

Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) **EP 1 125 510 A2**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
22.08.2001 Bulletin 2001/34

(51) Int Cl.7: **A24F 19/00**

(21) Application number: **01102821.4**

(22) Date of filing: **12.02.2001**

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE TR**
Designated Extension States:
AL LT LV MK RO SI

(72) Inventor: **Cho, Byung-Kwan**
276, Yangcheon-ku, Seoul (KR)

(74) Representative: **Patentanwälte
Hauck, Graalfs, Wehnert, Döring, Siemons
Neuer Wall 41
20354 Hamburg (DE)**

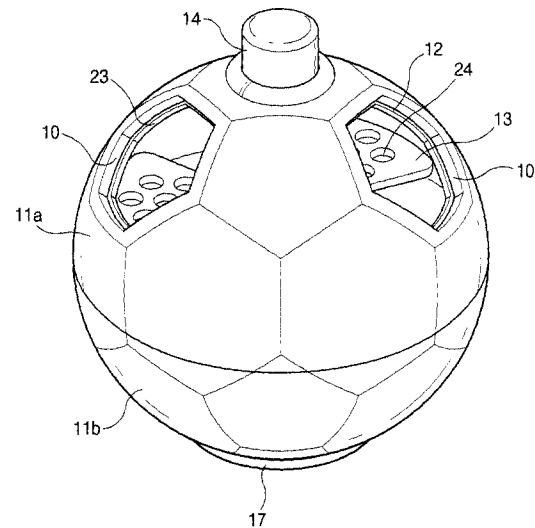
(30) Priority: **10.02.2000 KR 2000003444**

(71) Applicant: **Cho, Byung-Kwan**
276, Yangcheon-ku, Seoul (KR)

(54) **Ashtray**

(57) The present invention relates to an ashtray which could be used as the decoration due to good appearance as well as could not make other people unpleasant by covering the interior thereof, as it is not in use, and could cause ashes to be knocked off easily by the simple operation of the button as it is in use. For this, the present invention provides an ashtray comprising: an upper and lower spherical body having at least three ash hole in an upper surface thereof and forming a certain inner space by being coupled each other, and a supporter supporting the upper and lower body; a spherical door coupled in the upper and lower body and rotating selectively, the door opening and closing each ash hole at the same time, and an extinguishing plate 13 coupled with the door and cause cigarette to put out; a button coupled with an upper end of the upper and lower body to slide up and down, the button pushed elastically by projecting outwardly; an upper and lower ratchet member coupled with the button and door respectively and engaging each other to transmit the power in one direction, the upper and lower ratchet member rotating regularly by the spiral power transmission with the button and rotating the extinguishing and door in a certain angle.

FIG. 1



EP 1 125 510 A2

Description

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The present invention relates to an ashtray, more specifically the ashtray which could be used as a decoration due to the good appearance, could used as the ashtray only in necessity, and particularly causes an ash or a butt not to appear by covering an interior thereof when it is not in use so as to keep surroundings as well as to perform its own function.

Background of the Related Art

[0002] Generally, an ashtray is a container having an opened upper part, and rarely includes a groove that a cigarette is seated and a lid covering the upper part.

[0003] However, these conventional ashtrays make other people unpleasant due to the visible ashes and butts therein. Also if the ashtray is not emptied frequently, the ashes and butts stacked fully makes surroundings and the ashtray itself dirty.

SUMMARY OF THE INVENTION

[0004] The present invention is contemplated to solve the aforementioned problem, and it is an object of the present invention to provide an ashtray, which is used as a decoration due to the good appearance as well as do not makes other people unpleasant by covering an interior thereof when it is not in use, and allows ashes to be knocked off with a simple operation when it is in use.

[0005] To accomplish the above object, it is provided an ashtray comprising: an upper and lower spherical body having at least three ash hole in an upper surface thereof and forming a certain inner space by being coupled each other, and a supporter supporting the upper and lower body; a spherical door coupled in the upper and lower body and rotating selectively, the door opening and closing each ash hole at the same time, and an extinguishing plate 13 coupled with the door and cause cigarette to put out; a button coupled with an upper end of the upper and lower body to slide up and down, the button pushed elastically by projecting outwardly; an upper and lower ratchet member coupled with the button and door respectively and engaging each other to transmit the power in one direction, the upper and lower ratchet member rotating regularly by the spiral power transmission with the button and rotating the extinguishing and door in a certain angle.

[0006] Specifically, a ball stopper restricting a rotation limit of the door and extinguishing plate exactly is provided in one side of an upper surface of the door.

[0007] Additionally, two opposite horizontal projection are formed at an end portion of the button and two par-

allel spiral groove extending lengthwise are formed on a circumferential surface of the upper ratchet member, thereby the upper ratchet member could rotate, as each horizontal projection proceeds along the each spiral groove in pushing of the button.

[0008] Preferably, the button slides up and down exactly along a key groove of a body housing extending inwardly to an upper end of the upper body by using a key attached on a side thereof.

[0009] Furthermore, it is preferable that adhesive means is provided at the supporter so as to be used in interior of vehicles.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] The features and advantages of the present invention will be more described specifically in the following description of preferred embodiments of the invention with reference to the accompanying drawings wherein:

FIG. 1 is a perspective view showing an ashtray in use according to the present invention;

FIG. 2 is a perspective view showing the ashtray not in use according to the present invention;

FIG. 3 is an exploded perspective view showing components of the ashtray according the present invention;

FIG. 4 is a sectional view illustrating pre-operational status of the ashtray according to the present invention; and

FIG. 5 is a sectional view illustrating post-operational status of the ashtray according to the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0011] Reference will now be made in detail to the embodiment of the present invention and examples of which are illustrated in the accompanying drawings. In explaining the present invention, the same names and reference numerals will be given to the same components, and explanations in the same will be omitted.

[0012] FIG. 1 and FIG. 2 are showing status of an ashtray according to the present invention.

[0013] As illustrated, an upper body 11a and a lower body 11b having a volume containing a certain amount of ashes and butts are joined detachably, a button 14 is projected in a center of the upper body 11a, and three ash hole 10 is formed with a constant interval along an upper end of the upper body 11a.

[0014] However the upper body 11a and lower body 11b according to one embodiment of the present invention form a completed sphere, any similar type sphere is enough to obtain an effect expected in the present invention.

[0015] This spherical upper and lower body 11a, 11b

maintain their position by being located in or merged with a supporter 17, and more preferably could be used advantageously in the interior of vehicles where the vibration is generated severely if adhesive means such as a double-sided adhesive tape is attached on a bottom surface of the supporter 17.

[0016] The upper part of the body 11a has three ash hole 10 and they are arranged with the interval of 120°, and thereby a door 12 opening and closing the ash hole 10 sequentially has door hole 23 with the interval of 120° and one rotation limit of the door 12 is determined as 60°.

[0017] FIG. 1 illustrates the status that the ashtray is being used, and since the ash hole 10 of the upper body 11a coincides exactly with the door hole 23 of the door 12 as illustrated, smoker knocks ashes off into the ashtray and puts the cigarette out.

[0018] FIG. 2 illustrates the status that the ashtray is not being used, and since the door 14 has one rotation and closes the ash hole 10 by pushing the button 14 as illustrated, the interior of the ashtray is covered.

[0019] FIG. 3 illustrates components of the ashtray according the present invention.

[0020] As shown in FIG. 3, the ashtray of the present invention comprises container means accommodating ashes and butts, door means opening and closing the interior, operation means for controlling the opening or closing status of the ashtray, and drive means rotating the door means by the operation means.

[0021] The container means includes the spherical upper and lower body 11a, 11b assembled detachably, and more specifically the container means is assembled or dissembled by the fastening and releasing between a groove 24 and projection 25 formed in an end portion of the bodies 11a, 11b.

[0022] That is, as the ashtray is filled with ashes and butts, the fastening of the groove 24 and projection 25 is released by twisting the upper and lower body 11a, 11b in opposite direction respectively, and then the ashtray could be emptied by separating the upper and lower body 11a, 11b.

[0023] Also, three ash hole 10 arranged with constant interval, for example 120° along the peripheral of the center, is formed in an upper surface of the upper body 11a, and through the ash hole 10, smoker knocks ashes off into the ashtray and puts cigarette out.

[0024] The ash hole 10 could be designed freely regardless of the number of hole, if considering one rotation limit of the door 12 suitably.

[0025] Also, a cylindrical body housing 20 which vertically extends with a predetermined length and has a lower end opened partly, is formed in the center of the upper body 11a, and this body housing 20 guides an exact up and down sliding of the button 14 inserted therein.

[0026] For this, a key groove 22 incised in vertical direction is formed in a wall surface of the body housing 20, and a key 21 fitted in one side of the button 14 is

guided along the key groove 22, thereby the exact up and down sliding of the button 14 is possible.

[0027] Particularly, when the entire ashtray is made of plastics, it is preferable that a metal plate 32 resisting the heat of ashes and butts is attached, or other metal layer is coated on the wall surface and bottom surface of the lower body 11b.

[0028] The door means comprises a hemispherical door 12 is assembled to be struck to an inner surface of the upper body 11 a, and includes an extinguishing plate 13 fastened to a lower end of this door 12.

[0029] Around an upper surface of the door 12, three door hole 10 corresponding to three ash hole 10 of the upper body 11a are arranged with the interval of 120°, and a cylindrical door housing 29 extending downwardly is provided in the center of the door 12. Therefore, the door 12 is fitted in the outside of the body housing 20 formed in the upper body 11 a and has its pivot in rotation.

[0030] In addition, the extinguishing plate 13 comprises a cylindrical body having low center height and at least three radial blades extending horizontally and is fixed to the lower end of the door 12 by using the cylindrical body.

[0031] Especially, the door 12 and extinguishing plate 13 are coupled to maintain the predetermined relative position by a locating groove 34 and locating projection 33 in the each bottom surface. That is, when the door 12 and extinguishing plate 13 is coupled with the locating projection 33 and locating groove 34 being aligned each other, each door hole 23 in the door 12 and each blade of the extinguishing plate 13 is misaligned to a certain degree. Therefore, in use of the ashtray, since this misalignment causes the blades of the extinguishing plate 13 to move aside in one direction, smoker knocks ashes off and puts the cigarette out more easily.

[0032] Also, since a plurality of the extinguishing holes 26 are formed in the blade of the extinguishing plate 13, they assist the easy extinguishments of the cigarette. In this extinguishing plate 13, it is preferable that an upper surface of the plate 13 is coated with the metal layer so as to prevent the extinguishing plate 13 from the deformation due to the heat of cigarette.

[0033] Such door 12 and extinguishing plate 13 are substantially supported by the fastening with a screw to a lower ratchet member 15b supported by the bottom surface of the body housing in the upper body 11a. And, the door 12 and extinguishing plate 13 rotate together with the rotation of the ratchet member 15b, as the a coupling projection 30 formed in a bottom surface of the lower ratchet member 15b is fitted through a coupling groove 31 formed in the door 12 and extinguishing plate 13.

[0034] Further, a ball stopper 16 limiting the exact one rotation is provided in the door 12.

[0035] In the ball stopper 16, a ball spring 16b and ball 16a is contained sequentially in a spring seat 16c formed at one upper side of the door 12, and according

to the rotation of the door 12, the ball 16a is engaged selectively in the engaging groove 16d arranged with the constant interval along the path of the ball 16b at the inner surface of the upper body 11a.

[0036] Since six engaging groove 16d is formed corresponding to the one rotation limit 60° of the door 12, the one rotation limit of the door 12 could be controlled exactly as 60°.

[0037] The operation means comprises the button 14 pushed directly with the hand and a button spring 27 restoring the button 14.

[0038] The button 14 has a hollow cylindrical body, two opposite horizontal projection 18 extending from the body toward the center is formed in a lower end thereof, and a hole for the key 21 is formed in one side surface thereof.

[0039] The horizontal projection 18 provides the force rotating an upper ratchet member 15a, as proceeding along a spiral groove 19 of the upper ratchet member 15a. The key 21 enables the exact up and down sliding of the button 14, as proceeding downwardly along the key groove 22 of the body housing 20.

[0040] This button 14 is inserted sequentially with a button spring 27 in the body housing 20 of the upper body 11a, and slides up and down using the key 21 guided along the key groove 22 of the body housing 20.

[0041] The drive member comprises the upper ratchet member 15a cooperating with the button 14 and the lower ratchet member 15b coupled with the door 12.

[0042] The upper and lower ratchet member 15a, 15b transmit the power by the engaging and releasing between an upper ratchet 28a and a lower ratchet 28b formed on each plane contacting mutually.

[0043] That is, since the upper and lower ratchet 28a, 28b have teeth which only engage in one direction and enables the sliding in another direction, the upper and lower ratchet 28a, 28b are engaged each other and the ratchet 15b also rotates together, as the upper ratchet member 15a rotates by the force from the button 14.

[0044] Specifically, since two parallel spiral groove 19 extending lengthwise is formed in a circumferential surface of the upper ratchet 15a and the horizontal projection 18 of the button 14 proceeds in this spiral groove 19, the rotation of the upper ratchet member 15a is possible according to the up and down sliding of the button 14.

[0045] Therefore, pre and post-operational status of the ashtray according to the present invention is described as follows.

[0046] FIG. 4 illustrates pre-operational status of the ashtray according to the present invention.

[0047] As shown in FIG. 4, the button 14 located in the upper end of the upper body 11a, 11b maintains the projected status by the button spring 27, and the ash hole 10 of the upper and lower body 11a, 11b is closed by the internal door 12.

[0048] That is, since the interior of the ashtray is covered as shown in FIG. 2 described above, the clean ap-

pearance could be kept when the ashtray is not in use.

[0049] FIG. 5 illustrates post-operational status of the ashtray according to the present invention.

[0050] As can be shown in FIG. 5, when the button 14 is pushed to use the ashtray, the button 14 moves downwardly guided by the key 21 proceeding along the key groove 22, and at the same time the horizontal projection 18 of the button 14 rotates the upper ratchet member 15a with proceeding along the spiral groove 19 of the upper ratchet member 15a.

[0051] Continuously, according to the rotation of the upper ratchet member 15a, the lower ratchet member 15b engaged in one direction with the upper ratchet member 15a rotates together. Then, the door 12 and extinguishing plate 13 coupled therewith also rotate and open the ash hole 11 a in the upper body 11 a, and thereby the ashtray could be used.

[0052] With one push of the button 14, the door 12 and extinguishing plate 13 open and close the ash hole 10 of the upper body 11a, as rotating in 60° of one direction by the ball stopper 16. The upper ratchet member 15a rotated in one direction by the button 14 rotates in opposite direction to the original position with the restoration of the button 14 and prepares to perform the next step.

[0053] Since the upper ratchet member 15a in the restoration has the sliding contact with the lower ratchet member 15a without engagement and the door 12 and extinguishing plate 13 including the lower ratchet member 15b is restricted by the ball stopper 16, the restoration of the button 14 and the upper ratchet member 15a do not affect the status of the ashtray itself.

[0054] The effects of the present invention could be summarized as follows.

[0055] The ashtray according the present invention could be used as the decoration due to good appearance such as a soccer ball as well as could not make other people unpleasant by covering the interior thereof, as it is not in use. Also, the present invention is opened and used easily by the simple operation of the button as it is in use, and therefore it gives convenience to smoker.

Claims

1. An ashtray comprising:

an upper and lower spherical body having at least three ash hole in an upper surface thereof and forming a certain inner space by being coupled each other, and a supporter supporting the upper and lower body;
a spherical door coupled in the upper and lower body and rotating selectively, the door opening and closing each ash hole at the same time, and an extinguishing plate 13 coupled with the door and cause cigarette to put out;
a button coupled with an upper end of the upper

and lower body to slide up and down, the button pushed elastically by projecting outwardly; an upper and lower ratchet member coupled with the button and door respectively and engaging each other to transmit the power in one direction, the upper and lower ratchet member rotating regularly by the spiral power transmission with the button and rotating the extinguishing and door in a certain angle.

5

10

2. An ashtray according to claim 1, wherein a ball stopper restricting a rotation limit of the door and extinguishing plate exactly is provided in one side of an upper surface of the door.

15

3. An ashtray according to claim 1, wherein two opposite horizontal projection are formed at an end portion of the button and two parallel spiral groove extending lengthwise are formed on a circumferential surface of the upper ratchet member, thereby the upper ratchet member could rotate, as each horizontal projection proceeds along the each spiral groove in pushing of the button.

20

4. An ashtray according to claim 1, wherein the button slides up and down exactly along a key groove of a body housing extending inwardly to an upper end of the upper body by using a key attached on a side thereof.

25

30

5. An ashtray according to claim 1, adhesive means is provided at the supporter so as to be used in interior of vehicles.

35

40

45

50

55

FIG. 1

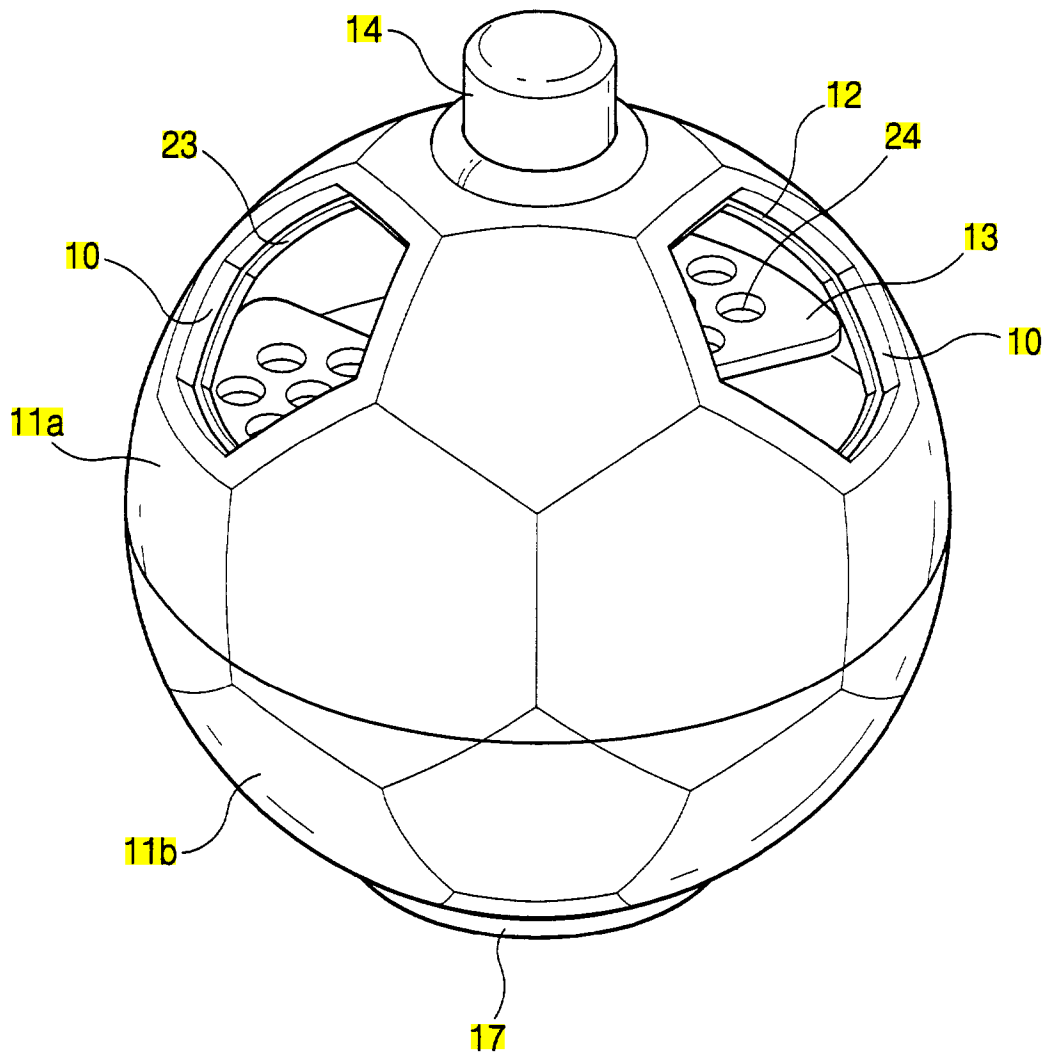


FIG. 2

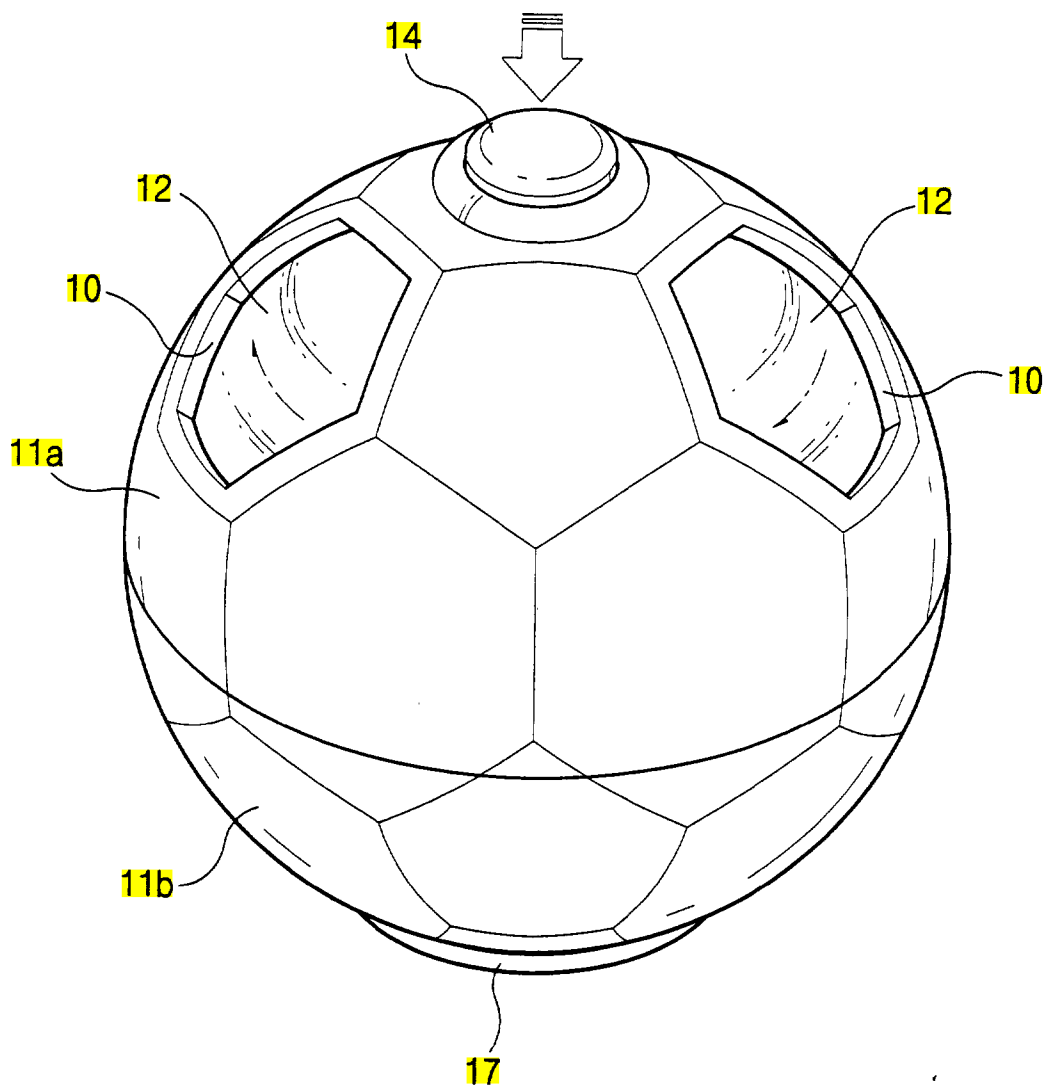


FIG. 4

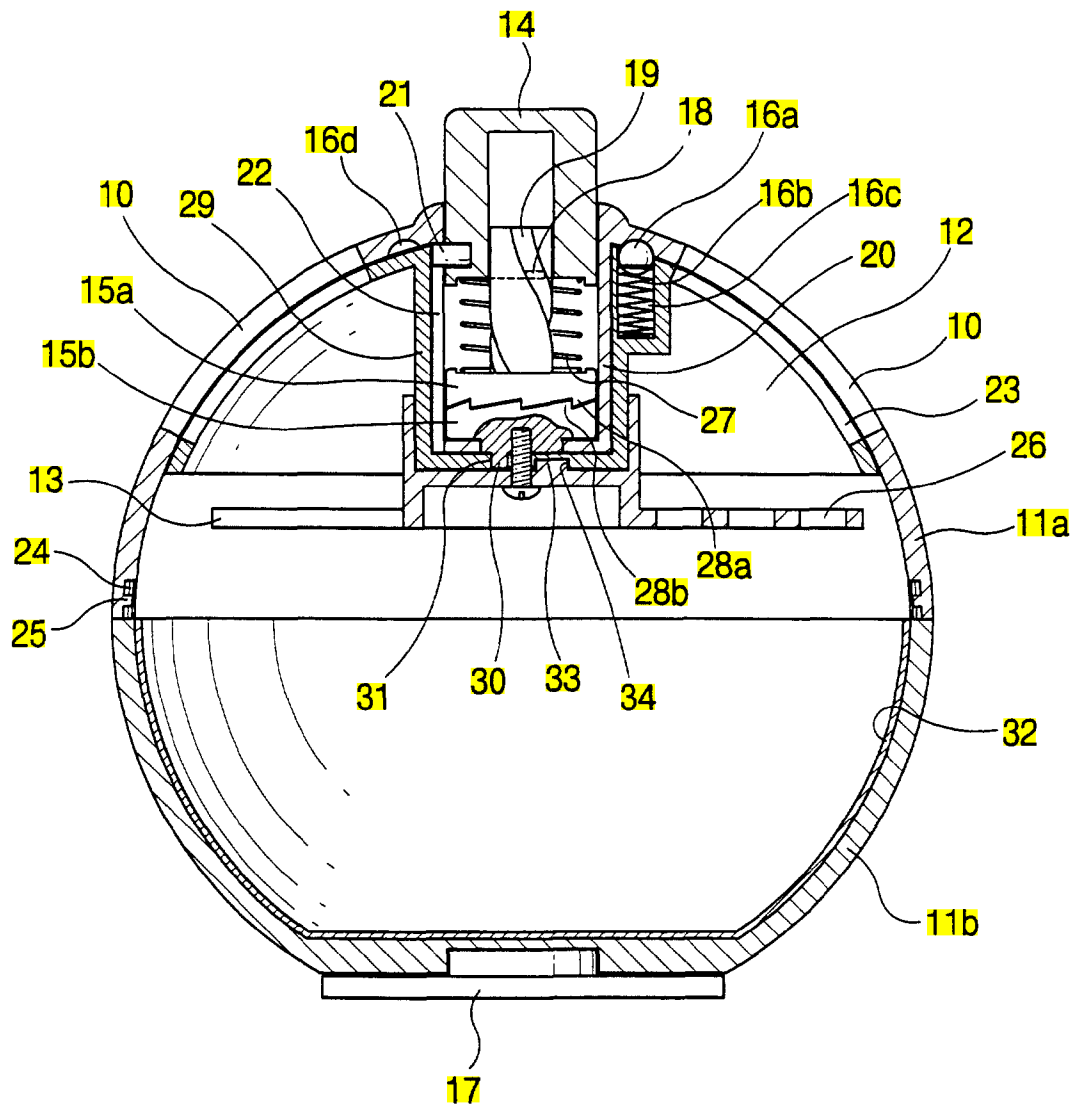


FIG. 5

