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- **Jung,, Keun Hwa**
443-743 Gyeonggi-do (KR)
- **You,, Min Su**
443-743 Gyeonggi-do (KR)
- **Lee,, Jong Jin**
443-743 Gyeonggi-do (KR)
- **Moon,, Ung Han**
443-743 Gyeonggi-do (KR)

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(71) Applicant: **Samsung Electro-Mechanics Co., Ltd.**
Gyeonggi-do (KR)

(74) Representative: **Powell, Timothy John**
Potter Clarkson LLP
Patents
The Belgrave Centre
Talbot Street
Nottingham Nottinghamshire NG1 5GG (GB)

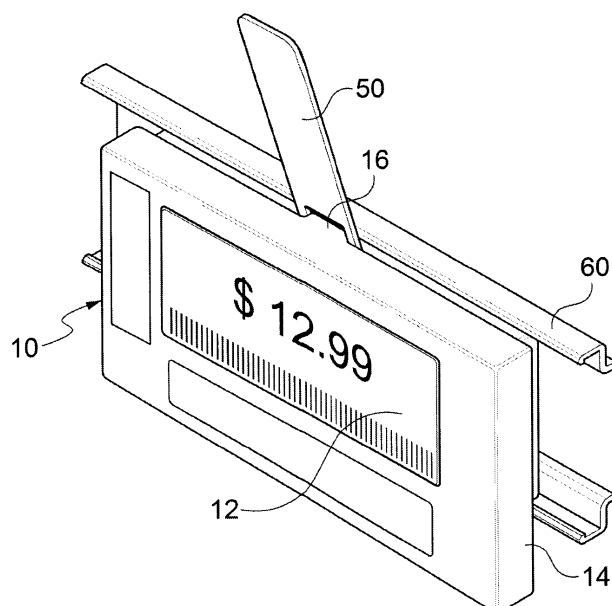
(72) Inventors:
• **Kang,, Yeon Hee**
443-743 Gyeonggi-do (KR)

(54) **Electronic tag and remover key of electronic tag**

(57) Disclosed herein are an electronic tag installed in a distribution market and having a brand name, cost, or the like described thereon, and a remover key separating the electronic tag. The electronic tag installed in a guide rail of a product display stand, includes: a display

part and a case coupled to the display part; at least a pair of guide protrusions formed on a circumference surface of the case so as to be inserted into the guide rail and slid in the guide rail; and a support protrusion formed between the pair of guide protrusions of the case.

[FIG. 3]



Description

CROSS REFERENCE(S) TO RELATED APPLICATIONS

[0001] This application claims the benefit of Korean Patent Application Serial No. 10-2013-0060434, entitled "Electronic Tag and Remover Key of Electronic Tag" filed on May 28, 2013, which is hereby incorporated by reference in its entirety into this application.

BACKGROUND OF THE INVENTION

1. Technical Field

[0002] The present invention relates to an electronic tag and a remover key of the electronic tag, and more particularly, to an electronic tag installed in a distribution market and having a brand name, cost, or the like described thereon, and a remover key separating the electronic tag.

2. Description of the Related Art

[0003] In order to exhibit and sell a number of products in a predetermined space such as a distribution market, a label displaying information and cost of the products has been used.

[0004] In general, the cost displaying label has been used in a scheme in which it is attached to a position in the vicinity of displayed product by directly handwriting product information necessary to sell the product, for example, cost and discount information on a paper or printing the product information on the paper so as to conform to a standardized form.

[0005] A traditional scheme looks as if it may be simple, convenient, and implemented at low cost, but in the case in which the standardized forms are used for tens of thousands of product items or more as in a large-scaled distribution market and costs are frequently changed, there is a limit as to what an existing paper label scheme is applied.

[0006] That is, if changes in costs of some product items among a number of product items have occurred, after a manager summarizes the changed costs and handwrites or prints the product information such as the changed costs, the manager has to go to where the corresponding products are sold and exhibited in the distribution market so as to replace the labels.

[0007] Therefore, time and workers for performing the above-mentioned work and replacement whenever the cost information of the product is changed have required and a need for improving the above-mentioned problems has increased due to nature of the large-scaled distribution market.

[0008] In recent, the existing paper label has significantly replaced with an electronic tag based on the above-mentioned market requirement.

[0009] The electronic tag is inserted into a guide rail of a display stand on which the product is displayed and is then moved along the guide rail so as to be disposed at a center of a place on which the product is placed.

5 **[0010]** When separating the electronic tag from the guide rail, the electronic tag may be separated from the guide rail by manipulating a stopper installed on a side of the electronic tag using a remover key.

10 **[0011]** However, the remover key of separating the electronic tag from the guide rail separates the electronic tag from the guide rail by lifting a lower end of the electronic tag in a state in which the remover key is inserted into the stopper of the electronic tag. In this process, a tip of the remover key may be damaged by excessive force of a user.

15 **[0012]** In addition, since the stopper of the electronic tag is elastically supported by a spring, a position of the electronic tag is adjusted after lifting the stopper using the remover key. However, in this case, it is difficult to finely adjust the position of the electronic tag.

[Related Art Document]

[Patent Document]

25 **[0013]** (Patent Document 1) Cited Reference: Korean Patent Laid-Open Publication No. 1999-0005966

SUMMARY OF THE INVENTION

30 **[0014]** An object of the present invention is to provide an electronic tag and a remover key of the electronic tag capable of easily installing and separating the electronic tag on and from a displaying stand of a product, and particularly, simultaneously anticipating convenience and durability according to the separation of the electronic tag.

35 **[0015]** Another object of the present invention is to provide an electronic tag and a remover key of the electronic tag capable of efficiency of management by preventing the electronic tag from being easily separated by an arbitrary tool.

40 **[0016]** According to an exemplary embodiment of the present invention, there is provided an electronic tag installed in a guide rail of a product display stand, the electronic tag including: a display part and a case coupled to the display part; at least a pair of guide protrusions formed on a circumference surface of the case so as to be inserted into the guide rail and slid in the guide rail; and a support protrusion formed between the pair of guide protrusions of the case.

45 **[0017]** According to another exemplary embodiment of the present invention, there is provided an electronic tag installed in a guide rail of a product display stand, the electronic tag including: a display part and a case coupled to the display part; at least a pair of guide protrusions formed on a circumference surface of the case so as to be inserted into the guide rail and slid in the guide rail; a

remover groove formed between the pair of guide protrusions of the case; and a rib formed in the remover groove of the case.

[0018] The remover groove may be configured in a shape in which a rear surface and an upper surface of the case are opened and the rib configured in the remover groove may be plural.

[0019] The remover groove may be provided with a plurality of ribs having different intervals from each other.

[0020] According to another exemplary embodiment of the present invention, there is provided a remover key installed in a guide rail of a product display stand and separating an electronic tag having a plurality of ribs formed therein, the remover key including: a handle and an extension part, wherein the extension part has a plurality of extensions formed so as to be coupled to the rib of the electronic tag.

[0021] The extension part may have a plurality of extensions formed so as to have different intervals therebetween.

[0022] The extension may be provided with an inclined surface having a thickness that becomes thin toward a tip part thereof and the extension may be configured to be bent.

BRIEF DESCRIPTION OF THE DRAWINGS

[0023]

FIG. 1 is an exploded perspective view showing a state in which an electronic tag and a guide rail are separated from each other according to an exemplary embodiment of the present invention;

FIG. 2 is an exploded perspective view showing a state in which the electronic tag and a remover key are separated from each other according to the exemplary embodiment of the present invention;

FIG. 3 is a perspective view showing a state in which the remover key is coupled to the electronic tag according to the exemplary embodiment of the present invention;

FIGS. 4A and 4B are illustration views showing processes in which the electronic tag is separated from the guide rail by the remover key according to the exemplary embodiment of the present invention;

FIG. 5 is an exploded perspective view showing a state in which an electronic tag and a guide rail are separated from each other according to another exemplary embodiment of the present invention;

FIG. 6 is an exploded perspective view showing a state in which the electronic tag and a remover key are separated from each other, according to another exemplary embodiment of the present invention;

FIG. 7 is a perspective view showing a state in which the remover key is coupled to the electronic tag according to another exemplary embodiment of the present invention; and

FIGS. 8A and 8B are illustration views showing proc-

esses in which the electronic tag is separated from the guide rail by the remover key, according to another exemplary embodiment of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0024] Hereinafter, exemplary embodiments of the present invention will be described in detail with reference to the accompanying drawings.

[0025] FIG. 1 is an exploded perspective view showing a state in which an electronic tag and a guide rail are separated from each other, according to an exemplary embodiment of the present invention, FIG. 2 is an exploded perspective view showing a state in which the electronic tag and a remover key are separated from each other, according to an exemplary embodiment of the present invention, FIG. 3 is a perspective view showing a state in which the remover key is coupled to the electronic tag, according to an exemplary embodiment of the present invention, FIGS. 4A and 4B are illustration views showing processes in which the electronic tag is separated from the guide rail by the remover key, according to an exemplary embodiment of the present invention, FIG. 5 is an exploded perspective view showing a state in which an electronic tag and a guide rail are separated from each other, according to another exemplary embodiment of the present invention, FIG. 6 is an exploded perspective view showing a state in which the electronic tag and a remover key are separated from each other, according to another exemplary embodiment of the present invention, FIG. 7 is a perspective view showing a state in which the remover key is coupled to the electronic tag, according to another exemplary embodiment of the present invention, and FIGS. 8A and 8B are illustration views showing processes in which the electronic tag is separated from the guide rail by the remover key, according to another exemplary embodiment of the present invention.

[0026] As shown in FIGS. 1 to 4, an electronic tag 10 according to an exemplary embodiment of the present invention is inserted into a guide rail 60 installed on a product display stand (not shown) of a distribution market so as to provide cost of the product and simple information related to the product.

[0027] The above-mentioned electronic tag 10 includes a display part 12 on which contents related to the product is displayed and a case 14 coupled to the display part 12.

[0028] The display part 12 may use an electronic paper or a display panel. Power supplement may be performed by a battery (not shown) installed on a rear surface of the electronic tag 10.

[0029] The case 14 having the display part 12 coupled thereto is manufactured by injecting synthetic resin and may have at least one pair of guide protrusions 15 formed any one of upper or lower portion of a central portion of a circumference surface of the case 14.

[0030] The pair of guide protrusions 15 is formed so that the electronic tag 10 is caught and slid in the guide rail 60 and the guide protrusion 15 may be configured in various shapes such as a rectangular shape, a semi-circular shape, a cylinder shape, or the like protruded toward an upper side.

[0031] In this case, the pair of guide protrusions 15 may be formed at both end portions of the case 14 and the guide protrusions 15 formed at the central portion of the case 14 is more preferable than the guide protrusions 15 formed at both end portions of the case 14 when considering convenience according to separation and installation of the electronic tag 10.

[0032] In addition, the pair of guide protrusions 15 may have a support protrusion 16 formed therebetween. The support protrusion 16 may be formed so as to have a size smaller than an interval between the pair of guide protrusions 15.

[0033] When the electronic tag 10 configured as described above is installed in the guide rail 60, the electronic tag 10 may be coupled to the guide rail 60 so that the guide protrusion 15 is inserted into a side of the guide rail 60 or may be installed so that the guide protrusion 15 is inserted into an inner side of the guide rail 60 by strongly pushing the electronic tag 10 toward the inner side of the guide rail 60 from a position on which a product is displayed.

[0034] However, since the method in which the guide protrusion 15 is inserted into the inner side of the guide rail 60 may damage the guide protrusion 15 by the guide rail 60, a method in which the guide protrusion 15 is inserted from the side of the guide rail 60 and is moved will be safe.

[0035] After the electronic tag 10 is installed as described above, when a manager separates the electronic tag 10 from the guide rail 60, the manager uses a remover key 50.

[0036] The remover key 50, which is configured by injecting a metal material or a synthetic resin material, includes a handle 52 and an extension part 55 formed to be extended from the handle 52.

[0037] The handle 52 may be manufactured so as to have a length of about 10cm, which is a width of a palm of normal man so that the manager may conveniently grasp and use the handle 52.

[0038] The extension part 55 includes extensions 56 in which both end portions rather than a central portion thereof are extended from the handle 52. The extensions 56 may be formed at both sides based on the center of the extension part 55 and may have a shape varied according to a shape and a position of the support protrusion 16 formed on the electronic tag 10.

[0039] In addition, a length of the extension 56 may be changed according to a thickness of the electronic tag 10 and may be formed so as to be the same as or larger than the thickness of the electronic tag 10.

[0040] In addition, the extension 56 has an inclined surface having a thickness that becomes thin toward a tip

part thereof. The inclined surface 57 is configured so that the extension 56 is further conveniently inserted into between the electronic tag 10 and the guide rail 60.

[0041] When the electronic tag 10 is separated from the guide rail 60 using the remover key 50 according to the exemplary embodiment of the present invention, the manager grasps the handle 52 and allows the support protrusion 16 of the electronic tag to be inserted between the extensions 56 while inserting the inclined surface 57 into the inner side of the guide rail 60.

[0042] Once the extensions 56 are inserted between the guide rail 60 and the electronic tag 10, the handle 52 is pressed in a downward direction. When the handle 52 is pressed, a rear surface of the extension part 55 presses an upper surface of the case 14 by a principle of a lever and the inclined surface 57 of the extensions lift the guide rail 60. The guide rail 60 is lifted, the guide protrusions 15 of the electronic tag is separated from the guide rail 60 by a predetermined interval.

[0043] Once the guide rail is separated from an upper portion of the electronic tag 10, the manager grasps the electronic tag 10 with his or her hand and takes out it from the guide rail 60.

[0044] Therefore, the electronic tag 10 according to the exemplary embodiment of the present invention may be quickly and conveniently separated from the guide rail 60 in the case of using the remover key 50.

[0045] Meanwhile, FIGS. 5 to 8 show another exemplary embodiment of the present invention and the electronic tag 10 according to the exemplary embodiment of the present invention may be easily separated from the guide rail 60 by forming a remover groove 17 on the circumference surface of the case 14 and forming a plurality of ribs in the remover groove 17.

[0046] More specifically, the remover groove 17 may be formed at the central portion of the case 14. The remover groove 17 has a shape in which rear and upper surfaces of the case 14 are opened. The plurality of ribs 18 may be formed in the remover groove 17 while each having different intervals.

[0047] The reason for forming the ribs 18 at different positions is to prevent the electronic tag 10 from being easily separated from the guide rail 60 using other tools other than the remover key 50 owned by the manager by configuring the remover key 50 and the remover groove 17 as a key and a lock.

[0048] In this case, the remover key 50 may be configured by bending a central portion of the extension part 55. A bending angle may have a range less than 90°. In the case in which the bending angle has a range of 90° or more, since an insertion angle of the remover key 50 becomes small in a process in which the remover key 50 is inserted into the remover groove 17, the usage of the remover key 50 may be further inconvenient.

[0049] When the electronic tag 10 is separated from the guide rail 60 by inserting the remover key 50 into the electronic tag 10, the remover key 50 is inserted into the electronic tag 10 so that the extension part 55 is coupled

to each rib 18 of the remover groove by vertically putting down the remover key 50 on the upper portion of the electronic tag 10.

[0050] In this state, once the remover key 50 is pressed in a direction opposite to a direction in which the guide rail 60 is positioned, the end portions of the extensions 56 lift the guide rail 60 around the bending part of the extension part 55.

[0051] Once the guide rail 60 is lifted, the guide protrusions 15 of the electronic tag is separated from the guide rail 60. Once the electronic tag 10 is separated from the guide rail 60, the manager takes out the electronic tag 10 from the guide rail 60 with his or her other hand.

[0052] As such, the electronic tag 10 according to the exemplary embodiment of the present invention may separate between the guide rail 60 and the electronic tag 10 by the principle of the lever in the case of forming the remover groove 17 on the upper portion of the case 14 and bending the shape of the remover key 50 at 90°.

[0053] The electronic tag and the remover key of the electronic tag according to the exemplary embodiment of the present invention may easily install and separate the electronic tag on and from the displaying stand of the product, and particularly, may simultaneously anticipate convenience and durability according to the separation of the electronic tag.

[0054] In addition, the electronic tag and the remover key of the electronic tag according to the exemplary embodiment of the present invention may increase efficiency in market management by preventing the electronic tag from being easily separated by a shopper using an arbitrary tool.

[0055] Hereinabove, although the electronic tag and the remover key of the electronic tag according to the exemplary embodiments of the present invention have been described, the present invention is not limited thereto, but may be variously modified and altered by those skilled in the art.

Claims

1. An electronic tag installed in a guide rail of a product display stand, the electronic tag comprising:

a display part and a case coupled to the display part;
at least a pair of guide protrusions formed on a circumference surface of the case so as to be inserted into the guide rail and slid in the guide rail; and
a support protrusion formed between the pair of guide protrusions of the case.

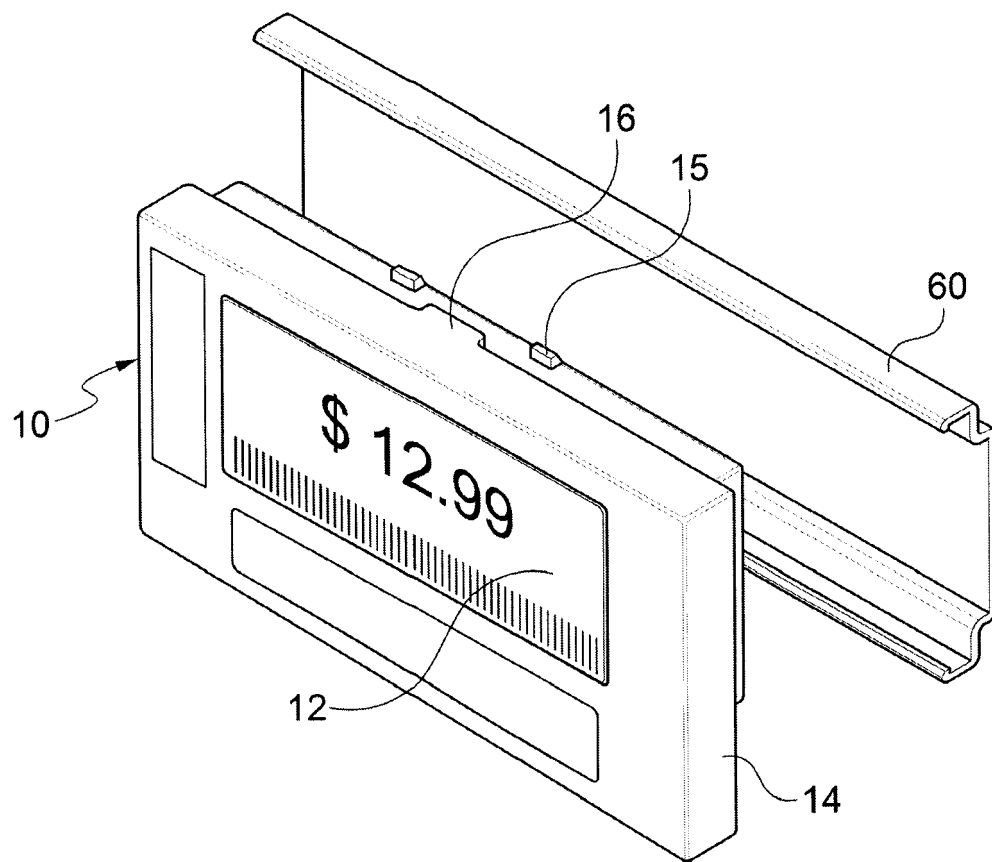
2. An electronic tag installed in a guide rail of a product display stand, the electronic tag comprising:

a display part and a case coupled to the display part;
at least a pair of guide protrusions formed on a circumference surface of the case so as to be inserted into the guide rail and slid in the guide rail;
a remover groove formed between the pair of guide protrusions of the case; and
a rib formed in the remover groove of the case.

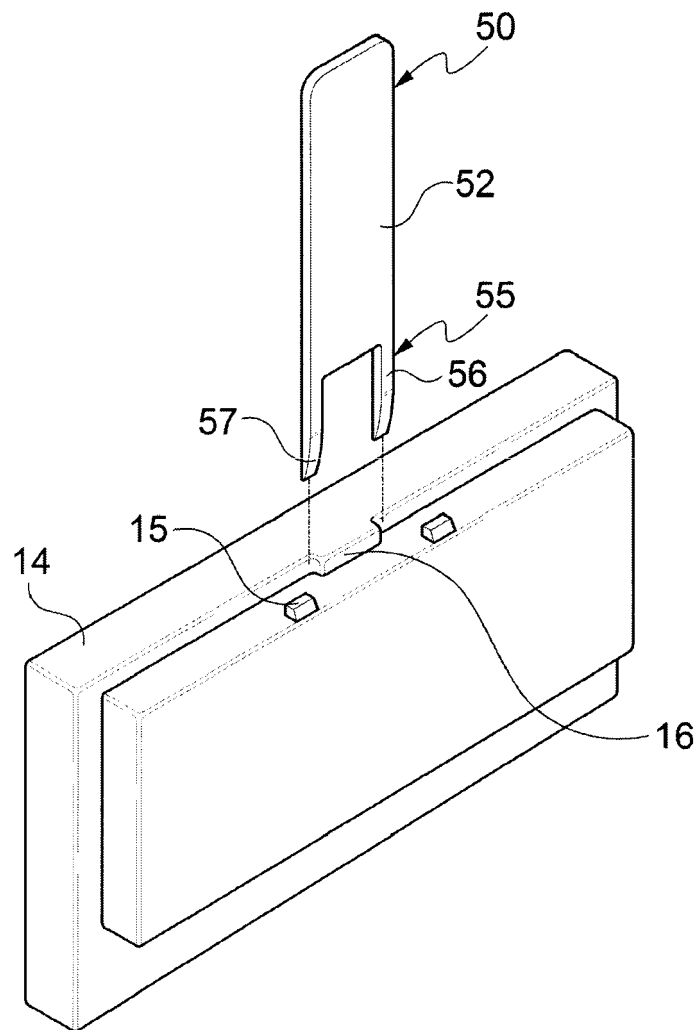
3. The electronic tag according to claim 2, wherein the remover groove is configured in a shape in which a rear surface and an upper surface of the case are opened.
4. The electronic tag according to claim 2, wherein the rib configured in the remover groove is plural.
5. The electronic tag according to claim 2 or 4, wherein the remover groove is provided with a plurality of ribs having different intervals from each other.
6. A remover key installed in a guide rail of a product display stand and separating an electronic tag having a plurality of ribs formed therein, the remover key comprising:

a handle and an extension part,
wherein the extension part has a plurality of extensions formed so as to be coupled to the rib of the electronic tag.
7. The remover key of the electronic tag according to claim 6, wherein the extension part has a plurality of extensions formed so as to have different intervals therebetween.
8. The remover key of the electronic tag according to claim 7, wherein the extension is provided with an inclined surface having a thickness that becomes thin toward a tip part thereof.
9. The remover key of the electronic tag according to claim 6, wherein the extension is configured to be bent.

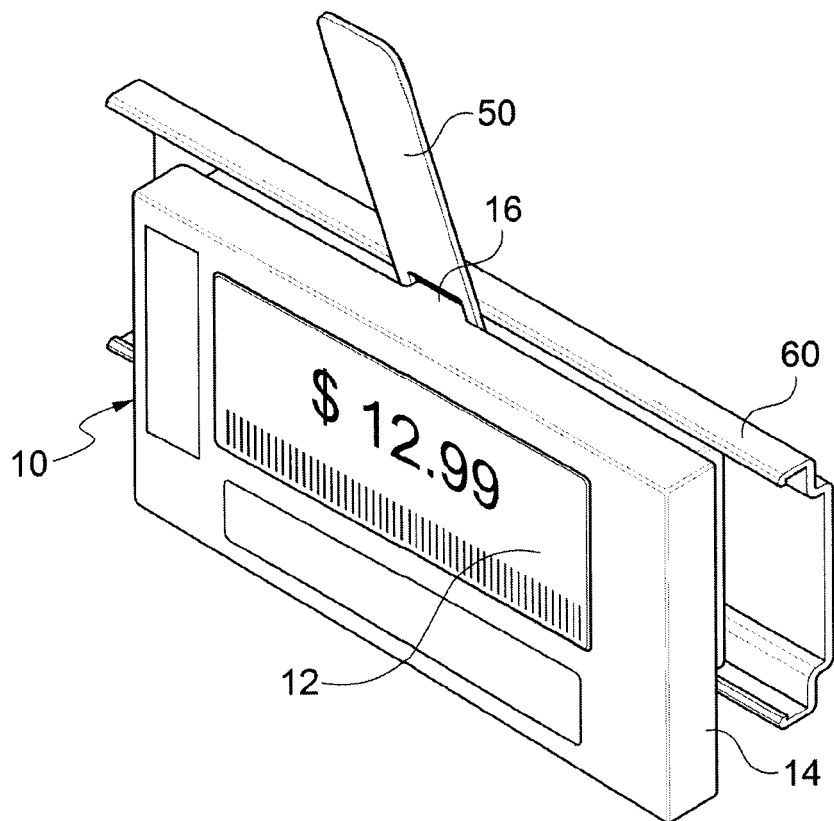
[FIG. 1]



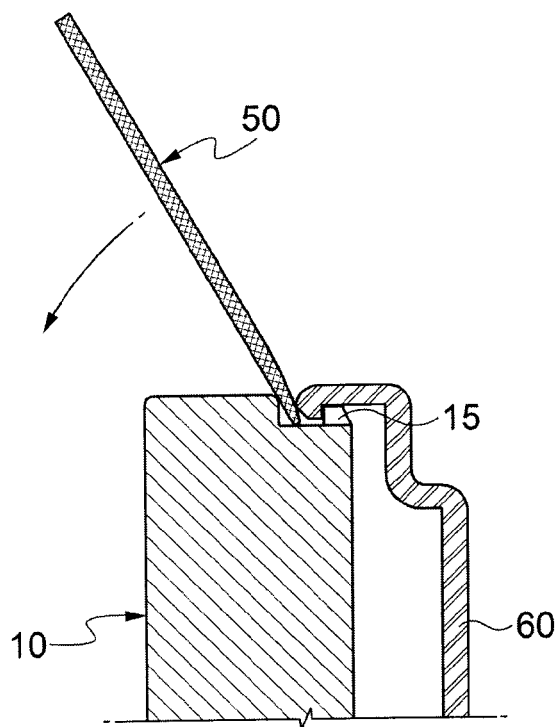
[FIG. 2]



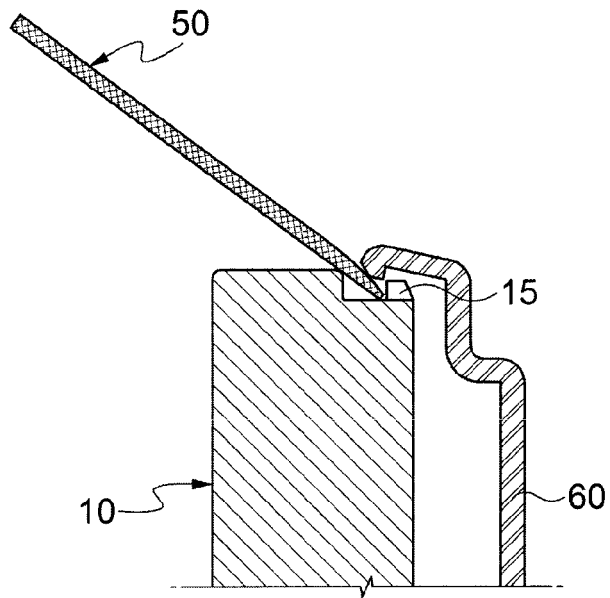
[FIG. 3]



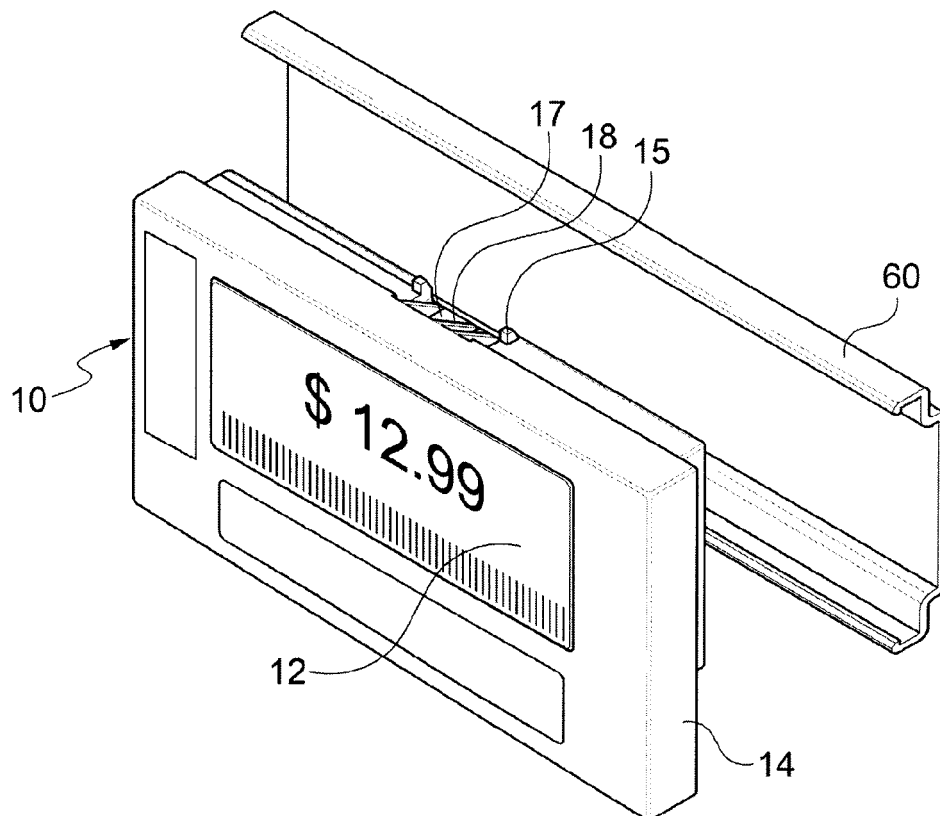
[FIG. 4A]



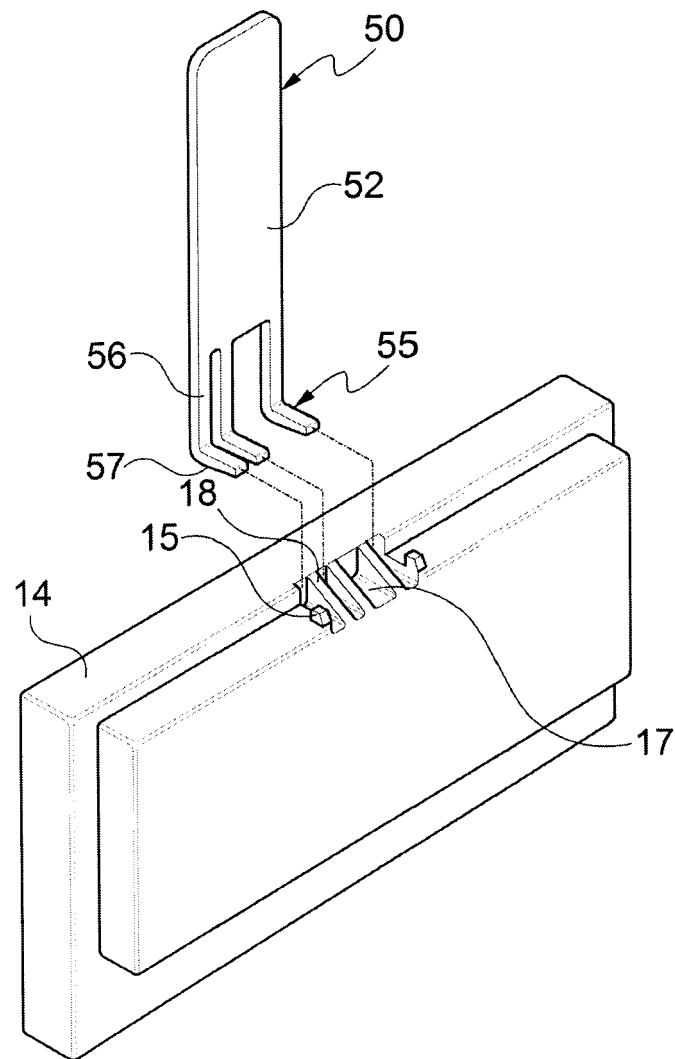
[FIG. 4B]



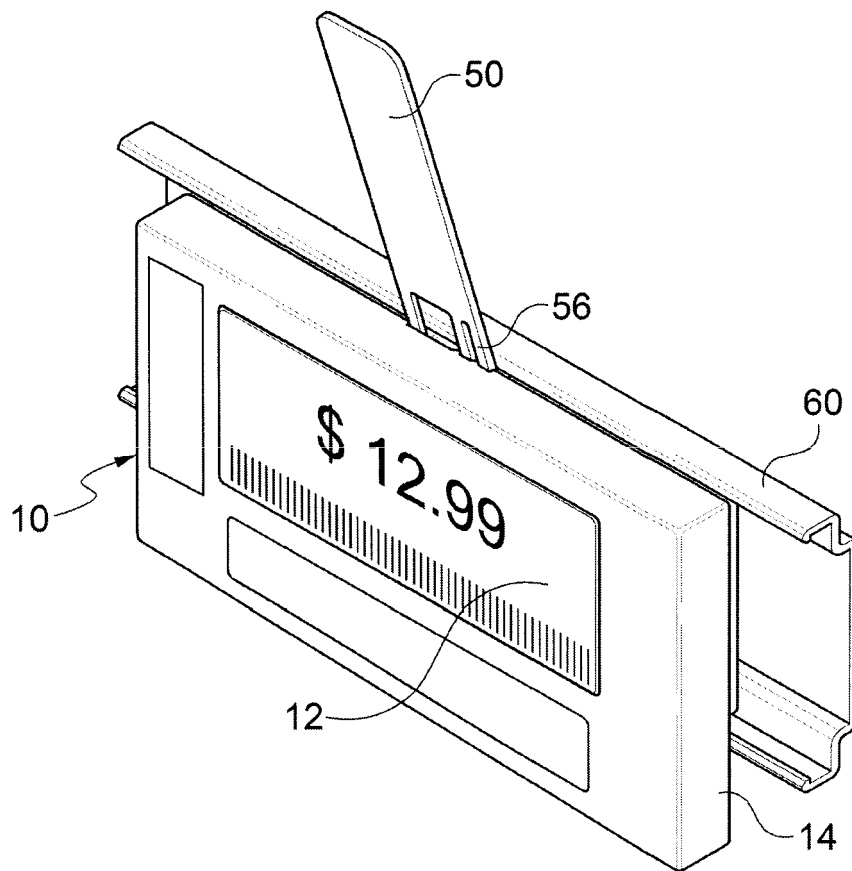
[FIG. 5]



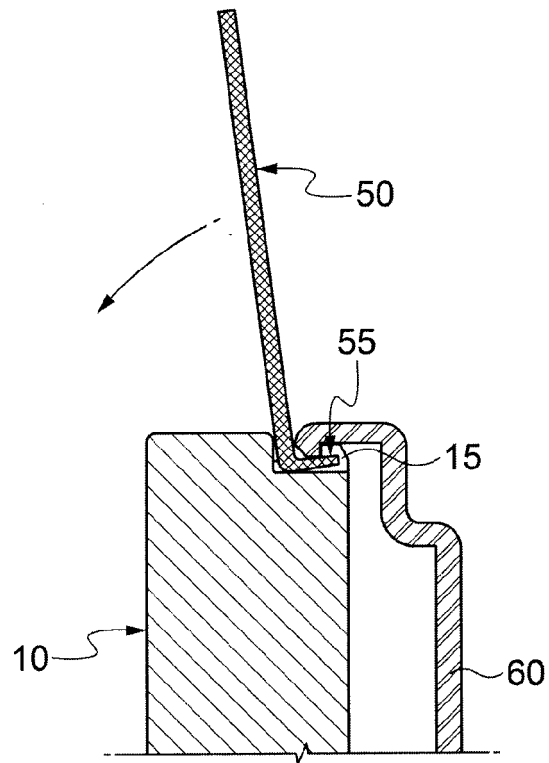
[FIG. 6]



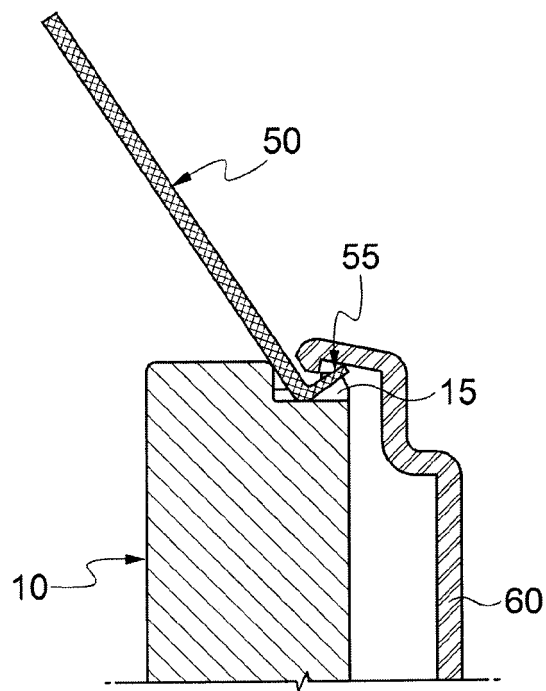
[FIG. 7]



[FIG. 8A]



[FIG. 8B]





EUROPEAN SEARCH REPORT

Application Number
EP 13 27 5263

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 99/03174 A1 (WHITAKER CORP [US]; HUIN THIERRY [FR]; VOGEL FREDERIC [FR]) 21 January 1999 (1999-01-21) * page 1, line 1 - line 5 * * page 4, line 22 - page 5, line 31 * * page 7, line 6 - page 8, line 29 * * figures 1-11 *	1,6-9	INV. G09F3/20
X	EP 0 683 478 A2 (AT & T GLOBAL INF SOLUTION [US] NCR INT INC [US]) 22 November 1995 (1995-11-22) * column 3, line 35 - column 4, line 16 * * figures 3,4,5 *	1,6,7	
X	GB 2 462 334 A (SAMSUNG ELECTRO MECH [KR]) 10 February 2010 (2010-02-10) * paragraph [0089] - paragraph [0093] * * figures 6,8B *	6,7	
A	US 2010/088937 A1 (LEE JAE CHAN [KR] ET AL) 15 April 2010 (2010-04-15) * paragraph [0033] - paragraph [0051] * * page 1-; figures 1-5 *	1-9	TECHNICAL FIELDS SEARCHED (IPC) G09F
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 17 October 2014	Examiner Pantoja Conde, Ana
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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EPO FORM 1503 03/92 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 13 27 5263

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17-10-2014

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
WO 9903174	A1	21-01-1999	AU	8030798 A		08-02-1999
			DE	69804822 D1		16-05-2002
			DE	69804822 T2		28-11-2002
			EP	1012926 A1		28-06-2000
			WO	9903174 A1		21-01-1999

EP 0683478	A2	22-11-1995	DE	69518694 D1		12-10-2000
			DE	69518694 T2		31-05-2001
			EP	0683478 A2		22-11-1995
			JP	H07319397 A		08-12-1995
			US	6069596 A		30-05-2000

GB 2462334	A	10-02-2010	FR	2934912 A1		12-02-2010
			GB	2462334 A		10-02-2010
			KR	20100019106 A		18-02-2010
			US	2010031548 A1		11-02-2010

US 2010088937	A1	15-04-2010	GB	2464353 A		21-04-2010
			KR	20100042029 A		23-04-2010
			US	2010088937 A1		15-04-2010

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- KR 1020130060434 [0001]
- KR 19990005966 [0013]