operating system executed by the processor to display a graphical user interface for controlling the operation of the hand-held computing device (Lands discloses the CPU includes a memory that stores various applications and programs controlling the handheld device, column 4, lines 13-14; figs. 2, 3, 5, and 6).

Lands fails to disclose wherein the graphical user interface provides a graphical element responsive to the directional input signal processed by the processor and wherein the operating system comprises processor-executable instructions that cause the graphical element to move in one of an axial constraining mode or an axial selecting mode, and wherein the graphical element moves in a direction substantially perpendicular to an axis of inclination in the axial constraining mode, and moves in a direction substantially corresponding to an axis of inclination in the axial selecting mode. Lands further fails to disclose **an internally located directional input device providing a directional input signal; a second directional input; and a processor coupled to the internally located directional input device and the second directional input and operable to receive and process the directional input signal in conjunction with a signal from the second directional input**.

Kaplan discloses a special orientation sensor within a hand-held electronic computing device for movement of a screen cursor (graphical element) in response to changes in the spatial orientation (inclination) of the computing device (0010-0012). (Fig. 1 of Kaplan discloses the electronic computing device in the form of a PDA. Kaplan also discloses the PDA includes accelerometers or tilt sensors, the processor

responsive to the signals of the accelerometers converts those signals to cursor position signals (abstract; corresponds to graphical element moving in a direction substantially corresponding to an axis of inclination). Kaplan further discloses an internally located directional input device providing a directional input signal; a second directional input; and a processor coupled to the internally located directional input device and the second directional input and operable to receive and process the directional input signal in conjunction with a signal from the second directional input (Kaplan discloses a display control for hand-held devices that includes internally located orientation sensors (fig. 1., items 10 and 11), buttons (fig. 1., items 12, 13, 14) that read on applicant's second directional input, and a processor (fig. 5, item 17) that is coupled to the sensors as well as the buttons to process the directional input).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Kaplan to modify Lands.

The motivation for doing so would have been to provide a portable input device that is easily used with one-hand operation (Kaplan, 0003).

Therefore, it would have been obvious to combine Kaplan with Lands to obtain the invention as specified in claim 1.

Lands and Kaplan, in combination, fail to disclose a second directional input device.

Hinckley discloses an apparatus using multiple sensors in a device with a display that uses the tilting technology as well as directional input (figs. 10 and 11).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Hinckley to modify Lands and Kaplan.

The motivation for doing so would have been to provide a device that bases a display on the tilt angle (column 1, lines 55-60).

Therefore, it would have been obvious to combine Hinckley with Lands and Kaplan to obtain the invention as specified in claim 1.

Regarding claim 15 and 16, Kaplan discloses wherein the cursor (pointer) movement is only in response to the inclination of the hand-held computing device (0011).

Regarding claim 18, Kaplan discloses the processor is configured to detect movement patterns from the tilt or orientation signals and the cursor movement is responsive to the detected movement patterns (0017).

Regarding claim 19, Kaplan discloses wherein the cursor is configured to accelerate in response to a detected movement pattern (0018-0019).

Regarding claim 22, Kaplan discloses wherein the second directional input is a button (fig. 1).

4. Claims 2-8 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lands in view of Kaplan and further in view of Hinckley as applied to claim 1 above, and further in view of Moskin et al., US Patent #4,425,488, hereinafter referred to as Moskin.

Regarding claim 2, Lands discloses an internally-located directional input device (tilt sensors, abstract; 0004). Figs. 3-5 of Lands also discloses the directional input

device having a direction interpreter for generating a directional input to the graphical user interface and causing the device option (control zooming, paging, brightness, or volume) to be selected through the graphical user interface.

Lands, Kaplan and Hinckley fail to disclose the directional input not having a primary contact, a directional contact, and a circuit closing means.

Moskin discloses a multi-position tilt switch comprising a primary contact (base or 107 in figs. 8 and 9) positionally fixed in a portable device, a directional contact (contact 101, fig. 8) operatively connected to the primary contact, a circuit closing means (113) for movement in response to inclination of the portable device to form an open circuit or a closed circuit between the primary contact and the directional contact, and a directional interpreter for generating the directional input when the closed circuit is formed (column 4, line 64 - column 5, line 27).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Moskin to modify Lands, Kaplan and Hinckley.

The motivation for doing so would have been to provide a multi-position input device that is inexpensive and reliable (Moskin, column 1, lines 35-36).

Therefore, it would have been obvious to combine Moskin with Lands, Kaplan and Hinckley to obtain the invention as specified in claim 2.

Regarding claim 3-5, Moskin discloses a second direction contact (99,103, or 105)) and the direction interpreter generating a second directional input as claimed (column 4, line 64 – column 5, line 27).

Regarding claims 6-8, Moskin discloses a plurality of direction contacts (99,101,103, and 105) and the direction interpreter generating a second directional input as claimed (column 4, line 64 - column 5, line 27).

Regarding claims 11 and 12, figs. 8 and 9 of Moskin discloses the device including a base for supporting the circuit closing means (113) in response to movement between the neutral position and the active position and the base biases the circuit closing means to the neutral position (109).

Regarding claim 13, fig. 2 of Moskin discloses the circuit closing means is a ball bearing (39).

Regarding claim 14, fig. 8 of Moskin discloses the circuit closing means is a mercury contact (113).

5. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lands, Kaplan, Moskin, and Hinckley as applied to claims 6 and 9 above, and further in view of Amberny, US Patent #3,876,850.

Regarding claim 9, Lands, Kaplan, Moskin and Hinckley fail to disclose the circuit closing means having two adjacent directional contacts are operatively connected to close the open circuit in response to the inclination of the device.

Amberny discloses a mercury device comprising a plurality of radial contacts; two or three adjacent of the plurality of contacts are connected by the mercury to form a closed circuit (abstract; fig. 3).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Amberny to modify Lands, Kaplan, Moskin, and Hinckley.

The motivation for doing so would have been to enable complex switching to be carried out and to provide a correspondingly large number of switching states (column 1, lines 30-35).

Therefore, it would have been obvious to combine Amberny with Lands, Kaplan, Moskin, and Hinckley to obtain the invention as specified in claim 9.

Regarding claim 10, Lands and Moskin disclose the input device having direction interpreter means. Lands as modified by Moskin, Kaplan, Hinckley and Amberny would include the direction interpreter means for generating directional input for each active position of the circuit closing means as claimed.

6. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lands Kaplan, and Hinckley as applied to claim 1 above, and further in view of Bartlett, US Patent #6,573,883.

Regarding claim 20, Lands, Kaplan and Hinckley fail to disclose wherein the graphical element is configured to accelerate in response to a detected movement pattern.

Bartlett discloses the graphical element is configured to perform a selection function in response to the detected movement pattern (column 3, lines 22-37).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Bartlett to modify Lands, Kaplan and Hinckley.

The motivation for doing so would have been to provide a computing device without the use of buttons for command input (column 2, lines 19-22).

Therefore, it would have been obvious to combine Bartlett with Lands, Kaplan and Hinckley to obtain the invention as specified in claim 20.

7. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lands, Kaplan and Hinckley as applied to claim 20 above, and further in view of Geshwind, US Patent #6,590,573.

Regarding claim 21, Lands, Kaplan, and Hinckley fail to disclose wherein the detected movement pattern is a flick of the wrist.

Geshwind discloses a “wrist flick" would be used to implement a number of useful functions (column 24, lines 51-53).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Geshwind to modify Lands, Kaplan and Hinckley.

The motivation for doing so would have been to allow the user to manipulate the device options faster and easily (column 24, lines 55-60).

Therefore, it would have been obvious to combine Geshwind with Lands, Kaplan and Hinckley to obtain the invention as specified in claim 21.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENNETH B. LEE JR whose telephone number is (571)270-3147. The examiner can normally be reached on Mon. - Fri. 7:30AM - 4:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexander Eisen can be reached on 571-272-7687. 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.

Kenneth B. Lee Jr.
Examiner
Art Unit 2629

KBL

/Alexander Eisen/
Supervisory Patent Examiner, Art Unit 2629

Notice of References Cited	Application/Control No. 11/240,501	Applicant(s)/Patent Under Reexamination VARANDA, MARCELO	
	Examiner KENNETH B. LEE JR	Art Unit 2629	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-7,289,102	10-2007	Hinckley et al.	345/156
	B	US-			
	C	US-			
	D	US-			
	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.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11240501	VARANDA, MARCELO
	Examiner	**Art Unit**
	KENNETH B LEE JR	2629

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	08/28/2008	03/17/2009	07/16/2009						
	1	✓	✓	✓						
	2	✓	✓	✓						
	3	✓	✓	✓						
	4	✓	✓	✓						
	5	✓	✓	✓						
	6	✓	✓	✓						
	7	✓	✓	✓						
	8	✓	✓	✓						
	9	✓	✓	✓						
	10	✓	✓	✓						
	11	✓	✓	✓						
	12	✓	✓	✓						
	13	✓	✓	✓						
	14	✓	✓	✓						
	15	✓	✓	✓						
	16	✓	✓	✓						
	17	✓	-	-						
	18	✓	✓	✓						
	19	✓	✓	✓						
	20	✓	✓	✓						
	21	✓	✓	✓						
	22		✓	✓						

REMARKS

The Applicant would like to thank the Examiner for his attention to this application.

Claims 1, 4, 5 and 22 have been amended to better distinguish between the "second directional input" introduced in claim 1 and the "second directional input" introduced in claim 4. Specifically, claim 1 now reads "second directional input device" and claim 4 reads "second directional input signal". The Applicant submits that this amendment does not change the scope of the claims and is therefore supported by the description.

Responsive to the rejection under 103, the Applicant submits that claim 1 is allowable over the cited references for the following reasons.

The Examiner suggests that Kaplan discloses buttons (fig. 1., items 12, 13, 14) that read on the second directional input of claim 1. The applicant respectfully submits that items 12, 13 and 14 of Kaplan are in fact inputs, but not directional inputs.

The applicant further submits that the term "directional input" is properly construed as an input which indicates a direction. Examples of directional inputs are recited in claim 22, and include a button, a roller, a touch surface, and a thumbwheel.

Importantly however, not every button is a directional input, although a button can be a directional input, such as for example arrow keys on a keyboard.

Items 12, 13 and 14 of Kaplan however, are not directional inputs. Rather, they are used to either enable or disable the directional input from the accelerometers 10 and 11. In particular, Kaplan states at paragraph [0010]:

> For example when a user of PDA 100 pushes button 13 the movement of cursor 120 is enabled. Releasing button 13 disables changes in the position of cursor 120. Correspondingly, when a user of PDA 100 pushes another button, for example button 14 (or a combination of buttons, such as buttons 13 and 14) the cursor is frozen and the display below is panned, and/or scrolled.

At paragraph [0019], Kaplan further states that:

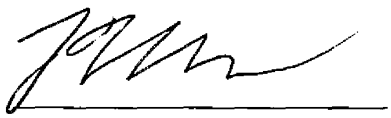
> For example, pressing button 13 lightly enables movement of cursor 120 with a low gain factor and, therefore, fine sensitivity, while pressing button 13 harder increases the gain factor and thus reduces sensitivity.

As per the above, the applicant respectfully submits that buttons 12, 13 and 14 of Kaplan are used to enable or disable the first directional input, enter panning/scrolling mode, and to determine the sensitivity of the movement of the cursor. Accordingly, they do not play a role in the direction of the cursor, and as such cannot be considered to be "directional input".

As Kaplan and Lands fail to teach the subject matter of claim 1, either individually or in combination, withdrawal of the objection is respectfully urged. As dependent claims 2 to 16 and 18 to 22 ultimately depend from claim 1, they are submitted to be allowable over Kaplan and Lands as well.

Moreover, as neither Moskin, Amberny, Bartlett or Geshwind overcome the deficiencies of Lands and Kaplan discussed above, claims 1 to 16 and 18 to 22 are submitted to be allowable and withdrawal of the objections leading to allowance is respectfully urged.

Respectfully submitted,



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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Marcelo VARANDA

Serial No.: 11/240,501

Filed: October 3, 2005 (10/03/2005)

Title: **METHOD OF OPERATING A HANDHELD DEVICE FOR DIRECTIONAL INPUT**

Art Unit: 2629

Examiner: LEE JR., Kenneth B.

Docket No.: 2173-264

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO OFFICE ACTION

Dear Sir:

A Request for Continued Examination, is being submitted herewith.

This is in response to the Official Action mailed April 1, 2009 and the Advisory Action mailed June 10, 2009. Please amend the above captioned application, as follows.

Claim amendments begin on page 2.

Remarks begin on page 7.

Electronic Patent Application Fee Transmittal	
Application Number:	11240501
Filing Date:	03-Oct-2005
Title of Invention:	Method of operating a handheld device for directional input
First Named Inventor/Applicant Name:	Marcelo Varanda
Filer:	Joseph Louis Ulvr
Attorney Docket Number:	2173-264
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($)
Miscellaneous:				
Request for continued examination	1801	1	810	810
		Total in USD ($)		**810**

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A handheld computing device, comprising:

a display;

an internally located directional input device providing a directional input signal;

a second directional input device;

a processor coupled to the internally located directional input device and the second directional input device and operable to receive and process the directional input signal in conjunction with a signal from the second directional input device; and

a memory subsystem, the memory storing an operating system executed by the processor to display on the display a graphical user interface for controlling the operation of the handheld computing device, wherein the graphical user interface provides a graphical element responsive to the directional input signal processed by the processor;

wherein the operating system comprises processor-executable instructions that cause the graphical element to move in one of an axial constraining mode or an axial selecting mode, and wherein the graphical element moves in a direction substantially perpendicular to an axis of inclination in the axial constraining mode, and moves in a direction substantially corresponding to an axis of inclination in the axial selecting mode.

2. (previously presented) The handheld computing device of claim 1, wherein the internally-located directional input device comprises:

a primary contact positionally fixed in the handheld computing device;

a directional contact positionally fixed in the handheld computing device and operatively connected to the primary contact;

circuit closing means, movable on, and in electrical contact with, the primary contact, for movement, in response to inclination of the handheld computing device in the direction of the directional contact, between a neutral position in which the primary contact and the directional contact form an open circuit, and an active position in which the primary contact and the directional contact form a closed circuit; and

a direction interpreter, operatively connected to the primary and directional contacts, for generating a directional input signal to processor for processing for the graphical user interface when the closed circuit is formed, the directional input signal causing the graphical element to change position within the graphical user interface.

3. (original) The handheld computing device of claim 2, wherein the directional input device further includes a second directional contact positionally fixed in the handheld computing device and operatively connected to the primary contact to form a second open circuit when the circuit closing means is in the neutral position, and wherein the second open circuit is closable by the circuit closing means in response to inclination of the handheld computing device in the direction of the second directional contact by movement of the circuit closing means to a second active position.

4. (currently amended) The handheld computing device of claim 3, wherein the direction interpreter generates a second directional input signal when the circuit closing means is in the second active position.

5. (currently amended) The handheld computing device of claim 4, wherein the generated second directional input signal is uniquely associated with the direction of the inclination.

6. (original) The handheld computing device of claim 2, further including a plurality of subsequent directional contacts, positionally fixed in the handheld, each subsequent directional contact connected to the primary contact to create a plurality of subsequent open circuits, each subsequent open circuit closable by the circuit closing means in response to an inclination of the handheld device in the direction of the associated subsequent directional contact by movement of the circuit closing means to a subsequent active position.

7. (original) The handheld computing device of claim 6, wherein the direction interpreter generates a directional input when the circuit closing means is in a subsequent active position.

8. (original) The handheld computing device of claim 7, wherein the generated directional input is uniquely associated with the direction of the inclination.

9. (original) The handheld computing device of claim 6, wherein each of the directional contacts are further connected to adjacent directional contacts to create a plurality of secondary open circuits, each of the plurality of secondary open circuits closable by the circuit closing means in response to inclination of the handheld to a junction of adjacent directional contacts.

10. (original) The handheld computing device of claim 9, wherein the direction interpreter generates the directional input when one of the secondary open circuits is closed.

11. (original) The handheld computing device of claim 2, further including a base, electrically connected to the primary contact, for supporting the circuit closing means in response to movement between the neutral position and the active position.

12. (original) The handheld computing device of claim 11, wherein the base biases the circuit closing means to the neutral position.

13. (original) The handheld computing device of claim 2, wherein the circuit closing means is a ball bearing.

14. (original) The handheld computing device of claim 2, wherein the circuit closing means is a mercury contact.

15. (original)The handheld computing device of claim 1, wherein the graphical element changes position within the graphical user interface only in response to an inclination of the handheld computing device.

16. (original) The handheld computing device of claim 1, wherein the graphical element is a pointer.

17. (cancelled)

18. (original) The handheld computing device of claim 1, wherein the processor is configured to detect movement patterns from the directional input signal and wherein the graphical element is further responsive to the detected movement patterns.

19. (original) The handheld computing device of claim 18, wherein the graphical element is configured to accelerate in response to a detected movement pattern.

20. (original) The handheld computing device of claim 18, wherein the graphical element is configured to perform a selection function in response to the detected movement pattern.

21. (original) The handheld computing device of claim 20, wherein the detected movement pattern is a flick of the wrist.

22. (currently amended) The handheld computing device of claim 1, wherein the second directional input device is selected from the group consisting of a button; a roller; a touch surface; and a thumbwheel.

Electronic Acknowledgement Receipt	
EFS ID:	5586177
Application Number:	11240501
International Application Number:	
Confirmation Number:	2624
Title of Invention:	Method of operating a handheld device for directional input
First Named Inventor/Applicant Name:	Marcelo Varanda
Customer Number:	43563
Filer:	Joseph Louis Ulvr
Filer Authorized By:	
Attorney Docket Number:	2173-264
Receipt Date:	25-JUN-2009
Filing Date:	03-OCT-2005
Time Stamp:	13:39:16
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$810
RAM confirmation Number	14432
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1		2173-264-US-Resp25Jun09-AA-10Jun09.pdf	189706 aac4583c00975049b907b43c7cb1b68bf00df4dd	yes	8
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Amendment Submitted/Entered with Filing of CPA/RCE		1	1	
	Claims		2	6	
	Applicant Arguments/Remarks Made in an Amendment		7	8	
Warnings:					
Information:					
2	Request for Continued Examination (RCE)	2173-264-US_sb0030e_fill.pdf	697740 a75fff622f32c5923573e2f050d0310ab0cfe480	no	3
Warnings:					
Information:					
3	Fee Worksheet (PTO-875)	fee-info.pdf	29731 ddf85990663e86ed9d0e81cfe060ccc20018b6c5	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	917177		

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.

Doc code: RCEX
Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (06-09)
Approved for use through 06/30/2009. OMB 0651-0031
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REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	11240501	Filing Date	2005-10-03	Docket Number (if applicable)	2173-264	Art Unit	2629
First Named Inventor	Marcelo Varanda			Examiner Name	LEE JR., KENNETH B.		

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 orde 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 _____

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

EFS - Web 2.1.13

PTO/SB/30EFS (06-09)
Approved for use through 06/30/2009. OMB 0651-0031
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Signature of Registered U.S. Patent Practitioner			
Signature	/JOSEPH L. ULVR/	Date (YYYY-MM-DD)	2006-06-25
Name	Joseph L. Ulvr	Registration Number	57696

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 t
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
estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Tim
will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions fo
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 informatio 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 ma 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/06 (07-06)
Approved for use through 1/31/2007. 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 displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
11/240,501	10/03/2005	

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	06/25/2009	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 21	Minus	** 22	= 0	X $ =		OR	X $52=	0
	Independent (37 CFR 1.16(h))	* 1	Minus	***3	= 0	X $ =		OR	X $220=	0
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	RATE ($)	ADDITIONAL FEE ($)
	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))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L 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.

Legal Instrument Examiner:
/KAREN VESTAL/

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 NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/240,501	10/03/2005	Marcelo Varanda	2173-264	2624

43563 7590 06/10/2009

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CANADA

EXAMINER	
LEE JR, KENNETH B	
ART UNIT	PAPER NUMBER
2629	

MAIL DATE	DELIVERY MODE
06/10/2009	PAPER

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.

PTOL-90A (Rev. 04/07)

Advisory Action Before the Filing of an Appeal Brief	Application No. 11/240,501	Applicant(s) VARANDA, MARCELO	
	Examiner KENNETH B. LEE JR	Art Unit 2629	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 28 May 2009 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:
   a) ☐ The period for reply expires _____months from the mailing date of the final rejection.
   b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

   Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   (a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);
   (b) ☐ They raise the issue of new matter (see NOTE below);
   (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☒ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
   The status of the claim(s) is (or will be) as follows:
   Claim(s) allowed: _____.
   Claim(s) objected to: _____.
   Claim(s) rejected: *1-16 and 18-22*.
   Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.
12. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____
13. ☐ Other: _____.

/Alexander Eisen/
Supervisory Patent Examiner, Art Unit 2629

Kenneth B. Lee Jr.
Examiner
Art Unit: 2629

Continuation of 11. does NOT place the application in condition for allowance because: Applicant raises new issues, such as a second directional input device which not reads on a separate device and not additional directional inputs, which would require further consideration and/or search.

REMARKS

The Applicant would like to thank the Examiner for his attention to this application.

Claims 1, 4, 5 and 22 have been amended to better distinguish between the "second directional input" introduced in claim 1 and the "second directional input" introduced in claim 4. Specifically, claim 1 now reads "second directional input device" and claim 4 reads "second directional input signal". The Applicant submits that this amendment does not change the scope of the claims and is therefore supported by the description.

Responsive to the rejection under 103, the Applicant submits that claim 1 is allowable over the cited references for the following reasons.

The Examiner suggests that Kaplan discloses buttons (fig. 1., items 12, 13, 14) that read on the second directional input of claim 1. The applicant respectfully submits that items 12, 13 and 14 of Kaplan are in fact inputs, but not directional inputs.

The applicant further submits that the term "directional input" is properly construed as an input which indicates a direction. Examples of directional inputs are recited in claim 22, and include a button, a roller, a touch surface, and a thumbwheel.

Importantly however, not every button is a directional input, although a button can be a directional input, such as for example arrow keys on a keyboard.

Items 12, 13 and 14 of Kaplan however, are not directional inputs. Rather, they are used to either enable or disable the directional input from the accelerometers 10 and 11. In particular, Kaplan states at paragraph [0010]:

> For example when a user of PDA 100 pushes button 13 the movement of cursor 120 is enabled. Releasing button 13 disables changes in the position of cursor 120. Correspondingly, when a user of PDA 100 pushes another button, for example button 14 (or a combination of buttons, such as buttons 13 and 14) the cursor is frozen and the display below is panned, and/or scrolled.

At paragraph [0019], Kaplan further states that:

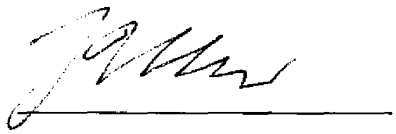
> For example, pressing button 13 lightly enables movement of cursor 120 with a low gain factor and, therefore, fine sensitivity, while pressing button 13 harder increases the gain factor and thus reduces sensitivity.

As per the above, the applicant respectfully submits that buttons 12, 13 and 14 of Kaplan are used to enable or disable the first directional input, enter panning/scrolling mode, and to determine the sensitivity of the movement of the cursor. Accordingly, they do not play a role in the direction of the cursor, and as such cannot be considered to be "directional input".

As Kaplan and Lands fail to teach the subject matter of claim 1, either individually or in combination, withdrawal of the objection is respectfully urged. As dependent claims 2 to 16 and 18 to 22 ultimately depend from claim 1, they are submitted to be allowable over Kaplan and Lands as well.

Moreover, as neither Moskin, Amberny, Bartlett or Geshwind overcome the deficiencies of Lands and Kaplan discussed above, claims 1 to 16 and 18 to 22 are submitted to be allowable and withdrawal of the objections leading to allowance is respectfully urged.

Respectfully submitted,



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(613) 232-7302

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Marcelo VARANDA
Serial No.:	11/240,501
Filed:	October 3, 2005 (10/03/2005)
Title:	**METHOD OF OPERATING A HANDHELD DEVICE FOR DIRECTIONAL INPUT**
Art Unit:	2629
Examiner:	LEE JR., Kenneth B.
Docket No.:	2173-264

May 26, 2009

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO OFFICE ACTION

Dear Sir:

This is in response to the Official Action mailed April 1, 2009. Please amend the above captioned application, as follows.

Claim amendments begin on page 2.

Remarks begin on page 7.

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A handheld computing device, comprising:

a display;

an internally located directional input device providing a directional input signal;

a second directional input device;

a processor coupled to the internally located directional input device and the second directional input device and operable to receive and process the directional input signal in conjunction with a signal from the second directional input device; and

a memory subsystem, the memory storing an operating system executed by the processor to display on the display a graphical user interface for controlling the operation of the handheld computing device, wherein the graphical user interface provides a graphical element responsive to the directional input signal processed by the processor;

wherein the operating system comprises processor-executable instructions that cause the graphical element to move in one of an axial constraining mode or an axial selecting mode, and wherein the graphical element moves in a direction substantially perpendicular to an axis of inclination in the axial constraining mode, and moves in a direction substantially corresponding to an axis of inclination in the axial selecting mode.

2. (previously presented) The handheld computing device of claim 1, wherein the internally-located directional input device comprises:

a primary contact positionally fixed in the handheld computing device;

a directional contact positionally fixed in the handheld computing device and operatively connected to the primary contact;

circuit closing means, movable on, and in electrical contact with, the primary contact, for movement, in response to inclination of the handheld computing device in the direction of the directional contact, between a neutral position in which the primary contact and the directional contact form an open circuit, and an active position in which the primary contact and the directional contact form a closed circuit; and

a direction interpreter, operatively connected to the primary and directional contacts, for generating a directional input signal to processor for processing for the graphical user interface when the closed circuit is formed, the directional input signal causing the graphical element to change position within the graphical user interface.

3. (original) The handheld computing device of claim 2, wherein the directional input device further includes a second directional contact positionally fixed in the handheld computing device and operatively connected to the primary contact to form a second open circuit when the circuit closing means is in the neutral position, and wherein the second open circuit is closable by the circuit closing means in response to inclination of the handheld computing device in the direction of the second directional contact by movement of the circuit closing means to a second active position.

4. (currently amended) The handheld computing device of claim 3, wherein the direction interpreter generates a second directional input signal when the circuit closing means is in the second active position.

5. (currently amended) The handheld computing device of claim 4, wherein the generated second directional input signal is uniquely associated with the direction of the inclination.

6. (original) The handheld computing device of claim 2, further including a plurality of subsequent directional contacts, positionally fixed in the handheld, each subsequent directional contact connected to the primary contact to create a plurality of subsequent open circuits, each subsequent open circuit closable by the circuit closing means in response to an inclination of the handheld device in the direction of the associated subsequent directional contact by movement of the circuit closing means to a subsequent active position.

7. (original) The handheld computing device of claim 6, wherein the direction interpreter generates a directional input when the circuit closing means is in a subsequent active position.

8. (original) The handheld computing device of claim 7, wherein the generated directional input is uniquely associated with the direction of the inclination.

9. (original) The handheld computing device of claim 6, wherein each of the directional contacts are further connected to adjacent directional contacts to create a plurality of secondary open circuits, each of the plurality of secondary open circuits closable by the circuit closing means in response to inclination of the handheld to a junction of adjacent directional contacts.

10. (original) The handheld computing device of claim 9, wherein the direction interpreter generates the directional input when one of the secondary open circuits is closed.

11. (original) The handheld computing device of claim 2, further including a base, electrically connected to the primary contact, for supporting the circuit closing means in response to movement between the neutral position and the active position.

12. (original) The handheld computing device of claim 11, wherein the base biases the circuit closing means to the neutral position.

13. (original) The handheld computing device of claim 2, wherein the circuit closing means is a ball bearing.

14. (original) The handheld computing device of claim 2, wherein the circuit closing means is a mercury contact.

15. (original)The handheld computing device of claim 1, wherein the graphical element changes position within the graphical user interface only in response to an inclination of the handheld computing device.

16. (original) The handheld computing device of claim 1, wherein the graphical element is a pointer.

17. (cancelled)

18. (original) The handheld computing device of claim 1, wherein the processor is configured to detect movement patterns from the directional input signal and wherein the graphical element is further responsive to the detected movement patterns.

19. (original) The handheld computing device of claim 18, wherein the graphical element is configured to accelerate in response to a detected movement pattern.

20. (original) The handheld computing device of claim 18, wherein the graphical element is configured to perform a selection function in response to the detected movement pattern.

21. (original) The handheld computing device of claim 20, wherein the detected movement pattern is a flick of the wrist.

22. (currently amended) The handheld computing device of claim 1, wherein the second directional input device is selected from the group consisting of a button; a roller; a touch surface; and a thumbwheel.

Electronic Acknowledgement Receipt

EFS ID:	5414008
Application Number:	11240501
International Application Number:	
Confirmation Number:	2624
Title of Invention:	Method of operating a handheld device for directional input
First Named Inventor/Applicant Name:	Marcelo Varanda
Customer Number:	43563
Filer:	Joseph Louis Ulvr
Filer Authorized By:	
Attorney Docket Number:	2173-264
Receipt Date:	28-MAY-2009
Filing Date:	03-OCT-2005
Time Stamp:	15:48:42
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		2173-264-US-Resp26May09-FOA-01Apr09.pdf	185639 69b0114f51958b88297838d26a5b164d05adb462	yes	8

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment After Final	1	1
	Claims	2	6
	Applicant Arguments/Remarks Made in an Amendment	7	8
Warnings:			
Information:			
	Total Files Size (in bytes):	185639	

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/06 (07-06)
Approved for use through 1/31/2007. 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 11/240,501	Filing Date 10/03/2005	☒ To be Mailed

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

		(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
	05/28/2009	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
AMENDMENT	Total (37 CFR 1.16(i))	* 21	Minus	** 21	= 0	X $ =		OR	X $52=	0
	Independent (37 CFR 1.16(h))	* 1	Minus	***3	= 0	X $ =		OR	X $220=	0
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	**0**

		(Column 1)		(Column 2)	(Column 3)					
		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
AMENDMENT	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))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L 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.

Legal Instrument Examiner:
/NICHELE PETERSON/

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.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11240501	VARANDA, MARCELO
	Examiner	**Art Unit**
	KENNETH B LEE JR	2629

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	08/28/2008	03/17/2009							
	1	✓	✓							
	2	✓	✓							
	3	✓	✓							
	4	✓	✓							
	5	✓	✓							
	6	✓	✓							
	7	✓	✓							
	8	✓	✓							
	9	✓	✓							
	10	✓	✓							
	11	✓	✓							
	12	✓	✓							
	13	✓	✓							
	14	✓	✓							
	15	✓	✓							
	16	✓	✓							
	17	✓	-							
	18	✓	✓							
	19	✓	✓							
	20	✓	✓							
	21	✓	✓							
	22		✓							

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.
11/240,501	10/03/2005	Marcelo Varanda	2173-264	2624

43563 7590 04/01/2009

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427 LAURIER AVEUE W., SUITE 1200
OTTAWA, ON K1R 7Y2
CANADA

EXAMINER	
LEE JR, KENNETH B	
ART UNIT	PAPER NUMBER
2629	

MAIL DATE	DELIVERY MODE
04/01/2009	PAPER

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.

PTOL-90A (Rev. 04/07)

Office Action Summary	Application No.	Applicant(s)	
	11/240,501	VARANDA, MARCELO	
	Examiner	Art Unit	
	KENNETH B. LEE JR	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 January 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16 and 18-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16 and 18-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ 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:

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)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 15, 16, 18, 19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lands, US Patent #6,201,554, in view of Kaplan, US Patent Application Publication #2002/0093483.

Regarding claim 1, Lands discloses a hand-held data processing device (10), comprising a display (26); a processor (CPU 44) coupled to the display and the means for detecting directional input and operable to receive and process the directional input signal (fig. 2); and a memory (45), the memory storing an operating system executed by the processor to display a graphical user interface for controlling the operation of the hand-held computing device (figs. 3, 5, and 6; column 4, lines 9-15).

Lands fails to disclose wherein the graphical user interface provides a graphical element responsive to the directional input signal processed by the processor and wherein the operating system comprises processor-executable instructions that cause the graphical element to move in one of an axial constraining mode or an axial selecting mode, and wherein the graphical element moves in a direction substantially perpendicular to an axis of inclination in the axial constraining mode, and moves in a direction substantially corresponding to an axis of inclination in the axial selecting mode.

Lands further fails to disclose **an internally located directional input device providing a directional input signal; a second directional input; and a processor coupled to the internally located directional input device and the second directional input and operable to receive and process the directional input signal in conjunction with a signal from the second directional input**.

Kaplan discloses a special orientation sensor within a hand-held electronic computing device for movement of a screen cursor (graphical element) in response to changes in the spatial orientation (inclination) of the computing device (0010-0012). Fig. 1 of Kaplan discloses the electronic computing device in the form of a PDA. Kaplan also discloses the PDA includes accelerometers or tilt sensors, the processor responsive to the signals of the accelerometers converts those signals to cursor position signals (abstract; corresponds to graphical element moving in a direction substantially corresponding to an axis of inclination). Kaplan further discloses an internally located directional input device providing a directional input signal; a second directional input; and a processor coupled to the internally located directional input device and the second directional input and operable to receive and process the directional input signal in conjunction with a signal from the second directional input (Kaplan discloses a display control for hand-held devices that includes internally located orientation sensors (fig. 1., items 10 and 11), buttons (fig. 1., items 12, 13, 14) that read on applicant's second directional input, and a processor (fig. 5, item 17) that is coupled to the sensors as well as the buttons to process the directional input).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Kaplan to modify Lands.

The motivation for doing so would have been to provide a portable input device that is easily used with one-hand operation (Kaplan, 0003).

Therefore, it would have been obvious to combine Kaplan with Lands to obtain the invention as specified in claim 1.

Regarding claim 15 and 16, Kaplan discloses wherein the cursor (pointer) movement is only in response to the inclination of the hand-held computing device (0011).

Regarding claim 18, Kaplan discloses the processor is configured to detect movement patterns from the tilt or orientation signals and the cursor movement is responsive to the detected movement patterns (0017).

Regarding claim 19, Kaplan discloses wherein the cursor is configured to accelerate in response to a detected movement pattern (0018-0019).

Regarding claim 22, Kaplan discloses wherein the second directional input is a button (fig. 1).

3. Claims 2-8 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lands in view of Kaplan as applied to claim 1 above, and further in view of Moskin et al., US Patent #4,425,488, hereinafter referred to as Moskin.

Regarding claim 2, Lands discloses an internally-located directional input device (tilt sensors, abstract; 0004). Figs. 3-5 of Lands also discloses the directional input device having a direction interpreter for generating a directional input to the graphical

user interface and causing the device option (control zooming, paging, brightness, or volume) to be selected through the graphical user interface.

Lands and Kaplan fail to disclose the directional input not having a primary contact, a directional contact, and a circuit closing means.

Moskin discloses a multi-position tilt switch comprising a primary contact (base or 107 in figs. 8 and 9) positionally fixed in a portable device, a directional contact (contact 101, fig. 8) operatively connected to the primary contact, a circuit closing means (113) for movement in response to inclination of the portable device to form an open circuit or a closed circuit between the primary contact and the directional contact, and a directional interpreter for generating the directional input when the closed circuit is formed (column 4, line 64 - column 5, line 27).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Moskin to modify Lands and Kaplan.

The motivation for doing so would have been to provide a multi-position input device that is inexpensive and reliable (Moskin, column 1, lines 35-36).

Therefore, it would have been obvious to combine Moskin with Lands and Kaplan to obtain the invention as specified in claim 2.

Regarding claim 3-5, Moskin discloses a second direction contact (99,103, or 105)) and the direction interpreter generating a second directional input as claimed (column 4, line 64 – column 5, line 27).

Regarding claims 6-8, Moskin discloses a plurality of direction contacts (99,101,103, and 105) and the direction interpreter generating a second directional input as claimed (column 4, line 64 - column 5, line 27).

Regarding claims 11 and 12, figs. 8 and 9 of Moskin discloses the device including a base for supporting the circuit closing means (113) in response to movement between the neutral position and the active position and the base biases the circuit closing means to the neutral position (109).

Regarding claim 13, fig. 2 of Moskin discloses the circuit closing means is a ball bearing (39).

Regarding claim 14, fig. 8 of Moskin discloses the circuit closing means is a mercury contact (113).

4. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lands, Kaplan, and Moskin as applied to claims 6 and 9 above, and further in view of Amberny, US Patent #3,876,850.

Regarding claim 9, Lands, Kaplan, and Moskin fail to disclose the circuit closing means having two adjacent directional contacts are operatively connected to close the open circuit in response to the inclination of the device.

Amberny discloses a mercury device comprising a plurality of radial contacts; two or three adjacent of the plurality of contacts are connected by the mercury to form a closed circuit (abstract; fig. 3).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Amberny to modify Lands, Kaplan, and Moskin.

The motivation for doing so would have been to enable complex switching to be carried out and to provide a correspondingly large number of switching states (column 1, lines 30-35).

Therefore, it would have been obvious to combine Amberny with Lands, Kaplan, and Moskin to obtain the invention as specified in claim 9.

Regarding claim 10, Lands and Moskin disclose the input device having direction interpreter means. Lands as modified by Moskin, Kaplan, and Amberny would include the direction interpreter means for generating directional input for each active position of the circuit closing means as claimed.

5. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lands and Kaplan as applied to claim 1 above, and further in view of Bartlett, US Patent #6,573,883.

Regarding claim 20, Lands and Kaplan fail to disclose wherein the graphical element is configured to accelerate in response to a detected movement pattern.

Bartlett discloses the graphical element is configured to perform a selection function in response to the detected movement pattern (column 3, lines 22-37).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Bartlett to modify Lands and Kaplan.

The motivation for doing so would have been to provide a computing device without the use of buttons for command input (column 2, lines 19-22).

Therefore, it would have been obvious to combine Bartlett with Lands and Kaplan to obtain the invention as specified in claim 20.

6. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lands and Kaplan as applied to claim 20 above, and further in view of Geshwind, US Patent #6,590,573.

Regarding claim 21, Lands and Kaplan fail to disclose wherein the detected movement pattern is a flick of the wrist.

Geshwind discloses a “wrist flick" would be used to implement a number of useful functions (column 24, lines 51-53).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Geshwind to modify Lands and Kaplan.

The motivation for doing so would have been to allow the user to manipulate the device options faster and easily (column 24, lines 55-60).

Therefore, it would have been obvious to combine Geshwind with Lands and Kaplan to obtain the invention as specified in claim 21.

Response to Arguments

7. Applicant's arguments filed 01/02/2009 have been fully considered but they are not persuasive. Applicant argues that the prior art fails to disclose a handheld device that includes an internally located directional input device that is used in conjunction

with a signal from the second directional input. Examiner, respectfully, disagrees and addresses this limitation in the action above.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENNETH B. LEE JR whose telephone number is (571)270-3147. The examiner can normally be reached on Mon. - Fri. 7:30AM - 4:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 571-272-7681. 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.

/Bipin Shalwala/
Supervisory Patent Examiner, Art Unit 2629

Kenneth B. Lee Jr.
Examiner
Art Unit 2629

KBL

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A handheld computing device, comprising:

a display;

~~means for detecting directional input and providing a directional input signal indicative of the detected directional input, the means for detecting directional input located within the handheld computing device~~an internally located directional input device providing a directional input signal;

a second directional input;

a processor coupled to the ~~display and the means for detecting~~ internally located directional input device and the second directional input and operable to receive and process the directional input signal in conjunction with a signal from the second directional input; and

a memory subsystem, the memory storing an operating system executed by the processor to display on the display a graphical user interface for controlling the operation of the handheld computing device, wherein the graphical user interface provides a graphical element responsive to the directional input signal processed by the processor;

wherein the operating system comprises processor-executable instructions that cause the graphical element to move in one of an axial constraining mode or

an axial selecting mode, and wherein the graphical element moves in a direction substantially perpendicular to an axis of inclination in the axial constraining mode, and moves in a direction substantially corresponding to an axis of inclination in the axial selecting mode.

2. (currently amended) The handheld computing device of claim 1, wherein the ~~means for detecting directional input comprises~~:

~~an~~ internally-located directional input device ~~comprising~~comprises:

a primary contact positionally fixed in the handheld computing device;

a directional contact positionally fixed in the handheld computing device and operatively connected to the primary contact;

circuit closing means, movable on, and in electrical contact with, the primary contact, for movement, in response to inclination of the handheld computing device in the direction of the directional contact, between a neutral position in which the primary contact and the directional contact form an open circuit, and an active position in which the primary contact and the directional contact form a closed circuit; and

a direction interpreter, operatively connected to the primary and directional contacts, for generating a directional input signal to processor for processing for the graphical user interface when the closed circuit is formed, the directional input signal causing the graphical element to change position within the graphical user interface.

3. (original) The handheld computing device of claim 2, wherein the directional input device further includes a second directional contact positionally fixed in the handheld computing device and operatively connected to the primary contact to

form a second open circuit when the circuit closing means is in the neutral position, and wherein the second open circuit is closable by the circuit closing means in response to inclination of the handheld computing device in the direction of the second directional contact by movement of the circuit closing means to a second active position.

4. (original) The handheld computing device of claim 3, wherein the direction interpreter generates a second directional input when the circuit closing means is in the second active position.

5. (original) The handheld computing device of claim 4, wherein the generated second directional input is uniquely associated with the direction of the inclination.

6. (original) The handheld computing device of claim 2, further including a plurality of subsequent directional contacts, positionally fixed in the handheld, each subsequent directional contact connected to the primary contact to create a plurality of subsequent open circuits, each subsequent open circuit closable by the circuit closing means in response to an inclination of the handheld device in the direction of the associated subsequent directional contact by movement of the circuit closing means to a subsequent active position.

7. (original) The handheld computing device of claim 6, wherein the direction interpreter generates a directional input when the circuit closing means is in a subsequent active position.

8. (original) The handheld computing device of claim 7, wherein the generated directional input is uniquely associated with the direction of the inclination.

9. (original) The handheld computing device of claim 6, wherein each of the directional contacts are further connected to adjacent directional contacts to create a plurality of secondary open circuits, each of the plurality of secondary open circuits closable by the circuit closing means in response to inclination of the handheld to a junction of adjacent directional contacts.

10. (original) The handheld computing device of claim 9, wherein the direction interpreter generates the directional input when one of the secondary open circuits is closed.

11. (original) The handheld computing device of claim 2, further including a base, electrically connected to the primary contact, for supporting the circuit closing means in response to movement between the neutral position and the active position.

12. (original) The handheld computing device of claim 11, wherein the base biases the circuit closing means to the neutral position.

13. (original) The handheld computing device of claim 2, wherein the circuit closing means is a ball bearing.

14. (original) The handheld computing device of claim 2, wherein the circuit

closing means is a mercury contact.

15. (original)The handheld computing device of claim 1, wherein the graphical element changes position within the graphical user interface only in response to an inclination of the handheld computing device.

16. (original) The handheld computing device of claim 1, wherein the graphical element is a pointer.

17. (cancelled)

18. (original) The handheld computing device of claim 1, wherein the processor is configured to detect movement patterns from the directional input signal and wherein the graphical element is further responsive to the detected movement patterns.

19. (original) The handheld computing device of claim 18, wherein the graphical element is configured to accelerate in response to a detected movement pattern.

20. (original) The handheld computing device of claim 18, wherein the graphical element is configured to perform a selection function in response to the detected movement pattern.

21. (original) The handheld computing device of claim 20, wherein the detected movement pattern is a flick of the wrist.

22. (new) The handheld computing device of claim 1, wherein the second directional input is selected from the group consisting of a button; a roller; a touch surface; and a thumbwheel.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Marcelo VARANDA
Serial No.	:	11/240,501
Filed	:	October 3, 2005 (10/03/2005)
Title	:	**METHOD OF OPERATING A HANDHELD DEVICE FOR DIRECTIONAL INPUT**
Art Unit	:	2629
Examiner	:	LEE JR., Kenneth B.
Docket No.	:	2173-264

January 2, 2009

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO OFFICE ACTION

Dear Sir:

This is in response to the Official Action mailed September 2, 2008 , please amend the above captioned application, as follows.

Claim amendments begin on page 2.

Remarks begin on page 8.

REMARKS

The Applicant would like to thank the Examiner for his attention to this application.

Responsive to the rejections under 35 U.S.C. 112 the Applicant has cancelled claim 17.

With regard to claims 20 and 21, the Applicant respectfully submits that, in paragraph 42 of the Specification as filed, the Specification reads

> In the fourth step, events are generated by the further processing of the signal, such as by detecting patterns of the signal which correspond to patterns of the physical parameters of the sensors can be as complex or as simple as required. For instance as accelerated directional input, to as simple as a simple click caused by the flick of the wrist, as defined by processing steps.

The Applicant therefore submits that there is support in the Specification for the elements of claims 20 and 21 and reconsideration is therefore respectfully urged.

Rejection under 103

Responsive to the rejection under 103, the Applicant submits herewith amended claim 1. For the reasons submitted below, the Applicant submits that the claim now overcomes the cited references.

Claim 1 has been amended to include the limitation that the handheld device include an internally located directional input device providing a directional input signal along with a second directional input. The processor of the claim is now required to process the directional input signal in conjunction with a signal from the second directional input.

Support for the amendment is found in paragraph 45 of the application as filed. In particular, paragraph 45 states "orientation is used in conjunction with other forms of directional input such as that provided by buttons, a roller, a touch surface or any other sensor capable of providing directional input, on a handheld device. For instance, a thumb wheel can be used to signal a degree of displacement in conjunction with the orientation sensed in the first step 30".

The Applicant respectfully submits that none of the cited references disclose the use of a directional input along with a signal from a second directional input where the two directional inputs are used in conjunction with each other.

In particular, US Patent Number 6,201,554 to Lands and US Patent Application Number 2002/0093483 to Kaplan both describe handheld electronic

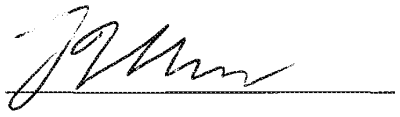
devices with an orientation sensor used to monitor parameters, and in the case of Kaplan, to move a cursor.

US Patent Number 4,425, 488 to Moskin teaches a sensor using a ball 39 to make contact with various electrical contacts throughout the sensor.

US Patent Number 3,876,850 to Amberny describes a switch comprising a housing into which a plurality of contacts extend, and where a drop of mercury moves freely based on the inclination of the switch. As the switch is inclined in one direction or another, the drop of mercury touches different contacts and completes a circuit between the contacts.

None of the references, however, teach the use of multiple directional sensors in conjunction with each other as now required by claim 1 and is supported by paragraph 45 of the specification as filed. Based on this, the Applicant submits that the references cited cannot make the present invention obvious and reconsideration is respectfully urged.

Respectfully submitted,



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(613) 232-7302

Attorney for Applicant
JLU:cd

Electronic Acknowledgement Receipt	
EFS ID:	4548547
Application Number:	11240501
International Application Number:	
Confirmation Number:	2624
Title of Invention:	Method of operating a handheld device for directional input
First Named Inventor/Applicant Name:	Marcelo Varanda
Customer Number:	43563
Filer:	Joseph Louis Ulvr
Filer Authorized By:	
Attorney Docket Number:	2173-264
Receipt Date:	02-JAN-2009
Filing Date:	03-OCT-2005
Time Stamp:	15:10:24
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$130
RAM confirmation Number	186
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1		January2ResponsetoOA.pdf	349664 3fbc9dae210ca6bb2b72f1d502d04140c5bf662e	yes	11

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	7
	Applicant Arguments/Remarks Made in an Amendment	8	11

Warnings:

Information:

2	Fee Worksheet (PTO-06)	fee-info.pdf	29473 737a95ed228958d23ea1b647e42df1c66795d934	no	2

Warnings:

Information:

Total Files Size (in bytes):	379137

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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.

Electronic Patent Application Fee Transmittal

Application Number:	11240501
Filing Date:	03-Oct-2005
Title of Invention:	Method of operating a handheld device for directional input
First Named Inventor/Applicant Name:	Marcelo Varanda
Filer:	Joseph Louis Ulvr
Attorney Docket Number:	2173-264

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:				
Extension - 1 month with $0 paid	1251	1	130	130

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**130**

PTO/SB/08a (08-03)
Approved for use through 07/31/2006. OMB 0651-0031
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99**)		
	Application Number	11378364
	Filing Date	2006-03-20
	First Named Inventor	EMERY, Jeffrey et al
	Art Unit	2618
	Examiner Name	
	Attorney Docket Number	2173-319

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
/KBL/	1	5224151		1993-06-29	BOWEN, Donald J. et al	
/KBL/	2	5712911		1998-01-27	HER, Ju-Won	
/KBL/	3	6411828		2002-06-25	LANDS, Robert Michael et al	
/KBL/	4	6453041		2002-09-17	ERYLIMAZ, Erol	
/KBL/	5	6587553		2003-07-01	SHAFFER, Shmuel et al	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	11378364
	Filing Date	2006-03-20
	First Named Inventor	EMERY, Jeffrey et al
	Art Unit	2618
	Examiner Name	
	Attorney Docket Number	2173-319

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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	1		☐

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EXAMINER SIGNATURE

Examiner Signature	/Kenneth B Lee Jr/	Date Considered	08/28/2008

*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.

Notice of References Cited	Application/Control No. 11/240,501	Applicant(s)/Patent Under Reexamination VARANDA, MARCELO	
	Examiner KENNETH B. LEE JR	Art Unit 2629	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,201,554	03-2001	Lands, Robert M.	345/169
*	B	US-2002/0093483	07-2002	Kaplan, Alan Edward	345/158
*	C	US-4,425,488	01-1984	Moskin et al.	200/220
*	D	US-3,876,850	04-1975	Amberny, Phillippe Paul	200/220
*	E	US-6,573,883	06-2003	Bartlett, Joel F.	345/156
*	F	US-6,590,573	07-2003	Geshwind, David Michael	345/419
	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)
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	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.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11240501	VARANDA, MARCELO
	Examiner	Art Unit
	KENNETH B LEE JR	2629

SEARCHED			
Class	Subclass	Date	Examiner
345	156-158	08/2008	KBL

SEARCH NOTES		
Search Notes	Date	Examiner
US-PGPUB;USPAT;USOCR;EPO;JPO	08/2008	KBL

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/240,501	10/03/2005	Marcelo Varanda	2173-264	2624

43563 7590 09/02/2008

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EXAMINER	
LEE JR, KENNETH B	
ART UNIT	PAPER NUMBER
2629	

MAIL DATE	DELIVERY MODE
09/02/2008	PAPER

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.

PTOL-90A (Rev. 04/07)

Office Action Summary	Application No.	Applicant(s)	
	11/240,501	VARANDA, MARCELO	
	Examiner	Art Unit	
	KENNETH B. LEE JR	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 December 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ 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:

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)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 17, 20, and 21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification does not provide written support for "the graphical element is a menu bar selection" as is now claimed in claim 17.

The specification also does not provide written support for "the graphical element is configured to perform a selection function in response to the detected movement pattern" and "the detected movement pattern is a flick of the wrist" as is now claimed in claims 40 and 41.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 15, 16, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lands, US Patent #6,201,554, in view of Kaplan, US Patent Application Publication #2002/0093483.

Regarding claim 1, Lands discloses a hand-held data processing device (10), comprising a display (26); tilt sensors attached to the housing of the hand-held device 10, the sensors are preferably gravitational accelerometers which respond to an angle of tilt of the hand-held device 10, the level, or rate of adjustment to the particular parameter proportional to the change in tilt of the hand-held device from the reference tilt as sensed by the sensors (e.g. in a selected mode such as volume control mode as shown in fig. 5, the volume level is changed only in response to the tilt angles of the hand-held device; this corresponds to means for detecting directional input and providing a directional input signal indicative of the detected input, the means for detecting directional input located within the hand-held computing device); a processor (CPU 44) coupled to the display and the means for detecting directional input and operable to receive and process the directional input signal (fig. 2); and a memory (45), the memory storing an operating system executed by the processor to display a graphical user interface for controlling the operation of the hand-held computing device (figs. 3, 5, and 6; column 4, lines 9-15).

Lands fails to disclose wherein the graphical user interface provides a graphical element responsive to the directional input signal processed by the processor and wherein the operating system comprises processor-executable instructions that cause the graphical element to move in one of an axial constraining mode or an axial selecting

mode, and wherein the graphical element moves in a direction substantially perpendicular to an axis of inclination in the axial constraining mode, and moves in a direction substantially corresponding to an axis of inclination in the axial selecting mode.

Kaplan discloses a special orientation sensor within a hand-held electronic computing device for movement of a screen cursor (graphical element) in response to changes in the spatial orientation (inclination) of the computing device (0010-0012). Fig. 1 of Kaplan discloses the electronic computing device in the form of a PDA. Kaplan also discloses the PDA includes accelerometers or tilt sensors, the processor responsive to the signals of the accelerometers converts those signals to cursor position signals (abstract; corresponds to graphical element moving in a direction substantially corresponding to an axis of inclination).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Kaplan to modify Lands.

The motivation for doing so would have been to provide a portable input device that is easily used with one-hand operation (Kaplan, 0003).

Therefore, it would have been obvious to combine Kaplan with Lands to obtain the invention as specified in claim 1.

Regarding claim 15 and 16, Kaplan discloses wherein the cursor (pointer) movement is only in response to the inclination of the hand-held computing device (0011).

Regarding claim 18, Kaplan discloses the processor is configured to detect movement patterns from the tilt or orientation signals and the cursor movement is responsive to the detected movement patterns (0017).

Regarding claim 19, Kaplan discloses wherein the cursor is configured to accelerate in response to a detected movement pattern (0018-0019).

5. Claims 2-8 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lands in view of Kaplan as applied to claim 1 above, and further in view of Moskin et al., US Patent #4,425,488, hereinafter referred to as Moskin.

Regarding claim 2, Lands discloses an internally-located directional input device (tilt sensors, abstract; 0004). Figs. 3-5 of Lands also discloses the directional input device having a direction interpreter for generating a directional input to the graphical user interface and causing the device option (control zooming, paging, brightness, or volume) to be selected through the graphical user interface.

Lands and Kaplan fail to disclose the directional input not having a primary contact, a directional contact, and a circuit closing means.

Moskin discloses a multi-position tilt switch comprising a primary contact (base or 107 in figs. 8 and 9) positionally fixed in a portable device, a directional contact (contact 101, fig. 8) operatively connected to the primary contact, a circuit closing means (113) for movement in response to inclination of the portable device to form an open circuit or a closed circuit between the primary contact and the directional contact, and a directional interpreter for generating the directional input when the closed circuit is formed (column 4, line 64 - column 5, line 27).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Moskin to modify Lands and Kaplan.

The motivation for doing so would have been to provide a multi-position input device that is inexpensive and reliable (Moskin, column 1, lines 35-36).

Therefore, it would have been obvious to combine Moskin with Lands and Kaplan to obtain the invention as specified in claim 2.

Regarding claim 3-5, Moskin discloses a second direction contact (99,103, or 105)) and the direction interpreter generating a second directional input as claimed (column 4, line 64 – column 5, line 27).

Regarding claims 6-8, Moskin discloses a plurality of direction contacts (99,101,103, and 105) and the direction interpreter generating a second directional input as claimed (column 4, line 64 - column 5, line 27).

Regarding claims 11 and 12, figs. 8 and 9 of Moskin discloses the device including a base for supporting the circuit closing means (113) in response to movement between the neutral position and the active position and the base biases the circuit closing means to the neutral position (109).

Regarding claim 13, fig. 2 of Moskin discloses the circuit closing means is a ball bearing (39).

Regarding claim 14, fig. 8 of Moskin discloses the circuit closing means is a mercury contact (113).

6. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lands, Kaplan, and Moskin as applied to claims 6 and 9 above, and further in view of Amberny, US Patent #3,876,850.

Regarding claim 9, Lands, Kaplan, and Moskin fail to disclose the circuit closing means having two adjacent directional contacts are operatively connected to close the open circuit in response to the inclination of the device.

Amberny discloses a mercury device comprising a plurality of radial contacts; two or three adjacent of the plurality of contacts are connected by the mercury to form a closed circuit (abstract; fig. 3).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Amberny to modify Lands, Kaplan, and Moskin.

The motivation for doing so would have been to enable complex switching to be carried out and to provide a correspondingly large number of switching states (column 1, lines 30-35).

Therefore, it would have been obvious to combine Amberny with Lands, Kaplan, and Moskin to obtain the invention as specified in claim 9.

Regarding claim 10, Lands and Moskin disclose the input device having direction interpreter means. Lands as modified by Moskin, Kaplan, and Amberny would include the direction interpreter means for generating directional input for each active position of the circuit closing means as claimed.

7. Claims 17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lands and Kaplan as applied to claims 1 and 18 above, and further in view of Bartlett, US Patent #6,573,883.

Regarding claim 17, Lands and Kaplan fail to disclose wherein the graphical element is a menu bar selection.

Bartlett discloses a hand-held input device having a menu bar selection in response to the orientation of the hand-held input device (column 6, lines 8-18).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Bartlett to modify Lands and Kaplan.

The motivation for doing so would have been to provide a computing device without the use of buttons for command input (column 2, lines 19-22).

Therefore, it would have been obvious to combine Bartlett with Lands and Kaplan to obtain the invention as specified in claim 17.

Regarding claim 20, Bartlett discloses the graphical element is configured to perform a selection function in response to the detected movement pattern (column 3, lines 22-37).

8. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lands and Kaplan as applied to claim 20 above, and further in view of Geshwind, US Patent #6,590,573.

Regarding claim 21, Lands and Kaplan fail to disclose wherein the detected movement pattern is a flick of the wrist.

Geshwind discloses a “wrist flick" would be used to implement a number of useful functions (column 24, lines 51-53).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate the invention disclosed in Geshwind to modify Lands and Kaplan.

The motivation for doing so would have been to allow the user to manipulate the device options faster and easily (column 24, lines 55-60).

Therefore, it would have been obvious to combine Geshwind with Lands and Kaplan to obtain the invention as specified in claim 21.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENNETH B. LEE JR whose telephone number is (571)270-3147. The examiner can normally be reached on Mon. - Fri. 7:30AM - 4:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Alexander Eisen can be reached on 571-272-7687. 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.

Kenneth B. Lee Jr.
Examiner
Art Unit 2629

KBL

/Alexander Eisen/
Supervisory Patent Examiner, Art Unit 2629

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	("20060071905").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2008/08/28 12:50
L2	6155	(345/156,157).CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2008/08/28 13:06
L3	7	(("4425488") or ("6201554") or ("3876850") or ("20020093483") or ("6573883") or ("6590573")).PN.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2008/08/28 13:11
L4	0	2 and (axis adj contrain$3)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2008/08/28 13:39
L5	4	2 and (axis adj constrain $3)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2008/08/28 13:39
L6	26	2 and (perpendicular near parallel)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2008/08/28 13:42
L7	0	2 and (operating adj system) near5 (parallel and perpendicular)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2008/08/28 13:48
L8	1	2 and (processor) near5 (parallel and perpendicular)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2008/08/28 13:48
L9	10	2 and (axis adj2 inclination)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2008/08/28 13:58
L10	6859	(345/156,157,158).CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2008/08/28 14:14

L12	0	10 and (graphical adj element icon) near5 (inclination)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2008/08/28 14:15
L13	13	10 and (element icon) near5 (inclination)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2008/08/28 14:16
L14	17	10 and (cursor) near5 (inclination)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2008/08/28 14:43
L15	0	10 and ((cursor) near (perpendicular and inclination))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2008/08/28 14:46
L16	1	10 and ((cursor) near5 (perpendicular and inclination))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2008/08/28 14:47
L17	465	10 and ((cursor) near5 (mode$1))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2008/08/28 14:53
L18	144	17 and (perpendicular and parallel)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2008/08/28 14:53
L19	0	18 and ((cursor) near (perpendicular and parallel))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2008/08/28 14:54
L20	3	18 and ((cursor) near5 (perpendicular and parallel))	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2008/08/28 14:54
L21	565	(PDA) and (tilt) and (cursor) and (movement)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2008/08/28 15:32
L22	0	21 and (PDA) near (cursor and movement)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2008/08/28 15:33
L23	2	21 and (PDA) near5 (cursor and movement)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2008/08/28 15:33

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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11240501	VARANDA, MARCELO
	Examiner	**Art Unit**
	KENNETH B LEE JR	2629

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	08/28/2008								
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SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
11/240,501	10/03/2005	178	2629	2173-264

APPLICANTS
Marcelo Varanda, Ottawa, CANADA;

**** CONTINUING DATA ***************************
This application is a DIV of 10/191,232 07/09/2002 ABN
which claims benefit of 60/303,865 07/09/2001

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ****
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Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /KENNETH B LEE JR/ Examiner's Signature	☐ Met after Allowance KBL Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		CANADA	4	21	1

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427 LAURIER AVEUE W., SUITE 1200
OTTAWA, ON K1R 7Y2
CANADA

TITLE
Method of operating a handheld device for directional input

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	Filing Date	2006-03-20
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	First Named Inventor	EMERY, Jeffrey et al
	Art Unit	2618
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Title of Invention:	Method of operating a handheld device for directional input
First Named Inventor:	Marcelo Varanda
Customer Number:	43563
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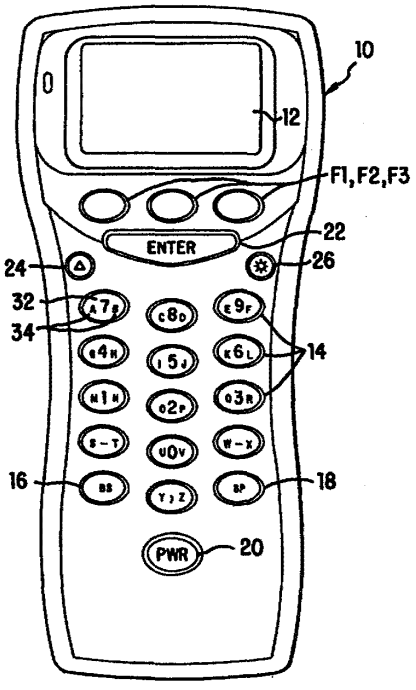
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(54) Title: DATA ENTRY DEVICE HAVING MULTIFUNCTION KEYS

(57) Abstract

The data entry device has multifunction keys (14, 32) with a primary function for the entry of numerical data and at least one secondary function for the entry of alphabetic characters. The device is operated with a single hand and does not require the use of a shift or a function key thereby keeping the number of keys to a minimum and avoiding visual clutter. The multifunction keys have a primary actuator (120) located at the center of the key and at least one secondary actuator (225) located at the edge of the key such that a vertical pressing of the key actuates the primary actuator and a pressing on the edge of the key causes the actuation of the secondary actuator.



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DATA ENTRY DEVICE HAVING MULTIFUNCTION KEYS

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a data entry device having keys which have multiple functions. In particular the present invention relates to a data entry device having relatively few keys, compared to an ordinary or standard keyboard, and in which each key can produce three, four or five characters depending upon how the key is depressed. The data entry device eliminates the need for a shift key or function key which, in a conventional keyboard, must be depressed simultaneously with another key to produce a second function, such as capitalization or a second character.

2. Description of the Prior Art

A standard keyboard has keys corresponding to the 26 letters of the alphabet, numbers 0-9, punctuation, and other various commonly used symbols. Including a shift key, a control key and an alt key, the total number of keys is approximately 50 Most of the keys will produce a second character when depressed simultaneously with the shift key. Similarly, if the alt key or control key are depressed with one of the other keys, character different from the primary character will be produced.

While the standard keyboard is sufficient for normal use at a work station, it does not lend itself to use in hand-held devices, or other situations where a large keyboard would be awkward or inappropriate. For a hand-held device, a data entry device would preferably require only one hand to enter data. Consequently, a requirement of using a shift, control or alt key simultaneously with other keys would be a drawback.

Other arrangement of keyboards exist beside the standard arrangement. For example, U.S. Patent No. 4,891,777 to Lapeyre is directed to a single hand keyboard array which provides alphanumeric capabilities from twelve keys. The keyboard is intended to be operated using one hand. The system employs virtual keys which are selected by simultaneous action of two or more individual keys. The apparatus decodes the

signals produced by activation of the switches to produce the alphanumeric symbol desired.

U.S. Patent 5,087,910 to Guyot-Sionnest pertains to an electronic keyboard for one-hand operation. The keyboard produces alphanumeric and analog characters upon the activation of one or more finger keys and a thumb key. The finger keys can each assume one of three states, and the thumb key can assume five different states. The keys can thereby, in combination, produce 134 different characters.

Another device is described in U.S. Patent No. 5,543,818 to Scott which relates to a method and apparatus for entering text using an input device having a small number of keys. A display device, connected to a CPU, displays a character selection menu having sixteen groups of characters. An input device which includes four cursor movement keys and four selection keys to choose a desired character. The four cursor movement keys move the cursor on the display from one character group to another. The four selection keys determine which of four characters in a group is desired.

U.S. Patent No. 4,680,577 to Straayer et al teaches a multipurpose cursor control keyswitch. The switch has an ordinary function of producing an alphanumeric symbol when depressed vertically, and directs cursor movement when horizontal pressure is applied. The Straayer et al keyswitch is not intended to reduce the number of keys and is not designed to facilitate one hand operation.

A multiple switch assembly including a rockable control plate for selectively actuating multiple microswitches is disclosed in U.S. Patent No. 5,504,286 to Tsai. The assembly is intended to reduce the number of keys on the keyboard of a portable computer by employing rockable keys which can produce two characters without reducing the size of the keys. The keys can be pressed to either one of two sides corresponding to two different characters. The primary reason for reducing the number of keys is to accommodate a cursor movement device.

U.S. Patent No. 4,769,516 to Allen relates to a finger operated switching apparatus. The keyboard utilizes keys which

can produce three different characters. The keyboard is intended to replace a conventional keyboard and requires two hands for use.

U.S. Patent No. 5,504,286 to Blauer pertains to a keyboard with elongate keys associated with compact switch mechanisms. The keyboard is intended to be used with both hands and is intended for use in a desk-top configuration. The keyboard has a series of keys which produce two or three outputs depending upon how the keys are depressed.

SUMMARY OF THE INVENTION

According to one aspect of the present invention, a data entry device is provided, having as its primary function the entry of numeric data. A secondary function is the entry of alphabetic characters. The device can be operated with a single hand and requires no shift or function keys. The number of keys on the device is kept to a minimum to avoid visual clutter and to facilitate its use with one hand. The keys are designed to be easy to access and to be operated while wearing a glove. The device may be hand-held, a telephone keypad, a television remote, or a computer keyboard.

It is an object of the present invention to provide a hand-held data entry device.

Another object of the present invention is to provide a data entry device having multifunction keys, which can produce more than one character depending upon how the key is depressed.

Still another object of the present invention is to provide a data entry device having multifunction keys which produce three different alphanumeric characters.

Yet another object of the present invention is to provide a data entry device having multifunction keys which produce four different alphanumeric characters.

Another object of the present invention is to provide a data entry device having multifunction keys, which can produce five different alphanumeric characters.

Still another object of the present invention is to provide a data entry device having multifunction keys which each have a central primary numeric character and secondary alphabetic characters.

Yet another object of the present invention is to provide a data entry device having multifunction keys which each have a central primary numeric character and secondary alphabetic characters, where the numeric character is produced by applying a primarily vertical force to the key and the secondary alphabetic characters are produced by applying additional force in secondary directions.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing and other attributes of the present invention will be described with respect to the following drawings in which:

FIG. 1 is a top plan view of a first embodiment of the keyboard having multifunction keys according to the present invention;

FIG. 2 is a top plan view of a single key of the keyboard shown in FIG. 1, according to the present invention;

FIG. 3 is a cross-sectional view of the key shown in FIG> 2 taken along line A-A;

FIG. 4 is an arrangement of multifunction keys according to a second embodiment of the present invention;

FIG. 5 is a keyboard arrangement of multifunction keys according to a third embodiment of the present invention;

FIG. 6 is a top plan view of a circuit pattern on a circuit board according to a first embodiment of the present invention; and

FIG. 7 is a top plan view of a circuit pattern on a circuit board according to the second embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Referring to FIG. 1, a first embodiment of the data entry device 10 according to the present invention is illustrated. The data entry device 10 has a housing 8 and a display 12, which is preferably a liquid crystal display (LCD). Thirteen multifunction keys 14 are provided as are a backspace key (BS) 16, a space key (SP) 18, an power key 20, an enter key 22, an ▲ key 24, a "*" key 26 and three function keys F1, F2, and F3.

The multifunction keys 14 of the first embodiment are shown in greater detail in FIGS. 2 and 3. The keys 14 of the first embodiment can produce three different characters depending upon how the keys are depressed. The keys 14 are oval in shape. The primary character 32 for each key 14 is displayed in the center of the key, while the secondary characters 34 for each key 14 are displayed to either side of the primary character.

Referring to FIG. 3, the keys 14 project up through openings in a housing 40 which forms the body of the data entry device 10. Keys 14 are disposed above a printed circuit board 50, and are resiliently biased away from the circuit board 50, by resilient arms 60. The underside of each key 14 has a convex profile 62, extending away from the upper side of the key 14, which forms an electrical actuator 64. The convex profile 62 is parallel to the lengthwise axis of the oval key 14. In the illustrated embodiment the resilient arms 60 are located on either side of convex profile 62 of the actuator 64.

The circuit board 50 has a pattern of electrical contacts 100, shown in FIG. 6, which is repeated below each of the multifunction keys 14. The pattern of electrical contacts 100 consists of a series of parallel electrical contact lines 105 which extend perpendicular to the axis of curvature of the convex profile 62. Each pattern 100 has a central electrical contact 110 formed along line X-Y disposed in the middle of the pattern of electrical contacts 100.

The ▲ key 24 is a mode key, and determines the mode of the multifunction keys 14. The multifunction keys 14 are thus placed in one of two modes. A first mode is a primary mode or

numerical mode. In the primary mode, the multifunction keys 14 will only produce the primary character 32. In the embodiment illustrated in FIG. 1, the primary characters are predominantly numbers "0-9", and therefore, the primary mode can be referred to as a numerical mode. By depressing the ▲ key 24, the data entry device 10 switches from primary mode to multifunction mode, and vice-versa.

In primary mode, only the primary character 32 is produced when a multifunction key 14 is depressed. Secondary characters 34 are disabled in the primary mode. In the multifunction mode, the multifunction keys 14 can only produce secondary characters 34. Instead of producing a primary character 14, the central electrical contact 110 indicates which of the multifunction keys is depressed, and the electrical contact lines 105 determine which secondary character 34 is desired, as discussed below. All characters, primary and secondary are produced upon depression of the keys 14, not upon their release. In primary mode, when a multifunction key 14 is depressed so that it will produce its primary character, the user depresses the key 14 by applying enough force to overcome the resilient bias of arms 60, so that the central electrical contact 110 comes in to contact with the convex profile 62 of the actuator 64. As a result, the circuit board 50 interacts with the CPU to cause the primary character for that multifunction key to be registered on the LCD 12.

If the user wants to enter one of the secondary characters on a multifunction key 14, the ▲ key 24 is pressed to change to multifunction mode, and force is applied both vertically and simultaneously on an angle toward the desired secondary character on one side of the multifunction key 14. As a result the multifunction key 14 moves downward toward the circuit board 50 against the bias of the resilient arms 60. The convex profile 62 of the actuator 64 contacts the central electrical contact 110 as well as simultaneously contacting the parallel electrical contact lines 105 on one side of the central electrical contact 110. The force at an angle determines which electrical contact lines 105 make contact with the convex profile

62 of the actuator 64. In such a situation, depending upon the software programmed into the CPU, the contact between the actuator 64 and the electrical contact lines 105 over-rides the input created by the contact between the actuator 64 and the central contact line 110, or the contact of the actuator 64 and the electrical contact lines 105 and the contact between the actuator 64 and the central contact line 110 combine so that the secondary character registers on the LCD 12.

Since the actuator 64 has a convex profile 62 the electrical contact lines 105 on either side of central contact line 110 can not make contact with the actuator 64 at the same time. Such a situation would create a conflict which the CPU could not interpret. A reverse configuration of the actuator and the parallel contact lines could be employed, as could other configurations of differing length actuators without departing from the scope of the present invention.

In the first embodiment of FIGS. 1-3, the primary characters are the numbers "**0-9**", "-", and ".". Each of the thirteen multifunction keys 14 has two letters "**A-Z**" as its secondary characters. No specific provision is made for upper case letters. The letters by default are all upper case. However, the three function keys F1, F2, and F3 are programmable, and in an application where upper and lower case characters are desired, one of the three function keys may be programmed to work as a shift key so that both upper and lower case letters may be displayed.

While only three function keys F1, F2, and F3 are provided on the device 10, the ▲ key can be employed to provide three additional functions by ▲ key depression followed by one of the F1, F2, and F3 keys.

Referring to FIG. 4, a second embodiment of the data entry device of the present invention is illustrated. In this embodiment the multifunction keys 70 are triangular instead of oval. Each multifunction key 70 can produce up to four characters. The primary character is displayed in the center of each triangular key 70. The three secondary characters are displayed at the corners of the triangle. The primary characters are

numbers "0-9", and the secondary characters are "-", and ".", and letters "A-Z".

The total number of keys on the device 10 of the second embodiment is less than the number used in the first embodiment. The remaining keys are comparable to the keys of the first embodiment. The keys 70 interact with the circuit board 50 in the same manner as the keys 14 of the first embodiment. The primary character is produced when a vertical force is applied to the center of the key 70 causing only a central contact 120 on the circuit board 50. When a corner of a key 70 is depressed, both the central contact 120 and arcuate surrounding contact lines 225 make contact with the actuator 64 in the same manner as described above with regard to the first embodiment. Each key 70 has a convex profile which curves about more than one axis. The curvature of the actuator 64 may form an arcuate portion of a sphere. As was the case with the first embodiment, the curvature of the actuator prevents arcuate surrounding contact lines 225 on different sides of the central contact 120 from making simultaneous contact with the actuator 64.

The circuit board 50 has a pattern of electrical contacts 100, shown in FIG. 7, which is repeated below each of the multifunction keys 70. The pattern of electrical contacts 100 consists of a series of arcuate contact lines 225 which form three arcs aground the central contact 120. Each pattern 100 has a central electrical contact 120 formed in the middle of the pattern of electrical contact lines 225.

The keys 80 of a third embodiment of the data entry device of the present invention are shown in FIG. 5. The keys 80 are rectangular. The centers 85 of the top of each key 80 is lower than the corners 88. The primary character for each key 80 is located in the center 85, while the secondary characters are located at the corners 88 of each multifunction key 80. Thus, each multifunction key 80 can produce up to five characters. The illustrated embodiment shows numbers "0-9", and the primary characters and "-", ".", "&", "+", "?", "=", "%", "$", "/", "," and letters "A-Z" as the secondary characters.

The keys 80 function in a manner similar to the keys 14 and 70 of the first and second embodiments, respectively, discussed above. Each key 80 has a convex profile which curves about more than one axis. The curvature of the actuator 64 may form an arcuate portion of a sphere. As was the case with the first embodiment, the curvature of the actuator prevents contact lines 125 on different sides of the central contact 120 from making simultaneous contact with the actuator 64.

In all of the three embodiments, the multifunction keys have shapes which transmit unique tactile sensations to the fingers of the user thereby helping the user select the desired character. In the third embodiment, the raised corners 88 provide additional tactile sensation to the user. While pentagonal, hexagonal, etc., shaped keys can be employed and are considered to fall within the scope of the present invention, the ability to transmit accurate sensation to the user and thereby display the desired character decreases with each increase in the complexity of the keys. In all three embodiments characters are registered upon depression. However, it is contemplated that registration could occur upon release of the key as opposed to depression.

The data entry device 10 of the present invention is intended to function as a hand-held portable unit. It would be powered by an internal power source such as batteries, and would be small enough to fit into a jacket or pants pocket. The data entry device is preferably 3" wide, 7.5" long and 2" thick. The weight including batteries is less than eight ounces. The LCD 12 is capable of displaying up to eight lines of twenty characters each. The device may have a built in bar code reader, such, as a laser scanner, CCD or bar contact reader. Such a bar code reader could be used to track packages or other inventory. The CPU would contain memory, preferably at least 1 Megabyte.

Having described the preferred embodiments of the data entry device of the present invention, it is believed that other modifications, variations and changes will be suggested to those skilled in the art in view of the description set forth above. For example, the primary characters need not be numbers and can

be letters as well as other characters. The primary characters may be the most commonly used letters. Furthermore, as stated previously, the shape of the multifunction keys can be different, such as pentagonal, hexagonal, octagonal, trapezoidal , or other geometric shape. It is therefor to be understood that all such variations, modifications and changes are believed to fall within the scope of the invention as defined in the appended claims.

WHAT IS CLAIMED IS:

1. A data entry device comprising:

a power source;

a keyboard having a plurality of multifunction keys, each of said plurality of multifunction keys producing one of a primary character and one of at least two secondary characters on a display when said multifunction keys are depressed by a user, each of said plurality of multifunction keys having an actuator with a convex profile on a bottom surface of said multifunction keys; and

a circuit board disposed below said keyboard, said circuit board having a central electrical contact and a series of outer electrical contacts;

wherein each of said plurality of multifunction keys produces said primary character when depressed vertically along an axis of said multifunction keys so that said actuator makes contact with only said central electrical contact, and

wherein each of said plurality of multifunction keys produces said one of said at least two secondary characters when depressed vertically along said axis and simultaneously at an edge of said multifunction key, so that said actuator makes contact with said central contact and ones of said series outer electrical contacts.

2. A data entry device as recited in claim 1, wherein said display is disposed in said data entry device.

3. A data entry device as recited in claim 1, wherein said plurality of multifunction keys are oval shaped.

4. A data entry device as recited in claim 3, wherein each of said plurality of multifunction keys has said primary character represented at a center of said oval shaped key and said at least two secondary characters on opposite sides of said primary character at edges of said oval.

5. A data entry device as recited in claim 1, wherein said plurality of multifunction keys each has three secondary characters.

6. A data entry device as recited in claim 5, wherein said plurality of multifunction keys are triangle shaped, and each of said plurality of multifunction keys displays said primary character at a center of said triangle shaped key and said three secondary characters on corners of said triangle shaped key.

7. A data entry device as recited in claim 1, wherein said plurality of multifunction keys each has four secondary characters.

8. A data entry device as recited in claim 7, wherein said plurality of multifunction keys are rectangle shaped, and each of said plurality of multifunction keys displays said primary character at a center of said rectangle shaped key and said four secondary characters on corners of said rectangle shaped key.

9. A data entry device as recited in claim 8, wherein a top surface of each of said plurality of rectangle shaped multifunction keys has raised corners.

10. A data entry device as recited in claim 1, wherein said primary characters include numbers.

11. A data entry device as recited in claim 1, wherein said secondary characters include letters.

12. A data entry device as recited in claim 1, wherein said secondary characters include numbers and punctuation symbols.

13. A data entry device as recited in claim 1, wherein said data entry device is hand-held and portable.

14. A data entry device comprising:

a power source;

a keyboard having a plurality of multifunction keys, each of said plurality of multifunction keys producing one of a primary character and one of at least two secondary characters on a display when said multifunction keys are depressed by a user, each of said plurality of multifunction keys having an actuator with an arcuate profile on a bottom surface of said multifunction keys; and

a circuit board disposed below said keyboard, said circuit board having a central electrical contact and a series of outer electrical contacts;

wherein each of said plurality of multifunction keys produces said primary character when depressed vertically along an axis of said multifunction keys so that said actuator makes contact with only said central electrical contact, and

wherein each of said plurality of multifunction keys produces said one of said at least two secondary characters when depressed vertically along said axis and simultaneously at an edge of said multifunction key, so that said actuator makes contact with said central contact and ones of said series outer electrical contacts.

15. A data entry device as recited in claim 14, wherein said arcuate profile is convex.

16. A data entry device as recited in claim 1, further comprising a mode key for switching from a primary mode to a multifunction mode, wherein, when in a primary mode, said multifunction key is only produced said primary character, and in said secondary mode, said multifunction keys only produce seconary characters.

17. A data entry device as recited in claim 14, further comprising a mode key for switching from a primary mode to a multifunction mode, wherein, when in a primary mode, said multifunction key is only produced said primary character, and in said secondary mode, said multifunction keys only produce seconary characters.

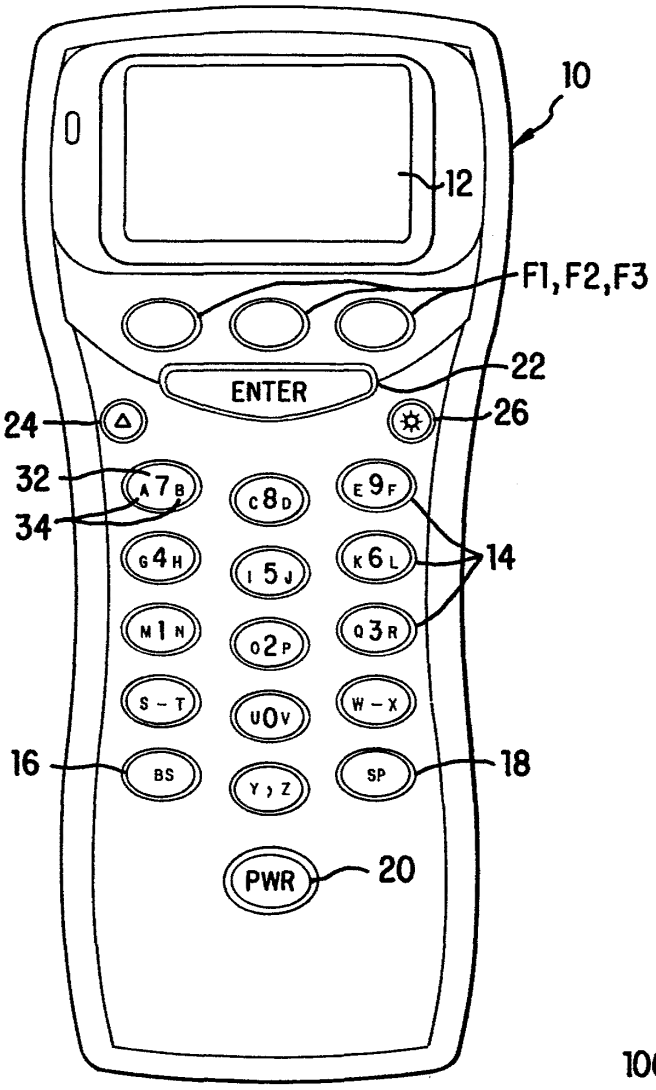


FIG. 1

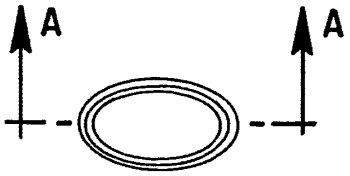


FIG. 2

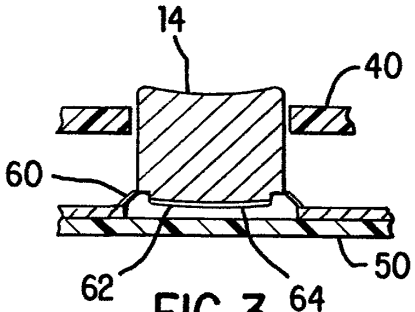


FIG. 3

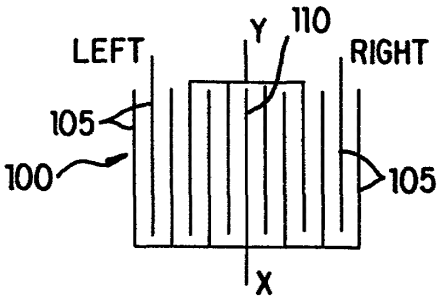


FIG. 6

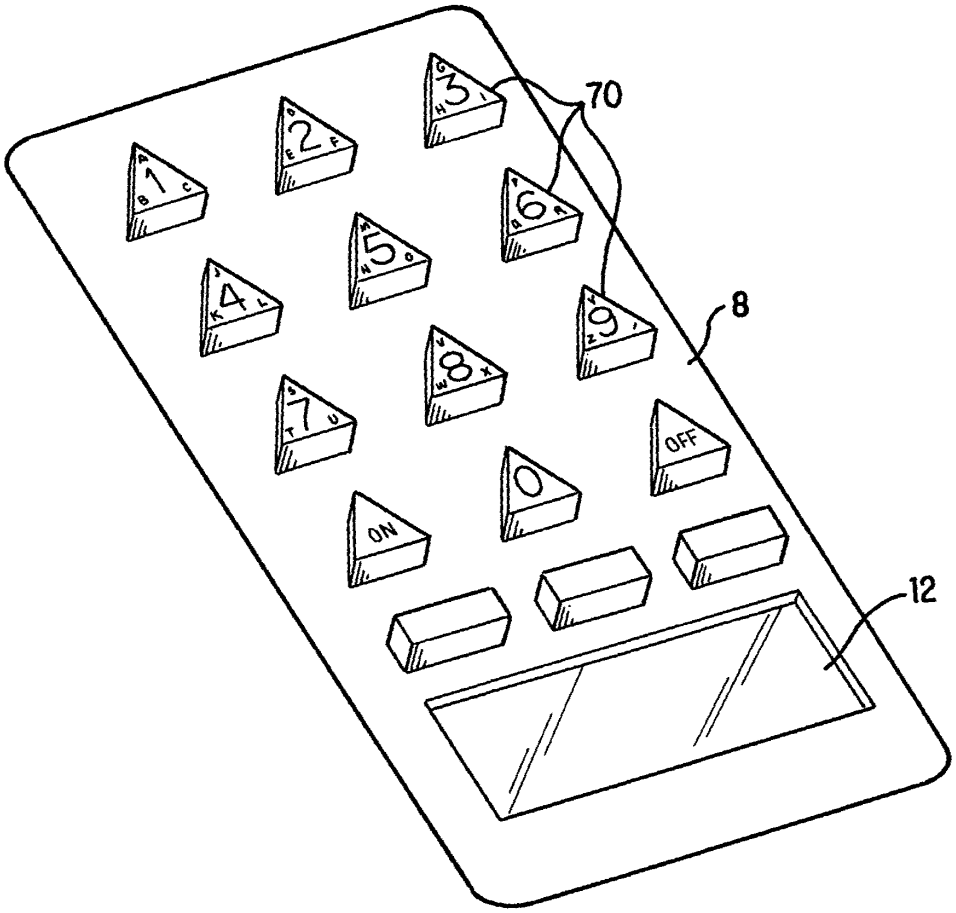


FIG. 4

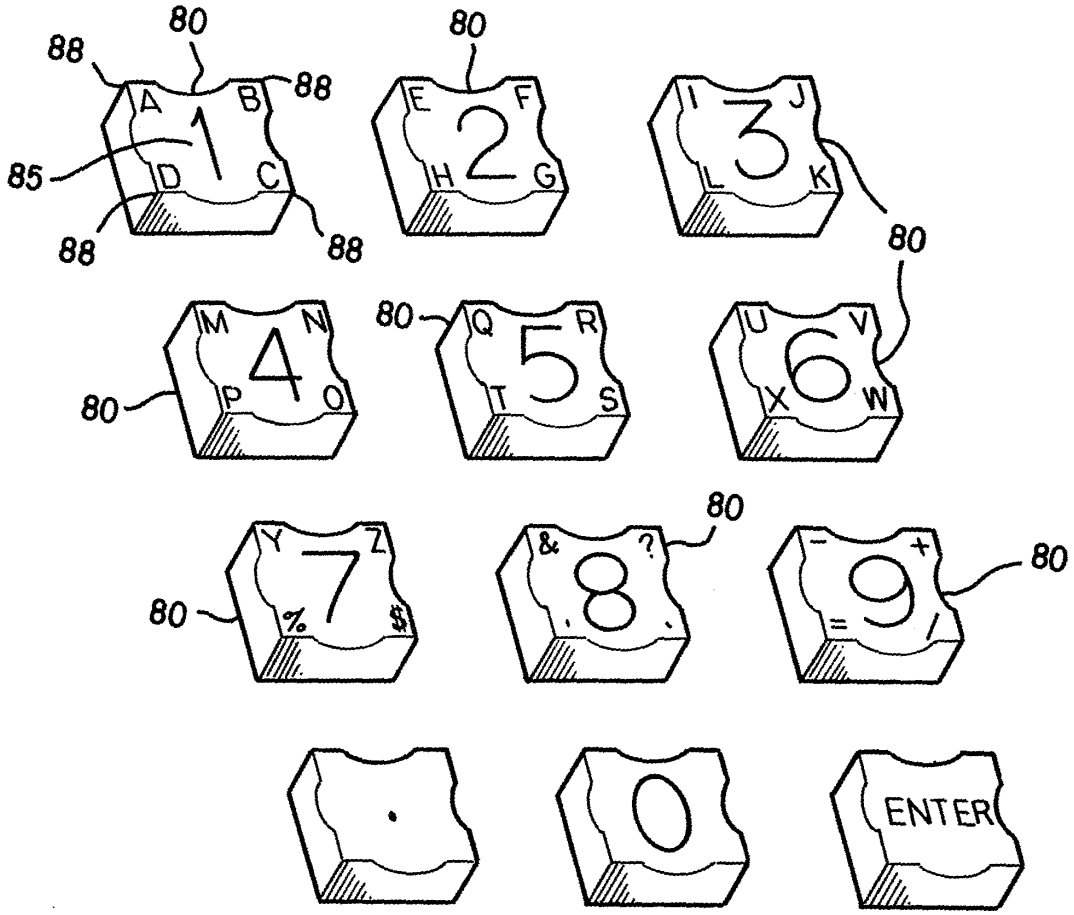

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FIG. 5

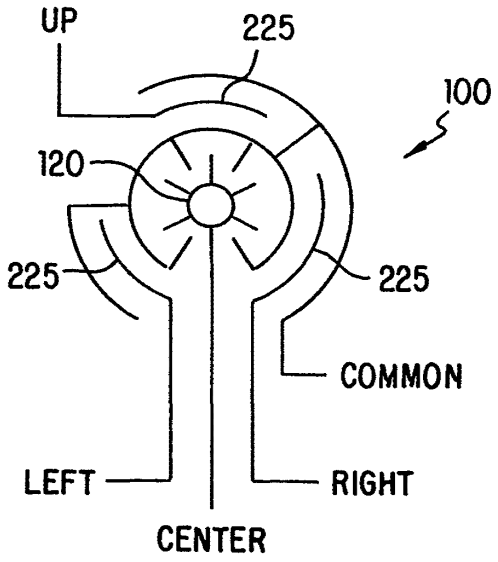


FIG. 7

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/19892

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :Please See Extra Sheet.
US CL : 341/22; 200/5R, 5E, 6A; 400/479

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 341/22; 200/5R, 5E, 6A; 400/479

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS, switch, multiple, pivot, multifunction, primary, secondary, actuator, vertical, edge

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4,975,547 A (NAKAYAMA et al.) 04 December 1990	1-17
A	US 4,896,003 A (HSIEH) 23 January 1990	1-17
A	US 4,680,577 A (STRAAYER et al.) 14 July 1987	1-17
A	US 4,698,464 A (TANAKA et al.) 06 October 1987	1-17
A	US 4,769,516 A (ALLEN) 06 September 1988	1-17
A	US 4,590,338 A (SUZUKI) 20 May 1986	1-17
A	US 4,499,342 A (NAKAYAMA) 12 February 1985	1-17
A	US 5,528,235 A (LIN et al.) 18 June 1996	1-17

[X] Further documents are listed in the continuation of Box C. [ ] See patent family annex.

*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier document published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search	Date of mailing of the international search report
10 DECEMBER 1998	13 APR 1999

Name and mailing address of the ISA/US	Authorized officer
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Form PCT/ISA/210 (second sheet)(July 1992) ★

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/19892

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,543,818 A (SCOTT) 06 August 1996	1-17
A	US 5,265,716 A (SAWADA et al.) 30 November 1993	1-17
A	US 5,504,286 A (TSAI) 02 April 1996	1-17
A	US 5,087,910 A (GUYOT-SIONNEST) 11 February 1992	1-17
A	US 5,164,554 A (IKUNAMI) 17 November 1992	1-17
A	US 5,172,101 A (BATES) 15 December 1992	1-17

Form PCT/ISA/210 (continuation of second sheet)(July 1992) ★

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/19892

A. CLASSIFICATION OF SUBJECT MATTER:
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H03K 17/94; H03M 11/00; B41J 5/08, 5/10, 5/12, 5/14, 5/16, 5/26, 5/28; H01H 9/26, 19/00, 21/00

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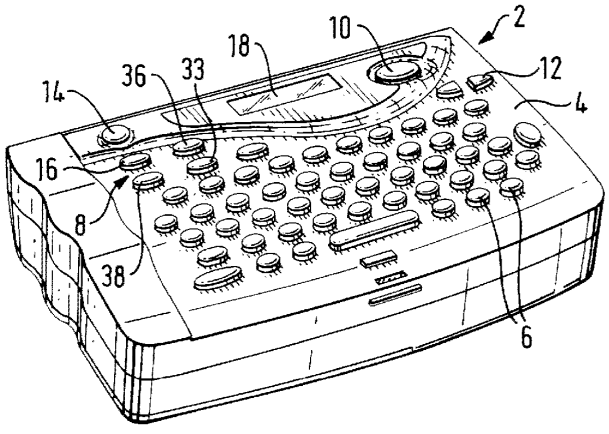
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(54) Printing apparatus

(57) A printing device (2) for printing an image receiving medium has a printing mechanism and a keyboard (4) having a plurality of data entry keys (6) for entering data for controlling the printing mechanism and a user key (16). Storage means for holding data accessible in response to the data entered at the keyboard (4) is provided. A controller defines an image to be printed on an image receiving medium in dependence on the data accessed in response to the data entered at the keyboard (4) so that the controller operates selectively in one of a plurality of modes of operation. The modes of operation include a normal mode of operation in which at least some of the keys (6) have predetermined functions associated therewith to access predetermined data associated with the predetermined functions. There is also a user determination mode which is entered by activation of the user key (16) in which the user is able to define a user function associated with one or more of the data keys (6) so that the user defined data is held in the storage means to implement the user function. There is also a user defined mode in which the data entry keys (6) are operable to define a label to be printed in accordance with the user defined data.

FIG. 1



EP 0 760 291 A2

Printed by Jouve, 75001 PARIS (FR)

Description

The present invention relates to printing apparatus and, in particular but not exclusively, is concerned with tape printing apparatus.

Known tape printing apparatus of the type with which the present invention is generally concerned are disclosed in EP-A-322918 and EP-A-322919 (Brother Kogyo Kabushiki Kaisha) and EP-A-0267890 (Varitronics). The printers each include a printing device having a cassette receiving bay for receiving a cassette or tape holding case. In EP-A-0267890, the tape holding case houses an ink ribbon and a substrate tape, the latter comprising an upper image receiving layer secured to a backing layer by an adhesive. In EP-A-322918 and EP-A-322919, the tape holding case houses an ink ribbon, a transparent image receiving tape and a double-sided adhesive tape which is secured at one of its adhesive coated sides to the image tape after printing and which has a backing layer peelable from its other adhesive coated side. With both these apparatus, the image transfer medium (ink ribbon) and an image receiving tape (substrate) are in the same cassette.

The present applicants have developed a different type of tape printing apparatus which is described for example in EP-A-578372, the contents of which are herein incorporated by reference. In this printing apparatus, the substrate tape is similar to that described in EP-A-0267890 but is housed in its own tape holding case while the ink ribbon is similarly housed in its own tape holding case.

In all of these cases, the image receiving tape passes in overlap with the ink ribbon to a print zone consisting of a fixed print head and a platen against which the print head can be pressed to cause an image to transfer from the ink ribbon to the image receiving tape. There are many ways doing this, including dry lettering or dry film impression, but the most usual way at present is by thermal printing where the printhead is heated and the heat causes ink from the ink ribbon to be transferred to the image receiving tape. Alternatively, the print head may be in direct contact with a thermally sensitive image receiving tape whereby when the print head is heated, an image is defined on the image receiving tape.

Typically, tape printing apparatus have a keyboard which allows a user to input data defining a label to be printed on the image receiving tape. Additionally, the keyboard allows the user to select various attributes for the label and for characters included in the label. These label attributes may be boxing, underlining, orientation of printed characters relative to the image receiving tape, label length etc. The character attributes include fonts, character styles for example bold or italics, character sizes, etc. For each label, the various attributes required must be individually selected. This can be a relatively time consuming process involving a relatively large number of key strokes. In particular, certain attributes are selectable via menus which have to be brought up onto the display. A cursor is moved by a user through the menu by activation of a cursor key until the selected attribute is reached. This further increases the number of key strokes required. Not only is the selection of the required attribute time consuming, but errors resulting from the incorrect selection of the wrong attribute are more likely to occur.

The tape printing apparatus with which some embodiments of the present invention are concerned typically are small handheld or desk top devices with a limited number of keys. In general, various symbols or characters are associated with each key, for example numbers, letters and punctuation marks. However, such tape printing apparatus also store a number of other symbols in a table. To select a symbol stored in a table, the table is called up and the user has to move a cursor through the table until the required symbol is located. Accordingly, it can be time consuming to locate and select the required symbol, particularly when a large number of symbols are included in the table. This can be disadvantageous if the symbol is one which is frequently used by the user.

According to the first aspect of the present invention, there is provided a printing device for printing an image on an image receiving medium comprising:

a printing mechanism;
a keyboard having a plurality of data entry keys for entering data for controlling the printing mechanism, and a user key;
storage means for holding data accessible in response to said data entered at the keyboard;
a controller for defining an image to be printed on said image receiving medium in dependence on the data accessed in response to said data entered at the keyboard, wherein said controller operates selectively in one of a plurality of modes of operation, said modes including:
a normal mode of operation in which at least some of the keys have predetermined functions associated therewith to access predetermined data associated with the predetermined functions;
a user determination mode entered by activation of the user key in which the user is able to define a user function associated with one or more of said data entry keys so that user defined data is held in the storage means to implement said user function; and
a user defined mode in which said data entry keys are operable to define a label to be printed in accordance with the user defined data.

By having a user determination mode in which the user is able to define a user function, the operation of the printing device can be modified in accordance with the user's own preference. Thus, embodiments of the present invention are flexible enough to permit the printing device to be operated in a number of different ways.

Nintendo Exhibit 1003
Page 332

Additionally, the use of user defined functions reduces the number of, for example, keystrokes required to obtain frequently used functions that would otherwise require a relatively large number of keystrokes.

Preferably, the user defined data defines a set of label settings selected by the user in the user determination mode. The set of label settings may comprise a plurality of label attributes and/or character attributes. The label attributes may include at least one of the following attributes: label layout; underlining; boxing; orientation of characters with respect to the image receiving medium; label length; and label format. The character attributes may include at least one of the following attributes: fonts; character styles; character size; and capitalization. As discussed above, in order to select the desired set of label settings for a particular label, a large number of key strokes may be required. By storing a preferred set of label settings, the user can avoid having to reselect a given set of label settings. This is particularly advantageous where the user has a preferred set of label settings or frequently uses the same settings. This may reduce the number of key strokes required in order to obtain the desired set of label settings.

The controller preferably comprises process means operable, when said selected label settings are recalled when said device is in said user defined mode, to provide an image in which the input data entered via said data entry keys is modified in accordance with the selected set of label settings via said data entry means. Thus, the user may for example only need to enter the text of a label and when the selected label settings are recalled, a label including the entered text and having the selected set of label settings can be obtained with a relatively few key strokes. In one embodiment of the present invention, once the selected label settings have been recalled, the selected label settings are the current settings until such time as the user modifies those settings.

Preferably, the user defined data defines a symbol selected by the user from a table of symbols associated with a symbol key. Thus, in those embodiments where a table containing a large number of symbols is associated with a single symbol key, the user can select one or more symbols of his choice. The or each selected symbol will then be associated with a given key or keys of the keyboard and accordingly can be easily accessed. This is particularly advantageous where a given symbol is frequently used by the user and the symbol table contains a large number of symbols.

The controller may be arranged in said user determination mode to cause the user defined function to be stored in said storage means on activation of a store key. This key may be a specific store key or alternatively may have some other function associated with it. The controller, when in the user defined mode, may be arranged to recall the user function in response to activation of this store key. This is particularly advantageous in those embodiments where the store key has other functions associated therewith. For example the store key may be a number key or the like.

Alternatively, the controller, when in the user defined mode, may be arranged to recall the user function in response to activation of a recall key, different to said store key. The recall key may be a specific recall key or may have some other function associated with it in normal operation of the printing device.

The controller is preferably arranged so that the user defined function is accessed, in said user defined mode, through activation of said user key. By using the user key in order to recall a stored function, as well as in order to enter the user determination mode, the number of keys required can be reduced. Additionally, by having further associated functions associated with the user key, a separate user key may be justified.

The controller may be arranged so that the user defined data in the form of a symbol can be accessed in said user defined mode by activation of the symbol key of the keyboard. This may be followed by activation of the store key in association with which the symbol is stored.

According to a second aspect of the present invention, there is provided a method of defining a user function in a printing device, said method comprising the steps of:

activating a user key of a keyboard of the printing device to define a user determination mode;
activating one or more data entry keys of the keyboard to define a user function associated with one or more data entry keys of the keyboard;
storing user defined data associated with the activated data entry keys in storage means of the printing device to implement the user function;
activating said data entry keys to define a user defined mode, wherein said data entry keys are operable to define a label to be printed in accordance with the user defined data; and
printing the label on an image receiving medium.

The user key may be activated before or after the user function has been defined in embodiments of the present invention.

For a better understanding of the present invention and as to how the same may be carried into effect, reference will now be made by way of example to the accompanying drawings in which:

Figure 1 is a plan view showing the front of a tape printing apparatus;
Figure 2 is a plan view of the underside of the tape printing apparatus of Figure 1;
Figure 3 is a simplified block diagram of control circuitry for controlling the tape printing apparatus of Figure 1;
Figure 4 is a flow chart illustrating the selection and storage of a set of attributes;

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Figure 5 is a flow chart illustrating the retrieval of the selected set of attributes;
Figure 6 is a flow chart illustrating the selection and storage of a particular symbol; and
Figure 7 is a flow chart illustrating the retrieval of the stored symbol.

Figure 1 shows a simplified plan view of a tape printing apparatus 2. The tape printing apparatus comprises a keyboard 4. The keyboard 4 has a plurality of data entry keys and in particular comprises a plurality of numbered, lettered and punctuation keys 6 for inputting data to be printed as a label and function keys 8 for editing the input data. These function keys 8 are arranged for example to change the size or font of the input data. Additionally, these function keys 8 also allow, amongst other functions, underlining and boxing of the label to be achieved. The keyboard 4 also comprises a print key 10 which is operated when it is desired that a label be printed as well as tape feeding keys 12. Additionally, the keyboard 4 also has an on/off key 14 for switching the label printing apparatus 2 on and off. Finally, a user key 16, as will be described in more detail hereinafter, is provided to assist users of the tape printing apparatus 2 to store personalised label settings and symbols.

The tape printing apparatus 2 also has a liquid crystal display (LCD) 18 which displays the data as it is entered. The display 18 allows the user to view all or part of the label to be printed which facilitates the editing of the label prior to its printing. Additionally, the display 18 can also display messages to the user, for example, error messages or an indication that the print key 10 should be pressed. The display 18 is driven by a display driver 28 which can be seen in Figure 3.

On the underside of the tape printing apparatus 2 which can be seen from Figure 2, there is a cassette receiving bay 40. The cassette receiving bay 40 includes a thermal print head 42 and a platen 44 which cooperate to define a print zone 46. The print head 42 is pivotable about a pivot point 48 so that it can be brought into contact with the platen 44 for printing and moved away from the platen 44 to enable a cassette to be removed and replaced. A cassette inserted into the cassette bay 40 is denoted generally by reference numeral 50. The cassette 50 holds a supply spool 52 of image receiving tape 54. The image receiving tape 54 comprises an upper layer for receiving a printed image on one of its surfaces and has its other surface coated with an adhesive layer to which is secured a releasable backing layer. The image receiving tape 54 is guided by a guide mechanism (not shown) through the cassette 50, out of the cassette 50 through an outlet O, past the print zone 46 to a cutting location C. The same cassette 50 also has an ink ribbon supply spool 56 and ink ribbon take up spool 58. The image receiving tape 54 and the ink ribbon 60 are arranged to pass in overlap between the print head 42 and the platen 44. In particular, the image receiving layer of the image receiving tape 54 is in contact with the ink ribbon 60.

The platen 44 is driven by a motor 30 (see Figure 3), for example a dc motor or a stepper motor so that it rotates to drive the image receiving tape 54 in a direction which is parallel to the lengthwise extent of the image receiving tape through the print zone 46. In this way, an image is printed on the image receiving tape 54 and the image receiving tape 54 is fed from the print zone 46 to the cutting location C which is provided at a location on a portion of the wall of the cassette 50 which is close to the print zone 46. The portion of the wall of the cassette 50 where the cutting location C is defined is denoted by reference 62. A slot 64 is defined in the wall portion 62 and the image receiving tape 54 is fed past the print zone 46 to the cutting location C where it is supported by facing wall portions on either side of the slot 64.

A cutting mechanism 66 is provided and includes a cutter support member 68 which carries a blade 70. The blade 70 cuts the image receiving tape 54 and enters the slot 64.

In those embodiments where the motor 30 is a dc motor, the image receiving tape 54 is driven continuously through the print zone 46 during printing. Alternatively, in those embodiments where the motor is a stepper motor, the platen 44 rotates stepwise to drive the image receiving tape 54 in steps through the print zone 46 during the printing operation.

The print head 42 is a thermal print head comprising a column of a plurality of printing elements. The print head 42 is preferably only one printing element wide and the column extends in a direction perpendicular to the lengthwise direction of the image receiving tape 54. The height of the column of printing elements is preferably equal to the width of the image receiving tape 54 to be used with the label printing apparatus 2. Where more than one width of image receiving tape 54 is used, the print head column will generally have a height equal to the largest width of tape 54. An image is printed on the image receiving tape 54 column by column by the print head 42. It should be appreciated that an image can be printed on the image receiving tape via the ink ribbon 60. Alternatively if the image receiving tape 54 is of a suitable thermally sensitive material, an image can be applied directly by the print head 42 to the image receiving tape.

As an alternative to the one cassette system shown in Figure 2, the cassette receiving bay may be arranged to receive a separate image receiving tape cassette and a separate ink ribbon cassette which are arranged so that the ink ribbon and image receiving tape are passed in overlap through a print zone. This particular cassette arrangement is described for example in our earlier European Patent Application No. 578372, the contents of which are herein incorporated by reference. Any other suitable arrangement for providing a supply of image receiving tape can of course be used with embodiments of the present invention.

Figure 3 shows the basic control circuitry for con-

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trolling the tape printing apparatus 2 of Figures 1 and 2. There is a microprocessor chip 20 having a read only memory (ROM) 22, a microprocessor 24 and random access memory capacity indicated diagrammatically by RAM 26. The microprocessor 24 is controlled by programming stored in the ROM 22 and when so controlled acts as a controller. The microprocessor chip 20 is connected to receive label data input to it from the keyboard 4. The microprocessor chip 20 outputs data to drive the display 18 via the display driver chip 28 to display a label to be printed (or a part thereof) and/or a message or instructions for the user. Additionally, the microprocessor chip 20 also outputs data to drive the print head 42 which prints an image onto the image receiving tape 54 to form a label. Finally, the microprocessor chip 20 also controls the motor 30 for driving the image receiving tape 54 through the tape printing apparatus 2. The microprocessor chip 20 may also control the cutting mechanism 66 to allow lengths of image receiving tape 54 to be cut off after an image has been printed thereon.

The tape printing apparatus 2 allows labels to be composed and displayed on the display 18 using the various keys. In particular, the ROM 22 stores information relating to alphanumeric characters and the like which are associated with respective ones of keys 6 as well as information relating to the functions associated with the function keys 8. When a key 6 is depressed, data concerning the associated character or the like is retrieved from the ROM 22 and then stored in the RAM 26. The data stored in the RAM 26 may be in the form of a code which identifies the character. The microprocessor 24, in accordance with the data stored in the RAM 26 generates pixel data which is transmitted in one form column by column to the print head 42 and to the display 18 in another form. Additionally data concerning a function may be retrieved from the ROM 22 in response to activation of one or more of the function keys 8. That data may take the form of a flag. The pixel data generated by the microprocessor 24 and sent to the print head 42 and the display 18 will take into account the data relating to one or more functions stored in the RAM 26. As will be appreciated, the keys 6 and 8 of the keyboard 4 have predetermined functions associated therewith which causes predetermined data associated with that function to be retrieved from the ROM 22.

The user is able to vary the label attributes and character attributes of the label to be printed using the function keys 8. The attributes relating to the characters and the label itself can be included in the data defining the text of a label as it is entered via the keyboard 4. Alternatively, the input text can first be entered via the keyboard 4 and then subsequently manipulated using the function keys 8 so as to provide the desired label settings having the desired label attributes and character attributes. In both cases, information defining the label to be printed is stored temporarily in the RAM 26.

Label attributes include the layout of the label, underlining, boxing, orientation of the characters with respect to the image receiving tape, label length, label format and the like. Character attributes include character sizes, character styles such as fonts, bolding, italics and capitalisation, and the like. The term character is used broadly to describe alphanumeric characters, punctuation marks and in certain circumstances symbols. A number of these label and character attributes are selected using menus. For example, when the function key 8 relating to text size is activated or depressed, a menu with the various size options is displayed. To select the required size option the user moves a cursor through the menu until the desired size is indicated. The desired character size can be selected by pressing the associated function key 8 again. This would remove the menu from the display 18 and cause a flag to be stored in the RAM 26 in accordance with the selected size attribute. Where a large number of different attributes relating to the label and the characters are required by the user, the selection of the desired label settings can be of a relatively time consuming process.

Reference will now be made to Figures 4 and 5 which illustrate how a selection of label and/or character attributes can be made and stored for easy retrieval by the user. This is particularly advantageous where a particular set of label settings (which may include both label and character attributes) is frequently used by the user.

Reference will now be made to step S1 of Figure 4 in which a set of desired settings for a label is selected. As will be appreciated, the set of desired label settings selected by the user can be chosen in accordance with each user's individual needs and preferences which makes embodiments of the invention flexible. These settings can include label attributes and/or character attributes. These attributes are selected in the usual way by use of the function keys 8. Depending on the attributes selected, this may involve the selection of particular attributes from menus, as outlined above. As already discussed data relating to the various possible attributes for the label and characters are stored in the ROM 22. Activation of selected function keys 8 of the keyboard 4 causes the microprocessor 24 to retrieve data from the ROM 22 relating to the attributes selected by activation of the keys 8 of the keyboard 4. The microprocessor 24 causes data relating to the selected attributes to be stored in the RAM 26. These attributes are stored in the RAM 26 in the form of a sequence of bytes containing data defining attributes of the characters to be included in the label and/or label attributes.

If it is desired to store the selected set of attributes., the user key 16 is depressed in step S2. A store key 33 (one of the function keys 8) is depressed in step S3 to confirm that the selected set of label settings are to be stored. These set of label settings are the encoded and stored in the RAM 26 (step S4) under the control of the microprocessor 24. The current label settings are thus stored when the store key 33 is depressed. The current label settings may thus replace any previously stored settings.

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The label printing apparatus 2 can be used in a normal mode of operation to print a variety of labels with different label and character attributes selected for each individual label as desired by the user. When the user wishes to use the stored set of selected label settings, the steps shown in Figure 5 are carried out. Firstly, in step S5, the user key 16 is depressed to thereby activate that key. In step S6, a recall key 36 which is one of the function keys 8, is depressed. Activation of the recall key 36 causes data relating to the selected set of label settings to be in the working part of the random access memory 26. When the recall key 26 is depressed, information relating to the various stored attributes are displayed. A character size menu may be displayed on the display and any annunciators on the display which need changing are changed to reflect the stored attributes. Annunciators indicate to the user which attributes have been selected such as which font, size, etc. The user has to activate a key such as the return key to remove the menu. If the delete key is alternatively activated, the earlier current label settings will be left unchanged.

The user, in step S7, inputs data via the data entry keys 6, for example in the form of a text to be printed. As in the normal mode of operation, data relating to the input text is retrieved from the ROM 22 and then stored in the RAM 26. In step S8, the print key 10 is activated. This results in the microprocessor 24 then generating pixel data to be sent to the display 18 and the printhead 42 which takes into account the input text data stored in the RAM 26 as well as the data relating to the selected set of attributes.

The label printing apparatus 2 is then ready for the next label to be printed. The data relating to the selected set of attributes itself is unchanged by being recalled by the user and can be retrieved subsequently by the user as and when required in the manner outlined above. It should be appreciated that the desired label attributes remain in the storage area of the memory and are unchanged. In particular when the recall key 36 is activated, the stored set of label attributes are copied into the working part of the memory but also remain unchanged in the storage part of the memory. The input text can, in some embodiments of the invention be input prior to the recalling of the data relating to the selected set of label settings. The resulting label which is printed would also have the required label settings.

Thus, in order to recall a desired set of attributes which have been previously selected by the user, only two keys are required to be depressed. This may be a considerable reduction in the number of key strokes as compared to the number which could be required if the selected set of label settings were to be re-selected each time a label having those settings was required.

In general, each of the numbered, lettered and punctuation keys 6 is associated with one or two symbols (characters, numbers, punctuation marks, icons, etc.). However, tape printing apparatus 2 generally have a table of a large number of symbols which can also be printed by the tape printing apparatus 2. These symbols are not specifically associated with the respective numbered, lettered or punctuation keys 6. Rather, to retrieve a symbol in the symbol table, it is necessary to call up the table using the associated symbol key 38 which is one of the function keys 8. The user then has to move a cursor through the symbol table in order to find the required symbol. As such tables often have over a hundred different symbols, this can be a relatively time consuming process and frustrating for the user if a particular symbol is often used. Accordingly, embodiments of the present invention permit a user to select one or more symbols from the symbol table and cause those selected symbols to be associated with a particular key or keys of the keyboard 4.

In this regard, reference is made to Figures 6 and 7. In particular, the various steps required in order to select the symbols from the symbol table and to associate them with particular keys is described with reference to Figure 6. In the first step T1, the symbol table is called up in the normal way by activation of the symbol key 38. The display appears with the message "a-n". The user then activates any of the alphanumeric keys a to n and the various symbols associated with the activated alphanumeric key are displayed. In step T2, the user selects a symbol which is to be associated with a particular key, in the normal manner. In particular, a cursor is moved until the desired symbol associated with the selected alphanumeric key is highlighted. Normally to select that symbol, the return key or symbol key 38 is activated.

However, in the user mode, in step T3, the user key 16 is pressed when the cursor is over the selected symbol. The user is asked in step T4 as to which of the available symbol stores are to be used. In this embodiment of the present invention, there are nine available symbol stores which are associated with the number keys 1 to 9. It will be appreciated that the user may be interrogated by the display of a question on the display 18. In step T5, the user indicates which of the available stores are to be used by pressing for example the key 6 for number "1" if the selected symbol is to be associated with the number key "1". These steps can be repeated so as to store selected symbols at the eight remaining symbol stores. Data associated with the selected symbol is retrieved from the ROM 22 and then stored in the RAM 26. Additionally, information which associates the selected symbols with the selected number key (symbol store) is stored in the RAM 26. Once this step is completed the user is returned to step T2 so that if required a further symbol can be selected for association with a particular key.

Reference is made to Figure 7. To retrieve a user selected symbol, in step T6, the user enters the symbol mode by pressing the symbol key 38 which results in the symbol table being called up. In step T7 the number key associated with the desired selected symbol is pressed to retrieve data relating to the selected symbol

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which is stored in the RAM 26. The symbol table is at the same time removed from the display 18. In this way the selected symbol can be retrieved with only two key strokes as compared to the many more which may be required to retrieve a symbol from the symbol table. The symbol is retrieved into an input string of text at the location of the cursor at the time that the user activates the symbol key 38 in step T6.

In the particular embodiment described above, only one set of label settings is selectable to be associated with the recall key 36. In order to change the set of selected label settings, the steps described in relation to Figure 4 are carried out again. The new set of label settings will then replace the previous set of label settings. However, it will be appreciated that in certain embodiments of the invention, more than one set of label settings can be selected and stored. In these embodiments, a set of label stores can be provided, in a similar way to those provided for the selected symbols. In certain embodiments of the invention, the selected sets of label settings can be accessed via a menu. Where the set of selected label settings include a number of different attributes, the use of a menu can still result in a reduction in the number of key strokes required to obtain a desired set of label settings.

As regards the selection of the selected symbols to be associated with predetermined keys, it will be appreciated that in order to change a selected symbol associated with a given symbol store or number key, the steps described in relation to Figure 6 are repeated.

As will be appreciated, the various store, recall and user keys may have other functions in the normal mode of operation of the tape printing apparatus. The required store and recall functions can be obtained in a user determined mode by activation of the user key.

Claims

1. A printing device for printing an image on an image receiving medium comprising:

   a printing mechanism;
   a keyboard having a plurality of data entry keys for entering data for controlling the printing mechanism, and a user key;
   storage means for holding data accessible in response to said data entered at the keyboard;
   a controller for defining an image to be printed on said image receiving medium in dependence on the data accessed in response to said data entered at the keyboard, wherein said controller operates selectively in one of a plurality of modes of operation, said modes including:
   a normal mode of operation in which at least some of the keys have predetermined functions associated therewith to access predetermined data associated with the predetermined functions;
   a user determination mode entered by activation of the user key in which the user is able to define a user function associated with one or more of said data entry keys so that user defined data is held in the storage means to implement said user function; and
   a user defined mode in which said data entry keys are operable to define a label to be printed in accordance with the user defined data.

2. A printing device as claimed in claim 1, wherein said user defined data defines a set of label settings selected by the user in the user determination modes.

3. A printing device as claimed in claim 2, wherein said set of label settings comprises a plurality of label attributes and/or character attributes.

4. A printing device as claimed in claim 3, wherein said label attributes includes at least one of the following attributes:

   label layout; underlining; boxing; orientation of characters with respect to the image receiving medium; label length and label format.

5. A printing device as claimed in claim 3 or 4, wherein said character attributes include at least one of the following attributes:

   font; character style; character size; and capitalization.

6. A printing device as claimed in claim 2, 3, 4 or 5, wherein the controller comprises process means operable, when said selected label settings are recalled when the device is in a user defined mode, to provide an image in which the input data entered via said data entry keys is modified in accordance with said selected set of label settings.

7. A printing device as claimed in preceding claim, wherein said user defined data defines a symbol selected by the user from a table of symbols associated with a symbol key.

8. A printing device as claimed in any preceding claim, wherein the controller is arranged in said user determination mode to cause the user defined function to be stored in said storage means on activation of a store key.

9. A printing device as claimed in claim 8, wherein the controller, when in the user defined mode, is arranged to recall the user function in response to activation of said store key.

10. A printing device as claimed in claim 8, wherein the controller, when in the user defined mode, is ar-

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ranged to recall the user function in response to activation of a recall key, different to said store key.

11. A printing device as claimed in any preceding claim, wherein said controller is arranged so that the user defined function is accessed, in said user defined mode, through activation of said user key.

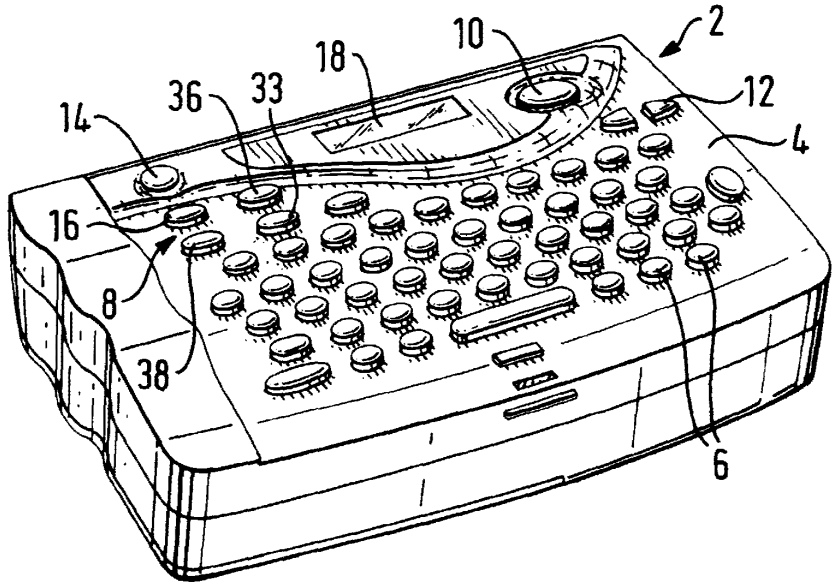
12. A printing device as claimed in claim 7 or any claim appended thereto, wherein the controller is arranged so that the user defined data defines a symbol which is accessed in said user defined mode by activation of the symbol key of said keyboard.

13. A method of defining a user function in a printing device, said method comprising the steps of:

activating a user key of a keyboard of the printing device to define a user determination mode;
activating one or more data entry keys of the keyboard to define a user function associated with one or more data entry keys of the keyboard;
storing user defined data associated with the activated data entry keys in storage means of the printing device to implement the user function;
activating said data entry keys to define a user defined mode, wherein said data entry keys are operable to define a label to be printed in accordance with the user defined data; and
printing the label on an image receiving medium.

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FIG. 1


10
2
18
36
33
12
14
4
16
8
38
6

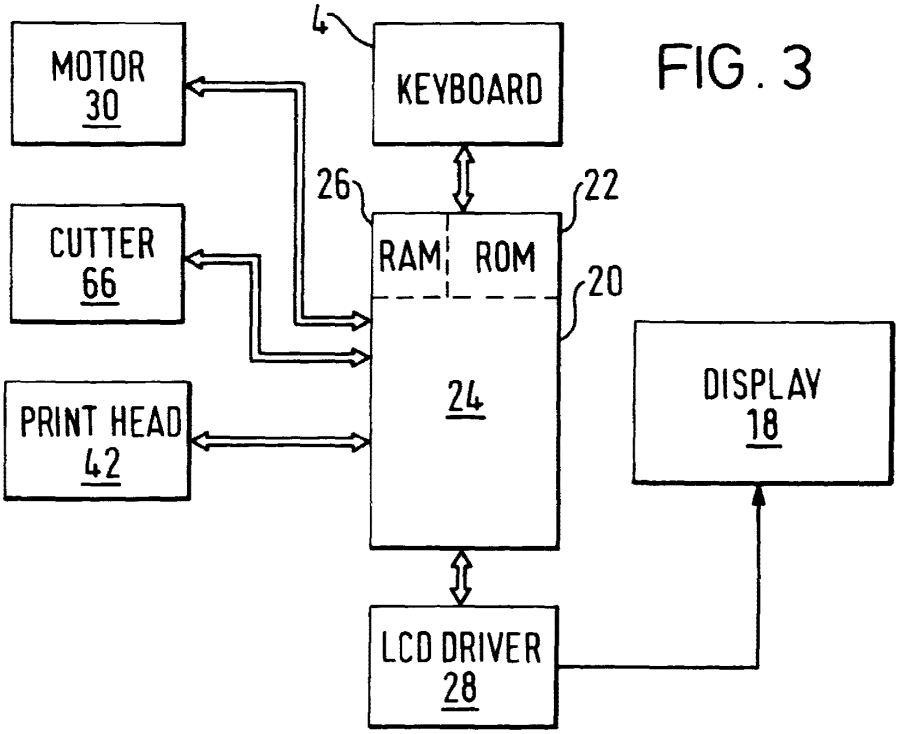

4
MOTOR
30
KEYBOARD
26
22
CUTTER
66
RAM
ROM
20
24
DISPLAY
18
PRINT HEAD
42
LCD DRIVER
28

FIG. 3

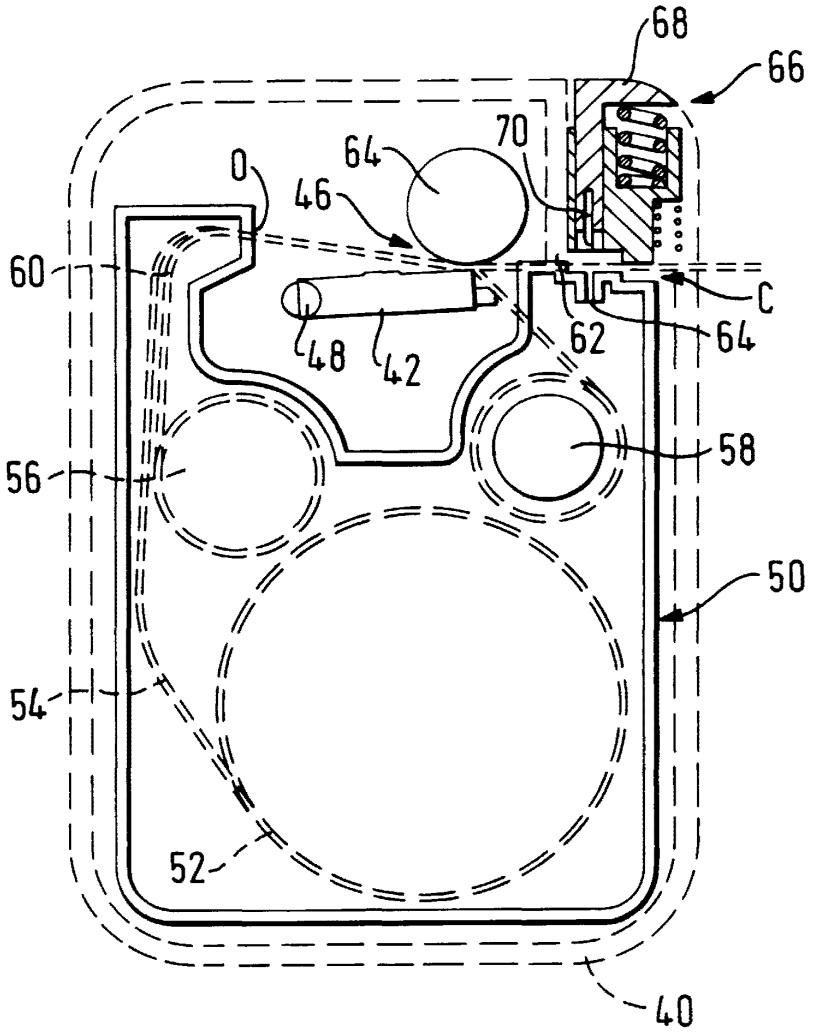


FIG. 2

FIG. 4

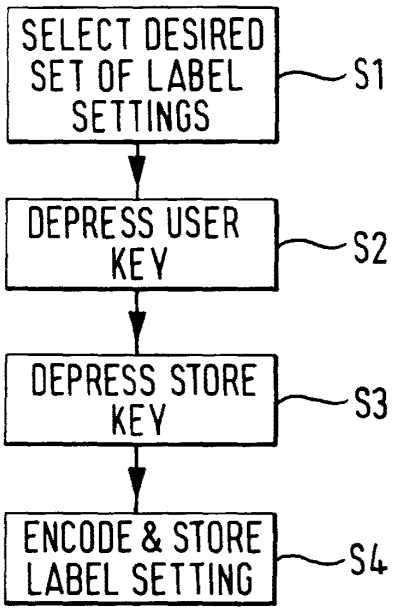
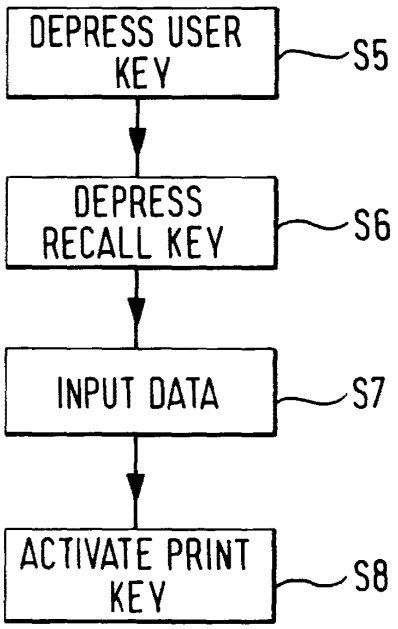


FIG. 5



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FIG. 6

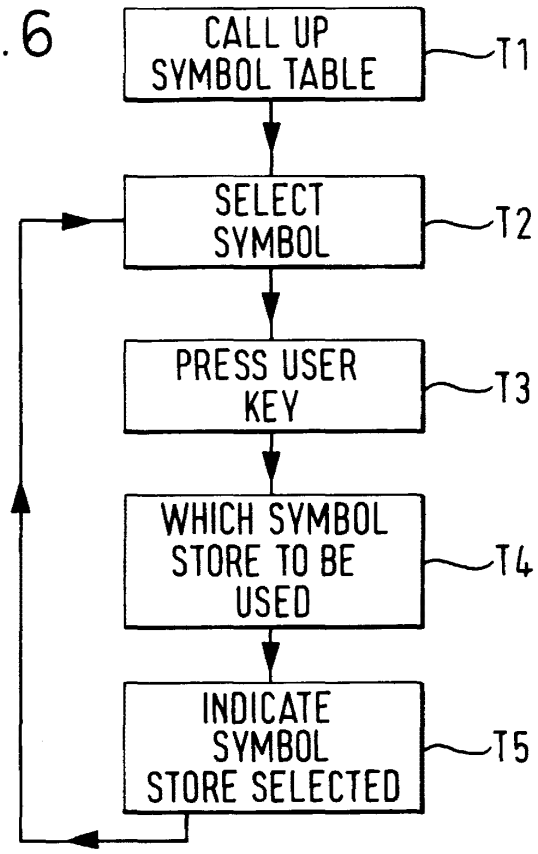
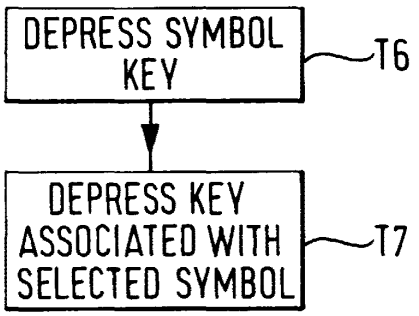


FIG. 7



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	Application Number	11240501
	Filing Date	2005-10-03
	First Named Inventor	VARANDA, Marcelo
	Art Unit	2674
	Examiner Name	
	Attorney Docket Number	2173-264

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	Application Number	11240501
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	First Named Inventor	VARANDA, Marcelo
	Art Unit	2674
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	42	6148261		2000-11-14	Obradovich et al.	
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	1	0760291	EP		1997-03-05	Palmer, Mathew Richard et al		☐
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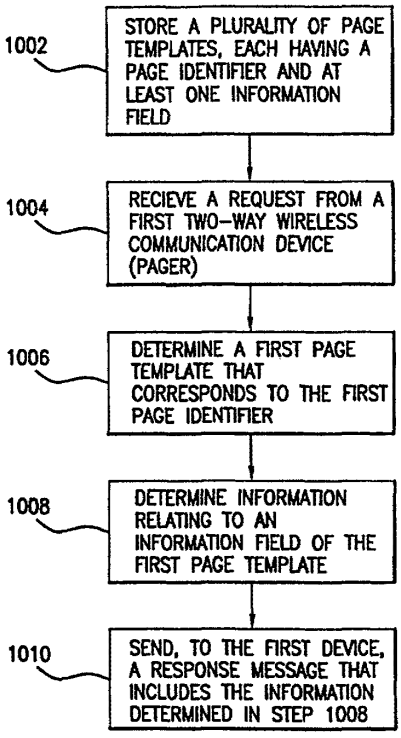
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(57) Abstract

A method and system for providing formatted information via a wireless communications system that includes a plurality of cell sites. The method includes the steps of storing a plurality of page templates each having a page identifier and at least one information field. The method also includes the step of receiving a request from a first two–way wireless communications device, wherein the request specifies the first device and a first page identifier selected by a user of the first device. In response to receiving the request a first page template, of the plurality of page templates, is determined. The first page template corresponds to the first page identifier. The method also includes determining information relating to an information field of the first page template and sending a response message to the first device, wherein the response message includes the determined information. The method can include the step of displaying the information on a display of the first paging device.



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METHOD AND SYSTEM FOR PROVIDING FORMATTED INFORMATION VIA A TWO-WAY COMMUNICATIONS SYSTEM

Background of the Invention

Field of the Invention

The present invention relates generally to a wireless paging system, and more particularly, to an method and system for sending formatted information to a two-way communications device.

Related Art

Conventional wireless paging systems are typically one-way communication systems that can only send messages in a forward direction from a service provider to a subscriber's paging device. Because these one-way paging systems have no knowledge of the locations of paging devices, each message is distributed to all paging transmission facilities of a service provider, which can cover a geographic area such as North America. Each facility then transmits the message so that if an addressed paging device is within a coverage area of one of the transmitters, the message will be delivered to the paging device. This type of one-way paging system is often called a broadcast paging system. The message capacity of such a broadcast paging system is not used efficiently because each message is transmitted by every transmission facility in the system, but only one transmission facility will actually deliver the message to the subscriber's paging device. Therefore, the majority of the message traffic of any given transmitter will typically be occupied by messages addressed to pagers that are not within the coverage area of the transmitter. Accordingly, subscriptions to broadcast-type nationwide paging services are relatively expensive.

The messages sent in these one-way paging systems can be intended for one subscriber or for multiple subscribers. For example, a message intended for one subscriber's paging device can inform that subscriber that a third party is attempting to contact them. These paging devices are generally tuned to a predetermined frequency that is shared with many other paging devices. The reception of a particular message by a paging device activates an acoustic,

vibrating, or visible alert, thereby indicating to the subscriber that a message has been received.

The addressability of a one-way paging device is determined by a unique identifier stored within the pager. The unique identifier may be considered analogous to a telephone number. For historical reasons, it is often referred to as a "capcode" because in early paging devices, a code number was printed on a cap that fit on top of the pager. The capcode is typically a four or seven digit number. This number is used by the paging system to generate the right sequence of tones to alert a specific paging device. In other words, the capcode is the unique serial number that paging system transmitters transmit to notify a paging device of an incoming message.

Examples of one-way paging messages intended for multiple subscribers include headline news, sports scores, and financial information. More specifically, companies such as Mobeo, Inc. (formerly DocuPro, Inc.) of Bethesda, Maryland, provide real-time quotes of financial instruments, energy instruments, world metal markets, and late-breaking news. A subscriber of Mobeo can receive such message information using a one-way paging device such as the ADVISOR™ Gold pager manufactured by Motorola, Inc. of Schaumburg, Illinois. The same message information is broadcast by every transmission facility of the wireless data network supporting Mobeo. As discussed above, the addressability of a one-way paging device is determined by its capcode. These capcodes can be reprogrammed such that multiple paging devices have the same capcode. Thus, when multiple paging devices are programmed to have same capcode, each paging device can receive the message information broadcast by the transmitters.

A further disadvantage of these one-way paging systems is that the message information sent to the multiple subscribers is not tailored to the interests of each subscriber. Rather the message information is generally created to appeal to a broad spectrum of subscribers regardless of their individual interests and/or needs. For example, if individuals subscribe to a nationwide sports paging service, the message information can include the final results of the current day's baseball

games because this type of information would probably appeal to a broad spectrum of subscribers. However, since the performance of a Baltimore Orioles' player is probably not of interest to a subscriber located in Seattle, such information cannot be economically provided to a Baltimore subscriber. That is, it would be a very inefficient use of valuable airtime for a service provider to transmit information relating to a Baltimore player from every transmission facility in a nationwide system. More generally, it is not efficient to send an information to the entire coverage area of a nation wide paging service where the information is only of interest to subscribers in one specific geographic area

Still another disadvantage of these one-way paging systems is that subscribers pay the same amount for a service whether they desire information only once a day or fifty time a day. This may cause a service provider to lose revenue from customers that want only minimal information and are thus unwilling to pay for full service. Accordingly, it would be beneficial for a service provider to charge relative to the extent of a subscriber's use of service.

Attempts have been made to overcome some of the above disadvantages. For example, limited two-way wireless communications have been added to paging systems that were designed to handle one-way paging. For example, Motorola has developed the ReFLEX™ Protocol for two-way paging. A primary use of ReFLEX is to enable a paging device to send an acknowledgment (ACK) message indicating that a message has been received. This increases the reliability of a paging system because a message can be resent until an ACK message has been received. However, since ReFLEX was designed to modify an existing one-way FLEX™ protocol, its two-way capabilities are somewhat limited. For example, for messages originating at a paging device, ReFLEX support data rates of only 800, 1600, 6400, or 9600 bits per second (bps). Additionally, it typically takes on the order of a few minutes, from the time a message is sent to a paging device, to receive an ACK message using ReFLEX. Accordingly, ReFLEX has not satisfactorily overcome most of the above discussed disadvantages. More

generally, ReFLEX has not proved acceptable for real time two-way communications.

More robust two-way wireless paging systems include the BellSouth Wireless Data network (also known as the RAM Mobile Data network) and the ARDIS network. These networks provide two-way paging using paging devices such as the Inter@active Pager™ manufactured by Research In Motion (RIM), Limited, of Waterloo, Ontario, Canada. This RIM two-way pager provides fast two-way delivery of full-length, error-free, alphanumeric messages with guaranteed delivery. For example, when using the RIM pager with the BellSouth Wireless Data network or the ARDIS network, an acknowledgment message is received within a few seconds of the original message being sent. Thus, such networks and paging devices are beginning to provide two-way wireless paging services that have not previously been available.

Additional details of the BellSouth and ARDIS networks are publically available. For example, U.S. Patent No. 5,526,401, entitled *"Method and Apparatus for Acknowledging A Paging Message Via A Cellular Network Control Channel"*, and U.S. Patent No. 5,797,097, entitled *"Method and Apparatus for Identifying the Location of a Roaming Pager"*, both of which are assigned to BellSouth Corporation, of Atlanta, Georgia, and both of which are incorporated herein by reference, provide additional details of the BellSouth network.

Two-way paging devices are addressed through the use of unique identifiers. Some identifiers are programmable and others are hard coded and fixed in a paging device. A programmable and/or hard coded identifier can be used to address a specific paging device. Because two-way paging devices transmit messages that include these unique identifiers, fraud is more likely to be detected.

There is a need to overcome the above discussed disadvantages. More specifically there is a need to cost effectively and efficiently provide subscribers with information specific to their needs and/or desires when the subscribers need and/or desire such information. Further, there is a need to provide subscribers

with information that has a logical and useful format. Additionally, there is a need to provide a subscriber with information that is specifically formatted for that individual subscriber. Also, there is a need to efficiently request and receive complex sets of information (for example, financial information) using a minimum amount of airtime.

Summary of the Invention

The present invention is directed toward a method and system for providing formatted information via a wireless communications system that includes a plurality of cell sites. The method includes the step of storing a plurality of page templates each having a page identifier and at least one information field. The method also includes the step of receiving a request from a first two-way wireless communications device, wherein the request specifies the first device and a first page identifier selected by a user of the first device. A first page template, of the plurality of page templates, is determined in response to receiving the request. The first page template corresponds to the first page identifier. The method also includes determining information relating to an information field of the first page template and sending a response message to the first device, wherein the response message includes the determined information. The information can then be displayed on a display of the first device.

A portfolio list, including at least the first page identifier, can be displayed on the first device. The user of the first paging device can select a page identifier from this portfolio list. In one embodiment, the portfolio list can be displayed in response to a portfolio key of the first paging device being pressed, regardless of what was displayed on the first paging device prior to the portfolio key being pressed.

Each of the plurality of stored templates can also corresponds to a two-way wireless communications device. Accordingly, a first page template corresponding to both the first page identifier and the first device can be different

than a further page template corresponding to the first page identifier and a second device.

The request can specify a brief page identifier corresponding to the first page identifier to thereby reduce airtime used when sending the request from the first device to a receiver of a cell site.

Brief Description of the Figures

The features, objects, and advantages of the present invention will become more apparent from the detailed description set forth below when taken in conjunction with the drawings in which like reference characters identify corresponding elements throughout and wherein:

FIG. 1 illustrates an exemplary wireless communication system in which the present invention is useful;

FIGS. 2A and 2B illustrate exemplary two-way paging devices for use with the present invention;

FIG 3 shows a portfolio list presented on a display screen of a paging device, according to an embodiment of the present invention;

FIG. 4 shows a formatted page as it is presented on a display screen of a paging device, according to an embodiment of the present invention;

FIGS. 5A and 5B illustrate portions of request messages for use with the present invention;

FIGS. 6 and 7 illustrate tables that map cell sites with unique identifiers of paging devices;

FIG. 8 illustrates a table that maps page identifiers, unique identifiers, and templates, according to an embodiment of the present invention;

FIG. 9 shows an exemplary "Symbol Entry screen" according to an embodiment of the present invention; and

FIG. 10 is a flowchart depicting the high level operation of the present invention.

Detailed Description of the Preferred Embodiments

I. Introduction

The present invention is particularly suited for use in two-way wireless communications systems. The method and system of the present invention supports the efficient transmission of formatted information to two-way communications devices upon receiving a request for such information from the device.

A preferred embodiment of the invention is discussed in detail below. While specific steps, configurations and arrangements are discussed, it should be understood that this is done for illustrative purposes only.

II. Exemplary Two-Way Wireless Communications System

An exemplary wireless communication system 100 in which the present invention is useful is illustrated in FIG. 1. Communications system 100 includes a plurality of cell sites102 each having a coverage area that is typically about 5 to 10 miles in diameter. A coverage area of one cell site often overlaps a portion of a coverage area of a second cell site, which are illustrated for exemplary purposes by the hexagonal regions. Each cell site 102 includes an antenna 104 for transmitting and receiving paging messages to and from two-way wireless paging devices 108 that are located within a geographic coverage area of the cell site 102. Alternatively, separate antennas can be used for sending and receiving messages, as would be apparent to a person skilled in the relevant art. Each cell 102 is coupled to communications network 110, which in a preferred embodiment is an X.25 packet switched network. Communications network 110 may include, but is not limited to, land based links such as fiber optics or terrestrial microwave, and/or satellite based links, as would also be apparent to a person skilled in the relevant art.

Each cell site 102 is in communications with a message system center (MSC) 120 that includes a subscriber database that maintains records of all subscribers on the system, a unique identity sequence for the subscriber's paging device, and an indication of the cell site from which a paging device last sent a message (such as an acknowledgment message). Preferably, communications between each cell cite 102 and MSC 120 is accomplished through communications network 110. Alternatively, each cell site 102 can have a dedicated link to MSC 120.

Communications network 110 can be coupled to public switched telephone network (PSTN) 112 so that a caller can use PSTN 112 to send a message to paging device 108, and vice versa.

A message can also be sent from one paging device 108 to another paging device 108 using communications system 100.

Messages transmitted to paging device 108 from antenna 104 of cell site 102 shall be referred to herein as forward channel messages or pages. Messages originating at paging device 108 and received by antenna 104 of cell site 102 shall be referred to herein as reverse channel messages.

In a preferred embodiment, communications system 100 is the Bell South Wireless Data network (also known as the RAM Mobile Data network) or the ARDIS network, which are both well known two-way nationwide wireless packet data networks.

Two-way wireless communications device 108 (also referred to herein as a paging device) typically identifies itself to MSC 120 by sending a registration or identification signal. Such signals include a data field including at least a unique identification identifier, such as a Mobile Identification Number (MIN) and/or Electronic Serial Number (ESN). A MIN, which can be reprogrammed, is analogous to a telephone number. An ESN is hard-coded and fixed such that it supposedly cannot be changed. Some paging devices include both a MIN and an ESN. The paging device used in the preferred embodiment of the present invention, discussed in more detail below, only includes one unique sequence,

known as a Mobile Access Number (MAN), which is similar to an ESN in that it is hard-coded and fixed. The identification signal sent by paging device 108 can include one or more of the above discussed unique identifiers. Such identification information can be periodically transmitted by paging device 108 and/or included with other types of messages sent by paging device 108.

An optional function of MSC 120 is to determine whether the unique identifier of a paging device is valid. A received unique identifier, such as a string of digitally represented alphanumeric characters, can be compared to a database maintained of unique identifiers (i.e., MIN, ESN, MAN) to detect fraud.

MSC 120 can keep track of the approximate whereabouts of each paging device 108 by keeping track of which cell site 102 a message, sent by a paging device 108, originated. When MSC 120 is thus informed of the approximate whereabouts of each individual paging device 108, it can later limit the number of cell sites 102 from which it transmits a message addressed to a particular paging device 108. MSC 120 can even limit the transmission of a message to only one cell site, the cell site whose coverage area the particular paging device 108 is believed to be located within. The coverage area of the limited number of cell cites 102 (possibly only a single cell site or a last known site and its adjacent sites) shall be referred to as a targeted coverage area. Thus, the targeted area can be the area covered by a single cell site or a slightly larger area that is covered by a few cell sites. This limited or "targetted paging" is much more efficient than broadcast-type paging where a message is transmitted from every cell site, regardless of a location of the paging device 108 to which the message is addressed.

Service providers 114 are supported by communications system 100. That is, communications system 100 provides for message delivery between a service provider 114 and one or more paging devices 108. Service providers 114 can communicate directly with communications network 110. Alternatively, service providers 114 can communicate with communications network 110 through PSTN 112. In one embodiment, service providers 114 provide information to a paging

device 108 upon receiving a request from the paging device 108. Additionally, service providers 114 can initiate the sending of information to a paging device 108. This can be done periodically or upon a triggering event. Additional details about the types of services and the information provided by services providers 114 are discussed below.

Service providers 114 maintain or otherwise have access to local or remote databases which store and/or provide various types of data. FIG. 1 shows remote databases 130 that are maintained by data sources 132. Service provider 114 can communicate with data sources 132 through dedicated links or through communications network 110, for example. The type and number of databases, and the form of communication of data between the service providers 114 and the databases, is implementation specific.

The invention covers the ability of a service provider system to provide formatted information to paging devices (*i.e.*, uniquely identifiable two-way wireless communications devices) via a wireless communications system, which typically has a plurality of cell sites that are coupled to a communications network. The functions performed by the service provider system can comprise software running on one or more general purpose computers or on telecommunications-specific hardware. Alternatively, the combination of the software and hardware to accomplish the functions of the present invention can be conceptualized as a union of service provider controllers that each perform a discrete task, such as: storing a plurality of page templates each having a page identifier and at least one information field; receiving a request from a first two-way wireless communications device, the request specifying the first device and a first page identifier selected by a user of the first device; determining a first page template of the plurality of page templates that corresponds to the first page identifier; determining information relating to an information field of the first page template; and sending a response message to the first device, the response message including the determined information. Two or more of these discrete tasks can be performed by a single service provider controller. Alternatively, discrete tasks can

be performed by any number of service provider controllers. A further description of exemplary software and hardware controllers is provided below.

III. Exemplary Two-Way Paging Device

An exemplary two-way wireless paging device is illustrated in FIG. 2A. Paging device 108 includes antenna 202, transmitter 204, receiver 206, microprocessor 208, display 210 and keypad 212. Transmitter 204 is controlled by microprocessor 208 to transmit through antenna 202 reverse channel messages. Forward channel messages received from a transmitter of the paging system are received through antenna 202 or a separate antenna (not shown). The received messages are routed from antenna 202 to receiver 206 and processed by microprocessor 208, for example. Display 210 can be a liquid crystal display and is used for displaying, to a user (also referred to as subscriber) of paging device 108, information received via communications system 100. Display 210 can also display lists and/or menus from which a subscriber can make selections and perform various functions. Other methods of presenting the received information, such as aurally through a speaker or through another type of display, are not precluded. Keypad 212 can include as few as one button, but can also include an entire alphanumeric keypad.

In a preferred embodiment, paging device 108 is an Inter@ctive™ Pager 950 manufactured by Research In Motion (RIM), Limited, of Waterloo, Ontario, Canada. The RIM Inter@ctive pager (RIM pager) is a commercially available device that provides two-way wireless communications. The RIM pager, shown in FIG. 2B, includes a 31-key keypad 212, roller wheel 214 that is similar to a mouse, and screen display 210 with 8 lines of text by approximately 28 characters per line. The RIM page also includes a built-in internal radio modem for two-way wireless communications over a cellular network such as the BellSouth network. Of course, the use of other two-way cellular paging devices is within the spirit and scope of the present invention.

Paging device 108 can also includes memory elements (not shown). For example, the RIM pager includes 1 Mbytes of flash memory and 304 Kbytes of static random access memory (SRAM). Computer programs (also called computer control logic) can be stored in these memory elements. Such computer programs, when executed, enable paging device 108 to perform some of the features of the present invention as discussed herein. In particular, the computer programs, when executed, enable microprocessor 208 to perform specific features of the present invention.

In an embodiment where features of the invention are implemented using software, the software can be stored in a computer program product and loaded into the memory of paging device 108 using, for example, a communications interface. For example, the RIM pager includes an RS-232 compatible serial port. The control logic (software), when executed by microprocessor 208 causes microprocessor 208 to perform certain functions of the invention as described herein.

IV. Preferred Embodiment of the Invention

A. Portfolio Lists

A main feature of the present invention is to provide two-way pager subscribers with a list of formatted information that they can request. In order to achieve this aspect of the present invention, such a list can be displayed on display 210 of paging device 108. FIG. 3 shows a portfolio list 300 that is presented on display 210 of paging device 108. In a preferred embodiment, portfolio list 300 is maintained within a memory (not shown) of paging device 108. Additionally, in a preferred embodiment, discussed in more detail below, a user can press a "portfolio" button to have portfolio list 300 presented on display 210, regardless of what was previously presented on display 210.

Portfolio list 300 is made up of page identifiers 302. The exemplary portfolio list 300, shown in FIG. 3, includes page identifiers +FX, +INDICES, +GOV_PX, +FUTURES, +MINORS, +HILO and +TONY1.

A user can scroll through and select any individual page identifier 302 of portfolio list 300 using an input mechanism, such as keypad 212, of paging device 108. In a preferred embodiment, where paging device 108 is RIM pager discussed above, a user can scroll through portfolio list 300 using the thumb wheel 214. More specifically, the user can roll or turn thumb wheel 214 until a desired one of the page identifiers 302 is highlighted, as shown generally by the shading of the page identifier "+FUTURES." The user can then press the thumb wheel to select the highlighted page identifier 302. The use of other types of input mechanisms to scroll through portfolio list 300 and select a page identifier 302, such as up/down arrows, shift keys, return keys, and the like, are within the spirit and scope of the present invention. Other types of indications besides highlighting, such as pointing with arrows or bolding, can be used to indicate which page identifier 302 is to be selected.

Paging device 108 can store one or more portfolio lists 300. Each list can be related to a particular topic. For example, the portfolio list 300 shown in FIG. 3 relates to financial information. Another portfolio list 300 (not shown) can relate to sports, wherein the page identifiers can include +YANKEES, +METS, +DODGERS, and the like. A user can move from one portfolio list 300 to another using an input mechanism of paging device 108.

Each page identifier 302, discussed in more detail below, specifies information that is stored and/or collected at a service provider 114. By scrolling to and then selecting a page identifier 302, a request is sent from paging device 108 to service provider 114. For example, paging device 108 transmits a request to cell site 102. The request is then forwarded from cell site 102 to service provider 114 via communications network 110.

B. Request Messages

FIG. 5A illustrates and exemplary request messages that is generated by paging device 108. In FIG. 5A, request message 500 includes portions 502 and 504. Portion 502 specifies a unique identifier (for example, a MAN or ESN) of paging device 108. Portion 504 specifies the page identifier 302 that was selected (from portfolio list 300) by a user of paging device 108. In another embodiment, shown in FIG. 5B, the request message 500 also includes portion 506 that specifies a cell site from which request message 500 was sent. The cell site information can be added to the request by the provider of communications system 100. For example, the cell site information can be provided by MSC 120 before the request is forwarded to service provider 114. Additionally, request massage 500 can include server address (not shown) of service provider 114. In a preferred embodiment, this server address is coded into an application running on paging device 108. In this manner, when a user selects a page identifier (associated with service provider 114) the server address is automatically included as part of the request message. Additional details of page identifiers 302 are discussed below.

Cell site information can be maintained in a database of the provider of communications system 100 (such as BellSouth). This database, maintained at MSC 120 for example, can map unique identifiers of paging devices 108 with cell sites 102. MSC 120 can keep track of the whereabouts of each paging device 108 by keeping track of which cell site 102 a message, sent by a paging device 108, originated. Examples of tables that can be stored in such a database are shown in FIGS. 6 and 7. FIG. 6 shows table 600 that includes MAN column 602 and cell site column 604. Alternatively, FIG. 7 shows table 700 that includes cell site column 702 and MANs column 704. For example, row 706 of table 700 indicates that paging devices having MAN_1 and MAN_5 are within the coverage area of cell site 1. This cell site information can be added to a request message 500 before MSC forwards the message to service provider 114. Alternatively, service provider 114 can determine which cell site's coverage area paging device 108 is

within by requesting such cell site information from MSC 120 via communications network 110.

C. Page Identifiers

Each page identifier 302 specifies information that is stored and/or collected at a service provider 114. In one embodiment, service provider 114 stores a plurality of templates, wherein each template corresponds to a page identifier. Each of these templates includes at least one information field. For example, the template and information field(s) corresponding to the +FX page identifier will be described. +FX is actually a brief identifier that stands for "foreign exchange." The template corresponding to +FX shall be referred to herein as the +FX template. For example, the +FX template shown in FIG. 4 includes information fields 406. Each information field can have a corresponding information field identifier 404. Examples of information field identifiers are Y and CAD, which stand for "Yen" and "Canadian Dollar", respectively. Once a request message specifying +FX is received, service provider 114 determines real-time data for each information field 404. For example, for information field identifier CAD, the data provided for its corresponding information field can relate to the exchange rate of the Canadian Dollar. A "completed" template shall be referred to herein as a formatted page 400. What is meant by "completed" is that data has been determined for each information field 406 of the template 402. In a preferred embodiment, service provider 114 determines the real-time data by obtaining it from external data sources 132, which are discussed in more detail below. Additional details of formatted pages 400 are also discussed below.

It is noted that terms such as formatted page, template and information field refer to information that the service provider 114 determines in response to the request. As noted herein, the service provider 114 either looks-up pre-stored information or queries a database for real-time information. Thus, the formatted page, template or information field are data structures that are propagated or

otherwise linked or field delimited (possibly via software by the service provider) with the resultant information. This enables specific resultant information to be quickly sent by the service provider 114 as pages, field delimited text, or the like, to the requesting paging device (i.e., subscriber) and displayed by a paging device 108. Transmitted resultant information for a given information field need not be limited to the amount of information that can be displayed on the paging device's display. The paging device's operating system only needs to be able to determine what should displayed first, so that the subscriber can later scroll to view the additional data.

In a preferred embodiment, each page identifier 302 includes a predetermined symbol (for example, an ASCII character) that identifies a string of alphanumeric characters as being a page identifier. For example, each page identifier 302 can begin with a "+" symbol. Accordingly, the existence of the "+" symbol in "+FX" identifies this string as a page identifier. Of course the use of other symbols/characters is within the scope of the present invention. The advantage of each page identifier 302 having such a predetermined symbol is that it enables a message specifying a page identifier to be distinguished from other types of messages that can be sent using paging device 108. For example, if a subscriber wants to receive a single quote, such as the current price of a share of Apple Computer, Inc. stock, the subscriber can enter the four character symbol "APPL" on the paging device and then press send. The absence of the "+" symbol indicates that a formatted page is not requested. In response to receiving a request message that does not include a page identifier, service provider 114 can send back a message, for example, that simply includes a single current stock price.

D. Formatted Pages

As briefly discussed above, FIG. 4 shows an example of a formatted page 400 corresponding to page identifier +FX. Formatted page 400 includes

information field identifiers 404 (shown in a first column) and corresponding information fields 406 (shown in a second column). The values within the information fields are U.S. exchange rates. For example, the value 115.00/05 + 010 corresponding to Y, should be interpreted as the exchange rate being 115.00/05 Japanese Yen per 1 U.S. Dollar. The number following "+" or "-" symbols represent a positive (+) or negative (-) change in value for the entire most recent trading day. Other formatting schemes are envisions, which do not depart from the spirit and scope of the present invention.

Upon receipt of a request message from paging device 108, service provider 114, using a processor (not shown), examines the request. Assuming the request message specifies a page identifier, service provider 114 determines the page identifier specified by the request message. Service provider 114 can also determine an identity of paging device 108 using the unique identifier specified in the request. In a preferred embodiment, service provider 114 determines an identity of paging device 108 based on a Mobile Access Number (MAN), discussed above. If the request includes information specifying a cell site from which paging device 108 sent the request, then service provider 114 can also determined the cell site of paging device 108. Alternatively, service provider 114 can determine the cell site of the paging device 108 by requesting such information from a database of MSC 120, as discussed above.

Assuming a request message specifies page identifier +FX, service provider 114 determines information relating to +FX. In a preferred embodiment, service provider 114 retrieves a +FX template (from a plurality of stored templates) that includes information fields 406, discussed above. Service provider 114 can then obtains real-time data from one or more data sources 132. These data sources 132 maintain real-time databases 130 that contain information relating to finance, sports, weather, airline schedules, and the like. Examples of data sources 132 include Reuters, which is a well known leading financial and news provider, and GovPX, which provides Treasury market pricing. A data source that maintains foreign exchange information is Garvin Information

Systems, LLC, of New York, NY, who provides real-time data feeds for spot foreign exchange rates, spot cross rates, currency forward rates, and the like.

Service provider 114 obtains this real-time data to complete a template 402 (corresponding to the page identifier) and thereby creates a formatted page 400. The formatted page 400 can then be sent to the paging device 108 that sent the request message. In a preferred embodiment, the response message is transmitted to only a targetted coverage area, as described above. The response message can be re-transmitted until service provider 114 and/or MSC 120 receive an acknowledgment message from paging device 108 indicating that paging device 108 has received the formatted page 400.

E. Personalized Formatted Pages

In one embodiment of the present invention, subscribers can create custom or personalized formatted pages. For example, in FIG. 3 the "+TONY1" page identifier shown in portfolio list 300 can correspond to a personalized formatted page. A personalized formatted page can correspond to a unique identifier of a paging device 108 such that the formatted page corresponding to "+TONY1" can be different for a first paging device 108A than it is for a second paging device 108B. In other words, formatted pages corresponding to the same page identifier can be different for different paging devices 108. This is because service provider 114 can maintain a database that maps page identifiers to unique identifiers and templates 402. An example of a table maintained in such a database is shown in FIG. 8.

FIG. 8 illustrates a table 800 that includes a page identifier column 802, a MAN column 804, and a template column 806. Some page identifiers 302, such as +FX and +FUTURES,can correspond to the same template for all MANs. Accordingly, when service provider 114 receives a request message specifying +FX, from a first paging device 108A (having unique identifier MAN_4) and a second paging device 108B (having unique identifier MAN_8), the response

message sent to the first and second paging devices 108A, 108B will cause the same formatted page to be displayed. However, when service provider 114 receives a request message specifying page identifier +TONY1 from the same two paging devices, 108A and 108B, the response message sent to the first paging device 108A will be different than the response message sent to the second paging device 108B, thereby causing a different formatted page to be displayed on the first paging device 108A as compared to that displayed on the second paging device 108B. This is because the same page identifier, +TONY1, can correspond to different templates depending on the MAN of the paging device that sent the request. The different templates can have different information fields. For example, Template+TONY1(4) can have information fields that relate to the prices of precious metals, while Template+TONY1(8) can have information fields that relate to airline schedules, sports scores, and headline news. Accordingly, by maintaining a database having tables similar to table 800, service provider 114 can efficiently and cost effectively provide information that is specific to each subscriber.

Additionally, a page identifier, such as +GROUP, can correspond to one template (Template+Group(A)) for one group of paging devices (having unique identifiers MAN_4, MAN_8, MAN_{12} and MAN_{33}) and correspond to a second template (Template+Group(B)) for a second group of paging devices (having unique identifiers MAN_7, MAN_{22}, MAN_1 and MAN_{50}). A group, for example, can include employees of the same company or some other plurality of subscribers having similar interests (e.g., shift schedules for groups of teams).

A subscriber can call service provider 114 and specify what information fields 406 the subscriber (also referred to herein as a user of paging device 108) wants in the templates corresponding to a personalized formatted page. Alternatively, service provider 114 can maintain a web page from which a subscriber can customize the template of his personalized formatted page. It is also anticipated that a message sent from paging device 108 to service provider 114 can provide the necessary information for service provider 114 to generate a

template for a personalized formatted page. A user of paging device 108 can add (or delete) page identifiers 302, such as those corresponding to personalized formatted pages, to (or from) portfolio list 300.

Service providers operating over one-way paging systems cannot provide such efficient and cost effective customized service because they would need to broadcast the personalized pages within the coverage area of every cell site. Additionally, service providers using one-way paging systems would not know when a subscriber wanted this personalized information and thus would need to periodically broadcast these personalized pages thereby wasting channel capacity and increasing the airtime used to send the personalized pages

F. Verifying Authorization

In a preferred embodiment, service provider 114 can determine whether paging device 108 is authorized to receive a response that includes information relating to the page identifier. For example, service provider 114 can utilize a database, that maps unique identifiers (i.e., MIN, ESN, MAN) with page identifiers, to determine whether paging device 108 is authorized to receive information relating to the page identifier specified in the request. In a preferred embodiment, service provider 114 maintains a database that maps MANs and page identifiers. After receiving a request message, if service provider 114 determines that paging device 108 is authorized to receive information relating to the page identifier, then service provider 114 determines the information relating to the page identifier in order to prepare a response message. If it is determined that paging device 108 is not authorized to receive the information relating to the page identifier, service provider 114 can send a message to paging device 108 indicating the unauthorized status or service provider 114 need not respond to the request.

An important advantage of using the unique identifier of paging device 108 to determine authorization is that the procedure of "logging in" is avoided. Typically, a user must log into a system before it can request proprietary

information. This may require entering a user name, password, and the like. Such a login process is time consuming. Additionally, a logging procedure can consume expensive airtime when performed over a wireless two-way communications system. That is, a logging procedure typically necessitates multiple messages being sent between a service provider 114 and paging device 108 before authorization is determined. If a two-way paging subscriber's fee is dependent on the number of messages and/or the number of characters sent and/or received, a logging procedure increases the subscribers' bills. Additionally, a logging procedure can consume valuable channel capacity.

G. User Interface

In a preferred embodiment, where paging device 108 is the RIM pager discussed above, functions corresponding to the pressing of specific buttons on the pager can be modified. Normally, a user of the RIM pager must navigate out of one state to get to another state. For example, if a user is currently viewing a message sent from another paging device, the user must navigate out of the message and then navigate to the portfolio list before the user can select a page identifier. In a preferred embodiment, a user can press a predetermined button to jump directly to the portfolio list screen regardless of what was being presented on display 210. For example, pressing button 216 can cause portfolio list 300 to be immediately displayed. If more than one portfolio list 300 is stored in the RIM pager, a next portfolio list can be displayed by pressing button 216 a second time. To make button 216 a "portfolio button," a custom application can be developed for the paging device operating system using, for example, C++.

A custom application can also be developed to cause a "Symbol Entry" screen to be displayed when a predetermined button is pressed. Screen 900 of FIG. 9 is an example of such a screen. Pressing button 218 can cause screen 900 to be immediately displayed. A user can the enter a page identifier or other type of request using keypad 212. For example, a user can type "+FX" and then press

thumb wheel 214 in order to send a request message specifying +FX to service provider 114. Alternatively, a user can press button 218, type "APPL," and then press thumb wheel 214 in order to request the current stock price of Apple Computer, Incorporated. To make button 218 a "Symbol Entry button," a custom application can be developed for the paging device operating system using, for example, C++.

H. Description of Flow Diagram

The method according to the present invention provides information to uniquely identifiable two-way wireless communications devices. Below is a high level flow diagram that illustrates the method of the present invention in a wireless communications system including a plurality of cell sites. Each cell site has a corresponding coverage area, as described above.

Turning to FIG. 10, the method of the invention includes storing a plurality of page templates, wherein each page template has a corresponding page identifier and at least one information field, as shown in step 1002. In one embodiment, each page template also corresponds to a two-way wireless communications device, such that two page templates can be different if they correspond to the same page identifier but correspond to different devices.

In step 1004, a request is received from a first two-way wireless communications device (two-way pager). The request specifies the first device and a first page identifier that was selected by a user of the first device.

Based on the first page identifier specified in the request, a first page template is determined, as shown in step 1006. In the embodiment where each template also corresponds to a two-way wireless communications device, the first page template is determined based on the first page identifier and the first device, both of which are specified in the request.

The service provider then determines an item of information for each of the information fields of the first page template, as shown in step 1008. An

information field can correspond to, for example, the real-time exchange rate of Japanese currency, final results of a sporting event, current weather conditions, and the like. The item of information that is determined for each of the information fields is the actual data that the service provider collects, looks-up, or otherwise accesses. For example, if an information field corresponds to the real-time exchange rate of Japanese currency, the information that is determined is "115.00/05+010", for example. If the information field corresponds to the current weather conditions, the information that is determined is "52 degrees, barometer rising, light showers", for example. Because the service provider can determine the cell site from which the first device sent the request (as discussed above), the determined information can also correspond to a location of that cell site. For example, the determined current whether conditions can be specific to the location of the cell site from which the device sent the request. The service provider can collect such information from external data sources, as discussed above.

Once the service provider has determined the information in step 1008, the service provider then sends a response message to the first device, as shown in step 1010. This response message includes the information that was determined in step 1008. Once received at the first device, the information can be displayed on the first device's display.

V. Conclusion

There are many advantage of the present invention. For example, a formatted page 400 can include information specifically requested by a single subscriber. In contrast, one-way paging systems typically provide a subscriber with much more information than the subscriber wants. This is because the information that is broadcast in a one-way paging system must appeal to a broad spectrum of subscribers. Accordingly, when a subscriber receives more information than desired, he/she must parse through the information until the desired information is found.

Another advantage of the present invention is that it conserves channel capacity for at least the following reasons. The present invention only sends messages in response to a request or a triggering event. Conventional one way service providers must periodically send messages because they do not know when a subscriber wants information. Also, in a preferred embodiment the response messages are transmitted only within a targetted coverage area. In contrast, conventional one-way service providers typically must transmit messages to the coverage areas of every cell site, regardless of the location of paging devices, thereby wasting valuable channel capacity.

Service provider 114 can perform specific features of the present invention using service provider controllers, which in effect comprise a computer system. Such a computer system includes, for example, one or more processors that are connected to a communication bus. Although telecommunication-specific hardware can be used to implement the present invention, the following description of a general purpose computer system is provided for completeness.

The computer system can also include a main memory, preferably a random access memory (RAM), and can also include a secondary memory. The secondary memory can include, for example, a hard disk drive and/or a removable storage drive, representing a floppy disk drive, a magnetic tape drive, an optical disk drive, and the like. The removable storage drive reads from and/or writes to a removable storage unit in a well known manner. The removable storage unit, represents a floppy disk, magnetic tape, optical disk, and the like, which is read by and written to by the removable storage drive. The removable storage unit includes a computer usable storage medium having stored therein computer software and/or data.

The secondary memory can include other similar means for allowing computer programs or other instructions to be loaded into the computer system. Such means can include, for example, a removable storage unit and an interface. Examples of such can include a program cartridge and cartridge interface (such as that found in video game devices), a removable memory chip (such as an

EPROM, or PROM) and associated socket, and other removable storage units and interfaces which allow software and data to be transferred from the removable storage unit to the computer system.

The computer system can also include a communications interface. The communications interface allows software and data to be transferred between the computer system and external devices. Examples of communications interfaces include, but are not limited to a modem, a network interface (such as an Ethernet card), a communications port, a PCMCIA slot and card, etc. Software and data transferred via the communications interface are in the form of signals that can be electronic, electromagnetic, optical or other signals capable of being received by the communications interface. These signals are provided to communications interface via a channel that can be implemented using wire or cable, fiber optics, a phone line, a cellular phone link, an RF link, and the like.

In this document, the terms "computer program medium" and "computer usable medium" are used to generally refer to media such as removable storage device, a hard disk installed in a hard disk drive, and signals. Computer program products are means for providing software to the computer system.

Computer programs (also called computer control logic) are stored in the main memory and/or secondary memory. Computer programs can also be received via the communications interface. Such computer programs, when executed, enable the computer system to perform certain features of the present invention as discussed herein. In particular, the computer programs, when executed, enable the processor to perform features of the present invention. Accordingly, such computer programs represent controllers of the computer system.

In an embodiment where the invention is implemented using software, the software can be stored in a computer program product and loaded into the computer system using the removable storage drive, the hard drive or the communications interface. The control logic (software), when executed by the

processor, causes the processor to perform certain functions of the invention as described herein.

In another embodiment, features of the invention are implemented primarily in hardware using, for example, hardware components such as application specific integrated circuits (ASICs). Implementation of the hardware state machine so as to perform the functions described herein will be apparent to persons skilled in the relevant art(s).

In yet another embodiment, features of the invention can be implemented using a combination of both hardware and software.

The previous description of the preferred embodiments is provided to enable any person skilled in the art to make or use the present invention. While the invention has been particularly shown and described with reference to preferred embodiments thereof, it will be understood by those skilled in the art that various changes in form and details may be made therein without departing from the spirit and scope of the invention.

What Is Claimed Is:

1. In a wireless communications system including a plurality of cell sites, a method for providing formatted information, to uniquely identifiable two-way wireless communications devices, using minimal airtime, the method comprising the steps of:

(a) storing a plurality of page templates each having a page identifier and at least one information field;

(b) receiving a request from a first two-way wireless communications device, the request specifying the first device and a first page identifier selected by a user of the first device;

(c) determining a first page template of the plurality of page templates that corresponds to the first page identifier;

(d) determining information relating to an information field of the first page template; and

(e) sending a response message to the first device, the response message including the information determined in step(d).

2. The method of claim 1, further comprising the step of displaying the information on a display of the first device.

3. The method of claim 1, further comprising the step of displaying a portfolio list, from which the user can select a page identifier, on the first device, the portfolio list including at least the first page identifier.

4. The method of claim 1, wherein each of the plurality of templates stored in step (a) also corresponds to a two-way wireless communications device and wherein said step (c) comprises determining a first page template corresponding to both the first page identifier and the first device, wherein a further page

template corresponding to the first page identifier and a second device is different than the first page template.

5. The method of claim 1, wherein said step (d) further comprises determining further information relating a further information field of the first page template.

6. The method of claim 1, wherein said step (d) comprises retrieving the information from an external data source.

7. The method of claim 1, wherein said request specifies a brief page identifier corresponding to the first page identifier to thereby reduce airtime used when sending the request from the first device to a receiver of a cell site.

8. The method of claim 1, wherein said step (e) comprises:

(i) determining a first cell site, of the plurality of cell sites, from which the first device sent the request; and

(ii) transmitting the response message to the first device via the first cell site.

9. The method of claim 1, further comprising the step of determining whether the first device is authorized to receive the information.

10. The method of claim 9, wherein said step (e) is only performed if the first paging device is authorized to receive the information.

11. The method of claim 3, further comprising the step of displaying the portfolio list in response to a portfolio key of the first device being pressed, regardless of what was displayed on the first paging device prior to the portfolio key being pressed.

12. The method of claim 1, further comprising the step of displaying a symbol entry screen in response to a symbol key of the first device being pressed, regardless of what was displayed on the first device prior to the symbol key being pressed.

13. The method of claim 1, wherein step (b) further comprises receiving the request via an X.25 network.

14. A system for proving formatted information to two-way wireless communications devices via a wireless communications system having a plurality of cell sites, the system comprising:

a database that stores a plurality of page templates each having a page identifier and at least one information field;

a first service provider controller adapted to retrieve a first page template from said database in response to receiving a request from a two-way wireless communications device, wherein said first page template corresponds to a first page identifier specified in said request;

a second service provider controller adapted to determine information relating to an information field of said first page template; and

a third service provider controller adapted to send, to said device, a response message including said information relating to said information field.

15. The system of claim 14, wherein said response message causes said information to be displayed on said devise.

16. The system of claim 14, wherein said request is generated by a user of said devise selecting said first page identifier from a portfolio list displayed on said device.

17. The system of claim 14, wherein each of said plurality of templates stored in said database also corresponds to a two-way wireless communications device such that said first page template that corresponds to said first page identifier and said device is different than a second page template that corresponds to said first page identifier and a different two-way wireless communications device.

18. The system of claim 14, wherein said second service provider controller is adapted to determine further information relating a further information field of said first page template.

19. The system of claim 14, wherein said second service provider controller is adapted retrieve said information from an external data source.

20. The system of claim 14, wherein said request specifies a brief page identifier that corresponds to said first page identifier to thereby reduce airtime used to send said request from said device to a receiver of a cell site.

21. The system of claim 14, further comprising a fourth service provider controller adapted to determine whether said first device is authorized to receive said information.

22. The system of claim 21, wherein said third service provider controller sends said response message only if said device is authorized to receive said information.

23. In a wireless communications system including a plurality of cell sites, a system for providing formatted information, to uniquely identifiable two-way wireless communications devices, using minimal airtime, the system comprising:

means for storing a plurality of page templates each having a page identifier and at least one information field;

means for receiving a request from a first two-way wireless communications device, said request specifying said first device and a first page identifier selected by a user of said first device;

means for determining a first page template of the plurality of page templates that corresponds to said first page identifier;

means for determining information relating to an information field of said first page template; and

means for sending a response message to said first device, said response message including said determined information.

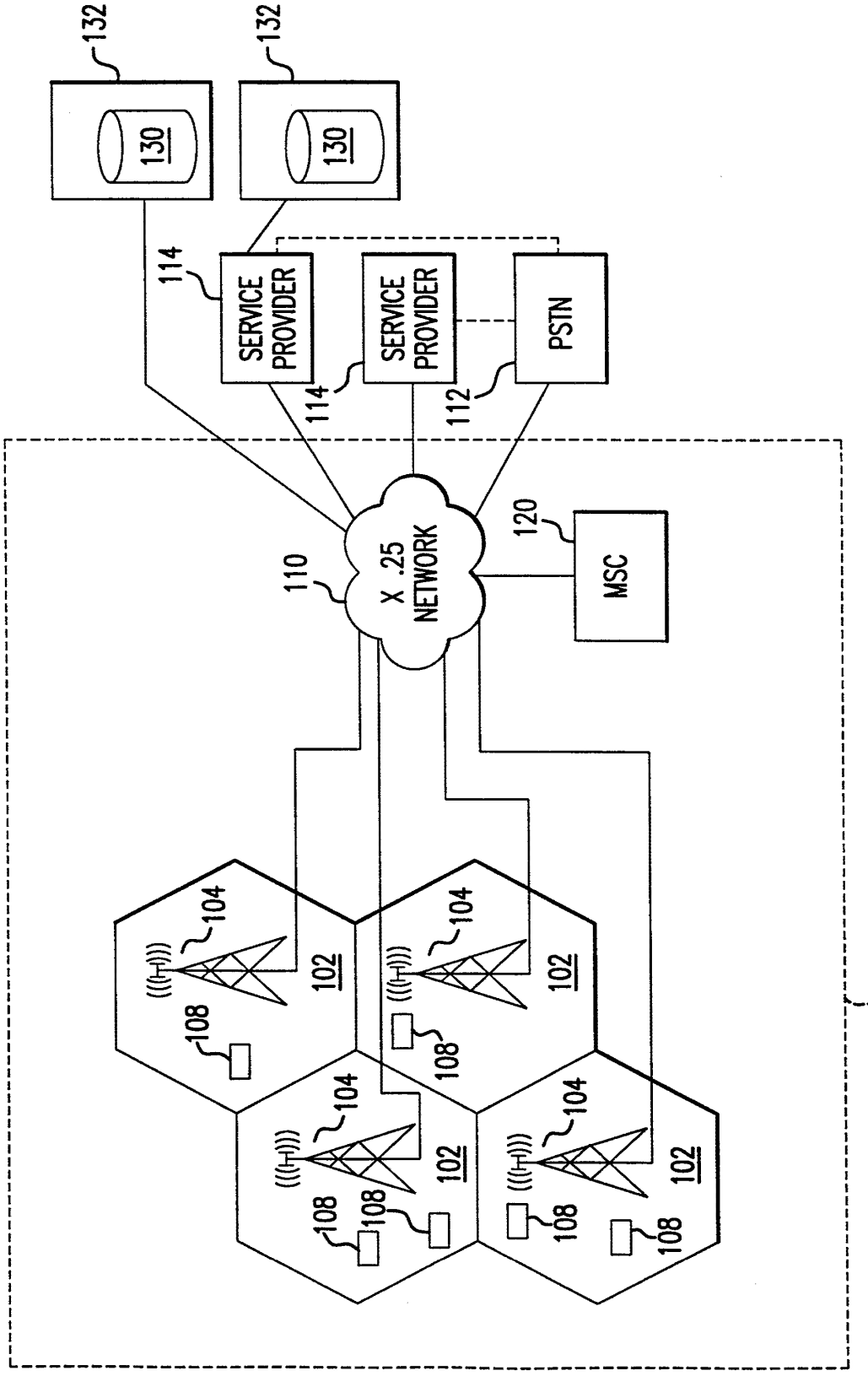

132
132
130
130
114
SERVICE PROVIDER
SERVICE PROVIDER
PSTN
114
112
110
X .25 NETWORK
120
MSC
104
102
108
100

FIG.1

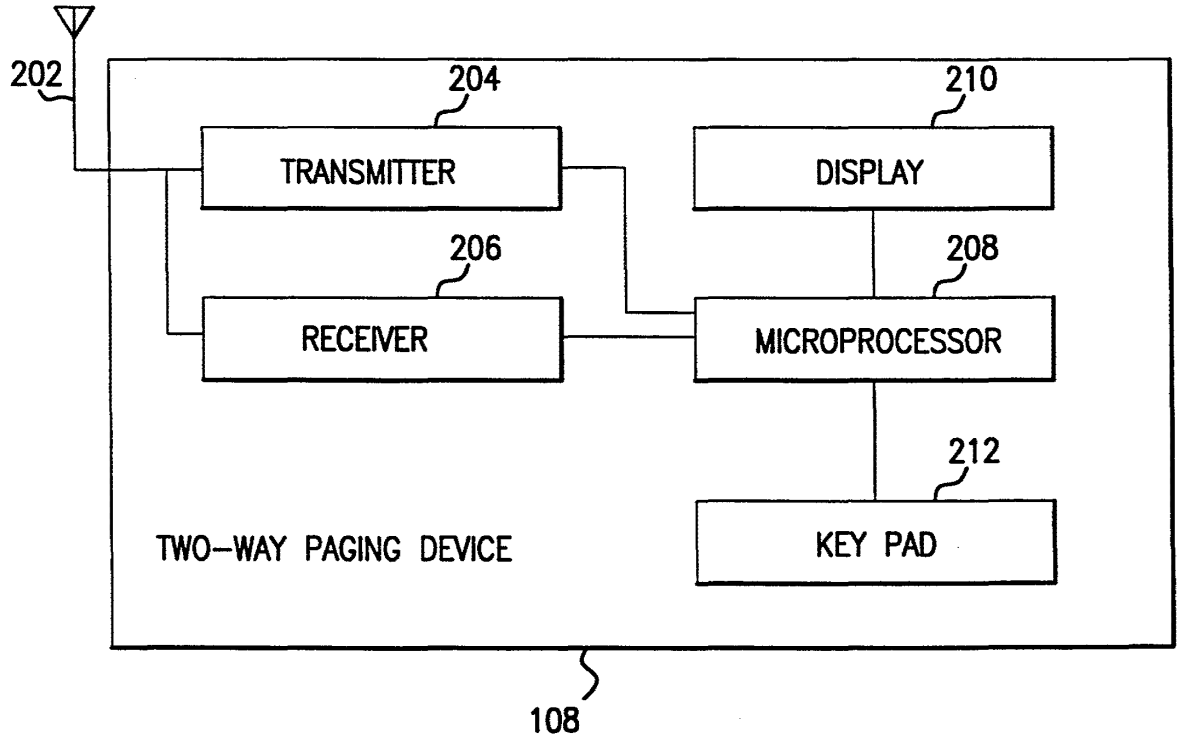

202
204
210
TRANSMITTER
DISPLAY
206
208
RECEIVER
MICROPROCESSOR
212
TWO-WAY PAGING DEVICE
KEY PAD
108

FIG.2A

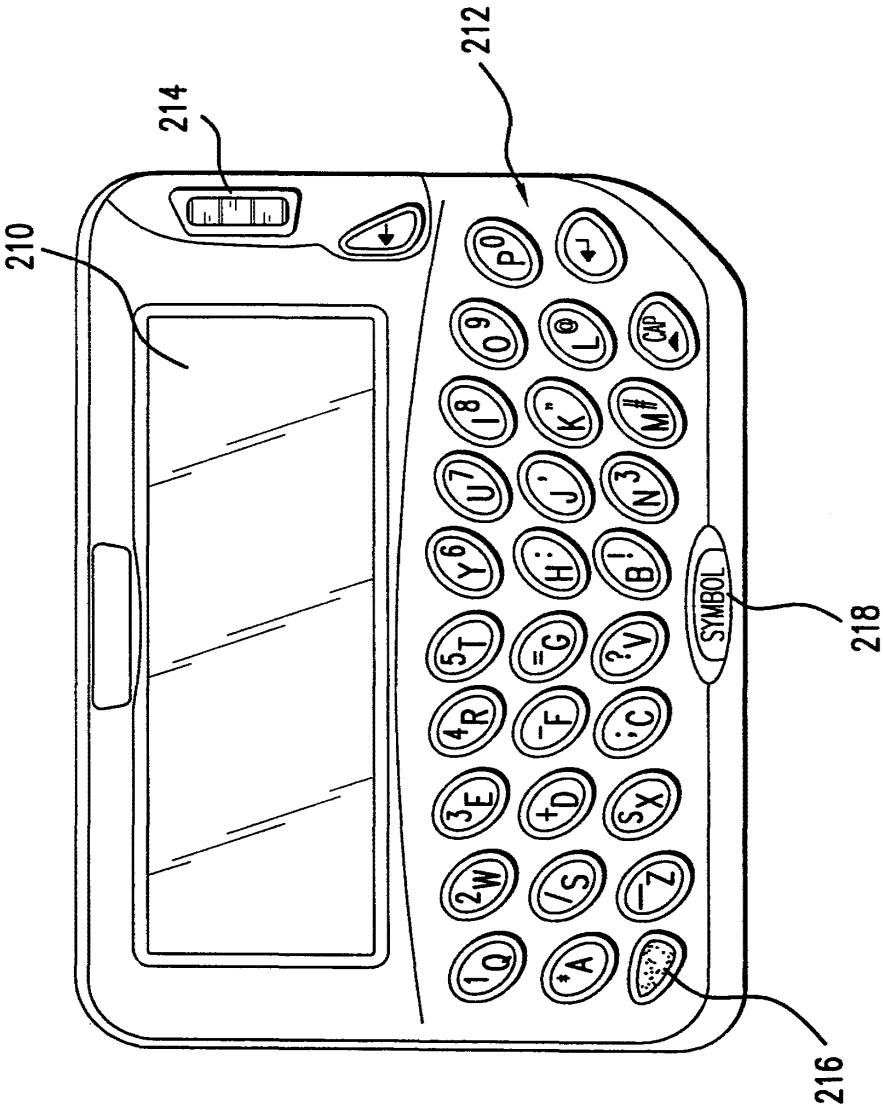


FIG.2B

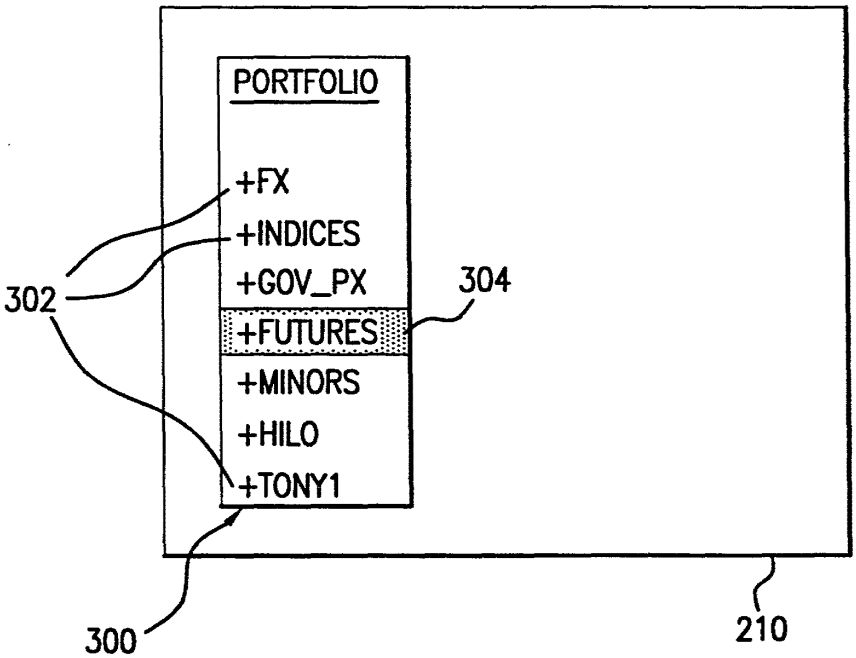

PORTFOLIO
+FX
+INDICES
+GOV_PX
+FUTURES
+MINORS
+HILO
+TONY1
302
304
300
210

FIG.3

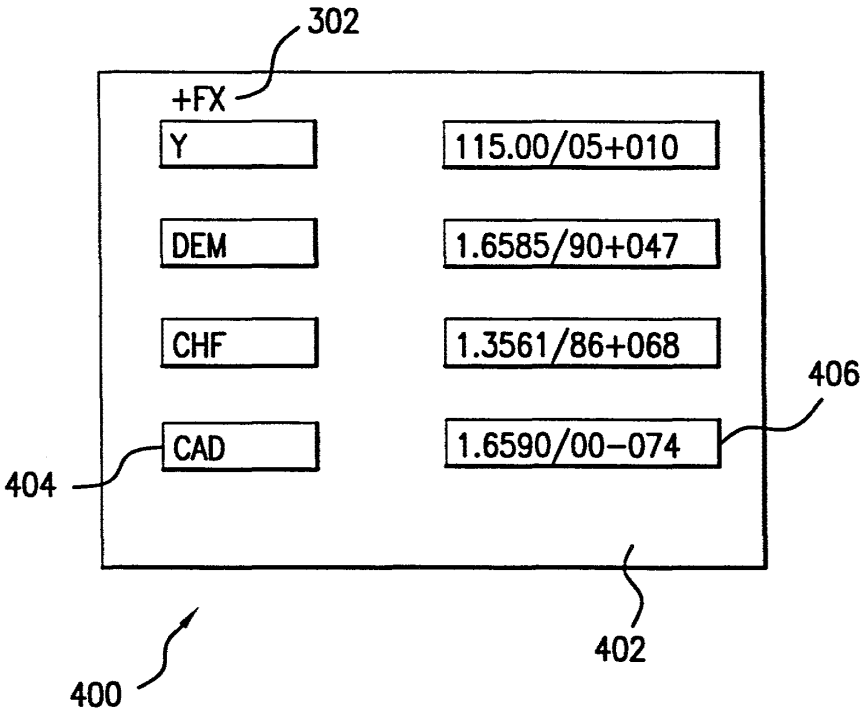

302
+FX
Y
115.00/05+010
DEM
1.6585/90+047
CHF
1.3561/86+068
406
CAD
1.6590/00-074
404
400
402

FIG.4

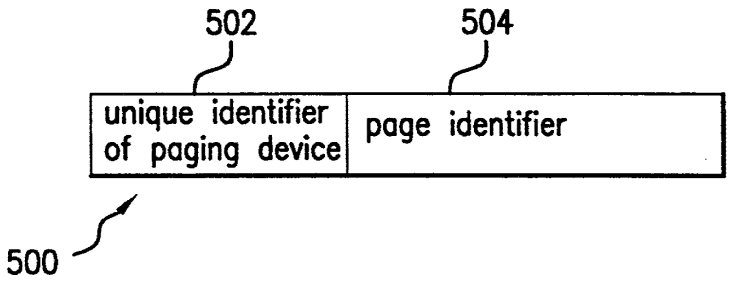

502
504
unique identifier of paging device
page identifier
500

FIG.5A

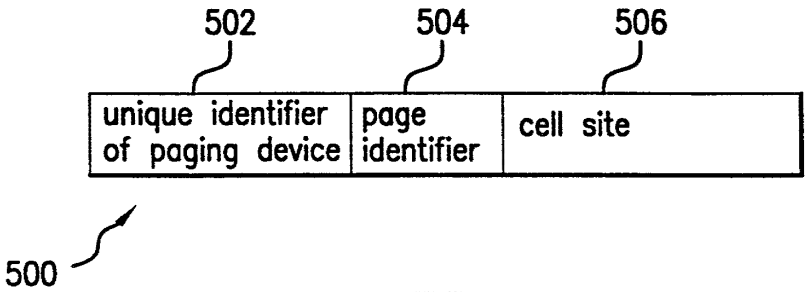

502
504
506
unique identifier of paging device
page identifier
cell site
500

FIG.5B

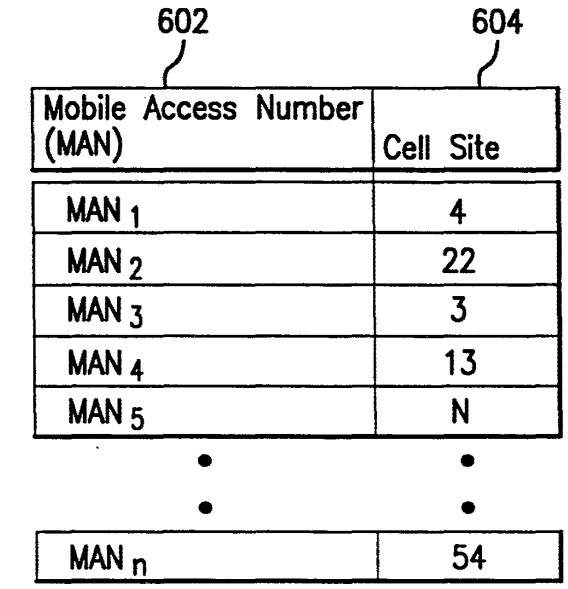

602
604
Mobile Access Number (MAN)
Cell Site
MAN 1
4
MAN 2
22
MAN 3
3
MAN 4
13
MAN 5
N
MAN n
54
600

FIG.6

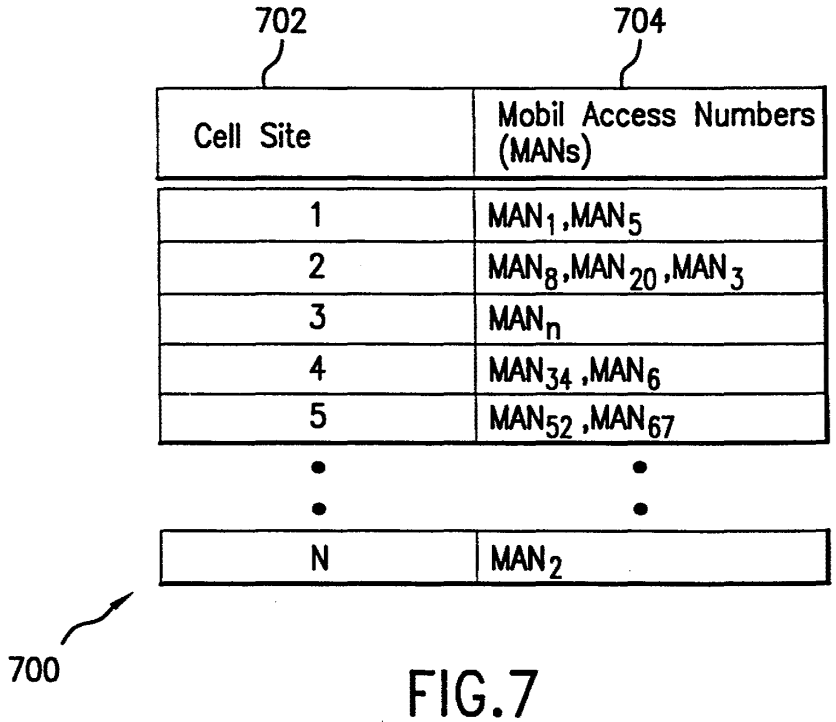

702
704
Cell Site
Mobil Access Numbers (MANs)
1
MAN1,MAN5
2
MAN8,MAN20,MAN3
3
MANn
4
MAN34,MAN6
5
MAN52,MAN67
N
MAN2
700

FIG.7

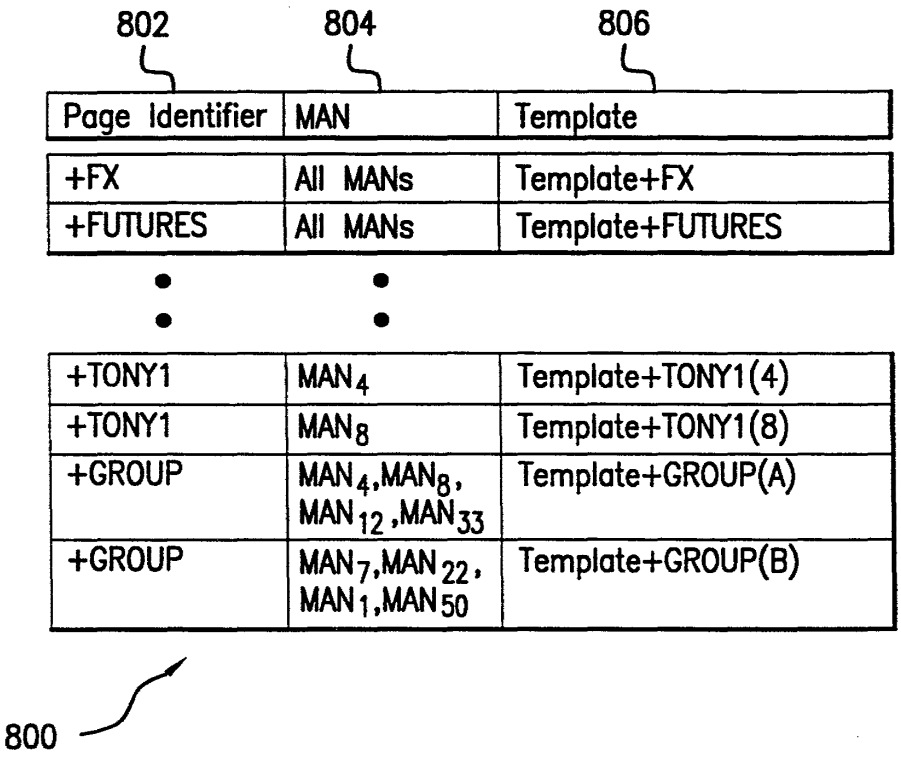

802
804
806
Page Identifier
MAN
Template
+FX
All MANs
Template+FX
+FUTURES
All MANs
Template+FUTURES
+TONY1
MAN4
Template+TONY1(4)
+TONY1
MAN8
Template+TONY1(8)
+GROUP
MAN4,MAN8, MAN12,MAN33
Template+GROUP(A)
+GROUP
MAN7,MAN22, MAN1,MAN50
Template+GROUP(B)
800

FIG.8

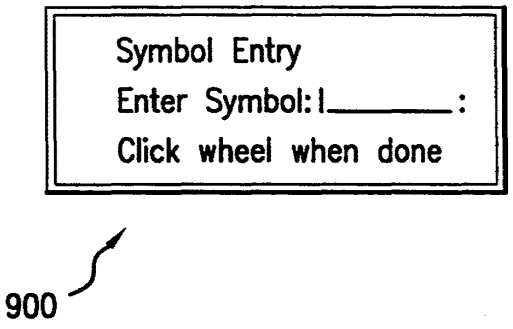

Symbol Entry
Enter Symbol: I_____:
Click wheel when done
900

FIG.9

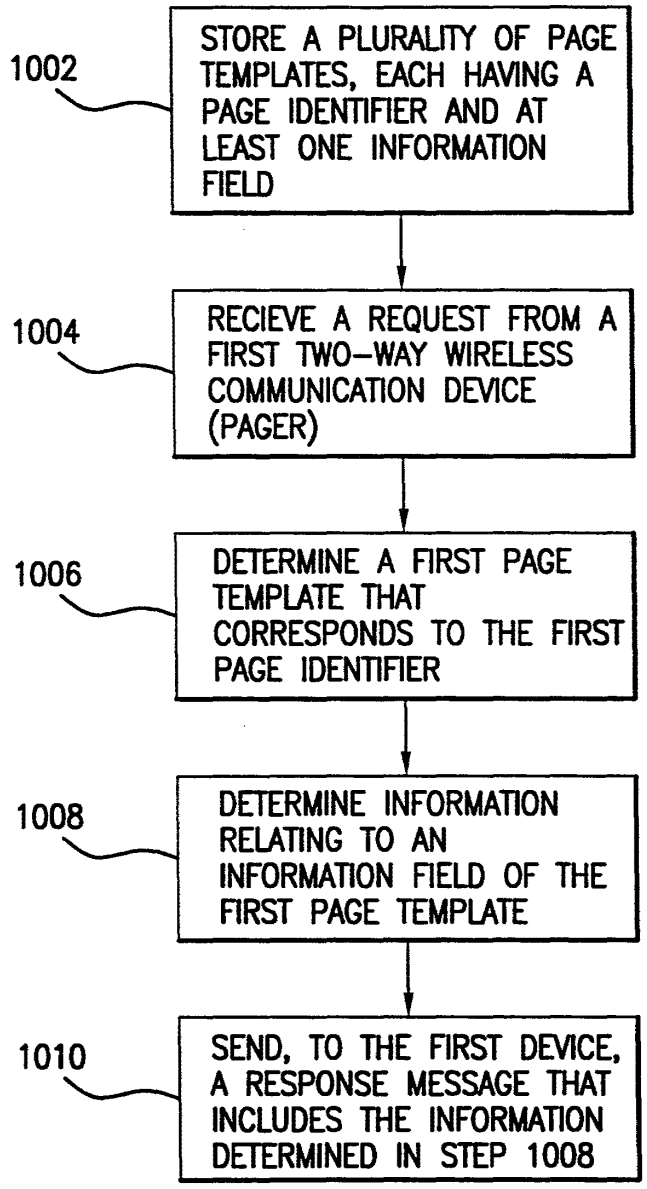

1002
STORE A PLURALITY OF PAGE TEMPLATES, EACH HAVING A PAGE IDENTIFIER AND AT LEAST ONE INFORMATION FIELD
1004
RECIEVE A REQUEST FROM A FIRST TWO-WAY WIRELESS COMMUNICATION DEVICE (PAGER)
1006
DETERMINE A FIRST PAGE TEMPLATE THAT CORRESPONDS TO THE FIRST PAGE IDENTIFIER
1008
DETERMINE INFORMATION RELATING TO AN INFORMATION FIELD OF THE FIRST PAGE TEMPLATE
1010
SEND, TO THE FIRST DEVICE, A RESPONSE MESSAGE THAT INCLUDES THE INFORMATION DETERMINED IN STEP 1008

FIG.10

INTERNATIONAL SEARCH REPORT

Inter onal Application No
PCT/US 99/26441

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04Q7/22 G08B5/22

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H04Q G08B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 96 27985 A (HOWARTH ROY ;EDEN GROUP LTD (GB)) 12 September 1996 (1996-09-12)	1-3,5-7, 9,10, 14-16, 18-23
A	page 2, line 18 -page 3, line 23 page 4, line 15 - line 25 page 6, line 15 - line 35 page 13, line 15 -page 14, line 19	4,8,17
A	WO 97 08901 A (MOTOROLA INC) 6 March 1997 (1997-03-06) page 7, line 10 - line 33 page 8, line 23 -page 9, line 20 figure 1	1-3,11, 12, 14-16,23

-/--

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
8 March 2000	16/03/2000

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Heinrich, D

1

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

Inte onal Application No
PCT/US 99/26441

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 398 021 A (MOORE MORRIS A) 14 March 1995 (1995-03-14) column 3, line 10 -column 4, line 2 figure 1	1,2,6, 13-15, 19,23

1

Form PCT/ISA/210 (continuation of second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

Information on patent family members

Inter ional Application No
PCT/US 99/26441

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9627985 A	12-09-1996	EP 0818109 A	14-01-1998
		JP 11501407 T	02-02-1999
WO 9708901 A	06-03-1997	CN 1194078 A	23-09-1998
		EP 0886978 A	30-12-1998
		JP 11512201 T	19-10-1999
		US 5872521 A	16-02-1999
US 5398021 A	14-03-1995	NONE	

Form PCT/ISA/210 (patent family annex) (July 1992)

PTO/SB/08a (08-03)
Approved for use through 07/31/2006. 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	11240501
	Filing Date	2005-10-03
	First Named Inventor	VARANDA, Marcelo
	Art Unit	2674
	Examiner Name	
	Attorney Docket Number	2173-264

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	2	4425488		1984-01-10	Moskin et al	
	3	3876850		1975-04-08	Amberny	
	4	6590573		2003-07-08	Geshwind	
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	Application Number	11240501
	Filing Date	2005-10-03
	First Named Inventor	VARANDA, Marcelo
	Art Unit	2674
	Examiner Name	
	Attorney Docket Number	2173-264

	1							☐

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	1		☐

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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	11240501
	Filing Date	2005-10-03
	First Named Inventor	VARANDA, Marcelo
	Art Unit	2674
	Examiner Name	
	Attorney Docket Number	2173-264

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.

☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☑ None

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	/JOSEPH L. ULVR/	Date (YYYY-MM-DD)	2006-05-30
Name/Print	Joseph L. Ulvr	Registration Number	57696

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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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.

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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 Acknowledgement Receipt

EFS ID:	1060879
Application Number:	11240501
Confirmation Number:	2624
Title of Invention:	Method of operating a handheld device for directional input
First Named Inventor:	Marcelo Varanda
Customer Number:	43563
Filer:	Joseph Louis Ulvr
Filer Authorized By:	
Attorney Docket Number:	2173-264
Receipt Date:	30-MAY-2006
Filing Date:	03-OCT-2005
Time Stamp:	14:53:11
Application Type:	Utility
International Application Number:	

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)	Multi Part	Pages
1	Information Disclosure Statement (IDS) Filed	US_IDS_Form__SB_08b_1.pdf	715986	no	4

Warnings:	
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Total Files Size (in bytes):	715986

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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.

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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.

MOFFAT & CO.
Patent & Trademark Agents

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Ottawa, ON, Canada K1P 5W3

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fax: 613.235.2508
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Marcelo Varanda
Serial No.:	11/240,501
Filing Date:	October 3, 2005 (10/03/2005)
Title:	METHOD OF OPERATING A HANDHELD DEVICE FOR DIRECTIONAL INPUT
Art Unit:	2674
Examiner:	Lazena Martin
Attorney Docket No.:	2173-264
Assignee	Research in Motion Limited

February 20, 2006

To: Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Via Facsimile:
1-571-273-8300

CORRECTION

Dear Sir:

We are in receipt of the updated official filing receipt for this patent application.

Please note that on the filing receipt the "Atty Docket No" is recorded as "2143-164". By Voluntary Amendment dated November 10, 2005 we had requested that this clerical error be corrected to read – **2173-264** -- .

We respectfully request correction of this clerical error.

Respectfully submitted,
MOFFAT & CO.

Joseph L. Ulvr, Reg. No. 57696

JLU:cd : 138879

John S. Macera[1], Andrew K. Jarzyna, J. Kevin Carton[2], Gary K. Arkin, Elizabeth G. Elliott[1], Barry E. Hutsel, James R. Palmer Howard P. Knopf, Adele J. Finlayson, Johanna I. Coutts, Amy M. Thomas, Joseph L. Ulvr

[1]Certified by the Law Society as a Specialist in Intellectual Property (Patents, Trademarks, Copyright) Law.
[2]Certified by the Law Society as a Specialist in Intellectual Property (Patent) Law.

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11/240,501	10/03/2005	2674	1050	~~2448-104~~ 2173-264	4	21	1

CONFIRMATION NO. 2624

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OTTAWA, ON K1R 7Y2
CANADA

CORRECTED FILING RECEIPT

"OC000000018013494"

Date Mailed: 02/08/2006

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. 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 mail to the Commissioner for Patents P.O. Box 1450 Alexandria Va 22313-1450. 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 (if appropriate).**

Applicant(s)

Marcelo Varanda, Ottawa, CANADA;

Assignment For Published Patent Application

Research in Motion Limited

Power of Attorney: The patent practitioners associated with Customer Number **043563**.

Domestic Priority data as claimed by applicant

This application is a DIV of 10/191,232 07/09/2002 ABN
which claims benefit of 60/303,865 07/09/2001

Foreign Applications

If Required, Foreign Filing License Granted: 10/27/2005

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is
US11/240,501

Projected Publication Date: 04/06/2006

Non-Publication Request: No

Early Publication Request: No

Title

Method of operating a handheld device for directional input

Preliminary Class
178

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).

LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

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.

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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 Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

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).

PAGE 4/4 * RCVD AT 2/20/2006 12:09:05 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-6/25 * DNIS:2738300 * CSID:613 235 2508 * DURATION (mm-ss):01-20

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OFFICE OF PETITIONS

MOFFAT & CO
427 LAURIER AVEUE W., SUITE 1200
OTTAWA ON K1R 7Y2 CA CANADA

In re Application of
Marcelo Varanda
Application No. 11/240,501
Filed: October 3, 2005
Attorney Docket No. 2143-164

: DECISION GRANTING
: PETITION

This is a decision on the filing date petition filed December 15, 2005, under 37 CFR 1.57.

The application was filed on October 3, 2005. However, on October 28, 2005 the Office of Initial Patent Examination mailed a Notice of Incomplete Application stating that the application had not been filed with drawings and thus, the application could not be accorded a filing date.

In response, the present petition was filed. Petitioner admits that the drawings were inadvertently omitted but argues that the instant application, upon filing, properly incorporated by reference parent application no. 10/191,232 filed July 19, 2002.

In view of 37 CFR 1.57 which provides that a proper priority claim under 37 CFR 1.55 or 37 CFR 1.78 can also be considered an incorporation by reference of the prior filed application as to the inadvertently omitted drawings, the argument is persuasive and the petition therefore is **GRANTED**.

Since the petition was required to accord the requested filing date and since the error occurred through no wrongdoing on the part of the USPTO, the petition fee in the amount of $400.00 has been charged to petitioner's deposit account and cannot be refunded.

The primary examiner is expected to compare the drawings supplied on December 15, 2005, to the disclosure of prior application no. 10/191,232 in order to verify that the drawings are in fact, a part of the disclosure of the prior application.

The application is being forwarded to the Office of Initial Patent Examination for correction of the filing date to October 3, 2005, using the application papers filed October 3, 2005 and those submitted December 15, 2005 as a part of the original disclosure.

Telephone inquiries concerning this matter should be directed to the undesigned Petitions Attorney at (571) 272-3212.

Patricia Faison-Ball
Senior Petitions Attorney
Office of Petitions

OIPE IAP68
DEC 16 2005
PATENT & TRADEMARK OFFICE

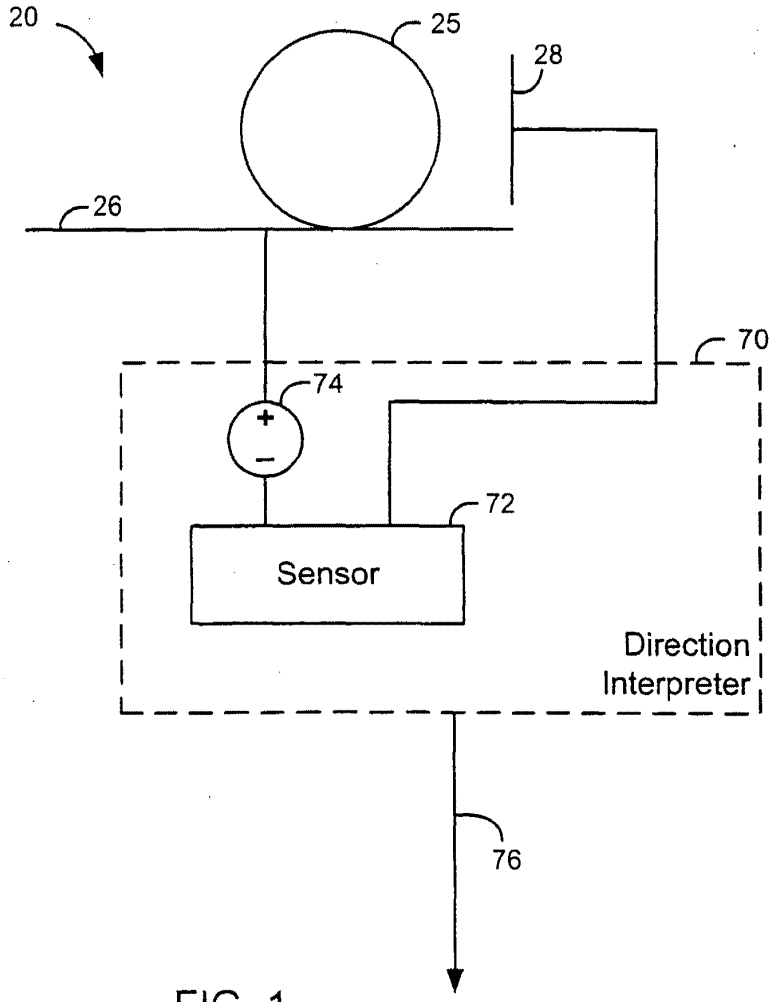


FIG. 1

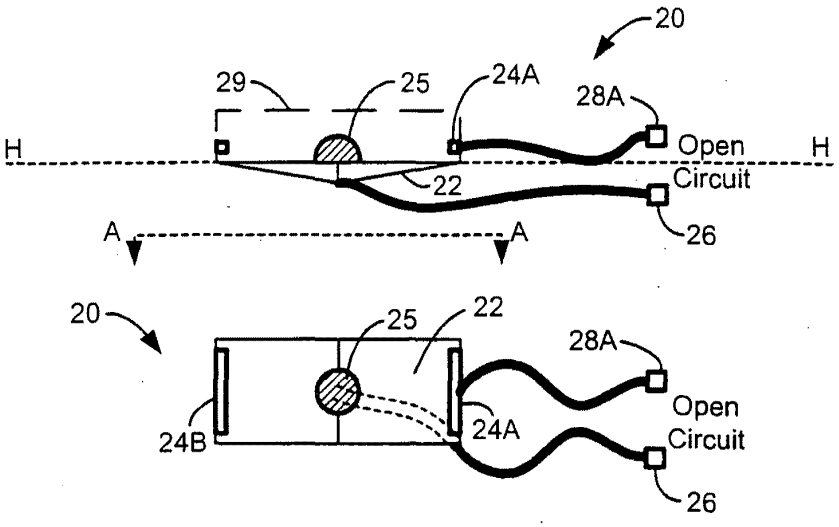

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FIG. 2

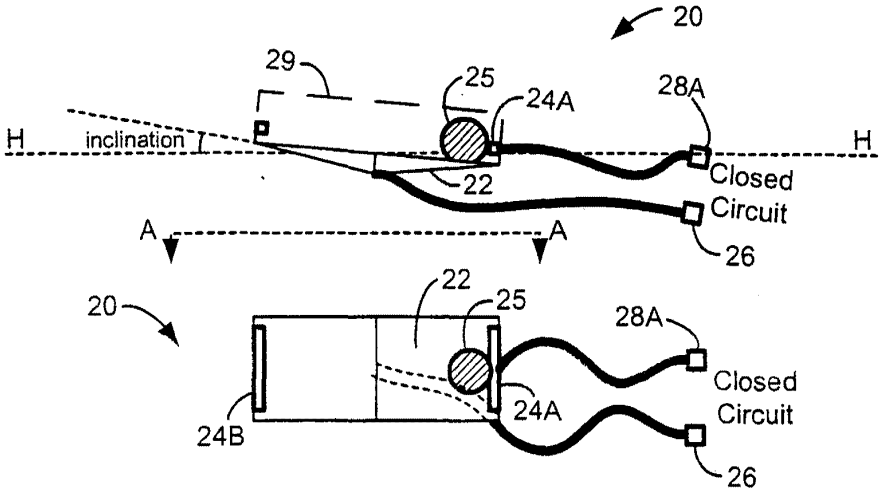

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FIG. 3

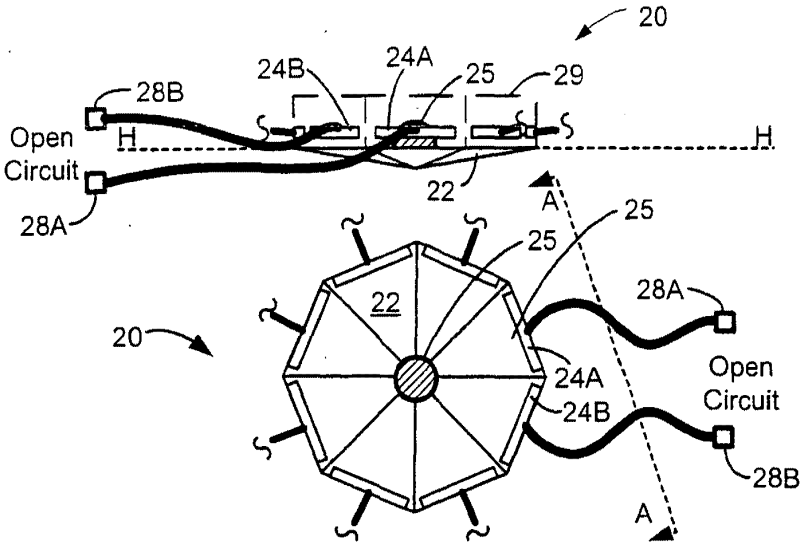

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FIG. 4

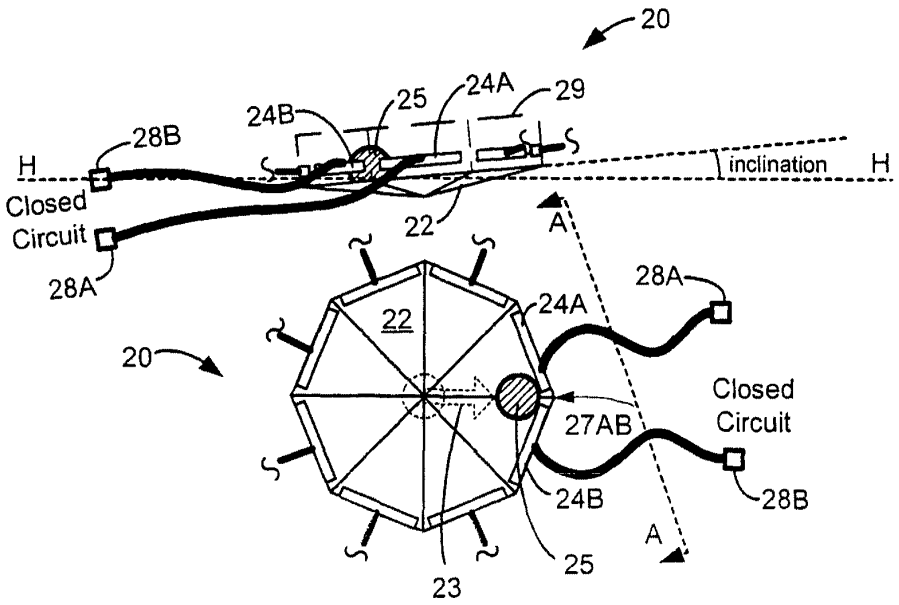

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FIG. 5

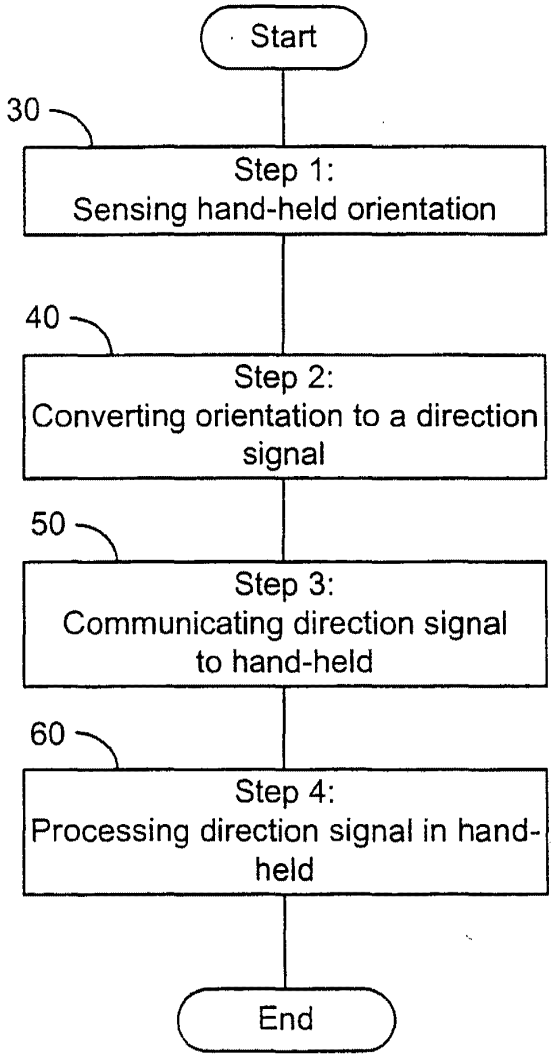

Start
30
Step 1:
Sensing hand-held orientation
40
Step 2:
Converting orientation to a direction signal
50
Step 3:
Communicating direction signal to hand-held
60
Step 4:
Processing direction signal in hand-held
End

FIG. 6

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APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
11/240,501	10/03/2005	Marcelo Varanda	2143-164

CONFIRMATION NO. 2624

FORMALITIES LETTER

00043563
MOFFATT & CO
427 LAURIER AVEUE W., SUITE 1200
OTTAWA, ON K1R 7Y2
CANADA

Date Mailed: 10/28/2005

NOTICE OF INCOMPLETE NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

A filing date has NOT been accorded to the above-identified application papers for the reason(s) indicated below.

All of the items noted below **and a newly executed oath or declaration covering the items must** be submitted within **TWO MONTHS** of the date of this Notice, unless otherwise indicated, or proceedings on the application will be terminated *(37 CFR 1.53(e))*. Replies should be mailed to: Mail Stop Missing Parts, Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450.

The filing date will be the date of receipt of all items required below, unless otherwise indicated. Any assertions that the item(s) required below were submitted, or are not necessary for a filing date, must be by way of petition directed to the attention of the Office of Petitions accompanied by the $400.00 petition fee *(37 CFR 1.17(f))*. If the petition states that the application is entitled to a filing date, a request for a refund of the petition fee may be included in the petition. Petitions should be mailed to: Mail Stop Petitions, Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450.

- The application was deposited without drawings. 35 U.S.C. 113 (first sentence) requires a drawing "where necessary for the understanding of the subject matter sought to be patented." *Applicant should reconsider whether the drawings are necessary under 35 U.S.C. 113 (first sentence).*

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.

Replies should be mailed to: Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

A copy of this notice MUST be returned with the reply.

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PTO/SB/21 (09-04)
Approved for use through 07/31/2006. 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.

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission: 11

Application Number	11/240,501
Filing Date	October 3, 2005
First Named Inventor	VARANDA, Marcelo
Art Unit	
Examiner Name	
Attorney Docket Number	2173-264

ENCLOSURES (*Check all that apply*)

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☐ Amendment/Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☑ Reply to Missing Parts/ Incomplete Application
  - ☐ Reply to Missing Parts under 37 CFR 1.52 or 1.53
- ☑ Drawing(s)
- ☐ Licensing-related Papers
- ☑ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD, Number of CD(s) _____
  - ☐ Landscape Table on CD
- ☐ After Allowance Communication to TC
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- ☐ Proprietary Information
- ☐ Status Letter
- ☑ Other Enclosure(s) (please Identify below):
  - Notice of Incomplete Nonprovisional Application
  - Petition Fee Transmittal
  - Credit Card Payment form

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	MOFFAT & CO.		
Signature	J. Ulvr		
Printed name	Joseph L. Ulvr		
Date	14 December 2005	Reg. No.	57696

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature			
Typed or printed name		Date	

This collection of information is required by 37 CFR 1.5. 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 and1.14. This collection is estimated to 2 hours 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.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

MOFFAT & CO.
Patent & Trademark Agents

P.O. Box 2088, Station D
1200 - 427 Laurier Avenue W.
Ottawa, ON, Canada K1P 5W3

tel: 613.232.7302
fax: 613.235.2508
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November 14, 2005

BY COURIER

United States Patent and Trademark Office
Customer Service Window, Mail Stop Missing Parts
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Dear Sir:

Re : U.S. Divisional Patent Appln No. 11/240,501
From U. S. Patent Appln No. 10/191.232
Filing Date : October 3, 2005
METHOD OF OPERATING A HAND-HELD DEVICE FOR DIRECTIONAL INPUT
First Named Applicant : VARANDA, Marcelo
Our File : 2173-264

Responsive to the Notice of Incomplete Non-Provisional Application, the Applicant inadvertently omitted to send drawings in this case. The specification clearly refers to drawings and the drawings submitted herewith were intended to be filed with the original application.

The present application is a divisional application from U.S. Application Serial No. 10/191,232 filed July 9, 2002. In paragraph 1 this is clearly indicated and the parent application is further incorporated by reference explicitly in this paragraph. The drawing pages submitted herewith are identical to the drawing pages filed in U.S. Application Serial No. 10/191,232. As such, the current drawing pages submitted were incorporated by reference into the present application.

John S. Macera[1], Andrew K. Jarzyna, J. Kevin Carton[2], Gary K. Arkin, Elizabeth G. Elliott[1], Barry E. Hutsel, James R. Palmer Howard P. Knopf, Adele J. Finlayson, Johanna I. Coutts, Amy M. Thomas, Joseph L. Ulvr

[1]Certified by the Law Society as a Specialist in Intellectual Property (Patents, Trademarks, Copyright) Law.
[2]Certified by the Law Society as a Specialist in Intellectual Property (Patent) Law.

Pursuant to discussions with Mr. David Bucci in the Office of Petitions on November 10, 2005, we have been advised that because the drawings were incorporated by reference, no petition is necessary. We have therefore not included a petition in this case but if we are incorrect in this, please advise the agent for the Applicant, Joseph Ulvr, by telephone at 613-232-7302 at your earliest convenience.

Respectfully submitted,

_____

Joseph L. Ulvr
Reg. No. 57696
MOFFAT & CO.
427 Laurier Ave. W., Suite 1200
Ottawa, ON K1R 7Y2
(613) 232-7302

Attorney for Applicant
JLU:cd : 130133

John S. Macera[1], Andrew K. Jarzyna, J. Kevin Carton[2], Gary K. Arkin, Elizabeth G. Elliott[1], Barry E. Hutsel, James R. Palmer Howard P. Knopf, Adele J. Finlayson, Johanna I. Coutts, Amy M. Thomas, Joseph L. Ulvr

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December 14, 2005

BY HAND

United States Patent and Trademark Office
Customer Service Window, Mail Stop Petitions
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Re : U.S. Divisional Patent Appln No. 11/240,501
From U. S. Patent Appln No. 10/191.232
Filing Date : October 3, 2005
METHOD OF OPERATING A HAND-HELD DEVICE FOR DIRECTIONAL INPUT
First Named Applicant : VARANDA, Marcelo
Our File : 2173-264

PETITION UNDER 37 CFR 1.57(a)

Dear Sir:

This is a Petition under 37 CFR 1.57(a) to add inadvertently omitted material to the above-captioned application and to accord a filing date of October 3, 2005. The Applicant has received a Notice of Incomplete Non-Provisional Application dated October 28, 2005 for the present application.

The present application is a divisional application from U.S. Application Serial Number 10/191,232 filed July 9th, 2002. In paragraph 1 of the present application this is clearly indicated and the parent application is incorporated by reference explicitly in this paragraph. The drawing pages submitted herewith are identical to the drawing pages filed in U.S. Application Serial Number 10/191,232. As such, the current drawing pages submitted were incorporated by reference into the present application.

12/16/2005 HALI11 00000013 11240501 400.00 OP
01 FC:1462

John S. Macera[1], Andrew K. Jarzyna, J. Kevin Carton[2], Gary K. Arkin, Elizabeth G. Elliott[1], Barry E. Hutsel, James R. Palmer Howard P. Knopf, Adele J. Finlayson, Johanna I. Coutts, Amy M. Thomas, Joseph L. Ulvr

[1]Certified by the Law Society as a Specialist in Intellectual Property (Patents, Trademarks, Copyright) Law.
[2]Certified by the Law Society as a Specialist in Intellectual Property (Patent) Law.

The drawings in the present case were inadvertently omitted and it was the Applicant's intention to include the drawings as part of the specification. This is evidenced by the content of the description which includes references to the drawings.

The present application was filed after September 21, 2004.

The drawings submitted herewith are completely contained in the parent application, as originally filed.

The amendment is being made within the two month time period indicated in the Notice of Incomplete Non-Provisional Application.

Pursuant to discussions with Mr. David Bucci of the Office of Petitions on November 10, 2005, we were advised that because the drawings were incorporated by reference, a Petition and Petition fee were not required. However, we have been subsequently advised by the Office of Preliminary Patent Examination that the Petition and Petition fee are in fact required. If the Office determines that no Petition or Petition fee is required, we request that the fee be refunded to the Agent's Credit Card.

The drawings submitted herewith were previously submitted by courier on November 14, 2005. However, our telephone conversation with the Office of Preliminary Patent Examination has determined that the Office has no record of this previous courier submission. A copy of our submission previously submitted is enclosed for the Office's reference.

Should any part of this Petition or Response be deemed insufficient, we ask that the Office contact the agent for the Application, Joseph Ulvr by telephone at 1-613-232-7302 at the Office's early convenience.

Respectfully submitted,



Joseph L. Ulvr
Reg. No. 57696
MOFFAT & CO.
427 Laurier Ave. W., Suite 1200
Ottawa, ON K1R 7Y2
(613) 232-7302
Attorney for Applicant
JLU:cd : 13024

John S. Macera[1], Andrew K. Jarzyna, J. Kevin Carton[2], Gary K. Arkin, Elizabeth G. Elliott[1], Barry E. Hutsel, James R. Palmer Howard P. Knopf, Adele J. Finlayson, Johanna I. Coutts, Amy M. Thomas, Joseph L. Ulvr

[1]Certified by the Law Society as a Specialist in Intellectual Property (Patents, Trademarks, Copyright) Law.
[2]Certified by the Law Society as a Specialist in Intellectual Property (Patent) Law.

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PETITION FEE
Under 37 CFR 1.17(f), (g) & (h)
TRANSMITTAL
(Fees are subject to annual revision)

Send completed form to: Commissioner for Patents
P.O. Box 1450, Alexandria, VA 22313-1450

Application Number	11/240501
Filing Date	Oct. 3, 2005
First Named Inventor	Varanda, Marcelo
Art Unit	
Examiner Name	
Attorney Docket Number	8173-264

Enclosed is a petition filed under 37 CFR 1.57(a) that requires a processing fee (37 CFR 1.17(f), (g), or (h)). Payment of $400.00 is enclosed.
This form should be included with the above-mentioned petition and faxed or mailed to the Office using the appropriate Mail Stop (e.g., Mail Stop Petition), if applicable. *For transmittal of processing fees under 37 CFR 1.17(i), see form PTO/SB/17i.*

Payment of Fees (small entity amounts are NOT available for the petition fees)

☐ The Commissioner is hereby authorized to charge the following fees to Deposit Account No._____:
☐ petition fee under 37 CFR 1.17(f), (g) or (h) ☐ any deficiency of fees and credit of any overpayments
Enclose a duplicative copy of this form for fee processing.

☐ Check in the amount of $_____ is enclosed.

☑ Payment by credit card (Form PTO-2038 or equivalent enclosed). Do not provide credit card information on this form.

Petition Fees under 37 CFR 1.17(f): Fee $400 Fee Code 1462
For petitions filed under:
§ 1.36(a) - for revocation of a power of attorney by fewer than all applicants
§ 1.53(e) - to accord a filing date.
§ 1.57(a) - to accord a filing date.
§ 1.182 - for decision on a question not specifically provided for.
§ 1.183 - to suspend the rules.
§ 1.378(e) - for reconsideration of decision on petition refusing to accept delayed payment of maintenance fee in an expired patent.
§ 1.741(b) - to accord a filing date to an application under § 1.740 for extension of a patent term.

Petition Fees under 37 CFR 1.17(g): Fee $200 Fee Code 1463
For petitions filed under:
§ 1.12 - for access to an assignment record.
§ 1.14 - for access to an application.
§ 1.47 - for filing by other than all the inventors or a person not the inventor.
§ 1.59 - for expungement of information.
§ 1.103(a) - to suspend action in an application.
§ 1.136(b) - for review of a request for extension of time when the provisions of section 1.136(a) are not available.
§ 1.295 - for review of refusal to publish a statutory invention registration.
§ 1.296 - to withdraw a request for publication of a statutory invention registration filed on or after the date the notice of intent to publish issued.
§ 1.377 - for review of decision refusing to accept and record payment of a maintenance fee filed prior to expiration of a patent.
§ 1.550(c) - for patent owner requests for extension of time in ex parte reexamination proceedings.
§ 1.956 - for patent owner requests for extension of time in inter partes reexamination proceedings.
§ 5.12 - for expedited handling of a foreign filing license.
§ 5.15 - for changing the scope of a license.
§ 5.25 - for retroactive license.

Petition Fees under 37 CFR 1.17(h): Fee $130 Fee Code 1464
For petitions filed under:
§ 1.19(g) - to request documents in a form other than that provided in this part.
§ 1.84 - for accepting color drawings or photographs.
§ 1.91 - for entry of a model or exhibit.
§ 1.102(d) - to make an application special.
§ 1.138(c) - to expressly abandon an application to avoid publication.
§ 1.313 - to withdraw an application from issue.
§ 1.314 - to defer issuance of a patent.

J. Ulm
Signature

14 Dec. 2005
Date

JOSEPH ULVR
Typed or printed name

57696
Registration No., if applicable

This collection of information is required by 37 CFR 1.17. 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 5 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.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

MOFFAT & CO.

PATENT AND TRADE-MARK AGENTS

JOHN S. MACERA [1]
ANDREW K. JARZYNA
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City/Country	Alexandria VA U.S.A.	Date	November 10, 2005
Fax No.	**(571) 273-8300**	Time	
Telephone		Total Pages	
Subject	U.S. Patent Application No. 11/240-501 METHOD OF OPERATING A HAND-HELD DEVICE FOR DIRECTIONAL INPUT Our Docket No.: 2173-264		

☐ **Attached Correspondence Sent by Mail**

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TRANSMITTAL FORM

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Total Number of Pages in This Submission: 3

Application Number	11/240,501
Filing Date	October 3, 2005
First Named Inventor	VARANDA, Marcelo
Art Unit	
Examiner Name	
Attorney Docket Number	2143-164

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ENCLOSURES (Check all that apply)

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☑ Amendment/Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Reply to Missing Parts/ Incomplete Application
  - ☐ Reply to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
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  - ☐ Landscape Table on CD
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- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
- ☐ Proprietary Information
- ☐ Status Letter
- ☐ Other Enclosure(s) (please identify below):

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	MOFFAT & CO.		
Signature			
Printed name	Joseph L. Ulvr		
Date	November 10, 2005	Reg. No.	57696

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Typed or printed name	Cathy Downey	Date	November 10, 2005

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Patent & Trademark Agents

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fax 613.235.2508
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Research in Motion Limited
Serial No.:	11/240,501
Filing Date:	October 3, 2005
Title:	METHOD OF OPERATING A HAND-HELD DEVICE FOR DIRECTIONAL INPUT
Art Unit:	
Examiner:	
Attorney Docket No.:	2143-164
Date:	November 10, 2005

To: Mail Stop Amendment
Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Via Facsimile:
1-571-273-8300

VOLUNTARY AMENDMENT

Dear Sir:

We submit herein a request to have the Attorney Docket No. with regard to the above-captioned patent application corrected to read **2173-264.** It was inadvertently submitted as 2143-164 on the Utility Patent Application Transmittal form and we respectfully request a correction of same.

Respectfully submitted,

MOFFAT & CO.

Joseph L. Ulvr, Reg. # 57696

JLU:cd

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APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
11/240,501	10/03/2005	Marcelo Varanda	2143-164

CONFIRMATION NO. 2624

00043563
MOFFATT & CO
427 LAURIER AVEUE W., SUITE 1200
OTTAWA, ON K1R 7Y2
CANADA

FORMALITIES LETTER

Date Mailed: 10/28/2005

NOTICE OF INCOMPLETE NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

A filing date has NOT been accorded to the above-identified application papers for the reason(s) indicated below.

All of the items noted below **and a newly executed oath or declaration covering the items must** be submitted within **TWO MONTHS** of the date of this Notice, unless otherwise indicated, or proceedings on the application will be terminated *(37 CFR 1.53(e))*. Replies should be mailed to: Mail Stop Missing Parts, Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450.

The filing date will be the date of receipt of all items required below, unless otherwise indicated. Any assertions that the item(s) required below were submitted, or are not necessary for a filing date, must be by way of petition directed to the attention of the Office of Petitions accompanied by the $400.00 petition fee *(37 CFR 1.17(f))*. If the petition states that the application is entitled to a filing date, a request for a refund of the petition fee may be included in the petition. Petitions should be mailed to: Mail Stop Petitions, Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450.

- The application was deposited without drawings. 35 U.S.C. 113 (first sentence) requires a drawing "where necessary for the understanding of the subject matter sought to be patented." *Applicant should reconsider whether the drawings are necessary under 35 U.S.C. 113 (first sentence).*

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.

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A copy of this notice MUST be returned with the reply.

IN THE CLAIMS

1. A handheld computing device, comprising:

a display;

means for detecting directional input and providing a directional input signal indicative of the detected directional input, the means for detecting directional input located within the handheld computing device;

a processor coupled to the display and the means for detecting directional input and operable to receive and process the directional input signal; and

a memory subsystem, the memory storing an operating system executed by the processor to display on the display a graphical user interface for controlling the operation of the handheld computing device, wherein the graphical user interface provides a graphical element responsive to the directional input signal processed by the processor;

wherein the operating system comprises processor-executable instructions that cause the graphical element to move in one of an axial constraining mode or an axial selecting mode, and wherein the graphical element moves in a direction substantially perpendicular to an axis of inclination in the axial constraining mode, and moves in a direction substantially corresponding to an axis of inclination in the axial selecting mode.

2. The handheld computing device of claim 1, wherein the means for detecting directional input comprises:

an internally-located directional input device comprising:

a primary contact positionally fixed in the handheld computing device;

a directional contact positionally fixed in the handheld computing device and operatively connected to the primary contact;

circuit closing means, movable on, and in electrical contact with, the primary contact, for movement, in response to inclination of the handheld computing device in the direction of the directional contact, between a neutral position in which the primary contact and the directional contact form an open circuit, and an active position in which the primary contact and the directional contact form a closed circuit; and

a direction interpreter, operatively connected to the primary and directional contacts, for generating a directional input signal to processor for processing for the graphical user interface when the closed circuit is formed, the directional input signal causing the graphical element to change position within the graphical user interface.

3. The handheld computing device of claim 2, wherein the directional input device further includes a second directional contact positionally fixed in the handheld computing device and operatively connected to the primary contact to form a second open circuit when the circuit closing means is in the neutral position, and wherein the second open circuit is closable by the circuit closing means in response to inclination of the handheld computing device in the direction of the second directional contact by movement of the circuit closing means to a second active position.

4. The handheld computing device of claim 3, wherein the direction interpreter generates a second directional input when the circuit closing means is in the second active position.

5. The handheld computing device of claim 4, wherein the generated second directional input is uniquely associated with the direction of the inclination.

6. The handheld computing device of claim 2, further including a plurality of subsequent directional contacts, positionally fixed in the handheld, each subsequent directional contact connected to the primary contact to create a plurality of subsequent open circuits, each subsequent open circuit closable by the circuit closing means in response to an inclination of the handheld device in the direction of the associated subsequent directional contact by movement of the circuit closing means to a subsequent active position.

7. The handheld computing device of claim 6, wherein the direction interpreter generates a directional input when the circuit closing means is in a subsequent active position.

8. The handheld computing device of claim 7, wherein the generated directional input is uniquely associated with the direction of the inclination.

9. The handheld computing device of claim 6, wherein each of the directional contacts are further connected to adjacent directional contacts to create a plurality of secondary open circuits, each of the plurality of secondary open circuits closable by the circuit closing means in response to inclination of the handheld to a junction of adjacent directional contacts.

10. The handheld computing device of claim 9, wherein the direction interpreter generates the directional input when one of the secondary open circuits is closed.

11. The handheld computing device of claim 2, further including a base, electrically connected to the primary contact, for supporting the circuit closing means in response to movement between the neutral position and the active position.

12. The handheld computing device of claim 11, wherein the base biases the circuit closing means to the neutral position.

13. The handheld computing device of claim 2, wherein the circuit closing means is a ball bearing.

14. The handheld computing device of claim 2, wherein the circuit closing means is a mercury contact.

15. The handheld computing device of claim 1, wherein the graphical element changes position within the graphical user interface only in response to an inclination of the handheld computing device.

16. The handheld computing device of claim 1, wherein the graphical element is a pointer.

17. The handheld computing device of claim 1, wherein the graphical element is a menu bar selection.

18. The handheld computing device of claim 1, wherein the processor is configured to detect movement patterns from the directional input signal and wherein the graphical element is further responsive to the detected movement patterns.

19. The handheld computing device of claim 18, wherein the graphical element is configured to accelerate in response to a detected movement pattern.

20. The handheld computing device of claim 18, wherein the graphical element is configured to perform a selection function in response to the detected movement pattern.

21. The handheld computing device of claim 20, wherein the detected movement pattern is a flick of the wrist.

PTO/SB/01 (03-01)
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DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

☑ Declaration Submitted with Initial Filing OR ☐ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)

Attorney Docket Number	555255012
First Named Inventor	Marcelo VARANDA
COMPLETE IF KNOWN	
Application Number	/
Filing Date	
Group Art Unit	
Examiner Name	

As a below named inventor, I hereby declare that:

My residence, mailing 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 invention entitled:

METHOD OF OPERATING A HANDHELD DEVICE FOR DIRECTIONAL INPUT

(Title of the Invention)

the specification of which

☑ is attached hereto

OR

☐ was filed on (MM/DD/YYYY) ☐ as United States Application Number or PCT International Application Number ☐ and was amended on (MM/DD/YYYY) ☐ (if applicable).

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

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached? YES	NO
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

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DECLARATION — Utility or Design Patent Application

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David B. Cochran, Esq.
Name

Jones, Day, Reavis & Pogue
Address North Point, 901 Lakeside Avenue

City	State	ZIP
Cleveland	Ohio	44114-1190

Country	Telephone	Fax
USA	(216) 586-3939	(216) 579-0212

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 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

NAME OF SOLE OR FIRST INVENTOR : ☐ A petition has been filed for this unsigned inventor

Given Name (first and middle [if any])	Family Name or Surname
Marcelo	VARANDA

Inventor's Signature

Date July 05-2002

Residence: City	State	Country	Citizenship
Ottawa	Ontario	CANADA	Brazilian

Mailing Address: 295 Phillip Street

City	State	ZIP	Country
Waterloo	Ontario	N2L 3W8	CANADA

NAME OF SECOND INVENTOR: ☐ A petition has been filed for this unsigned inventor

Given Name (first and middle [if any])	Family Name or Surname

Inventor's Signature

Date

Residence: City	State	Country	Citizenship

Mailing Address

City	State	ZIP	Country

☐ Additional inventors are being named on the ____supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto.

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POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby appoint:

☑ Practitioners associated with the Customer Number: 043563

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

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).

Assignee Name and Address:

Research In Motion Limited
295 Phillip Street
Waterloo, Ontario, Canada N2L 3W8

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

Name	Mihal Lazaridis		
Signature		Date	28 May 04
Title	President & Co-CEO	Telephone	519-888-7465

This collection of information is required by 37 CFR 1.31 and 1.33. 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 3 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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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875 Effective December 8, 2004

Application or Docket Number: 1124050/

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	150.00		N/A	300.00
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A	$250		N/A	$500
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	$100		N/A	$200
TOTAL CLAIMS (37 CFR 1.16(i))	21 minus 20 =	* 1	X$ 25 =		OR	X$50 =	50
INDEPENDENT CLAIMS (37 CFR 1.16(h))	1 minus 3 =	*	X100 =			X200 =	
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))			+180=			+360=	
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	1050

APPLICATION AS AMENDED – PART II

AMENDMENT A

	(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 ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X$ 25 =		OR	X$50 =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X100 =		OR	X200 =	
Application Size Fee (37 CFR 1.16(s))									
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					+180=		OR	+360=	
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

AMENDMENT B

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X$ 25 =		OR	X$50 =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X100 =		OR	X200 =	
Application Size Fee (37 CFR 1.16(s))									
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					+180=		OR	+360=	
					TOTAL ADD'L FEE		OR	TOTAL ADD'L 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.

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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	2143-164
First Inventor	VARANDA, Marcelo
Title	METHOD OF OPERATING HAND-HELD...
Express Mail Label No.	

14202 U.S. PTO 100305

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. [✓] **Fee Transmittal Form** (e.g., PTO/SB/17) *(Submit an original and a duplicate for fee processing)*
2. [ ] **Applicant claims small entity status.** See 37 CFR 1.27.
3. [✓] **Specification** [*Total Pages* 25] Both the claims and abstract must start on a new page *(For information on the preferred arrangement, see MPEP 608.01(a))*
4. [ ] **Drawing(s)** (*35 U.S.C. 113*) [*Total Sheets* _____]
5. **Oath or Declaration** [*Total Sheets* 2]
   a. [ ] Newly executed (original or copy)
   b. [✓] A copy from a prior application (37 CFR 1.63(d)) *(for continuation/divisional with Box 18 completed)*
      i. [ ] DELETION OF INVENTOR(S) Signed statement attached deleting inventor(s) name in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. [ ] **Application Data Sheet.** See 37 CFR 1.76
7. [ ] **CD-ROM or CD-R** in duplicate, large table or Computer Program *(Appendix)* [ ] Landscape Table on CD
8. **Nucleotide and/or Amino Acid Sequence Submission** *(if applicable, items a. – c. are required)*
   a. [ ] Computer Readable Form (CRF)
   b. Specification Sequence Listing on:
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      ii. [ ] Paper
   c. [ ] Statements verifying identity of above copies

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ACCOMPANYING APPLICATION PARTS

112948 U.S. PTO 11/240501 100305

9. [✓] **Assignment Papers** (cover sheet & document(s)) Name of Assignee Research in Motion Limited
10. [ ] **37 CFR 3.73(b) Statement** *(when there is an assignee)* [✓] **Power of Attorney**
11. [ ] **English Translation Document** *(if applicable)*
12. [ ] **Information Disclosure Statement** (PTO/SB/08 or PTO-1449) [ ] Copies of citations attached
13. [ ] **Preliminary Amendment**
14. [ ] **Return Receipt Postcard** (MPEP 503) *(Should be specifically itemized)*
15. [ ] **Certified Copy of Priority Document(s)** *(if foreign priority is claimed)*
16. [ ] **Nonpublication Request** under 35 U.S.C. 122(b)(2)(B)(i). Applicant must attach form PTO/SB/35 or equivalent.
17. [ ] Other: Credit Card Payment Form

The PTO did not receive the following listed item(s) 2 sheets of specification

18. If a CONTINUING APPLICATION, *check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:*

[ ] Continuation [✓] Divisional [ ] Continuation-in-part (CIP) of prior application No.: 10/191,232

Prior application information: *Examiner* LIANG, Regina *Art Unit:* 2674

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Name (Print/Type)	John S. Macera	Registration No. (Attorney/Agent)	31474

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FEE TRANSMITTAL
For FY 2005

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 1,090.00

Complete if Known	
Application Number	
Filing Date	
First Named Inventor	VARANDA, Marcelo
Examiner Name	
Art Unit	
Attorney Docket No.	2173-264

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FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

	FILING FEES		SEARCH FEES		EXAMINATION FEES		
		Small Entity		Small Entity		Small Entity	
Application Type	Fee ($)	Fee ($)	Fee ($)	Fee ($)	Fee ($)	Fee ($)	Fees Paid ($)
Utility	300	150	500	250	200	100	$1,000.00
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee ($)	Small Entity Fee ($)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180

Total Claims		Extra Claims		Fee ($)		Fee Paid ($)
21	- 20 or HP =	1	x	$50.0	=	$50.00

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims		Extra Claims		Fee ($)		Fee Paid ($)
	- 3 or HP =		x		=	

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Multiple Dependent Claims	
Fee ($)	Fee Paid ($)

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Total Sheets		Extra Sheets		Number of each additional 50 or fraction thereof		Fee ($)		Fee Paid ($)
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SUBMITTED BY

Signature		Registration No. (Attorney/Agent) 31474	Telephone 1-613-232-7302
Name (Print/Type)	John S. Macera		Date 5/31/05

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Research in Motion Limited
Serial No.:	Unknown
Filing Date:	Unknown
Title:	METHOD OF OPERATING A HAND-HELD DEVICE FOR DIRECTIONAL INPUT
Art Unit:	Unknown
Examiner:	Unknown
Our File:	2173-264
Date:	September 30, 2005

The Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In further response to the Election/Restriction Required mailed on February 22, 2005, in application serial number 10/191,232 filed July 9, 2002, the Applicant elects Group II, claims 42, 43 as attached in the Divisional application being filed herein today.

Respectfully Submitted,

MOFFAT & CO.

John S. Macera,
Reg. # 31474
JLU:cd : 126300

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PATENT APPLICATION SERIAL NO _____

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FEE RECORD SHEET

10/05/2005 JBALINAN 00000028 11240501

01 FC:1011	300.00	OP
02 FC:1111	500.00	OP
03 FC:1311	200.00	OP
04 FC:1202	50.00	OP

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U.S. Government Printing Office: 2002 — 466-247/69033

Abstract

A directional input device for use in a handheld device is disclosed herein. The directional input device provides input to an element of the user interface in response to the inclination of the handheld. The input device can be embedded into any handheld communicating or computing device to provide directional input to an element of the user interface of the handheld without consuming space on the face of the device that could otherwise be used for a larger screen.

METHOD OF OPERATING A HANDHELD DEVICE FOR DIRECTIONAL INPUT

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application is a divisional application from U.S. Application Serial Number 10/191,232 filed July 9, 2002 and further claims priority from U.S. Provisional Application Serial No. 60/303,865, filed on July 9, 2001. These applications, including the specifications and drawing figures, are hereby incorporated into this application by reference.

FIELD OF THE INVENTION

[0002] The present invention relates to the field of controlling a handheld device. More particularly, the present invention relates to a method of operating a handheld device for directional input, converting a pattern of physical parameters into signals processed by the handheld device.

BACKGROUND OF THE INVENTION

[0003] Handheld computing and communication devices are well known. Cellular telephones, personal digital assistants (PDAs), and small form factor computers all require input from a user in order to operate. Typically, these handheld device have a processor connected to a memory, a screen and a user input device. The screen typically provides either a text or graphical interface through which options or applications are selected. In many instances a selection is made by use of a directional input device, such as a touchpad, rollerball, directional keypad, or

thumbwheel. These options allow the user to position a pointer or a cursor on the list application or option desired. These directional input devices allow a user to select options, launch applications, and move pointers or cursors. Typically the directional input device works in conjunction with some variety of action button, such as a mouse button, or an integrated selector as used in many thumbwheel devices.

[0004] Directional input devices produce signals which are further processed by the handheld device to represent a direction to an element of the handheld device user interface. For example, in operations involving the displacement of a cursor on a screen, a handheld device user presses, rolls, touches, or exerts pressure on some directional sensor. The pattern of the physical parameter is converted into signals processed by the handheld, and ultimately the cursor or a pointer moves.

[0005] Directional input devices can be classified as having either one, or a plurality of degrees of freedom. Devices that have one degree of freedom are restricted to providing directional input in one dimension, for instance up-down, or left-right, but not both. In input devices with a plurality of degrees of freedom, several directions are possible, for instance both up-down and left-right. In typical directional input devices, only two dimensions are tracked. Though there are devices for tracking three dimensional input, typically these devices are used in conjunction with very specialised user interfaces. The quality of directional signals depends on the attributes of the sensed pattern of physical parameters, which ultimately depend on the type of sensors. For instance, simple push-buttons or keys can only detect directional presence-either the key is pressed, or it is not. On the other hand, a roller or touch surface can detect directional degree.

[0006] The layout of the handheld device is determined by a number of ergonomic and aesthetic constraints. One of the greatest constraints is the overall size of the

device, which for reasons of portability is tightly constrained. As a result of their small form factors, handheld devices typically trade off a desirable large screen, for necessary input device space. Without enlarging the handheld device, a larger screen must come at the cost of a smaller input device. There exist a number of well-known, convenient directional input devices, such as computer mice, trackballs and touchpads, that address a number of concerns in directional input devices. However, these devices either require a great deal of space or cannot be easily integrated with a portable handheld device.

[0007] To accomplish the reduction in input device size, many people have attempted to eliminate a distinct directional input device. Some devices have eliminated the distinct directional input device by employing a touch sensitive screen. This allows the user to select an option or application directly on the screen. This however, typically requires at least a rudimentary directional input device to allow scrolling through pages. Additionally, it requires two-handed operation, which is not always possible, and should not be necessary to perform simple tasks with the handheld device.

[0008] Another strategy is to employ a thumbwheel, such as a jog-dial, which can be place on the side of the handheld. This removes the directional input device from the face of the device and can save considerable space. By combining the simplicity of a roller, with optimal placement for use with the thumb, a thumbwheel is provided on handheld devices for directional input. A thumb roll in a first direction is interpreted as a directional input corresponding to a positive displacement on a first primary direction, such as up, whereas a thumb roll in a second opposite displacement is interpreted as a directional input corresponding to a negative displacement along the same first direction. Furthermore, by detecting a presence condition, such as the user holding down an "alt" key, at the same time as a thumb roll, the thumb roll can be interpreted to provide a pointer or cursor displacement in

a second direction. Thus a thumbwheel can be adapted to provide multidirectional input. An example of bi-directional input, a specific type of multidirectional input, is the displacement of a cursor in a text editor pane wherein one direction corresponds to the character position of the cursor and wherein the other direction corresponds to the line number of the cursor. Though thumbwheels address many concerns, the thumbwheel requires a rotatable key to be installed in the handheld, which is only on one side of the device. The positioning of the directional input device on the side of the device makes the device difficult to use for either right or left handed people. Additionally, because the handheld is of a standard size, the positioning of the thumbwheel can make the device difficult to use for people with large or small hands. Furthermore, the thumbwheel, as with any mechanical device, is subject to mechanical wear and failure, and additionally increases the cost of manufacturing the mould for the device's exterior due to the additional apertures required.

[0009] In classifying directional input devices it should be noted that directional input devices can have both presence and degree. The simplest directional input device has presence, such as for example in an arrangement of pressure sensors such as buttons, each of which is associated with a fixed increment in a particular direction, such as is the case for example with arrow keys. Either a key is pressed, or it is not. The user's input has presence in one particular direction and is sensed in this fashion and the handheld device is signalled accordingly.

[0010] More advanced directional input devices can provide directional degree. Directional degree is related to the magnitude of displacement along a physical degree of freedom of the sensor. For instance, in a roller sensor, the degree of roller activity is proportional to the displacement of the roller and has the same sign as the direction of displacement. The degree of user activity in a direction is sensed in this fashion and the handheld device is signalled accordingly. Degree can be simulated in devices that can only provide presence through mechanisms such as key repeat

rate, which provides a plurality of presence signals if the input device is activated for a sufficient amount of time. Some directional input devices have both presence and degree, such as a rollers or touch surfaces, that are combined with at least one button.

[0011] Directional input devices can also be categorized by the degrees of freedom that they provide. Directional input devices which have only one physical degree of freedom, such as thumbwheels, are typically used to provide directional input restricted to a single path. Directional input devices which have more than one degree of freedom are traditionally used in multidirectional input, such as for example a capacitive touch surface type sensor manipulated with the finger or a stylus. Directional input devices with several degrees of physical freedom tend to be more expensive and complex to operate than sensors with only one degree of freedom.

[0012] As described above, sensors with only one physical degree of freedom, a presence based control can be used to select alternate directions, which are typically perpendicular to the primary direction, thereby providing simulated multidirectional input. An example is the aforementioned a thumbwheel which moves a cursor in one dimension in a native state, but moves the cursor in a perpendicular direction when an "alt" key is depressed.

[0013] In the case of sensors with several degrees of freedom, presence can be used to constrain the directional input signals to a major direction, such as horizontal, vertical, or diagonal, thereby providing a simulated unidirectional input, which facilitates the drawing of a straight line on a freeform surface such as a touchpad. To achieve this, a user could use a touch surface to draw a diagonal line, and then hold an action key to constrain the line to the direction of the largest component, either horizontal or vertical.

[0014] Current techniques of directional input control of handhelds often combine varied sensor types and methods to provide varied forms of directional input, each of which presents some advantages but unfortunately also has drawbacks.

[0015] Added user operational complexity may be required for simulated uni-dimensional input on devices using traditional multidegree of freedom directional input devices. The same can be said for simulated multidimensional input using traditional single degree of freedom directional input devices. The mere combination of the two types of input devices, such as providing both a thumbwheel and a touch surface, overcomes many problems, but still requires the expensive tooling required to install a thumbwheel, and does not eliminate the valuable area required by the touchpad.

[0016] There is therefore a need for a directional input device with a minimized size, to allow for a larger screen, while reducing the tooling costs associated with apertures on the moulding of the handheld device. There is a further need for a directional device that is capable providing directional input to a handheld without requiring dual handed operation, and without providing a preference to right handed people, left handed people, or people with a particular size of hand.

SUMMARY OF THE INVENTION

[0017] It is an object of the present invention to obviate or mitigate at least one disadvantage of previous directional input devices in handheld computing or communicating devices.

[0018] In a first aspect, the present invention provides an input device, for

embedding in a handheld device, for providing directional input to an element of the user interface in the handheld device in response to an inclination of the handheld device. The input device comprises a primary contact positionally fixed in the handheld, and a directional contact positionally fixed in the handheld and operatively connected to the primary contact. A circuit closing means, such as a ball bearing or a mercury contact, is movable on, and in electrical contact with, the primary contact. In response to inclination of the handheld device in the direction of the directional contact, the circuit closing means moves between a neutral position in which the primary contact and the directional contact form an open circuit, and an active position in which the primary contact and the directional contact form a closed circuit. A direction interpreter, operatively connected to the primary and directional contacts, generates the directional input to the element of the user interface when the closed circuit is formed. In a further embodiment, a second directional contact is positionally fixed in the handheld and operatively connected to the primary contact to form a second open circuit when the circuit closing means is in the neutral position. The second open circuit is closable by the circuit closing means, in response to inclination of the handheld device in the direction of the second directional contact by movement of the circuit closing means to a second active position. In this case, the direction interpreter generates a second directional input when the circuit closing means is in the second active position.

[0019] In another embodiment, the input device includes a plurality of subsequent directional contacts, positionally fixed in the handheld. Each subsequent directional contact is connected to the primary contact to create a plurality of subsequent open circuits. Each subsequent open circuit closable by the circuit closing means in response to an inclination of the handheld device in the direction of the associated subsequent directional contact by movement of the circuit closing means to a subsequent active position. This embodiment can be modified such that each of the directional contacts is further connected to adjacent directional contacts to create a

plurality of secondary open circuits. Each of the plurality of secondary open circuits is closable by the circuit closing means in response to inclination of the handheld to a junction of adjacent directional contacts.

[0020] The input device of claim 1, further including a base, electrically connected to the primary contact, for supporting the circuit closing means in response to movement between the neutral position and the active position.

[0021] In a further aspect, the present invention provides an input device, embedded in a handheld device, for providing directional input to an element of the user interface in the handheld device in response to an inclination of the handheld device. The input device comprises a base positionally fixed in the handheld. A plurality of directional contacts, positionally are fixed in the handheld around the base. Each directional contact is operatively connected to at least one adjacent directional contact. Circuit closing means, movable on the base between a neutral position and a plurality of active positions, is provided. In the neutral position the base and the plurality of directional contacts are in open circuit. In the active positions two of the plurality of directional contacts are operatively connected to close the open circuit in response to the inclination of the handheld device in the direction of a pair of adjacent directional contacts. A direction interpreter is operatively connected to the plurality of directional contacts, and generates the directional input in response to closing the open circuit. Preferably, the base biases the circuit closing means to the neutral position, and is provided with a plurality of grooves for guiding the circuit closing means between the neutral position and at least one of the plurality of active positions.

[0022] In another aspect, there is provided a method of controlling an element of a user interface of a handheld device based on the inclination of the handheld device. The method comprises sensing the inclination of the handheld device; generating a

directional input signal representative of the inclination of the handheld device; transmitting the generated directional input signal to the user interface of the handheld device; and processing the transmitted directional input signal to control the element of the user interface.

[0023] Other aspects and features of the present invention will become apparent to those ordinarily skilled in the art upon review of the following description of specific embodiments of the invention in conjunction with the accompanying Figs.

BRIEF DESCRIPTION OF THE DRAWINGS

[0024] Embodiments of the present invention will now be described, by way of example only, with reference to the attached Figs., wherein:

[0025] FIG. 1 illustrates an embodiment of a system of the present invention;

[0026] FIG. 2 illustrates top and side views of an embodiment of a 1 degree of freedom directional input device of the present invention in a neutral position;

[0027] FIG. 3 illustrates top and side views of an embodiment of a 1 degree of freedom directional input device of the present invention in an active position;

[0028] FIG. 4 illustrates top and side views of an embodiment of a 2 degree of freedom directional input device of the present invention in a neutral position;

[0029] FIG. 5 illustrates top and side views of an embodiment of a 2 degree of freedom directional input device of the present invention in an active position; and

[0030] FIG. 6 is a flowchart which illustrates the steps in one embodiment of the method of directional input for a handheld device in accordance with the present invention.

DETAILED DESCRIPTION

[0031] Generally, the present invention provides a directional input device integrated into a handheld device. In particular the present invention provides a directional input device that is internal to the handheld device, so that directional input is provided by manipulation of the orientation of the entire handheld device.

[0032] The present invention provides a directional input device that provides a directional input signal when the orientation of the handheld device is manipulated. For example, if it desired to move the cursor to the right, the handheld would be tilted to the right. This completely removes the directional input device from the face of the device to allow for a larger screen, and does not require either an external mechanical mechanism subject to external wear and tear or an expensive moulding modification.

[0033] FIG. 1 illustrates the principle of the present invention. Directional input device 20 is typically embedded in a handheld device. A base, or primary contact 26, is connected to a directional contact 28, to create an open circuit. Between primary contact 26 and directional contact 28 is a direction interpreter 70. When a connection is made between primary contact 26 and directional contact 28, direction interpreter 70 senses the closing of the open circuit and generates a directional input signal 76. Circuit closing means 25 is provided, so that the open circuit can be closed by inclining the handheld. When the handheld device is inclined, directional input device 20 is inclined, which results in base 26 tilting, allowing gravity to pull

circuit closing means 25 towards directional contact 28 which causes circuit closing means 25 to close the open circuit. As illustrated in FIG. 1, circuit closing means 25 is in a neutral position, which corresponds to the open circuit remaining open. When the handheld device is sufficiently inclined, circuit closing means 25 moves to an active position, in which the open circuit is closed. One of skill in the art will appreciate that a number of different implementations of circuit closing means are available. Illustrated in FIG. 1 is a simple embodiment, where a ball bearing is used as the circuit closing means. Tilting the directional input device will cause the ball bearing to roll along primary contact 26 towards directional contact 28. Upon touching contact 28, the bearing will close the circuit. In an alternate embodiment, circuit closing means 25 is a small quantity of mercury that forms a mercury contact. The use of mercury as circuit closing means 25, reduces the present invention to a mercury switch that is used to provide a directional input.

[0034] One of skill in the art will appreciate that a number of embodiments of direction interpreter 70 are possible. FIG. 1 illustrates a simple embodiment, wherein contacts 26 and 28 are connected by a power supply 74 and a sensor 72. While contacts 26 and 28 are connected in an open circuit configuration no power flows between them, but when circuit closing means 25 moves to the active position the open circuit is closed and sensor 72 can detect the current flow between the contacts. One of skill in the art will appreciate that this is a simple embodiment of the direction interpreter 70, and that further embodiments could be employed by one of skill in the art without departing from the scope of the present invention.

[0035] FIG. 2 illustrates the top and side views of an improved one degree of freedom directional input device according to the present invention. Though inclining the device of FIG. 1 results in the open circuit being closed, there is no guarantee that circuit closing means 25 will return to its neutral position when device 20 returns to a horizontal inclination. This is problematic for both applications

of the present invention in which degree is simulated, and applications where both positive and negative directional control (e.g. both left and right inputs) is required. To overcome this, base 22 of device 20, as illustrated in FIGS. 2 and 3, is designed to bias circuit closing means 25 to the neutral position when the inclination is ceased. In the embodiment illustrated in FIGS. 2 and 3, the base is curved so that gravity will pull the circuit closing means back to the neutral position, this gravitationally biases circuit closing means 25 to the neutral position. Base 22 is connected to lead 26, which forms an open circuit with lead 28A, which is connected to contact 24A. One of skill in the art will readily appreciate that the open circuit between leads 26 and 28A include direction interpreter such as direction interpreter 70 of FIG. 1. The direction interpreter has been omitted for clarity of the drawings. Also omitted for clarity is a lead from connection 24B that forms a second open circuit with lead 26. As device 20 of FIGS. 2 and 3 is inclined in one direction or another, the circuit closing means 25 is pulled by gravity towards one of the contacts (contact 24A as illustrated in FIG. 3). The direction interpreter detects the closed circuit when circuit closing means 25 is in an active position and generates a directional input signal. Lid 29 serves to both contain the circuit closing means 25, and to seal device 20. The embodiment of FIGS. 2 and 3 provides a directional input device with a biased neutral position and two active positions, each active position being associated with the closure of one of the two open circuits.

[0036] One of skill in the art will readily appreciate that a two degree of freedom directional input device can be implemented using a simple extension of the above embodiment. Whereas the embodiment of FIGS. 2 and 3 restricts the path of circuit closing means 25 to a single dimension, in a 2-degree of freedom embodiment, circuit closing means 25 is allowed to move freely in two directions, and is bounded by a plurality of contacts arranged about the base so as to form an approximation of a circle. Each directional contact is connected to the base in the same fashion that contacts 24A and 24B were connected to base 22, via lead 26, to create an open

circuit. When the handheld is tilted in any direction the directional input device 20 is inclined. This causes the circuit closing means 25 to create a closed circuit between one of the contacts and the base by gravitationally overcoming the bias to the neutral position. This can be sensed by a direction interpreter which would provide a directional input signal. One of skill in the art will readily appreciate that the circuit closing means will often close more than one circuit simultaneously by touching two adjacent directional contacts. The direction interpreter will recognise the multiple closed circuits as motion in a direction corresponding to a combination of the directions associated with each directional contact in the closed circuits.

[0037] FIGS. 4 and 5 illustrate another embodiment of the present invention. Referring to FIG. 4 a first embodiment of a two degree of freedom directional input device 20 is illustrated. The orientation sensor 20 is preferably embedded in a handheld device. FIG. 4 illustrates the present embodiment in the neutral position. A dish, or base, 22 supports circuit closing means 25 and biases circuit closing means 25 to the neutral position. As illustrated, base 22 is substantially horizontal with respect to line HH. A plurality of direction contacts 24A, 24B, and further unlabelled direction contacts, are disposed on the interior of a non-conductive cover 29 in a peripheral fashion, to form a circular approximation. Preferably, at an equilibrium orientation of the handheld device, the shape of base 22 biases the circuit closing means 25 to the neutral position.

[0038] Referring to FIG. 5, an inclined or active position is illustrated. Base 22 is inclined past a certain threshold by inclining the handheld in the direction 23 of a pair of direction contacts 24A,B. Circuit closing means moves along a guide 27AB and comes to rest on the direction contacts 24A,B thereby creating a closed circuit condition which can be sensed between the direction contact leads 28A,B. This embodiment does not require a contact for the base 22.

[0039] In reference to FIGS. 1-5, various embodiments of orientation sensors are described. Although not expressly shown in the Figs., many alternative sensors are compatible with the method, such as a solid state compass or gyroscope which senses orientation with respect to magnetic north, or a pendulum such as a tine pendulum, a micro saucer, or a solid state memory device. The choice of an actual orientation sensor is a matter which depends on the application of the present invention to a particular handheld device and the choice of sensor is obvious to those knowledgeable in the field in light of a particular handheld and the present invention.

[0040] Although not expressly shown in the drawings, the use of a sensor that detects orientation in terms of degree instead of presence is also envisaged. Many orientation sensors can be used to detect degree using orientation, of varied complexity from as simple a principle as a pendulum, or a solid state compass, to as complex a principle as a gyroscope. The substitution of any orientation sensor is considered obvious to a person skilled in the art in view of this invention.

[0041] Finally, having described general principles of directional input, having considered examples of handheld devices, and having considered examples of orientation sensors in reference to FIGS. 1-5, embodiments of the method for operating a handheld device for directional input will be described next by way of example and reference to FIG. 6.

[0042] The method of FIG. 6 can be used to signal to an element of the user interface in the handheld that a change in orientation has occurred. Typically the element of the user interface is either a cursor or a pointer. In relation of the embodiments of the system as illustrated in FIGS. 1-5, this signalling to the handheld occurs when the circuit closing means moves to an active position. The first step 30 of the method is to sense the handheld orientation or inclination. Once

the handheld orientation has been sensed, the second step 40 is to convert the orientation to a direction signal. Then, at the third step 50 the direction signal is communicated to the handheld. Finally, at the fourth step 60 the direction signal is further processed in the handheld. In the fourth step, events are generated by the further processing of the signal, such as by detecting patterns of the signal which correspond to patterns of the physical parameters of the sensors can be as complex or as simple as required. For instance as accelerated directional input, to as simple as a simple click caused by the flick of the wrist, as defined by processing steps

[0043] Although not expressly shown in the drawings, the second step 40 is not required if the sensed orientation is already converted to a direction signal by a direction interpreter. Adaptation of the present invention to use alternate orientation sensors is within the scope of the invention as it would be obvious to a person skilled in the art in view of this disclosure.

[0044] In one embodiment, orientation is used as the basis for directional input on a handheld device. Returning to FIG. 6, in the second step 40, the orientation is converted to a direction signal compatible with traditional directional input means, such as a roller, touch pad, or arrow keys, thereby allowing a next generation handheld using the method to reclaim the space used by traditional directional controls such as a thumbwheel.

[0045] In another embodiment, orientation is used in conjunction with other forms of directional input such as that provided by buttons, a roller, a touch surface or any other sensor capable of providing directional input, on a handheld device. For instance, a thumbwheel can be used to signal a degree of displacement in conjunction with the orientation sensed at the first step 30. At step 40, the sensed orientation and amount of roller displacement are converted into a direction signal.

[0046] In an axis constraining embodiment, a change in orientation constrains the axis corresponding to directional input on a handheld device. For instance, a touch pad on an handheld oriented so as to be inclined along an inclination axis is used to signal a degree of displacement in conjunction with the orientation sensed at the first step 30. At step 40, the sensed orientation and amount of touch pad displacement are converted into a direction signal constrained in a direction substantially perpendicular to the inclination axis.

[0047] In an axis selecting embodiment, the orientation is mapped to an axis corresponding to directional input on a handheld device. For instance, a touch pad on an handheld oriented so as to be inclined along an inclination axis is used to signal a degree of displacement in conjunction with the orientation sensed at the first step 30. At step 40, the sensed orientation and amount of touch pad displacement are converted into a direction signal constrained in a direction substantially parallel to the inclination axis. Alternatively, a sensed change of orientation sensed at step 30 can cause roller displacement to operate on an alternate direction at step 60.

[0048] The present invention provides a directional input device that does not consume surface area on the face of a handheld device. This allows for a larger screen in the same form factor as a handheld device with a face mounted directional input device. Additionally, because it can be completely embedded in the handheld, no external access is required, obviating the need for expensive apertures in the moulding. Furthermore, reliability of the directional input device is improved by eliminating the mechanical wear that occurs with an externally accessible directional input device such as a thumbwheel.

[0049] The above-described embodiments of the present invention are intended to be examples only. Alterations, modifications and variations may be effected to the

particular embodiments by those of skill in the art without departing from the scope of the invention, which is defined solely by the claims appended hereto.