



(11) **EP 2 080 707 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention
of the grant of the patent:
17.03.2010 Bulletin 2010/11

(51) Int Cl.:
B65D 39/12 (2006.01)

(21) Application number: **08001052.3**

(22) Date of filing: **21.01.2008**

(54) **Bottle stopper**

Flaschenstöpsel

Butoir pour bouteille

(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 MT NL NO PL PT
RO SE SI SK TR**

(43) Date of publication of application:
22.07.2009 Bulletin 2009/30

(73) Proprietor: **Wang Wu, Ching Yueh
Tainan City (TW)**

(72) Inventor: **Wang Wu, Ching Yueh
Tainan City (TW)**

(74) Representative: **Volpert, Marcus et al
Zeitler - Volpert - Kandlbinder
Patentanwälte
Herrnstrasse 44
80539 München (DE)**

(56) References cited:
**BE-A- 494 559 FR-A- 2 853 630
GB-A- 399 429**

EP 2 080 707 B1

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Description

1. Field of the Invention

[0001] This invention relates to a bottle stopper, particularly to one able to closely plug up a bottle mouth of a bottle, conforming to sanitation and able to be placed horizontally for facilitating storing.

2. Description of the Prior Art

[0002] In most cases, after a bottle of wine is uncorked, the contents in the bottle, such as grape wine, champagne or the like, can hardly be drunk up at one time; therefore, it is necessary to cover up a bottle mouth with a bottle stopper in order to keep its contents fresh. A conventional bottle stopper 1 for covering up a bottle mouth 19, as shown in Figs. 1 and 2, includes a shaft rod 10 orderly fitted thereon with a first elastic body 11, a positioning block 12 and a second elastic body 13. The shaft rod 10 has its lower end disposed with an expanded member 100 for holding the elastic body 11, 13 and the positioning block 12, and its upper end inserted through a sealing cover 14 and a packing-up plate 15 and then pivotally connected with a pull lever 16 by means of a pivot 160. Thus, when the pull lever 16 is pulled and pressed downward, the pressing portion 161 at the lower end of the pull lever 16 will press the gasket 15 on the sealing cover 14 and drive the shaft rod 10 to move upward, and simultaneously the expanded member 100 and the positioning block 12 at the lower end of the shaft rod 10 will squeeze the elastic body 11 to make it deformed and expanded outwards to plug up the bottle mouth 19.

[0003] However, designed in this way, the conventional bottle stopper has the following drawbacks.

1. When the conventional bottle stopper 1 on the bottle mouth 19 is to be closely plugged in the bottle mouth 19, a user must apply a great force to pull and press the pull lever 16 sideward and downward, thus likely to make the bottle unstable and easily fall sideways and let the interior contents flow out.
2. Only covered on the upper edge of the bottle mouth 19, the sealing cover 14 is unable to be tightly fitted with the bottle mouth 19 and can hardly be held stably for applying force.
3. The shaft rod 10, the two elastic bodies 11, 13 and the positioning block 12 of the conventional bottle stopper 1 are exposed to the outside of the sealing cover 14 so they are easy to be soiled with dirt when they are not used.
4. The conventional bottle stopper 1 cannot be placed horizontally, inconvenient in storing.

[0004] An expansible stopper device for bottles and the like is known from GB 399 429 A.

[0005] A bottle stopper comprising the features of the

preamble of claim 1 is known from FR 2 853 630 A1.

SUMMARY OF THE INVENTION

[0006] It is an object of the present invention to provide a bottle stopper able to closely plug up a bottle mouth of a bottle, convenient and sanitary in use, and able to be placed horizontally.

[0007] This object is solved by a bottle stopper comprising the features of claim 1.

[0008] Further embodiments are mentioned in the sub-claims.

BRIEF DESCRIPTION OF DRAWINGS

[0009] This invention will be better understood by referring to the accompanying drawings, wherein:

- Fig. 1 is a cross-sectional view of a conventional bottle stopper not yet plugged in a bottle mouth;
- Fig. 2 is a cross-sectional view of the conventional bottle stopper plugged in the bottle mouth;
- Fig. 3 is an exploded perspective view of a bottle stopper in the present invention;
- Fig. 4 is a perspective view of the bottle stopper in the present invention;
- Fig. 5 is a cross-sectional view of the bottle stopper in the present invention showing a bottle mouth not being sealed;
- Fig. 6 is a cross-sectional view of the bottle stopper in the present invention showing the bottle mouth being sealed; and
- Fig. 7 is a schematic view of the bottle stopper in the present invention in a using condition.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0010] A preferred embodiment of a bottle stopper in the present invention, as shown in Figs. 3, 4 and 5, includes a cover body 2, a shaft rod 3, a rotatable member 4, a connecting base 5, a plugging member 6, a fixing base 7 and a cover plate 8 combined together.

[0011] The cover body 2 has its lower portion provided with a recessed chamber 20 fixed therein with a lengthwise pillar 21, its upper portion provided with an annular recess 23 fixed therein with a projecting base 24, and its interior provided with a shaft hole 25 in communication with the lengthwise pillar 21 and the projecting base 24. The lengthwise pillar 21 has its bottom disposed with a recess 22. The projecting base 24 has its wall cut with two opposite guide notches 26. A gasket 27 is fitted in the annular recess 23.

[0012] The shaft rod 3 inserted in the shaft hole 25 of the cover body 2 has a female threaded hole 30 bored in its lower portion and an insert hole 31 bored at a location near its upper end.

[0013] The rotatable member 4 assembled on the cov-

er body 2 has its lower portion formed with an accommodating chamber 40 and its wall formed with two opposite oblique slide grooves 41 each provided with an engage slot 42 at an apex thereof. An insert pin 43 is inserted through the two opposite oblique slide grooves 41 and the insert hole 31 of the shaft rod 3 and positioned in the two opposite guide notches 26 of the cover body 2.

[0014] The connecting base 5 fixed in the recessed chamber 20 of the cover body 2 has its upper and lower sides respectively fixed with a flange 50, 51 and its center bored with a shaft hole 52 for the shaft rod 3 to pass therethrough.

[0015] The plugging member 6 made of soft material is fixed under the connecting base 5 and bored with an insert hole 60 in the center.

[0016] The fixing base 7 secured under the plugging member 6 has a flange 70 disposed on its upper side a stepped insert hole 71 bored in its lower side and in communication with its top, a fastening member 72 inserted in the stepped insert hole 71, and two opposite engage slots 73.

[0017] The cover plate 8 covered at the lower side of the fixing base 7 is fixed thereon with two opposite engage members 80.

[0018] In assembling, referring to Figs. 3, 4 and 5, firstly, place the upper portion of the shaft rod 3 in the accommodating chamber 40 of the rotatable member 4, and then insert the insert pin 43 through the opposite oblique slide grooves 41 of the rotatable member 4 and the insert hole 31 of the shaft rod 3 to combine the upper portion of the shaft rod 3 together with the rotatable member 4. Secondly, fit the gasket 27 in the annular recess 23, and then place the combined rotatable member 4 and the shaft rod 3 together on the cover body 2, with the lower edge of the rotatable member 4 engaged in the annular recess 23 of the cover body 2, with the shaft rod 3 passing through in the shaft hole 25 of the cover body 2, and with the insert pin 43 positioned in the two opposite guide notches 26 of the projecting base 24 of the cover body 2. Thirdly, place the connecting base 5 in the recessed chamber 20 of the cover body 2, with the flange 50 of the connecting base 5 engaged in the recess 22 of the lengthwise pillar 21 of the cover body 2, and with the lower portion of the shaft rod 3 passing through the shaft hole 52 of the connecting base 5. Fourthly, fix the plugging member 6 with the lower side of the connecting base 5, with the flange 51 of the connecting base 5 engaged in an upper side of the insert hole 60 of the plugging member 6, and with the lower portion of the shaft rod 3 passing through the insert hole 60 of the plugging member 6. Fifthly, fix the fixing base 7 with the lower side of the plugging member 6, with the flange 70 of the fixing base 7 engaged in a lower side of the insert hole 60 of the plugging member 6. Sixthly, insert the fastening member 72 in the stepped insert hole 71 of the fixing base 7 to be screwed in the female threaded hole 30 of the shaft rod 3 to connect the fixing base 7, the plugging member 6 and the connecting base 5 together in the re-

cessed chamber 20 of the cover body 2. Lastly, cover the cover plate 8 firmly on the lower side of the fixing base 7 by engaging the two opposite engage members 80 of the cover plate 8 in the two opposite engage slots 73 of the fixing base 7 for covering up the fastening member 72, thus finishing assembly of the bottle stopper.

[0019] In using, referring to Figs. 5, 6 and 7, cover the cover body 2 on a bottle mouth 90 of a bottle 9, with the bottle mouth 90 positioned in the recessed chamber 20 of the cover body 2, and with the lower portion of the shaft rod 3, the connecting base 5, the plugging member 6 and the fixing base 7 inserted in the bottle mouth 90. And then, hold the cover body 2 with one hand and turn around the rotatable member 4 with the other hand. When the rotatable member 4 is rotated, the insert pin 43 positioned in the two opposite oblique slide grooves 41 of the rotatable member 4 and restricted by the two opposite guide notches 26 of the projecting base 24 of the cover body 2 cannot be rotated together with the rotatable member 4 but only move upwards and downwards.

[0020] To seal the bottle mouth 90 with the bottle stopper of the present invention on, only rotate the rotatable member 4 clockwise to slide the insert pin 43 upwards along the rotation of the two opposite oblique slide grooves 41 of the rotating member 4. Simultaneously, the shaft rod 3 together with the fixing base 7 will be actuated by the insert pin 43 to move upwards, and meanwhile the plugging member 6 fixed on the fixing base 7 will be squeezed to expand outwards and plug the bottle mouth 90. When the rotatable member 4 is rotated until the insert pin 43 is slid to the apexes of the two opposite oblique slide grooves 41, the insert pin 43 will be engaged in the engage slots 42 of the two opposite oblique slide grooves 41 and positioned therein. Thus, the bottle mouth 90 can be tightly sealed up for keeping the contents in the bottle 9 fresh.

[0021] To remove the cover body 2 from the bottle mouth 90, only turn the rotatable member 4 counterclockwise to slide the insert pin 43 downwards along the rotation of the two opposite oblique slide grooves 41 to actuate the shaft rod 3 and the fixing base 7 to move downwards, and at this time the plugging member 6 will elastically recover its original shape and no longer plug the bottle mouth 90, as shown in Fig. 5. Thus, the bottle stopper of the present invention can be removed from the bottle mouth 90 for drinking the contents in the bottle 9 again, convenient in use.

[0022] As can be understood from the above description, this invention has the following advantages.

1. When the rotatable member 4 is rotated on the cover body 2, the shaft rod 3 in the cover body 2 will be actuated to move upward, but the rotatable member 4 itself will not be moved up; therefore, the space between the rotatable member 4 and the cover body 2 will not be enlarged.
2. Covered around the outer side of the bottle mouth 90, the cover body 2 can be closely fitted with the

bottle mouth 90 and also can be held conveniently.

3. The force-applying point for covering the cover body 2 on the bottle mouth 90 is right in the center; therefore, during the rotatable member 4 turned, the bottle 9 can be kept upright not to fall sideward, able to cover the bottle stopper with great stability.

4. The shaft rod 3, the plugging member 6 and other members are concealed in the interior of the recessed chamber 20 of the cover body 2 not exposed out so they can be kept clean, conforming to sanitation.

5. The bottle stopper of the present invention can be placed horizontally, convenient to store a bottle and place it on a table top.

[0023] While the preferred embodiment of the invention has been described above, it will be recognized and understood that various modifications may be made therein and the appended claims are intended to cover all such modifications that may fall within the scope of the invention.

Claims

1. Bottle stopper comprising:

a cover body (2) having its lower portion provided with a recessed chamber (20) fixed with a lengthwise pillar (21) therein, its upper portion provided with an annular groove (23) fixed with a projecting base (24) therein, and its interior provided with a shaft hole (25) in communication with said lengthwise pillar (21) and said projecting base (24);

a shaft rod (3) inserted in said shaft hole (25) of said cover body (2) and bored with an insert hole (31) at a location near its upper end;

a rotatable member (4) assembled on said cover body (2) and having its lower portion formed with an accommodating chamber (40);

a plugging member (6) fitted on said shaft rod (3), said plugging member (6) made of soft material and bored with an insert hole (60); said projecting base (24) of said cover body (2) having its wall cut with two opposite guide notches (26);

characterized by

said rotatable member (4) having its wall formed with two opposite oblique slide grooves (41), an insert pin (43) inserted through said two opposite oblique slide grooves (41) of said rotatable member (4) and said insert hole (31) of said shaft rod (3) and positioned in said two opposite guide notches (26) of said projecting base (24) of said cover body (2);

a connecting base (5) fixed in said recessed chamber (20) of said cover body (2), positioned

on said plugging member (6) and bored therein with a shaft hole (52) for said shaft rod (3) to pass therethrough; and,

a fixing base (7) secured under said plugging member (6), and having a stepped insert hole (71) bored in its lower side in communication with its top and a fastening member (72) inserted in said stepped insert hole (71) and combined with a lower portion of said shaft rod (3).

2. Bottle stopper according to claim 1, **characterized in that** said lengthwise pillar (21) of said cover body (2) has its bottom disposed with a recess (22), and said connecting base (5) has its upper side provided with a flange (50) to be engaged and positioned in said recess (22) of said lengthwise pillar (21) of said cover body (2).

3. Bottle stopper according to claim 1 or 2, **characterized in that** a lower side of said connecting base (5) and an upper side of said fixing base (7) are respectively disposed with a flange (51) and (70) to be engaged and positioned in said insert hole (60) of said plugging member (6).

4. Bottle stopper according to one of claims 1 to 3, **characterized in that** a gasket (27) is fitted in said annular recess (23) of said cover body (2).

5. Bottle stopper according to one of the foregoing claims, **characterized in that** each of said two opposite oblique slide grooves (41) of said rotatable member (4) is formed with an engage slot (42) at an apex thereof for positioning said shaft rod (3).

6. Bottle stopper according to one of the foregoing claims, **characterized in that** said fixing base (7) is bored with two opposite engage slots (73), and a cover plate (8) covered at the lower side of said fixing base (7) is fixed thereon with two opposite engage members (80) to be correspondingly engaged in said two opposite engage slots (73) of said fixing base (7).

Patentansprüche

1. Flaschenverschluss, umfassend:

einen Deckel (2), dessen Unterteil mit einer aus-
gesparten Kammer (20) versehen ist, in der eine
Längssäule (21) befestigt ist, dessen Oberteil
mit einer Ringnut (23) versehen ist, in der eine
vorstehende Basis (24) befestigt ist, und dessen
Inneres mit einer Achsbohrung (25) versehen
ist, die mit der Längssäule (21) und der vorste-
henden Basis (24) in Verbindung steht;
einen Achsstab (3), der in die Achsbohrung (25)
des Deckels (2) eingesteckt ist und nahe seinem

- oberen Ende eine Durchgangsbohrung (31) aufweist;
 ein drehbares Element (4), das auf dem Deckel (2) angebracht ist und dessen Unterteil eine Aufnahmekammer (40) aufweist;
 ein Stopfelement (6), das auf den Achsstab (3) aufgesetzt ist, aus weichem Material hergestellt ist und mit einer Durchgangsbohrung (60) versehen ist,
 wobei die vorstehende Basis (24) des Deckels (2) eine Wand hat, in die zwei gegenüberliegenden Führungsschlitze (26) geschnitten sind;
gekennzeichnet durch,
 das drehbare Element (4), dessen Wand zwei gegenüberliegende schräge Gleitnuten (41) aufweist, wobei ein Stift (43) **durch** die gegenüberliegenden schrägen Gleitnuten (41) des drehbaren Elements (4) und die Durchgangsbohrung (31) des Achsstabes (3) eingesetzt ist und in den beiden gegenüberliegenden Führungsschlitzen (26) der vorstehenden Basis (24) des Deckels (2) angeordnet ist;
 eine Verbindungsbasis (5), die in der ausgesparten Kammer (20) des Deckels (2) befestigt, auf dem Stopfelement (6) angeordnet und mit einer Achsbohrung (52) versehen ist, **durch** die der Achsstab (3) hindurchgeht; und
 eine Fixierbasis (7), die unter dem Stopfelement (6) befestigt ist und an ihrer Unterseite eine abgestufte Durchgangsbohrung (71), die **durch** die Oberseite der Fixierbasis hindurchgeht, und ein Befestigungselement (72) hat, das in die abgestufte Durchgangsbohrung (71) eingesetzt und mit einem Unterende des Achsstabes (3) befestigt ist.
2. Flaschenverschluss nach Anspruch 1, **dadurch gekennzeichnet, dass** am Boden der Längssäule (21) des Deckels (2) eine Aussparung (22) ausgebildet ist und an der Oberseite der Verbindungsbasis (5) ein Flansch (50) vorgesehen ist, der in die Aussparung (22) der Längssäule (21) des Deckels (2) eingreift und darin angeordnet ist.
3. Flaschenverschluss nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** an der Unterseite der Verbindungsbasis (5) und an der Oberseite der Fixierbasis (7) jeweils ein Flansch (51, 70) angeordnet ist, der in die Durchgangsbohrung (60) des Stopfelementes (6) eingreift und darin angeordnet ist.
4. Flaschenverschluss nach einem der Ansprüche 1 bis 3, **dadurch gekennzeichnet, dass** in der Ringnut (23) des Deckels (2) eine Dichtung (27) angeordnet ist.
5. Flaschenverschluss nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass**

am höchsten Punkt jeder der beiden gegenüberliegenden schrägen Gleitnuten (41) des drehbaren Elements (4) eine Eingriffsrille (42) zur Positionierung des Achsstabes (3) ausgebildet ist.

6. Flaschenverschluss nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** an der Fixierbasis (7) zwei gegenüberliegende Eingriffsschlitze (73) ausgebildet sind und an der Unterseite der Fixierbasis (7) eine Abdeckplatte (8) mittels zweier gegenüberliegender Eingriffselemente (80) befestigt ist, die entsprechend in die beiden gegenüberliegenden Eingriffsschlitze (73) der Fixierbasis (7) eingreifen.

Revendications

1. Fermeture de bouteille, comprenant :

un corps de couverture (2) dont la portion inférieure est munie d'une chambre évidée (20) fixée avec un pilier allongé (21) à l'intérieur d'elle-même, sa portion supérieure étant munie d'une gorge annulaire (23) fixée avec une base en projection (24) à l'intérieur d'elle-même, et sa partie intérieure étant munie d'un orifice d'arbre (25) en communication avec ledit pilier allongé (21) et ladite base en projection (24) ;
 une tige d'arbre (3) insérée dans ledit orifice d'arbre (25) dudit corps de couverture (2) et percée avec un orifice d'insertion (31) à un emplacement proche de son extrémité supérieure ;
 une pièce rotative (4) assemblée sur ledit corps de couverture (2) et ayant sa portion inférieure formée avec une chambre d'accueil (40) ;
 un élément de bouchon (6) monté sur ladite tige d'arbre (3), ledit élément de bouchon (6) étant réalisé en un matériau mou et percé avec un trou d'insertion (60) ;
 ladite base en projection (24) dudit corps de couverture (2) ayant sa paroi coupée par deux encoches de guidage opposées (26) ;

caractérisée en ce que

ladite pièce rotative (4) est telle que sa paroi est formée avec deux gorges de coulissement obliques opposées (41), une épingle d'insertion (43) est insérée à travers lesdites deux gorges de coulissement obliques opposées (41) de ladite pièce rotative (4) et dans ledit trou d'insertion (31) de ladite tige d'arbre (3) et est positionnée dans lesdites deux encoches de guidage opposées (26) de ladite base en projection (24) dudit corps de couverture (2) ;
 une base de liaison (5) est fixée dans ladite chambre évidée (20) dudit corps de couverture (2), positionnée sur ledit élément de bouchon (6) et percée à l'intérieur d'elle-même par un ori-

fice d'arbre (52) pour que ladite tige d'arbre (3)
 passe à travers celui-ci ; et
 une base de fixation (7) est attachée sous ledit
 élément de bouchon (6), et ayant un orifice d'in- 5
 sertion en gradins (71) percé dans son côté in-
 férieur en communication avec son sommet, et
 une pièce de fixation
 (72) insérée dans ledit orifice d'insertion en gra-
 dins (71) et combinée avec une portion inférieure 10
 de ladite tige d'arbre (3).

2. Fermeture de bouteille selon la revendication 1, **caractérisée en ce que** ledit pilier allongé (21) dudit corps de couverture (2) a son fond muni d'un évidement (22), et ladite base de connexion (5) a son côté 15
 supérieur muni d'une bride (50) destinée à s'engager et à se positionner dans ledit évidement (22) dudit pilier allongé (21) dudit corps de couverture (2).
3. Fermeture de bouteille selon la revendication 1 ou 2, **caractérisée en ce qu'**un côté inférieur de ladite 20
 base de liaison (5) et un côté supérieur de ladite base de fixation (7) sont respectivement munis d'une bride (51) et (70) destinée à s'engager et se positionner dans ledit trou d'insertion (60) dudit élément 25
 de bouchon (6).
4. Fermeture de bouteille selon l'une des revendications 1 à 3, **caractérisée en ce qu'**une garniture d'étanchéité (27) est montée dans ledit évidement 30
 annulaire (23) dudit corps de couverture (2).
5. Fermeture de bouteille selon l'une des revendications précédentes, **caractérisée en ce que** chacune 35
 desdites deux gorges de coulissement obliques opposées (41) de ladite pièce rotative (4) est formée avec une fente d'engagement (42) dans son sommet pour positionner ladite tige d'arbre (3).
6. Fermeture de bouteille selon l'une des revendications précédentes, **caractérisée en ce que** ladite 40
 base de fixation (7) est percée avec deux fentes d'engagement opposées (73), et une plaque de couverture (8) couvrant le côté inférieur de ladite base de fixation (7) est fixée sur celle-ci avec deux pièces 45
 d'engagement opposées (80) pour s'engager de façon correspondante dans lesdites deux fentes d'engagement opposées (73) de ladite base de fixation (7). 50

50

55

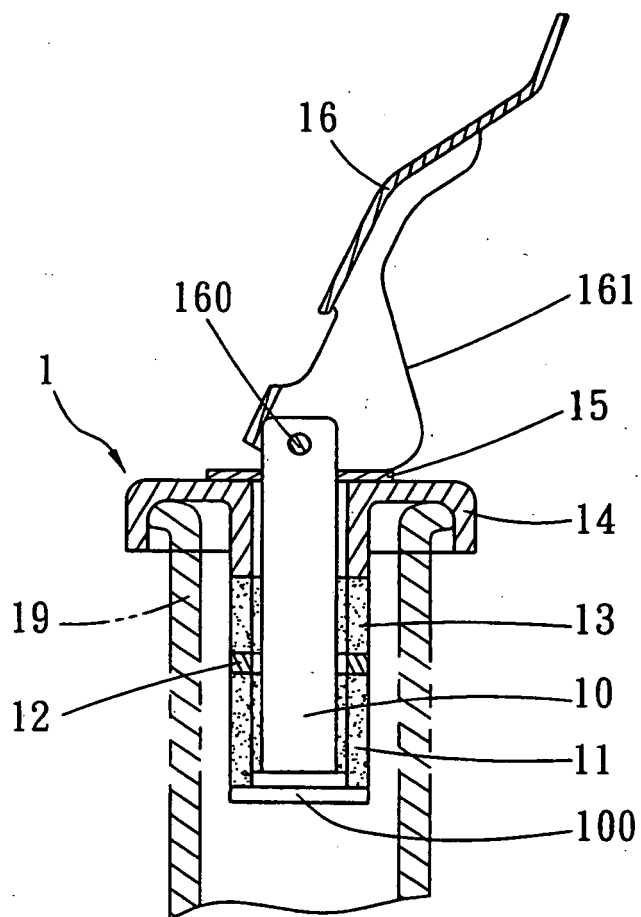


FIG.1
(PRIOR ART)

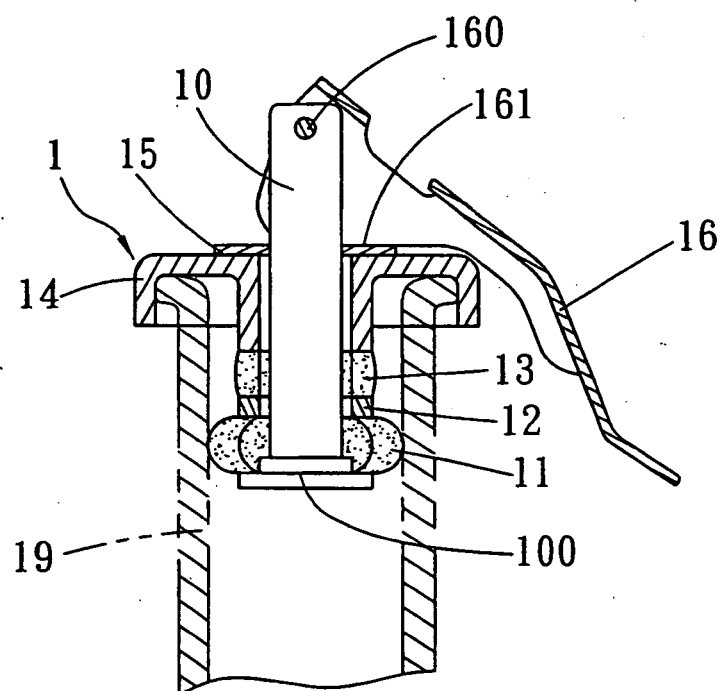
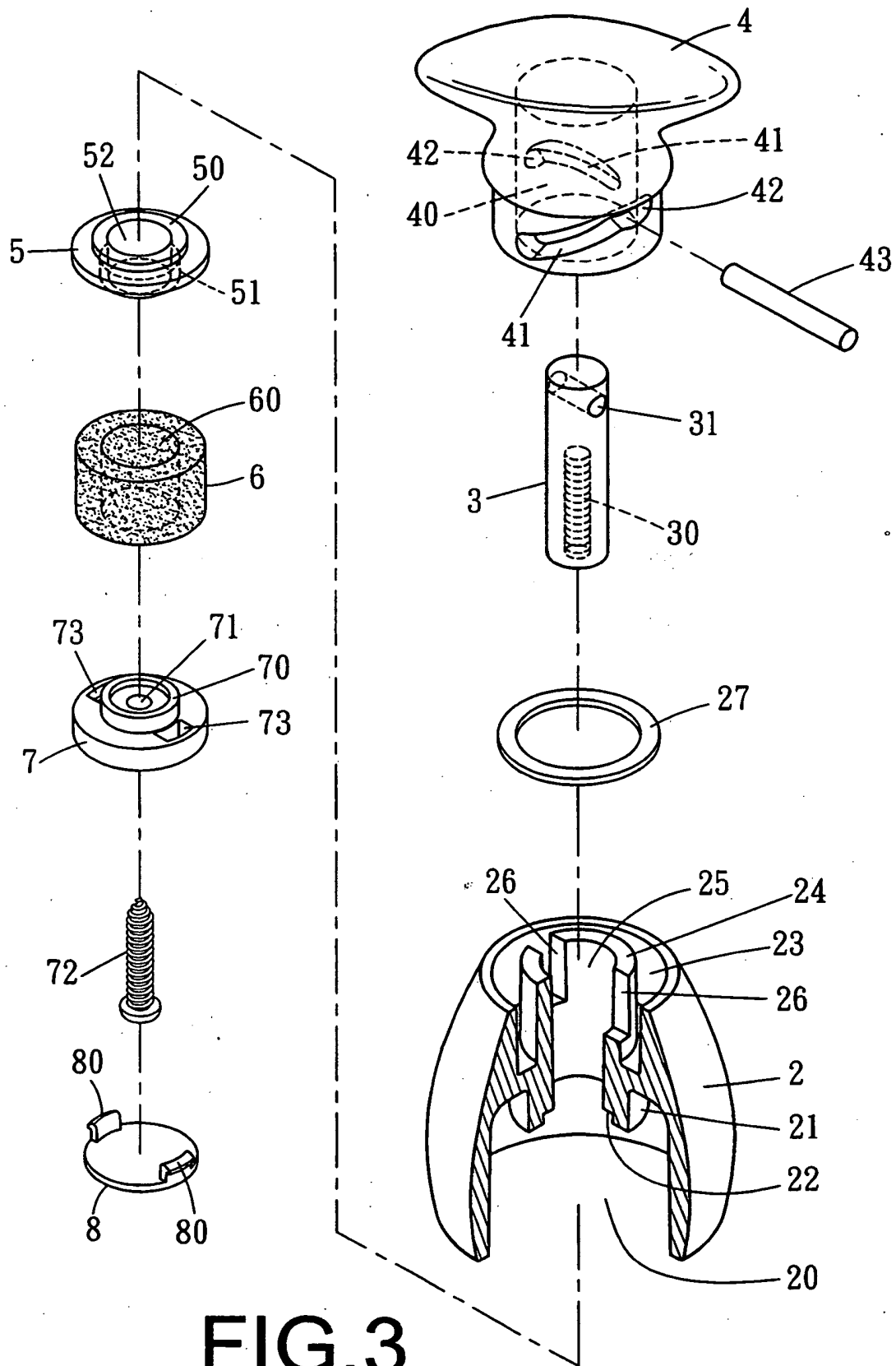


FIG.2
(PRIOR ART)



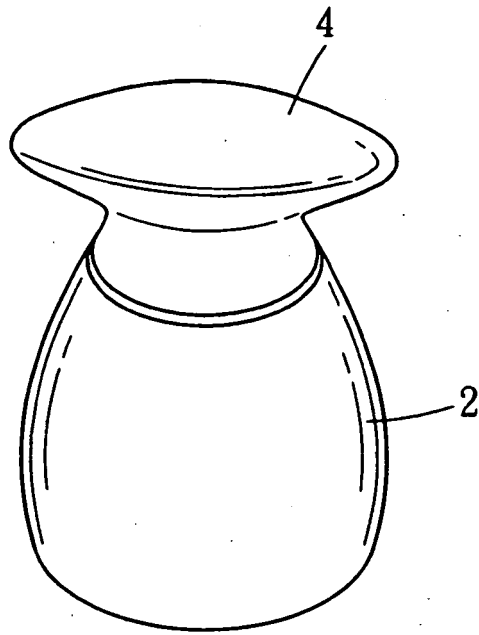


FIG.4

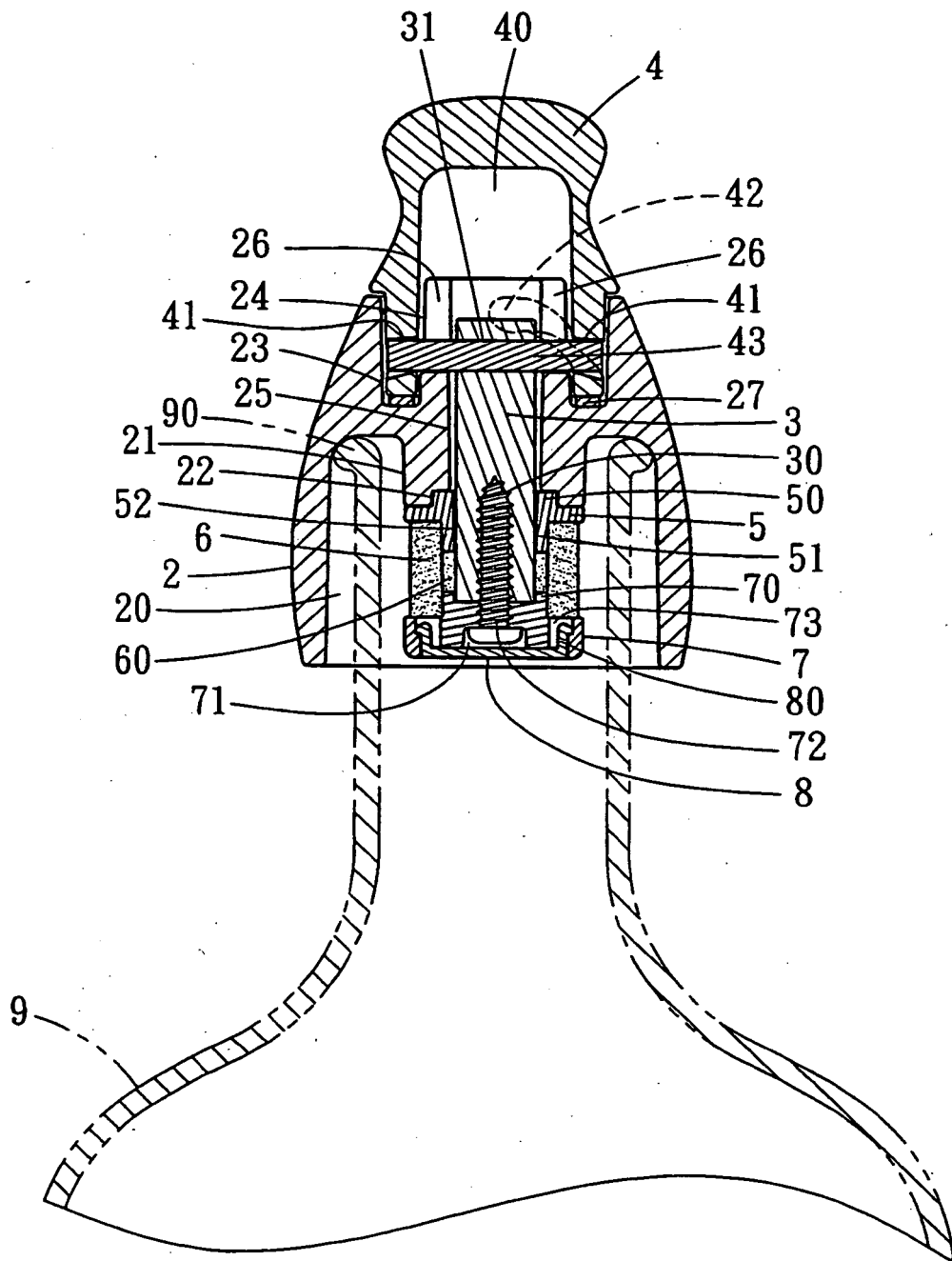


FIG.5

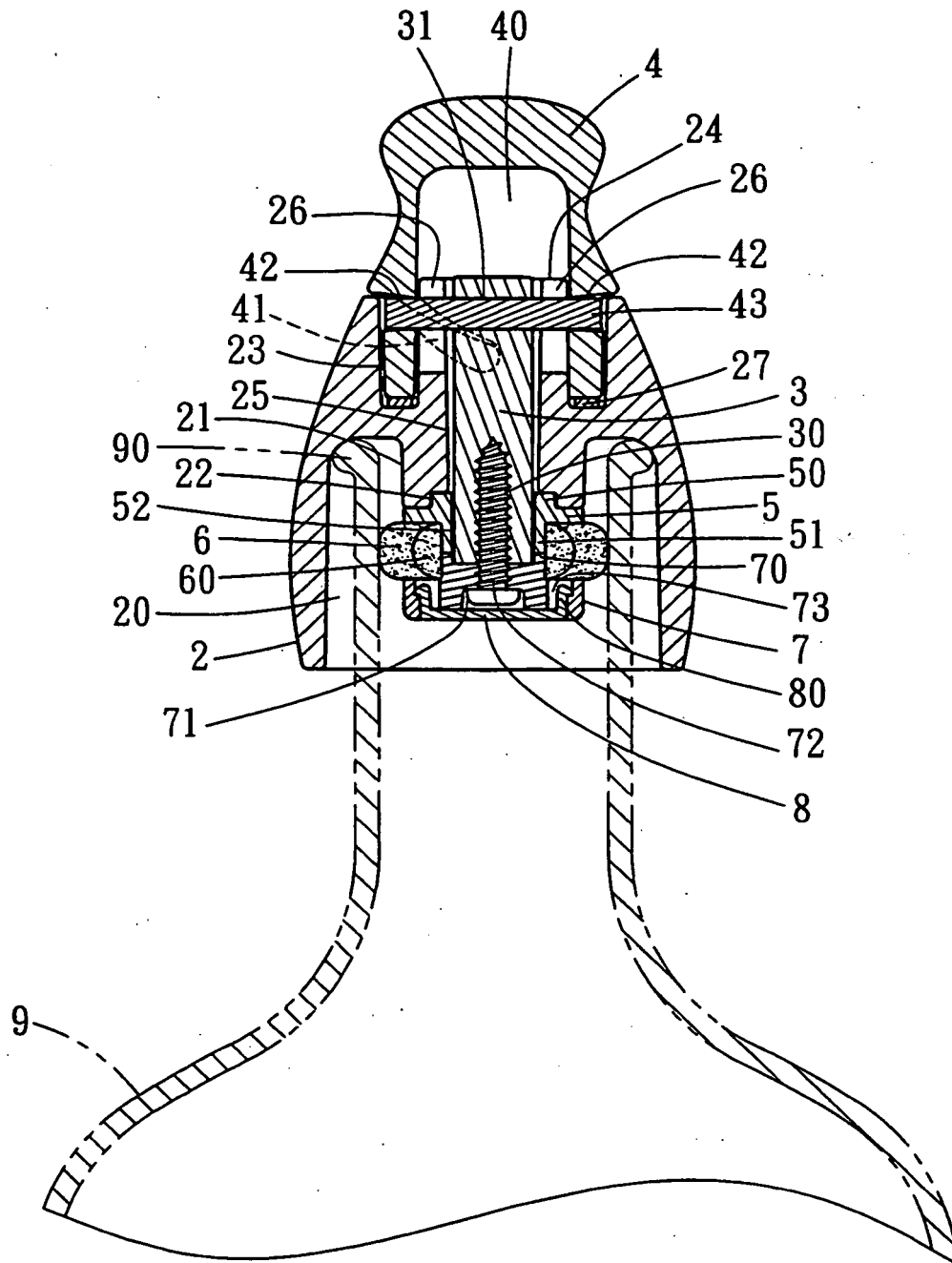


FIG.6

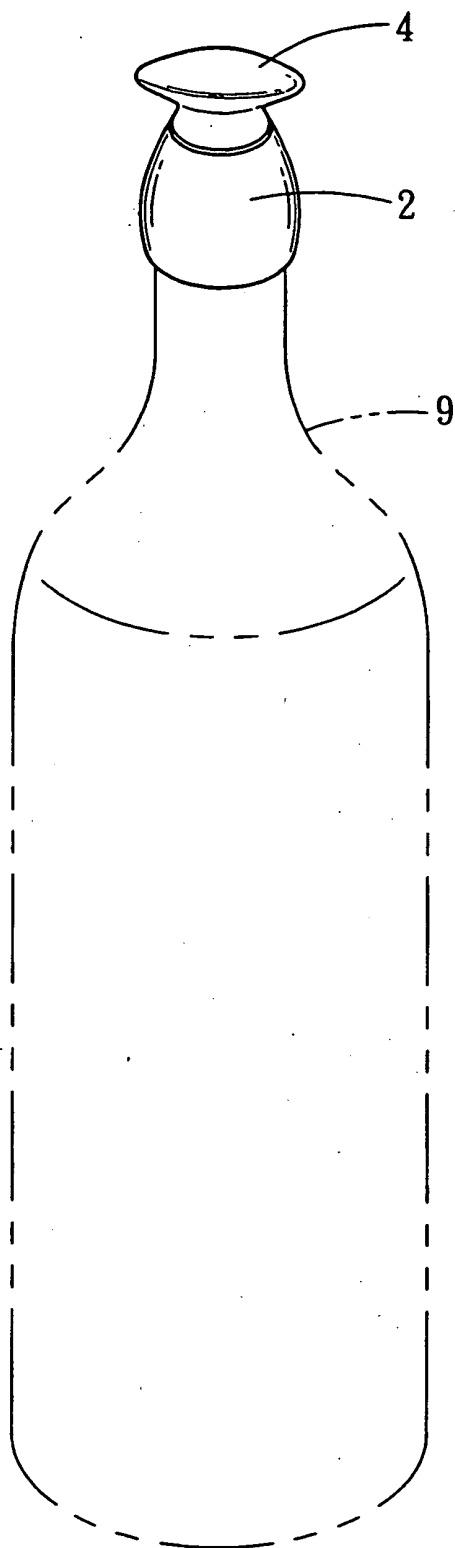


FIG.7

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- GB 399429 A [0004]
- FR 2853630 A1 [0005]