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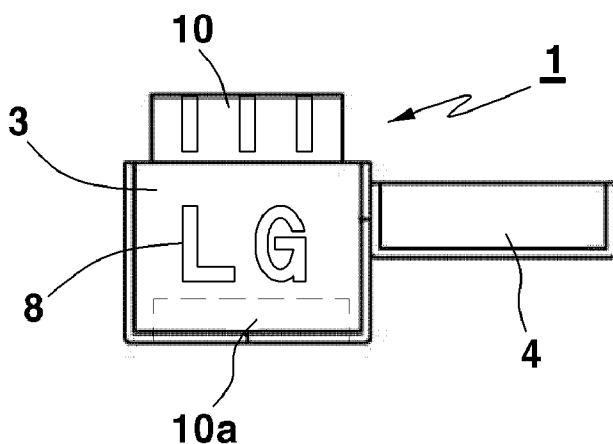
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(54) Title: THE PORTABLE EMERGENCY BATTERY



(57) Abstract: Disclosed herein is a portable emergency battery. The portable battery includes an internal circuit for supplying and controlling predetermined charging voltage and current, a battery cell for enabling the internal circuit to perform electric charging, a casing for protecting the internal circuit and the battery cell, a body constituting the casing, a light emission unit formed on a front or back of the body through double-shot molding, and an output gender and an input gender respectively formed in upper and lower portions of the casing, containing the battery cell and the internal circuit, and each configured to harmonize a specific number of pins of an interface with a difference number of pins of another interface.

WO 2008/078851 A1

Description

THE PORTABLE EMERGENCY BATTERY

Technical Field

- [1] The present invention relates, in general, to a portable emergency battery, and, more particularly, to a portable emergency battery, in which the number of pins of the connector of a mobile phone is immediately harmonized and used using genders, which are core parts of the emergency battery of the present invention, without requiring that the number of pins of the connector of the mobile phone be changed since, of various products of portable mobile devices, the mobile phone is configured such that power and control signals are connected to a standard 18~20-pin or 20~24-pin connector, standardized by the Korean Telecommunication Technology Association (TTA), so that the mobile device can be powered, or the dedicated battery of the mobile device can be charged in the case where a battery charger is not carried or an AC power source or vehicle power source cannot be used in a situation in which the mobile device cannot be used due to the discharge of the battery, and in which the emergency battery is also used as a data communication cable, so that the transmission and reception of data to and from external communications equipment is enabled.

Background Art

- [2] In general, of various mobile device products, popularized mobile phones, MP3 players, PDAs, PMPs, notebook computers and digital cameras have small sizes and multiple functions, thus being highly useful. However, they are frequently subjected to cases where the batteries thereof are exhausted at important moments during use, which is troublesome.
- [3] In order to overcome this problem, battery manufacturers have produced high-capacity batteries and provided them to mobile device manufacturers, but the high-capacity batteries limit the portability of mobile devices due to the heavy weights thereof.
- [4] As a result, in order to meet users' demand for lightweight mobile devices and focus on "portability," unlimitedly high-capacity batteries are not provided.
- [5] Accordingly, in the case where a user goes on a long-distance business trip or frequently uses a mobile device (for example, in the case of a salesperson), the user must always carry one or more extra mobile device batteries or a battery charger. However, it is impractical from the aspect of economy and very burdensome and inconvenient to purchase and carry expensive batteries or carry a battery charger, so that there is a problem in that a user must always be concerned about the charged state of the battery.

- [6] As a result, various types of mobile device emergency batteries, in each of which an output connector for charging the battery of a mobile device and an input connector for charging the emergency battery itself are provided on the top and bottom of an emergency battery casing and are connected to a battery cell and an internal circuit accommodated in the casing, have been developed and commercialized.
- [7] In the case where the number of calls is large or there is insufficient charging time, such an emergency battery is connected to a mobile device through the output connector of the emergency battery or is used to charge the battery of a mobile device, thereby overcoming the problem of exhaustion of the battery of the mobile device.
- [8] Although conventional emergency batteries have an advantage of extending the service period of the battery of a mobile device, they have a limitation in that they are limited to a single use (disposable auxiliary batteries) or to an auxiliary function only for charging, so that various additional functions, such as the exchange of data with external communications equipment and accessory functions, cannot be expected.
- [9] Meanwhile, of mobile devices to which the emergency batteries are applied, mobile phones are provided with various internal circuits depending on manufacturers and the types thereof, and 18~24 pin connectors are provided in the bottoms or side portions of the mobile phones to provide interfacing for communication with external communication equipment.
- [10] The above-described connectors are classified and are specified so that they are divided into IF connectors for the transmission and reception of data and charging and earphone connectors for the reception of earphone jacks, and so that the transmission and reception of data and charging are performed by the IF connectors and an earphone function is performed using the earphone connectors.
- [11] However, recently, as mobile phones become thin and lightweight, it is not desirable from the aspects of design and application of mobile phones to provide a plurality of connectors in a mobile phone, and thus 20-pin earphone connectors are constructed by extending the earphone connectors to perform charging also, thereby meeting a tendency toward slim mobile phones.
- [12] Besides the earphone connectors provided in response to manufacturers' requests, recently, standard 24-pin connectors have been adopted by many battery chargers and data communication cables so as to prevent the waste of resources and the increase in economic burden attributable to the necessary provision of unnecessary battery chargers.

Disclosure of Invention

Technical Problem

- [13] Accordingly, the present invention has been made keeping in mind the above

problems occurring in the prior art, and an object of the present invention is to provide an accessory-type portable emergency battery, which is capable of being used for the transmission and reception of data to and from external communications equipment and as the charging source of a portable mobile device, and which is provided with a plurality of additional functions, thereby increasing the ease of use and usefulness of the mobile device.

- [14] Another object of the present invention is to meet the tendency toward slim mobile phones by harmonizing the different numbers of pins of a mobile device and an interface with each other in such a way as to apply genders, which are connector parts, including both male and female connector units for harmonizing a mobile device with the standard 18~20 or 20~24 pin connector of an external power supply unit, to an emergency battery.

Technical Solution

- [15] In order to accomplish the above object(s), the present invention provides a portable emergency battery, comprising an internal circuit for supplying and controlling pre-determined charging voltage and current, a battery cell for enabling the internal circuit to perform electric charging, a casing for protecting the internal circuit and the battery cell, a body constituting the casing, a light emission unit formed on a front or back of the body through double-shot molding, and an output gender and an input gender respectively formed in upper and lower portions of the casing, containing the battery cell and the internal circuit, and each configured to harmonize a specific number of pins of an interface with a difference number of pins of another interface.

- [16] Meanwhile, the emergency battery of the present invention may be provided with additional functions, such as a voice recording and decoding function, a blood sugar measurement function, a breathalyzer function, a bad breath removal function, a location tracking (GPS or LBS) function and an RFID function, in addition to data transmission/reception and charging functions.

Advantageous Effects

- [17] According to the above-described present invention, parts called genders, which are additional connector parts for providing interfacing to a mobile device and to the standard 20~24 pin terminal of an external power supply, are applied to an emergency battery, so that the different numbers of pins of interfaces can be harmonized with each other, thereby realizing an effect of making the mobile phone slim, and a battery charging function of powering the mobile phone or charging the dedicated battery of the mobile phone in the case where a battery charger is not carried or an AC power source or vehicle power source cannot be used in a situation in which a mobile phone cannot be used due to the discharge of a battery, a function of communicating with

external communications equipment, and a plurality of additional functions are provided to the emergency battery, thereby realizing a useful effect of further improving the ease of use and usefulness of a mobile phone.

Brief Description of the Drawings

[18] FIGS. 1, 2 and 3 are views showing the various external configurations of an emergency battery according to the present invention;

[19] FIG. 4 is a block diagram schematically illustrating the emergency battery according to the present invention; and

[20] FIGS. 5, 6, and 7 are views showing embodiments of the emergency battery according to the present invention.

[21] <Description of reference characters of principal elements in the drawings>

[22] 1: emergency battery 2: casing 3: body 4: lid 5: accessory string 6: connection ring 7: mobile phone 8: light emission unit 9: internal circuit 10: output gender 10a: input gender 12: battery cell 13: voice circuit 14: blood sugar measurement circuit 15: bad breath removal circuit 16: breathalyzer circuit 17: location tracking (GPS or LBS) circuit 18: RFID circuit

Best Mode for Carrying Out the Invention

[23] A preferred embodiment of the present invention will be described in detail with reference to the accompanying drawings below.

[24] Although, in the detailed description and accompanying drawings of the present invention, a specific product, such as a mobile phone, rather than various types of mobile devices, is described as an example, this is provided only to help comprehensively understand the present invention. It will be apparent to those skilled in the art that the specific product may be varied or modified within the scope of the present invention.

[25] The internal circuit 9 functions to regulate power supplied from the input gender 10a, and functions to regulate power, supplied from the output gender 10, and supply this power for the exchange of data with external communications equipment and to a mobile phone 7 via the battery cell 12. The output gender 10 is connected to the mobile phone 7, while the input gender 10a is connected to an external power supply unit.

[26] Furthermore, a Light Emitting Diode (LED) is connected to the internal circuit 9, and thus predetermined power is supplied to a light emission unit 8.

[27] A general secondary battery, such as a lithium ion battery, a lithium-polymer battery, a nickel-manganese battery, a nickel-metal hydride battery or an equivalent thereof, may be used as the battery cell 12, but the type of secondary battery is not limited. It is preferred that the battery cell 12 be very small because it is contained in a casing that is easy to carry.

- [28] The battery cell 12 is connected to the output and input genders 10 and 10a, including both male and female connector units, and the internal circuit 9, as described above, and thus the battery cell 12 is charged to a predetermined voltage with charging current and voltage supplied through the output and input genders 10 and 10a.
- [29] The above-described emergency battery 1 according to the present invention may be provided in various shapes and designs, as shown in FIGS. 1, 2, and 3. The emergency battery 1 may be variously constructed in such a way that, in the state in which a lid 4 is present or is not present at the top of a body 3 defined by a casing 2, the output gender 10 is disposed on the casing 2 at an appropriate location and is then used. It is preferred that this emergency battery 1 be attached to the mobile phone 7 using a typical accessory string.
- [30] The casing 2 is formed to include the transparent light emission unit 8, which is formed on the front side of the translucent or opaque body 3 through double injection. The LED of the light emission unit 8 is connected to the internal circuit 9 contained in the casing 2, and is thus supplied with predetermined power and emits light through the front side of the body 3. That is, when the exchange of data with external communications equipment is performed, the mobile phone 7 is powered or the dedicated battery of the mobile phone is charged from the emergency battery 1, the above-described light emission unit 8 functions as an indication lamp.
- [31] Although the light emission unit 8 may be configured in the form of a lamp that simply emits light without special features, it is preferred that the light emission unit 8 be configured in the shape of the initials of a company's trade name or logo and emit light.
- [32] Meanwhile, an output gender 10 and an input gender 10a, respectively formed in the upper and lower portions of the casing 2, are provided as a gender that interfaces with an 18~20-pin male connector, provided in the bottom or side portion of the casing of the mobile phone 7, and a gender that interfaces with the 20~24-pin female connector of a battery charger, that is, an external power supply unit, respectively.
- [33] As shown in the block diagram of FIG. 4, schematically showing an emergency battery, a casing 2 is configured to include an internal circuit 9, a battery cell 12, a light emission unit 8, an output gender 10, and an input gender 10a, thereby performing data transmission/reception and battery charging functions. Additionally, it is the principal technical aspect of the present invention that other functions may be added by including application circuits, such as a voice circuit 13, a blood sugar measurement circuit 14, a bad breath removal circuit 15, a breathalyzer circuit 16, a location tracking (GPS or LBS) circuit 17, and an RFID circuit 18, in the internal circuit 9.
- [34] According to the present invention, constructed as described above, in the case where, when the user carries the emergency battery 1, the emergency battery 1 is

attached to the mobile phone 7 using an accessory string (not shown) and is carried as an accessory, it is easy to use the emergency battery 1 and there is no concern about the loss thereof. In a situation in which the mobile phone cannot be used any longer due to the discharge of the battery during the use of the mobile phone while the user carries the emergency battery 1 as described above, the upper output gender 10 is exposed to the outside by opening the lid 4 disposed at the top of the body 3, as shown in FIG. 1, or the output gender 10, disposed on the body 3 at the appropriate location to be exposed to the outside, as shown in FIGS. 2 and 3, is connected to a standard connector, which is classified as a female connector or a male connector, which is provided in the bottom or side portion of the mobile phone 7, thereby operating the mobile phone or charging the dedicated battery of the mobile phone. Moreover, the exchange of data with external communications equipment can be performed by using the emergency battery 1 as a data communications cable.

[35] The input gender 10a for charging the battery cell 12 is disposed in the bottom of the casing 2, so that the battery cell 12 is supplied with electricity through the female connector of a battery charger, that is, an external power supply unit, using the input gender 10a, with the result that the battery cell 12 is charged with electricity through the internal circuit 9 and the charged battery cell 12 supplies power for the exchange of data with external communications equipment or to the mobile phone or the battery of the mobile phone through the output gender 10, which provides interfacing to a standard connector such as a female connector or male connector, via the internal circuit 9.

[36] In this case, the internal circuit 9 operates to prevent excessive discharge as well as excessive charging during charging.

[37] In the case where the battery cell 12 is connected to a mobile phone through the output gender 10, the connection is detected through the internal circuit 9. Through the operation of the internal circuit 9, electricity is supplied from the battery cell 12 and causes the light emission unit 8 to emit light, and thus the light emission unit 8 functions as an indication lamp, indicating that data is being exchanged with external communications equipment, or that the mobile phone or the battery of the mobile phone is being charged with power.

[38] In the case where the light emission unit 8, formed on the front side of the body 3 through double injection, is configured to include the LED connected to the internal circuit 9 and the light emission unit 8 is formed in the shape of a company's trade name or logo rather than just a lamp that simply indicates charging status, an advertising effect as well as a visual effect can be accomplished.

[39] Meanwhile, when the voice circuit 13, which is an additional function circuit of the present invention, is included in the internal circuit 9, a small-sized microphone and

speaker (not shown) are formed in the casing 2, and thus voice can be recorded and decoded. When a bad breath removal circuit 15 is included in the internal circuit 9, a small-sized discharge hole (not shown) is formed through the casing 2, and thus odors and a bad breath removing agent can be discharged through the discharge hole. When the blood sugar measurement circuit 14 or the breathalyzer circuit 16 is included in the internal circuit 9, a display (not shown) is installed in the casing 2, and thus the status of blood sugar measurement or the status of breathalysing can be provided. When the location tracking (GPS, or LBS) circuit 17 is included in the internal circuit 9, a location tracking service to be used in the event of loss of the mobile phone can be provided. When the RFID circuit 18 is included in the internal circuit 9, an RFID chip (not shown) is attached to the casing 2, and thus various types of authentication, regarding information stored in the electronic chip, can be provided.

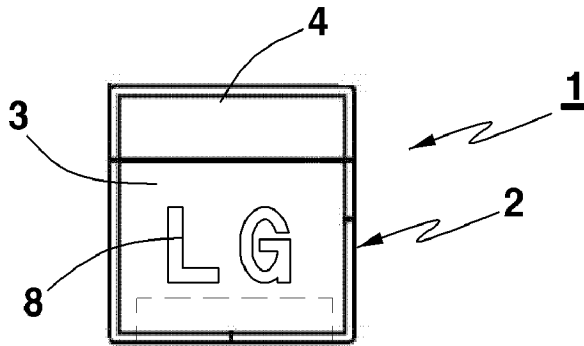
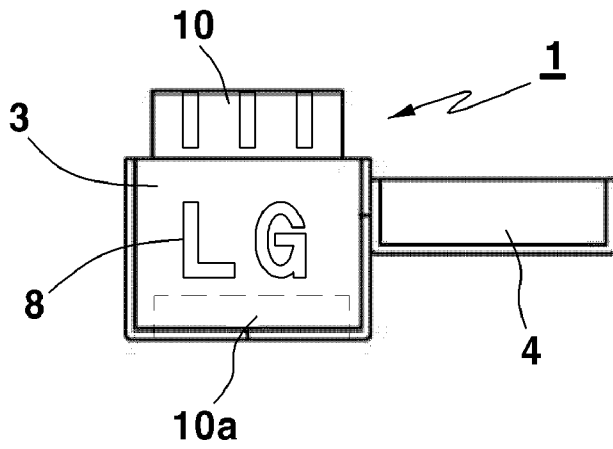
[40] Since the above-described additional functions are provided by applying general additional functions to the emergency battery 1 of the present invention, the illustration thereof is omitted in the drawings, as described above. It is preferred that the additional functions be activated using switches.

Claims

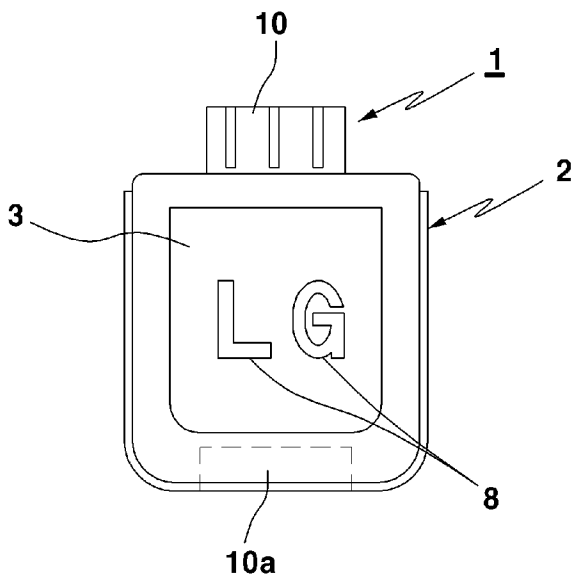
- [1] A portable emergency battery, comprising an internal circuit (9) for supplying and controlling predetermined charging voltage and current, a battery cell (12) for enabling the internal circuit (9) to perform electric charging, a casing (2) for protecting the internal circuit (9) and the battery cell (12), a body (3) made of Acrylonitrile Butadien Styrene (ABS) constituting the casing (2), a light emission unit (8) formed on a front or back of the body (3) through double-shot molding and made of PolyCarbonate (PC), and an output gender (10) and an input gender (10a) respectively formed in upper and lower portions of the casing, containing the battery cell (12) and the internal circuit (9), and each configured to harmonize a specific number of pins of an interface with a difference number of pins of another interface.
- [2] The portable emergency battery as set forth in claim 1, wherein the output gender (10) and the input gender (10a), respectively formed in the upper and lower portions of the emergency battery casing (2), are genders that provide matching to a 18-20 pin male connector, formed in a bottom or side of a mobile phone (7), and a 20-24 pin female connector of a charger, that is, an external power supplying unit.
- [3] The portable emergency battery as set forth in claim 1, wherein the light emission unit (8) is shaped in a form of an initial of a company's trade name or logo, and is configured to emit light.
- [4] The portable emergency battery as set forth in claim 1, wherein the internal circuit (9) of the emergency battery (1) further comprises a voice circuit (13).
- [5] The portable emergency battery as set forth in claim 1, wherein the internal circuit (9) of the emergency battery (1) further comprises a blood sugar measurement circuit (14).
- [6] The portable emergency battery as set forth in claim 1, wherein the internal circuit (9) of the emergency battery (1) further comprises a bad breath removal circuit (15).
- [7] The portable emergency battery as set forth in claim 1, wherein the internal circuit (9) of the emergency battery (1) further comprises a breathalyzer circuit (16).
- [8] The portable emergency battery as set forth in claim 1, wherein the internal circuit (9) of the emergency battery (1) further comprises a location tracking (GPS, LBS) circuit (17).
- [9] The portable emergency battery as set forth in claim 1, wherein the internal circuit (9) of the emergency battery (1) further comprises a Radio Frequency

Identification (RFID) circuit (18).

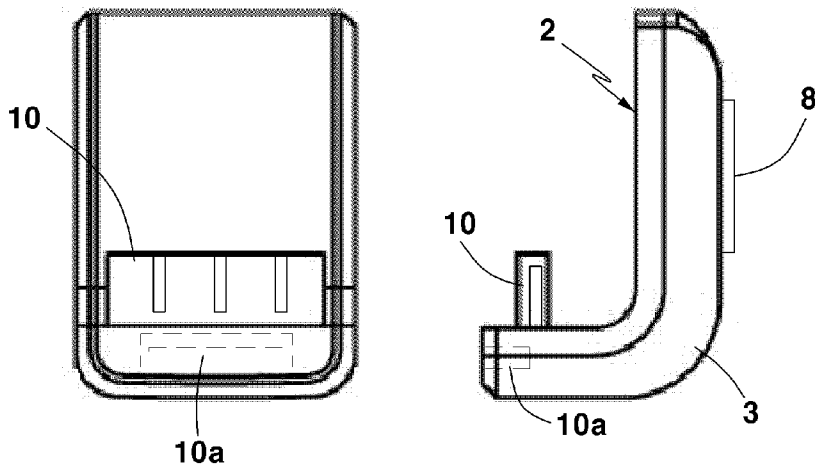
[Fig. 1]



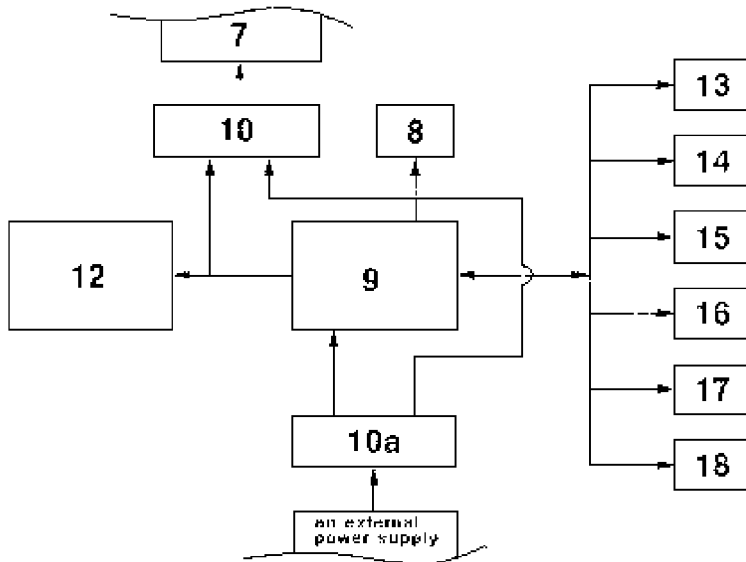
[Fig. 2]



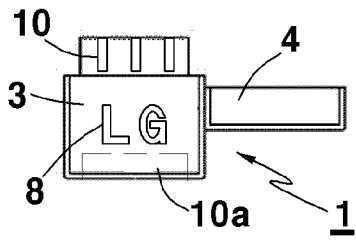
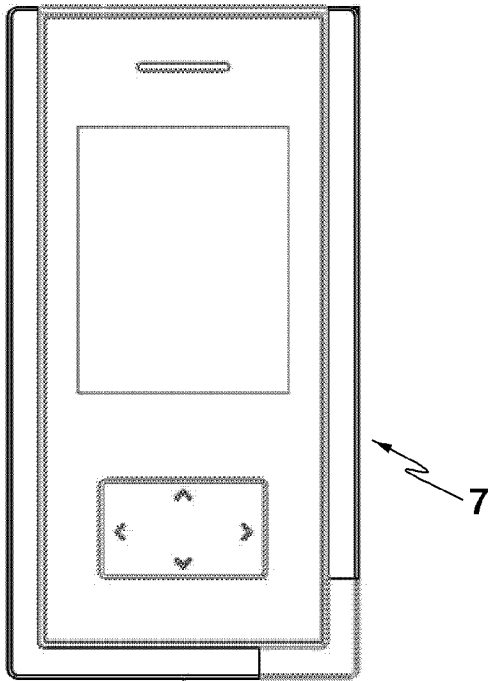
[Fig. 3]



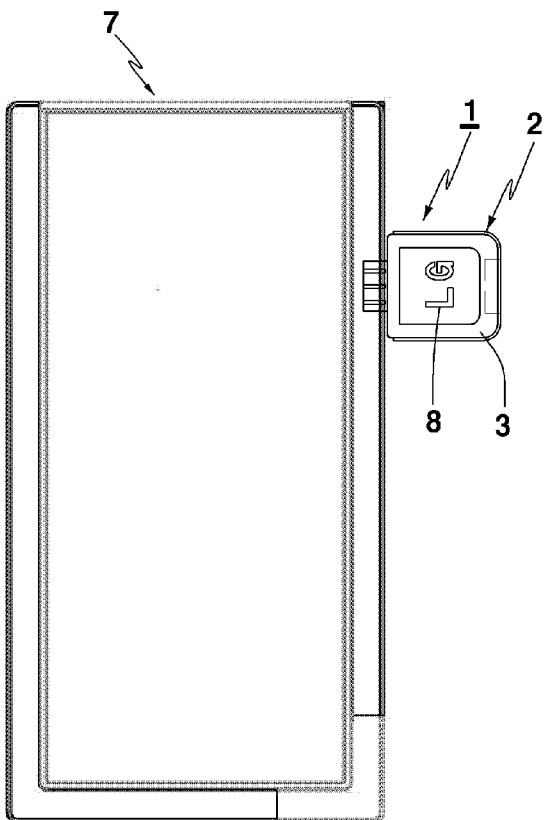
[Fig. 4]



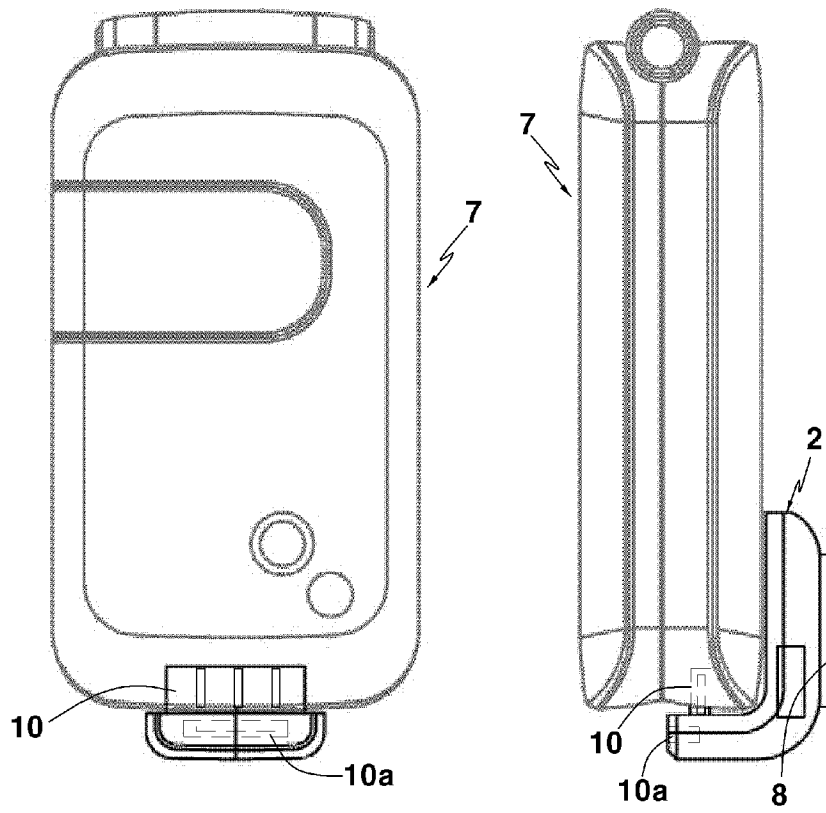
[Fig. 5]



[Fig. 6]



[Fig. 7]



A. CLASSIFICATION OF SUBJECT MATTER**H01M 2/02(2006.01)i**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 8 H01M

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

KR.JP : classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

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A	US 05717307 A, (MOTOROLA, INC.), 10 February 1998 (10.02.1998) see the abstract, figure 2, column 2: line 44 ~ column 3: line 34, claims 1 and 7.	1 - 9
A	US 05568038 A, (NEC CORPORATION), 22 October 1996 (22.10.1996) see the abstract, column 2: line 6 ~ column 3: line 7, claims 1 and 2.	1 - 9

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

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Date of the actual completion of the international search

21 SEPTEMBER 2007 (21.09.2007)

Date of mailing of the international search report

21 SEPTEMBER 2007 (21.09.2007)

Name and mailing address of the ISA/KR

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Telephone No. 82-42-481-8493



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

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