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Attorney Docket No.: 891.0013.U1(US)

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NEW APPLICATION TRANSMITTAL FORM

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Transmitted herewith for filing is the patent application of

Inventor(s): **Claus H. Jorgensen**

For (title): **Portable Electronic Device.**

Enclosed are the following:

- ☒ Application Cover Page
- ☒ **19** pages of Specification that consists of, **12** pages of Description, **6** pages of Claims and **1** page of Abstract;
- ☒ **6** sheet of drawings;
- ☒ Inventor(s) Declaration;
- ☐ Preliminary Amendment;
- ☐ Priority is hereby claimed from:
  - Patent Application Number filed on ;
  - Patent Application Number filed on ;
  - Patent Application Number filed on ;
- ☐ Certified Copy of priority document(s);
- ☐ English language translation of priority document;
- ☐ Application Data Sheet;
- ☒ Information Disclosure Statement and/or Form PTO 1449 and cited non-U.S. art (if applicable);
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IPR2024-00799 (Amazon.com, Inc., Amazon.com Services LLC v. Nokia Technologies Oy)

Assignment Data

☒ An assignment of the invention to Nokia Corporation
- ☒ is attached.
- ☐ will follow.
- ☐ has been previously filed.

Small Entity Status

☐ Applicant claims small entity status.

Fees

☒ Utility ☐ Reissue

☐ Design

Basic Filing Fee					$ 300.00
Excess Claim Fee					
	Number Filed	Number Extra		Rate	
Total Claims	**24** -20 =	**4**	x	$ 50.00	**$ 200.00**
Independent Claims	**4** - 3 =	**1**	**x**	$ 200.00	**$ 200.00**
☐ Multiple Dependent Claim Fee ($360.00)					$
Examination Fee					$ 200.00
Patent Search Fee					$ 500.00
Exceeding of 100 sheets of paper fee ($250.00 per each 50 sheets)					$
Assignment Recordal		**1**	**x**	$ 40.00	$ **40.00**
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March 29, 2006
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Small Entity Status

☐ Applicant claims small entity status.

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☒ Utility ☐ Reissue

☐ Design

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Excess Claim Fee					
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☐ Multiple Dependent Claim Fee ($360.00)					$
Examination Fee					$ 200.00
Patent Search Fee					$ 500.00
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March 29, 2006
Date

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Patent Application Papers Of:

Claus H. Jorgensen

For: Portable Electronic Device

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Portable Electronic Device

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The invention relates to a portable electronic device and, more particularly, to form factor configuration of a portable electronic device.

Brief Description of Prior Developments

[0002] Ultra thin telephone products have emerged in the market, pioneering a new approach in mechanical architecture for flip-phone designs (also known a clam-shell handset). Priority for these products is mechanical thinness, allowing the feature set and industrial design to be adjusted to suit this goal. New flip-phones include the Motorola RAZR, the Motorola V3, the Motorola V3x, the Samsung SCH-V740, the NEC L1. For example, the Motorola RAZR has a thickness of about 0.54 inch. Candy-bar shaped mobile phones can have smaller thicknesses, such as the Motorola SLIVR with a thickness of about 0.45 inch and the Motorola SCALPEL with a thickness of about 0.25 inch.

[0003] There is a desire for an architecture for an ultrathin fold product, such as a flip-phone style of mobile telephone, which can maintain aesthetic balance in proportions, and allow added thickness to avoid a "squeezed" appearance as seen with the RAZR™ mobile telephone.

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SUMMARY OF THE INVENTION

[0004] In accordance with one aspect of the invention, a portable electronic apparatus is provided comprising a first section comprising electronics; a second section movably connected to the first section by a hinge section, wherein the second section comprises a display; and an access entry provided in the hinge section adapted to allow insertion of an electrical device through the hinge section and into electrical connection with an electrical connector inside the first section.

[0005] In accordance with another aspect of the invention, a portable electronic device is provided including a first section, a second section and a connecting section. The first section has a user input section and a first tubular housing member. The first tubular housing member forms a majority of opposite exterior lateral sides of the first section. The second section has a display and a second tubular housing member. The second tubular housing member forms a majority of opposite exterior lateral sides of the second section. The connecting section movably connects the second section with the first section. The first tubular housing member at least partially houses the user input section. The second tubular housing member at least partially houses the display.

[0006] In accordance with another aspect of the invention, a mobile telephone is provided comprising an engine section comprising a printed circuit board, a transceiver, a processor and a memory; a battery located adjacent the engine section; and a user input section comprising a keypad located directly above the engine

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section and the battery. The user input section is located directly opposite the battery without a portion of the engine section therebetween.

[0007] In accordance with another aspect of the invention, a portable electronic device is provided comprising a first section; a second section movably connected to the first section by a hinge; and a camera. The hinge comprises a first hinge member connected to the first section and a second hinge member connected to the second section. The camera is connected to the second section. The camera is housed at an exterior side of the portable electronic device by a junction of a portion of the second hinge member and a portion of an exterior housing of the second section.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] The foregoing aspects and other features of the invention are explained in the following description, taken in connection with the accompanying drawings, wherein:

[0009] Fig. 1 is a perspective view of a mobile telephone comprising features of the invention;

[0010] Fig. 2 is a perspective view of the telephone shown in Fig. 1 is a closed configuration;

[0011] Fig. 3 is a side view of the telephone shown in Fig. 1;

[0012] Fig. 4 is a front view of the telephone shown in Fig. 2;

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[0013] Fig. 5 is a side view of the telephone shown in Fig. 2;

[0014] Fig. 6 is a rear view of the telephone shown in Fig. 2;

[0015] Fig. 7 is an exploded perspective view of the telephone shown in Figs. 1-6;

[0016] Fig. 8 is a schematic view showing the layout of the engine and the battery of the telephone shown in Figs. 1-7;

[0017] Fig. 9 is a schematic view similar to Fig. 8 showing an alternate embodiment of the layout of the engine and the battery;

[0018] Fig. 10 is a schematic view similar to Fig. 8 showing another alternate embodiment of the layout of the engine and the battery;

[0019] Fig. 11 is a schematic view showing an alternate embodiment of the layout of the engine and the battery;

[0020] Fig. 12 is a schematic view similar to Fig. 11 showing an alternate embodiment of the layout of the engine and the battery; and

[0021] Fig. 13 is a schematic view similar to Fig. 11 showing an alternate embodiment of the layout of the engine and the battery.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0022] Referring to Fig. 1, there is shown a perspective view of a portable electronic device 10

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incorporating features of the invention. Although the invention will be described with reference to the exemplary embodiments shown in the drawings, it should be understood that the invention can be embodied in many alternate forms of embodiments. In addition, any suitable size, shape or type of elements or materials could be used.

[0023] In the embodiment shown, the device 10 comprises a hand-held mobile telephone. However, in alternate embodiments, features of the invention could be used in other types of portable electronic devices, such as a PDA or a hand-held gaming device for example. The telephone 10 is a flip-phone type of telephone comprising a first section 12 connected to a second section 14 by a movably connecting section 16. In this embodiment the connecting section 16 is a hinge. However, in alternate embodiments, any suitable type of movable connecting section could be provided. Fig. 1 shows the telephone 10 in an open configuration. Fig. 2 shows the telephone 10 in a closed configuration.

[0024] Referring also to Figs. 3-6, in the closed configuration, the second section 14 lies directly opposite the first section 12. The hinge 16 allows the second section 14 to pivot open to the open configuration at an angle 18 of about 165°. However, in alternate embodiments, the angle 18 could have any suitable angle. In the closed configuration, the telephone has a height 20 of about 88.7 mm, a width 22 of about 45 mm, and a thickness 24 of about 15 mm. In the open configuration, the telephone has a length 26 of about 166 mm. However, in alternate embodiments, any suitable dimensions could be provided. As seen with reference to Fig. 3, the

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design shown has a substantially uniform thickness lower section 12 and a substantially uniform thickness upper section 14 along their entire lengths except for at the hinge 16. As seen best in Figs. 5 and 14, when the two sections 12, 14 are closed, the telephone 10 has a block shape with grooves along the joints at the lateral sides, but with the ends of the sections 12, 14 being at the same bottom end of the closed shape.

[0025] Referring also to Fig. 7, there is shown an exploded perspective view of the telephone 10 for details of how the small thickness 24 of about only 15 mm in a flip-phone design can be accomplished. The first section 12 generally comprises a first housing member 28, an engine 30, a battery 32, a user input section 34, and an antenna module 36. Additional components could be provided. The first housing member 28 generally comprises a one-piece tubular member. In a preferred embodiment, the tubular member is comprises of metal, such as aluminum for example. In one type of embodiment, the tubular metal member could be formed from an extruded member with holes punched into it after it is extruded. The first housing member 28 forms a majority of opposite exterior lateral sides 38 and a rear side 40 of the first section 12 (except at top and bottom ends 42, 44 of the first section). The front side of the first housing member 28 has holes 46 therethrough for portions of the user input section 34 to be located in the holes. Because of the tubular shape of the first housing member 28, the first housing member 28 has substantially open top and bottom apertures, which are slanted in the embodiment shown.

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[0026] The antenna module 36 is located at the bottom aperture into the first housing member 28 and enclosed by the antenna cover 48. The antenna cover 48, such as made of plastic, is attached to the first housing member 28 at the bottom aperture to keep the antenna module 36 attached to the rest of the telephone. In one type of embodiment, the antenna module could be a STINGRAY antenna from RaySat, Inc. However, any suitable antenna module could be provided.

[0027] The user input section generally comprises keymats 50, an EL backlight foil 52, a keymat dome sheet 54 and a keymat stiffener 56. However, in alternate embodiments, any suitable user input section could be provided. The keymats 50 are located in the holes 46 of the first housing member 28. The other components of the user input section are located inside the first housing member 28. A cross bar portion 47 of the first housing member 28 is located between the two keymats 50.

[0028] The engine 30 generally comprises a printed circuit board, a transceiver, a processor, and a memory, among other components. Referring also to Fig. 8, the width of the engine 30 is only about less than half the width 22 of the telephone. The battery 32 is located adjacent the lateral side of the engine 30 and is also about less than half the width 22 of the telephone. Unlike conventional telephones which have the engine located above the battery, the configuration of the side-by-side engine/battery allows the battery and the engine to have a practical design thickness and still provide a reduced thickness 24 as compared to conventional flip-phones. The keypads are located above the engine section 30 and the battery 32, wherein the user input section 34

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is located directly opposite the battery 32 without a significant portion of the engine section 30 therebetween.

[0029] The connecting section 16 has a first hinge member 58 and a second hinge member 60. The first hinge member 58 is connected to the top end of the first frame member 28 to substantially close the open top end of the first frame member 28. The first hinge member 58 also comprises a door 61 for access to the battery 32 such that the battery can be removed, and a door 63 for access to the engine 30 for inserting and removing an electronic module 65, such as a SIM card or flash memory or other memory card. The doors 61, 63 are located below the shoulders 62 such that there is a path at the connecting section 16 past the second hinge member 60. In an alternate embodiment, the connecting section 16 could have only one door; for the battery or for the electronic module or both. The door(s) is preferably connected to the rest of the first hinge member 58 by a living hinge. However, in alternate embodiments any suitable type of doorway system could be provided. In other alternate embodiments any suitable access entry could be provided. In a preferred embodiment the door(s) support the electronic device (such as the battery 32 and/or electronic module 65). The engine 30 comprises electrical connectors 67 and 69 for the electronic devices 32 and 65 to connect to inside the first section 12.

[0030] The first hinge member 58 has shoulders 62 with interior facing apertures to receive ends of the hinge module 64. The hinge module 64 is mounted in the second hinge member 60. The second hinge member 60 is sized and

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shaped to pivotably fit between the shoulders 62. In an alternate embodiment any suitable type of hinge assembly could be provided, such as disclosed in U.S. Patent No. 6,900,981, and U.S. Patent Application Nos. 10/610,978, 11/055,914, 11/077,674, and 11/253,017, for example, which are hereby incorporated by reference in their entireties. In an alternate embodiment, the electronic device insertion and removal feature through a movable connection section of the invention could be used in other types of telephones having movable sections including, for example, a slide phone such as shown in U.S. Patent No. Des. 427,171 which is hereby incorporated by reference in its entirety, or could be used in other apparatus, such as a gaming device or PDA having two movable sections connected by a hinge or connecting section.

[0031] The second section 14 generally comprises a second housing member 66, a display module 68 and a camera 70. The second housing member 66 preferably comprises a one-piece member having a general tubular shape. In a preferred embodiment, the tubular member is comprises of metal, such as aluminum for example. In one type of embodiment, the tubular metal member could be formed from an extruded member with holes punched into it after extrusion. The second housing member 66 forms portions of opposite exterior lateral sides 72, a front side 74 and a rear side 76 of the second section 14. The front side of the second housing member 66 has a hole 78. A front portion 80 of the display module 68 can be located for viewing through the hole 78. The rear side of the second housing member 66 has a hole 82 therethrough. A rear portion 84 (see Fig. 4) of the

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display module 68 is located for viewing through the hole 82. Front portion 80 forms a main display, and rear portion 84 forms a sub-display. A window 86 can be glued onto the sub-display 84. Because of the tubular shape of the second housing member 66, the second housing member 66 has substantially open top and bottom apertures, which are slanted in the embodiment shown.

[0032] The display module 68, camera 70 and a speaker or sound transducer 88 are coupled to the engine 30 by a flex cable assembly 90 which extends through the hinge 16. A mounting bracket 92 is provided for mounting the display module 68 inside the second housing member 66 between the second hinge member 60 and a speaker cover 94 at opposite ends of the second housing member 66. An optional second camera 96 could also be provided.

[0033] The camera 70 extends to the rear side 76 of the second section 14. The camera 70 is housed at an exterior side of the portable electronic device by a junction 98 of a cutout portion 99 of the second hinge member 60 and a cutout portion 100 of the second tubular housing member 66. The cutout portions 99, 100 project slightly from the rear side of the telephone to form a protrusion 142 (see Fig. 14). By providing a projecting portion of the housing for the camera, rather than making the housing flush with the camera, this allows the rest of the telephone to have the reduced thickness 24, but still use a standard size camera.

[0034] Referring also to Figs. 9-10, alternate embodiments of configuration of the battery relative to the engine of Fig. 8 is shown. Fig. 10 shows an embodiment where the battery 102 and engine 104 are

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located in the first section 12 in a side-by-side configuration. This side-by-side configuration comprises the battery 102 being located at a top side of the engine 104 proximate the hinge end of the first section. Fig. 11 shows an embodiment where the battery 102 is located between two portions 106, 108 of the engine 110. Thus a split side-by-side configuration is provided. In both of these alternate embodiments the keypad is located above the engine section and the battery, wherein the user input section is located directly opposite the battery without a substantial portion of the engine section therebetween.

[0035] Figs. 11-13 show other alternate embodiments of positioning the battery relative to the engine. In Fig. 11 the battery 112 is located below the engine 114. The keypad 116 is located above the engine 114. The components 112, 114, 116 are housed in a one-piece metal tubular housing member 118. The keypad is located at a hole through the front side 120 of the housing member 118. Otherwise, the housing member 118 forms enclosed lateral exterior sides 122 and rear side 124.

[0036] Fig. 12 shows an embodiment similar to Fig. 11. However, in this embodiment the battery 126 is thinner and wider than the battery 112. The tubular housing member 128 is thinner and wider than the tubular housing member 118. Fig. 13 shows another alternate embodiment. In this embodiment the battery 130 is about half the width of the tubular housing member 132. The engine 134 comprises a portion 136 located at the lateral side of the battery 130 and another portion 138 located between the battery and the keypad 140. The configurations shown

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in Figs. 11-13 could be used in candy-bar style telephone handsets as well as flip-phone style handsets.

[0037] One of the features of the invention is the use of tubular members to form the major housing components of the first and second sections of the flip-phones. The tubular housing members provide an increased strength than conventional housing designs. This allows the reduction in side of the housing components versus conventional housing components and, thus, a reduction in the thickness 24 of the telephone. In addition, the side-by-side positioning of the battery/engine can further allow a reduction in thickness of the handset versus conventional stacked battery/engine handsets.

[0038] With the present invention a user exchangeable battery and/or cards (SIM, flash and other memory cards) can be inserted and removed through the hinge end in a portable terminal. The housing of a fold phone can be extruded in one material. Extruding a housing in one material and having a user exchangeable battery (and cards) through a hinge end can be provided. With the invention a battery can be located next to the PWB on a lateral side of the phone.

[0039] It should be understood that the foregoing description is only illustrative of the invention. Various alternatives and modifications can be devised by those skilled in the art without departing from the invention. Accordingly, the invention is intended to embrace all such alternatives, modifications and variances which fall within the scope of the appended claims.

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CLAIMS

What is claimed is:

1. A portable electronic apparatus comprising:

a first section comprising electronics;

a second section movably connected to the first section by a hinge section, wherein the second section comprises a display; and

an access entry provided in the hinge section adapted to allow insertion of an electrical device through the hinge section and into electrical connection with an electrical connector inside the first section.

2. A portable electronic apparatus as in claim 1 wherein the access entry comprises a movable door on the hinge section.

3. A portable electronic apparatus as in claim 2 wherein the access entry comprises a living hinge connecting the door to the rest of the hinge section.

4. A portable electronic apparatus as in claim 1 wherein the access entry is sized and shaped to allow insertion of a battery through the access entry, and the electrical connector is adapted to electrically connect to the battery.

5. A portable electronic apparatus as in claim 1 wherein the access entry is sized and shaped to allow insertion of an electronic module through the access entry, and the electrical connector is adapted to electrically connect to the electronic module.

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6. A portable electronic apparatus as in claim 1 wherein the access entry is sized and shaped to at least partially support the electronic device when the electronic device is fully inserted into the portable electronic device.

7. A portable electronic device comprising:

a first section having a user input section and a first one-piece tubular housing member, wherein the first tubular housing member forms a majority of opposite exterior lateral sides of the first section;

a second section having a display and a second tubular housing member, wherein the second tubular housing member forms a majority of opposite exterior lateral sides of the second section; and

a connecting section movably connecting the second section with the first section,

wherein the first tubular housing member at least partially houses the user input section, and wherein the second tubular housing member at least partially houses the display.

8. A portable electronic device as in claim 7 wherein at least one of the first and second tubular housing members comprises a metal member.

9. A portable electronic device as in claim 8 wherein the first tubular housing members comprises an extruded member.

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10. A portable electronic device as in claim 7 wherein the connecting section comprises a hinge with a first hinge member forming a cap to an open end of the first tubular housing member and a second hinge member forming a cap to an open end of the second tubular housing member.

11. A portable electronic device as in claim 7 wherein the first section comprises:

an engine section comprising a printed circuit board, a transceiver, a processor and a memory;

a battery located adjacent the engine section; and

the user input section comprises a keypad located above the engine section and the battery, wherein the user input section is located directly opposite the battery without a portion of the engine section therebetween.

12. A portable electronic device as in claim 7 wherein the connecting section comprises a hinge, wherein the hinge comprises a first hinge member connected to the first section and a second hinge member connected to the second section; and the portable electronic device further comprises a camera connected to the second section, wherein the camera is housed at an exterior side of the portable electronic device by a junction of a portion of the second hinge member and a portion of the second tubular housing member.

13. A portable electronic device as in claim 7 wherein the portable electronic device comprises a mobile telephone having a transceiver.

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14. A portable electronic device as in claim 7 wherein the connecting section comprises an access entry provided in the connecting section adapted to allow insertion of an electrical device through the connecting section and into electrical connection with an electrical connector inside the first section.

15. A mobile telephone comprising:

an engine section comprising a printed circuit board, a transceiver, a processor and a memory;

a battery located adjacent the engine section; and

a user input section comprising a keypad located above the engine section and the battery, wherein the user input section is located directly opposite the battery without a portion of the engine section therebetween.

16. A mobile telephone as in claim 15 wherein the battery is located at a lateral side of the engine section.

17. A mobile telephone as in claim 15 wherein the engine section is located at opposite sides of the battery.

18. A mobile telephone as in claim 15 wherein the mobile telephone comprises a first section comprising a first one-piece housing member having a general tubular shape and forming opposite exterior lateral sides of the first section, wherein the engine section, battery and user input section are housed in the first section.

19. A mobile telephone as in claim 18 wherein the mobile telephone comprises a second section pivotably connected to the first section, wherein the second section

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comprises a second one-piece housing member having a general tubular shape and forming opposite exterior lateral sides of the second section.

20. A mobile telephone as in claim 15 wherein the mobile telephone comprises a first section pivotably connected to a second section by a hinge, wherein the hinge comprises a first hinge member connected to the first section and a second hinge member connected to the second section; and the mobile telephone further comprises a camera connected to the second section, wherein the camera is housed at an exterior side of the portable electronic device by a junction of a portion of the second hinge member and a portion of a one-piece second tubular housing member of the second section, wherein the second tubular housing member forms opposite exterior lateral sides of the second section.

21. A portable electronic device comprising:

a first section;

a second section movably connected to the first section by a hinge, wherein the hinge comprises a first hinge member connected to the first section and a second hinge member connected to the second section; and

a camera connected to the second section, wherein the camera is housed at an exterior side of the portable electronic device by a junction of a portion of the second hinge member and a portion of an exterior housing of the second section.

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22. A portable electronic device as in claim 21 wherein the first section comprises:

a first tubular housing member, wherein the first tubular housing member forms a majority of opposite exterior lateral sides of the first section, and located at the first tubular section:

an engine section comprising a printed circuit board, a transceiver, a processor and a memory;

a battery located adjacent the engine section; and

a user input section comprising a keypad located directly above the engine section and the battery, wherein the user input section is located directly opposite the battery without a portion of the engine section therebetween.

23. A portable electronic device as in claim 21 wherein the first section comprises a tubular metal housing member forming a majority of opposite exterior lateral sides of the first section, and wherein the second section comprises a tubular metal housing member forming a majority of opposite exterior lateral sides of the second section.

24. A portable electronic device as in claim 21 wherein the first and second sections each comprises tubular metal exterior housing members comprising extruded metal members.

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ABSTRACT

A portable electronic device including a first section, a second section and a connecting section. The first section has a user input section and a first tubular housing member. The first tubular housing member forms a majority of opposite exterior lateral sides of the first section. The second section has a display and a second tubular housing member. The second tubular housing member forms a majority of opposite exterior lateral sides of the second section. The connecting section movably connects the second section with the first section. The first tubular housing member at least partially houses the user input section. The second tubular housing member at least partially houses the display.

Amazon.com, Inc., Amazon.com Services LLC - Ex. 1012, Page 000026

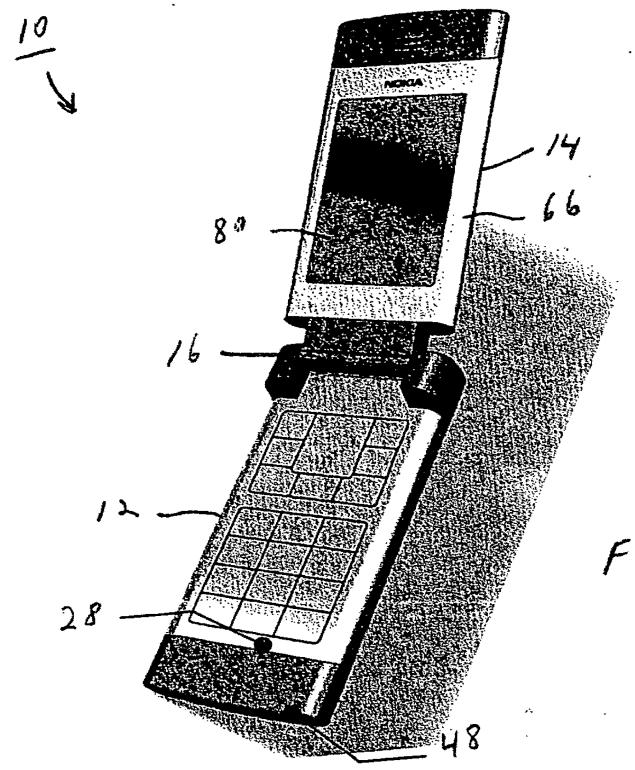


Fig. 1

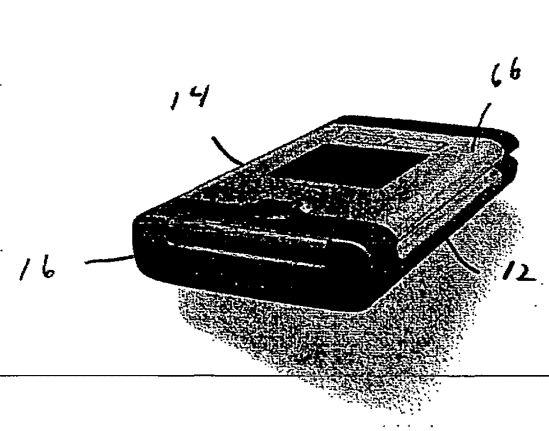


Fig. 2

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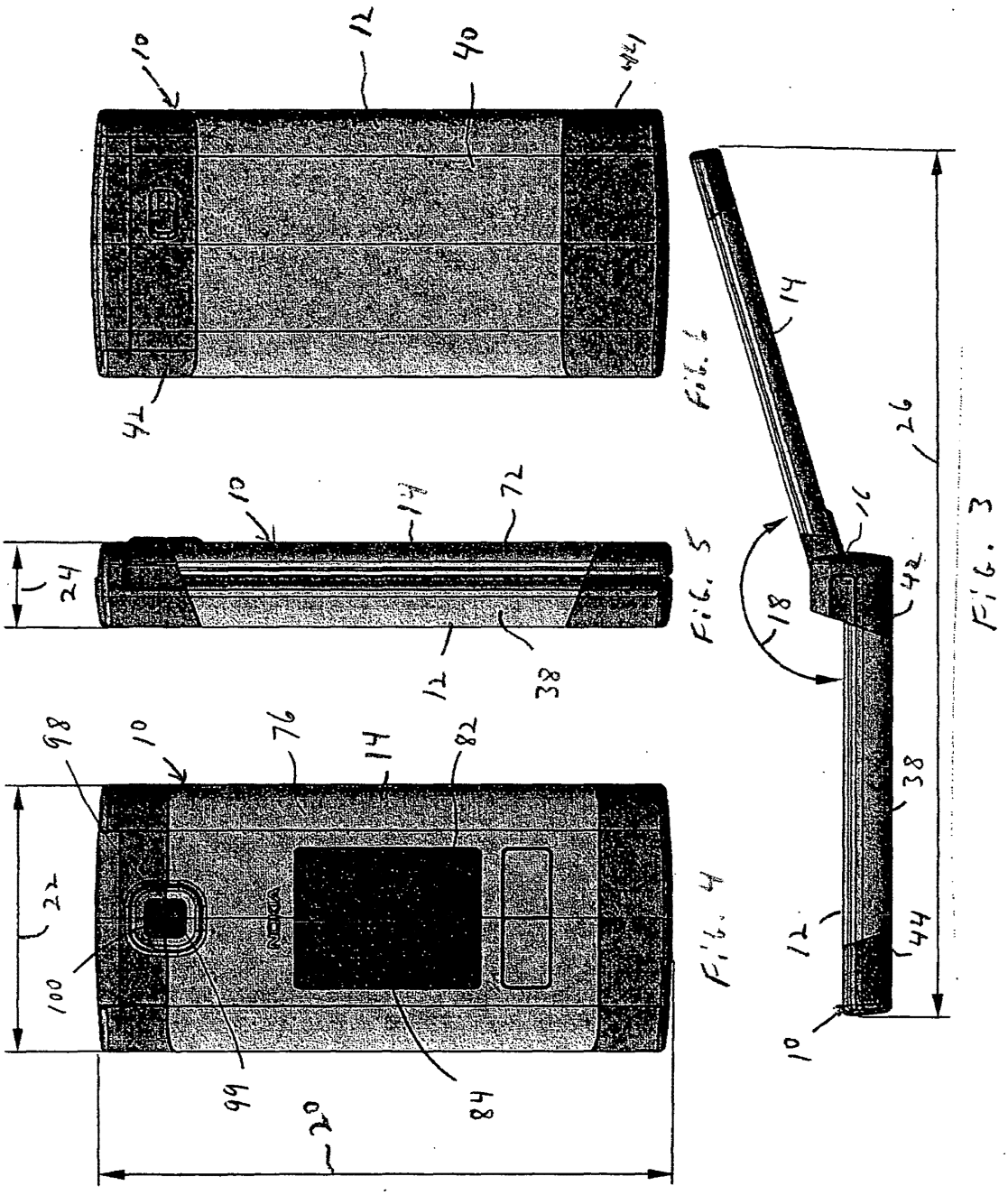


Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

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Amazon.com, Inc., Amazon.com Services LLC - Ex. 1012, Page 000028

FIG. 7

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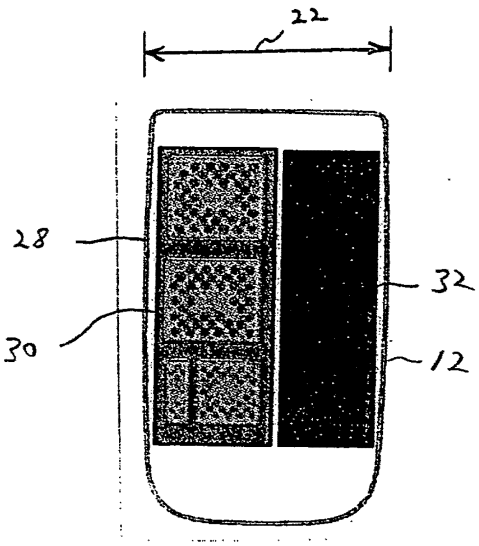


Fig. 8

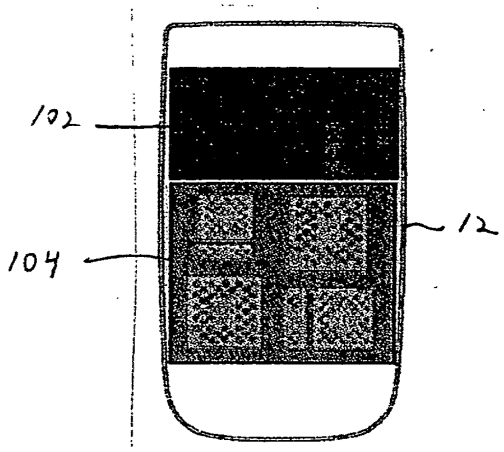


Fig. 9

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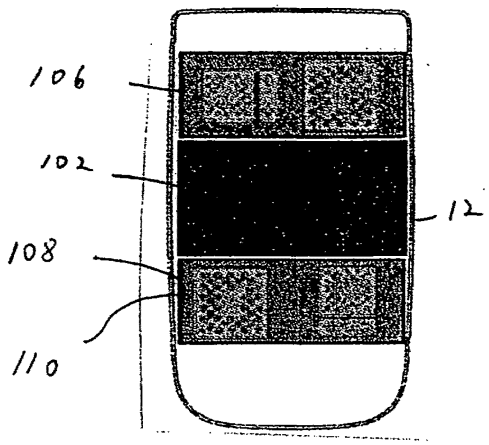


Fig. 10

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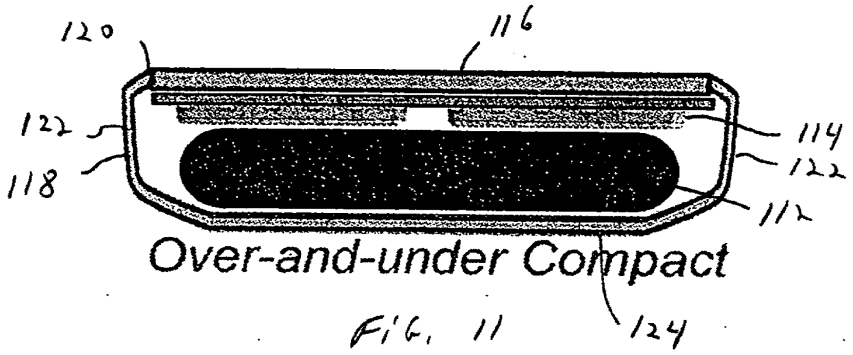


Fig. 11



Fig. 12

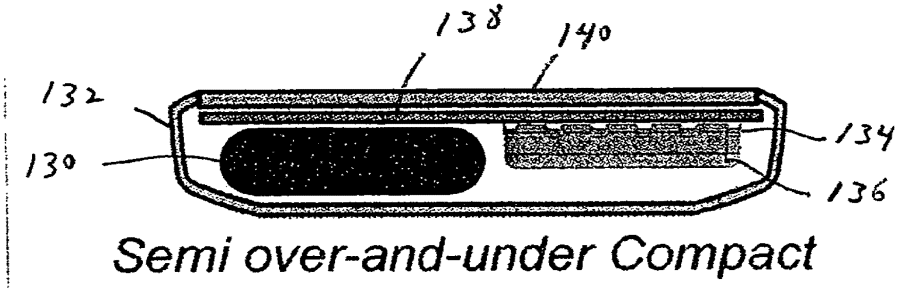


Fig. 13

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Docket No.: **891.0013.U1(US)**

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

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

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

Portable Electronic Device

the specification of which:

(check one) ☒ is attached hereto.

☐ was filed on _____ as U.S. Application Serial No. , and was amended on _____ (if applicable).

☐ was described and claimed in PCT International Application Number _____ filed on _____ and

- ☐ as amended under PCT Article 19 on _____ (if any) and/or
- ☐ as amended under PCT Article 34 as published in the Annex(es) to the International Preliminary Examination Report (if any).

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

I acknowledge the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to the patentability of this application as defined in Title 37, Code of Federal Regulations, §1.56

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate(s) listed below and have also identified below any foreign application(s) for patent or inventor's certificate(s) having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)			Priority Claimed
_____	_____	_____	☐ Yes ☐ No
(Number)	(Country)	(Day/Mon/Year Filed)	

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

Amazon.com, Inc., Amazon.com Services LLC - Ex. 1012, Page 000033

(Application Serial No.) (Filing Date)

I hereby claim benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

(Application Serial No.) (Filing Date) (Status)

POWER OF ATTORNEY: As a named inventor I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the U.S. Patent and Trademark Office connected therewith:

All attorneys associated with Customer No.: **29,683**

SEND CORRESPONDENCE TO:

Customer No. 29,683

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

FULL NAME OF INVENTOR:	LAST NAME	FIRST NAME	MIDDLE NAME
	Jorgensen	**Claus**	**H.**
RESIDENCE & CITIZENSHIP:	CITY & STATE OR COUNTRY		CITIZENSHIP
	Frederiksberg, Denmark		**Denmark**

POST OFFICE ADDRESS: **Kong Georgsvej 58, 1. tv**
2000 Frederiksberg
Denmark

Signature _____ Date 24/3 2006

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Amazon.com, Inc., Amazon.com Services LLC - Ex. 1012, Page 000034

PATENT APPLICATION SERIAL NO. _____

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

04/03/2006 MGEBREM1 00000052 11393510

01 FC:1011	300.00	OP
02 FC:1111	500.00	OP
03 FC:1311	200.00	OP
04 FC:1201	200.00	OP
05 FC:1202	200.00	OP

PTO-1556
(5/87)

*U.S. Government Printing Office: 2002 — 489-267/60033

1 7 15 21

PTO/SB/06 (12-04)
Approved for use through 7/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875 Effective December 8, 2004

Application or Docket Number: 11393510

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	$200
TOTAL CLAIMS (37 CFR 1.16(i))	24 minus 20 =	* 4	X$ 25 =		OR	X$50 =	200
INDEPENDENT CLAIMS (37 CFR 1.16(h))	4 minus 3 =	* 1	X100 =			X200 =	200
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	1400

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.

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.

INFORMATION DISCLOSURE CITATION FORM FOR PATENT APPLICATION (FORM PTO-1449) (Substitute)	Docket No.: 891.0013.U1(US) Serial No.: Applicant(s): Claus H. Jorgensen Filing Date: herewith Group:

U.S. PATENT DOCUMENTS

Examiner Initials	Document Number (Number-Kind Code)	Publication Date (MM-DD-YYYY)	Name of Patentee or Applicant	Class	Sub-class
	US-DES. 427,171	06-27-2000	Frye et al.	D14	138
	US-				
	US-				
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FOREIGN PATENT DOCUMENTS

Examiner Initials	Document Number (Country Code-Number-Kind Code)	Publication Date (MM-DD-YYYY)	Name Of Patentee of Applicant	Translation? Yes/No/n/a
	- -			
	- -			
	- -			
	- -			
	- -			
	- -			
	- -			

OTHER DOCUMENTS (Author (Capitalize), Title, Date, Pages, Etc., if known)

Examiner's Signature:	Date Considered:

Initial if reference was considered, whether or not citation is in conformance with MPEP. Mark through citation if not considered. Include a copy of this citation form with your next correspondence to the Applicant(s).

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
11/393,510	03/29/2006	Claus H. Jorgensen	891.0013.U1(US)

CONFIRMATION NO. 8456

29683
HARRINGTON & SMITH, LLP
4 RESEARCH DRIVE
SHELTON, CT 06484-6212

FORMALITIES LETTER

Date Mailed: 04/20/2006

NOTICE TO FILE CORRECTED APPLICATION PAPERS

Filing Date Granted

An application number and filing date have been accorded to this application. The application is informal since it does not comply with the regulations for the reason(s) indicated below. Applicant is given TWO MONTHS from the date of this Notice within which to correct the informalities indicated below. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

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

- Replacement drawings in compliance with 37 CFR 1.84 and 37 CFR 1.121(d) are required. The drawings submitted are not acceptable because:
  - The drawings must be reasonably free from erasures and must be free from alterations, overwriting, interlineations, folds, and copy marks. See Figure(s) 7.

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 <u>MUST</u> be returned with the reply.

Office of Initial Patent Examination (571) 272-4000, or 1-800-PTO-9199, or 1-800-972-6382
PART 3 - OFFICE COPY

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UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
11/393,510	03/29/2006	Claus H. Jorgensen	891.0013.U1(US)

CONFIRMATION NO. 8456

29683
HARRINGTON & SMITH, LLP
4 RESEARCH DRIVE
SHELTON, CT 06484-6212

FORMALITIES LETTER

Date Mailed: 04/20/2006

NOTICE TO FILE CORRECTED APPLICATION PAPERS

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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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PART 2 - COPY TO BE RETURNED WITH RESPONSE

TRANSMITTAL OF FORMAL DRAWINGS (In Response to Notice of Informal Drawings)	Docket No. 891.00013.U1(US)

PATENT & TRADEMARK OFFICE
MAY 11 2006

In Re Application Of: Claus H. Jorgensen

Application No.	Filing Date	Batch No.	Examiner	Customer No.	Group Art Unit	Confirmation No.
11/393,510	3/29/2006			29683	2875	8456

Invention: **Portable electronic Device**

Address to:
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

In response to the NOTICE OF INFORMAL DRAWINGS mailed on 4/20/2006 *(date)* attached please find:

(a) 6 sheets of formal drawing(s) for this application.

☒ Each sheet of drawing indicates the identifying indicia suggested in 37 CFR Section 1.84(c).

(b) A copy of the NOTICE OF INFORMAL DRAWINGS.

Mark F. Harrington
Signature

Dated: 5/8/06

Mark F. Harrington (Reg. No. 31,686)
Harrington & Smith, LLP
4 Research Drive
Shelton, CT 06484-6212

I hereby certify that this correspondence is being 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" [37 CFR 1.8(a)] on

5/8/2006
(Date)

Elaine F. Mian
Signature of Person Mailing Correspondence

Elaine F. Mian
Typed or Printed Name of Person Mailing Correspondence

P23A/REV02

MAR 2006
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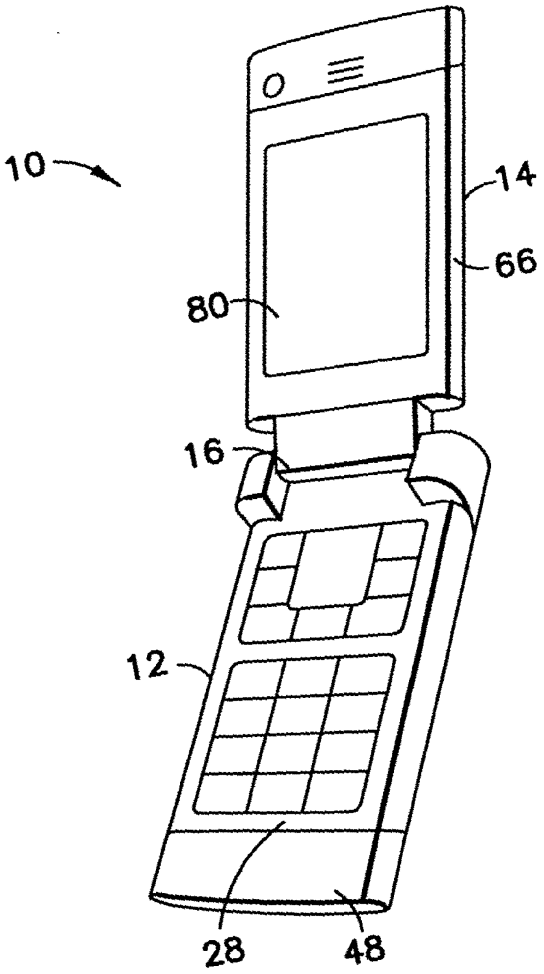


FIG.1

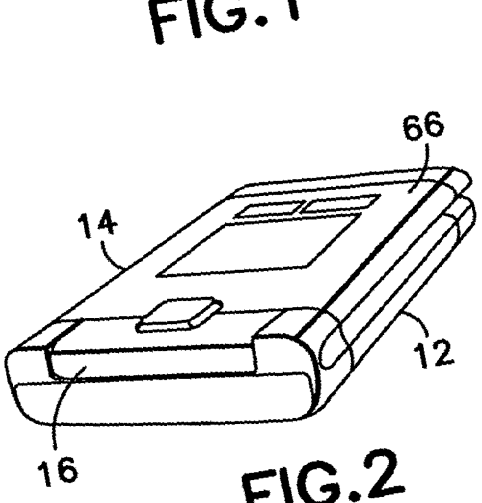


FIG.2

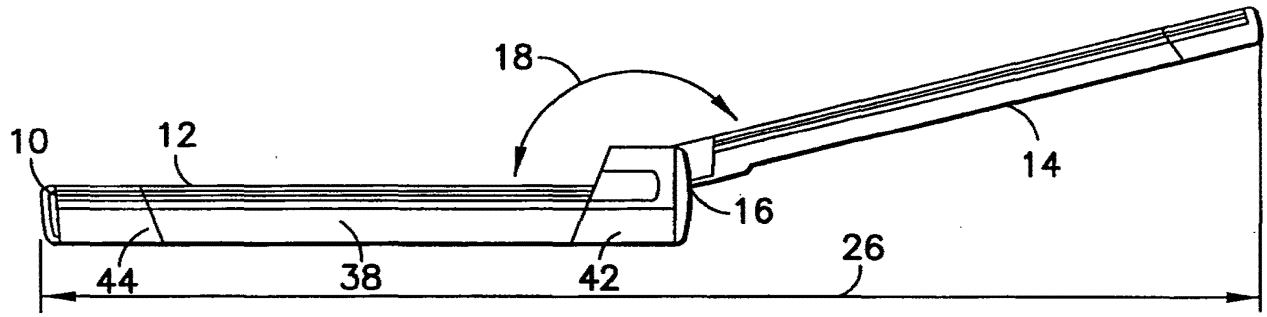


FIG.3

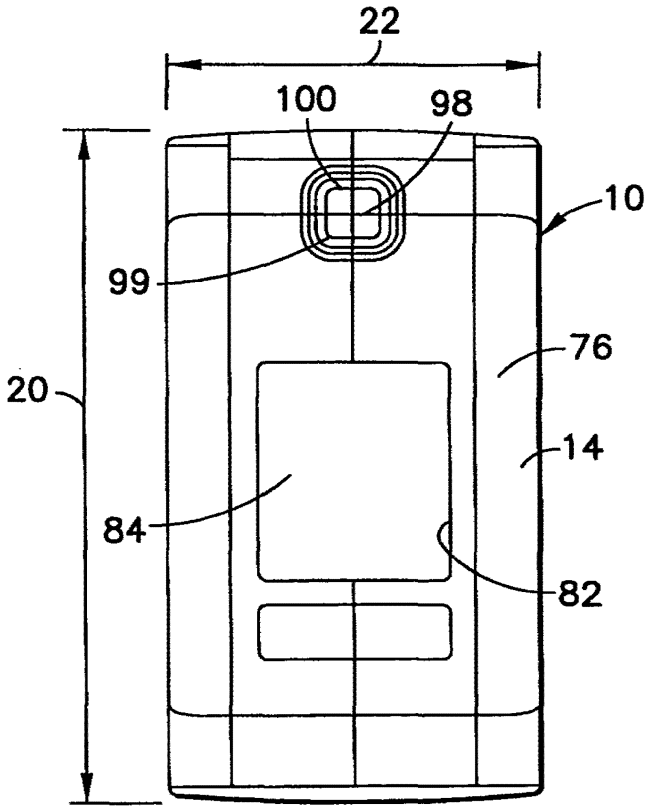


FIG.4

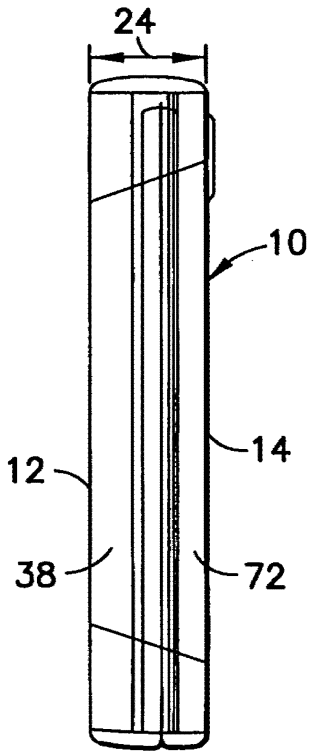


FIG.5

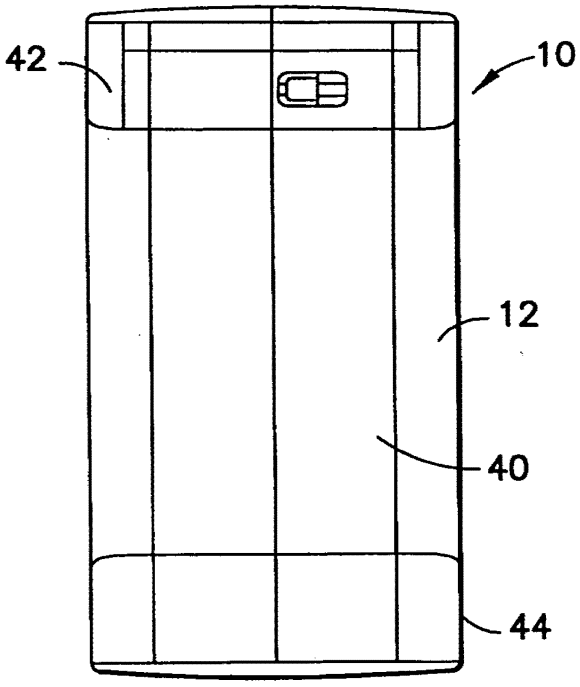


FIG.6

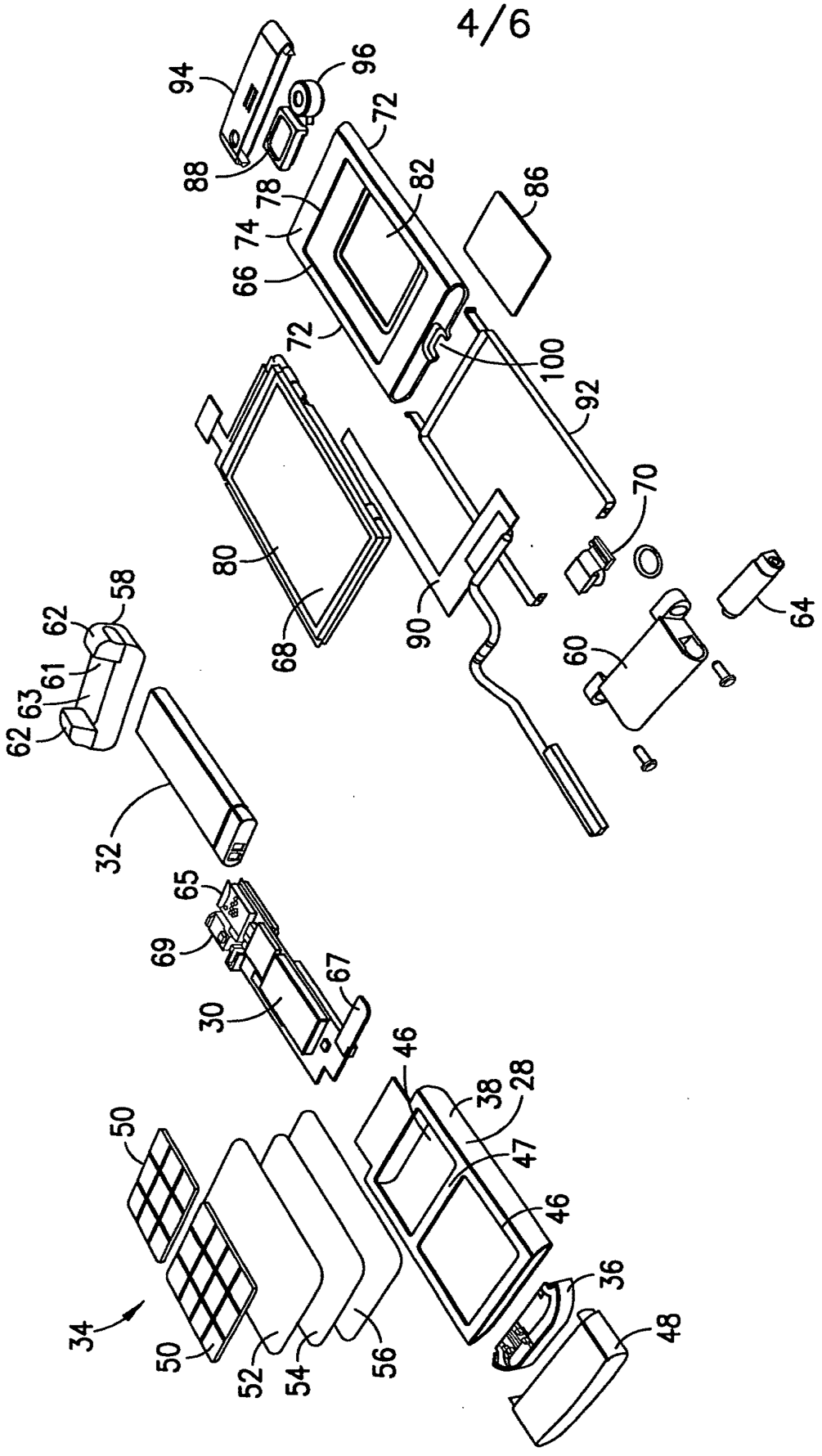

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FIG. 7

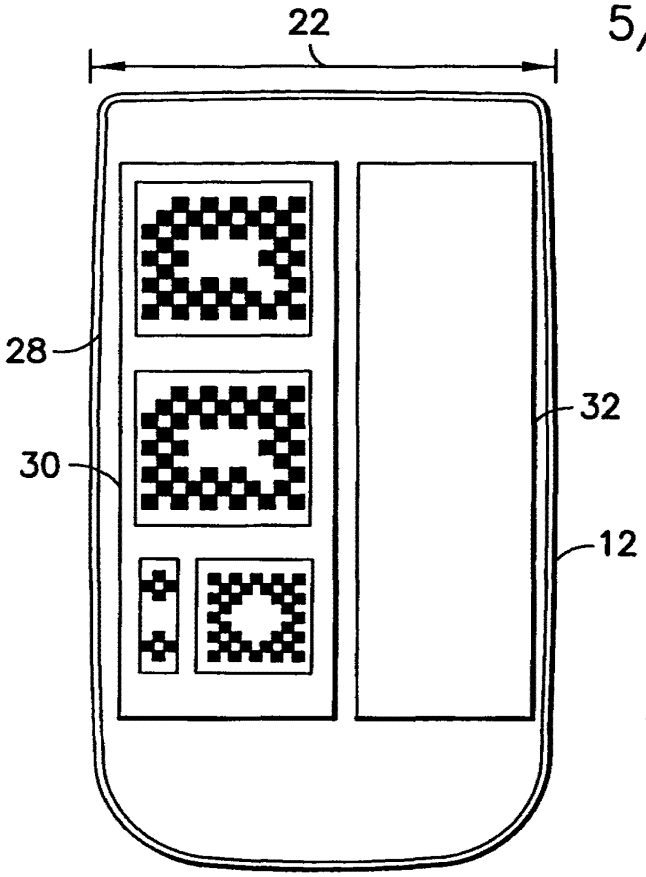


FIG.8

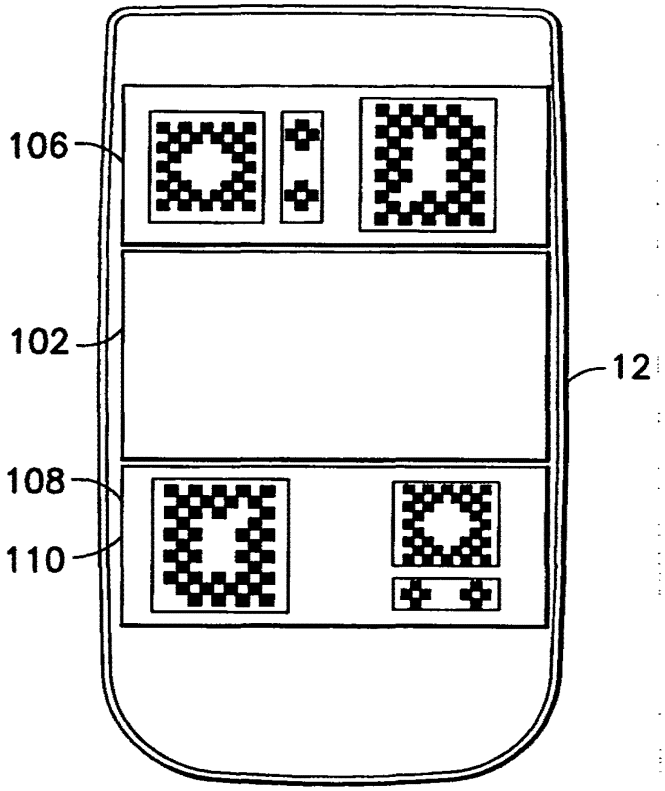


FIG.10

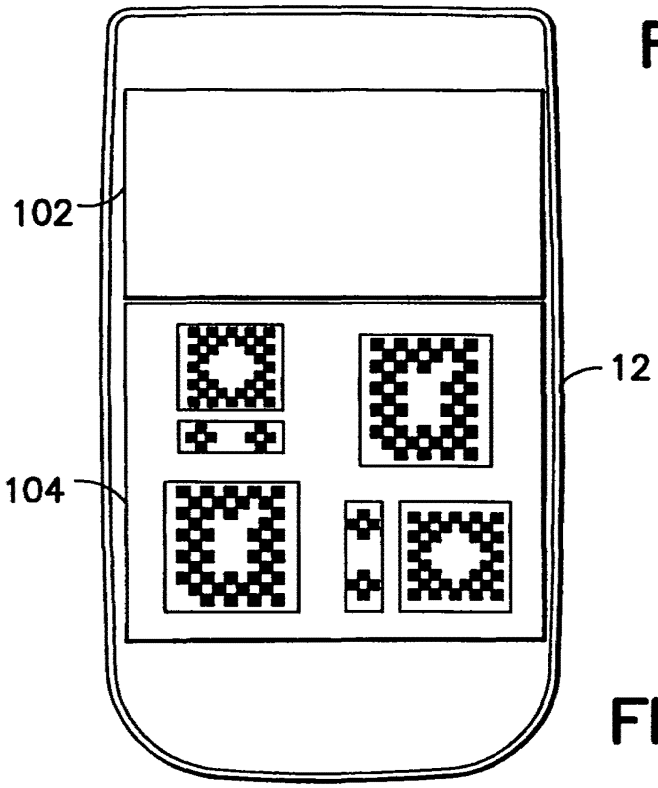


FIG.9

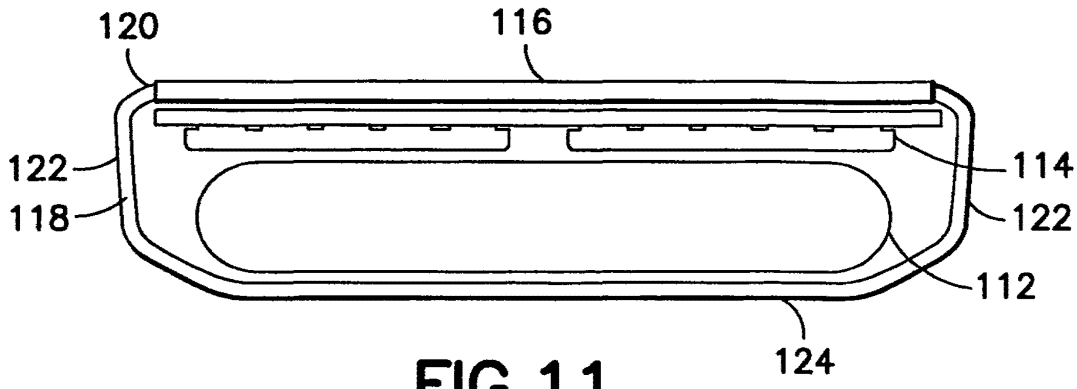


FIG. 11

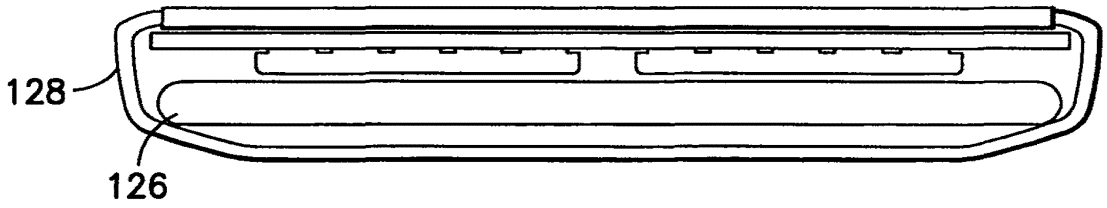


FIG. 12

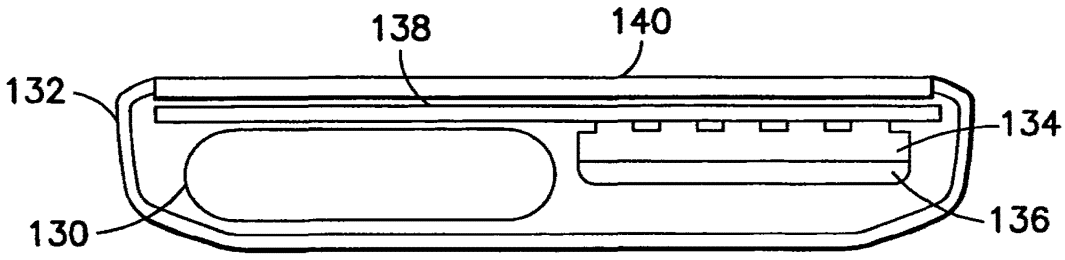


FIG. 13

OIPE IAP6
SEP 04 2007
PATENT & TRADEMARK OFFICE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re U.S. Patent Application of:

INVENTOR(S): C. Jorgensen

SERIAL NO.: 11/393,510 ART UNIT: 2875

FILED: March 29, 2006 EXAMINER: To Be Assigned

TITLE: Portable Electronic Device

CONFIRMATION NO.: 8456

ATTORNEY DOCKET NO.: 891.0013.U1(US)

MAIL STOP AMENDMENT
Commissioner For Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

(37 C.F.R. §1.97(d))

Dear Sir:

The following information is being disclosed to the U.S. Patent and Trademark Office as information that may be material to the examination of the above-identified patent application.

Applicants' Attorney is aware of the art listed on the enclosed Form PTO-1449. Copies of the non-U.S. patent art are enclosed with the Form PTO-1449 for the Examiner's use.

Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Statement. Enclosed is a copy of the International Search Report dated July 31, 2007 listing the cited references.

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The filing of this Statement is not to be construed as a representation that a search has been made regarding the claimed invention (37 C.F.R. §1.97(g)) or that no other possible material information exists. In addition, the filing of this Statement is not to be construed to be an admission that the information cited in the Statement is, or is considered to be, material to Patentability (37 C.F.R. §1.97(h)).

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U.S. PATENT DOCUMENTS

Examiner Initials	Document Number (Number-Kind Code)	Publication Date (MM-DD-YYYY)	Name of Patentee or Applicant	Class	Sub-class
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	EP-1496672-A1	01-12-2006	Matsushita Electric Industrial Co., Ltd.	
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OTHER DOCUMENTS (Author (Capitalize), Title, Date, Pages, Etc., if known)

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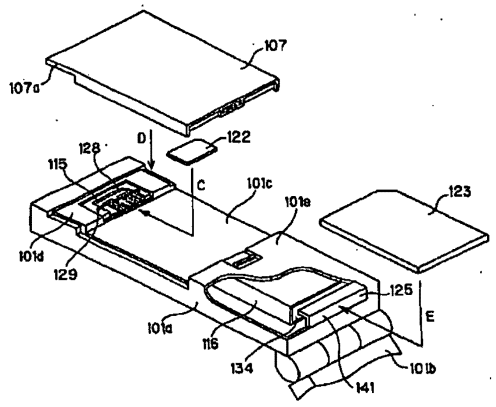
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(54) PORTABLE TERMINAL

(57) An object of the invention is to provide a portable telephone which is easily detachable an information recording medium while avoiding the enlargement of its size.

The portable telephone according to the invention includes a battery attachment portion (101c) of a concave shape to which a battery (107) is attached, a step portion (101d) protruded in the drawing-out direction (opposite direction to an arrow D in the figure) of the battery (107) with respect to the bottom surface of the battery attachment portion (101c), a UIM card connector (115) which is disposed near the surface extending across the corners of the step portion 101d and has a configuration that the one major surface of a UIM card (122) exposes on the surface of the step portion (101d) at the time of attaching the UIM card (122), and a battery cover (107a) which covers the step portion (101d) and the battery attachment portion (101c) at the time of attaching the battery (107).

FIG. 7



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Description

<Technical Field>

[0001] The present invention relates to a portable terminal capable of attaching an information recording medium thereto.

<Background Art>

[0002] In recent years, devices accorded to the W-CDMA system employed in the third generation portable telephones have been developed and commercialized. A portable telephone accorded to the W-CDMA system is arranged so that an IC card (subscriber identification information card) such as a SIM (Subscriber Identity Module) card or a UIM (User Identity Module) card in which information (telephone number, ID and charging information etc. of a subscriber) is recorded can be attached to the telephone. By using the information recorded in the IC card, a portable phone can be used always in the same circumstance without depending on the hardwares different at every kinds of portable phones.

[0003] As a conventional portable phone to which the subscriber identification information card can be attached, there is a portable phone disclosed in JP-A-10-336292.

[0004] Fig. 11 is a rear vies of a conventional portable phone.

[0005] As shown in the figure, a portable telephone 200 has a battery attachment portion 203 of a concave shape. The battery attachment portion 203 is configured by a bottom surface 204 and a vertical wall 205 erected vertically from the bottom surface 204. An opening 206 which is protruded with respect to the bottom surface 204 is formed at the lower end side of the vertical wall 205. A card holder to which the subscriber identification information card is attached is inserted into the opening 206. The opening 206 is provided with finger insertion recess portions 208a and 208b at the both ends of the front panel portion 207 of the card holder, respectively, which is disposed at the center of the opening. When a user of the portable telephone 200 inserts the thumb 209a into the finger insertion recess portion 208a and inserts the forefinger 209b into the finger insertion recess portion 208b thereby to fasten and draw out the front panel portion 207 by both the fingers, the subscriber identification information card can be drawn out.

[0006] However, in the conventional portable telephone, the subscriber identification information card can not be drawn out without inserting the fingers near the bottom surface 204 of the battery attachment portion 203. Thus, for a person having large hands or a woman having long nails etc., the fingers can hardly be inserted into the finger insertion recess portions 208a and 208b, so that the subscriber identification information card can not be drawn out easily. In order for any person to draw out the subscriber identification information card easily, the finger insertion recess portions 208a and 208b are required to be made larger in their sizes and so there arises a problem that the portable telephone 200 is inevitably made large in its size.

[0007] Further, in recent years, a digital video camera and a notebook computer etc. to each of which a information recording card such as a MMC (Multi Media Card: trade mark) or a SD (Super Density: trade mark) card capable of recording audio information, image information and character information etc. therein can be attached have been commercialized. Thus, hereinafter, the third generation portable telephone has been desired to have the structure capable of also being attached with these information recording cards.

[0008] The invention has been made in view of the aforesaid problem of the conventional technique and an object of the invention is to provide a portable telephone which is easily detachable an information recording medium while avoiding the enlargement of its size, and also to provide a portable telephone which can house two information recording mediums therein while avoiding the enlargement of its size.

<Disclosure of the invention>

[0009] The portable terminal according to the invention is arranged to include:

a battery attachment portion to which a detachable battery is attached;

an information recording medium storage portion for storing in a detachable manner an information recording medium in which information is recorded; and

a battery housing portion, for storing the battery, which is constituted by the battery attachment portion and the information recording medium storage portion, wherein

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the information recording medium storage portion is disposed in a state of exposing one major surface of the information recording medium.

[0010] According to the invention, since the information recording medium storage portion is disposed in the state of exposing the one major surface of the information recording medium, the information recording medium can be drawn and inserted by touching the one surface of the information recording medium with fingers. Thus, the information recording medium can be easily attached and detached. Further, since the information recording medium storage portion is provided at the battery housing portion, the information recording medium storage portion can be disposed using the existing space. Therefore, it is not necessary to secure a new space for disposing the information recording medium storage portion, at a portion other than the battery housing portion. Accordingly, the enlargement of the portable terminal can be prevented.

[0011] Further, the battery housing portion is provided in a housing of an almost rectangular parallelepiped, and a second information recording medium storage portion, for storing in a detachable manner an information recording medium in which information is recorded, is disposed in adjacent to the battery housing portion along a longitudinal direction of the housing within the housing.

[0012] According to the invention, since the second information recording medium storage portion and the battery housing portion are disposed in adjacent to each other along the longitudinal direction of the housing, it is possible to house two kinds of the information recording mediums within the housing. Thus, the enlargement of the portable terminal capable of housing the two kinds of the information recording mediums can be prevented.

[0013] Further, the portable terminal is arranged to further include the housing, a second housing, and a hinge portion for coupling the housing and the second housing in a manner of capable of being folded.

[0014] According to the invention, since the second information recording medium storage portion and the battery housing portion are disposed in one of the housings, it is possible to house the two kinds of the information recording mediums within the one housing in the portable terminal arranged to be able to fold the two housings.

[0015] Further, each of the information recording medium and the second information recording medium has an almost rectangular parallelepiped shape,

the information recording medium storage portion is disposed in a manner that a longitudinal direction of the information recording medium coincides with a direction orthogonal to the longitudinal direction of the housing, and

the second information recording medium storage portion is disposed in a manner that a longitudinal direction of the second information recording medium coincides with the longitudinal direction of the housing.

[0016] According to the invention, since the information recording medium storage portion is disposed in a manner that the longitudinal direction of the information recording medium coincides with the direction orthogonal to the longitudinal direction of the housing, it is not necessary to make the longitudinal direction of the housing longer. Further, since the second information recording medium storage portion is disposed in a manner that the longitudinal direction of the second information recording medium coincides with the longitudinal direction of the housing, it is not necessary to make the direction orthogonal to the longitudinal direction of the housing longer. Thus, the enlargement of the housing capable of housing the information recording medium and the second information recording medium can be prevented.

[0017] Further, the housing has an opening portion for storing the second information recording medium within the second information recording medium storage portion, and

the opening portion is covered by an open/close lid in a manner that the lid moves in a direction orthogonal to a housing direction of the second information recording medium and rotates in a freely closing and opening manner with respect to the housing.

[0018] According to the invention, since the open/close lid is constituted in a manner that the lid moves in the direction orthogonal to the housing direction of the second information recording medium and rotates in a freely closing and opening manner with respect to the housing, the open/close lid is not opened even when a shock is applied to the housing and so the second information recording medium collides with the open/close lid. Thus, the second information recording medium can be prevented from being ejected outside.

[0019] Further, the information recording medium storage portion and an input/output portion for inputting and outputting information are disposed in an overlapped manner at a side of the information recording medium opposite to a surface of the information recording medium being exposed.

[0020] According to the invention, since the information recording medium storage portion and the input/output portion are disposed in the overlapped manner, the space for providing the information recording medium storage portion and the input/output portion can be reduced, so that the enlargement of the portable terminal can be prevented. Further, even when a force is applied to the information recording medium storage portion, the influence on the input/output portion can be reduced.

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<Brief Description of the Drawings>

[0021]

Figs. 1(a) to 1(c) are a perspective view showing a closed state of the portable telephone according to the embodiment of the invention, a perspective view showing an opened state, and a perspective view of the opened state seen from the rear surface side.

Fig. 2 is a plan view of the portable telephone according to the embodiment.

Fig. 3 is a cross sectional view of the portable telephone shown in Fig. 2.

Fig. 4 is a perspective view of the housing member which is housed within the portable telephone according to the embodiment.

Fig.5 is a perspective view showing the rear surface side of the open/close cover 141.

Fig. 6 is a block diagram showing the inner structure of the portable telephone according to the embodiment.

Fig. 7 is an exploded perspective view of the lower housing 101a of the portable telephone according to the embodiment.

Figs. 8(a) to (d) are sectional diagrams showing the open/close lid 125 of the portable telephone according to the embodiment.

Fig. 9 is a rear view of a conventional portable telephone.

[0022] Incidentally, in the figures, a reference numeral 101 refers to a housing, 101a to a lower housing, 101b to an upper housing, 101c to a battery attachment portion, 101d and 101e to step portions, 102 to an antenna, 103 to a transceiver portion, 104 to a vibrator portion, 105 to an operation portion, 106 to an information recording portion, 107 to a battery, 108 a to receiver portion, 109 a to transmission portion, 110 to a camera portion, 111 to a hall element, 112 and 113 to display portions, 114 to an I/O connector, 115 to an UIM card connector, 116 to a SD card connector, 117 and 118 to print circuit boards, 119 to a control portion, 120 to a permanent magnet, 121 to an I/O plug, 122 to an UIM card, 123 to a SD card, 124 to a hinge portion, 125 an open/close lid, 126 a holder, 127 a contact terminal, 128 to a housing portion, 129 to a cover portion, 130a and 130b to connection lands, 131 to a signal terminal, 132 to a housing, 133 to a terminal, 134 to an opening portion, 135 to a housing portion, 136 to a holder, 137 and 138 to bearing shafts, 139a, 139b and 140 to coupling plates, 141 to an open/close cover, 142 and 143 to torsion coil spring, 144 to an elongated hole, 145 to a flange, 146 to an engagement nail, 147 to an engagement projection, 148 a projection portion, 149 a spring groove, 150 to a fixing hole, 151 to a hook hole, 152 to a rectangular hole, 153 to a projection portion, 200 to portable telephone, 203 to a battery attachment portion, 204to a bottom surface, 205 to a vertical wall, 206 to an opening, 207 to a front surface panel portion, 208a and 208b to finger insertion recess portion, 209a to a thumb, and 209b to a forefinger.

<Best Mode for Carrying Out the Invention>

[0023] Hereinafter, an embodiment of the invention will be explained with reference to the drawings. The embodiment will be explained as to a portable telephone as an example of a portable terminal such as a portable information terminal or a portable telephone.

[0024] Fig. 1(a) is a perspective view showing a closed state of the portable telephone according to the embodiment of the invention. Fig. 1(b) is a perspective view showing an opened state of the portable telephone according to the embodiment of the invention.. Fig. 1(c) is a perspective view of the portable telephone seen from the rear surface side in Fig. 1(b). Fig. 2 is a plan view of the portable telephone according to the embodiment of the invention. Fig. 3 is a cross sectional view of the portable telephone shown in Fig. 2. Fig. 4 is a perspective view of the housing member which is housed within the portable telephone according to the embodiment of the invention. Fig.5 is a perspective view showing the rear surface side of the open/close cover 141. Fig. 6 is a block diagram showing the inner structure of the portable telephone according to the embodiment of the invention. Fig. 7 is an exploded perspective view of the lower housing of the portable telephone according to the embodiment of the

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invention. Hereinafter, the embodiment according to the invention will be explained as a case where a UIM card of an almost rectangular parallelepiped is used as the subscriber identification information card and a SD card of an almost rectangular parallelepiped is used as the information recording card.

[0025] In the portable telephone 100, the housing 101 is constituted by the lower housing 101a and the upper housing 101b, and the lower housing 101a and the upper housing 101b are coupled to be rotatable through the hinge portion 124. The portable telephone 100 is used in a closed state (folded state) where the lower housing 101a is adjacent and opposed to the upper housing 101b when being carried.

[0026] The upper housing 101b is provided with the antenna 102, the transceiver portion 103, the vibrator portion 104, the receiver portion (receiver) 108, the camera portion 110, the hall element 111, the display portion 112 and the display portion 113.

[0027] The lower housing 101a is provided with the operation portion 105, the information receiving portion 106, the detachable battery 107, the transmission portion (microphone) 109, the I/O connector 114, the UIM card connector 115 corresponding to an information recording medium storage portion recited in claims, the SD card connector 116 corresponding to a second information recording medium storage portion recited in claims, the printed circuit board 117, the printed circuit board 118 and the control portion 119. The housing 101 is adapted to be attached from the outside with the I/O plug 121, the UIM card 122 corresponding to an information recording medium recited in claims, and the SD card 123 corresponding to a second information recording medium recited in claims.

[0028] As shown in Fig. 6, the transceiver portion 103 is connected to the antenna 102. The portion 118 is connected to the transceiver portion 103, the vibrator portion 104, the operation portion 105, the information receiving portion 106, the battery 107 corresponding to a battery recited in claims, the receiver portion 108, the transmission portion 109, the camera portion 110, the hall element 111, the display portion 112, the display portion 113, the I/O connector 114, the UIM card connector 115, and the SD card connector 116 and controls these constituent elements. The portion 118 is connected to the battery 107 and supplied with electric power therefrom.

[0029] The antenna 102 receives a radio signal and transmits the received signal to the transceiver portion 103. The transceiver portion 103 processes the received signal from the antenna 102 and transmits the received signal thus processed to the receiver portion 108. The receiver portion 108 outputs sound or voice in response to the received signal from the transceiver portion 103. The transmission portion 109 receives voice, then converts the voice into a transmission signal and transmits the transmission signal to the antenna 102. The antenna 102 receives the transmission signal from the transceiver portion 103 and transmits as a radio signal.

[0030] On the printed circuit board 117, the transceiver portion 103, the operation portion 105 and the information receiving portion 106 are formed and the I/O connector 114 is mounted. The SD card connector 116 is mounted on the printed circuit board 118.

[0031] The vibrator portion 104 is used to vibrate and notify an incoming call through vibration. The operation portion 105 is used to input characters, symbols, numerals and operation signals etc. and to operate the camera portion 110. The information receiving portion 106 is arranged to record therein telephone number information, voice information, non-voice information and image information etc.

[0032] Each of the display portion 112 and the display portion 113 is configured by a liquid crystal display and displays characters, symbols, numerals and images etc. thereon. The display portion 112 is provided at the surface of the lower housing 101a which is exposed when the upper housing 101b is opened. The display portion 113 is provided at the surface in opposite to the surface where the display portion 112 is provided. The camera portion 110 is provided at the same surface of the upper housing 101b where the display portion 112 is provided and disposed so as to photograph the forward portion of the display portion 112.

[0033] The permanent magnet 120 is provided at the same surface where the display portion 112 of the upper housing 101b is provided. The hall element 111 is provided at the surface of the upper housing 101b which opposes to the surface of the lower housing 101a when the lower housing 101a and the upper housing 101b are closed. When the lower housing 101a and the upper housing 101b are closed, the permanent magnet 120 approaches the hall element 111, which in turn detects the permanent magnet 120 and transmits a detection signal to the control portion 119.

[0034] When the lower housing 101a and the upper housing 101b are opened (shown in Figs. 2 and 3), the permanent magnet 120 is separated from the hall element 111, so that the hall element 111 can not detect the permanent magnet 120 and so the detection signal is not generated.

[0035] The portion 118 can recognize the open/close state of the lower housing 101a and the upper housing 101b in accordance with the non-presence and the presence of the detection signal from the hall element 111, respectively.

[0036] The I/O plug (a contact plug for a radio signal system and an audio or image signal system) 121 is a plug for inputting and outputting data from and to an external device and is attached to the I/O connector (an interface connector) 114 from the outside of the housing 101. The UIM card 122 is attached to the UIM card connector 115 from the outside of the housing 101. The UIM card connector 115 is covered by a battery cover 117a which is attached to

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[0037] The battery attachment portion 101c is a portion to which the battery 107 is attached and has a concave shape with respect to the lower housing 101a. The step portions 101d and 101e are portions protruded in the attachment direction of the battery 107 with respect to the bottom surface of the battery attachment portion 101c. Incidentally, the portions (the battery attachment portion 101c and the step portion 101d) covered by the battery cover 117a when the battery 107 is attached to the lower housing 101a corresponds to a battery housing portion recited in claims. The SD card 123 is attached to the SD card connector 116 from the outside of the housing 101. The opening portion 134 of the SD card connector 116 is arranged to be covered by the open/close lid 125 which can be opened and closed with respect to the lower housing 101a.

[0038] The UIM card connector 115 is provided with the holder 126 and the contact terminal 127. An IC contained in the UIM card 122 records therein information such as telephone numbers, a user ID and charges for calls. The UIM card 122 has a size of 12mm in width, 25mm in length and 0.76mm in thickness. The holder 126 is formed in a reverse-L shape and provided with the housing portion 128 in which the UIM card 122 is housed and the cover portion 129 for preventing the UIM card 122 thus inserted from separating from the housing portion 128. The UIM card 122 is inserted between the housing portion 128 and the cover portion 129 from the battery attachment portion 101c side and attached to the UIM card connector.

[0039] The UIM card connector 115 is disposed near the external appearance surface extending across the corner portions of the step portion 101d protruded in the attachment direction of the battery 107 with respect to the bottom surface of the battery attachment portion 101c in a manner that the longitudinal direction of the UIM card 122 to be attached coincides with the direction orthogonal to the longitudinal direction of the lower housing 101a.

[0040] Six contact terminals 127 are provided in correspondence to Vcc, Vdd, GND, RST, CLK and I/O, respectively. The one end of each of these contact terminals 127 abuts against the contact portion (not shown) of the UIM card 122 thus attached, whilst the other end thereof abuts against the connection land 130a on the printed circuit board 117 contained within the lower housing 101a thereby to electrically connect the UIM card 122 to the printed circuit board 117.

[0041] The I/O connector 114 of an almost box shape is disposed so as to be overlapped with the UIM card connector 115 and surface-mounted near the end surface of the printed circuit board 117. The signal terminals 131 of the I/O connector 114 are connected through the soldering to the connection lands 130b which are formed near the connection lands 130a and on the end surface side of the printed circuit board 117.

[0042] Explanation will be made as to the inspection method in an assembling factory.

[0043] In general, whether an electronic part surface-mounted on a printed circuit board is normally soldered or not is determined through inspecting the presence or non-presence of a fillet by means of a dedicated robot. In order to facilitate this inspection and also to facilitate the repair using a soldering iron (to secure a space for inserting the soldering iron) when the inspection result is determined to be failure, a space for a part of a predetermined length or more is required between the connection land 130a and the connection land 130b.

[0044] According to the embodiment, in order to miniaturize the portable telephone by closely disposing parts (narrowing the space between the connection land 130a and the connection land 130b) each having a large height and many terminals to be soldered, the terminals of the parts on one side (the signal terminals 131 of the I/O connector 114) are automatically mounted and the terminals of the parts on the other side (the contact terminals 127 of the UIM card connector 115) are formed as spring contacts. Thus, the parts on the one side are automatically inspected by the robot and the sufficient space for inserting the soldering iron for the repair therein is secured when the inspection result is determined to be failure. On the other hand, when the inspection result is determined to be normal, the parts on the other side are merely placed on the printed circuit board, whereby both the parts on the one side and the parts on the other side are electrically connected. Alternatively, the parts on the other side may be assembled to the lower housing 101a in advance and the printed circuit board 117 may be housed within the lower housing 101a thereby to electrically connect the contact terminals 127 and the connection lands 130a.

[0045] Next, detailed explanation will be made as to the SD card connector 116 and the open/close lid 125.

[0046] The SD card connector 116 includes the housing 132 and the terminals 133. Image or audio or voice information can be recorded into an IC contained within the SD card 123. The SD card 123 has a size of 24mm in width, 32mm in height and 2.1 in thickness.

[0047] The housing 132 includes the opening portion 134 in which the SD card 123 is inserted and the housing portion 135 for storing the SD card 123 which is inserted through the opening portion 134. Nine terminals 133 are provided for card detection, command, ground, power source and data I/O. The one ends of the terminals 133 abut against the contact portions (123a of Fig. 2) of the SD card 123 and the other ends thereof are soldered and connected to the printed circuit board 118 contained within the lower housing 101a. The SD card connector 116 is disposed in a manner that the longitudinal direction of the SD card 123 to be attached coincides with the longitudinal direction of the lower housing 101a.

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battery 107 with respect to the bottom surface of the battery attachment portion 101c. The opening portion 134 is covered by the open/close lid 125. The open/close lid 125 includes the holder 136, the bearing shaft 137, the bearing shaft 138, the coupling plates 139, the coupling plate 140, the open/close cover 141, the torsion coil spring 142 and the torsion coil spring 143.

[0049] A pair of the coupling plates 139a and 139b couple the both ends of each of the bearing shafts 137 and 138. The coupling plate 140 is rotatably supported by the bearing shaft 138. The open/close cover 141 is attached to the coupling plate 140 and forms the external appearance surfaces together with the lower housing 101a. The bearing shaft 137 is passed through the torsion coil spring 142 thereby to apply a rotational torque around the shaft center of the bearing shaft 137 to the coupling plates 139 with respect to the holder 136. The one end of the torsion coil spring 143 is hooked on the coupling plate 139 and the other end thereof is provided so as to lean against the bent root of the coupling plate 140 thereby to apply a rotational torque around the shaft center of the bearing shaft 138 to the coupling plate 140 and the open/close cover 141 with respect to the coupling plates 139.

[0050] The holder 136 is provided at both ends thereof with the elongated holes 144 through which the bearing shaft 137 is passed and further provided at the outer side thereof with the flange 145 which is fastened to the lower housing 101a by means of screws (not shown). The engagement projections 147 engaging with the engagement nails 146 of the open/close cover 141 are provided at the both ends of the upper portion of the holder 136 in an erected manner, respectively.

[0051] Further, the holder 136 is provided at the center portion thereof with the projection portion 148 having a top portion which slightly bends the center portion of the bearing shaft 137 when the bearing shaft 137 is shifted in the longitudinal direction of the elongated holes 144, and further provided with the spring groove 149 which is disposed at the side of the projection portion 148 and in which the one end of the first torsion coil spring 142 is inserted to suppress the rotation of the one end. Each of the torsion coil springs 142 and 143 is attached so as to be twisted in a direction of increasing its winding number in a manner that the twisted angle thereof is 0 degree or more irrespective of the positions of the coupling plates 139a, 139b, the coupling plate 140 and the open/close cover 141.

[0052] Each of the coupling plates 139a and 139b is provided at the end portions thereof with the two fixing holes 150 in which the bearing shaft 137 and the bearing shaft 138 are fixed through the caulking, respectively. The coupling plate 139a is provided with the hook hole 151 in which the one end of the second torsion coil spring 143 is hooked. The other end of the torsion coil spring 142 is hooked on the outer peripheral portion of the coupling plate 139a.

[0053] The coupling plate 140 is provided at the center portions thereof with two rectangular holes 152 which engage with the two projections 143 (shown in Fig. 5) of the open/close cover 141, whereby the open/close cover 141 is attached to the coupling plate 140 when inserted along the direction shown by an arrow A. In the case of disengaging the open/close cover 141, the engagement between the rectangular holes 152 and the projections 153 are released and the open/close cover 141 is pulled in a direction opposite to the direction shown by the arrow A., whereby the open/close cover is separated from the coupling plate.

[0054] In an assembling factory, a unit (hereinafter referred to a rotation unit) formed by assembling in advance the holder 136, the bearing shaft 137, the bearing shaft 138, the coupling plates 139, the coupling plate 140, the torsion coil spring 142 and the torsion coil spring 143 is supplied, and this unit is assembled to the lower housing 101a. Then, various characteristics such as radio characteristics, receiving characteristics and transmission characteristics are inspected as to each of the units thus assembled, and the open/close cover 141 is assembled only to each of the units having passed the inspection. In this manner, since the confirmation of the rotating operation of the rotation unit can be performed in a different procedure from the inspection of the external appearance of the open/close cover 141, the productivity of the portable telephones 100 can be improved.

[0055] Next, the operation of the portable telephone according to the embodiment of the invention will be explained with reference to Figs. 1 to 8.

[0056] Fig. 8 is sectional diagrams showing the open/close lid of the portable telephone according to the embodiment of the invention, wherein Fig 8(a) shows a state where the open/close lid is at the first position, Fig. 8(b) shows a state where the open/close lid is at the second position, Fig. 8(c) shows a state where the open/close lid is at the third position, and Fig. 8(d) shows a state where the open/close lid is at the fourth position.

[0057] First, the operation of the open/close lid will be explained with reference to Fig. 8.

[0058] Fig. 8(a) shows the state where the open/close cover 141 of the open/close lid 125 covers the opening portion 134, in which the engagement nails 146 of the open/close cover 141 engage with the engagement projections 147 of the holder 136. The bearing shaft 137 locates at the one end sides of the elongated holes 144 (the upper side in Fig. 8(a) but the lower side in Fig. 4) and so the lower housing 101a coincides with the open/close cover 141 in their external appearance surfaces. This state is referred as the first position (closed state).

[0059] When an external force is applied to the open/close cover 141 by a finger in a direction shown by an

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arrow B in the first position, the bearing shaft 137 passes the projection portion 148 accompanied with a clicking operation and moves to the other end sides of the elongated holes 144. Then, the engagement between the engagement nails 146 and the engagement projections 147 is released and so the lid etc. are placed in a state shown in Fig. 8(b). This state is referred as the second position of the open/close lid 125.

[0060] When the engagement between the engagement nails 146 and the engagement projections 147 is released, the holder 136 and the coupling plates 139a, 139b are applied with a force due to the torsion moment of the torsion coil spring 142, so that a torque is generated around the bearing shaft 137 thereby to start to rotate the coupling plate 139 together with the open/close cover 141 counterclockwise.

[0061] Further, since the coupling plates 139a, 139b and the open/close cover 141 are applied with a force due to the torsion moment of the torsion coil spring 143, a torque is generated around the bearing shaft 138 thereby to start to rotate the open/close cover 141 counterclockwise. This state is referred as the third position of the open/close lid 125 as shown in Fig. 8(c). Thereafter, the coupling plate 139a and the coupling plate 139b are rotated by about 90 degrees counterclockwise, and the open/close cover 141 is rotated by about 180 degrees counterclockwise. The state where these rotation operations are terminated is shown in Fig. 8(d) and this state is referred as the fourth position of the open/close lid 125.

[0062] As shown in Fig. 8(d), the open/close cover 141 is opened semi-automatically so that the external appearance surface of the open/close cover opposes to the external appearance surface of the lower housing 101a thereby to expose the opening portion 134 of the SD card connector 116, whereby the SD card 123 can attach to and detach from the SD card connector 116.

[0063] In Fig. 7, the UIM card 122 is attached to the UIM card connector 115 along the direction shown by an arrow C. Thereafter, when the battery 107 is assembled along the direction shown by an arrow D, the battery cover 107a of the battery 107 covers the UIM card 122. After opening the open/close cover 141, the SD card 123 is attached to the SD card connector 116 along the direction shown by an arrow E and the open/close cover 141 is closed, whereby the attachment procedure is completed.

[0064] As explained above, according to the embodiment, the open/close lid 125 is provided with the two rotation shafts and further provided with torsion coil springs for rotating the open/close cover in the same direction around the rotation shafts, respectively. Thus, when a user attaches or detaches the SD card 123, the user can open the opening portion 134 without damaging the open/close cover 141 by merely moving the open/close cover 141. Further, since the opening portion 134 is near the external appearance surface of the lower housing 101a, the SD card 123 having been attached also is positioned near the external appearance surface of the lower housing 101a in the state where the open/close lid 125 is opened. Thus, the attaching and detaching operations of the SD card 123 through the pushing and drawing operations thereof can be performed easily.

[0065] Further, since the open/close cover 141 is configured so as to rotate after being shifted in the direction orthogonal to the attaching/detaching direction of the SD card 123, there does not arise such a phenomenon that, if the portable telephone is dropped, for example, the housed SD card 123 collides with the open/close cover 141 to open the open/close lid 125 and so the SD card 123 is moved outside.

[0066] Incidentally, at the time of restoring (closing) the open/close lid 125 from the fourth position where the lid is opened to the first position, when a user applies a force to the open/close cover 141, the open/close cover 141 and the coupling plate 139 start to rotate clockwise. Then, the lid is shifted to the second position through the third position. Thereafter, when the user further applies a force continuously in the direction opposite to the direction shown by the arrow B, the lid moves to the first position through a clicking operation. In this manner, the operation for closing the open/close lid 125 is also very simple. Further, since the open/close lid 125 is closed accompanied with the clicking operation, the completion of the closing operation can be easily recognized advantageously.

[0067] If the portable telephone is configured in a manner that only the open/close cover 141 collides with the ground when the portable telephone 100 is dropped on the ground in a state that the open/close lid 125 is opened to a position near the hinge portion 124 (the fourth position of the open/close lid 125), the open/close cover 141 is broken. Thus, in this case, it is necessary to form the open/close lid 125 by metal material with high rigidity, for example.

[0068] In contrast, according to the embodiment, the portable telephone is configured in a manner that even when the portable telephone 100 is dropped in the opened state of the open/close lid 125, only the hinge portion 124 and the open/close cover 141 or only the hinge portion 124 collides with the ground. Thus, since a shock caused by the collision with the ground is distributed, it is not necessary to form the open/close cover 141 by material with high rigidity and high intensity. As a result, the cost-up of the portable telephones 100 at the time of production thereof can be avoided.

[0069] Incidentally, when the open/close cover 141 is required to be exchanged in such a case where the open/close cover 141 is broken or damaged due to an unexpected accident and a user wants to exchange this cover, the engagement between the open/close cover 141 and the coupling plate 140 is released and then the open/close

the coupling plate are separated. Then, a new open/close cover 141 is assembled along the direction shown by the arrow A, whereby the reassembling of the open/close lid 125 is completed. In this manner, since the portable telephone 100 can be promptly repaired at a repair shop etc. without returning the portable telephone to an assembling factory, the portable telephone can be maintained quite easily.

[0070] Further, according to the embodiment, since the coupling plates 139 rotate about 90 degrees, the torsion coil spring 142 is arranged to also twist about 90 degrees. On the other hand, since the torsion coil spring 143 is disposed in a manner that the coil center thereof does not coincide with the bearing shaft 138 (that is, disposed at the peripheral portion of the bearing shaft 138), the torsion angle thereof is smaller than the rotation angle of the open/close cover 141 (compare between Fig. 8(a) and Fig. 8(d)).

[0071] For example, when the coil center of the torsion coil spring 143 is made coincide (coaxially) with the bearing shaft 138, the torsion angle of the torsion spring becomes almost same as the rotation angle of the open/close cover 141, so that a stress generated at the spring may exceed an allowable stress depending on the average diameter and the number of the windings of the spring. Thus, a stress thus generated can be made small by arranging the constituent elements according to the embodiment. As a result, the cost-up of the portable telephones 100 at the time of production thereof can be avoided without selecting expensive material with a large allowable stress.

[0072] According to the aforesaid reason, the similar effect can be obtained when the torsion coil spring 142 is disposed in a manner that the coil center thereof does not coincide with the coil center of the bearing shaft 137 thereby to make the torsion angle of the torsion coil spring 142 small. Thus, suitable method may be employed depending on the structure.

[0073] Further, according to the embodiment, the housing portion 128 of the UIM card connector 115 is formed at the upper surface of the UIM card connector 115 (near the external appearance surface of the lower housing 101a). That is, the one major surface of the UIM card 122 attached to the UIM card connector 115 is exposed when the battery 107 is removed. Thus, even for a person having large hands or long nails etc., the person can easily attach and detach the UIM card 122 by touching the one major surface thereof with the fingers to insert and remove the card.

[0074] Further, according to the embodiment, since the direction orthogonal to the longitudinal direction of the lower housing 101a is made coincide with the longitudinal direction of the UIM card 122, it is not necessary to make the longitudinal direction of the lower housing 101a long. Further, since the longitudinal direction of the lower housing 101a is made coincide with the longitudinal direction of the SD card 123, it is not necessary to make the direction orthogonal to the longitudinal direction of the lower housing 101a long. Thus, the portable telephone 100 having the UIM card connector 115 and the SD card connector 116 and capable of easily detaching the UIM card 122 can be provided without increasing the size of the portable telephone 100.

[0075] It should be understood by those skilled in the art that although the foregoing description has been made on the particular embodiment, the invention is not limited thereto and various changes and modifications may be made without departing from the spirit and the scope of the invention.

[0076] The present application is based on Japanese Patent Application No. 2002-113386 filed on April 16, 2002, the content of which is incorporated herein by reference.

<Industrial Applicability>

[0077] According to the invention, since the information recording medium storage portion is disposed in the state of exposing the one major surface of the information recording medium, the information recording medium can be drawn and inserted by touching the one surface of the information recording medium with fingers. Thus, the information recording medium can be easily attached and detached. Further, since the information recording medium storage portion is provided at the battery housing portion, the information recording medium storage portion can be disposed using the existing space. Therefore, it is not necessary to secure a new space for disposing the information recording medium storage portion, at a portion other than the battery housing portion. Accordingly, the enlargement of the portable terminal can be prevented.

Claims

1. A portable terminal comprising:

a battery attachment portion to which a detachable battery is attached;

an information recording medium storage portion for storing in a detachable manner an information recording medium in which information is recorded; and

a battery housing portion, for storing the battery, which is constituted by the battery attachment portion

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and the information recording medium storage portion,

wherein the information recording medium storage portion is disposed in a state of exposing one major surface of the information recording medium.

2. The portable terminal according to claim 1,
wherein the battery housing portion is provided in a housing of an almost rectangular parallelepiped, and
wherein a second information recording medium storage portion, for storing in a detachable manner an information recording medium in which information is recorded, is disposed in adjacent to the battery housing portion along a longitudinal direction of the housing within the housing.

3. The portable terminal according to claim 2, further comprising:

the housing;

a second housing; and

a hinge portion for coupling the housing and the second housing in a manner of capable of being folded.

4. The portable terminal according to claim 2 or 3,
wherein each of the information recording medium and the second information recording medium has an almost rectangular parallelepiped shape,
wherein the information recording medium storage portion is disposed in a manner that a longitudinal direction of the information recording medium coincides with a direction orthogonal to the longitudinal direction of the housing, and
wherein the second information recording medium storage portion is disposed in a manner that a longitudinal direction of the second information recording medium coincides with the longitudinal direction of the housing.

5. The portable terminal according to one of claims 2 to 4,
wherein the housing has an opening portion for storing the second information recording medium within the second information recording medium storage portion, and
wherein the opening portion is covered by an open/close lid in a manner that the lid moves in a direction orthogonal to a housing direction of the second information recording medium and rotates in a freely closing and opening manner with respect to the housing.

6. The portable terminal according to one of claims 1 to 5,
wherein the information recording medium storage portion and an input/output portion for inputting and outputting information are disposed in an overlapped manner at a side of the information recording medium opposite to a surface of the information recording medium being exposed.

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FIG. 1 (c)

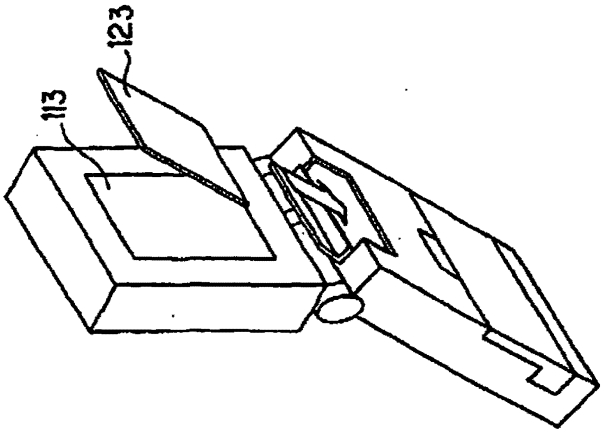


FIG. 1 (b)

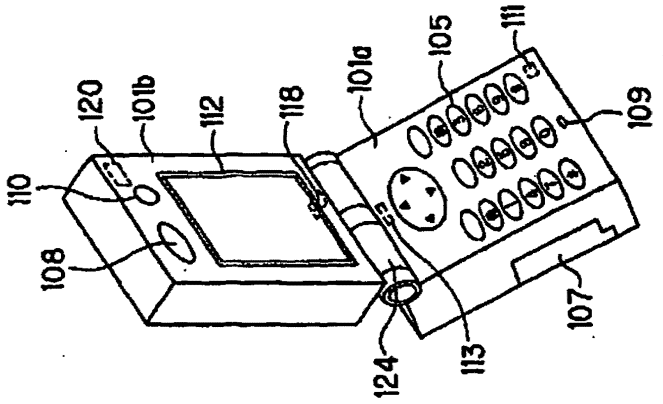
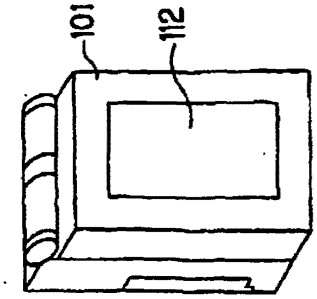
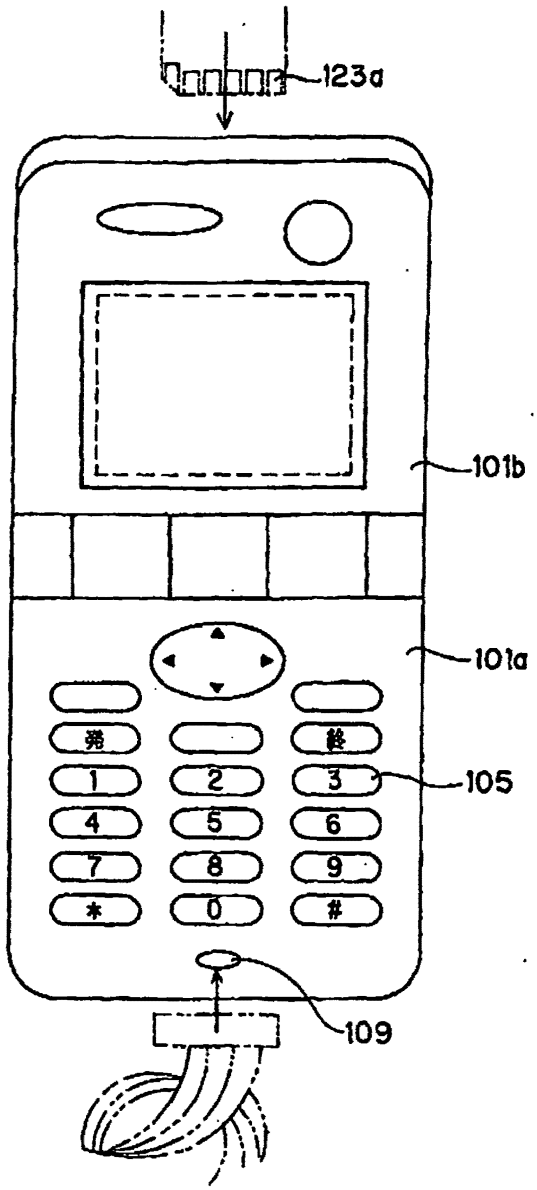


FIG. 1 (a)



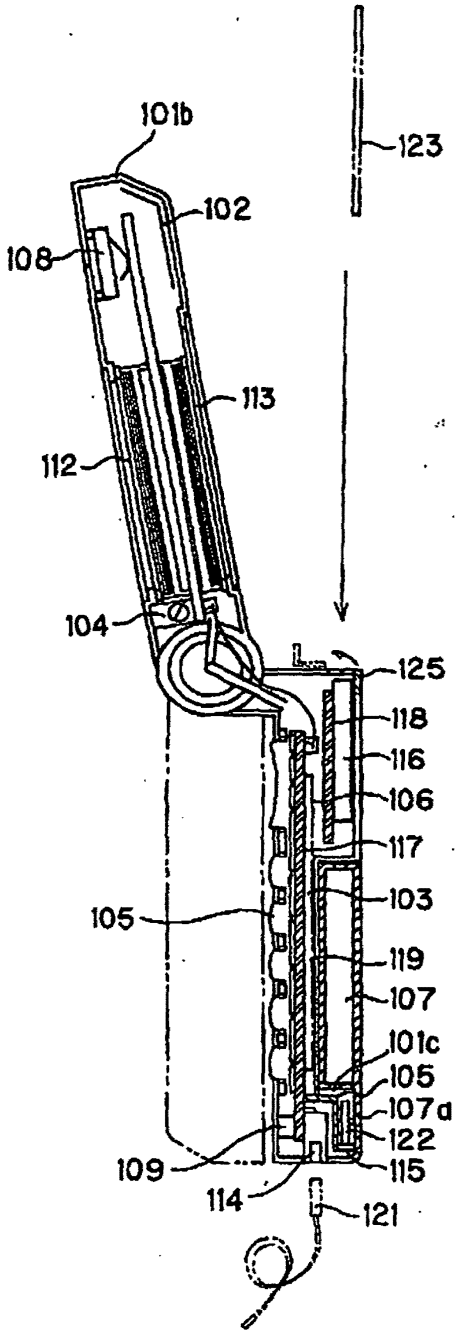
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FIG. 2



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FIG. 3



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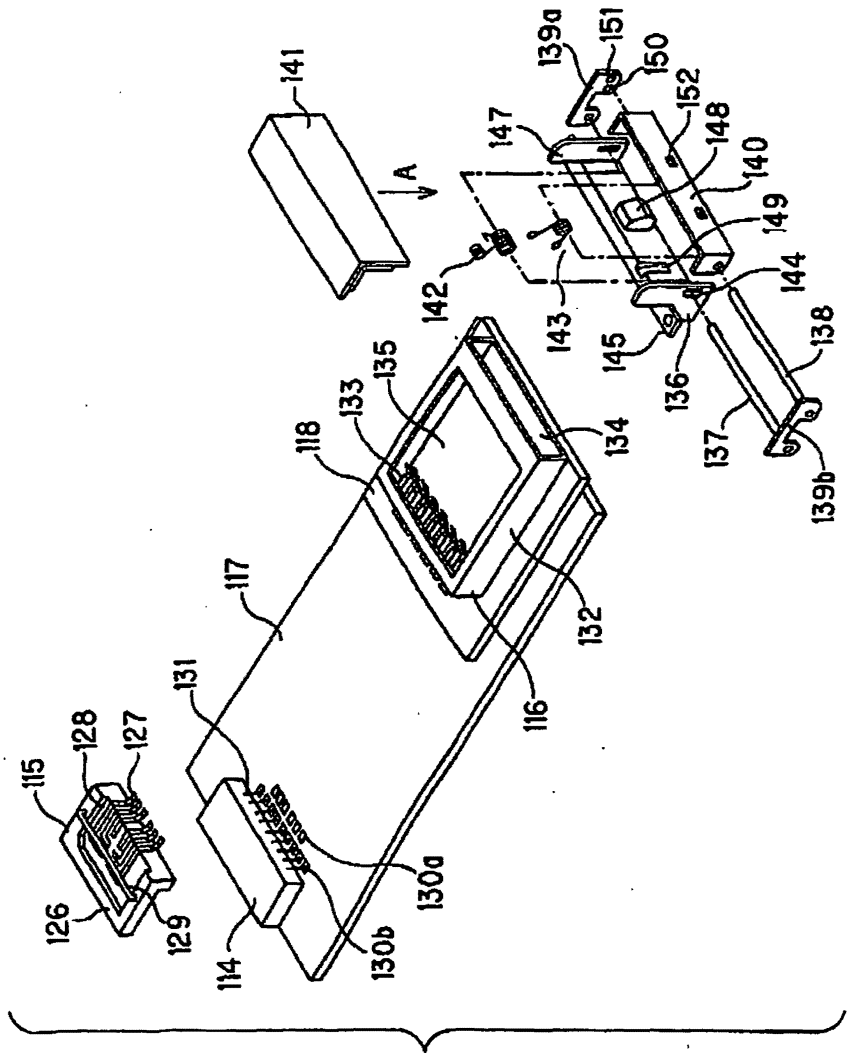


FIG. 4

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FIG. 5

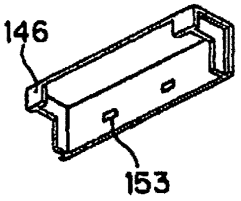
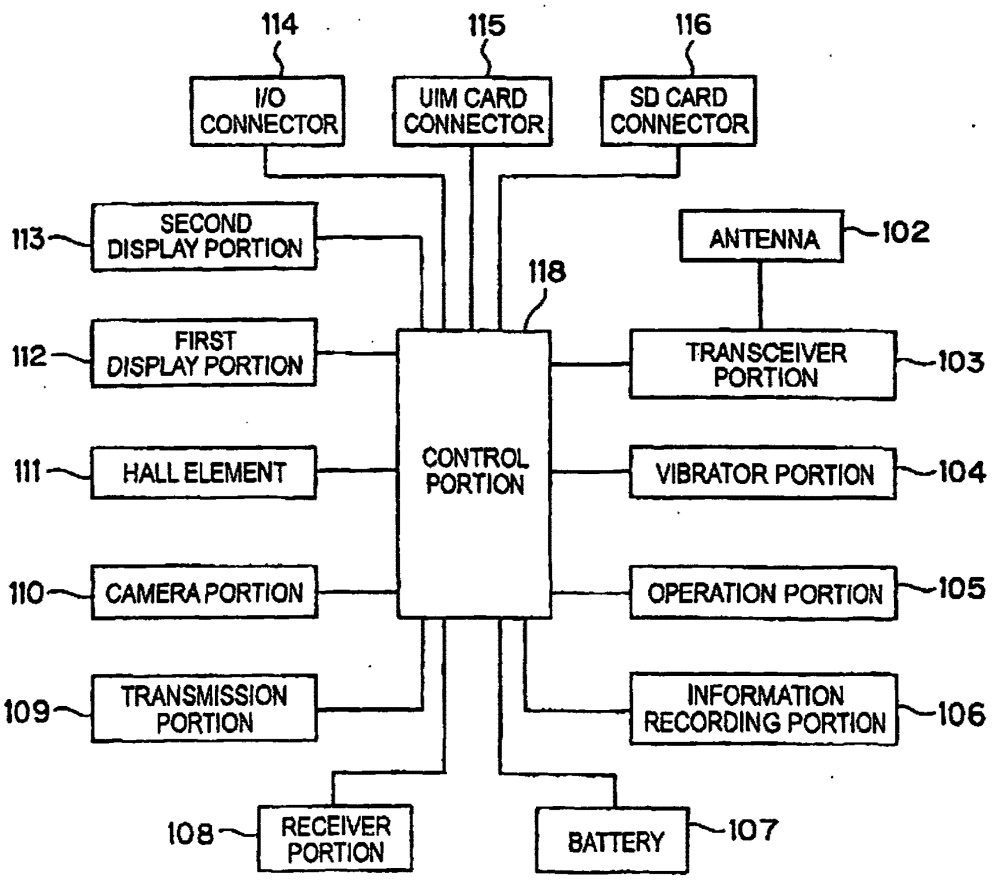
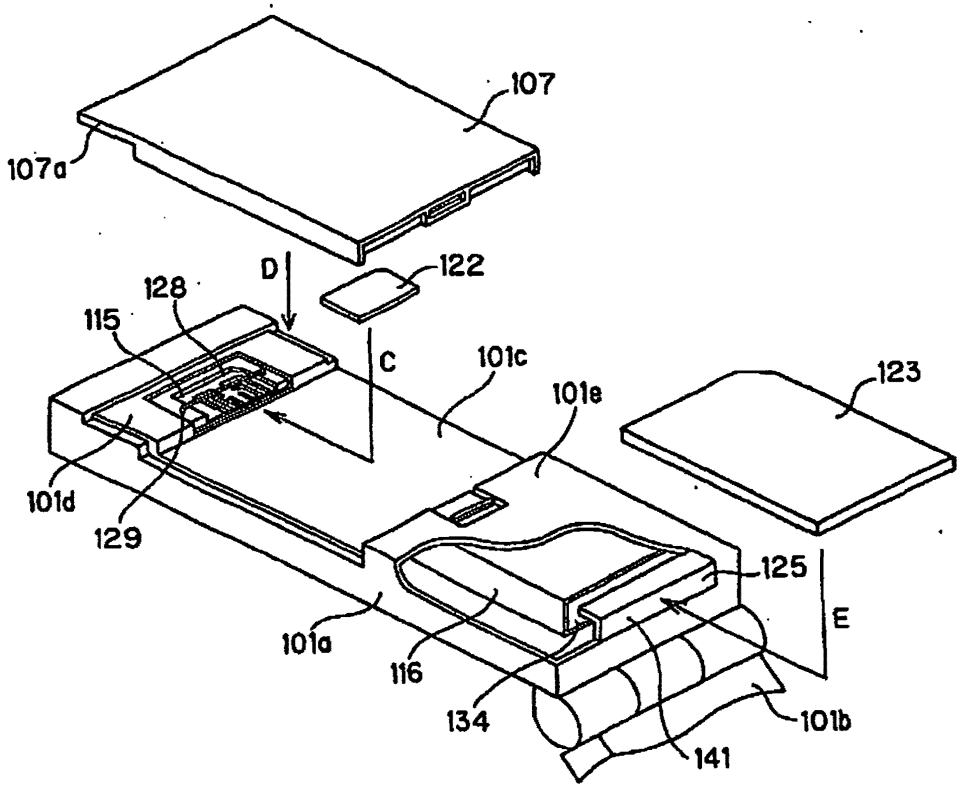


FIG. 6



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FIG. 7



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FIG. 8 (a)

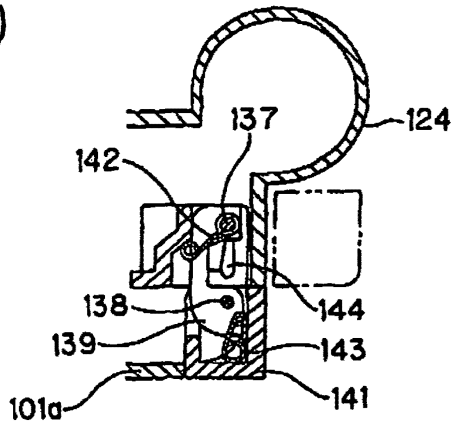


FIG. 8 (b)

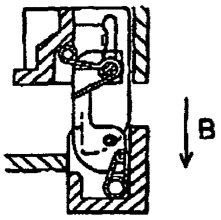


FIG. 8 (c)

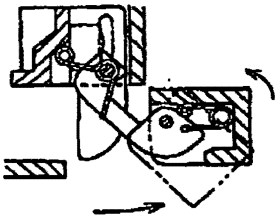
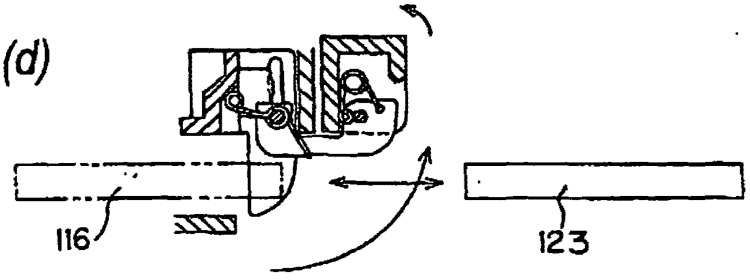
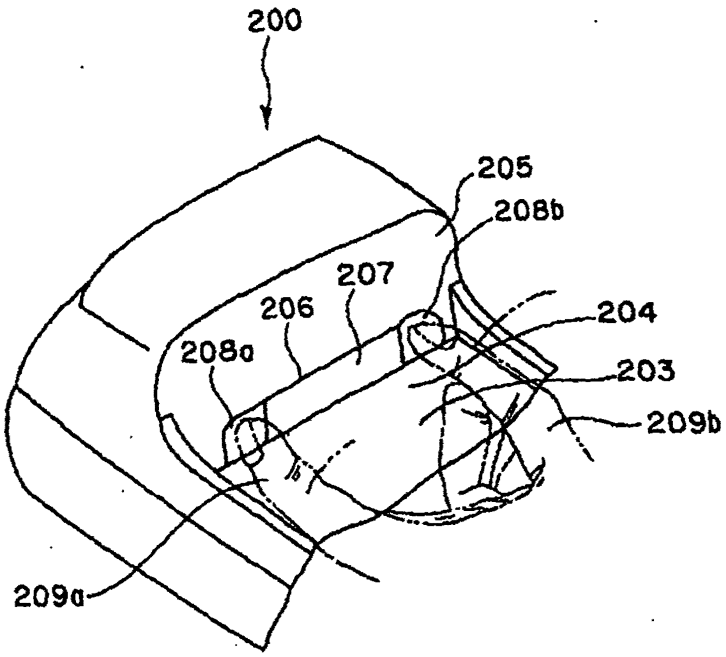


FIG. 8 (d)



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FIG. 9



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INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP03/04781

A. CLASSIFICATION OF SUBJECT MATTER
Int.Cl[7] H04M1/02

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)
Int.Cl[7] H04M1/02

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho	1922-1996	Toroku Jitsuyo Shinan Koho	1994-2003
Kokai Jitsuyo Shinan Koho	1971-2003	Jitsuyo Shinan Toroku Koho	1996-2003

Electronic data base consulted during the international search (name of data base and, where practicable, 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.
Y A	JP 10-190803 A (Kyocera Corp.), 21 July, 1998 (21.07.98), Figs. 15, 16 (Family: none)	1-4,6 5
Y	JP 8-79344 A (Motorola, Inc.), 22 March, 1996 (22.03.96), Fig. 1 & GB 9515342 A & DE 19526730 A & CA 2154318 A & FR 2724086 A	2,4
Y	JP 2001-251402 A (NEC Corp.), 14 September, 2001 (14.09.01), Fig. 2 & US 2001/21657 A & GB 2366060 A	2,4

[x] Further documents are listed in the continuation of Box C. [ ] See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
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"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
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"&" document member of the same patent family

Date of the actual completion of the international search 13 June, 2003 (13.06.03)	Date of mailing of the international search report 01 July, 2003 (01.07.03)
Name and mailing address of the ISA/ Japanese Patent Office Facsimile No.	Authorized officer Telephone No.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP03/04781

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	CD-ROM of the specification and drawings annexed to the request of Japanese Utility Model Application No. 77026/1992(Laid-open No. 41247/1994) (Oki Electric Industry Co., Ltd.), 31 May, 1994 (31.05.94), Fig. 6 (Family: none)	2,4
Y	JP 2002-27079 A (Sony Corp.), 25 January, 2002 (25.01.02), Fig. 1 (Family: none)	3

Form PCT/ISA/210 (continuation of second sheet) (July 1998)

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OIPE IAP66 NOV 01 2007 PATENT & TRADEMARK OFFICE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Claus H. Jorgensen CONFIRMATION NO.: 8456
SERIAL NO.: 11/393,510 ART UNIT: 2875
FILED: 03/29/2006 EXAMINER:
TITLE: Portable Electronic Device
ATTORNEY DOCKET NO.: 891.0013.U1(US)

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

Supplemental Information Disclosure Statement
(37 C.F.R. §1.97(c))

Sir:

The following information is being disclosed to the U.S. Patent and Trademark Office as information that may be material to the examination of the above-identified patent application.

Applicant's Attorney is aware of the art cited on the attached Form PTO-1449. The documents were cited in a related International Search Report dated October 16, 2007. Copies of the Search Report and Written Opinion are enclosed. Copies of the non-US patents are enclosed with the Form PTO-1449 for the Examiner's use.

☒ Each item of information contained in this Information Disclosure Statement was cited in a communication from a

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foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Statement, or

☐ No item of information contained in this 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 statement after making reasonable inquiry, no item of information contained in this Statement was known to any individual designated in 37 C.F.R. §1.56(c) more than three months prior to the filing of this Statement.

The filing of this Statement is not to be construed as a representation that a search has been made regarding the claimed invention (37 C.F.R. §1.97(g)) or that no other possible material information exists. In addition, the filing of this Statement is not to be construed to be an admission that the information cited in the Statement is, or is considered to be, material to patentability (37 C.F.R. §1.97(h)).

Respectfully submitted,

Mark F. Harrington (Reg. No. 31,686) 10/29/07

Mark F. Harrington (Reg. No. 31,686) Date

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INFORMATION DISCLOSURE CITATION FORM FOR PATENT APPLICATION (FORM PTO-1449)
(Substitute)

U.S. PATENT & TRADEMARK OFFICE NOV 01 2007

Docket No.: 891.0013.U1(WO) Serial No.: 11/393, 510

Applicant(s): Claus H. Jorgensen

Filing Date: 03/29/2006 Group: 2875

U.S. PATENT DOCUMENTS

Examiner Initials	Document Number (Number-Kind Code)	Publication Date (MM-DD-YYYY)	Name of Patentee or Applicant	Class	Sub-class
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	US-2003/0199290 A1	10-23-2003	Viertola	455	575.1
	US-				
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FOREIGN PATENT DOCUMENTS

Examiner Initials	Document Number (Country Code-Number-Kind Code)	Publication Date (MM-DD-YYYY)	Name Of Patentee of Applicant	Translation? Yes/No/n/a
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	EP-1533983-A1	05-25-2005	LG Electronics Inc.	
	GB-2391740-A	02-11-2004	Matsushita Electrical Industrial Co. Ltd.	
	JP-2005-318064-A	11-10-2005	Toshiba Corp	Abstract
	- -			
	- -			
	- -			

OTHER DOCUMENTS (Author (Capitalize), Title, Date, Pages, Etc., if known)

Examiner's Signature: Date Considered:

Initial if reference was considered, whether or not citation is in conformance with MPEP. Mark through citation if not considered. Include a copy of this citation form with your next correspondence to the Applicant(s).

(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

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(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
25.05.2005 Bulletin 2005/21

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(30) Priority: **21.11.2003 KR 2003083146**

(71) Applicant: **LG ELECTRONICS INC.**
Seoul (KR)

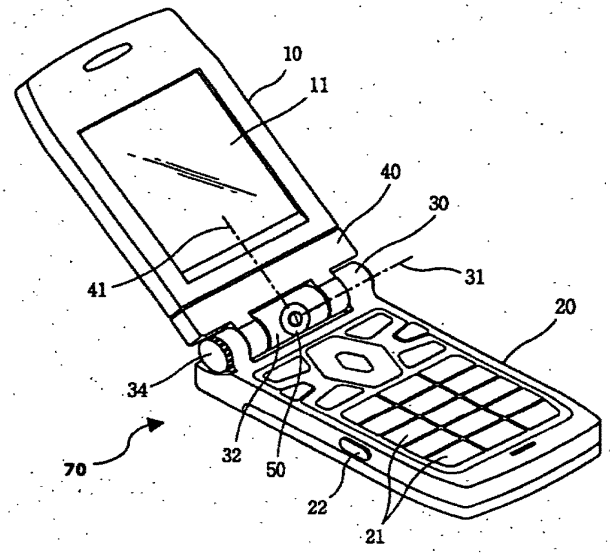
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(54) Mobile terminal having rotatable camera and swivel hinge structure

(57) A mobile communication terminal comprising a main body, a folder having a display, a first hinge formed at an upper portion of the main body for rotating the folder about the main body in a first direction, a camera positioned at a surface of the first hinge, and a second hinge formed between the folder and the first hinge for rotating the folder about the main body in a second direction. An object can be easily photographed at various angles and, even with the folder in a closed position, the object can be photographed while checking an image through the display.

FIG. 2



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Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to a camera-mounted mobile terminal and, more particularly, to a mobile communication terminal having a rotatable camera and a swivel hinge structure.

2. Description of the Related Art

[0002] In line with users' increasing demands on multimedia, recently developed mobile communication terminals can reproduce high quality sound and video as well as take high quality photographs.

[0003] Figure 1 is a perspective view of a related art camera-attached mobile communication terminal.

[0004] As shown in Figure 1, the related art camera-attached mobile terminal includes a main body 60 having a key pad 62, a folder 64 coupled to the main body 60 through a hinge 68, and a camera 66 installed at an upper surface of the folder 64.

[0005] When a user photographs an object, the user opens the folder 64 and directs the camera 66 toward the object. In this state, the user can check an image of the object to be photographed through a display screen, such as a liquid crystal display (LCD), viewable only when the folder is open. After checking, the user may photograph the object by manipulating the key pad 62 or some other key.

[0006] Presently, various types of camera-attached terminals are shown in the market wherein camera positions are varied in consideration of photographing scenes.

[0007] However, problems exist because the related art camera-attached mobile terminals photograph an object using only one camera. Thus, taking photographs from the both the front of the terminal as well as the back of the terminal is not possible. Although third-generation (3G) terminals having two cameras exist for photographing front and rear side directions to satisfy scenes for a picture communication, such a structure disadvantageously increases the size of the terminal. Furthermore, the related art camera-attached mobile terminals must have their folders in an open position to view an image to be photographed on the display. For those users who wish to keep the folder in a closed position while taking a photograph, it is not possible for the user to check the image through the display screen.

[0008] Therefore, what is needed is a camera-attached mobile terminal utilizing only one camera that allows a user to photograph scenes from both the front and back of the terminal and check an image to be photographed on a folder-housed display screen while the folder is in a closed position.

SUMMARY OF THE INVENTION

[0009] The present invention provides a mobile communication terminal capable of performing photography at various angles with one camera. Further, the present invention provides a mobile communication terminal capable of performing photography while checking an image on a display with a folder in a closed position.

[0010] To achieve at least the above objects in whole or in parts, there is provided a mobile communication terminal comprising a main body, a folder having a display, a first hinge formed at an upper portion of the main body for rotating the folder about the main body in a first direction, a camera positioned at a surface of the first hinge, and a second hinge formed between the folder and the first hinge for rotating the folder about the main body in a second direction.

[0011] In accordance with one aspect of the invention, the camera is rotated about the main body in the first direction, wherein the first direction is perpendicular to the second direction. Also, the folder is rotatable about the main body by 180° in the second direction.

[0012] In an exemplary embodiment, the folder is rotatable about the main body in the first direction to a closed position while the folder is rotated about the main body by 180° in the second direction, wherein the camera is exposed when the folder is in the closed position. Also, the display is exposed when the folder is rotated in the first direction to the closed position and rotated by 180° in the second direction.

[0013] In accordance with another aspect of the invention, the second hinge comprises a swivel portion having a rotation hole, a rotational shaft rotatably inserted in the rotation hole and fixed to the folder, and an engaging jaw formed at the swivel portion. In one exemplary embodiment, the rotational shaft comprises a fixed portion fixed at the folder, a lower end shaft connected to the fixed portion and having a first radius, and an upper end shaft connected to the fixed portion and having a second radius greater than the first radius so as to be engaged by the engaging jaw, wherein the rotational shaft comprises a hole for allowing a data line to pass through. Moreover, the camera may comprise a handle for rotating the camera.

[0014] In accordance with a further aspect of the invention, a method for photographing an object with a camera of a mobile communication terminal, comprises forming a first hinge at an upper portion of a main body for rotating a folder about the main body in a first direction, forming a second hinge between the folder and the first hinge for rotating the folder about the main body in a second direction, and positioning a camera at a surface of the first hinge.

[0015] The method further comprises rotating the camera about the main body in the first direction, wherein the first direction is perpendicular to the second direction. The method also comprises rotating the folder about the main body by 180° in the second direction and

rotating the folder about the main body in the first direction to a closed position while the folder is rotated about the main body by 180° in the second direction.

[0016] In an exemplary embodiment, the method comprises exposing the camera when the folder is in the closed position. Also, the method may expose the display when the folder is rotated in the first direction to the closed position and rotated by 180° in the second direction. The method may further comprise viewing the object to be photographed on the display when the folder is rotated in the first direction to the closed position and rotated by 180° in the second direction. Moreover, the camera comprises a handle for rotating the camera.

[0017] Additional advantages, objects, and features of the invention will be set forth in part in the description which follows and in part will become apparent to those having ordinary skill in the art upon examination of the following or may be learned from practice of the invention. The objects and advantages of the invention may be realized and attained as particularly pointed out in the appended claims.

[0018] It is to be understood that both the foregoing general description and the following detailed description of the present invention are exemplary and explanatory and are intended to provide further explanation of the invention as claimed.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019] The invention will be described in detail with reference to the following drawings in which like reference numerals refer to like elements.

Figure 1 is a perspective view showing a related art camera-attached mobile communication terminal.

Figure 2 is a perspective view of a mobile communication terminal having a rotatable camera and a swivel hinge structure in accordance with one embodiment of the invention.

Figure 3 is a detailed view of the swivel hinge of Figure 2 in accordance with one embodiment of the invention.

Figure 4 is a side view of the mobile communication terminal depicting a camera field of vision with a folder in an open position in accordance with one embodiment of the invention.

Figure 5 is a side view of the mobile communication terminal with the folder closed for photographing an object while checking an image through a display in accordance with one embodiment of the invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0020] The present invention relates to a mobile communication terminal and method for photographing an object at various angles, including front and rear directions, by using a rotatable camera. The terminal is designed such that a user can view an image of the object to be photographed through a display even when a folder housing the display is in a closed position.

[0021] The mobile communication terminal of the present invention preferably comprises a rotatable camera 32 such as a rotary type cylindrical camera installed at a central portion of a first hinge wherein the camera 32 can be rotated about a main body in a first direction. The camera 32 includes a camera lens 50 and a handle 34 for rotating the camera. A key pad 21 is installed at a front surface of a main body of the terminal. A side button 22 is also provided at a side surface of the main body. When depressed by the user, the side button 22 triggers the camera 32 to take the photograph. The mobile communication terminal preferably also comprises a second hinge for allowing a folder, which houses a display, to be rotated by an angle such as 180° about the main body in a second direction, wherein the second direction is perpendicular to the first direction.

[0022] Referring to Figure 2, the mobile communication terminal 70 comprises a main body 20, a folder 10 having a display 11, a first hinge 30, a rotatable camera 32 positioned at a central portion of the first hinge 30, and a second hinge 40. The first hinge 30 is formed at an upper portion of the main body 20 and functions to allow the folder 10 to rotate about the main body 20 in a first direction centering on a first rotational axis 31. The second hinge 40 is formed between the folder 10 and the first hinge 30 and is coupled to each respectively such that it can also be rotated about the main body 20 in the first direction. The second hinge 40 also functions to allow the folder 10 to rotate about the main body 20 in a second direction centering on a second rotational axis 41. Preferably, the folder 10 is rotatable about the main body 20 by an angle such as 180° in the second direction.

[0023] Preferably, the second hinge 40 comprises a swivel hinge 42 having a rotation hole at its central portion and a rotational shaft rotatably inserted in the rotation hole of the swivel hinge 42 and fixed to the folder 10. The swivel hinge 42 further comprises an engaging jaw 43 for engaging the rotational shaft.

[0024] Referring to Figure 3, the rotational shaft comprises a fixed portion 46 fixed at the folder part 10, a lower end shaft 45 and an upper end shaft 44. The shafts 44 and 45 are connected to the fixed portion 46. Preferably, the lower end shaft 45 has a radius smaller than the radius of the upper end shaft 44 wherein the radius of the upper end shaft allows it to be engaged by the engaging jaw 43. Additionally, a hole is formed at the rotational shaft to allow a data line 12, such as a flexible printed circuit board (FPCB), to pass through.

[0025] With reference to Figures 2 to 4, during operation of the mobile communication terminal of the present invention, a user may photograph an object by using the rotatable camera 32. Preferably, the user rotates the handle 34 to direct the camera lens 50 toward the object and then manipulates the side button 22 pro-

vided at the main body 20 or a key on the keypad 21 to take the photograph. As shown in Figures 2 and 4, the rotatable camera 32 is mounted at the first hinge 30 such that when the folder 10 is in an open position, the camera 32 can be rotated to view objects in front of as well as in back of the terminal. Preferably, the rotatable camera 32 can be rotated about the main body 20 by an angle such as 180° centering on the first rotational axis 31. Further referring to Figure 4, vision fields 51 and 52 are examples of what the camera 32 is capable of viewing in front of and in back of the terminal respectively. It is contemplated that the angle of the vision fields 51 and 52 will change according to the angle of the rotated camera 32. Thus, during operation of the terminal, the user can freely take a photograph of its own figure or any object within the vision field 51 and any object within the vision field 52.

[0026] Referring to Figure 5, during operation of the mobile communication terminal, the user may photograph an object using the rotatable camera 32 while the folder 10 is in a closed position. Preferably, the camera 32 and the second hinge 40 are both mounted at the first hinge 30 such that the camera lens 50 of the camera 32 is left exposed when the folder 10 is in the closed position. Thus, the camera 32 can be rotated to view an object within a vision field 53, as shown in Figure 5. When the user is ready, the side button 22 may be manipulated to take the photograph of the object. It is contemplated that the angle of the vision field 53 will change according to the angle of the rotated camera 32.

[0027] Additionally, the second hinge 40 allows the folder 10 to be rotated in a direction perpendicular to the rotation direction of the camera 32. Preferably, the folder 10 can be rotated about the main body 20 by an angle such as 180° centering on the second rotational axis 41. Thus, when the folder 10 is rotated about the main body 20 in the first direction centering on the first rotational axis 31 to close the folder, the rotated position of the folder 10 in the second direction centering on the second rotational axis 41 may be maintained. Hence, the display 11 is left exposed while the folder 10 is in a closed position. This facilitates the user taking a photograph of a desired object while checking an image of the object on the display 11 while the folder 10 is in a closed position.

[0028] As so far described, the mobile communication terminal having the rotatable camera and the swivel hinge structure has such advantages that a desired object can be easily photographed and, even with the folder closed, the object can also be photographed while checking an image on a display.

[0029] The foregoing embodiments and advantages are merely exemplary and are not to be construed as limiting the present invention. The present teaching can be readily applied to other types of apparatuses. The description of the present invention is intended to be illustrative, and not to limit the scope of the claims. Many alternatives, modifications, and variations will be apparent to those skilled in the art. In the claims, any means-plus-function clauses are intended to cover the structure described herein as performing the recited function and not only structural equivalents but also equivalent structures.

Claims

1. A mobile communication terminal comprising:

   a main body;
   a folder having a display;
   a first hinge formed at an upper portion of the main body for rotating the folder about the main body in a first direction;
   a camera positioned at a surface of the first hinge; and
   a second hinge formed between the folder and the first hinge for rotating the folder about the main body in a second direction.

2. The mobile communication terminal of claim 1, wherein the camera is rotated about the main body in the first direction.

3. The mobile communication terminal of claim 1, wherein the first direction is perpendicular to the second direction.

4. The mobile communication terminal of claim 1, wherein the folder is rotatable about the main body by 180° in the second direction.

5. The mobile communication terminal of claim 4, wherein the folder is rotatable about the main body in the first direction to a closed position while the folder is rotated about the main body by 180° in the second direction.

6. The mobile communication terminal of claim 5, wherein the camera is exposed when the folder is in the closed position.

7. The mobile communication terminal fo claim 5, wherein the display is exposed when the folder is rotated in the first direction to the closed position and rotated by 180° in the second direction.

8. The mobile communication terminal of claim 1, wherein the second hinge comprises:

   a swivel portion having a rotation hole;
   a rotational shaft rotatably inserted in the rotation hole and fixed to the folder; and
   an engaging jaw formed at the swivel portion.

9. The mobile communication terminal of claim 8,

wherein the rotational shaft comprises:

a fixed portion fixed at the folder;
a lower end shaft connected to the fixed portion and having a first radius; and
an upper end shaft connected to the fixed portion and having a second radius greater than the first radius so as to be engaged by the engaging jaw.

10. The mobile communication terminal of claim 8, wherein the rotational shaft comprises a hole for allowing a data line to pass through.

11. The mobile communication terminal of claim 1 wherein the camera comprises a handle for rotating the camera.

12. A method for photographing an object with a camera of a mobile communication terminal, comprising:

forming a first hinge at an upper portion of a main body for rotating a folder about the main body in a first direction;
forming a second hinge between the folder and the first hinge for rotating the folder about the main body in a second direction; and
positioning a camera at a surface of the first hinge.

13. The method of claim 12, further comprising rotating the camera about the main body in the first direction.

14. The method of claim 12, wherein the first direction is perpendicular to the second direction.

15. The method of claim 12, further comprising rotating the folder about the main body by 180° in the second direction.

16. The method of claim 15, further comprising rotating the folder about the main body in the first direction to a closed position while the folder is rotated about the main body by 180° in the second direction.

17. The method of claim 16, further comprising exposing the camera when the folder is in the closed position.

18. The method of claim 16, further comprising exposing the display when the folder is rotated in the first direction to the closed position and rotated by 180° in the second direction.

19. The method of claim 16, further comprising viewing the object to be photographed on the display when the folder is rotated in the first direction to the closed position and rotated by 180° in the second direction.

20. The method of claim 12, wherein the camera comprises a handle for rotating the camera.

FIG. 1

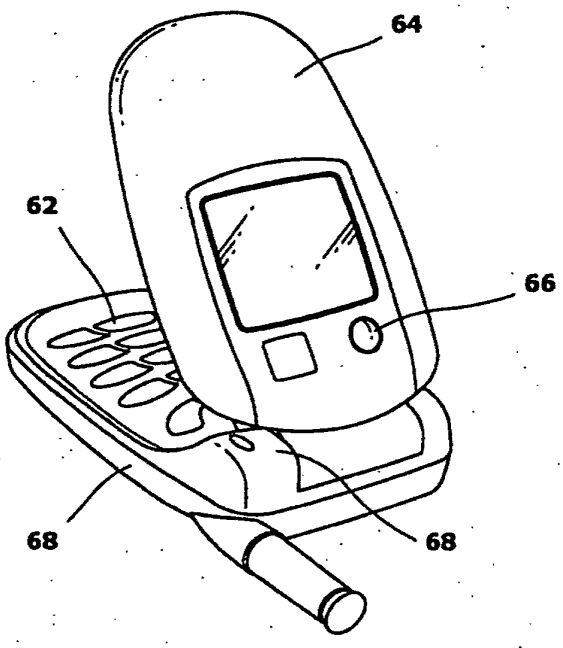


FIG. 2

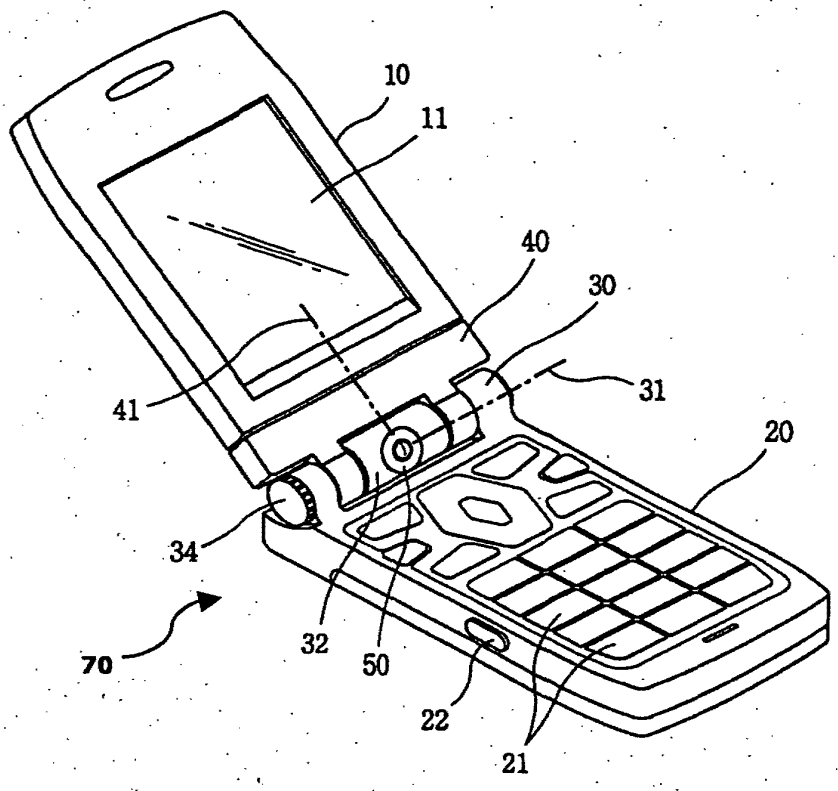


FIG. 3

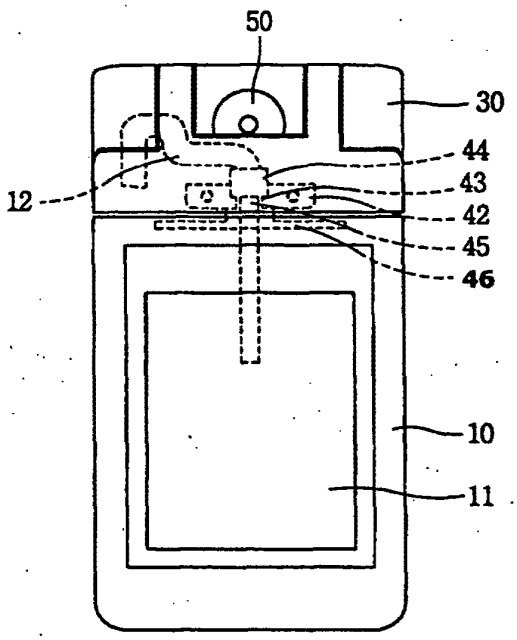


FIG. 4

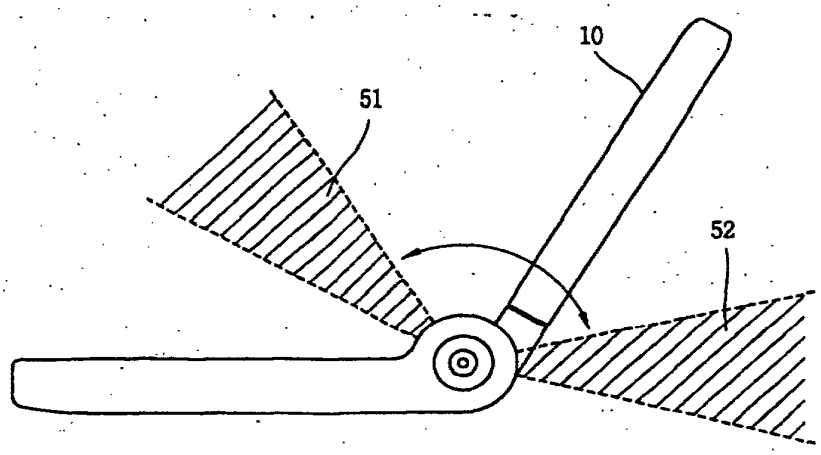
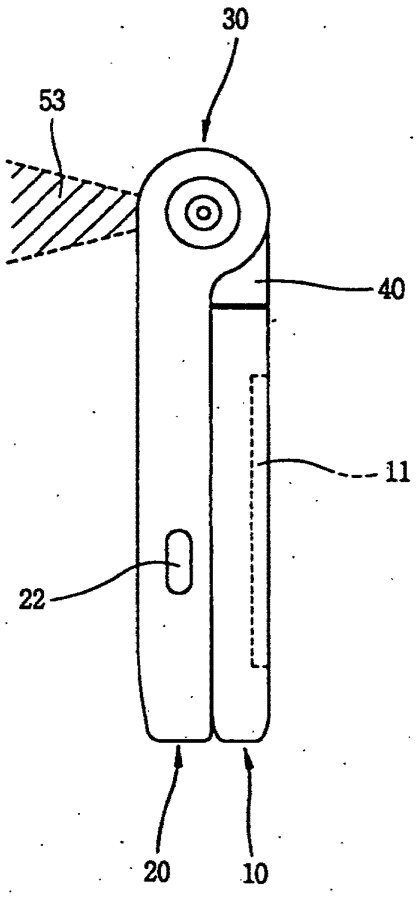


FIG. 5



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Application Number
EP 04 02 7407

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Berlin	18 January 2005	GONZALEZ GUTIERREZ

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X : particularly relevant if taken alone
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A : technological background
O : non-written disclosure
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E : earlier patent document, but published on, or after the filing date
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(51) Int Cl.[7]: **H04M 1/02**

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(54) Housing for an electronic device

(57) A housing for an electronic device is disclosed and comprises a unitary tubular body (1) having an open end (2) for insertion of electronic componentry therein. Preferably, the housing is for a mobile telecommunications device.

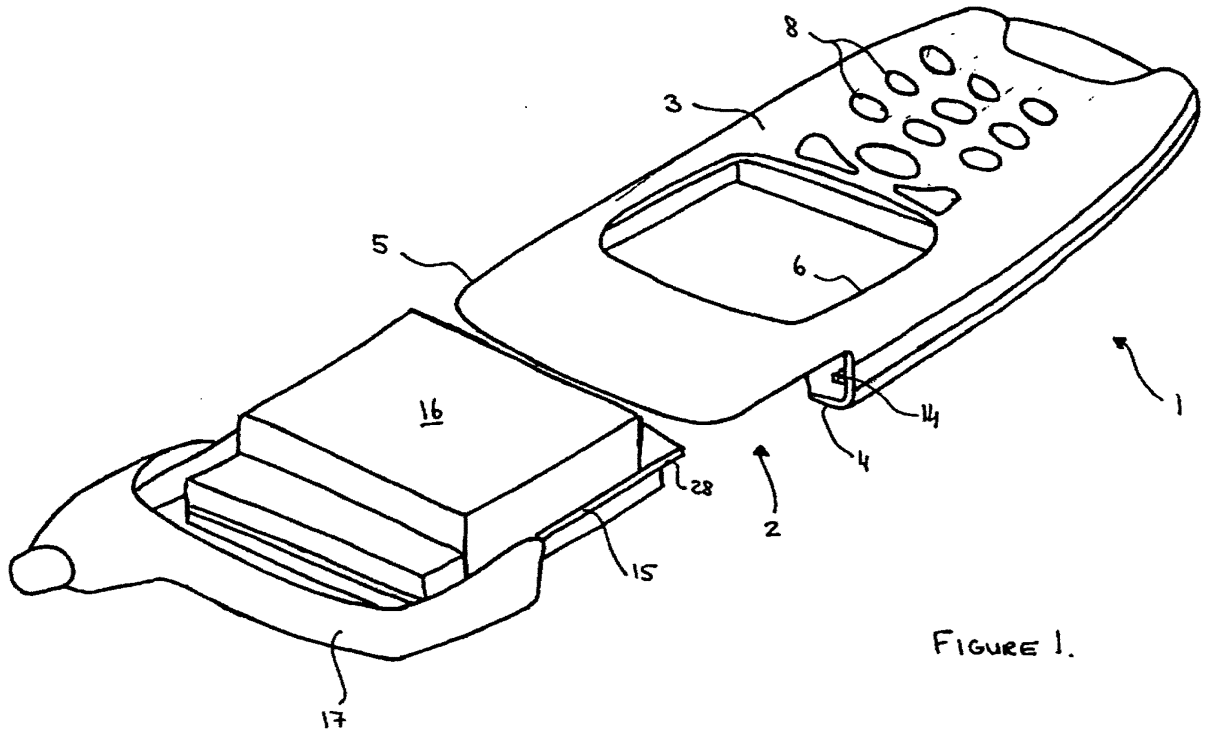


FIGURE 1.

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EUROPEAN SEARCH REPORT

Application Number
EP 01 30 8262

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	12 December 2002	Fragua, M

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X : particularly relevant if taken alone
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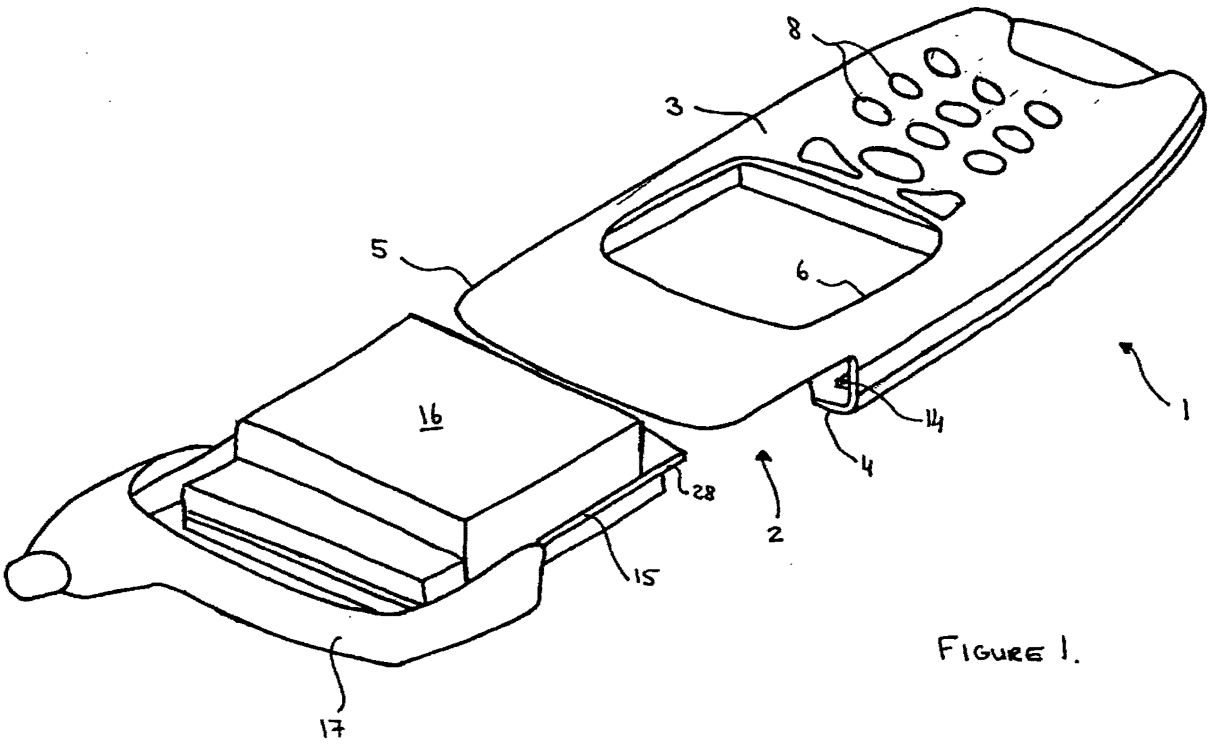


FIGURE 1.

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Description

[0001] The present invention relates to a housing for an electronic device and, particularly but not exclusively, to a housing for a mobile telecommunications device such as a mobile telephone.

[0002] A housing for a mobile telephone generally comprises a front and a rear casing. The electronic circuitry and other components of the telephone are mounted on one casing and the other casing part fits over it in a back-to-back relationship to form an enclosure around the circuitry and components. The two casing halves are attached to each other and are separable to enable access to the interior of the telephone for maintenance and other requirements such as insertion or removal of a SIM card. Additionally, design conscious consumers often prefer to personalise their telephone by replacing one or both parts of the casing with another of a different colour so it is important that a consumer can separate the casing portions without difficulty. Screws or clips may be used to attach the two casing halves together.

[0003] A disadvantage with a conventional housing such as that described above is that the join between the two housing portions extends all the way around the assembled telephone housing and is clearly visible. This compromises the design and appearance of the telephone thereby reducing the overall quality and feel of the product to consumers. Furthermore, the housing of a mobile telephone is subject to considerable wear and must not break too readily when inadvertently dropped. As the conventional housing is formed in two back-to-back parts releasably joined together, the overall strength and rigidity of the housing is reduced thereby increasing the likelihood that one or both parts will break on impact. It is possible to increase the strength and rigidity of a conventional housing by increasing the thickness of the materials from which the casing is made. However, this results in an increase in overall weight which also needs to be kept to a minimum.

[0004] It is one object of the present invention to overcome or alleviate the aforementioned disadvantages associated with a conventional housing for an electronic device.

[0005] According to the present invention, there is provided a housing for an electronic device comprising a unitary tubular body having an open end for insertion of electronic components therein.

[0006] The housing preferably includes a member for closing the open end of the tubular body.

[0007] The member is advantageously configured to support electronic components thereon. The electronic components may include a printed circuit board.

[0008] In a preferred embodiment, a portion of the inner peripheral wall of the member includes a recess to receive a transducer module.

[0009] A guide is formed on the body to receive and support electronic components mounted on the member. In one embodiment, the guide means is a rail.

[0010] Preferably, the body includes a plurality of apertures in one face to receive the keys of a keymat mounted on an inner wall of the body, and an opening in the other face opposite the apertures to receive a battery pack.

[0011] The body preferably also includes means to releasably secure a keymat retaining plate over the keymat.

[0012] In a preferred arrangement, a portion of the body overlaps the member, said body and member including co-operating means to mount the member on the body.

[0013] The co-operating means conveniently includes a flange on the member that forms an interference fit with the body.

[0014] Preferably, a lock is provided for releasably securing the member mounted to the body. The lock can include an aperture in the member and a boss in the body, fastening means being insertable through the aperture for engagement in the boss.

[0015] The present invention also relates to an electronic device incorporating the housing of the invention. Most preferably, the electronic device is a mobile telecommunications device.

[0016] The electronic device preferably includes a keymat, a keymat retaining plate and a battery pack, the retaining plate being configured such that the keymat is biased against the housing by the retaining plate when the battery pack is mounted in the housing.

[0017] In a preferred embodiment, the retaining plate includes resiliently deformable regions raised out of the plane of the plate, said regions being deflected back towards the plane of the plate by the battery pack when mounted in the housing, thereby biasing the keymat against the housing.

[0018] The resiliently deformable regions are preferably a plurality of spaced parallel ribs.

[0019] The present invention also relates to a method of forming a housing according to the invention for an electronic device according to the invention by permanently attaching at least two housing portions together.

[0020] The housing portions may be attached to each other by welding.

[0021] Alternatively, the housing portions may be attached by adhesive bonding.

[0022] The present invention also relates to a method of forming a housing for an electronic device both according to the invention, including the step of forming the housing in one piece.

[0023] In one embodiment, the housing is formed by extrusion.

[0024] In another embodiment, the housing is formed from sheet metal.

[0025] Embodiments of the invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

FIGURE 1 illustrates a perspective view of the housing of a mobile telephone of the invention together with a module shown removed from the open end of the housing, the module carrying the electronic componentry of the telephone;

FIGURE 2 illustrates a perspective view of the underside of the housing shown in Figure 1 together with the keymat, keymat retaining plate before insertion into the housing;

FIGURE 3 illustrates a perspective view of the underside of the module shown in Figure 1;

FIGURE 4 illustrates a perspective view of the transducer module for fitting to the module illustrated in Figure 3; and

FIGURE 5 illustrates a partial cross-section through the housing with the keymat, retaining plate and battery fitted thereto.

[0026] Referring now to the drawings, there is shown in Figure 1 and 2 a housing for a mobile telephone comprising a rigid unitary tubular body 1 open at one end 2. The front face 3 extends forward of the rear face 4 to form an overhang 5. The front face includes an aperture 6 for attachment of a transparent window 7 by laser welding (part of the window is shown fitted in the aperture 6, in Figure 2). Beneath the aperture 6 on the front face 3 is an array of smaller openings 8 through which the keys 9 of a keymat 10 may protrude. The rear face 4 has a rectangular aperture 11 therein opposite the array of smaller openings 8 in the front face 3 for insertion of a keymat 10, a keymat retaining plate 12 and a battery pack 13 in the order and direction shown by arrow A in Figure 2. These components will be explained in more detail hereinafter.

[0027] The body 1 includes integrally moulded guide rails 14 formed along each inside edge between the front and rear faces 3,4 to support a printed circuit board 15 and other electronic components 16 such as a liquid crystal display within the body 1. These components are mounted to a module 17 that fits over the open end 2 of the body 1 and interfaces with the edge of the open end 2 to close the body 1. The module 17 has an integrally moulded "U"-shaped clip 18 to receive and support the edge of the printed circuit board 15 and a spigot 16 to support its underside. Other electronic components are mounted to the PCB 15.

[0028] The module 17 includes an integrally formed boss 18 therein through which the antenna of the mobile telephone may extend. A portion 19 of the inner peripheral wall 20 of the module 17 is recessed to receive a transducer module 21 illustrated in Figure 4, and has a first elongate port 22 to allow for the transmission of infra-red waves through the module 17 from an emitter (not shown) mounted to the rear face 23 of the transducer module 21 that has a corresponding opening 24. Two further circular openings 25,26 are provided in the recess to receive an on/off key (not shown) and to allow for transmission of sound through the module 17 from a transducer (not shown). The transducer and on/off key are both mounted to the rear face 23 of the transducer module 21 which is provided with openings 25a,26a that correspond to the openings in the module 17.

[0029] The transducer module 21 is "L" shaped to fit the recess 19 in the peripheral wall 20 of the module 17 and has a reinforcing web 21a to increase its rigidity. A flexible electrical connector 27 extends from the transducer module 21 which connects to an interface on the printed circuit board 15.

[0030] The edge 28 of the printed circuit board 15 mounted to the module 17 locates on the top surface of the guide rails 14 and is slideably received within the body 1. When fully inserted into the body 1, the overhang 5 covers the electronic components and PCB 15 on the module 17 and closes the open end 2 of the body 1. The liquid crystal display is visible through the window 7 in the aperture 6 when the module 17 is located on the body 1. The module 17 includes a pair of apertures 29 therein and the body 1 has a pair of corresponding bosses 30 that are in alignment when the module 17 is fitted to the body 1. Conventional screws 31 (not shown) extend through the apertures 29 and are threadingly engaged in the bosses 30 to releasably secure the module 17 to the body 1.

[0031] Referring now to Figure 2 and Figure 5, the keymat 10 is disposed within the body 1 such that the keys 9 protrude through the apertures 8 in the front face 3. The keymat 10 is maintained in position using a layer of adhesive 32 interspersed between the body 1 and the keymat 10. The keymat 10 is positioned within the body 1 by inserting it through the rectangular aperture 11 in the rear face 4. To further retain the keymat 10 in position, the retaining plate 12 is positioned above the keymat 10 and locates under tabs 34 integrally formed on the body 1 between the front and rear faces 3,4. The retaining plate 12 is made from a resilient plastics material such as polyurethane and is a snap-fit under tabs 34.

[0032] The retaining plate 12 comprises an end portion 35 bent at right angles to the plane of the plate 12. A support block 36 is mounted to end portion 35 and cooperates with the closed end of the casing to further hold the retaining plate 12 in position in the body 1. Three ribs 40 are deformed out of the plane of the plate 12 directly above the keys 9. As is clearly shown in Figure 5, when the battery pack 13 is inserted into the aperture 11, the ribs 40 are compressed (see rib 40a in Figure 5) by the underside 41 of the battery pack 13 to urge the plate 12 against the keymat 10, and the keymat 10 against the body 1. When the battery pack 13 is removed, the resilient nature of the material from which the plate 12 is made causes the ribs 40 to spring back into their original shape, as shown by rib 40 in Figure 5.

[0033] The retaining plate 12 includes an arm 45 that extends laterally from the other end of the plate 12. The printed circuit board 15 contacts the arm 45 when inserted into the body 1 to provide additional support for the

printed circuit board 15 and the retaining plate 12.

[0034] The battery pack 13 is inserted into the body 1 through the aperture 11 from above (in the direction shown by arrow A in Figure 2) and the outer cover 46 of the back of the battery pack 13 locates within the edges of the aperture 11. A moulded lip 47 on the cover 46 engages beneath the rear face 4 of the body 1 to retain the battery pack 13 in position.

[0035] The body 1 of the housing may be formed using a number of different methods. For example, it may be made in two parts which are subsequently permanently attached together by laser or ultrasonic welding, MIG or TIG welding or by using adhesive along their interface. Alternatively, the body 1 can be formed in one piece by extrusion, by injection moulding or by sheet metal forming. The body 1 can be made from either plastics material or metal.

[0036] Many modifications and variations of the invention falling within the terms of the following claims will be apparent to those skilled in the art and the foregoing description should be regarded as a description of the preferred embodiments only.

Claims

1. A housing for an electronic device comprising a unitary tubular body having an open end for insertion of electronic components therein.

2. A housing according to claim 1, including a member for closing the open end of the tubular body.

3. A housing according to claim 2, wherein the member is configured to support electronic components thereon.

4. A housing according to claim 3, wherein the member includes a support for locating and retaining a printed circuit board thereon.

5. A housing according to claim 4, wherein said support includes an integrally moulded clip to receive the edge of a printed circuit board and a location spigot to support the underside thereof.

6. A housing according to any of claims 2 to 5, wherein a portion of the inner peripheral wall of the member includes a recess to receive a transducer module.

7. A housing according to any of claims 2 to 6, including a guide on the body to receive and support electronic components mounted on the member.

8. A housing according to claim 7, wherein the guide is a rail.

9. A housing according to any preceding claim, wherein the body includes a plurality of apertures in one face to receive the keys of a keymat mounted on an inner wall of the body, and an opening in the other face opposite the apertures to receive a battery pack.

10. A housing according to claim 9, wherein the body includes means to releasably secure a keymat retaining plate over the keymat.

11. A housing according to claim 10, wherein said means comprises an integrally formed tab on the body for location of the retaining plate thereunder.

12. A housing according to claim 11, wherein the retaining plate is formed from a resilient flexible material and is a snap fit beneath the integrally formed tab on the body.

13. A housing according to any of claims 2 to 12, wherein a portion of the body overlaps the member, said body and member including co-operating parts to mount the member on the body.

14. A housing according to claim 13, wherein the co-operating parts includes a flange on the member that forms an interference fit with the body.

15. A housing according to claim 13, including a lock for releasably securing the member mounted to the body.

16. A housing according to claim 15, wherein said lock includes an aperture in the member and a boss in the body, fastening means being insertable through the aperture for location in the boss.

17. An electronic device incorporating the housing according to any preceding claim.

18. An electronic device according to claim 17, comprising a mobile telecommunications device.

19. An electronic device according to claim 18, including a keymat, a keymat retaining plate and a battery pack, the retaining plate being configured such that the keymat is biased against the housing by the retaining plate when the battery pack is mounted in the housing.

20. An electronic device according to claim 19, wherein the retaining plate includes resiliently deformable regions raised out of the plane of the plate, said regions being deflected back towards the plane of the plate by the battery pack mounted in the housing, thereby biasing the keymat against the housing.

21. An electronic device according to claim 20, wherein

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said resiliently deformable regions are a plurality of spaced parallel ribs.

22. A method of forming a housing comprising a unitary tubular body having an open end for insertion of electronic components therein, the method including the step of permanently attaching at least two housing portions together to form said unitary body.

23. A method according to claim 22, wherein the portions are attached by welding.

24. A method according to claim 22, wherein the portions are attached by adhesive bonding.

25. A method of forming a housing according to any of claims 1 to 16 for an electronic device according to any of claims 17 to 21, including the step of forming the housing in one piece.

26. A method according to claim 25, wherein the housing is extruded.

27. A method according to claim 25, wherein the housing is formed from sheet metal.

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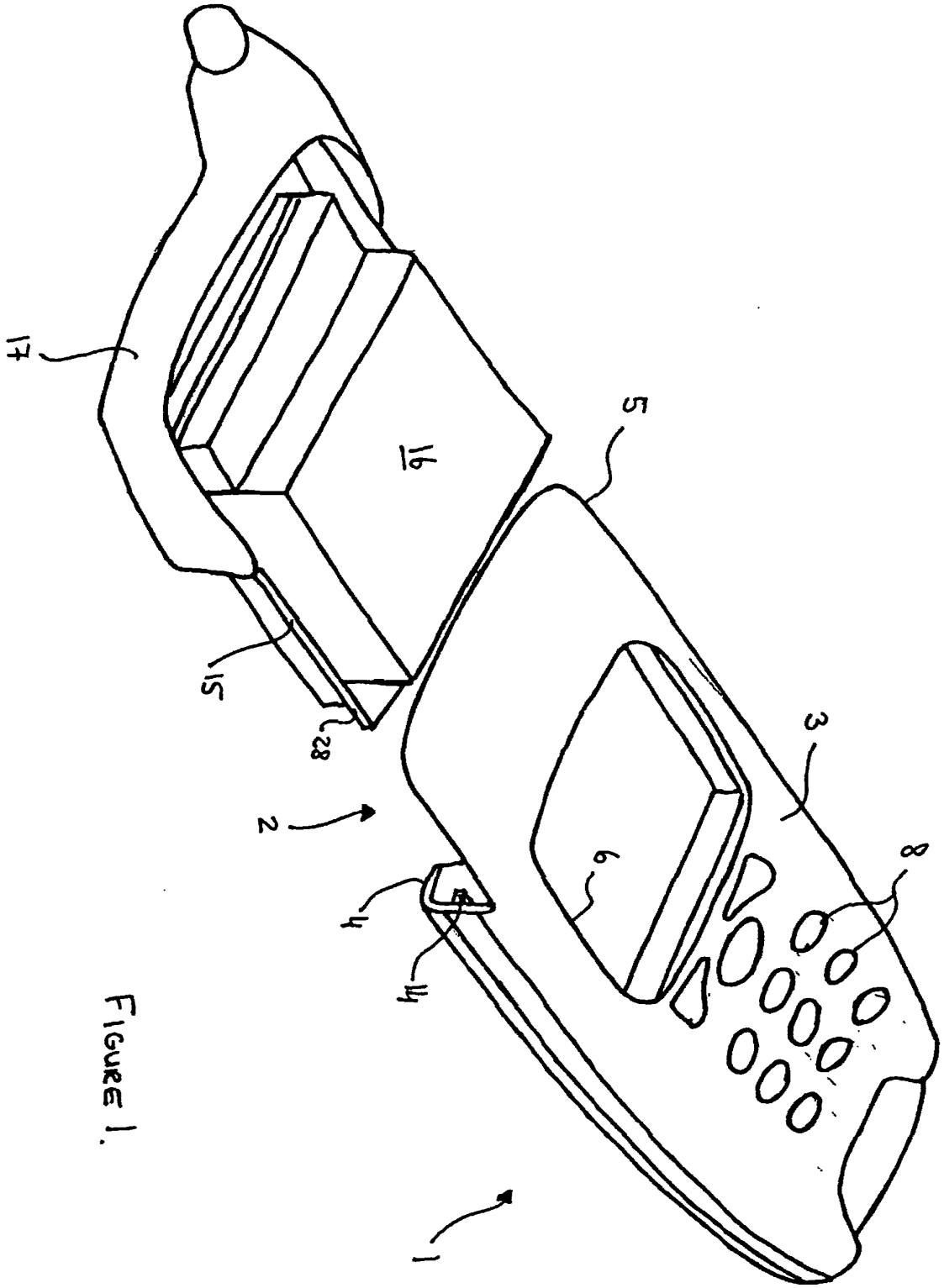


Figure 1.

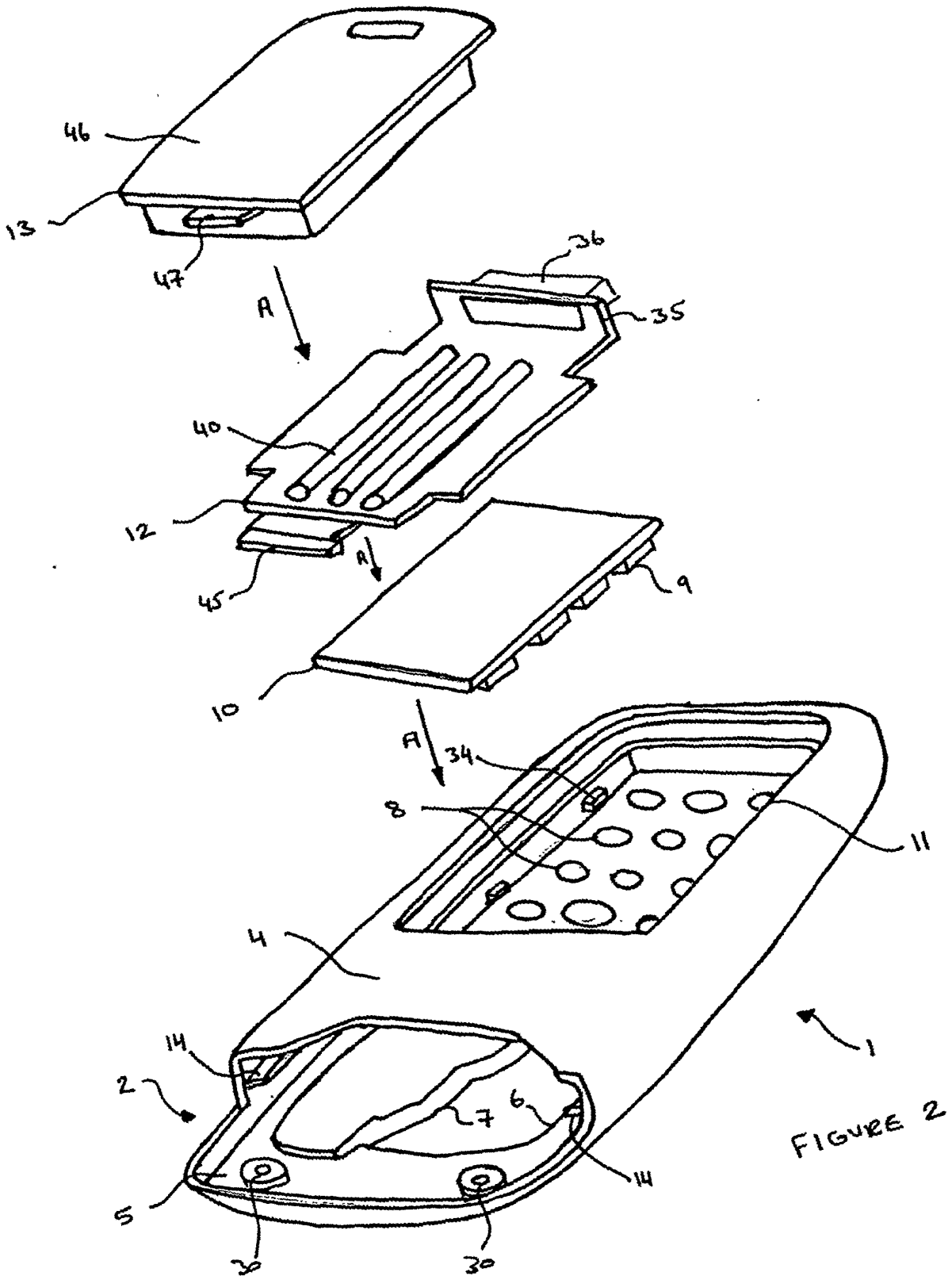


FIGURE 2

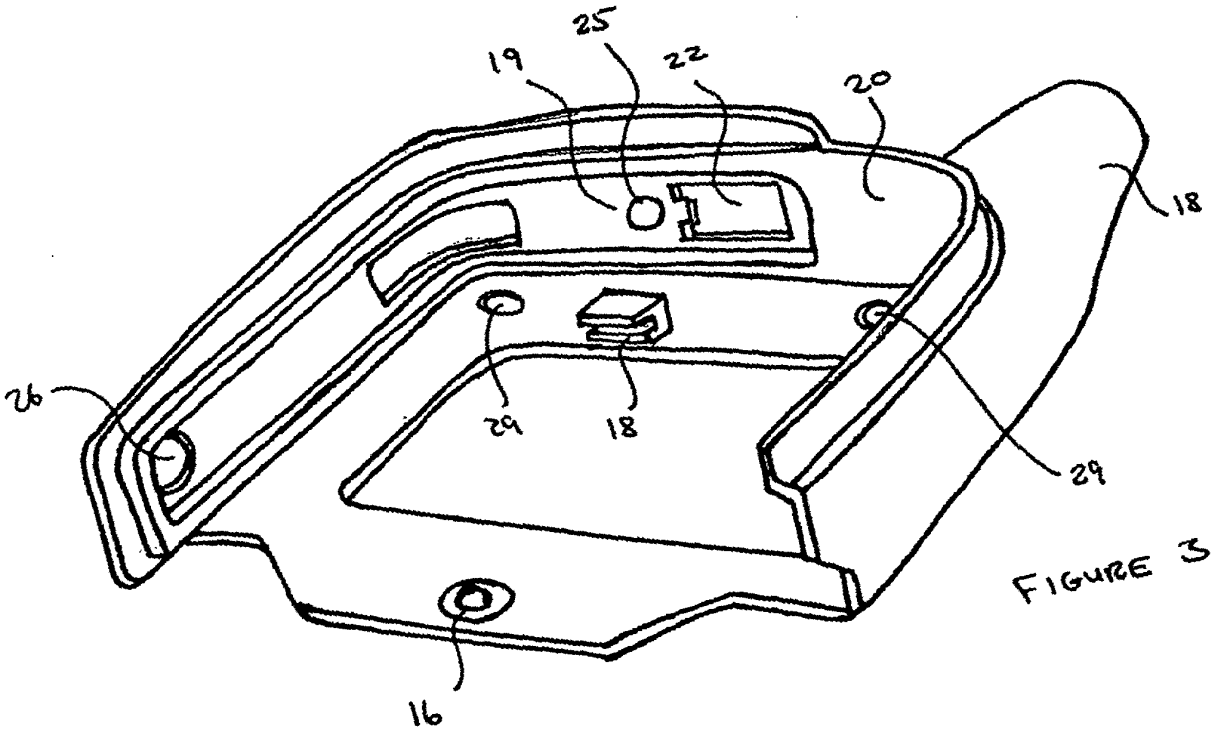


FIGURE 3

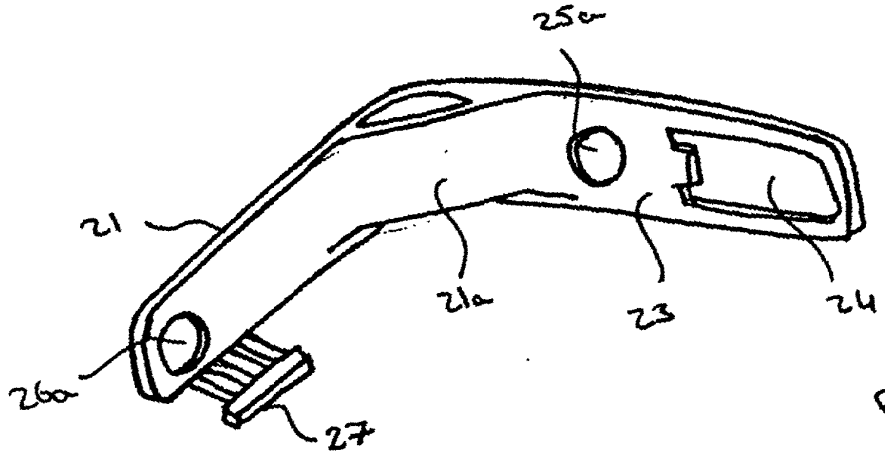


FIGURE 4

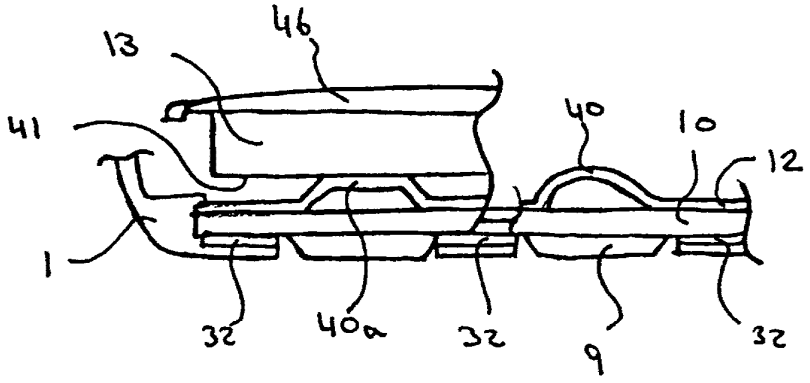


FIGURE 5

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H04M 1/02

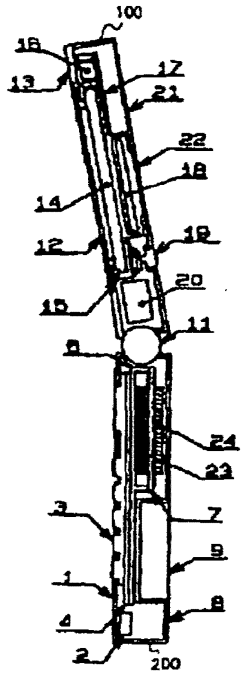
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Other: Jitsuyo Shinan Koho 1922-1996; Toroku Jitsuyo Shinan Koho 1994-2003; Kokai Jitsuyo Shinan Koho 1971-2003; Jitsuyo Shinan Toroku Koho 1996-2003

(54) Abstract Title: **Foldable cell phone device**

(57) A foldable cell phone device, comprising an operating part (3) installed on the opposed surface of a lower casing (200) opposed to an upper casing (100) when folded up, a circuit substrate (7) installed in the lower casing (200), and a plate-like spacer (5) installed between the operating part (3) and the circuit substrate (7) and supported by a rib.



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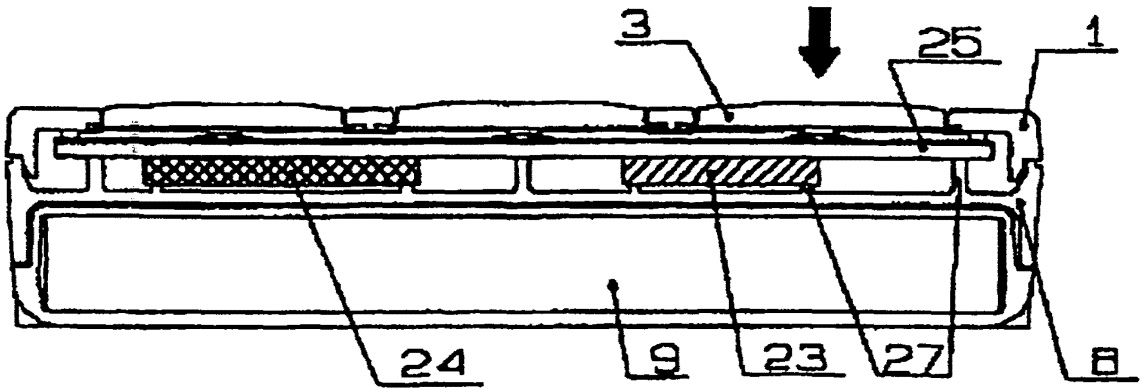


FIG. 1

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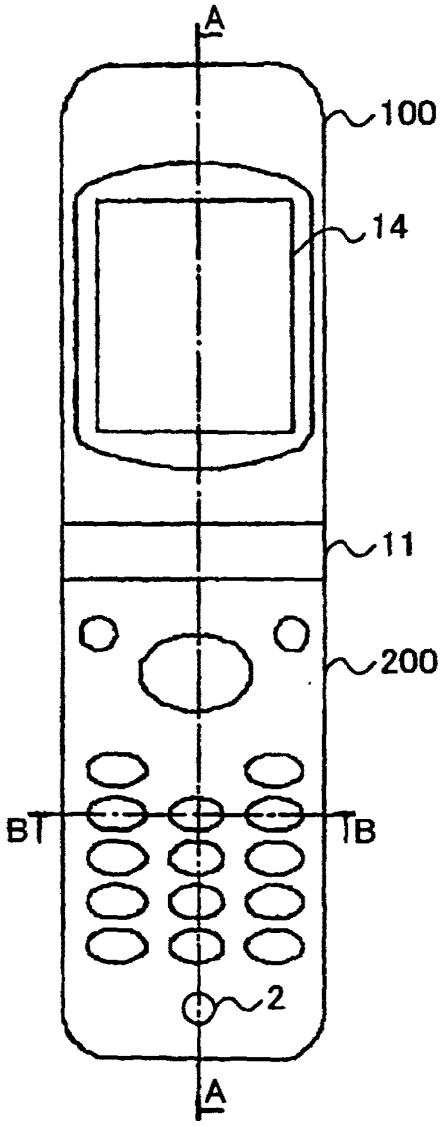


FIG. 2

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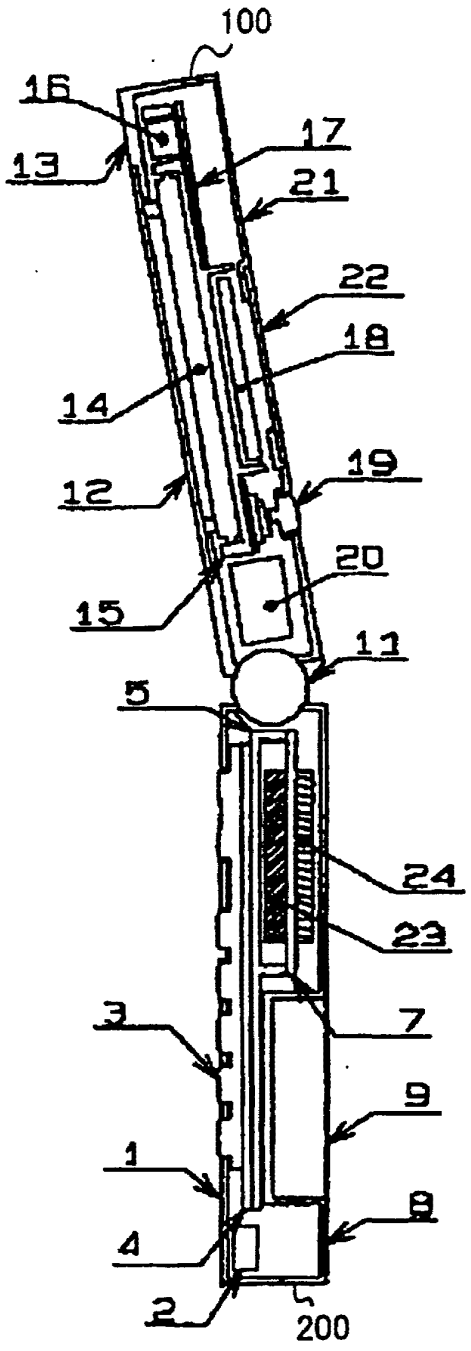


FIG. 3

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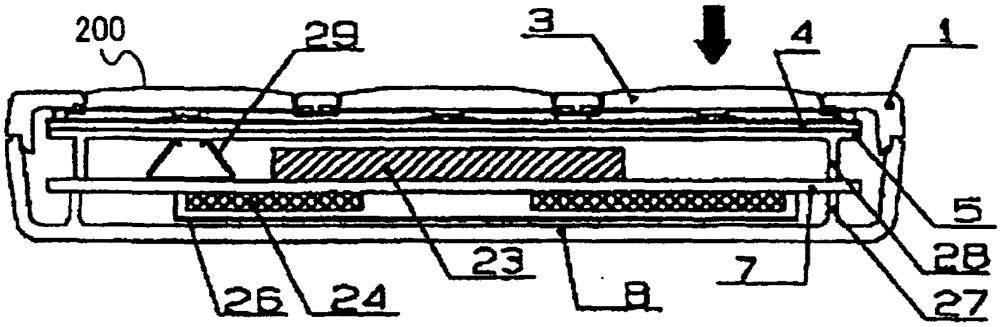


FIG. 4

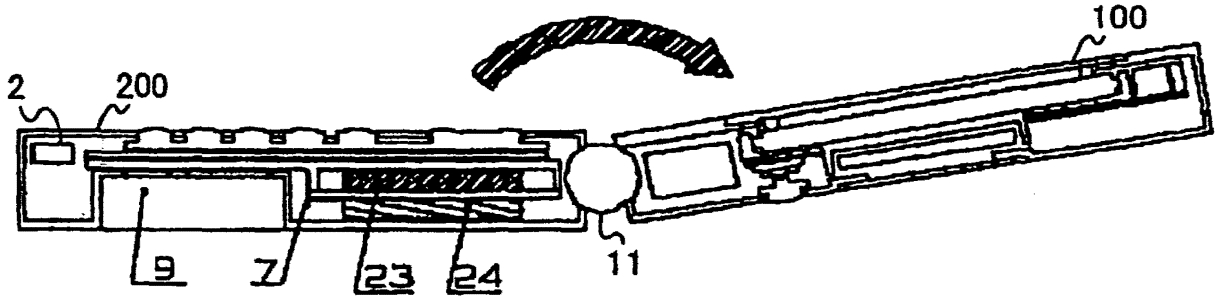


FIG. 5

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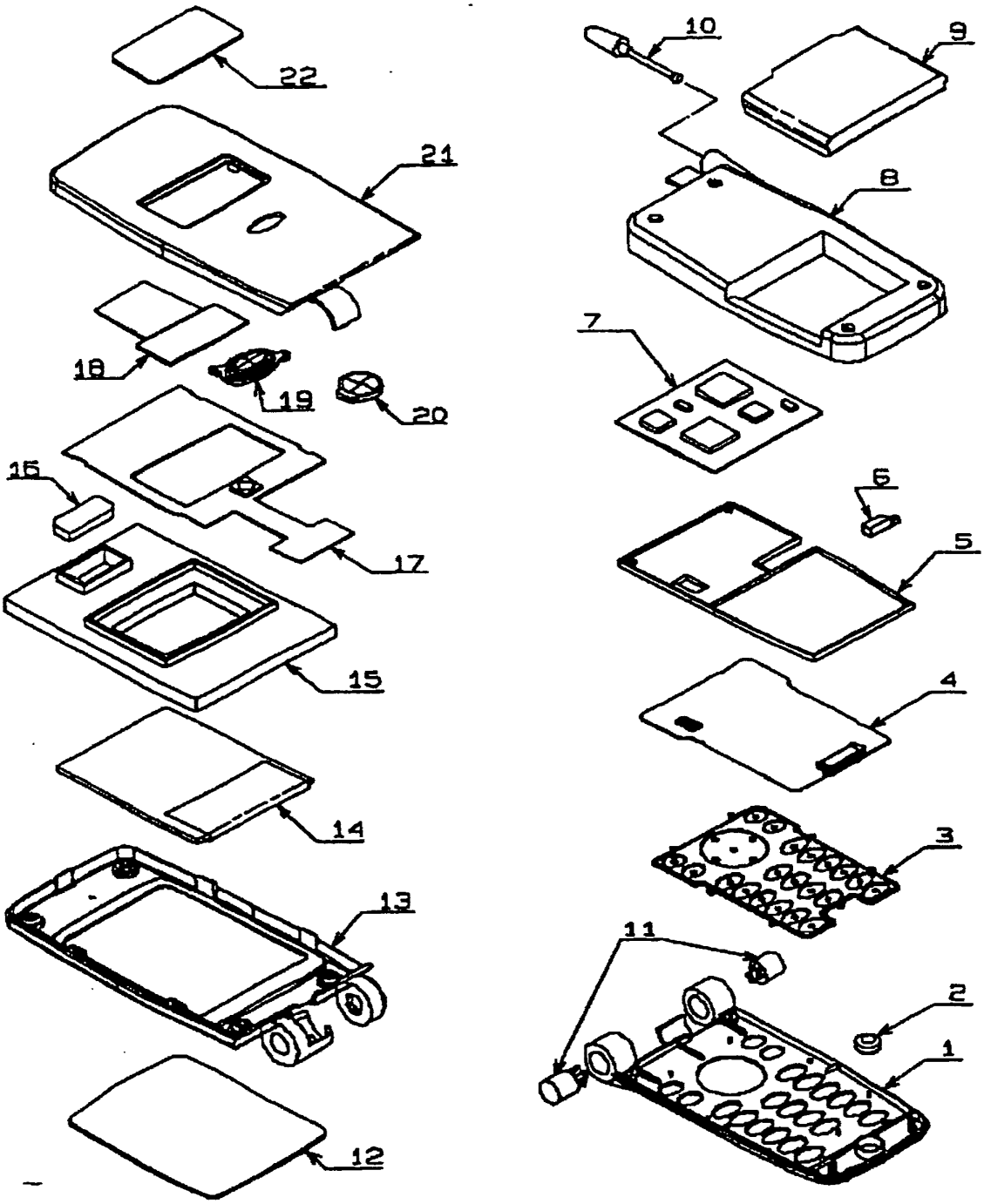


FIG. 6

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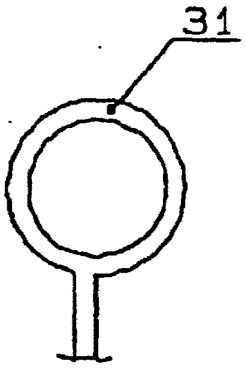


FIG. 7

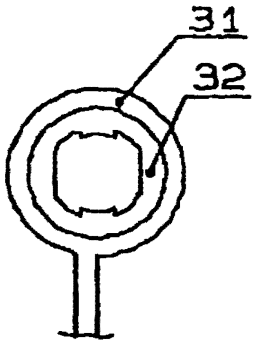


FIG. 8

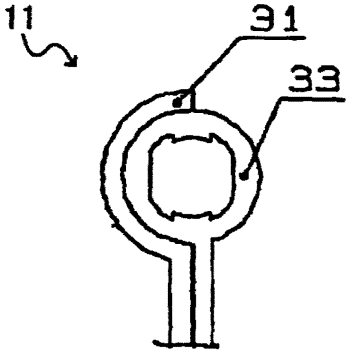


FIG. 9

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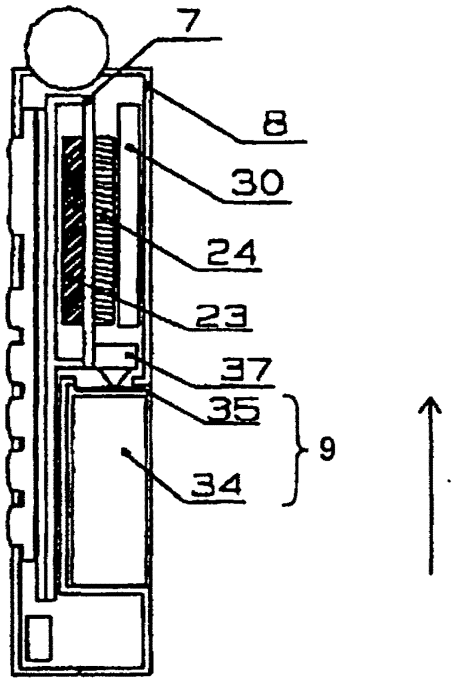


FIG. 10

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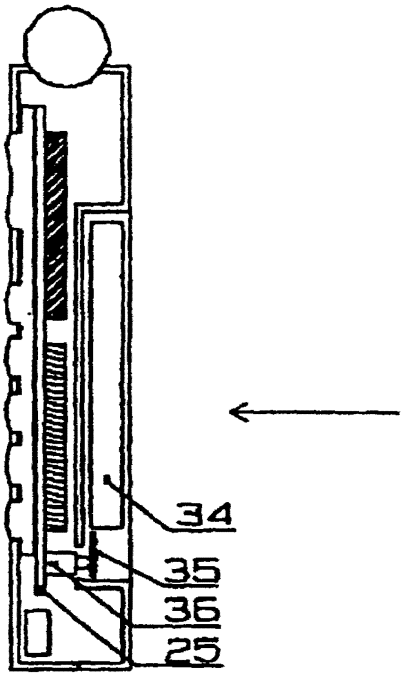


FIG. 11

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DESCRIPTION

FOLD MOBILE PHONE APPARATUS

Technical Field

The present invention relates to mobile phones, and more specifically, to fold mobile phone apparatus.

Background Art

In recent years, small, thin, and fold-type mobile phone apparatus have become the majority. However, miniaturization and thin modeling has led to decreased mechanical strength and rigidity, and there have been many occurrences of damaging the installation parts. Especially, with the single-board that has key operating sections on the front plane and the installation parts on the rear plane, the stress from key pressing transmits directly to the installation parts, and there is a high likelihood of damaging the installation parts. Moreover, the configuration makes it difficult to take measures when the problem of damage arises. Furthermore, the spread of e-mail functions has led to the enlargement of main display sections and the mounting of sub display sections that can be used when the apparatus is closed, and as a result, the weight of the upper chassis of a fold mobile phone apparatus has increased, and the upper chassis and the lower chassis tend to have a poor weight balance.

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FIG.1 is a sectional diagram showing a part of a configuration of a conventional fold mobile phone apparatus. Control circuit 23 and radio circuit 24 are formed on the side of the opposite plane from the operating plane of key circuit board 25, and the installation parts of key circuit board 25, control circuit 23, and radio circuit 24 are supported by means of lower rear case rib 27 formed in lower rear case 8.

As to the operation of key pressing, when key sheet 3 is pressed in the direction of the arrow, the stress from the operating section side of key circuit board 25 transmits to the installation parts on the opposite plane side from the operating section side. Next, this stress is received in lower rear case rib 27 formed in lower rear case 8. Moreover, this stress is received in battery 9 attached to lower rear case 8. Especially, in case the edge portions of the installation parts are situated right underneath the keys, little force of key pressing causes substantial stress to the solder joint portion of the installation parts, and the likelihood of damaging the solder joint portion is high.

Moreover, conventional fold mobile phone apparatus have the installation parts on the side of the opposite plane from the operating side of a key circuit board, and the likelihood of damaging the installation parts by key pressing, bending, and twisting is high. Moreover, a further problem is that miniaturization and thin

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modeling make the likelihood even higher.

Furthermore, since parts are implemented on the opposite plane side from the operating section side of the key circuit board, when development to new models is considered, miniaturizing a circuit board along with miniaturization of installation parts naturally miniaturizes the operating part as well, thereby leading to the problem of poor operationality.

Disclosure of Invention

It is therefore an object of the present invention to provide a fold mobile phone apparatus that is small and thin yet strong and rigid.

The above object can be achieved by providing a flat spacer between an operating section and a circuit board and by receiving stress that results from key pressing operations, bending, and twisting of the operating section by the spacer.

Brief Description of Drawings

FIG.1 is a sectional diagram, showing a configuration inside a lower chassis of a conventional fold mobile phone apparatus;

FIG.2 is a front view diagram, showing an external view of a fold mobile phone apparatus according to an embodiment of the present invention;

FIG.3 shows an A-A sectional view of FIG.2;

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FIG.4 shows a B-B sectional view of FIG.2;

FIG.5 is a sectional diagram, showing a configuration of the fold mobile phone apparatus of the embodiment of the present invention as laid on a desk;

FIG.6 is a decompositional perspective view, showing a configuration of the fold mobile phone apparatus of the embodiment of the present invention;

FIG.7 is a sectional view, showing a configuration of a hinge section of a conventional fold mobile phone apparatus for comparison with the embodiment;

FIG.8 is a sectional view, showing another configuration of a hinge section of a conventional fold mobile phone apparatus for comparison with the present embodiment;

FIG.9 is a sectional view, showing a configuration of a hinge section of the fold mobile phone apparatus of the embodiment of the present embodiment;

FIG.10 is sectional view, showing a configuration inside the fold mobile phone apparatus according to another embodiment of the present embodiment; and

FIG.11 is a sectional view, showing a configuration inside a lower chassis of a conventional fold mobile phone apparatus for comparison with the embodiment.

Best Mode for Carrying Out the Invention

Embodiments of the present invention will be described now with reference to the accompanying

drawings.

FIG.2 is a front view diagram, showing an external view of a fold mobile phone apparatus according to one embodiment of the present invention; FIG.3 shows an A-A sectional view of FIG.2; FIG.4 shows an B-B sectional view of FIG.2; and FIG.6 is a decompositional perspective view, showing a configuration of the fold mobile phone apparatus of the present embodiment of the present invention.

As shown in FIG.2 and FIG.3, the folding mobile phone apparatus of this embodiment comprises upper chassis 100 and lower chassis 200. Upper chassis 100 and lower chassis 200 are rotatably mounted via hinge section 11.

Upper chassis 100 is provided with main display section 14 and sub display section 18 for display sections. Main display 14 functions as a display section when the folding mobile phone apparatus is open, and sub display 18 functions as a display section when the folding mobile phone apparatus is closed. Main display 14 and sub display 18 are both electrically connected to flexible board 17 and held by means of holder 15.

Incidentally, sub display 18 has the functions of displaying the battery level, the signal condition, and the time, and displaying the number and the name of the caller upon an incoming call, thereby realizing a folding mobile phone apparatus that is highly convenient even while it is closed. Additionally, receiver 16 is also

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held by holder 15.

Upper chassis 100 is formed with upper front case 13 and upper rear case 21. Inside upper rear case 21, speaker 20 and rear key 19 are provided. Moreover, main display panel 12 is provided on upper front case 13 and sub display panel 22 is provided on upper rear case 21, thereby protecting main display section 14 and sub display section 18. Rear key 19 is provided with the function of switching the display content on sub display section 18 while the folding mobile phone apparatus is closed, the function of recording the caller's voice while the folding mobile phone apparatus is open and a call is in progress, and the function of playing the recorded content.

On the other hand, lower chassis 200 is formed with lower front case 1 and lower rear case 8. Lower chassis 200 is provided with key sheet 3 and key board 4 as the operating section. No installation parts are mounted on the opposite plane side from the operating section of key board 4. Control circuit 23 and radio circuit 24 are formed on circuit board 7, and flat spacer 5 is provided between key board 4 and circuit board 7.

Radio circuit 24 is provided with shield case 26 to prevent the intrusion of electromagnetic waves and maintain electrical performance, and such conductive material as phosphor copper, beryllium copper, spring nickel silver, and spring stainless, or

electroless-plated resin material is used.

Spacer 5 is provided with spacer rib 28 that protrudes in the direction of circuit board 7. Moreover, low rear case 8 is provided with lower rear case rib 27 that protrudes in the direction of circuit board 7. These spacer rib 28 and lower rear case rib 27 are formed in such positions that they face each other over circuit board 7. In this way, circuit board 7 is sandwiched between spacer rib 28 and lower rear case rib 27 and held parallel to key board 4. Moreover, spacer 5 is fixed by lower rear case 8.

Spacer 5 is formed of conductive magnesium, which, as in the case of radio circuit 24, makes it possible to prevent the intrusion of electromagnetic waves to control circuit 23 and maintain electrical performance. Incidentally, in case of insufficient electrical performance, by installing ground spring 29 made of such conductive material as phosphor copper, beryllium copper, spring nickel silver, and spring stainless on circuit board 7, and by pressing both spacer 5 and circuit board 7 against each other by the compression of ground spring 29, it is possible to strengthen the electrical connection and maintain more stable electrical performance.

Referring to circuit board 7, control circuit 23 is formed on the spacer side and radio circuit 24 is formed on the lower rear case 8 side, so that radio circuit 24, where the intrusion of electromagnetic waves is

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substantial, is covered with shield case 26, and control circuit 23, where the intrusion of electromagnetic waves is less compared to radio circuit 24, can utilize conductive spacer 5 as a shield case, thereby making it unnecessary to provide a dedicated shield case and thus realizing an ideal configuration.

If, on circuit board 7, control circuit 23 is formed on the lower rear case 8 side and radio circuit 24 is formed on the spacer 5 side, spacer 5 alone is insufficient for the measure against the intrusion of electromagnetic waves, and an additional shield case is necessary. Additionally, referring to control circuit 23, if lower rear case 8 is aluminum deposited in lower rear case 8 for the measure against the intrusion of electromagnetic waves, the likelihood of insufficient electrical performance, which makes it likely that an additional shield case needs to be provided. In other words, two shield cases are likely to be necessary, which then results in an increase in product cost and body size.

Lower chassis 200 is provided with additional components including battery 9, vibrator 6, antenna 10, and microphone 2, and these components are accommodated in lower front case 1 and in lower rear case 8.

As to the operation of key pressing, when key 3 is pressed in the direction of the arrow, the force from key board 4 first transmits to spacer5. However, provided that spacer 5 is made of high rigid material such as

magnesium, it is possible to reduce the stress from key board 4. Additionally, since no installation parts are provided on the plane of key board 4 opposite from the operating side, the stress of key pressing does not transmit to the installation parts. Although the stress that has transmitted to spacer 5 then transmits to circuit board 7, given the configuration in which lower rear case rib 27 formed on lower rear case 8 receives this stress and supports circuit board 7, it is still possible to reduce shape changes of circuit board 7 and stress upon the installation parts.

FIG.5 is a structural diagram showing the fold mobile phone apparatus of the present embodiment laid on a desk. When the fold mobile phone apparatus is used while laid on a desk or a table, by providing battery 9, which has the heaviest relative weight, at a position near microphone 2 apart from hinge section 11, the center of gravity of the body moves to a more remote position from hinge section 11, so that even when upper case 100 rotates in the direction of the arrow, it will not have a fall and remain stably set.

FIG.7 is a sectional diagram, showing an example of the configuration of a hinge section of a conventional fold mobile phone apparatus, in which lower front case hinge section 31 is formed in lower front case 1. Usually, lower front case 1 is formed of magnesium material to improve the rigidity of the body. FIG.8 is a sectional

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diagram, showing another configuration of a hinge section of a conventional fold mobile phone apparatus. Lower front case 1 is formed of general resin material such as ABS, and insert fitting 32, formed of metal system by insert molding, is provided in lower front case 1. In this case, the rigidity of the body is secured by insert fitting 32.

FIG. 9 is a sectional diagram showing a configuration of hinge section 11 of the fold mobile phone apparatus of the present embodiment of the present invention, and hinge section 33 is formed in spacer 5 made of metal material such as magnesium. By this means, it is possible to maintain the rigidity of the body and form lower front case 1 of general resin material such as ABS. In this way, it is not necessary to form the lower front case of magnesium, which is an external component, so that it is possible to improve the appearance and enhance manufacturability and costs.

FIG. 10 is a sectional diagram showing a configuration of a lower chassis of a fold mobile phone apparatus of another embodiment of the present invention. Recent years have seen the emergence of products such as mobile phone apparatus mounting media cards including SD cards, and the growth of current consumed due to high-functionalizations such as TV telephones and moving-image playback, and the term of battery tends to shorten. With fold mobile phone apparatus, considering

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the weight balance of an upper chassis and a lower chassis, an SD card should ideally be mounted in the lower chassis. Taking this into consideration, the mobile phone apparatus of the present embodiment retains the basic configuration of the above described embodiment, and SD card connector 30 is provided between lower rear case 8 and radio circuit section 24. As obvious from FIG.10, key board 4 and circuit board 7 retain the basic configuration with little change, and so SD card connector 30 can be situated between circuit board 7 and lower rear case 8. Although the thickness of SD card connector is added to the body, this also thickens battery 9 as well so that a high-capacity battery can be used.

Next, a battery connector section for supplying power from battery 9 will be described. Battery 9 comprises battery cell 34 and battery protection circuit board 35. Horizontal battery connector 37 is mounted to circuit board 7. Horizontal battery connector 37 operates in horizontal directions with respect to circuit board 7 as shown in the figure by the arrow. Consequently, it is possible to situate battery protection circuit board 35, attached to horizontal battery connector 37 for electrical connection, parallel to the side plane of battery cell 34, that is, vertically.

Next, FIG.11 shows an example of a configuration of a lower chassis of a conventional fold mobile phone apparatus. Vertical battery connector 36 is mounted on

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the opposite side from the operating side of key circuit plane 25, and vertical battery connector 36 operates in vertical directions with respect to key circuit board 25 as shown in the figure by the arrow. Consequently, battery protection circuit board 35, attached to vertical battery connector 36 for electrical connection, can be situated longitudinally with respect to the side plane of battery cell 34, that is, horizontally, and naturally the battery becomes long in the length direction.

The present embodiment is by no means limited to the above described embodiments and various changes and modifications can be applied for implementation.

The mobile phone apparatus of the present invention adopts a configuration of a fold mobile phone apparatus comprising an upper chassis, having a display section, and a lower chassis, having an operating section, rotatably mounted via a hinge section, the apparatus comprising: an operating section, provided on an opposing plane of the lower chassis that opposes the upper chassis when folded; a circuit board, provided inside the lower chassis; and a spacer, flat and provided between the operating section and the circuit board and supported by means of a rib.

In this configuration, the stress from key pressing, bending, and twisting is supported by means of the flat spacer, so that it is possible to maintain a small and thin size and prevent damage to the circuit board and

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such.

The mobile phone apparatus of the present invention adopts a configuration of a fold mobile phone apparatus, wherein a battery is situated on a side of a circuit board seen from a spacer, and near a microphone, the microphone being in a position more remote from a hinge section than the circuit board.

In this configuration, in the lower chassis, the center of gravity becomes far from the hinge section, which improves the weight balance when held in hand, so that even a long call can be carried out without fatigue. Moreover, when the fold mobile phone apparatus has TV telephone functions and is used as laid on a desk or a table, the center of gravity becomes far from the hinge section, so that, without worry that the apparatus might tumble into the direction of the upper-situated upper chassis, a stable, fold mobile phone apparatus of a good weight balance can be obtained.

The mobile phone apparatus of the present invention adopts a configuration, wherein, on a circuit board, a control circuit is provided on a plane on a side of an operating section a radio circuit is provided on a plane of an opposite side of the operating section.

In this configuration, the control circuit is formed on the operating section side and the radio circuit is formed on the lower rear case side, so that the radio circuit, where the intrusion of electromagnetic waves

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is substantial, is covered with a shield case, and as to the control circuit, where the intrusion of electromagnetic waves is less than in the radio circuit, it can utilize the spacer, which is conductive, as a shield case, making it unnecessary to provide a dedicated shield case.

The mobile phone apparatus of the present invention adopts a configuration, wherein a spacer rib that protrudes in a direction of a circuit board is formed in a spacer and a rear case rib that protrudes in the direction of the circuit board is formed in a rear case of the lower chassis, the spacer rib and the rear case rib formed in opposing positions over the circuit board.

In this configuration, the stress on the spacer is supported by both the spacer rib and the lower rear case rib, so that it is possible to completely prevent damage to the circuit board and such.

The mobile phone apparatus of the present invention adopts a configuration, wherein a connector is installed on a circuit board, the connector supplying d power from a battery and attached to a side plane of the battery.

In this configuration, making the battery connector horizontal makes it possible to situate a battery protection circuit board vertically and shorten the length of the length direction of the battery, thereby further miniaturizing the fold mobile phone apparatus.

As described above, according to the present

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invention, by providing a flat spacer between an operating section circuit board, and by receiving the stress from key pressing operations of the operating section, bending, and twist, it is possible to realize a fold mobile phone apparatus that is small and thin yet strong and rigid.

Moreover, when new models are developed, it is relatively easy to make common basic configurations, and when a circuit board is miniaturized, the battery can be made longer that much and a high-capacity battery can be realized. Then, furthermore, there is no need to change the size of a key board, and it is possible to realize a key sheet of a handy size that takes operability into consideration and provide a highly convenient fold mobile phone apparatus.

Furthermore, considering the possibilities of further high-functionalizations such as the mounting of media cards, TV telephones, moving image playback, and music distribution, the relationship of a circuit board and a battery in the configuration enables effective use of space, which makes various developments possible.

The present invention relates to Japanese Patent Application No.2002-26479 filed on February 4, 2002, entire content of which is expressly incorporated herein by reference.

Industrial Applicability

The present invention suits for use in fold mobile

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phone apparatus.

CLAIMS

1. A fold mobile phone apparatus comprising an upper chassis, having a display section, and a lower chassis, having an operating section, rotatably mounted via a hinge section, said apparatus comprising:

an operating section, provided on an opposing plane of said lower chassis that opposes said upper chassis when folded;

a circuit board, provided inside said lower chassis; and

a spacer, flat and provided between said operating section and said circuit board and supported by means of a rib.

2. The fold mobile phone apparatus of claim 1, wherein a battery is situated on a side of said circuit board seen from said spacer, and near a microphone, the microphone being in a position more remote from said hinge section than said circuit board.

3. The fold mobile phone apparatus of claim 1, wherein, on said circuit board, a control circuit is provided on a plane on a side of said operating section, while a radio circuit is provided on a plane of an opposite side of said operating section.

4. The fold mobile phone apparatus of claim 1, wherein

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a spacer rib that protrudes in a direction of said circuit board is formed in said spacer and a rear case rib that protrudes in said direction of said circuit board is formed in a rear case of said lower chassis, said spacer rib and said rear case rib formed in opposing positions over said circuit board.

5. The fold mobile phone apparatus of claim 2, wherein a connector is installed on sad circuit board, said connector supplying power from said battery and attached to a side plane of said battery.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP03/01091

A. CLASSIFICATION OF SUBJECT MATTER
Int.Cl[7] H04M1/02

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)
Int.Cl[7] H04M1/02

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Jitsuyo Shinan Koho 1922-1996 Toroku Jitsuyo Shinan Koho 1994-2003
Kokai Jitsuyo Shinan Koho 1971-2003 Jitsuyo Shinan Toroku Koho 1996-2003

Electronic data base consulted during the international search (name of data base and, where practicable, 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.
Y	JP 2000-151136 A (Matsushita Electric Industrial Co., Ltd.), 30 May, 2000 (30.05.00), Fig. 3 & EP 1001585 A2 & US 6396923 B1	1-5
Y	JP 10-276249 A (Sanyo Electric Co., Ltd.), 13 October, 1998 (13.10.98), Fig. 1 (Family: none)	1-5
Y	JP 8-153986 A (Toshiba Corp.), 11 June, 1996 (11.06.96), Fig. 1 (Family: none)	1-5

[x] Further documents are listed in the continuation of Box C. [ ] See patent family 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
06 May, 2003 (06.05.03)	27 May, 2003 (27.05.03)
Name and mailing address of the ISA/ Japanese Patent Office	Authorized officer

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP03/01091

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 6-53880 A (Dynascan Corp.), 25 February, 1994 (25.02.94), Fig. 3 & US 4876709 A	2
Y	JP 4-12589 A (The Furukawa Electric Co., Ltd.), 17 January, 1992 (17.01.92), Fig. 6 (Family: none)	1-5

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EUROPEAN PATENT OFFICE

Patent Abstracts of Japan

PUBLICATION NUMBER : 2005318064
PUBLICATION DATE : 10-11-05

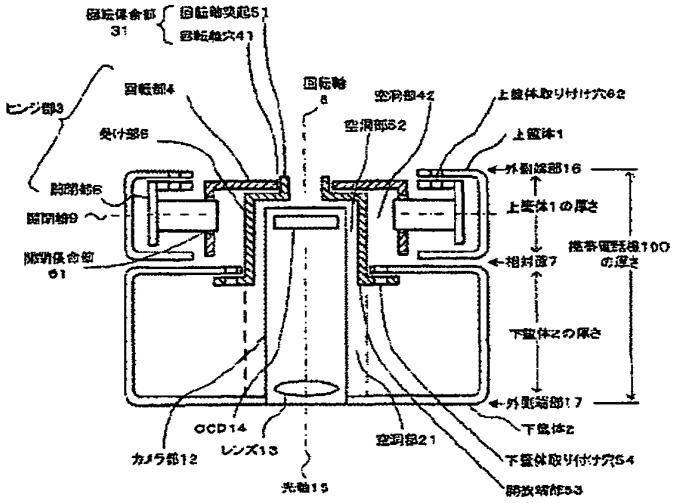
APPLICATION DATE : 27-04-04
APPLICATION NUMBER : 2004131107

APPLICANT : TOSHIBA CORP;

INVENTOR : YAMAZAKI NOBUYUKI;

INT.CL. : H04M 1/02 H04M 1/21 H05K 9/00

TITLE : ELECTRONIC APPARATUS



「実施例1：筐体とヒンジ部とカメラ部の組み立て後の断面図」

ABSTRACT : PROBLEM TO BE SOLVED: To provide an electronic apparatus, wherein an upper case and a lower case are freely revolvably coupled by a hinge part, which can mount a camera occupying a length such as a zoom camera and a telescope camera with respect to a thickness direction of the electronic apparatus or other components by effectively utilizing a cavity part of the hinge part.

SOLUTION: A rotary engagement part 31 of the hinge part 3 is arranged so as to take nearly the same positional relation as that of an outer side end 16 of the upper case 1 in a direction of a rotary shaft 8. Further, the hinge part 3 has cavity parts 42, 52 open toward an opposed face 7. The lower case 2 is provided with a cavity part 21 in its inside. Then the cavity parts 42, 52 of the hinge part 3 and the cavity part 21 of the lower case 2 are unified to form a large cavity part. A camera unit 12 and other components are mounted in the unified large cavity part.

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審査請求 未請求　請求項の数 6　OL　（全 10 頁）

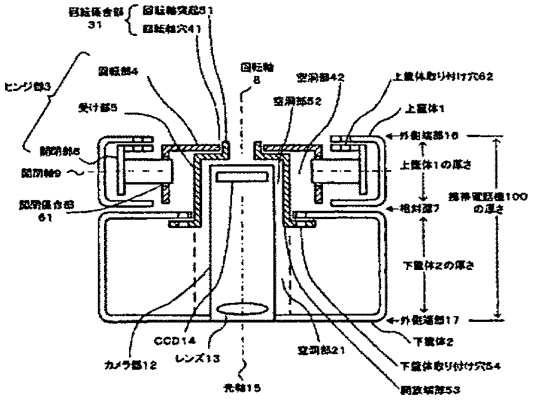
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Fターム(参考)　5E321 AA01　GG01
5K023 AA07　BB03　BB28　DD08　MM00
MM25

(54)【発明の名称】電子機器

(57)【要約】
【課題】　上筐体と下筐体とがヒンジ部により回動自在に結合された電子機器にあって、ヒンジ部の空洞部を有効に活用することにより、電子機器の厚さ方向に対して、ズームカメラや望遠カメラのような長さを必要とするカメラ、又は、その他の部品を搭載することができる電子機器を提供する。
【解決手段】　ヒンジ部３の回転係合部３１は、回転軸８方向において、上筐体１の外側端部１６と略同じ位置関係になるように取り付けられる。又、ヒンジ部３は、相対面７に向かって開放した空洞部４２、５２を有する。下筐体２は、内部に空洞部２１を設ける。そして、ヒンジ部３の空洞部４２、５２と、下筐体２の空洞部２１とが一体となった大きな空洞部を得る。この一体となった大きな空洞部にカメラ部１２やその他の部品を搭載する。
【選択図】　図４



「実施例1：　筐体とヒンジ部とカメラ部の組み立て後の断面図」

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【特許請求の範囲】
【請求項1】
第１筐体と、当該第１筐体と相対する第２筐体と、当該相対面に対して略垂直方向の回転軸を中心に当該両筐体を回動自在に係合するヒンジとを有する電子機器にあって、
前記ヒンジは、前記第１筐体を保持する回転部と、前記第２筐体を保持する受け部とを備えて、前記回転軸上に当該回転部と当該受け部とを係合する回転係合部を有し、
前記ヒンジと前記第１筐体と前記第２筐体の前記回転軸上の構造は、前記ヒンジの回転係合部を前記第１筐体の外側端部と略同じ位置に配置し、前記ヒンジの回転係合部と前記第２筐体の外側端部との間を空洞部とし、
当該空洞部に部品を搭載することを特徴とする電子機器。
【請求項2】
第１筐体と、当該第１筐体と相対する第２筐体と、当該相対面に対して略垂直方向の回転軸を中心に当該両筐体を回動自在に係合するヒンジとを有する電子機器にあって、
前記ヒンジは、前記第１筐体を保持する回転部と、前記第２筐体を保持する受け部とを備えて、前記回転軸方向の一方の端部に当該回転部と当該受け部とを係合する回転係合部と、前記回転軸方向の内部に第１空洞部と、前記回転軸方向の他方の端部に開放した開放端部とを有し、
前記ヒンジと前記第１筐体と前記第２筐体の前記回転軸上の構造は、前記ヒンジの回転係合部を前記第１筐体の外側端部と略同じ位置に配置し、前記開放端部を前記第２筐体に取り付け、前記第２筐体に前記第１空洞部と繋がる第２空洞部を備え、
前記第１空洞部と当該第２空洞部に部品を搭載することを特徴とする電子機器。
【請求項3】
第１筐体と、当該第１筐体と相対する第２筐体と、当該相対面に対して略垂直方向の回転軸を中心に当該両筐体を回動自在に係合するヒンジとを有する電子機器にあって、
前記ヒンジは、前記第１筐体を保持する回転部と、前記第２筐体を保持する受け部とを備えて、前記回転軸方向の一方の端部に当該回転部と当該受け部とを係合する回転係合部と、前記回転軸方向の内部に第１空洞部と、前記回転軸方向の他方の端部に開放した開放端部とを有し、
前記ヒンジと前記第１筐体と前記第２筐体の前記回転軸上の構造は、前記ヒンジの回転係合部を前記第１筐体の外側端部と略同じ位置に配置し、前記開放端部を前記第２筐体の外側端部近辺で取り付け、前記第１空洞部に部品を搭載することを特徴とする電子機器。
【請求項4】
前記受け部は、略筒状の電磁シールド部材とし、前記回転軸に略垂直な周辺方向に対して電磁シールドを行うことを特徴とする請求項３に記載の電子機器。
【請求項5】
第１筐体と、当該第１筐体と相対する第２筐体と、当該相対面に対して略垂直方向の回転軸を中心に当該両筐体を回動自在に係合するヒンジとを有する電子機器にあって、
前記ヒンジは、前記第１筐体を保持する回転部と、前記第２筐体を保持する略板状の受け部とを備えて、前記回転軸上に当該回転部と当該受け部とを係合する回転係合部を有し、
前記ヒンジと前記第１筐体と前記第２筐体の前記回転軸上の構造は、前記ヒンジの回転係合部を前記第１筐体の外側端部と略同じ位置に配置し、前記第２筐体に前記受け部の方向へ伸びて前記受け部を取り付ける延伸部を備え、当該延伸部の内部および当該第２筐体の外側端部との間を空洞部とし、
当該空洞部に部品を搭載することを特徴とする電子機器。
【請求項6】
前記部品は、前記回転軸方向と略同じ方向の光軸を有するカメラ部であることを特徴とする請求項１乃至５のいずれか１項に記載の電子機器。

【発明の詳細な説明】
【技術分野】
【0001】

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本発明は、電子機器の構造に関するもので、特に、上筐体と下筐体とがヒンジにより回動自在に係合された電子機器にあって、ヒンジおよびヒンジ近辺の空洞部を有効に活用することができる電子機器に関する。

【背景技術】

【0002】

上側ユニットおよび下側ユニットを開閉自在および回動自在に結合する可動接合部材を有する折り畳み式携帯情報端末がある（例えば、特許文献１参照。）。この特許文献１の折り畳み式携帯情報端末にあっては、可動接合部材の第１の回動軸の底部部分が回動自在な係合部分を構成している。又、この折り畳み式携帯情報端末はカメラ部を有する。このカメラ部は、第１の回動軸とは別体の円筒状ケースに固定されているが、カメラ部が第１の回動軸の内部に固定され、第１の回動軸に一体に形成される構成とすることもできる、との記載がある。

【0003】

又、画面部および本体部を折り畳み自在および回動自在に結合するヒンジ部、円形回転部および円形固定部を有する電子カメラ装置がある（例えば、特許文献２参照。）。この特許文献２の電子カメラ装置にあっては、円形回転部および円形固定部により回動自在な係合部分を構成している。そして、撮像部は円形回転部に設けられて、バックフォーカス、即ち、撮影レンズとCCDとの距離を確保することができる、との記載がある。

【特許文献1】特開２００３－２９８６９８号公報（第４～５頁、図３、図４）

【特許文献2】特開２００３－３１９２２３号公報（第２～５頁、図１～３）

【発明の開示】

【発明が解決しようとする課題】

【0004】

従来の特許文献１にあっては、カメラ部を直接、第１の回動軸の内部に固定することにより、内部スペースを利用することができたとしても、第１の回動軸の頂部と底部との間のスペースのみである。この第１の回動軸の頂部と底部間の距離は、略、上側ユニットの厚さに相当する。そのため、更に底部より下側の下側ユニットまで含めた大きな一体スペースを確保することはできない。従って、第１の回動軸の頂部と底部との間のスペースにズームカメラや望遠カメラのような光軸距離を必要とするカメラを搭載することができないという問題があった。敢えて搭載すると、上側ユニットの外側にカメラが大きく飛び出す構造となってしまうという問題がある。

【0005】

従来の特許文献２にあっては、円形回転部の厚さ分のバックフォーカスは確保できても、更に円形固定部の厚さ分まで含めたバックフォーカスを確保することはできない。従って、円形回転部の厚さ分では、ズームカメラや望遠カメラのような光軸距離を必要とするカメラを搭載することができないという問題があった。敢えて搭載すると、円形回転部の外側にカメラが大きく飛び出す構造となってしまうという問題がある。

【0006】

本発明は、上記の問題点を解決するためになされたもので、上筐体と下筐体とがヒンジにより回動自在に結合された電子機器にあって、ヒンジ部の空洞部と下筐体の空洞部とを有効に活用することにより、電子機器の厚さ方向にズームカメラや望遠カメラのような光軸距離を必要とするカメラおよびその他の部品を搭載することができる電子機器を提供することを目的とする。

【課題を解決するための手段】

【0007】

上記目的を達成するために、本発明の電子機器は、第１筐体と、当該第１筐体と相対する第２筐体と、当該相対面に対して略垂直方向の回転軸を中心に当該両筐体を回動自在に係合するヒンジとを有する電子機器にあって、前記ヒンジは、前記第１筐体を保持する回転部と、前記第２筐体を保持する受け部とを備えて、前記回転軸上に当該回転部と当該受け部とを係合する回転係合部を有し、前記ヒンジと前記第１筐体と前記第２筐体の前記回

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転軸上の構造は、前記ヒンジの回転係合部を前記第１筐体の外側端部と略同じ位置に配置し、前記ヒンジの回転係合部と前記第２筐体の外側端部との間を空洞部とし、当該空洞部に部品を搭載することを特徴とする。

【発明の効果】

【0008】

本発明によれば、上筐体と下筐体とがヒンジにより回動自在に結合された電子機器にあって、ヒンジ部のスペースを有効に活用することができる。これにより、電子機器の厚さ方向に電子機器の厚さより外側に飛び出すことなく、ズームカメラや望遠カメラのような光軸距離を必要とするカメラおよびその他の部品を搭載することが可能となる。

【発明を実施するための最良の形態】

【0009】

以下、本発明の実施例を、図面を参照して説明する。

図１は、本発明の各実施例に係る携帯電話機の構成を説明する図であり、携帯電話機の正面、側面、および上面を示す外観図である。側面図は正面図を矢印Ａ方向から見た図である。上面図は、正面図を矢印Ｂ方向から見た図であり、筐体を閉じた状態を示す。

携帯電話機１００は、上筐体１（第１筐体。上側ユニット）、下筐体２（第２筐体。下側ユニット）、これらの筐体を開閉および回動自在に係合するヒンジ部３等の主な機構を備える。

【0010】

ヒンジ部３は、回転部４、受け部５、および開閉部６を備える。回転部４と受け部５とは、上筐体１と下筐体２とを閉じた時に相対する相対面７に略垂直な回転軸８を中心に相互に回動自在に回転する。開閉部６は、回転部４の一部として回転部４に開閉自在に取り付けられて、開閉軸９を中心に開閉する。

上筐体１は回転部４の一部である開閉部６に取り付けられ、下筐体２は受け部５に取り付けられる。これにより、上筐体１と下筐体２とは、相互に開閉および回動自在に係合する。

【0011】

上筐体１には表示部１０が搭載される。下筐体２には、操作用のキー１１が搭載される。上筐体１は、ヒンジ部３を避けるように切り欠いた形状であるが、これは、開閉動作を行うための構造である。開閉動作を行わない回動動作だけの場合は、切り欠きを設けずに、上筐体１の内部にヒンジ部３が含まれる構造としてもよい。

カメラ部１２は、レンズ１３およびＣＣＤ１４等を搭載しており、回転軸８方向に光軸１５を合わせて、上筐体１と下筐体２を合わせた厚さ、すなわち、携帯電話機１００と略同じ厚さに相当する長さで、回転部４と下筐体２に跨って搭載される。

なお、回転軸８、開閉軸９、光軸１５は、幾何学的概念であって、本発明を構成する有体物ではない（以下においても同様とする）。

【実施例】

【0012】

図２～図４は、本発明を携帯電話機に適用した実施例１を示し、図２はヒンジ部とカメラ部を組み立てる前の分解斜視図、図３はヒンジ部の回転係合部の断面図、図４は筐体とヒンジ部とカメラ部を組み立てた後の詳細断面図である。

図２は、ヒンジ部とカメラ部を組み立てる前の分解斜視図であり、図１の上面図を上下反転した状態でのヒンジ部とカメラ部の分解斜視図を示す。図１と同じ構成については同じ番号を付して、具体的な構造について説明する。

ヒンジ部３は、回転部４、受け部５、開閉部６等から構成される。回転部４は、略筒状であり、頂部に回転係合用の回転軸穴４１を備え、内部に下筐体２方向に向かって開放した空洞部４２を備える。受け部５は、略箱型であり、頂部に回転係合用の回転軸突起５１を備え、内部に下筐体２方向に向かって開放した空洞部５２を備え、下部に開放端部５３と下筐体２取り付け用の下筐体取り付け穴５４を備える。回転軸突起５１にも穴があるが、これは上筐体１と下筐体２との間の信号線の配線用である。

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回転部４には、更に、開閉部６が開閉係合部６１により開閉軸９を中心に開閉自在に動くように取り付けられる。開閉部６の端部には、上筐体１取り付け用の上筐体取り付け穴６２を備える。

【0013】

回転部４と受け部５の係合は、回転部４の空洞部４２に受け部５を挿入し、更に、回転軸穴４１と回転軸突起５１を係合させて、回転部４と受け部５とは回転軸８を中心に回動自在に動く。

カメラ部１２は、光軸１５の方向を回転部４の回転軸８の方向に略合わせて、略上半分が、受け部５の空洞部５２に収まり、略下半分は、下筐体２（図１）の空洞部に収まる。

【0014】

図３は、図２に示した回転軸穴４１と回転軸突起５１による回転係合部の断面図である。回転軸突起５１は、略筒状の形状であり、これを回転部４と受け部５の穴に挿入し、その後、抜けないようにハトメを行う。これにより、回転部４と受け部５が回動自在に係合する回転係合部３１を構成する。なお、回転係合部３１は、この形状に限らず、回動自在に係合する形状であればよい。

以降の説明では、回転係合部の構造については、簡略化して記載する。

【0015】

次に、ヒンジ部とカメラ部を組み立てた後の詳細構造について、説明する。

図４は、携帯電話機の筐体とヒンジ部とカメラ部の位置関係を示す組み立て後の詳細断面図であり、図２の矢印Ｃ方向から見た断面である。図１の上面図を上下反転した状態で見た断面図でもある。説明を簡単にするために、断面図用のハッチングで図示するのは、回転部４と受け部５のみとする。

ヒンジ部３の回転部４と受け部５との取り付けは、回転軸穴４１に回転軸突起５１を挿入して回転係合部３１を構成する。そして、回転部４と受け部５とは、回転係合部３１により回転軸８を中心に回動自在に動く。

上筐体１は、回転部４の一部である開閉部６の上筐体取り付け穴６２に取り付けられる。下筐体２は、受け部５の下筐体取り付け穴５４に取り付けられる。そして、上筐体１を閉じた状態では、相対面７で向き合い、上筐体１の外側端部１６と下筐体２の外側端部１７間が携帯電話１００の略厚さとなる。

【0016】

上筐体１と下筐体２とヒンジ部３の回転軸８方向の位置関係は、ヒンジ部３の回転係合部３１が上筐体１の外側端部１６と略同じ位置関係になるように配置される。受け部５の開放端部５３は、下筐体２の相対面７近辺に取り付けられるが、開放端部５３を更に下筐体２の内部方向まで伸ばして、下筐体２の内部構造物に取り付けてもよい。

上筐体１は、開閉動作を行うためヒンジ部３を避けるように切り欠いた形状であるため、開閉部６の一部は上筐体１の内部に含まれるが、回転部４と受け部５は上筐体１の内部には含まれない。

【0017】

なお、開閉動作を行わない回動動作だけの場合は、開閉部６は不要となり、上筐体１は、回転部４に直接取り付けられる。また、上筐体１は、ヒンジ部３を避ける切り欠きは不要となるので、ヒンジ部３の大部分を上筐体１の内部に含む構造としてもよい。この場合も、上筐体１と下筐体２とヒンジ部３の回転軸８方向の位置関係は、ヒンジ部３の回転係合部３１が上筐体１の外側端部１６と略同じ位置関係になるように取り付けられる。

【0018】

また、上筐体取り付け穴６２の位置は、上筐体１の外側端部１６近辺である必要はない。また、上筐体取り付け穴６２を取り付ける上筐体１の対象物は、上筐体１内部の図示しないＬＣＤホルダや回路基板等であってもよい。要するに、ヒンジ部３の回転係合部３１が上筐体１の外側端部１６と略同じ位置関係になるように取り付けられるのであれば、どこでも構わない。

【0019】

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下筐体２は、回転軸８方向に空洞部２１を設ける。

このような回転軸８方向の位置関係にあるため、回転係合部３１から下筐体２の外側端部に向けて、空洞部４２、空洞部５２、空洞部２１が一体となった大きな空洞部を構成することができ、携帯電話機１００の厚さと略同じ長さの空洞部を得ることができる。

【0020】

この一体となった大きな空洞部に、カメラ部１２を搭載する。カメラ部１２は、レンズ１３およびＣＣＤ１４を搭載しており、このレンズ１３とＣＣＤ１４間の距離を長く取ることができる。従って、ズームカメラや望遠カメラ等を携帯電話機１００の厚みよりも飛び出すことなく搭載することができる。

【0021】

なお、カメラ部１２の図４における左右方向の寸法は、受け部５の空洞部５２に収まる必要があるが、図４の奥行き方向の寸法は、受け部５の奥行き方向が開いているため、回転部４の空洞部４２に収まる寸法であればよい。

又、レンズ１３とＣＣＤ１４間の距離が短くてもよい通常のカメラを搭載する場合は、携帯電話機の厚さを薄くすることができる。

【0022】

図１に示した携帯電話機において、ユーザは、カメラ撮影を行う時、カメラ部１２のレンズ１３側を被写体に向けて、そのモニタ画面を表示部１０で確認しながら、撮影する。従って、カメラ部１２の光軸方向は、携帯電話機の厚さ方向であることが望ましい。この位置関係にあっても、ズームカメラや望遠カメラ等を搭載することが可能となる。特に、開閉ヒンジがなくて回転ヒンジのみの場合は、表示部４の面が常に正面側を向くことになるため、携帯電話機の厚さ方向に光軸があるズームカメラや望遠カメラ等を搭載することができる効果は大きい。

【実施例】

【0023】

図５は、本発明を携帯電話機に適用した実施例２を示し、筐体とヒンジ部とカメラ部の位置関係を示す組み立て後の詳細断面図である。実施例１の断面図（図４）と同じ箇所には同じ番号を付して、異なるところを中心に、実施例２の構成を説明する。

ヒンジ部１０３の受け部１０５は、回転軸８方向の長さを長くして、開放端部５３を下筐体２の外側端部１７付近まで伸ばす。そして、下筐体取り付け穴５４で、下筐体１０２に取り付ける。ヒンジ部１０３の回転係合部３１は、実施例１の断面図（図４）と同様に、上筐体１の外側端部１６と略同じ位置関係になるように取り付けられる。

なお、上筐体取り付け穴６２の位置は、上筐体１の外側端部１６近辺である必要はない。また、上筐体取り付け穴６２を取り付ける上筐体１の対象物は、上筐体１内部の図示しないＬＣＤホルダや回路基板等であってもよい。要するに、ヒンジ部１０３の回転係合部３１が上筐体１の外側端部１６と略同じ位置関係になるように取り付けられるのであれば、どこでも構わない。

【0024】

このように、ヒンジ部１０３の受け部１０５自体の空洞部５２は、携帯電話機１００の厚さと略同じ長さの空洞部を得ることができる。この空洞部に、カメラ部１２を搭載する。カメラ部１２は、レンズ１３およびＣＣＤ１４を搭載しており、このレンズ１３とＣＣＤ１４間の距離を長く取ることができる。従って、ズームカメラや望遠カメラ等を携帯電話機１００の厚みよりも飛び出すことなく搭載することができる。

【0025】

なお、受け部１０５は、周囲を筒状の形状で部材をシールド部材とすることで、カメラ部１２の周囲を完全にシールドする効果も得ることができる。これにより、ズームカメラや望遠カメラ等を搭載することができると共に、シールド効果も得ることができる。

【実施例】

【0026】

図６は、本発明を携帯電話機に適用した実施例３を示し、筐体とヒンジ部とカメラ部の

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位置関係を示す組み立て後の詳細断面図である。実施例１の断面図（図４）と同じ箇所には同じ番号を付して、異なるところを中心に、実施例３の構成を説明する。

ヒンジ部２０３は、略板状の回転部２０４と受け部２０５を備え、回転係合部３１で係合する。ヒンジ部２０３は、開閉動作を行わないで、回動動作のみを行う。回転係合部３１は、実施例１の断面図（図４）と同様に、上筐体１の外側端部１６と略同じ位置関係になるように取り付けられる。

なお、上筐体取り付け穴４３の位置は、上筐体２０１の外側端部１６近辺である必要はない。また、上筐体取り付け穴４３を取り付ける上筐体２０１の対象物は、上筐体２０１内部の図示しないＬＣＤホルダや回路基板等であってもよい。要するに、ヒンジ部２０３の回転係合部３１が上筐体２０１の外側端部１６と略同じ位置関係になるように取り付けられるのであれば、どこでも構わない。

【0027】

上筐体２０１は、回転部２０４の上筐体取り付け穴４３に取り付けられて、回動動作のみを行う。開閉動作を行わないので、ヒンジ部２０３は、上筐体２０１の内部に含まれる構造としている。

下筐体２０２は、受け部２０５の下筐体取り付け穴５４に取り付けるために、下筐体２０２の基本部分から下筐体取り付け穴５４方向に向かって伸びる延伸部２２２を有する。この延伸部２２２により、回転係合部３１から下方向に向かう空洞部２２１を構成し、携帯電話機１００と略同じ厚さの空洞部を得ることができる。

この空洞部に、カメラ部１２を搭載する。カメラ部１２は、レンズ１３およびＣＣＤ１４を搭載しており、このレンズ１３とＣＣＤ１４間の距離を長く取ることができる。従って、ズームカメラや望遠カメラ等を携帯電話機１００の厚みよりも飛び出すことなく搭載することができる。

【0028】

なお、ヒンジ部２０３および上筐体２０１は、開閉動作および回動動作を行う構造であってもよい。その場合は、回転部２０４は、実施例１の図４の回転部４および開閉部６の構造とし、上筐体２０１は、実施例１の図４の上筐体１と同じ構造とする。受け部２０５は、図６のままの板状の形状とし、下筐体２の延伸部２２２と取り付けられる。

この場合も、回転係合部３１から下方向に向かう空洞部２２１を構成し、携帯電話機１００と略同じ厚さの空洞部を得ることができる。

【0029】

また、図４と図６の折衷例として、図４に示した空洞部５２を有する受け部５の形状と、図６に示す延伸部２２２を有する下筐体２０２の形状とを備えて、受け部５の開放端部５３と延伸部２２２の先端とが、上筐体１または上筐体２０１の厚さ方向の中間部で結合する構造としてもよい。

【0030】

なお、本発明の各実施例では、カメラ部のレンズ側の先端は、携帯電話機の厚さ方向から飛び出していないが、更に長い望遠カメラ等であれば、飛び出す構成としても構わない。

また、各実施例では、ヒンジの回転部は筒型形状とし、受け部は箱型形状としたが、頂部が係合部で、底部側の内部に空洞部がある構造であれば、筒型形状や箱型形状以外でも構わない。

また、各実施例では、ヒンジ部は、回転ヒンジと開閉ヒンジを有する構造であったが、開閉を伴わない回転ヒンジのみの構造であっても構わない。

また、各実施例では、空洞部にカメラ部を搭載したが、大きな空洞部を利用して、カメラ部以外の部品、例えば、電池、スピーカ、メモリスティック、イヤフォン等を搭載してもよい。

また、実施例では、上筐体に表示部を搭載し、下筐体にキーを搭載したが、これが逆であってもよい。

また、各実施例では、携帯電話機の場合について説明したが、２筐体を回動可能なヒン

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ジで係合する他の電子機器にも適用できる。

【図面の簡単な説明】

【0031】

【図1】本発明の各実施例に係る携帯電話機の外観図。

【図2】本発明の実施例１に係る携帯電話機のヒンジ部とカメラ部の組み立て前の分解斜視図。

【図3】本発明の実施例１に係るヒンジ部の回転係合部の断面図。

【図4】本発明の実施例１に係る携帯電話機の組み立て後の断面図。

【図5】本発明の実施例２に係る携帯電話機の組み立て後の断面図。

【図6】本発明の実施例３に係る携帯電話機の組み立て後の断面図。

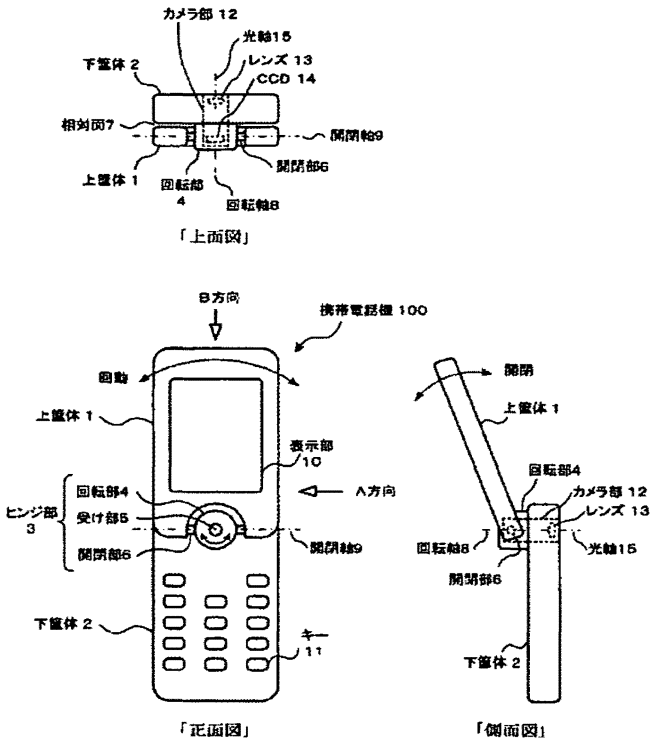
【符号の説明】

【0032】

１　上筐体
２　下筐体
３　ヒンジ部
４　回転部
５　受け部
６　開閉部
７　相対面
８　回転軸
９　開閉軸
１０　表示部
１１　キー
１２　カメラ部
１３　レンズ
１４　ＣＣＤ
１５　光軸
１６、１７　外側端部
３１　回転係合部
４１　回転軸穴
４２　空洞部
５１　回転軸突起
５２　空洞部
５３　開放端部
５４　下筐体取り付け穴
６１　開閉係合部
６２　上筐体取り付け穴
１００　携帯電話機
１０２　下筐体
１０３　ヒンジ部
１０５　受け部
２０１　上筐体
２０２　下筐体
２０３　ヒンジ部
２０４　回転部
２０５　受け部
２２１　空洞部
２２２　延伸部

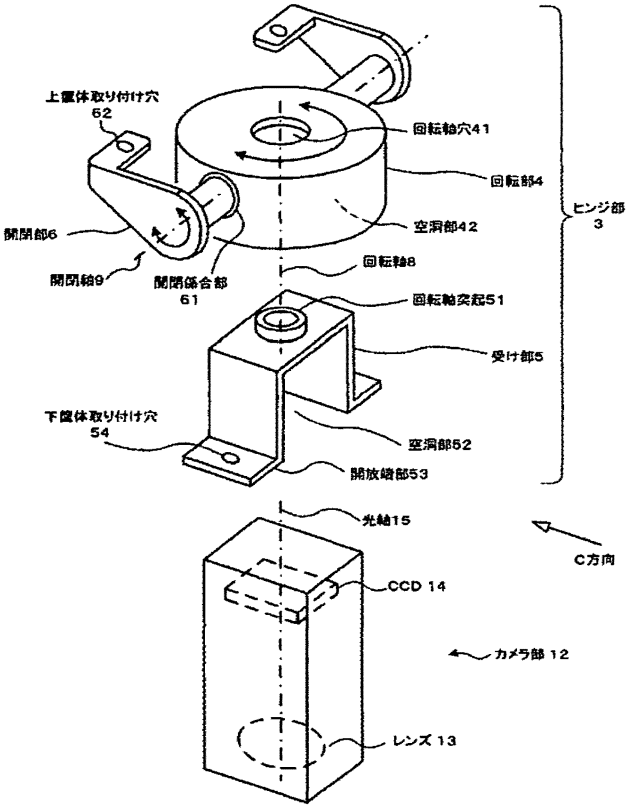
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【図1】



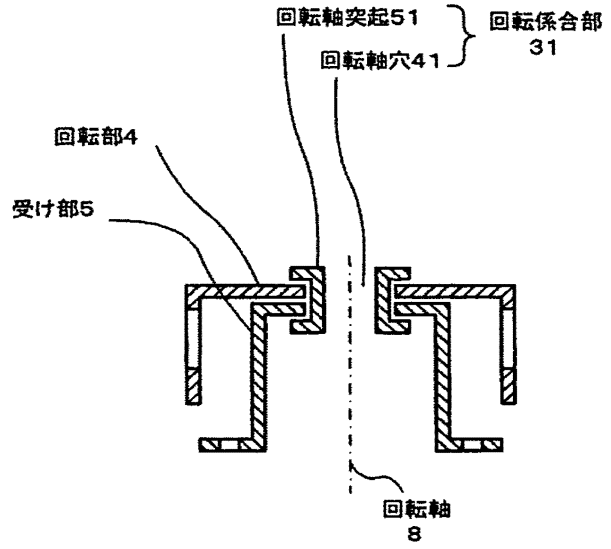
「携帯電話機の外観図」

【図2】



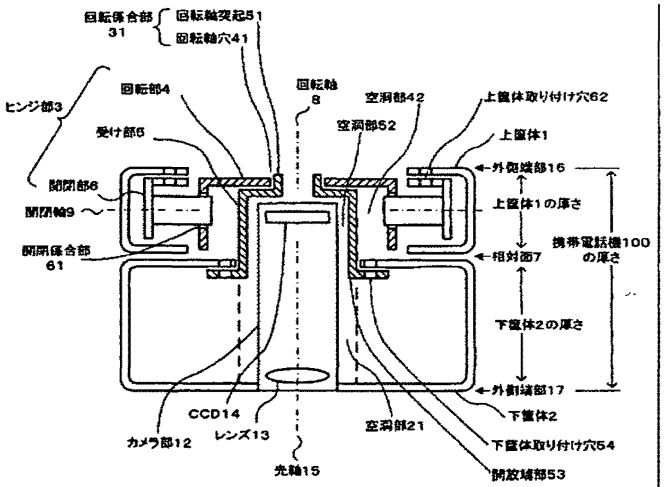
「実施例1：ヒンジ部とカメラ部の分解斜視図」

【図3】



「実施例1：回転係合部の断面図」

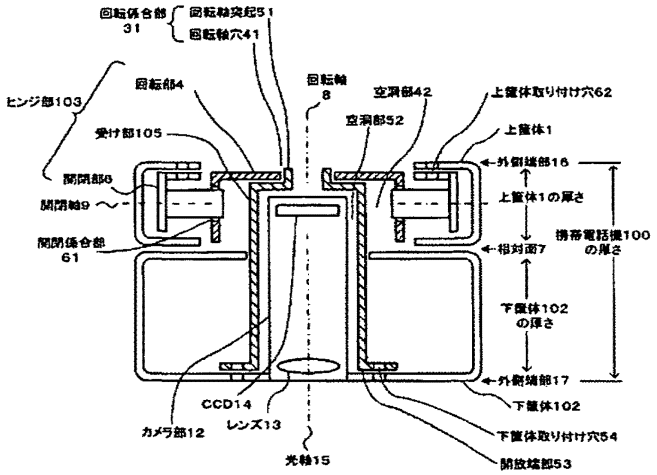
【図4】



「実施例1：筐体とヒンジ部とカメラ部の組み立て後の断面図」

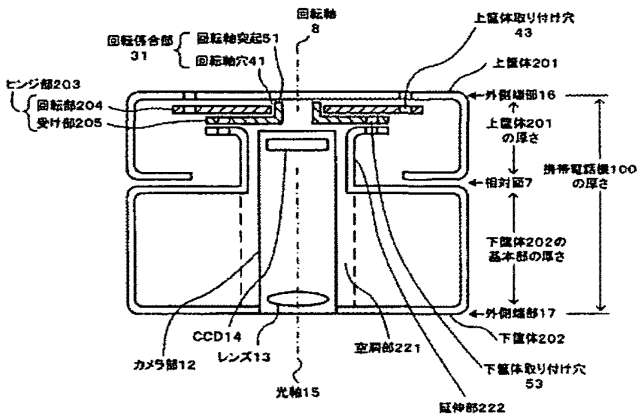
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【図5】



「実施例2：筐体とヒンジ部とカメラ部の組み立て後の断面図」

【図6】



「実施例3：筐体とヒンジ部とカメラ部の組み立て後の断面図」

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/393,510	03/29/2006	Claus H. Jorgensen	891.00013.U1(US)	8456

29683 7590 11/21/2008

HARRINGTON & SMITH, PC
4 RESEARCH DRIVE, Suite 202
SHELTON, CT 06484-6212

EXAMINER	
NGUYEN, TUAN DUC	

ART UNIT	PAPER NUMBER
2614	

MAIL DATE	DELIVERY MODE
11/21/2008	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.

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11/393,510	03/29/2006	Claus H. Jorgensen	891.00013.U1(US)	8456

29683 7590 11/21/2008

HARRINGTON & SMITH, PC
4 RESEARCH DRIVE, Suite 202
SHELTON, CT 06484-6212

EXAMINER	
NGUYEN, TUAN DUC	
ART UNIT	**PAPER NUMBER**
2614	
MAIL DATE	**DELIVERY MODE**
11/21/2008	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.

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DETAILED ACTION

Election/Restrictions

1. This application contains claims directed to the following patentably distinct species of the claimed invention:

Claims 1-23 are directed to 4 species as illustrated in figures 1-13. 4 species are identified as below.

Species 1 – claims 1-6, directed to a portable electronic apparatus.

Species 2 – claims 7-14, directed to a portable electronic apparatus with a tubular housing member.

Species 3 – claims 15-20, directed to a mobile telephone with an engine section.

Species 4 – claims 21-24, directed to a portable electronic device with a camera.

2. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, no claim is generic.

3. Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any

claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

4. Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

5. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TUAN D. NGUYEN whose telephone number is (571)272-8163. The examiner can normally be reached on M-F 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curt Kuntz can be reached on (571) 272-7499.

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.

TDN

11/18/08
/Tuan D. Nguyen/
Examiner, Art Unit 2614

Application Number	Application/Control No.	Applicant(s)/Patent under Reexamination	
	11/393,510	JORGENSEN, CLAUS H.	
	Examiner	Art Unit	
	TUAN D. NGUYEN	2614	

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 11/393,510 Confirmation No.: 8456
Applicant(s): Jorgensen
Filed: 03/29/2006
Art Unit: 2614
Examiner: Nguyen, Tuan Duc
Title: Portable Electronic Device

Attorney Docket No.: 891.0013.U1(US)
Customer No.: 29,683

Commissioner For Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Response To Restriction

Sir:

This is in response to the Office Action mailed 11/21/2008 in regard to the above-identified patent application. Please charge deposit account 50-1924 for any fee deficiency related to filing of this correspondence.

Applicant's attorney elects species 1 (Claims 1-6) with traverse.

As noted in MPEP 806.04(e), claims are definitions or descriptions of inventions. **Claims themselves are never species.** The scope of a claim may be limited to a single disclosed embodiment (i.e., a single species, and thus be designated a specific species claim). Alternatively, a claim may encompass two or more of the disclosed embodiments (and thus be designated a generic or genus claim). **Species always refer to the different embodiments of the invention.**

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In this case, the examiner has not given the applicant the opportunity to elect a single embodiment (single species). The examiner has only identified claims; not a species/embodiment to elect from.

In this case, Figs. 1-8 show a first embodiment (first species). Figs. 9-13 are alternate embodiments (different species). Thus, applicant desires to elect the embodiment of Figs. 1-8. Claims 1-16 and 18-24 read on the embodiment shown in Figs. 1-8. Thus, the examiner is requested to examine claims 1-16 and 18-24.

Note also MPEP 806.03, "Where the claims of an application define the same essential characteristics of a single disclosed embodiment of an invention, restriction therebetween should never be required. This is because the claims are not directed to distinct inventions; rather they are different definitions of the same disclosed subject matter, varying in breadth or scope of definition."

Favorable consideration and allowance is respectfully requested. Should any unresolved issue remain, the examiner is invited to call applicant's attorney at the telephone number indicated below.

PAGE 2/3 * RCVD AT 12/2/2008 3:38:41 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-6/46 * DNIS:2738300 * CSID:2039440245 * DURATION (mm-ss):00-58

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Appl. No.: 11/393,510
Reply to Office Action of: 11/21/2008

Respectfully submitted,

Mark F. Harrington (Reg. No. 31,686) 12/2/08
Mark F. Harrington (Reg. No. 31,686) Date

Customer No.: 29683
Harrington & Smith, PC
4 Research Drive
Shelton, CT 06484-6212
203-925-9400

CERTIFICATION OF FACSIMILE TRANSMISSION

I hereby certify that this correspondence is being facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

12/2/2008
Date

Elaine F. Musi
Name of Person Making Deposit

PAGE 3/3 * RCVD AT 12/2/2008 3:38:41 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-6/46 * DNIS:2738300 * CSID:2039440245 * DURATION (mm-ss):00-58

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/393,510	03/29/2006	Claus H. Jorgensen	891.00013.U1(US)	8456

29683 7590 12/29/2008
HARRINGTON & SMITH, PC
4 RESEARCH DRIVE, Suite 202
SHELTON, CT 06484-6212

EXAMINER	
NGUYEN, TUAN DUC	
ART UNIT	PAPER NUMBER
2614	
MAIL DATE	DELIVERY MODE
12/29/2008	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.

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Office Action Summary	Application No.	Applicant(s)	
	11/393,510	JORGENSEN, CLAUS H.	
	Examiner	Art Unit	
	TUAN D. NGUYEN	2614	

-- 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 December 2008*.

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) *1-24* is/are pending in the application.

4a) Of the above claim(s) *7-24* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* 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 *03/29/2006,09/04/2007,11/01/2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

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DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Species I claims 1-6 in the reply filed on 12/02/2008 is acknowledged. The traversal is on the ground(s) that the examiner has only identified claims; not a species/embodiment to elect from. This is not found persuasive because Species claims are clearly and distinctively claimed as identified in the previous office action dated 11/21/08. Claims 1-6 are examined on the merit and claims 7-24 are withdrawn from consideration.

   The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

   The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

   Claim 6 recites the limitation "the electronic device", “the portable electronic device in page 14 lines 3-5. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

4. 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.

5. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by the applicant's cited reference EP1496672 A1 (Satoh et al herein and after Satoh).

Regarding claim 1, Satoh discloses a portable electronic apparatus (figs. 1, 4, 7) comprising: a first section comprising electronics (101a); a second section (101b) movably connected to the first section by a hinge section (124), wherein the second section comprises a display (112); and an access entry provided in the hinge section adapted to allow insertion of an electrical device through the hinge section and into electrical connection with an electrical connector inside the first section (paragraphs 47-49).

Regarding claim 2, Satoh also shows wherein the access entry comprises a movable door on the hinge section (see figs 1c and 7).

Regarding claim 3, Satoh further shows herein the access entry comprises a living hinge connecting the door to the rest of the hinge section (see figs. 4 and 7).

Regarding claim 4, Satoh also discloses wherein the access entry is sized and shaped to allow insertion of a battery (107) through the access entry,

and the electrical connector is adapted to electrically connect to the battery (see fig. 7).

Regarding claim 5, Satoh also shows wherein the access entry is sized and shaped to allow insertion of an electronic module through the access entry, and the electrical connector is adapted to electrically connect to the electronic module (see fig. 7).

Regarding claim 6, Satoh also shows wherein the access entry is sized and shaped to at least partially support the electronic device when the electronic device is fully inserted into the portable electronic device (see figs 4 and 7).

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TUAN D. NGUYEN whose telephone number is (571)272-8163. The examiner can normally be reached on M-F 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curt Kuntz can be reached on (571) 272-7499. 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.

TDN
12/19/08

/Tuan D. Nguyen/
Examiner, Art Unit 2614

Application Number	Application/Control No.	Applicant(s)/Patent under Reexamination	
	11/393,510	JORGENSEN, CLAUS H.	
	Examiner	Art Unit	
	TUAN D. NGUYEN	2614	

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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11393510	JORGENSEN, CLAUS H.
	Examiner	Art Unit
	TUAN D NGUYEN	2614

✓	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	12/19/2008								
	1	✓								
	2	✓								
	3	✓								
	4	✓								
	5	✓								
	6	✓								
	7	N								
	8	N								
	9	N								
	10	N								
	11	N								
	12	N								
	13	N								
	14	N								
	15	N								
	16	N								
	17	N								
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	19	N								
	20	N								
	21	N								
	22	N								
	23	N								
	24	N								

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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11393510	JORGENSEN, CLAUS H.
	Examiner	Art Unit
	TUAN D NGUYEN	2614

SEARCHED

Class	Subclass	Date	Examiner
379	433.01,433.08,433.11,433.13	12/18/08	TN
455	90.3,575.1,575.3	12/18/08	TN

SEARCH NOTES

Search Notes	Date	Examiner
Inventor Search	12/18/08	TN

INTERFERENCE SEARCH

Class	Subclass	Date	Examiner

	/TUAN D NGUYEN/ Examiner.Art Unit 2614

INFORMATION DISCLOSURE CITATION FORM FOR PATENT APPLICATION (FORM PTO-1449)
(Substitute)

OIPE NOV 01 2007 PATENT & TRADEMARK OFFICE

Docket No.: 891.0013.U1(WO) Serial No.: 11/393, 510

Applicant(s): Claus H. Jorgensen

Filing Date: 03/29/2006 Group: 2875

U.S. PATENT DOCUMENTS

Examiner Initials	Document Number (Number-Kind Code)	Publication Date (MM-DD-YYYY)	Name of Patentee or Applicant	Class	Sub-class
/TN/	US-2005/0282593 A1	12-22-2005	Spence et al.	455	575.3
/TN/	US-2003/0199290 A1	10-23-2003	Viertola	455	575.1
	US-				
	US-				
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	US-				
	US-				
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	US-				
	US-				
	US-				

FOREIGN PATENT DOCUMENTS

Examiner Initials	Document Number (Country Code-Number-Kind Code)	Publication Date (MM-DD-YYYY)	Name Of Patentee of Applicant	Translation? Yes/No/n/a
/TN/	EP-1209880-A3	02-05-2003	Nokia Corporation	
	EP-1533983-A1	05-25-2005	LG Electronics Inc.	
	GB-2391740-A	02-11-2004	Matsushita Electrical Industrial Co. Ltd.	
	JP-2005-318064-A	11-10-2005	Toshiba Corp	Abstract
	- -			
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	- -			

OTHER DOCUMENTS (Author (Capitalize), Title, Date, Pages, Etc., if known)

Examiner's Signature: /Tuan Nguyen/ Date Considered: 12/19/2008

Initial if reference was considered, whether or not citation is in conformance with MPEP. Mark through citation if not considered. Include a copy of this citation form with your next correspondence to the Applicant(s).

INFORMATION DISCLOSURE CITATION FORM FOR PATENT APPLICATION (FORM PTO-1449) (Substitute)	Docket No.: 891.0013.U1(US) Serial No.: Applicant(s): Claus H. Jorgensen Filing Date: herewith Group:

U.S. PATENT DOCUMENTS

Examiner Initials	Document Number (Number-Kind Code)	Publication Date (MM-DD-YYYY)	Name of Patentee or Applicant	Class	Sub-class
/TN/	US-DES. 427,171	06-27-2000	Frye et al.	D14	138
	US-				
	US-				
	US-				
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FOREIGN PATENT DOCUMENTS

Examiner Initials	Document Number (Country Code-Number-Kind Code)	Publication Date (MM-DD-YYYY)	Name Of Patentee of Applicant	Translation? Yes/No/n/a
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OTHER DOCUMENTS (Author (Capitalize), Title, Date, Pages, Etc., if known)

Examiner's Signature: /Tuan Nguyen/ Date Considered: 12/19/2008

Initial if reference was considered, whether or not citation is in conformance with MPEP. Mark through citation if not considered. Include a copy of this citation form with your next correspondence to the Applicant(s).

OIPE IAP6 SEP 04 2007 PATENT & TRADEMARK OFFICE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re U.S. Patent Application of:

INVENTOR(S): C. Jorgensen

SERIAL NO.: 11/393,510 ART UNIT: 2875

FILED: March 29, 2006 EXAMINER: To Be Assigned

TITLE: Portable Electronic Device

CONFIRMATION NO.: 8456

ATTORNEY DOCKET NO.: 891.0013.U1(US)

MAIL STOP AMENDMENT
Commissioner For Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

(37 C.F.R. §1.97(d))

Dear Sir:

The following information is being disclosed to the U.S. Patent and Trademark Office as information that may be material to the examination of the above-identified patent application.

Applicants' Attorney is aware of the art listed on the enclosed Form PTO-1449. Copies of the non-U.S. patent art are enclosed with the Form PTO-1449 for the Examiner's use.

Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Statement. Enclosed is a copy of the International Search Report dated July 31, 2007 listing the cited references.

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The filing of this Statement is not to be construed as a representation that a search has been made regarding the claimed invention (37 C.F.R. §1.97(g)) or that no other possible material information exists. In addition, the filing of this Statement is not to be construed to be an admission that the information cited in the Statement is, or is considered to be, material to Patentability (37 C.F.R. §1.97(h)).

Respectfully submitted,

Mark F. Harrington
Reg. No. 31,686

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Customer No.: 29683

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail on the date shown below in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

August 31, 2007
Date

Name of Person Making Deposit

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INFORMATION DISCLOSURE CITATION FORM FOR PATENT APPLICATION (FORM PTO-1449) (Substitute)	Docket No.: 891.0013.U1(US) Serial No.: 11/393,510 Applicant(s): Claus H. Jorgensen Filing Date: 3/29/06 Group: 2875

U.S. PATENT DOCUMENTS

Examiner Initials	Document Number (Number-Kind Code)	Publication Date (MM-DD-YYYY)	Name of Patentee or Applicant	Class	Sub-class
/TN/	US-2004/0253508 A1	12-16-2004	Kohri et al.	429	100
/TN/	US-6,219,257 B1	04-17-2001	Arnold	361	814
	US-				
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OIPE IAP6 SEP 04 2007 PATENT & TRADEMARK OFFICE

FOREIGN PATENT DOCUMENTS

Examiner Initials	Document Number (Country Code-Number-Kind Code)	Publication Date (MM-DD-YYYY)	Name Of Patentee of Applicant	Translation? Yes/No/n/a
/TN/	EP-1496672-A1	01-12-2006	Matsushita Electric Industrial Co., Ltd.	
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	- -			
	- -			

OTHER DOCUMENTS (Author (Capitalize), Title, Date, Pages, Etc., if known)

Examiner's Signature: /Tuan Nguyen/ Date Considered: 12/19/2008

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 11/393,510 Confirmation No.: 8456
Applicant(s): Jorgensen
Filed: 03/29/2006
Art Unit: 2614
Examiner: Nguyen, Tuan Duc
Title: Portable Electronic Device

Attorney Docket No.: 891.0013.U1(US)
Customer No.: 29,683

Commissioner For Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Petition To Commission
(37 C.F.R. §1.181)

Sir:

This is a petition under 37 C.F.R. §1.181 to invoke the supervisory authority of the Commissioner.

Statement Of Facts

1. In an office action mailed 11/21/2008 the examiner issued a four-way species restriction. The four species were specified as follows:

   Species 1 - claims 1-6

   Species 2 - claims 7-14

   Species 3 - claims 15-20

   Species 4 - claims 21-24

2. In a Response filed on 12/2/2008 Applicant's Attorney elected species 1 (Claims 1-6), but with traverse.

3. In an office action mailed 12/29/2008, the examiner

PAGE 1/3 * RCVD AT 3/12/2009 10:54:10 AM [Eastern Daylight Time] * SVR:USPTO-EFXRF-5/41 * DNIS:2738300 * CSID:2039440245 * DURATION (mm-ss):01-00

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continued his restriction and made the restriction FINAL.

Point To Be Reviewed

Is the species restriction proper?

Action Requested

The Commissioner is requested to reverse the restriction requirement and direct the examiner to examine at least claims 1-16 and 18-24.

Discussion

As noted in MPEP 806.04(e), claims are definitions or descriptions of inventions. **Claims themselves are never species.** The scope of a claim may be limited to a single disclosed embodiment (i.e., a single species, and thus be designated a specific species claim). Alternatively, a claim may encompass two or more of the disclosed embodiments (and thus be designated a generic or genus claim). **Species always refer to the different embodiments of the invention.**

In this case, the examiner indicated that claims were species. This was in direct contradiction to MPEP 806.04(e) as noted above. In this case, the examiner has not given the applicant the opportunity to elect a single embodiment (single species). The examiner has only identified claims; not a species/embodiment to elect from.

In the pending application, Figs. 1-8 show a first embodiment (a first species). Figs. 9-13 show alternate embodiments (different species). As previously indicated to the examiner in the Response filed 12/2/2008, if a species restriction was necessary, applicant desired to elect the embodiment of Figs. 1-8. Claims 1-16 and 18-24 read on the embodiment shown in

PAGE 2/3 * RCVD AT 3/12/2009 10:54:10 AM [Eastern Daylight Time] * SVR:USPTO-EFXRF-5/41 * DNIS:2738300 * CSID:2039440245 * DURATION (mm-ss):01-00

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Figs. 1-8.

Note also MPEP 806.03, "Where the claims of an application define the same essential characteristics of a single disclosed embodiment of an invention, restriction therebetween should never be required. This is because the claims are not directed to distinct inventions; rather they are different definitions of the same disclosed subject matter, varying in breadth or scope of definition."

Summary

The examiner's restriction is in direct contradiction to MPEP 806.04(e). The Commissioner is requested to instruct the examiner to withdraw his restriction as it currently stands and either issue a new restriction or examine claims 1-16 and 18-24.

Respectfully submitted,

Mark F. Harrington

Mark F. Harrington (Reg. No. 31,686)

3/11/09

Date

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CERTIFICATION OF FACSIMILE TRANSMISSION

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3/12/2009

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Claire F. Main

Name of Person Making Deposit

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 11/393,510 Confirmation No.: 8456
Applicant(s): Jorgensen
Filed: 03/29/2006
Art Unit: 2614
Examiner: Nguyen, Tuan Duc
Title: Portable Electronic Device

Attorney Docket No.: 891.0013.U1(US)
Customer No.: 29,683

Commissioner For Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Amendment

Sir:

This is in response to the Office Action mailed 12/29/2008 in regard to the above-identified patent application. Please amend the Application as indicated on the following pages. Please charge deposit account 50-1924 the petition fee for a one month extension of time of $130.00. Please charge deposit account 50-1924 for any fee deficiency related to filing of this correspondence, or necessary for entry of this correspondence, including any petition fee for an extension of time.

Amendments to the **Claims** are reflected in the listing of claims which begin on page 2 of this paper.

Remarks begin on page 9 of this paper.

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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 portable electronic~~ An apparatus comprising:

a first section comprising electronics;

a second section movably connected to the first section by a hinge section, wherein the second section comprises a display, wherein the hinge section comprises a first hinge member pivotably connected to a second hinge member; and

wherein the second hinge member comprises an access entry ~~provided in the hinge section~~ adapted to allow insertion of an electrical device through the hinge section and into electrical connection with an electrical connector inside the first section.

2. (Currently amended) ~~A portable electronic~~ An apparatus as in claim 1 wherein the access entry comprises a movable door on the hinge section.

3. (Currently amended) ~~A portable electronic~~ An apparatus as in claim 2 wherein the access entry comprises a living hinge connecting the door to the rest of the hinge section.

4. (Currently amended) ~~A portable electronic~~ An apparatus as in claim 1 wherein the access entry is sized and shaped to

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allow insertion of a battery through the access entry, and the electrical connector is adapted to electrically connect to the battery.

5. (Currently amended) ~~A portable electronic~~ An apparatus as in claim 1 wherein the access entry is sized and shaped to allow insertion of an electronic module through the access entry, and the electrical connector is adapted to electrically connect to the electronic module.

6. (Currently amended) ~~A portable electronic~~ An apparatus as in claim 1 wherein the access entry is sized and shaped to at least partially support the ~~electronic~~ electrical device when the ~~electronic~~ electrical device is fully inserted into the portable electronic device.

7. (Withdrawn) A portable electronic device comprising:

a first section having a user input section and a first one-piece tubular housing member, wherein the first tubular housing member forms a majority of opposite exterior lateral sides of the first section;

a second section having a display and a second tubular housing member, wherein the second tubular housing member forms a majority of opposite exterior lateral sides of the second section; and

a connecting section movably connecting the second section with the first section,

wherein the first tubular housing member at least partially houses the user input section, and wherein the

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second tubular housing member at least partially houses the display.

8. (Withdrawn) A portable electronic device as in claim 7 wherein at least one of the first and second tubular housing members comprises a metal member.

9. (Withdrawn) A portable electronic device as in claim 8 wherein the first tubular housing members comprises an extruded member.

10. (Withdrawn) A portable electronic device as in claim 7 wherein the connecting section comprises a hinge with a first hinge member forming a cap to an open end of the first tubular housing member and a second hinge member forming a cap to an open end of the second tubular housing member.

11. (Withdrawn) A portable electronic device as in claim 7 wherein the first section comprises:

an engine section comprising a printed circuit board, a transceiver, a processor and a memory;

a battery located adjacent the engine section; and

the user input section comprises a keypad located above the engine section and the battery, wherein the user input section is located directly opposite the battery without a portion of the engine section therebetween.

12. (Withdrawn) A portable electronic device as in claim 7 wherein the connecting section comprises a hinge, wherein the hinge comprises a first hinge member connected to the first

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section and a second hinge member connected to the second section; and the portable electronic device further comprises a camera connected to the second section, wherein the camera is housed at an exterior side of the portable electronic device by a junction of a portion of the second hinge member and a portion of the second tubular housing member.

13. (Withdrawn) A portable electronic device as in claim 7 wherein the portable electronic device comprises a mobile telephone having a transceiver.

14. (Withdrawn) A portable electronic device as in claim 7 wherein the connecting section comprises an access entry provided in the connecting section adapted to allow insertion of an electrical device through the connecting section and into electrical connection with an electrical connector inside the first section.

15. (Withdrawn) A mobile telephone comprising:

an engine section comprising a printed circuit board, a transceiver, a processor and a memory;

a battery located adjacent the engine section; and

a user input section comprising a keypad located above the engine section and the battery, wherein the user input section is located directly opposite the battery without a portion of the engine section therebetween.

16. (Withdrawn) A mobile telephone as in claim 15 wherein the battery is located at a lateral side of the engine section.

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17. (Withdrawn) A mobile telephone as in claim 15 wherein the engine section is located at opposite sides of the battery.

18. (Withdrawn) A mobile telephone as in claim 15 wherein the mobile telephone comprises a first section comprising a first one-piece housing member having a general tubular shape and forming opposite exterior lateral sides of the first section, wherein the engine section, battery and user input section are housed in the first section.

19. (Withdrawn) A mobile telephone as in claim 18 wherein the mobile telephone comprises a second section pivotably connected to the first section, wherein the second section comprises a second one-piece housing member having a general tubular shape and forming opposite exterior lateral sides of the second section.

20. (Withdrawn) A mobile telephone as in claim 15 wherein the mobile telephone comprises a first section pivotably connected to a second section by a hinge, wherein the hinge comprises a first hinge member connected to the first section and a second hinge member connected to the second section; and the mobile telephone further comprises a camera connected to the second section, wherein the camera is housed at an exterior side of the portable electronic device by a junction of a portion of the second hinge member and a portion of a one-piece second tubular housing member of the second section, wherein the second tubular housing member forms opposite exterior lateral sides of the second section.

21. (Withdrawn) A portable electronic device comprising:

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a first section;

a second section movably connected to the first section by a hinge, wherein the hinge comprises a first hinge member connected to the first section and a second hinge member connected to the second section; and

a camera connected to the second section, wherein the camera is housed at an exterior side of the portable electronic device by a junction of a portion of the second hinge member and a portion of an exterior housing of the second section.

22. (Withdrawn) A portable electronic device as in claim 21 wherein the first section comprises:

a first tubular housing member, wherein the first tubular housing member forms a majority of opposite exterior lateral sides of the first section, and located at the first tubular section:

an engine section comprising a printed circuit board, a transceiver, a processor and a memory;

a battery located adjacent the engine section; and

a user input section comprising a keypad located directly above the engine section and the battery, wherein the user input section is located directly opposite the battery without a portion of the engine section therebetween.

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23. (Withdrawn) A portable electronic device as in claim 21 wherein the first section comprises a tubular metal housing member forming a majority of opposite exterior lateral sides of the first section, and wherein the second section comprises a tubular metal housing member forming a majority of opposite exterior lateral sides of the second section.

24. (Withdrawn) A portable electronic device as in claim 21 wherein the first and second sections each comprises tubular metal exterior housing members comprising extruded metal members.

PAGE 8/11 * RCVD AT 4/29/2009 10:38:49 AM [Eastern Daylight Time] * SVR:USPTO-EFXRF-5/11 * DNIS:2738300 * CSID:2039440245 * DURATION (mm-ss):01-50

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Appl. No.: 11/393,510
Reply to Office Action of: 12/29/2008

REMARKS

A Petition was filed on 3/12/2009 regarding the examiner's restriction. No decision has been received yet regarding that Petition. Thus, claims 7-24 have not been cancelled.

Claim 6 has been amended above to correct a minor typographical error and overcome the rejection under 35 U.S.C. 112, second paragraph.

Claims 1-6 were rejected under 35 U.S.C. 102(b) as being anticipated by EP 1496672 A1 (Satoh et al.). The examiner is requested to reconsider this rejection.

Claim 1 has been amended above to clarify applicant's claimed invention. Claim 1 claims that the hinge section comprises a first hinge member pivotably connected to a second hinge member, and that the second hinge member comprises the access entry. In Satoh et al. the lid 125 is not part of the hinge portion 124. As can be seen in Figs. 8(a)-8(d) of Satoh et al., the cover 141 of the lid 125 is connected by a linkage 139, etc. to move in direction B, then outward, and then upward. This linkage is not part of hinge portion 124. Claim 1, on the other hand, claims that the second hinge member comprises the access entry. There is no disclosure or suggestion in Satoh et al. that a hinge member of the hinge portion 124 comprises an access entry as recited in claim 1. The features of claim 1 are not disclosed or suggested in the cited art. Therefore, claim 1 is patentable and should be allowed.

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In regard to claim 3, nowhere in Satoh et al. is there a disclosure or suggestion of a "living hinge". A "living hinge" is a special type of hinge. This special type of hinge is not disclose or suggested in Satoh et al.

Though the claims dependent upon claim 1 contain their own allowable subject matter, these claims should at least be allowable due to their dependence from allowable claim 1. However, to expedite prosecution at this time, no further comment will be made.

For all of the foregoing reasons, it is respectfully submitted that the claims now present in the application are clearly novel and patentable over the prior art of record. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issue remain, the examiner is invited to call applicant's attorney at the telephone number indicated below.

Respectfully submitted,

Mark F. Harrington (Reg. No. 31,686) 4/29/09
Date

Customer No.: 29,683
Harrington & Smith, PC
4 Research Drive
Shelton, CT 06484-6212
203-925-9400

PAGE 10/11 * RCVD AT 4/29/2009 10:38:49 AM [Eastern Daylight Time] * SVR:USPTO-EFXRF-5/11 * DNIS:2738300 * CSID:2039440245 * DURATION (mm-ss):01-50

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Appl. No.: 11/393,510
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Elaine F. Main
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PTO/SB/06 (07-06)
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 11/393,510	Filing Date 03/29/2006	☐ 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

AMENDMENT	04/29/2009	(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))	* 24	Minus	** 24	= 0	X $ =		OR	X $52=	0
	Independent (37 CFR 1.16(h))	* 4	Minus	***4	= 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 ($)	ADDITIONAL FEE ($)		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:
/ANTHONY WILLIAMS/

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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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 11/393,510 Confirmation No.: 8456
Applicant(s): Jorgensen
Filed: 03/29/2006
Art Unit: 2614
Examiner: Nguyen, Tuan Duc
Title: Portable Electronic Device

Attorney Docket No.: 891.0013.U1(US)
Customer No.: 29,683

Commissioner For Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Status Inquiry Regarding Petition To Commission
(37 C.F.R. §1.181)

Sir:

A petition under 37 C.F.R. §1.181 to invoke the supervisory authority of the Commissioner was filed on 03/12/2009. Although the USPTO PAIR system indicates receipt of the Petition in the Image File Wrapper, the Petition is not indicated in the Transaction history.

The USPTO is requested to inform the undersigned of the status of the Petition.

Respectfully submitted,

Mark F. Harrington (Reg. No. 31,686) 6/25/09
Date

Customer No.: 29683
Harrington & Smith, PC
4 Research Drive
Shelton, CT 06484-6212
203-925-9400

PAGE 1/2 * RCVD AT 6/25/2009 10:30:26 AM [Eastern Daylight Time] * SVR:USPTO-EFXRF-6/40 * DNIS:2738300 * CSID:2039440245 * DURATION (mm-ss):00-46

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JUN 25 2009

CERTIFICATION OF FACSIMILE TRANSMISSION

I hereby certify that this correspondence is being facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

6/25/2009
Date

Claire F. Main
Name of Person Making Deposit

PAGE 2/2 * RCVD AT 6/25/2009 10:30:26 AM [Eastern Daylight Time] * SVR:USPTO-EFXRF-6/40 * DNIS:2738300 * CSID:2039440245 * DURATION (mm-ss):00-46

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/393,510	03/29/2006	Claus H. Jorgensen	891.00013.U1(US)	8456

29683 7590 08/12/2009

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EXAMINER	
NGUYEN, TUAN DUC	
ART UNIT	**PAPER NUMBER**
2614	

MAIL DATE	DELIVERY MODE
08/12/2009	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.

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TECHNOLOGY CENTER 2600

HARRINGTON & SMITH, PC
4 RESEARCH DRIVE, Suite 202
SHELTON CT 06484-6212

In re Application of:	:	
JORGENSEN, CLAUS H.	:	DECISION ON PETITION TO
Application Serial No.: 11/393,510	:	WITHDRAW RESTRICTION
Filed: March 29, 2006	:	REQUIREMENT UNDER
For: **PORTABLE ELECTRONIC DEVICE**	:	37 CFR 1.144

This is a decision on the petition filed March 12, 2009, under 37 CFR § 1.181 requesting withdrawal of the restriction requirement issued by the examiner on November 21, 2008; traversed by applicants in a response filed December 2, 2008; and maintained by the examiner in an Office action dated December 29, 2008. The petition is treated under 37 CFR § 1.144.

BACKGROUND

An election of species requirement was mailed on November 21, 2008 setting forth restriction between four species of invention. (It is noted that the examiner divided the species based upon claims rather then figures or disclosed embodiments.)

A response to the requirement was timely filed and received in the Patent and Trademark Office (PTO) on December 2, 2008, wherein applicants elected to prosecute the claims of Species 1 with traverse. Applicants argued in the response that in accordance with MPEP 806.04(e), claims themselves are definitions or descriptions of claims. Claims themselves are never species. The scope of a claim may be limited to a single disclosed embodiment (i.e., a single species, and thus be designated a specific species claim.) Alternatively, a claim may encompass two or more of the disclosed embodiments (and thus be designated a generic or genus claim.) Species always refer to the different embodiments of the invention. Applicant further argued that they were not given the opportunity to elect a single embodiment. The examiner has only identified claims; not a species/embodiment to elect from.

Petitioner seeks relief by filing the instant petition requesting that the restriction requirement be withdrawn or modified.

OPINION

Petitioner contends that the proposed species requirement of November 21, 2008 failed to properly set forth species as defined in MPEP 806.04(e). Further, the petition also notes MPEP 806.03, "Where the claims of an application define the same essential characteristics of a single disclosed embodiment of an invention, restriction therebetween should never be required, This is because the claims are not directed distinct inventions; rather they are different definitions of the same disclosed subject matter, varying in breadth or scope of definition."

A review of the record finds that the examiner, in making the election requirement first noted that the claims are directed to four species as illustrated in figures 1-13. However, the examiner did not divide the species based upon figures. This does not appear to be a proper species election requirement. It should be the applicant's responsibility to determine what claims correspond to the elected specie.

Additionally, the claims as divided by the examiner do not appear to be distinct inventions. For instance, compare claim 11 of specie 2 with claim 15 of specie 3. It seems that for at least these two groupings, there is difference of scope not rising to the level of distinctness, at least not distinct species. The same may be said of group 1 in comparison with group 2. As to group 4, having a camera incorporated into a mobile telephone or other portable electronic device, would not impart distinctness to this group in comparison with the other grouping.

CONCLUSION

For the above stated reasons, the petition to withdraw the restriction requirement is **GRANTED**.

The application file is being forwarded to the examiner for a new and appropriate action, in due course.

Mark Powell, Director
Technology Center 2600
Communications

PLUS Search Results for S/N 11393510, Searched Fri Aug 21 07:35:37 EDT 2009

The Patent Linguistics Utility System (PLUS) is a USPTO automated search system for U.S. Patents from 1971 to the present PLUS is a query-by-example search system which produces a list of patents that are most closely related linguistically to the application searched. This search was prepared by the staff of the Scientific and Technical Information Center, SIRA.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/393,510	03/29/2006	Claus H. Jorgensen	891.00013.U1(US)	8456

29683 7590 08/25/2009

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EXAMINER	
NGUYEN, TUAN DUC	
ART UNIT	**PAPER NUMBER**
2614	
MAIL DATE	**DELIVERY MODE**
08/25/2009	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.

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Office Action Summary	Application No.	Applicant(s)	
	11/393,510	JORGENSEN, CLAUS H.	
	Examiner	Art Unit	
	TUAN D. NGUYEN	2614	

-- 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 *29 April 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) *1-24* 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) *1-3 and 5-24* is/are rejected.

7)☒ Claim(s) *4* 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

Election/Restrictions

1. Petition filed on 3/12/2009 has been granted.

2. The restriction requirement Species, as set forth in the Office action mailed on 11/21/2008 is hereby withdraw.

Claims 1-24 are examined on the merit.

Claim Objections

3. Claims 1-14, 21-24 are objected to because of the following informalities: In the preamble, the limitations “an apparatus” and “a portable electronic device" are not descriptive. The examiner suggests to change them to “a portable communication apparatus" or "a portable communication device". Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 recites the limitation "the portable electronic device" in page 14 lines 4-5. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

6. 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.

7. Claims 1-3, 5 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by US 20010034242 (Takagi).

Regarding claim 1, Takagi discloses an apparatus (figs. 3-9) comprising: a first section comprising electronics (101); a second section (102) movably connected to the first section by a hinge section (103), wherein the second section comprises a display (152), wherein the hinge section comprises a first hinge member pivotably connected to a second hinge member; and wherein the second hinge meber comprises an access entry (fig. 7. item 180) adapted to allow insertion of an electrical device through the hinge section and into electrical connection with an electrical connector inside the first section (paragraphs 0149-0171).

Regarding claim 2, Takagi also shows wherein the access entry

comprises a movable door on the hinge section (see fig. 7).

Regarding claim 3, Takagi further shows herein the access entry comprises a living hinge connecting the door to the rest of the hinge section (see fig. 7).

Regarding claim 5, Takagi also shows wherein the access entry is sized and shaped to allow insertion of an electronic module through the access entry, and the electrical connector is adapted to electrically connect to the electronic module (see fig. 7).

Regarding claim 6, Takagi also shows wherein the access entry is sized and shaped to at least partially support the electrical device when the electrical device is fully inserted into the portable electronic device (see fig. 7).

8. Claims 7-14 are rejected under 35 U.S.C. 102(b) as being anticipated by the applicant's cited reference EP1209880 A2 (Hinge et al hereinafter Hinge).

Regarding claim 7, Hinge discloses a portable electronic device comprising: a first section (3) having a user input section and a first one-piece tubular housing member, wherein the first tubular housing member forms a majority of opposite exterior lateral sides of the first section; a second section (17) having a display (16) and a second tubular housing member, wherein the second tubular housing member forms a majority of opposite exterior lateral sides of the second section; and a connecting

section (14) movably connecting the second section with the first section, wherein the first tubular housing member at least partially houses the user input section, and wherein the second tubular housing member at least partially houses the display (fig. 1 paragraphs 0005, 0022-0024, 0027).

Regarding claim 8, Hinge also discloses wherein at least one of the first and second tubular housing members comprises a metal member (paragraphs 0024, 0035).

Regarding claim 9, Hinge also shows wherein the first tubular housing members comprises an extruded member (see fig. 1, paragraph 0023).

Regarding claim 10, Hinge shows wherein the connecting section comprises a hinge with a first hinge member forming a cap to an open end of the first tubular housing member and a second hinge member forming a cap to an open end of the second tubular housing member (see fig. 1).

Regarding claim 11, Hinge also discloses wherein the first section comprises: an engine section comprising a printed circuit board, a transceiver, a processor and a memory; a battery located adjacent the engine section; and the user input section comprises a keypad located above the engine section and the battery, wherein the user input section is located directly opposite the battery without a portion of the engine section therebetween (paragraph 0027).

Regarding claim 12, Hinge also shows wherein the connecting section comprises a hinge, wherein the hinge comprises a first hinge member

connected to the first section and a second hinge member connected to the second section; and the portable electronic device further comprises a camera connected to the second section, wherein the camera is housed at an exterior side of the portable electronic device by a junction of a portion of the second hinge member and a portion of the second tubular housing member (see fig. 1).

Regarding claim 13, Hinge also discloses wherein the portable electronic device comprises a mobile telephone having a transceiver (paragraphs 0001-0002, claim 17).

Regarding claim 14, Hinge also shows wherein the connecting section comprises an access entry provided in the connecting section adapted to allow insertion of an electrical device through the connecting section and into electrical connection with an electrical connector inside the first section (see fig. 1).

9. Claims 15-20 are rejected under 35 U.S.C. 102(b) as being anticipated by the applicant's cited reference US 2005/0282593 (Spence et al hereinafter Spence).

Regarding claim 15, Spence discloses a mobile telephone comprising: an engine section comprising a printed circuit board, a transceiver, a processor and a memory; a battery located adjacent the engine section;

and a user input section comprising a keypad located above the engine section and the battery, wherein the user input section is located directly opposite the battery without a portion of the engine section therebetween (figs. 3, 4, 6, 7 paragraphs 16, 20-21, 25, 28).

Regarding claim 16, Spence also discloses wherein the battery is located at a lateral side of the engine section (paragraph 20).

Regarding claim 17, Spence also discloses wherein the engine section is located at opposite sides of the battery (paragraph 20).

Regarding claim 18, Spence also shows wherein the mobile telephone comprises a first section comprising a first one-piece housing member having a general tubular shape and forming opposite exterior lateral sides of the first section, wherein the engine section, battery and user input section are housed in the first section (see figs 3, 4).

Regarding claim 19, Spence shows wherein the mobile telephone comprises a second section pivotably connected to the first section, wherein the second section comprises a second one-piece housing member having a general tubular shape and forming opposite exterior lateral sides of the second section (see figs 1, 3 and 4).

Regarding claim 20, Spence also shows wherein the mobile telephone comprises a first section pivotably connected to a second section by a hinge, wherein the hinge comprises a first hinge member connected to the first section and a second hinge member connected to the second section;

and the mobile telephone further comprises a camera connected to the second section, wherein the camera is housed at an exterior side of the portable electronic device by a junction of a portion of the second hinge member and a portion of a one-piece second tubular housing member of the second section, wherein the second tubular housing member forms opposite exterior lateral sides of the second section (figs 3, 4, 6 and 7, paragraphs 16, 20-21, 25, 28).

10. Claims 15-16 are rejected under 35 U.S.C. 102(b) as being anticipated by the applicant's cited reference GB 2391740 (Kolchl et al hereinafter Kolchl).

Regarding claim 15, Kolchl discloses a mobile telephone comprising: an engine section comprising a printed circuit board, a transceiver, a processor and a memory; a battery located adjacent the engine section; and a user input section comprising a keypad located above the engine section and the battery, wherein the user input section is located directly opposite the battery without a portion of the engine section therebetween (figs 3, 5 claims 1-2, abstract).

Regarding claim 16, Kolchl also shows wherein the battery is located at a lateral side of the engine section (see figs 3 and 5).

11. Claims 21-22 are rejected under 35 U.S.C. 102(b) as being anticipated by the applicant's cited reference JP 2005318064 (Yamazaki).

Regarding claim 21, Yamzaki discloses a portable electronic device comprising: a first section; a second section movably connected to the first section by a hinge, wherein the hinge comprises a first hinge member connected to the first section and a second hinge member connected to the second section; and a camera connected to the second section, wherein the camera is housed at an exterior side of the portable electronic device by a junction of a portion of the second hinge member and a portion of an exterior housing of the second section (figs 1, 4, abstract).

Regarding claim 22, Yamzaki also discloses wherein the first section comprises: a first tubular housing member, wherein the first tubular housing member forms a majority of opposite exterior lateral sides of the first section, and located at the first tubular section: an engine section comprising a printed circuit board, a transceiver, a processor and a memory; a battery located adjacent the engine section; and a user input section comprising a keypad located directly above the engine section and the battery, wherein the user input section is located directly opposite the battery without a portion of the engine section therebetween (figs 1, 4,

abstract).

Claim Rejections - 35 USC § 103

12. 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.

13. Claims 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2005318064 (Yamazaki) in view of EP1209880 A2 (Hinge et al hereinafter Hinge).

Regarding claims 23 and 24, Yamzaki does not disclose a tubular metal housing.

However, a tubular metal housing is well known in the art. For instance, Hinge teaches a tubular metal housing (0024).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use this well known tubular metal housing by Hinge.

Allowable Subject Matter

14. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TUAN D. NGUYEN whose telephone number is (571)272-8163. The examiner can normally be reached on M-F 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curt Kuntz can be reached on (571) 272-7499. 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.

TDN
8/21/09
/Tuan D. Nguyen/
Primary Examiner, Art Unit 2614

Notice of References Cited	Application/Control No. 11/393,510	Applicant(s)/Patent Under Reexamination JORGENSEN, CLAUS H.	
	Examiner TUAN D. NGUYEN	Art Unit 2614	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2001/0034242	10-2001	Takagi, Hisamitsu	455/550
	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
	11393510	JORGENSEN, CLAUS H.
	Examiner	Art Unit
	TUAN D NGUYEN	2614

✓	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	12/19/2008	08/21/2009							
	1	✓	✓							
	2	✓	✓							
	3	✓	✓							
	4	✓	O							
	5	✓	✓							
	6	✓	✓							
	7	N	✓							
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	17	N	✓							
	18	N	✓							
	19	N	✓							
	20	N	✓							
	21	N	✓							
	22	N	✓							
	23	N	✓							
	24	N	✓							

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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11393510	JORGENSEN, CLAUS H.
	Examiner	Art Unit
	TUAN D NGUYEN	2614

SEARCHED

Class	Subclass	Date	Examiner
379	433.01,433.08,433.11,433.13	12/18/08	TN
455	90.3,575.1,575.3	12/18/08	TN
	Updated same as above	8/19/09	TN

SEARCH NOTES

Search Notes	Date	Examiner
Inventor Search	12/18/08	TN
PLUS search	8/21/09	TN

INTERFERENCE SEARCH

Class	Subclass	Date	Examiner

	/TUAN D NGUYEN/ Primary Examiner.Art Unit 2614

OIPE IAP20
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 11/393,510 Confirmation No.: 8456
Applicant(s): Jorgensen
Filed: 03/29/2006
Art Unit: 2614
Examiner: Nguyen, Tuan Duc
Title: Portable Electronic Device

Attorney Docket No.: 891.0013.U1(US)
Customer No.: 29,683

Commissioner For Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Amendment

Sir:

This is in response to the Office Action mailed 08/25/2009 in regard to the above-identified patent application. Please amend the Application as indicated on the following pages. Please charge deposit account 50-1924 for any fee deficiency related to filing of this correspondence, or necessary for entry of this correspondence, including any petition fee for an extension of time.

Amendments to the Claims are reflected in the listing of claims which begin on page 2 of this paper.

Remarks begin on page 8 of this paper.

Amendments to the Claims:

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

Please cancel claims 15-20 without prejudice.

Listing of Claims:

1. (Currently amended) An apparatus comprising:

a first section comprising electronics;

a second section movably connected to the first section by a hinge section, wherein the second section comprises a display, wherein the hinge section comprises a first hinge member pivotably connected to a second hinge member; and

wherein the second hinge member comprises an access entry adapted to allow insertion of an electrical device through the ~~hinge section~~ access entry and into electrical connection with an electrical connector inside the first section.

2. (Previously presented) An apparatus as in claim 1 wherein the access entry comprises a movable door on the hinge section.

3. (Previously presented) An apparatus as in claim 2 wherein the access entry comprises a living hinge connecting the door to the rest of the hinge section.

4. (Currently amended) An apparatus ~~as in claim 1~~ comprising:

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a first section comprising electronics;

a second section movably connected to the first section by a hinge section, wherein the second section comprises a display, wherein the hinge section comprises a first hinge member pivotably connected to a second hinge member; and

wherein the second hinge member comprises an access entry adapted to allow insertion of an electrical device through the hinge section and into electrical connection with an electrical connector inside the first section,

wherein the access entry is sized and shaped to allow insertion of a battery through the access entry, and the electrical connector is adapted to electrically connect to the battery.

5. (Currently amended) An apparatus as in claim 1 wherein the access entry is sized and shaped to allow insertion of an electronic memory module through the access entry, and the electrical connector is adapted to electrically connect to the electronic module.

6. (Currently amended) An apparatus as in claim 1 wherein the access entry is sized and shaped to at least partially directly physically support the electrical device when the electrical device is fully inserted into the ~~portable electronic device~~ apparatus.

7. (Currently amended) A portable electronic device comprising:

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a first section having a user input section and a first one-piece tubular housing member, wherein the first tubular housing member forms a majority of opposite exterior lateral sides of the first section;

a second section having a display and a second tubular housing member, wherein the second tubular housing member forms a majority of opposite exterior lateral sides of the second section; and

a connecting section movably connecting the second section with the first section,

wherein the first tubular housing member at least partially houses the user input section, and wherein the second tubular housing member at least partially houses the display, and wherein the first and second sections are movably connected to each other between an open configuration and a closed configuration.

8. (Original) A portable electronic device as in claim 7 wherein at least one of the first and second tubular housing members comprises a metal member.

9. (Original) A portable electronic device as in claim 8 wherein the first tubular housing members comprises an extruded member.

10. (Original) A portable electronic device as in claim 7 wherein the connecting section comprises a hinge with a first hinge member forming a cap to an open end of the first tubular housing member and a second hinge member forming a cap to an open end of the second tubular housing member.

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11. (Original) A portable electronic device as in claim 7 wherein the first section comprises:

an engine section comprising a printed circuit board, a transceiver, a processor and a memory;

a battery located adjacent the engine section; and

the user input section comprises a keypad located above the engine section and the battery, wherein the user input section is located directly opposite the battery without a portion of the engine section therebetween.

12. (Original) A portable electronic device as in claim 7 wherein the connecting section comprises a hinge, wherein the hinge comprises a first hinge member connected to the first section and a second hinge member connected to the second section; and the portable electronic device further comprises a camera connected to the second section, wherein the camera is housed at an exterior side of the portable electronic device by a junction of a portion of the second hinge member and a portion of the second tubular housing member.

13. (Original) A portable electronic device as in claim 7 wherein the portable electronic device comprises a mobile telephone having a transceiver.

14. (Original) A portable electronic device as in claim 7 wherein the connecting section comprises an access entry provided in the connecting section adapted to allow insertion of an electrical device through the connecting section and into electrical connection with an electrical connector inside the first section.

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15-20. (Cancelled)

21. (Currently amended) A portable electronic device comprising:

a first section;

a second section movably connected to the first section by a hinge, wherein the hinge comprises a first hinge member connected to the first section and a second hinge member connected to the second section; and

a camera connected to the second section, wherein the camera is housed at ~~an~~ a first exterior side of the portable electronic device by a junction of a portion of the second hinge member located at the first exterior side and a portion of an exterior housing of the second section located at the first exterior side.

22. (Original) A portable electronic device as in claim 21 wherein the first section comprises:

a first tubular housing member, wherein the first tubular housing member forms a majority of opposite exterior lateral sides of the first section, and located at the first tubular section:

an engine section comprising a printed circuit board, a transceiver, a processor and a memory;

a battery located adjacent the engine section; and

a user input section comprising a keypad located directly above the engine section and the battery, wherein the

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user input section is located directly opposite the battery without a portion of the engine section therebetween.

23. (Original) A portable electronic device as in claim 21 wherein the first section comprises a tubular metal housing member forming a majority of opposite exterior lateral sides of the first section, and wherein the second section comprises a tubular metal housing member forming a majority of opposite exterior lateral sides of the second section.

24. (Original) A portable electronic device as in claim 21 wherein the first and second sections each comprises tubular metal exterior housing members comprising extruded metal members.

25. (New) An apparatus as in claim 1 wherein the access entry comprises a pivotable door on the hinge section.

26. (New) An apparatus as in claim 1 wherein the access entry is adapted to allow modular insertion and removal of the electrical device through the access entry.

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REMARKS

In regard to section 3 of the office action, the examiner is requested to withdraw his objection to claims 1-14 and 21-24. The examiner is directed to MPEP 2173.04. Breadth of a claim is not to be equated with indefiniteness. In re Miller, 441 F.2d 689, 169 USPQ 597 (CCPA 1971). If the scope of the subject matter embraced by the claims is clear, and if applicants have not otherwise indicated that they intend the invention to be of a scope different from that defined in the claims, then the claims comply with 35 U.S.C. 112, second paragraph. There appears to be no reason why the preamble language "an apparatus" and "a portable electronic device" cannot be used in the claims.

Claim 6 has been amended above to overcome the rejection under 35 U.S.C. 112, second paragraph.

Claim 4 has been converted from dependent form into independent form. This change in form does not narrow or limit the scope of the claim. The independent claim which claim 4 was formerly dependent upon has not been cancelled. Therefore, the full scope of the doctrine of equivalents should apply to claim 4 as if it was originally presented in independent form when the application was filed. In view of paragraph 14 of the office action, claim 4 should be in condition for allowance.

Claims 1-3, 5 and 6 were rejected under 35 U.S.C. 102(b) as being anticipated by Takagi (US 2001/0034242). Claims 7-14 were rejected under 35 U.S.C. 102(b) as being anticipated by Hinge et al. (EP 1209880 A2). Claims 15-20 were rejected

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under 35 U.S.C. 102(b) as being anticipated by Spence et al. (US 2005/0282593). Claims 15-16 were rejected under 35 U.S.C. 102(b) as being anticipated by Kolchi et al. (GB 2391740). Claims 21-22 were rejected under 35 U.S.C. 102(b) as being anticipated by Yamazaki (JP 2005318064). Claims 23-24 were rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki (JP 2005318064) in view of Hinge et al. (EP 1209880 A2). The examiner is requested to reconsider these rejections.

Attached, for the examiner's information, is a machine translation of the detailed description portion of Yamazaki (JP 2005318064) obtained from the Japanese Patent Office web site.

In regard to independent claim 1, Figure 7 of Tagaki illustrates a cover (180, 181) for a hinge section, the Examiner has interpreted this as being an access point. A flexible cable is referred to (154); the specification stating that a loop which forms part of the flexible cable is housed in the hinge.

Claim 1 has been amended above to claim that the second hinge member comprises an access entry adapted to allow insertion of an electrical device through the access entry and into electrical connection with an electrical connector inside the first section. Thus, the amended claim language helps to further define how the insertion is performed (e.g. through the hinge body) as opposed to merely occupying space within the hinge body as Tagaki outlines.

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Amended claim 1 clearly highlights that the electrical device being inserted is through the access entry. This differs from Tagaki where the flexible cable is placed in position by using the entry point 180, 181, but the cable remains a part of the device and is not inserted through the access point. Basis for this amendment can be found for example in paragraph 0031. Claims 25 and 26 have been added above to further claim the features recited therein. The features of claim 1 are not disclosed or suggested in the cited art. Therefore, claim 1 is patentable and should be allowed.

Though the claims dependent upon claim 1 contain their own allowable subject matter, these claims should at least be allowable due to their dependence from allowable claim 1. However, to expedite prosecution at this time, no further comment will be made.

Independent claim 7 has been amended above to claim that the first and second sections are movably connected to each other between an open configuration and a closed configuration. For example, Figs. 1 and 3 show an open configuration, and Figs. 2 and 5 show a closed configuration. Hinge et al. does not disclose or suggest first and second sections movably connected to each other between an open configuration and a closed configuration. The product described in Hinge et al. is clearly different from applicant's invention as claimed in claim 7. Claim 7 now clearly highlights that the claimed invention is a two bodied device where the two body parts (sections) are moveable while the device is operative (e.g. clamshell, slide). The features of claim 7 are not disclosed

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or suggested in the cited art. Therefore, claim 7 is patentable and should be allowed.

Though the claims dependent upon claim 7 contain their own allowable subject matter, these claims should at least be allowable due to their dependence from allowable claim 7. However, to expedite prosecution at this time, no further comment will be made.

Independent claim 21 now claims that a camera connected to the second section, wherein the camera is housed at a first exterior side of the portable electronic device by a junction of a portion of the second hinge member located at the first exterior side and a portion of an exterior housing of the second section located at the first exterior side. From a review of the English language translation of Yamazaki, it is clear that the camera part 12 is not housed by a junction of 1.) a portion of the second hinge member located at a first exterior side of the portable electronic device and 2.) a portion of an exterior housing of the second section located at the first exterior side of the portable electronic device. The features of claim 21 are not disclosed or suggested in Yamazaki. Therefore, claim 21 is patentable and should be allowed.

Though the claims dependent upon claim 21 contain their own allowable subject matter, these claims should at least be allowable due to their dependence from allowable claim 21. However, to expedite prosecution at this time, no further comment will be made.

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For all of the foregoing reasons, it is respectfully submitted that the claims now present in the application are clearly novel and patentable over the prior art of record. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issue remain, the examiner is invited to call applicant's attorney at the telephone number indicated below.

Respectfully submitted,

Mark F. Harrington (Reg. No. 31,686) 11/9/09
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2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[Field of the Invention]
[0001]
In this invention, it is related with the structure of electronic equipment.
Therefore, especially, upper casing and a lower casing are in the electronic equipment engaged with the hinge enabling free rotation, and are related with the electronic equipment which can utilize the hollow part of the hinge and hinge neighborhood effectively.

[Background of the Invention]
[0002]
an upper part unit and a bottom unit -- opening and closing -- there is a foldaway Personal Digital Assistant which has a movable joint member combined enabling free and free rotation (for example, refer to patent documents 1.). If it is in the foldaway Personal Digital Assistant of these patent documents 1, the engagement part which the bottom part of the 1st rotating shaft of a movable joint member can rotate freely is constituted. This foldaway Personal Digital Assistant has a camera part. There is a description that a camera part is fixed to the inside of the 1st rotating shaft, and this camera part can also be used as the 1st rotating shaft with the composition formed in one at the 1st rotating shaft although fixed to the cylindrical case of a different body.
[0003]
a screen part and a body part -- folding -- there is an electronic camera apparatus which has the hinge region, circular rotary part, and circular holding part which are combined enabling free and free rotation (for example, refer to patent documents 2.). If it is in the electronic camera apparatus of these patent documents 2, the engagement part which can be freely rotated by the circular rotary part and a circular holding part is constituted. And there is a description that an image pick-up part is provided in a circular rotary part, and can secure distance with a back focus, i.e., a taking lens, and CCD.
[Patent documents 1] JP,2003-298698,A (the 4-5th page, drawing 3, drawing 4)
[Patent documents 2] JP,2003-319223,A (the 2-5th page, drawing 1 -3)
[Description of the Invention]
[Problem(s) to be Solved by the Invention]
[0004]
If it is in the conventional patent documents 1, even if it is able to use inner space by

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fixing a camera part to the inside of the 1st rotating shaft directly, it is only a space between the crowning of the 1st rotating shaft, and a pars basilaris ossis occipitalis. The distance between the crowning of this 1st rotating shaft and a pars basilaris ossis occipitalis is equivalent to the thickness of abbreviation and an upper part unit. Therefore, a space is not really [big] which even the bottom unit below a pars basilaris ossis occipitalis included securable. Therefore, there was a problem that the camera which needs optical axis distance like a zoom camera or a telephotographic camera for the space between the crowning of the 1st rotating shaft and a pars basilaris ossis occipitalis could not be carried. When it dares to carry, the problem of being the structure where a camera jumps out greatly is on the outside of an upper part unit.

[0005]

If it is in the conventional patent documents 2, the back focus for the thickness of a circular rotary part cannot secure the back focus included to a part for the thickness of a circular holding part, even if securable. Therefore, in a part for the thickness of a circular rotary part, there was a problem that the camera which needs optical axis distance like a zoom camera or a telephotographic camera could not be carried. When it dares to carry, the problem of being the structure where a camera jumps out greatly is on the outside of a circular rotary part.

[0006]

By having made this invention in order to solve the above-mentioned problem, and upper casing and a lower casing being in the electronic equipment combined by the hinge enabling free rotation, and utilizing effectively the hollow part of a hinge region, and the hollow part of a lower casing, It aims at providing the electronic equipment which can carry the parts of the camera which needs optical axis distance like a zoom camera or a telephotographic camera for the thickness direction of electronic equipment, and others.

[Means for Solving the Problem]

[0007]

To achieve the above objects, electronic equipment of this invention, A rotary part in which it is in electronic equipment which has the 1st case, the 1st case concerned and the 2nd case that faces, and a hinge engaged for both the cases concerned centering on the axis of rotation of an abbreviated perpendicular direction to the relative side concerned enabling free rotation, and said hinge holds said 1st case, Have a holder part holding said 2nd case, and it has a rotating-engagement-of-clutch part engaged in rotary part concerned and the holder part concerned on said axis of rotation, structure on said axis of rotation of said hinge, said 1st case, and said 2nd case -- a rotating-engagement-of-clutch part of said hinge -- an outside end of said 1st case -- abbreviated -- it arranges in the same position, between a rotating-engagement-of-clutch part of said hinge and outside ends of said 2nd case is made into a hollow part, and parts are carried in the hollow part concerned

[Effect of the Invention]

[0008]

According to this invention, upper casing and a lower casing are in the electronic equipment combined by the hinge enabling free rotation, and the space of a hinge region can be utilized effectively. Thereby, it becomes possible to carry the parts of the camera which needs optical axis distance like a zoom camera or a telephotographic camera, and others, without jumping out outside the thickness of electronic equipment in the thickness

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direction of electronic equipment.
[Best Mode of Carrying Out the Invention]
[0009]
Hereafter, the example of this invention is described with reference to drawings.
Drawing 1 is a figure explaining the composition of the portable telephone concerning each example of this invention, and is an outline view showing the transverse plane of a portable telephone, the side, and the upper surface. A side view is a figure which looked at the front view from the direction of arrow A. A plan is a figure which looked at the front view from the direction of arrow B, and shows the state where the case was closed. The portable telephone 100 is the upper casing 1 (the 1st case.). An upper part unit, the lower casing 2 (the 2nd case.) It has the main mechanisms of the hinge region 3 grade engaged for bottom units and these cases enabling free opening and closing and rotation.
[0010]
The hinge region 3 is provided with the rotary part 4, the holder part 5, and the opens part 6. the relative side 7 which faces when the rotary part 4 and the holder part 5 close the upper casing 1 and the lower casing 2 -- abbreviated -- it rotates mutually centering on the vertical axis of rotation 8, enabling free rotation. The opens part 6 is attached to the rotary part 4 as a part of rotary part 4, enabling free opening and closing, and is opened and closed focusing on the opening-and-closing axis 9.
The upper casing 1 is attached to the opens part 6 which is a part of rotary part 4, and the lower casing 2 is attached to the holder part 5. Thereby, the upper casing 1 and the lower casing 2 are engaged mutually, enabling opening and closing and free rotation.
[0011]
The indicator 10 is carried in the upper casing 1. The key 11 for operation is carried in the lower casing 2. The upper casing 1 is the shape cut and lacked, as the hinge region 3 is avoided, but this is the structure for performing a switching action. Only in the case of the rotational operation which does not perform a switching action, it is good also as a structure where the hinge region 3 is contained in the inside of the upper casing 1 without providing notching.
the thickness 100 which the camera part 12 carried the lens 13 and the CCD14 grade, set the optic axis 15 in the axis-of-rotation 8 direction, and set the upper casing 1 and the lower casing 2, i.e., a portable telephone, -- abbreviated -- it is the length equivalent to the same thickness, and is carried ranging over the rotary part 4 and the lower casing 2. The axis of rotation 8, the opening-and-closing axis 9, and the optic axis 15 are geometric concepts, and are not corporeal things which constitute this invention (below, suppose that it is the same).
[Work example 1]
[0012]
It is the detailed sectional view after the exploded perspective view before drawing 2 - drawing 4 show Example 1 which applied this invention to the portable telephone and drawing 2 assembles a hinge region and a camera part, and drawing 3 assembled the sectional view of the rotating-engagement-of-clutch part of a hinge region and drawing 4 assembles a case, a hinge region, and a camera part.
Drawing 2 is the exploded perspective view before assembling a hinge region and a camera part.
The exploded perspective view of the hinge region in the state where flip vertical of the

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plan of drawing 1 was carried out, and a camera part is shown.
The number same about the same composition as drawing 1 is attached, and a concrete structure is explained.
The hinge region 3 comprises the rotary part 4, the holder part 5, and opens part 6 grade.
The rotary part 4 is approximately cylindrical, equips a crowning with the shaft hole 41 for rotating engagement of clutch, and is provided with the hollow part 42 wide opened toward the lower casing 2-way inside. The holder part 5 is approximate box-shape.
A crowning is equipped with the shaft projection 51 for rotating engagement of clutch, it has the hollow part 52 wide opened toward the lower casing 2-way inside, and the lower part is equipped with the open end part 53 and the lower casing mounting hole 54 for lower casing 2 attachment.
Although there is a hole also in the shaft projection 51, this is an object for wiring of the signal wire between the upper casing 1 and the lower casing 2.
Further, it is attached to the rotary part 4 so that the opens part 6 may move focusing on the opening-and-closing axis 9 by the opening-and-closing engagement part 61, enabling free opening and closing. The end of the opens part 6 is equipped with the upper casing mounting hole 62 for upper casing 1 attachment.
[0013]
Engagement of the rotary part 4 and the holder part 5 inserts the holder part 5 in the hollow part 42 of the rotary part 4, further, makes the shaft projection 51 engage with the shaft hole 41, and, as for the rotary part 4 and the holder part 5, moves, enabling free rotation centering on the axis of rotation 8.
In the direction of the optic axis 15, abbreviated ******** and an abbreviated upper half are settled in the hollow part 52 of the holder part 5 in the direction of the axis of rotation 8 of the rotary part 4, and, in an abbreviated lower half, the camera part 12 is settled in the hollow part of the lower casing 2 (drawing 1).
[0014]
Drawing 3 is a sectional view of the rotating-engagement-of-clutch part by the shaft hole 41 and the shaft projection 51 which were shown in drawing 2. The shaft projection 51 is approximately cylindrical shape, and inserts this in the hole of the rotary part 4 and the holder part 5.
Then, an eyelet is performed so that it may not escape.
Thereby, the rotary part 4 and the holder part 5 constitute the rotating-engagement-of-clutch part 31 engaged enabling free rotation. The rotating-engagement-of-clutch part 31 should just be shape engaged enabling not only this shape but free rotation.
Subsequent explanation simplifies and indicates the structure of a rotating-engagement-of-clutch part.
[0015]
Next, the detailed structure after assembling a hinge region and a camera part is explained.
Drawing 4 is a detailed sectional view after the assembly which shows the physical relationship of the case of a portable telephone, a hinge region, and a camera part.
It is the section seen from the direction of arrow C of drawing 2.
It is also the sectional view seen where flip vertical of the plan of drawing 1 is carried out. In order to explain simply, illustrating by hatching for sectional views is taken only as the rotary part 4 and the holder part 5.

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Attachment with the rotary part 4 of the hinge region 3 and the holder part 5 inserts the shaft projection 51 in the shaft hole 41, and constitutes the rotating-engagement-of-clutch part 31. And the rotary part 4 and the holder part 5 move centering on the axis of rotation 8 by the rotating-engagement-of-clutch part 31, enabling free rotation.
The upper casing 1 is attached to the upper casing mounting hole 62 of the opens part 6 which is a part of rotary part 4. The lower casing 2 is attached to the lower casing mounting hole 54 of the holder part 5. And where the upper casing 1 is closed, it faces each other in respect of [7] relativity, and between the outside end 16 of the upper casing 1 and the outside end 17 of the lower casing 2 serves as abbreviated thickness of the cellular phone 100.
[0016]
the physical relationship of the axis-of-rotation 8 direction of the upper casing 1, the lower casing 2, and the hinge region 3 -- the rotating-engagement-of-clutch part 31 of the hinge region 3 -- the outside end 16 of the upper casing 1 -- abbreviated -- it is arranged so that it may become the same physical relationship. Although the open end part 53 of the holder part 5 is attached near [relative side 7] the lower casing 2, it may lengthen the open end part 53 to the internal direction of the lower casing 2 further, and may attach it to the internal of the lower casing 2.
Since the upper casing 1 is the shape cut and lacked as the hinge region 3 is avoided, in order to perform a switching action, a part of opens part 6 is contained in the inside of the upper casing 1, but the rotary part 4 and the holder part 5 are not contained in the inside of the upper casing 1.
[0017]
Only in the case of the rotational operation which does not perform a switching action, it becomes unnecessary [the opens part 6], and the upper casing 1 is directly attached to the rotary part 4. Since notching which avoids the hinge region 3 becomes unnecessary, the upper casing 1 is good also as a structure which contains most hinge regions 3 in the inside of the upper casing 1. this case -- the physical relationship of the axis-of-rotation 8 direction of the upper casing 1, the lower casing 2, and the hinge region 3 -- the rotating-engagement-of-clutch part 31 of the hinge region 3 -- the outside end 16 of the upper casing 1 -- abbreviated -- it is attached so that it may become the same physical relationship.
[0018]
The position of the upper casing mounting hole 62 does not need to be the outside end 16 neighborhood of the upper casing 1. The subject of the upper casing 1 which attaches the upper casing mounting hole 62 may be an LCD holder, the circuit board, etc. which upper casing 1 inside does not illustrate. in short -- the rotating-engagement-of-clutch part 31 of the hinge region 3 -- the outside end 16 of the upper casing 1 -- abbreviated -- if it is attached so that it may become the same physical relationship, it will not matter anywhere.
[0019]
The lower casing 2 forms the hollow part 21 in the axis-of-rotation 8 direction.
since it is in the physical relationship of such axis-of-rotation 8 direction, the big hollow part with which the hollow part 42, the hollow part 52, and the hollow part 21 were united can be constituted from the rotating-engagement-of-clutch part 31 towards the outside end of the lower casing 2 -- the thickness of the portable telephone 100 --

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abbreviated -- the hollow part of the same length can be obtained.
[0020]
The camera part 12 is carried in this big united hollow part. The camera part 12 carries lens 13 and CCD14.
A long distance between this lens 13 and CCD14 can be taken.
Therefore, it can carry, without jumping out of a zoom camera, a telephotographic camera, etc. rather than the thickness of the portable telephone 100.
[0021]
Although the size of the longitudinal direction in drawing 4 of the camera part 12 needs to be settled in the hollow part 52 of the holder part 5, since the depth direction of the holder part 5 is open, the size of the depth direction of drawing 4 should just be a size settled in the hollow part 42 of the rotary part 4.
When it carries the lens 13 and the usual camera whose distance between CCD14 may be short, thickness of a portable telephone can be made thin.
[0022]
In the portable telephone shown in drawing 1, a user takes a photograph, turning the lens 13 side of the camera part 12 to a photographic subject, and checking the monitor display by the indicator 10, when performing camera photographing. Therefore, as for the optical axis direction of the camera part 12, it is desirable that it is a thickness direction of a portable telephone. Even if it is in this physical relationship, it becomes possible to carry a zoom camera, a telephotographic camera, etc. Especially the effect that a zoom camera with an optic axis, a telephotographic camera, etc. can be carried in the thickness direction of a portable telephone since there are no opening and closing hinges and the field of the indicator 4 will always turn to the transverse-plane side only in the case of a rotary hinge is large.
[Work example 2]
[0023]
Drawing 5 is a detailed sectional view after the assembly which shows Example 2 which applied this invention to the portable telephone, and shows the physical relationship of a case, a hinge region, and a camera part. The same number is given to the same part as the sectional view (drawing 4) of Example 1, and the composition of Example 2 is explained to it centering on a different place.
The holder part 105 of the hinge region 103 lengthens axis-of-rotation 8 lay length, and lengthens the open end part 53 up to near [outside end 17] the lower casing 2. And it attaches to the lower casing 102 in the lower casing mounting hole 54. the rotating-engagement-of-clutch part 31 of the hinge region 103 -- the sectional view (drawing 4) of Example 1 -- the same -- the outside end 16 of the upper casing 1 -- abbreviated -- it is attached so that it may become the same physical relationship.
The position of the upper casing mounting hole 62 does not need to be the outside end 16 neighborhood of the upper casing 1. The subject of the upper casing 1 which attaches the upper casing mounting hole 62 may be an LCD holder, the circuit board, etc. which upper casing 1 inside does not illustrate. in short -- the rotating-engagement-of-clutch part 31 of the hinge region 103 -- the outside end 16 of the upper casing 1 -- abbreviated -- if it is attached so that it may become the same physical relationship, it will not matter anywhere.
[0024]

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thus, the hollow part 52 of holder part 105 the very thing of the hinge region 103 -- the thickness of the portable telephone 100 -- abbreviated -- the hollow part of the same length can be obtained. The camera part 12 is carried in this hollow part. The camera part 12 carries lens 13 and CCD14.
A long distance between this lens 13 and CCD14 can be taken.
Therefore, it can carry, without jumping out of a zoom camera, a telephotographic camera, etc. rather than the thickness of the portable telephone 100.
[0025]
The holder part 105 can also acquire the effect which shields the circumference of the camera part 12 thoroughly by using a member as a shielding member for the circumference in tubed shape. Thereby, a zoom camera, a telephotographic camera, etc. can be carried and a shielding effect can also be acquired.
[Work example 3]
[0026]
Drawing 6 is a detailed sectional view after the assembly which shows Example 3 which applied this invention to the portable telephone, and shows the physical relationship of a case, a hinge region, and a camera part. The same number is given to the same part as the sectional view (drawing 4) of Example 1, and the composition of Example 3 is explained to it centering on a different place.
The hinge region 203 is provided with approximately tabular the rotary part 204 and the holder part 205, and is engaged in the rotating-engagement-of-clutch part 31. The hinge region 203 performs only rotational operation without performing a switching action. the rotating-engagement-of-clutch part 31 -- the sectional view (drawing 4) of Example 1 -- the same -- the outside end 16 of the upper casing 1 -- abbreviated -- it is attached so that it may become the same physical relationship.
The position of the upper casing mounting hole 43 does not need to be the outside end 16 neighborhood of the upper casing 201. The subject of the upper casing 201 which attaches the upper casing mounting hole 43 may be an LCD holder, the circuit board, etc. which upper casing 201 inside does not illustrate. in short -- the rotating-engagement-of-clutch part 31 of the hinge region 203 -- the outside end 16 of the upper casing 201 -- abbreviated -- if it is attached so that it may become the same physical relationship, it will not matter anywhere.
[0027]
The upper casing 201 is attached to the upper casing mounting hole 43 of the rotary part 204, and performs only rotational operation. Since a switching action is not performed, the hinge region 203 is made into the structure included in the inside of the upper casing 201.
In order to attach the lower casing 202 to the lower casing mounting hole 54 of the holder part 205, it has the extending part 222 extended toward lower casing mounting hole 54 direction from the fundamental part of the lower casing 202. this extending part 222 constitutes the hollow part 221 which goes to down from the rotating-engagement-of-clutch part 31 -- the portable telephone 100 -- abbreviated -- the hollow part of the same thickness can be obtained.
The camera part 12 is carried in this hollow part. The camera part 12 carries lens 13 and CCD14.
A long distance between this lens 13 and CCD14 can be taken.

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Therefore, it can carry, without jumping out of a zoom camera, a telephotographic camera, etc. rather than the thickness of the portable telephone 100.
[0028]
The hinge region 203 and the upper casing 201 may be the structures of performing a switching action and rotational operation. In that case, the rotary part 204 considers it as the structure of the rotary part 4 of drawing 4 of Example 1, and the opens part 6, and makes upper casing 201 the same structure as the upper casing 1 of drawing 4 of Example 1. The holder part 205 considers it as tabular shape with drawing 6, and is attached with the extending part 222 of the lower casing 2.
constituting the hollow part 221 which goes to down from the rotating-engagement-of-clutch part 31 also in this case -- the portable telephone 100 -- abbreviated -- the hollow part of the same thickness can be obtained.
[0029]
The shape of the holder part 5 which has the hollow part 52 shown in drawing 4 as an example of a compromise of drawing 4 and drawing 6, It is good also as a structure which is provided with the shape of the lower casing 202 of having the extending part 222 shown in drawing 6, and the open end part 53 of the holder part 5 and the tip of the extending part 222 combine in the pars intermedia of the thickness direction of the upper casing 1 or the upper casing 201.
[0030]
Although the tip by the side of the lens of a camera part is not sticking out of the thickness direction of the portable telephone, each example of this invention will be available for it also as composition which jumps out, if it is a still longer telephotographic camera etc.
Although the rotary part of the hinge considered it as telescopic shape and the holder part considered it as core box shape in each example, a crowning may be an engagement part, and as long as it is the structure which has a hollow part in the inside of the pars-basilaris-ossis-occipitalis side, except telescopic shape or core box shape may be sufficient.
In each example, although the hinge region was the structure of having a rotary hinge and opening and closing hinges, it may be the structure of only a rotary hinge without opening and closing.
In each example, although the camera part was carried in the hollow part, parts other than a camera part, for example, a cell, a loudspeaker, a memory stick, an earphone, etc. may be carried using a big hollow part.
This may be reverse, although the indicator was carried in upper casing and the key was carried in the lower casing in the example.
In each example, although the case of the portable telephone was explained, two cases are applicable to other electronic equipment engaged with a rotatable hinge.
[Brief Description of the Drawings]
[0031]
[Drawing 1]The outline view of the portable telephone concerning each example of this invention.
[Drawing 2]The exploded perspective view before an assembly of the hinge region of the portable telephone concerning Example 1 of this invention and a camera part.
[Drawing 3]The sectional view of the rotating-engagement-of-clutch part of the hinge region concerning Example 1 of this invention.

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[Drawing 4]The sectional view after an assembly of the portable telephone concerning Example 1 of this invention.
[Drawing 5]The sectional view after an assembly of the portable telephone concerning Example 2 of this invention.
[Drawing 6]The sectional view after an assembly of the portable telephone concerning Example 3 of this invention.
[Description of Notations]
[0032]
1 Upper casing
2 Lower casing
3 Hinge region
4 Rotary part
5 Holder part
6 Opens part
7 Relative side
8 Axis of rotation
9 Opening-and-closing axis
10 Indicator
11 Key
12 Camera part
13 Lens
14 CCD
15 Optic axis
16 and 17 Outside end
31 Rotating-engagement-of-clutch part
41 Shaft hole
42 Hollow part
51 Shaft projection
52 Hollow part
53 Open end part
54 Lower casing mounting hole
61 Opening-and-closing engagement part
62 Upper casing mounting hole
100 Portable telephone
102 Lower casing
103 Hinge region
105 Holder part
201 Upper casing
202 Lower casing
203 Hinge region
204 Rotary part
205 Holder part
221 Hollow part
222 Extending part

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[Translation done.]

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Best Available Copy

PTO/SB/06 (10-07)
Approved for use through 06/30/2010. OMB 0651-0032
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PATENT APPLICATION FEE DETERMINATION RECORD
Substitute for Form PTO-875

Application or Docket Number: 11/392,510

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
SEARCH FEE (37 CFR 1.16(k), (l), 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 26 =		OR	x 50 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	x 105 =			x 210 =	
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $260 ($130 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))			185			370	
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

11-12-09

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))	* 20	Minus	** 24	= 1	x 25 =		OR	x 50 =	
Independent (37 CFR 1.16(h))	* 2	Minus	*** 4	= 1	x 105 =		OR	x 210 =	
Application Size Fee (37 CFR 1.16(s))									
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					185		OR	370	
					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 ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	x 75 =		OR	x 50 =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	x 105 =		OR	x 210 =	
Application Size Fee (37 CFR 1.16(s))									
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					185		OR	370 N/A	
					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.

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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NOTICE OF ALLOWANCE AND FEE(S) DUE

29683 7590 12/15/2009

HARRINGTON & SMITH, PC
4 RESEARCH DRIVE, Suite 202
SHELTON, CT 06484-6212

EXAMINER	
NGUYEN, TUAN DUC	
ART UNIT	PAPER NUMBER
2614	

DATE MAILED: 12/15/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/393,510	03/29/2006	Claus H. Jorgensen	891.00013.U1(US)	8456

TITLE OF INVENTION: PORTABLE ELECTRONIC DEVICE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1510	$300	$0	$1810	03/15/2010

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. 08/07) Approved for use through 08/31/2010.

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PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
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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)

29683 7590 12/15/2009

HARRINGTON & SMITH, PC
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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.
11/393,510	03/29/2006	Claus H. Jorgensen	891.00013.U1(US)	8456

TITLE OF INVENTION: PORTABLE ELECTRONIC DEVICE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1510	$300	$0	$1810	03/15/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
NGUYEN, TUAN DUC	2614	379-433130

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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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/393,510	03/29/2006	Claus H. Jorgensen	891.00013.U1(US)	8456

29683 7590 12/15/2009

HARRINGTON & SMITH, PC
4 RESEARCH DRIVE, Suite 202
SHELTON, CT 06484-6212

EXAMINER	
NGUYEN, TUAN DUC	
ART UNIT	PAPER NUMBER
2614	

DATE MAILED: 12/15/2009

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 511 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 511 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. 08/07) Approved for use through 08/31/2010.

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Notice of Allowability	Application No.	Applicant(s)	
	11/393,510	JORGENSEN, CLAUS H.	
	Examiner	Art Unit	
	TUAN D. NGUYEN	2614	

-- 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 *11/12/2009*.

2. ☒ The allowed claim(s) is/are *1-14, 21-26 and renumbered as 1-20*.

3. ☐ 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.

4. ☐ 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.

5. ☐ 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).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ 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 _____.

/Tuan D. Nguyen/
Primary Examiner, Art Unit 2614

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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11393510	JORGENSEN, CLAUS H.
	Examiner	Art Unit
	TUAN D NGUYEN	2614

✓	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	12/19/2008	08/21/2009	12/11/2009						
1	1	✓	✓	=						
2	2	✓	✓	=						
3	3	✓	✓	=						
8	4	✓	O	=						
4	5	✓	✓	=						
5	6	✓	✓	=						
9	7	N	✓	=						
10	8	N	✓	=						
11	9	N	✓	=						
12	10	N	✓	=						
13	11	N	✓	=						
14	12	N	✓	=						
15	13	N	✓	=						
16	14	N	✓	=						
	15	N	✓	-						
	16	N	✓	-						
	17	N	✓	-						
	18	N	✓	-						
	19	N	✓	-						
	20	N	✓	-						
17	21	N	✓	=						
18	22	N	✓	=						
19	23	N	✓	=						
20	24	N	✓	=						
6	25			=						
7	26			=						

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Issue Classification

Application/Control No.	Applicant(s)/Patent Under Reexamination
11393510	JORGENSEN, CLAUS H.
Examiner	**Art Unit**
TUAN D NGUYEN	2614

ORIGINAL		INTERNATIONAL CLASSIFICATION															
CLASS	SUBCLASS	CLAIMED										NON-CLAIMED					
379	433.13	H	0	4	M	1 / 00 (2006.01.01)											
CROSS REFERENCE(S)		H	0	4	M	9 / 00 (2006.01.01)											
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)																
455	575.3																

☐ 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		17												
2	2		18												
3	3		19												
8	4		20												
4	5	17	21												
5	6	18	22												
9	7	19	23												
10	8	20	24												
11	9	6	25												
12	10	7	26												
13	11														
14	12														
15	13														
16	14														
	15														
	16														

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	20	
/TUAN D NGUYEN/ Primary Examiner.Art Unit 2614	12/11/09	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1 and 7

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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11393510	JORGENSEN, CLAUS H.
	Examiner	Art Unit
	TUAN D NGUYEN	2614

SEARCHED

Class	Subclass	Date	Examiner
379	433.01,433.08,433.11,433.13	12/18/08	TN
455	90.3,575.1,575.3	12/18/08	TN
	Updated same as above	8/19/09	TN
	updated same as above	12/8/09	TN

SEARCH NOTES

Search Notes	Date	Examiner
Inventor Search	12/18/08	TN
PLUS search	8/21/09	TN

INTERFERENCE SEARCH

Class	Subclass	Date	Examiner
	updated same as above	12/11/09	TN

	/TUAN D NGUYEN/ Primary Examiner.Art Unit 2614

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BIB DATA SHEET

CONFIRMATION NO. 8456

SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
11/393,510	03/29/2006	362	2614	891.00013.U1(US)

APPLICANTS
Claus H. Jorgensen, Frederiksberg, DENMARK;

**** CONTINUING DATA ***************************

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ****
04/19/2006

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /TUAN DUC NGUYEN/ Examiner's Signature	☐ Met after Allowance Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		DENMARK	6	24	4

ADDRESS

HARRINGTON & SMITH, PC
4 RESEARCH DRIVE, Suite 202
SHELTON, CT 06484-6212
UNITED STATES

TITLE

Portable electronic device

FILING FEE RECEIVED		
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PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
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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)

29683 7590 12/15/2009

HARRINGTON & SMITH, ~~PC~~ Attorneys at Law, LLC
4 RESEARCH DRIVE, Suite 202
SHELTON, CT 06484-6212

02/08/2010 CCHAU2 00000001 501924 11393510

01 FC:1501 1510.00 DA
02 FC:1504 300.00 DA

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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.

Jessica Pade	(Depositor's name)
	(Signature)
2.3.2010	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/393,510	03/29/2006	Claus H. Jorgensen	891.00013.U1(US)	8456

TITLE OF INVENTION: PORTABLE ELECTRONIC DEVICE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1510	$300	$0	$1810	03/15/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
NGUYEN, TUAN DUC	2614	379-433130

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 Harrington & Smith
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: Nokia Corporation

(B) RESIDENCE: (CITY and STATE OR COUNTRY): Espoo, Finland

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:
- ☒ Issue Fee
- ☒ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 50-1924 (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 Mark Harrington Date 2/3/10

Typed or printed name Mark Harrington Registration No. 31,686

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/393,510	03/23/2010	7684561	891.00013.U1(US)	8456

29683 7590 03/03/2010

HARRINGTON & SMITH
4 RESEARCH DRIVE, Suite 202
SHELTON, CT 06484-6212

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 870 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):

Claus H. Jorgensen, Frederiksberg, DENMARK;

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PTO/SB/30 (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
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Request For Continued Examination (RCE) Transmittal

Address to:
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P.O. Box 1450
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Application Number	11/393,510
Filing Date	3/29/2006
First Named Inventor	Claus H. Jorgensen
Art Unit	2614
Examiner Name	Nguyen, Tuan Duc
Attorney Docket Number	891.0013.U1(US)

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. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

1. Submission required under 37 CFR 1.114 Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

a. ☐ 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.
   i. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
   ii. ☐ Other _____

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b. ☒ Enclosed
   i. ☒ Amendment/Reply
   ii. ☐ Affidavit(s)/Declaration(s)
   iii. ☐ Information Disclosure Statement (IDS)
   iv. ☒ Other Petition Under 37 CFR 1.313(c)

2. Miscellaneous
a. ☐ 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)
b. ☐ Other _____

3. Fees The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.
a. ☒ The Director is hereby authorized to charge the following fees, any underpayment of fees, or credit any overpayments to Deposit Account No. 50-1924
   i. ☒ RCE fee required under 37 CFR 1.17(e) ($810.00)
   ii. ☐ Extension of time fee (37 CFR 1.136 and 1.17)
   iii. ☒ Other Petition fee ($130.00)
b. ☐ Check in the amount of $ _____ enclosed
c. ☐ Payment by credit card (Form PTO-2038 enclosed)

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Signature		Date	March 18, 2010
Name (Print / Type)	Juan Juan	Registration No.	60,564

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Signature	Elaine F. Mian		
Name (Print / Type)	Elaine F. Mian	Date	March 18, 2010

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Email: Patent@HSpatent.com
www.HSpatent.com

Harrington & Smith, Attorneys At Law, LLC

Fax

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To:	USPTO – Office of Petition	**From:**	Juan Juan
Fax:	571 273-0025	**Pages:**	12
Phone:		**Date:**	3/18/2010
Re:	Our Ref.: 891.0013.U1(US)	**CC:**	

☐ **Urgent** ☐ **For Review** ☐ **Please Comment** ☐ **Please Reply** ☐ **Please Recycle**

Re: S/N 11/393,510
Art Unit 2614

Please file the following:

Request for Continued Examination (RCE)
Amendment
Petition Under 37 CFR 1.313(c)

Thank you.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 11/393,510 Confirmation No.: 8456
Applicant(s): Jorgensen, Claus H.
Filed: 03/29/2006
Art Unit: 2614
Examiner: Nguyen, Tuan Duc
Title: Portable Electronic Device

Attorney Docket No.: 891.0013.U1(US)
Customer No.: 29,683

Commissioner For Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Petition Under 37 CFR §1.313(c)

Sir:

The issue fee was paid on 02/03/2010. This petition is accompanied by a Request for Continued Examination (RCE) in accordance with 37 C.F.R §1.313(c)(2).

Please charge deposit account 50-1924 the amount of $130.00 as payment for the petition fee under 37 C.F.R §1.17(h).

Applicant's attorney requests that the accompanying request for continued examination (RCE), in compliance with §1.114 and including the fee of $810.00 as per §1.17(e), be considered and entered. The RCE submission comprises an amendment.

The USPTO is requested to withdraw the patent application from issue to allow the examiner the opportunity to consider the claim amendment.

02/22/2010 LDIEP1 00000002 [illegible] 11393510
01 FC:1464 130.00 DA
02 FC:1801 810.00 DA

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Appl. No.: 11/393,510

If there are any additional charges with respect to this Petition or otherwise, please charge deposit account 50-1924 for any fee deficiency. Should any unresolved issue remain, the examiner is invited to call applicant's attorney at the telephone number indicated below.

Respectfully submitted,

3/18/2010

Juan Juan (Reg. No. 60,564) Date

Customer No.: 29683
Harrington & Smith,
Attorneys At Law, LLC
4 Research Drive
Shelton, CT 06484-6212
203-925-9400

CERTIFICATION OF FACSIMILE TRANSMISSION

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3/18/2010
Date

Claudia F. Juan
Name of Person Making Deposit

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 11/393,510 Confirmation No.: 8456
Applicant(s): Jorgensen, Claus H.
Filed: 03/29/2006
Art Unit: 2614
Examiner: Nguyen, Tuan Duc
Title: Portable Electronic Device

Attorney Docket No.: 891.0013.U1(US)
Customer No.: 29,683

Commissioner For Patents
P.O. Box 1450
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Amendment

Sir:

Please amend the Application as indicated on the following pages.

Amendments to the Claims are reflected in the listing of claims which begin on page 2 of this paper.

Remarks begin on page 8 of this paper.

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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) An apparatus comprising:

a first section comprising electronics;

a second section movably connected to the first section by a hinge section, wherein the second section comprises a display, wherein the hinge section comprises a first hinge member pivotably connected to a second hinge member; and

wherein the ~~second~~ first hinge member comprises an access entry adapted to allow insertion of an electrical device through the access entry and into electrical connection with an electrical connector inside the first section.

2. (Previously presented) An apparatus as in claim 1 wherein the access entry comprises a movable door on the hinge section.

3. (Previously presented) An apparatus as in claim 2 wherein the access entry comprises a living hinge connecting the door to the rest of the hinge section.

4. (Currently amended) An apparatus comprising:

a first section comprising electronics;

a second section movably connected to the first section by a hinge section, wherein the second section comprises a

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display, wherein the hinge section comprises a first hinge member pivotably connected to a second hinge member; and

wherein the ~~second~~ first hinge member comprises an access entry adapted to allow insertion of an electrical device through the hinge section and into electrical connection with an electrical connector inside the first section,

wherein the access entry is sized and shaped to allow insertion of a battery through the access entry, and the electrical connector is adapted to electrically connect to the battery.

5. (Previously presented) An apparatus as in claim 1 wherein the access entry is sized and shaped to allow insertion of an electronic memory module through the access entry, and the electrical connector is adapted to electrically connect to the electronic module.

6. (Previously presented) An apparatus as in claim 1 wherein the access entry is sized and shaped to at least partially directly physically support the electrical device when the electrical device is fully inserted into the apparatus.

7. (Previously presented) A portable electronic device comprising:

a first section having a user input section and a first one-piece tubular housing member, wherein the first tubular housing member forms a majority of opposite exterior lateral sides of the first section;

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a second section having a display and a second tubular housing member, wherein the second tubular housing member forms a majority of opposite exterior lateral sides of the second section; and

a connecting section movably connecting the second section with the first section,

wherein the first tubular housing member at least partially houses the user input section, and wherein the second tubular housing member at least partially houses the display, and wherein the first and second sections are movably connected to each other between an open configuration and a closed configuration.

8. (Original) A portable electronic device as in claim 7 wherein at least one of the first and second tubular housing members comprises a metal member.

9. (Original) A portable electronic device as in claim 8 wherein the first tubular housing members comprises an extruded member.

10. (Original) A portable electronic device as in claim 7 wherein the connecting section comprises a hinge with a first hinge member forming a cap to an open end of the first tubular housing member and a second hinge member forming a cap to an open end of the second tubular housing member.

11. (Original) A portable electronic device as in claim 7 wherein the first section comprises:

03/18/2010 THU 14:40 [TX/RX NO 6348] 006
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an engine section comprising a printed circuit board, a transceiver, a processor and a memory;

a battery located adjacent the engine section; and

the user input section comprises a keypad located above the engine section and the battery, wherein the user input section is located directly opposite the battery without a portion of the engine section therebetween.

12. (Original) A portable electronic device as in claim 7 wherein the connecting section comprises a hinge, wherein the hinge comprises a first hinge member connected to the first section and a second hinge member connected to the second section; and the portable electronic device further comprises a camera connected to the second section, wherein the camera is housed at an exterior side of the portable electronic device by a junction of a portion of the second hinge member and a portion of the second tubular housing member.

13. (Original) A portable electronic device as in claim 7 wherein the portable electronic device comprises a mobile telephone having a transceiver.

14. (Original) A portable electronic device as in claim 7 wherein the connecting section comprises an access entry provided in the connecting section adapted to allow insertion of an electrical device through the connecting section and into electrical connection with an electrical connector inside the first section.

15-20. (Cancelled)

03/18/2010 THU 14:40 [TX/RX NO 6348] 007
Amazon.com, Inc., Amazon.com Services LLC - Ex. 1012, Page 000240

21. (Previously presented) A portable electronic device comprising:

a first section;

a second section movably connected to the first section by a hinge, wherein the hinge comprises a first hinge member connected to the first section and a second hinge member connected to the second section; and

a camera connected to the second section, wherein the camera is housed at a first exterior side of the portable electronic device by a junction of a portion of the second hinge member located at the first exterior side and a portion of an exterior housing of the second section located at the first exterior side.

22. (Original) A portable electronic device as in claim 21 wherein the first section comprises:

a first tubular housing member, wherein the first tubular housing member forms a majority of opposite exterior lateral sides of the first section, and located at the first tubular section:

an engine section comprising a printed circuit board, a transceiver, a processor and a memory;

a battery located adjacent the engine section; and

a user input section comprising a keypad located directly above the engine section and the battery, wherein the user input section is located directly opposite the battery without a portion of the engine section therebetween.

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23. (Original) A portable electronic device as in claim 21 wherein the first section comprises a tubular metal housing member forming a majority of opposite exterior lateral sides of the first section, and wherein the second section comprises a tubular metal housing member forming a majority of opposite exterior lateral sides of the second section.

24. (Original) A portable electronic device as in claim 21 wherein the first and second sections each comprises tubular metal exterior housing members comprising extruded metal members.

25. (Previously presented) An apparatus as in claim 1 wherein the access entry comprises a pivotable door on the hinge section.

26. (Previously presented) An apparatus as in claim 1 wherein the access entry is adapted to allow modular insertion and removal of the electrical device through the access entry.

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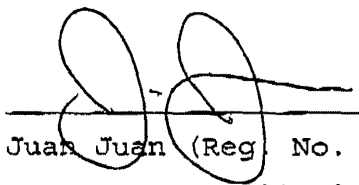
Appl. No.: 11/393,510

REMARKS

Claims 1 and 4 have been amended to clarify applicant's claimed invention. In particular, claims 1 and 4 have been amended to recite "wherein the first hinge member comprises an access entry ...".

Accordingly, favorable consideration and allowance is respectfully requested. If there are any additional charges with respect to this Amendment or otherwise, please charge deposit account 50-1924 for any fee deficiency. Should any unresolved issue remain, the examiner is invited to call applicant's attorney at the telephone number indicated below.

Respectfully submitted,



3/18/2010

Juan Juan (Reg. No. 60,564) Date

Customer No.: 29683
Harrington & Smith,
Attorneys At Law, LLC
4 Research Drive
Shelton, CT 06484-6212
203-925-9400

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Elaine F. Main
Name of Person Making Deposit

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MAR 19 2010

OFFICE OF PETITIONS

In re Application of :
Claus H. JORGENSEN :
Application No. 11/393,510 : DECISION GRANTING PETITION
Filed: March 29, 2006 : UNDER 37 CFR 1.313(c)(2)
Attorney Docket No. **891.00013.U1(US)** :

This is a decision on the petition under 37 CFR 1.313(c)(2), filed March 18, 2010, to withdraw the above-identified application from issue after payment of the issue fee.

The petition is **GRANTED**.

The above-identified application is withdrawn from issue for consideration of a submission under 37 CFR 1.114 (request for continued examination). See 37 CFR 1.313(c)(2).

Petitioner is advised that the issue fee paid on February 5, 2010 cannot be refunded. If, however, this application is again allowed, petitioner may request that it be applied towards the issue fee required by the new Notice of Allowance.[1]

Telephone inquiries should be directed to the undersigned at (571) 272-7253.

This application is being referred to Technology Center AU 2614 for processing of the request for continued examination under 37 CFR 1.114 and for consideration of the concurrently filed amendment.

/Monica A. Graves/
Petitions Examiner, Office of Petitions

[1] *The request to apply the issue fee to the new Notice may be satisfied by completing and returning the new Part B – Fee(s) Transmittal Form (along with any balance due at the time of submission). Petitioner is advised that the Issue Fee Transmittal Form* ***must*** *be completed and timely submitted to avoid abandonment of the application.*

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www.uspto.gov

DATE : March 19, 2010

TO : Director, Office of Patent Publication

FROM : Office of Petitions

SUBJECT : Withdrawal from Issue of **Application No. 11/393,510**

Applicant(s) : Claus H. JORGENSEN
Application No. : 11/393,510
Filed : March 29, 2006

The above-identified application has been assigned Patent No. 7,684,561 and an issue date of March 23, 2010.

It is hereby directed that this application be withdrawn from issue at the request of the applicant. Do not refund the issue fee.

The following erratum should be published in the Official Gazette if the above-identified application is published in the OG of March 23, 2010:

> **"All reference to Patent No. 7,684,561 to Claus H. Jorgensen of Frederiksberg, Denmark for PORTABLE ELECTRONIC DEVICE appearing in the Official Gazette of March 23, 2010 should be deleted since no patent was granted."**

/Monica A. Graves/
Petitions Examiner, Office of Petitions

cc: Paul Harrison
Deneise Boyd
Mary Louise McAskill
Niomi Farmer
Mary E. Johnson (Cookie)
Brad Harris
Kimberly Terrell
Lamont Fletcher

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

PATENT WITHDRAWAL NOTICE

DATE WITHDRAWN	WITHDRAWAL NUMBER
3/19/10	17943

The following application has been **WITHDRAWN** from the

Tuesday, March 23, 2010 issue.

SERIAL NO.	PATENT NUMBER
11/393,510	7,684,561
DRAWINGS	**CLASS**
006	379/433

TITLE

PORTABLE ELECTRONIC DEVICE

NAME AND ADDRESS

CLAUS H. JORGENSEN
FREDERIKSBERG, DENMARK

REASON FOR WITHDRAWAL

Office of Petitions granted applicant's request to withdraw patent from issue.

APPROVED

/Kimberly Terrell/, Manager

Patent Publication Branch
Office of Data Management

FORM PTO-302 -- (REV. 05-2009)

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NOTICE OF ALLOWANCE AND FEE(S) DUE

29683 7590 04/12/2010

HARRINGTON & SMITH
4 RESEARCH DRIVE, Suite 202
SHELTON, CT 06484-6212

EXAMINER	
NGUYEN, TUAN DUC	
ART UNIT	PAPER NUMBER
2614	

DATE MAILED: 04/12/2010

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/393,510	03/29/2006	Claus H. Jorgensen	891.00013.U1(US)	8456

TITLE OF INVENTION: PORTABLE ELECTRONIC DEVICE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1510	$0	$1510	$1510	07/12/2010

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. 08/07) Approved for use through 08/31/2010.

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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)

29683 7590 04/12/2010

HARRINGTON & SMITH
4 RESEARCH DRIVE, Suite 202
SHELTON, CT 06484-6212

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.
11/393,510	03/29/2006	Claus H. Jorgensen	891.00013.U1(US)	8456

TITLE OF INVENTION: PORTABLE ELECTRONIC DEVICE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1510	$0	$1510	$1510	07/12/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
NGUYEN, TUAN DUC	2614	379-433130

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.

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.

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UNITED STATES PATENT AND TRADEMARK OFFICE

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United States Patent and Trademark Office
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
NGUYEN, TUAN DUC	
ART UNIT	PAPER NUMBER
2614	

DATE MAILED: 04/12/2010

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 511 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 511 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. 08/07) Approved for use through 08/31/2010.

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Notice of Allowability	Application No.	Applicant(s)	
	11/393,510	JORGENSEN, CLAUS H.	
	Examiner	Art Unit	
	TUAN D. NGUYEN	2614	

-- 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 *03/18/2010.*

2. ☒ The allowed claim(s) is/are *1-14, 21-26 and renumbered as 1-20..*

3. ☐ 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.

4. ☐ 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.

5. ☐ 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).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ 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 _____.

/Tuan D. Nguyen/
Primary Examiner, Art Unit 2614

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11393510	JORGENSEN, CLAUS H.
	Examiner	Art Unit
	TUAN D NGUYEN	2614

✓	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	12/19/2008	08/21/2009	12/11/2009	04/08/2010					
1	1	✓	✓	=	=					
2	2	✓	✓	=	=					
3	3	✓	✓	=	=					
8	4	✓	O	=	=					
4	5	✓	✓	=	=					
5	6	✓	✓	=	=					
9	7	N	✓	=	=					
10	8	N	✓	=	=					
11	9	N	✓	=	=					
12	10	N	✓	=	=					
13	11	N	✓	=	=					
14	12	N	✓	=	=					
15	13	N	✓	=	=					
16	14	N	✓	=	=					
	15	N	✓	-	-					
	16	N	✓	-	-					
	17	N	✓	-	-					
	18	N	✓	-	-					
	19	N	✓	-	-					
	20	N	✓	-	-					
17	21	N	✓	=	=					
18	22	N	✓	=	=					
19	23	N	✓	=	=					
20	24	N	✓	=	=					
6	25			=	=					
7	26			=	=					

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Issue Classification

Application/Control No.	Applicant(s)/Patent Under Reexamination
11393510	JORGENSEN, CLAUS H.
Examiner	**Art Unit**
TUAN D NGUYEN	2614

ORIGINAL		INTERNATIONAL CLASSIFICATION															
CLASS	SUBCLASS	CLAIMED										NON-CLAIMED					
379	433.13	H	0	4	M	1 / 00 (2006.01.01)											
CROSS REFERENCE(S)		H	0	4	M	9 / 00 (2006.01.01)											
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)																
455	575.3																

☐ 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		17												
2	2		18												
3	3		19												
8	4		20												
4	5	17	21												
5	6	18	22												
9	7	19	23												
10	8	20	24												
11	9	6	25												
12	10	7	26												
13	11														
14	12														
15	13														
16	14														
	15														
	16														

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	20	
/TUAN D NGUYEN/ Primary Examiner.Art Unit 2614	4/8/10	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1 and 7

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	11393510	JORGENSEN, CLAUS H.
	Examiner	Art Unit
	TUAN D NGUYEN	2614

SEARCHED

Class	Subclass	Date	Examiner
379	433.01,433.08,433.11,433.13	12/18/08	TN
455	90.3,575.1,575.3	12/18/08	TN
	Updated same as above	8/19/09	TN
	updated same as above	12/8/09	TN
	updated same as above	4/6/10	TN

SEARCH NOTES

Search Notes	Date	Examiner
Inventor Search	12/18/08	TN
PLUS search	8/21/09	TN

INTERFERENCE SEARCH

Class	Subclass	Date	Examiner
	updated same as above	12/11/09	TN
	updated same as above	4/8/10	TN

	/TUAN D NGUYEN/ Primary Examiner.Art Unit 2614

UNITED STATES PATENT AND TRADEMARK OFFICE

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BIB DATA SHEET

CONFIRMATION NO. 8456

SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
11/393,510	03/29/2006	362	2614	891.00013.U1(US)

APPLICANTS
Claus H. Jorgensen, Frederiksberg, DENMARK;

**** CONTINUING DATA ***************************

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ****
04/19/2006

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /TUAN DUC NGUYEN/ Examiner's Signature	☐ Met after Allowance Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		DENMARK	6	24	4

ADDRESS
HARRINGTON & SMITH
4 RESEARCH DRIVE, Suite 202
SHELTON, CT 06484-6212
UNITED STATES

TITLE
PORTABLE ELECTRONIC DEVICE

FILING FEE RECEIVED		
1700	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

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OPAP JUL 15 2010 PATENT AND TRADEMARK OFFICE

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 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)

29683 7590 04/12/2010

HARRINGTON & SMITH
4 RESEARCH DRIVE, Suite 202
SHELTON, CT 06484-6212

~~Adjustment date: 07/15/2010 HVUONG2~~
~~02/08/2010 CCHAU2 00000001 501924 11393510~~
~~01 FC:1501 1510.00 CR~~
~~02 FC:1504 300.00 CR~~

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.

Elaine F. Mian	(Depositor's name)
Elaine F. Mian	(Signature)
July 12, 2010	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/393,510	03/29/2006	Claus H. Jorgensen	891.00013.U1(US)	8456

TITLE OF INVENTION: PORTABLE ELECTRONIC DEVICE

07/15/2010 HVUONG2 00000044 501924 11393510
01 FC:1501 1510.00 DA
02 FC:1504 300.00 DA

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1510	$0	$1510	$1510	07/12/2010

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NGUYEN, TUAN DUC	2614	379-433130

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(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 Harrington & Smith
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: Nokia Corporation

(B) RESIDENCE: (CITY and STATE OR COUNTRY): Espoo, Finland

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:
☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 50-1924 (enclose an extra copy of this form).

Issue Fee previously paid on February 3, 2010

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 July 12, 2010

Typed or printed name Juan Juan Registration No. 60,564

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/393,510	08/31/2010	7787618	891.00013.U1(US)	8456

29683 7590 08/11/2010

HARRINGTON & SMITH
4 RESEARCH DRIVE, Suite 202
SHELTON, CT 06484-6212

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 861 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).

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APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Claus H. Jorgensen, Frederiksberg, DENMARK;

Amazon.com, Inc., Amazon.com Services LLC - Ex. 1012, Page 000256

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	FILE WRAPPER LOCATION
11/393,510	7787618	2614	9200

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Correspondence Address/Fee Address Change

The following fields have been set to Customer Number 10948 on 11/15/2010

- **Correspondence Address**
- **Power of Attorney Address**

The address of record for Customer Number 10948 is:

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