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

(11) **EP 2 239 504 A1**

(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 153(4) EPC

(43) Date of publication:
**13.10.2010 Bulletin 2010/41**

(21) Application number: **09700116.8**

(22) Date of filing: **02.01.2009**

(51) Int Cl.:
***F23Q 2/32*** *(2006.01)* ***A24F 15/10*** *(2006.01)*

(86) International application number:
**PCT/KR2009/000006**

(87) International publication number:
**WO 2009/084934 (09.07.2009 Gazette 2009/28)**

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR**
Designated Extension States:
**AL BA RS**

(30) Priority: **02.01.2008 KR 20080000168**

(71) Applicant: **Lee, Hee Jae**
**Kyungkido 472-967 (KR)**

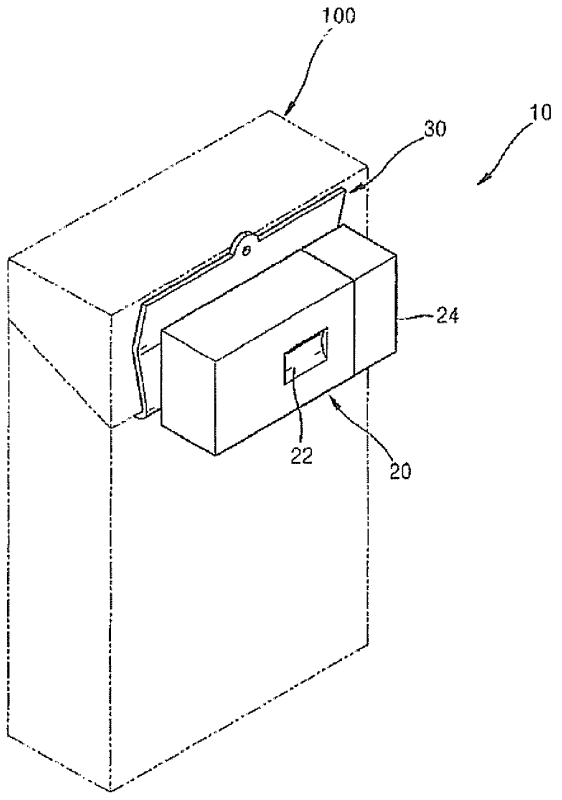
(72) Inventor: **Lee, Hee Jae**
**Kyungkido 472-967 (KR)**

(74) Representative: **von Kreisler Selting Werner**
**Deichmannhaus am Dom**
**Bahnhofsvorplatz 1**
**50667 Köln (DE)**

# (54) ELECTRICAL GAS LIGHTER WHICH IS CONVENIENT TO CARRY AND USE

(57) The electric gas lighter according to the present invention is **characterized in that** it comprises a body and a switch which is able to slide relative to the body, and the abovementioned switch comprises a clip part which is able to deform resiliently in such a way as to be inserted into a cigarette packet, the abovementioned clip part comprises a guide part having a width wider than the thickness of the wall surface of a cigarette packet and comprises a securing part having a width narrower than the thickness if the wall surface if the abovementioned cigarette packet, and it can be carried around inserted in a cigarette packet or the like and can be lit up while it is attached to the cigarette packet.

[Fig. 1]




EP 2 239 504 A1

## Description

### BACKGROUND OF THE INVENTION

1. Technical Field

**[0001]** The present invention relates to a electrical gas lighter. Particularly the present invention relates to the electrical gas lighter which can be carried with cigarette packet integrally and which can be lit up while it is attached to the cigarette packet.

2. BACKGROUND ART

**[0002]** Generally, it needs a match or a lighter as a portable lighting means to smoke necessarily.
**[0003]** Generally gas or gasoline etc, is used as a fuel for the lighter. To operate the lighter for smoking, it can be used the light generated as the fuel is combusted through lighting means which located on the top of the cigarette body.
**[0004]** The cigarette and the lighter each are carried because they are separated, and so it is inconvenient in that they each are found for lighting the cigarette. Also there are problems that it is easy to lose the lighter and it cannot light the cigarette sometimes for smoking when the lighter is not carried. There is a problem that it is inconvenient because it needs both hands to take a cigarette out of cigarette packet and extra to use the lighter for lighting the cigarette.
**[0005]** Thus, most smoker have experiences that they buy a new lighter or are not able to smoke because they have lose or have done carry it. Some smokers insert a small disposable lighter into the outer cover of the cigarette packet and use it in case of need to avoid the above-mentioned problems. But it also has a problem that it is inconvenient to take the small disposal lighter out of the cigarette packet for smoking.

### BRIEF DESCRIPTION OF DRAWINGS

**[0006]** The invention is diagrammatically illustrated, by way of example, in the accompanying drawings in which:

Fig.1 shows a perspective view of an electrical gas lighter according to a preferable embodiment of the present invention;

Fig.2 shows a side view of the electrical gas lighter of Fig.1;

Fig.3 shows a more detailed view of the electrical gas lighter of Fig.1;

Fig.4 and Fig.5 show a view for explaining how to use the electrical gas lighter of Fig.1;

Fig.6 shows a view for explaining the other part of the electrical gas lighter of Fig.1;

Fig.7 shows a view of another embodiment of the present invention;

Fig.8 shows a view of another embodiment of the present invention.

List of components

**[0007]**

| | |
|---|---|
| 10,10b: | an electrical gas lighter |
| 20: | a body |
| 22: | a groove part |
| 24: | a battery |
| 25: | an ignition switch |
| 25b: | a hanging part |
| 30,30b: | a clip part |
| 32: | a guide part |
| 34: | a securing part |
| 35: | a hanging jaw |
| 36: | a flange part |
| 38: | a hole for a linking ring |
| 39: | a double-sided tape |
| 100: | a cigarette packet |
| 110: | a cigarette |
| X: | longitudinal direction of the clip part |

### DISCLOSURE OF INVENTION

1. Technical purpose of the invention

**[0008]** A technical purpose of the present invention is to provide the electrical gas lighter having the more enhanced portability and convenience in that it is able to be carried and ignite attached to the cigarette packet and so on.

2. Technical solution

**[0009]** The electrical gas lighter according to the present invention has a body and a switch which is able

to slide relative to the body, the electrical gas lighter is **characterized in that** the switch comprises a clip part which is able to deform resiliently in such way as to be able to be inserted into a cigarette packet;
the clip part comprises a guide part having a width wider than the thickness of the wall surface of a cigarette packet; and comprises a securing part having a width narrower than the thickness of the wall surface if the cigarette packet.

3. Effects of the invention

**[0010]** The electrical gas lighter according to the present invention has effects wherein it has the improved portability and convenience by being able to be carried integrally with the cigarette packet and to ignite attached to the cigarette packet. Also in case that a double-sided tape is attached to the clip part as another preferable employment of the present invention, it has effect wherein it is able to be carried while it is attached to a body surface of cell-phone or the like. Also in case that a hole for a link ring is provided to the clip part as another preferable employment of the present invention, it has effect wherein it is able to be carried conveniently by linking the cell-phone or the like. Also in case that a subsidiary battery is provide to the body as another preferable employment of the present invention, it has effect wherein it is able to use as a reserve battery of portable electronic devices like a cell-phone, a PMP, a DMB, or the like. Also in case that the clip part is made in such a way that it is able to be separated from the ignition switch as the other preferable employment of the present invention, it has effect wherein it is able to be used semi-permanently by changing only the gas lighter when it is no longer of any use.

## DESCRIPTION OF SPECIFIC EMBODIMENTS

**[0011]** Now, various embodiments of the present invention will be specifically described with reference to the accompanying drawings.

**[0012]** Fig.1 shows a perspective view of an electrical gas lighter according to a preferable embodiment of the present invention. Fig.2 shows a diagrammatical side view of the electrical gas lighter of Fig.1. Fig.3 shows a more detailed view of the electrical gas lighter of Fig.1. Fig.4 and Fig.5 show a view for explaining how to use the electrical gas lighter of Fig.1. Fig.6 shows a view for explaining the other part of the electrical gas lighter of Fig.1.

**[0013]** Referring to Fig.1 - Fig.6, the electrical gas lighter according to a preferable embodiment of present invention comprises a body(20), an ignition switch(25) and a clip part(30).

**[0014]** The abovementioned body(20) comprises a groove part(22) and a battery(24). The body(20) comprises components for performing the ignition function of the lighter(10) like a fuel container and piezoelectric materials or the like inside thereof. The components are able to be used from the conventional technology and are not characteristic parts of the present invention, so are no more mentioned in detail.

**[0015]** The abovementioned groove part(22) is provided for user easily to apply an external force using a finger or the like in order to product the ignition function. In other words, the groove part(22) supports the finger of user to the body(20) while ignition. The groove part(22) has a concave form in the surface of the body.

**[0016]** The abovementioned battery(24) is located on the one side surface of the body. It is preferable that the battery(24) is a secondary cell, for example lithium-ion battery to be able to charge and discharge over and over again. The battery(24) is able to be inserted to the body by various conventional methods. In other words, for example, an accommodating space is formed in the body, so the battery(24) is fitted to it, or the battery is attached to the body(20) using a means like magnet, or the battery is attached to the body(20) by an elastic means like a spring or a rubber band.

**[0017]** The abovementioned ignition switch(25) is installed to be able to slide relative to the body(20). More in detail, the ignition switch(25) is installed to be able to slide in the X direction as showed in Fig.2 relative to the body(20). The ignition switch(25) generates an electric light by operating the piezoelectric material placed inside the body(20), also opens and closes a gas injection nozzle of the fuel container. The structure of the ignition switch(25) for opening and closing the piezoelectric material and the gas injection nozzle of the fuel container is the same of the conventional electric gas lighter, so no more mention in detail.

**[0018]** The abovementioned clip part(30) is placed in the ignition switch(25). The clip part(30) has the structure which is able to deform elastically in such a way that the ignition switch is fitted in the cigarette packet. In the embodiment of the present invention, the clip part(30) has an integral form not to separate from the ignition switch (25). The clip part(30) is the part which is fitted in the cigarette packet(100) and secured to the cigarette packet. The clip part(30) composes a guide part(32), a secure part(34), a flange part(36), and a hole for a link ring.

**[0019]** The abovementioned guide part(32) is the part that has a width wider than the thickness of the wall surface of the cigarette packet(100). The guide part(32) is the part that is provided in order for the clip part(30) to join easily to the cigarette packet(100) even though the clip part(30) is approaching the cigarette packet(100) with a little bit errors when the clip part(30) is inserted into the cigarette packet(100). The abovementioned securing part(34) has a width narrower than the thickness of the wall surface of the cigarette packet(100). The securing part(34) deforms elastically when the clip part(30) is inserted into the cigarette packet(100), and is supported forced the press to the both sides of the wall surface of the cigarette packet(100) by a compression-restoration force.

**[0020]** The abovementioned flange part(36) is provided to the open side of the guide part(32). The flange part (32) has a form that is perpendicular to the longitude direction(X) to the clip part(30). The flange part(32) disperses the pressure which is forced to the cigarette packet(100) when the clip part(30) is inserted into the cigarette packet(100) so that it protects the crumple or tear of the cigarette packet(100).

**[0021]** The abovementioned hole for the link ring(38) is placed in the upper of the clip part(30). The hole for the link ring(38) is the part that is provided in order for the clip part to be linked to a cell-phone etc. using a link ring or the like.

**[0022]** A double-sided tape(39) is adhesive to one side surface of the clip part (30). More in detail, the double-sided tape(39) is adhesive to the opposite side of the ignition switch(25). The double-sided tape(39) can be used in such a way that the body(20) is slid in X direction as shown at Fig.2 after clip part(30) is not secured to the cigarette packet but attached to a cell-phone or something that the clip part(30) is able to be secured to relative to the ignition switch(25) when the electric gas lighter is lit up. As shown at Fig. 7, in the preferable embodiment of the present invention, a absorption pad(39a) is able to be used instead of the double-sided tape(39). Also, though not shown at figurations, a rubber pad which the coefficient of friction thereof is bigger relatively is able to be adhered instead of the double-sided tape(39).

**[0023]** Hereafter, it will be explained in detail the operation of the electric gas lighter(10) which is structured as abovementioned, for example in a case that a user uses it with the cigarette packet together.

**[0024]** Firstly, it will be explained that the electric gas lighter(10) according to the present invention is joined to the cigarette packet(100). The electric gas lighter(10) according to the present invention is structured in such a way that the body (20) is moved, that is, slid relative to the ignition switch(25) in the ignition switch(25)'s relative securing state and operates the ignition device which is provided inside the body(20).

**[0025]** In a case that the user joins the electric gas lighter(10) according to the present invention to the cigarette packet(100), the user firstly opens the lid of the cigarette packet(100). Then the guide part(32) which is provided in the clip part(30) is approached to the edge of the lid of the cigarette packet(100). After the edge of the lid of the cigarette packet(100) is entered in the guide pat(32), let the clip part(30) move continuously in the same direction. Then the securing part(34) deforms elastically by the thickness of wall surface of the lid of the cigarette packet(100), and supports securely the both sides of the wall surface of the cigarette packet(100). Also the flange part(36) is supported to the other wall surface of the cigarette packet(100), and hereby the clip part(30) is secured to the lid of the cigarette packet. Close the lid of the cigarette packet(100) in this state. Then, as shown at Fig.1, the electric gas lighter(10) is joined to the cigarette packet(100). If a user carries the cigarette packet(100) and the electric gas lighter(10) as integrally this like, the user will not lose the lighter because does not carry the lighter separately for smoking. The electric gas lighter according to the present invention has the effect of the good portability like this.

**[0026]** Now, it will be explained that a cigarette is pick out from the cigarette packet(100), and is lit up using the electric gas lighter for smoking. In order to pick out a cigarette(100) from the cigarette packet(100), the cigarette packet(100) and the electric gas lighter(10) as shown at Fig.1 are picked out from a pocket or the like, and the lower part of the body(20) is pushed upwardly by a finger as shown at Fig.5 so that the lid of the cigarette packet(100) is opened. After a cigarette is picked out from the cigarette packet(100), the upper part of the body (20) is pushed downwardly so that the lid of the cigarette packet(100) is closed. And then in the state that the cigarette(110) is put between the user's teeth or held in the user's hand as shown at Fig.4, the groove part(22) of the body(20) is supported by the user' finger and the body (20) is pushed upwardly in the arrowed direction. Then the body(20) is moved relative to the ignition switch(25), the ignition device which is built in the body(20) operates and the lighter is ignited, hereby the cigarette(110) is able to be lit up. The electric gas lighter(10) according to the present invention has a effect that it's ignition is possible in the state that it is secured to the cigarette packet (100) like this, also has another effect that it opens and closes the cigarette packet(100) as the function of a handle by securing to the lid of the cigarette packet. In this process, the groove part(22) which is equipped in the body(20) let user force to the body(20) effectively. Also as the preferable embodiment of the present invention, if a battery is provided to the body(20), the electric gas lighter will provide the reserve electricity to electric devices like cell-phone, a PMP, or etc. by the battery. Also the electric gas lighter(10) according to the present invention has a hole for a link ring(38) which can make it link to cell-phone or the like using a linking ring. Thus, though it is not adhesive to the cigarette packet(100), it has a effect that its portability is improved in the case that nonsmokers should use a lighter(10) outdoors. Also as a preferable of the present invention, the electric gas lighter(10) has a effect that it can be carried with being attached to a cell-phone, a backpack, etc. using the double-sided tape in the case that the double-sided tape is attached to the clip part(30). Also the electric gas lighter(10) has a effect that even though it should be used by one hand only it can be ignited by securing the clip part(30) to a fixed thing relatively for example, a rock outdoors or a refrigerator indoors. It has the same effect even though a rubber pad or an absorption pad(39a) is used instead the abovementioned double-sided tape(39).

**[0027]** In the embodiment of the present invention, the open side of the guide part has the flange part that is perpendicular to the longitudinal direction of the clip part. But even though it has not the flange part, the purpose of the present invention can be achieved if the wall sur-

face of the cigarette packet is study enough.

**[0028]** In the embodiment of the present invention, the clip part has the hole for linking ring so that the lighter is linked to a cell-phone etc. by linking ring and the body has the groove part that supports user's finger when igniting. But even though it does not have the hole for linking ring or the groove part, the purpose of the present invention can be achieved with somewhat lower effects.

**[0029]** In the embodiment of the present invention, the body has the battery that can be used to the portable electric device. But even though it does not have the battery, the purpose of the present invention can be achieved.

**[0030]** In the embodiment of the present invention, the clip part has the form integral with the ignition switch not to separate from it. But the electric gas lighter(10b) according to another embodiment of the present invention as shown at Fig.8 that is even structured for the clip part to datable from the ignition switch can achieve the purpose of the present invention.

**[0031]** Referring the Fig.8, the clip part(30b) has a hanging jaw(35) and the ignition part(25) has the hanging part(25b) so that the hanging jaw(35) is fitted and hung to the hanging part(25b) by force, and thereby the clip part(30) and the ignition switch(25) are secured relatively. One skilled in the relevant art will recognize that there are various detachable structures apart from the above-mentioned structure.

**[0032]** In the description, numerous specific details are provided, such as examples of components, to provide a thorough understanding of embodiments of the invention. However, one skilled in the relevant art will recognize that embodiments of the invention can be practiced without one or more of the specific details. In other instances, well-known structures, materials, or operations are not shown or described in detail to avoid obscuring essentials of the invention.

**Type for embodiment of the invention**

**[0033]** It is preferable that the open side of the guide part has a flange part which is perpendicular to the longitudinal direction of the clip part.

**[0034]** It is preferable that the clip part has a hole for a linking ring so that it can be linked to a cell-phone etc. by the linking ring, and that the body has a groove part which supports user' finger when ignition.

**[0035]** It is preferable that the body has a battery to be used to portable electric devices.

**[0036]** It is preferable that the clip part is structured to detachable from the ignition switch.

**[0037]** It is preferable that the one of a double-sided tape, a rubber pad having the high coefficient of friction, an absorption is attached to the one side of the clip part.

**Claims**

1. An electric gas lighter comprising a body and a switch which is able to slide relative to the body and being convenient to carry and use, is **characterized in that,**
   said switch comprises a clip part which is able to deform resiliently in such a way as to able to be inserted into a cigarette packet;
   said clip part comprises a guide part having a width wider than the thickness of the wall surface of the cigarette packet; and securing part having a width narrower than the thickness of the wall surface of the cigarette packet.

2. The electric gas lighter of claim 1, is **characterized in that** the open side of the guide part has a flange part which is perpendicular to a longitudinal direction of the clip part.

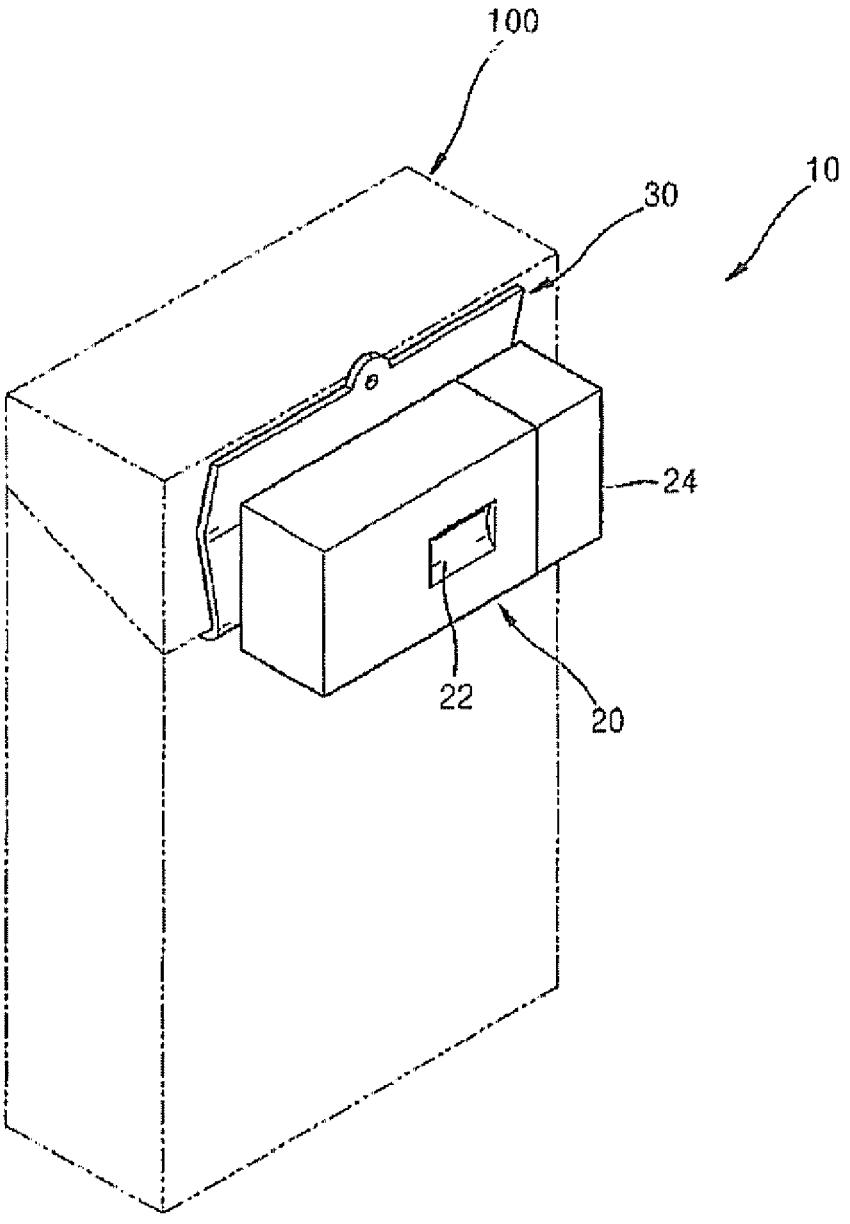
3. The electric gas lighter of claim 1, is **characterized in that** the clip part has a hole for a linking ring so that it can be linked to a cell-phone etc. by the linking ring, and the body has a groove part which supports user's finger when ignition.

4. The electric gas lighter of claim 1, is **characterized in that** the body has a battery to be used to portable electric devices.

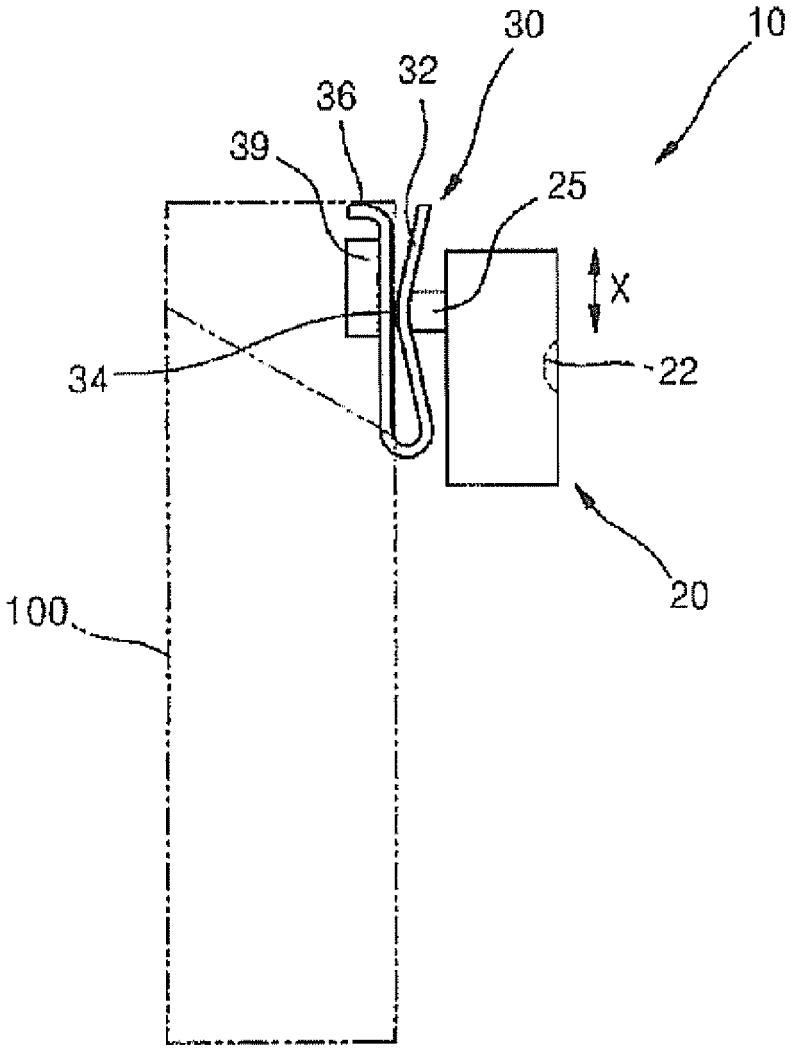
5. The electric gas lighter of claim 1, is **characterized in that** the clip part is structured to detachable from the ignition switch.

6. The electric gas lighter as claimed in one of claims 1 to 5, is **characterized in that** the one of a double-sided tape, a rubber pad having the high coefficient of friction, an absorption is attached to the one side of the clip part.

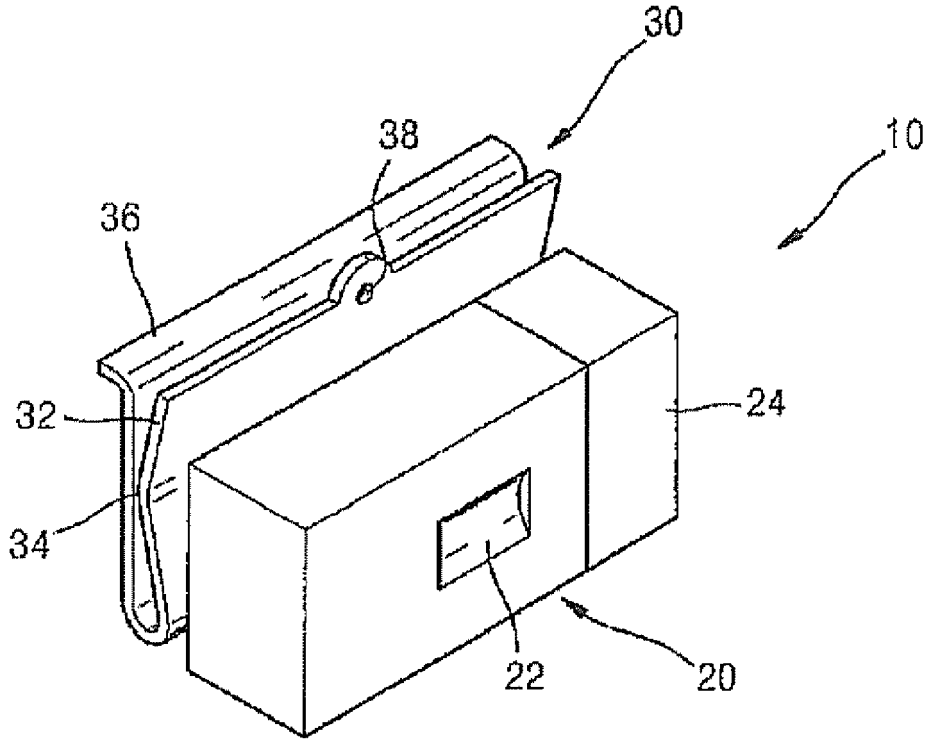
[Fig. 1]



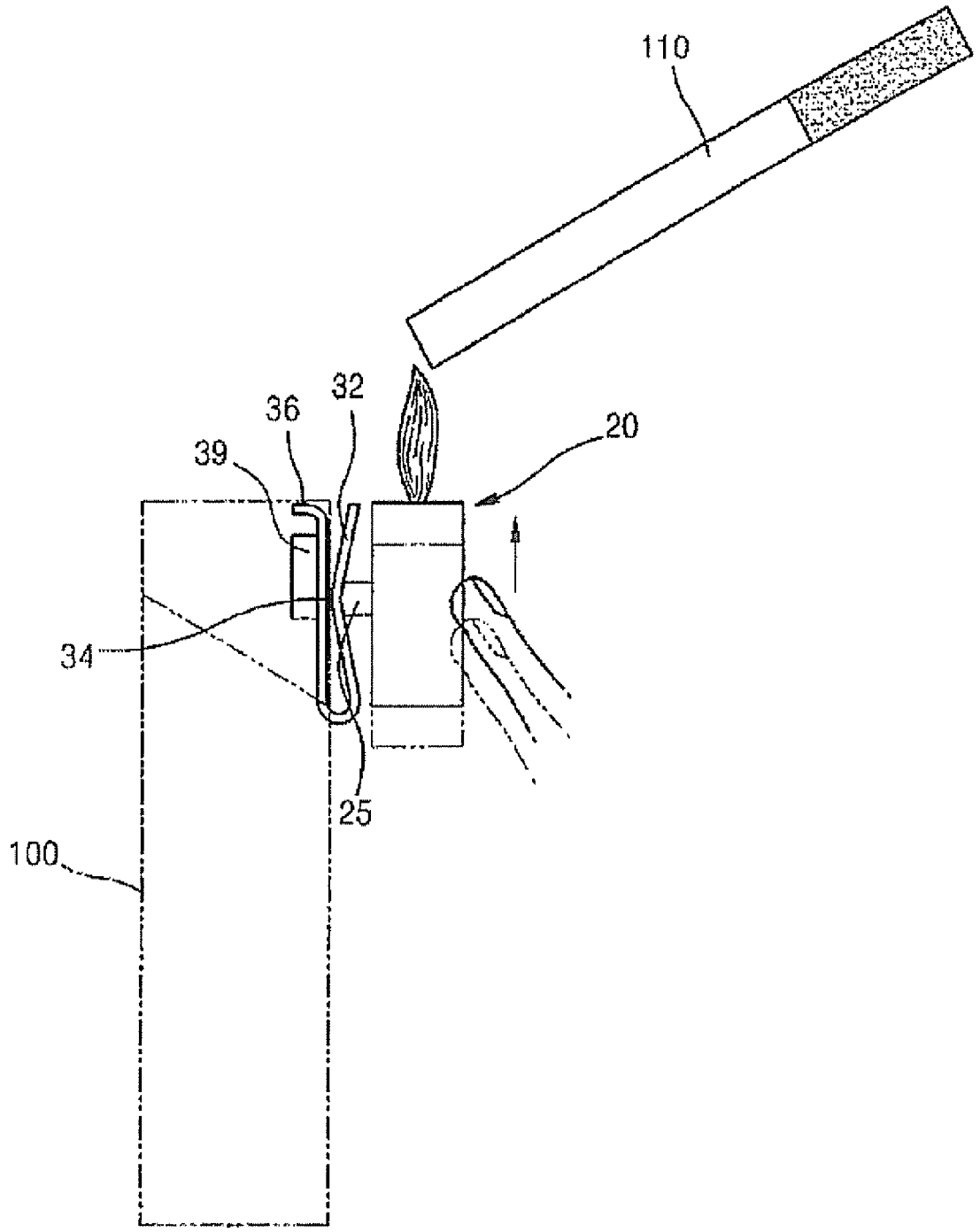
[Fig. 2]



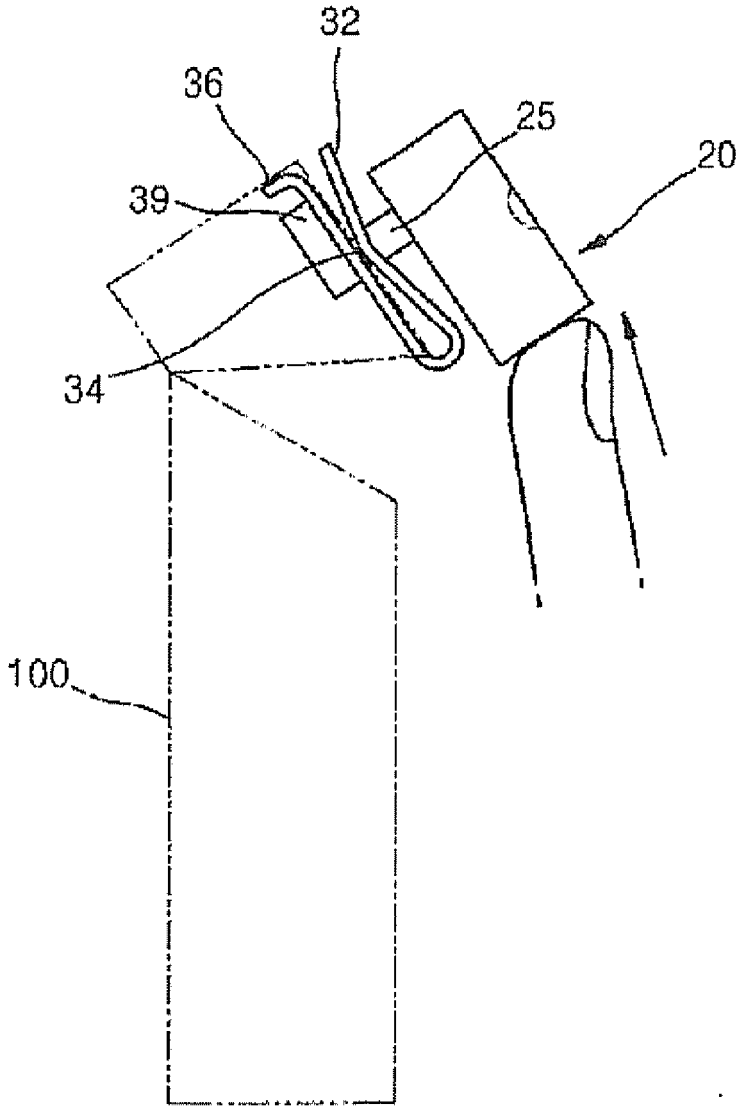
[Fig. 3]



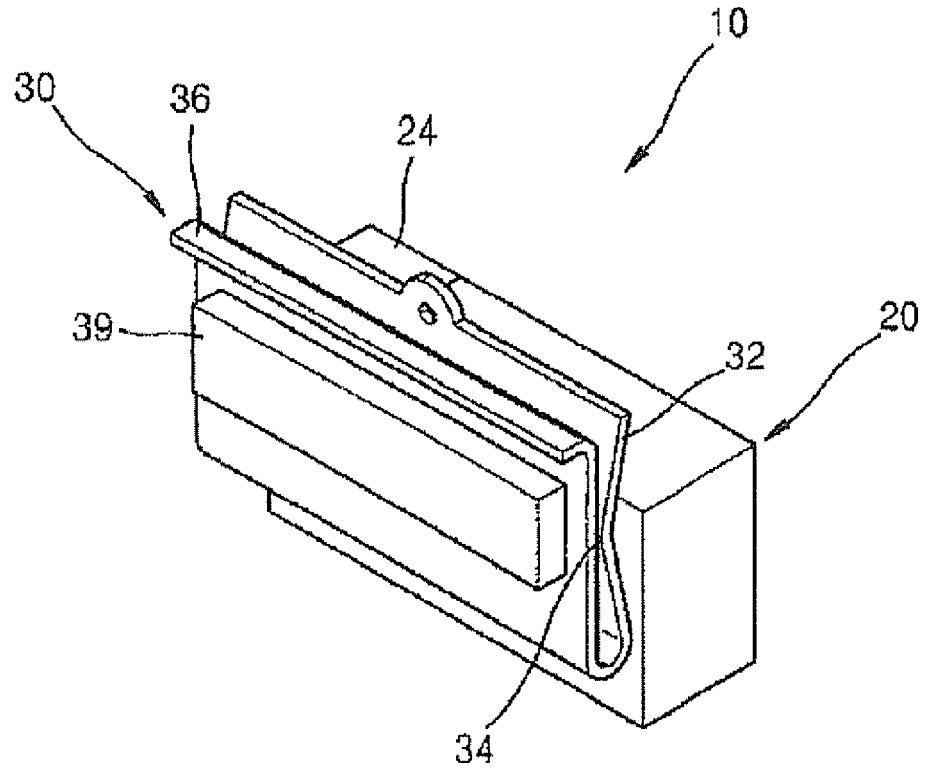
[Fig. 4]



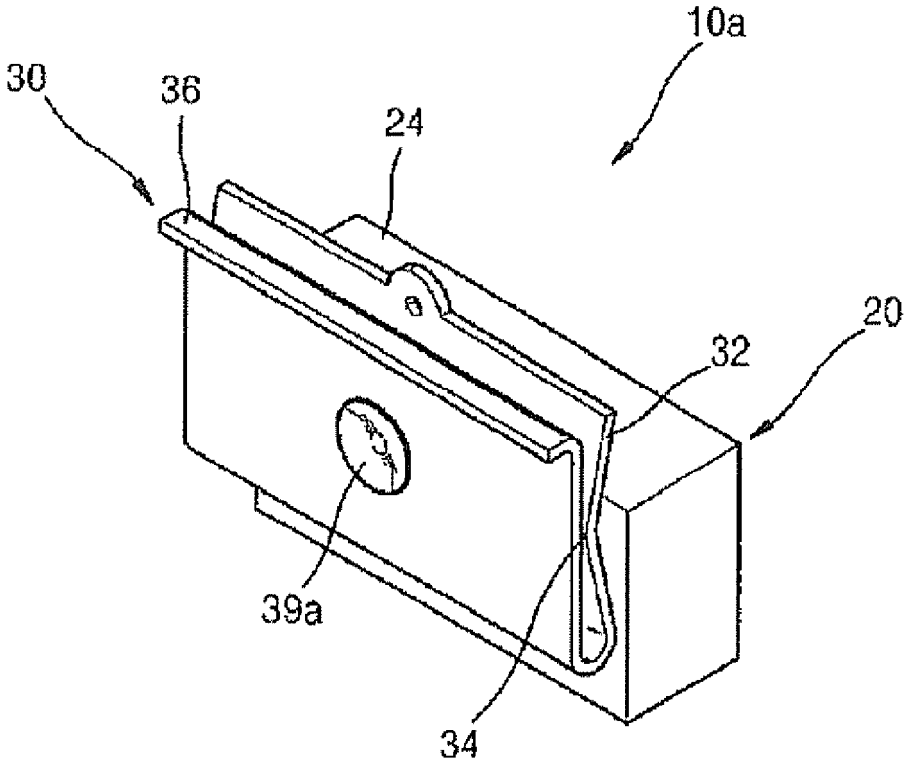
[Fig. 5]



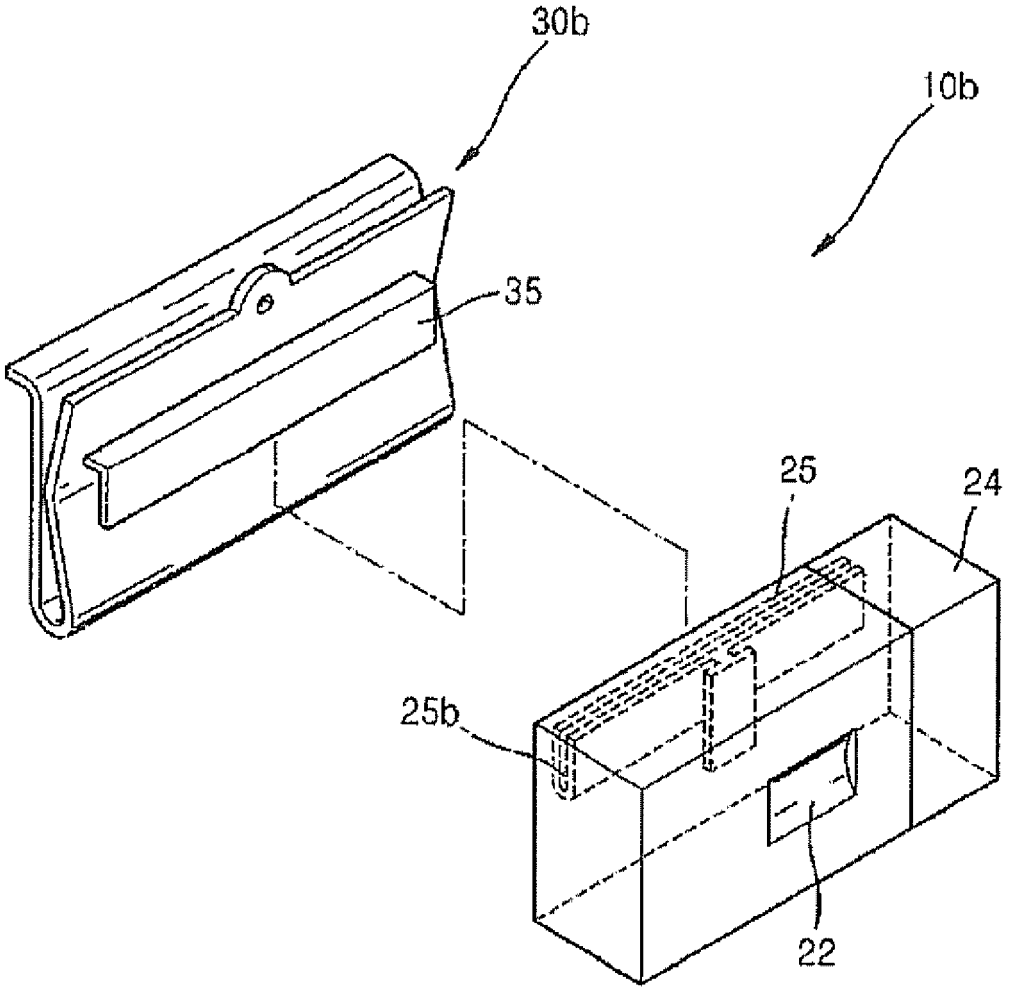
[Fig. 6]



[Fig. 7]



[Fig. 8]



INTERNATIONAL SEARCH REPORT

International application No.
**PCT/KR2009/000006**

A. CLASSIFICATION OF SUBJECT MATTER

***F23Q 2/32(2006.01)i, A24F 15/10(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: F23Q 2/32, A24F15/10

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

Published Korean Utility Model registrations since 1948
Published Korean Utility Model applications since 1983
Published Japanese Utility Model registrations and Utility Model applications since 1975

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

eKIPASS (KIPO internal) & keywords: clip, insert

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| Y | JP 18-153401 A (TOKAI INC.) 15 June 2006<br>See pages 2, 3; figure 1. | 1-6 |
| Y | WO 00-71939 A1 (KISCHITZKI, BODO) 30 November 2000<br>See abstract; page 5; lines 1-14; figures 1, 2. | 1-6 |
| Y | JP 13-269158 A (HIDEMASA, GOYA) 02 October 2001<br>See page 3; paragraph [0017]; figure 7. | 3 |
| Y | JP 03097507 U (TADASHI, GUKURA) 29 January 2004<br>See page 2; line 19-25; figures 1-4. | 5 |

☐ 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 application or patent but published on or after the international
"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

INTERNATIONAL SEARCH REPORT