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(54) **Bottle stopper**

(57) A bottle stopper includes a cover body 2 assembled with a rotatable member 4 and a shaft rod 3 which is combined with the rotatable member 4 by an insert pin 43. A connecting base 5, a plugging member 6 and a fixing base 7 are secured with the lower portion of the shaft rod 3 by a fastening member 72 and positioned in the recessed chamber 20 of the cover body 2. When the rotatable member 4 is rotated clockwise, the insert pin 43 restricted by two guide notches 26 of the cover body 2 not to be rotated with the rotatable member 4 will only slide upwards in two oblique slide grooves 41 of the rotatable member 4 to actuate the shaft rod 3 to move upwards. Synchronously, the fixing base 7 under the shaft rod 3 will be moved up to squeeze the soft plugging member 6 to expand outwards and plug a bottle mouth 90 of a bottle 9 closely, thus letting the bottle 9 placed horizontally for facilitating storing.

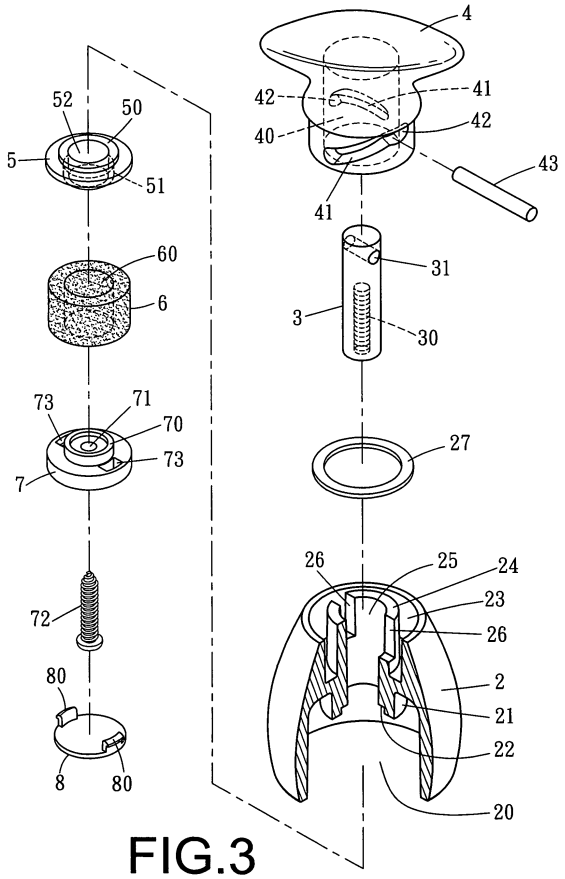

FIG.3

EP 2 080 707 A1

Description

BACKGROUND OF THE INVENTION

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 level 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.

SUMMARY OF THE INVENTION

[0004] The objective of this invention is to offer 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.

[0005] The main feature of the invention is to provide a projecting base 24 of a cover body 2 having its wall cut with two opposite guide notches 26; a rotatable member 4 having its wall formed with two opposite oblique slide grooves 41, and an insert pin 43 inserted through the two opposite oblique slide grooves 41 of the rotatable member 4 and an insert hole 31 of a shaft rod 3 and positioned in the two opposite guide notches 26 of the projecting base 24 of the cover body 2; a connecting base 5 fixed in a recessed chamber 20 of the cover body 2, positioned on a plugging member 6 and bored therein with a shaft hole 52 for the shaft rod 3 to pass therethrough; a fixing base 7 secured under the 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 the stepped insert hole 71 and combined with a lower portion of the shaft rod 3.

BRIEF DESCRIPTION OF DRAWINGS

[0006] 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

[0007] 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.

[0008] 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.

[0009] 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.

[0010] The rotatable member 4 assembled on the cover 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.

[0011] 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.

[0012] 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.

[0013] 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.

[0014] The cover plate 8 covered at the lower side of the fixing base 7 is fixed thereon with two opposite engage members 80.

[0015] 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 recessed 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.

[0016] 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.

[0017] 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.

[0018] 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.

[0019] 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.

[0020] 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 spirit and scope of the invention.

Claims

1. A 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; and,
characterized by
said projecting base 24 of said cover body 2 having its wall cut with two opposite guide notches 26;
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. The bottle stopper as claimed in Claim 1, wherein 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. The bottle stopper as claimed in Claim 1, wherein 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. The bottle stopper as claimed in Claim 1, wherein a gasket 27 is fitted in said annular recess 23 of said cover body 2.

5. The bottle stopper as claimed in Claim 1, wherein 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. The bottle stopper as claimed in Claim 1, wherein 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.

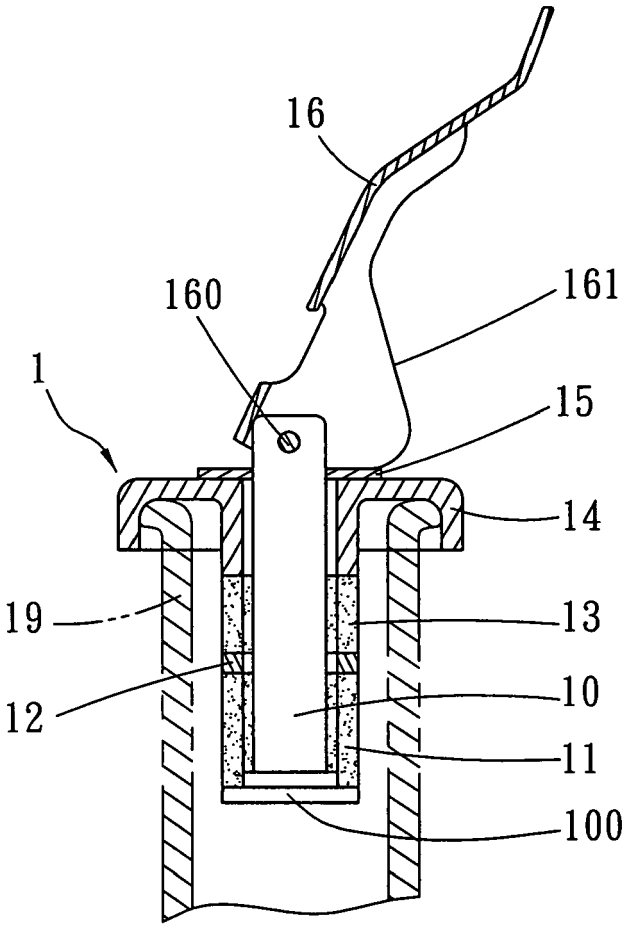

FIG.1
(PRIOR ART)

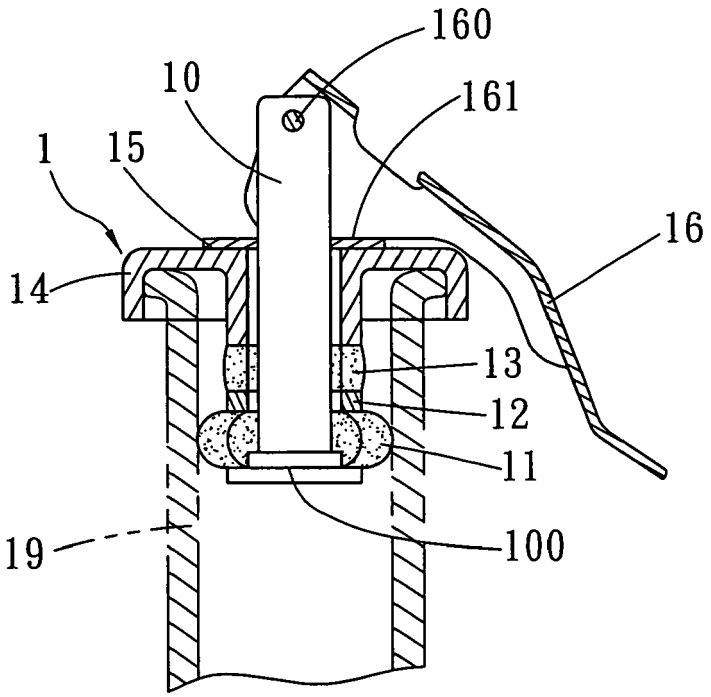

FIG.2
(PRIOR ART)

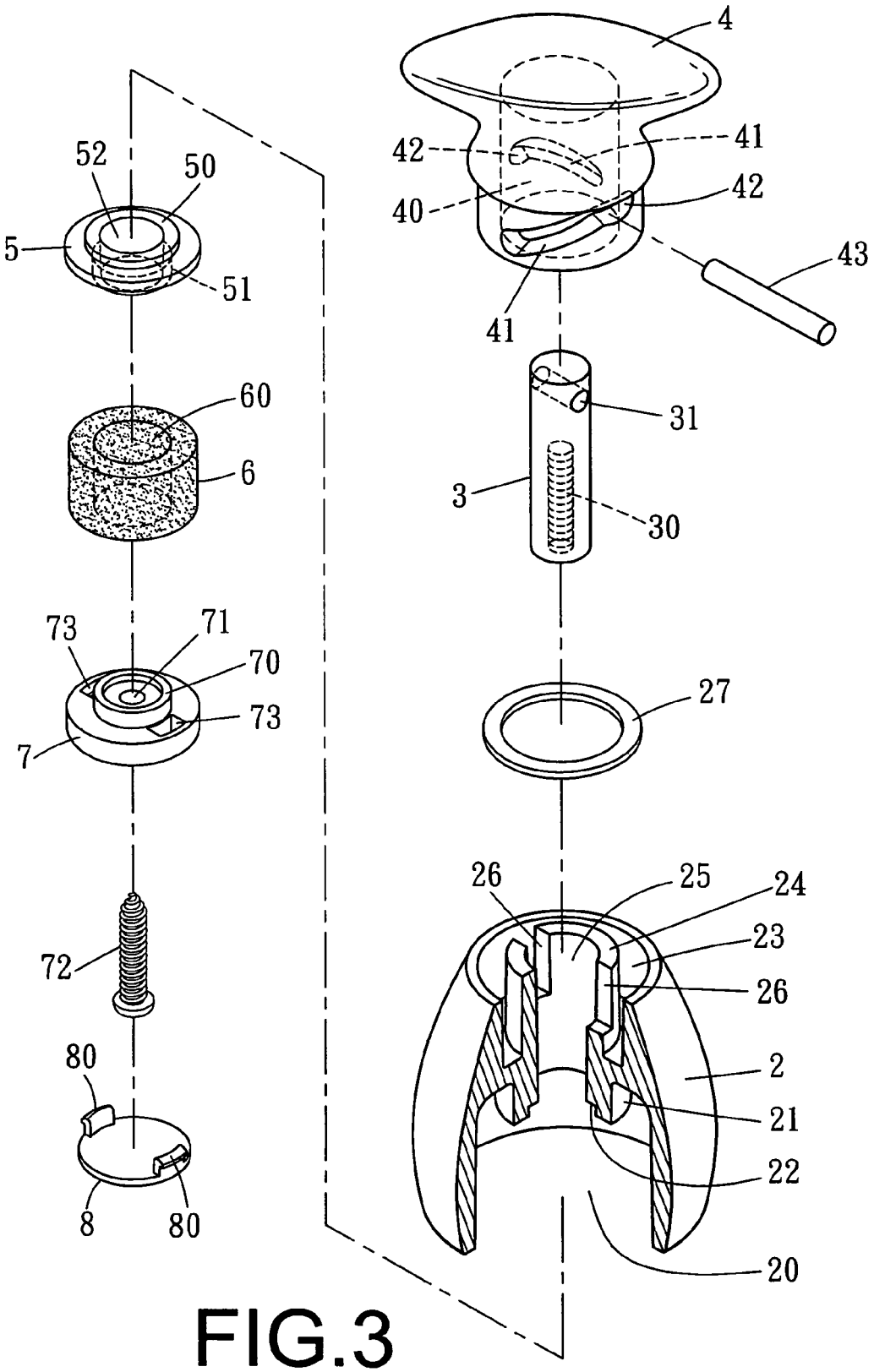
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FIG.3

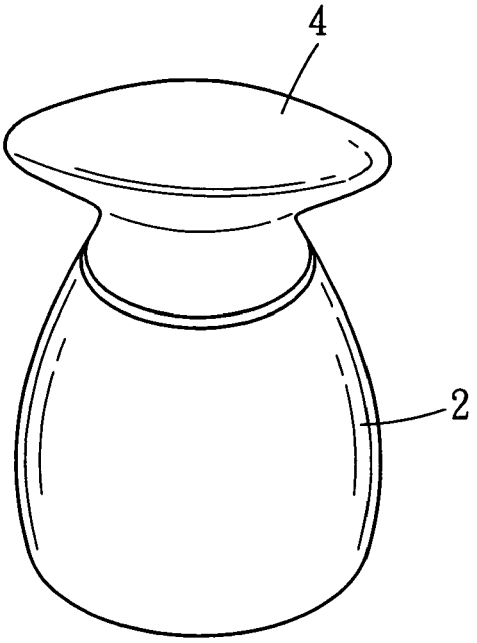

FIG.4

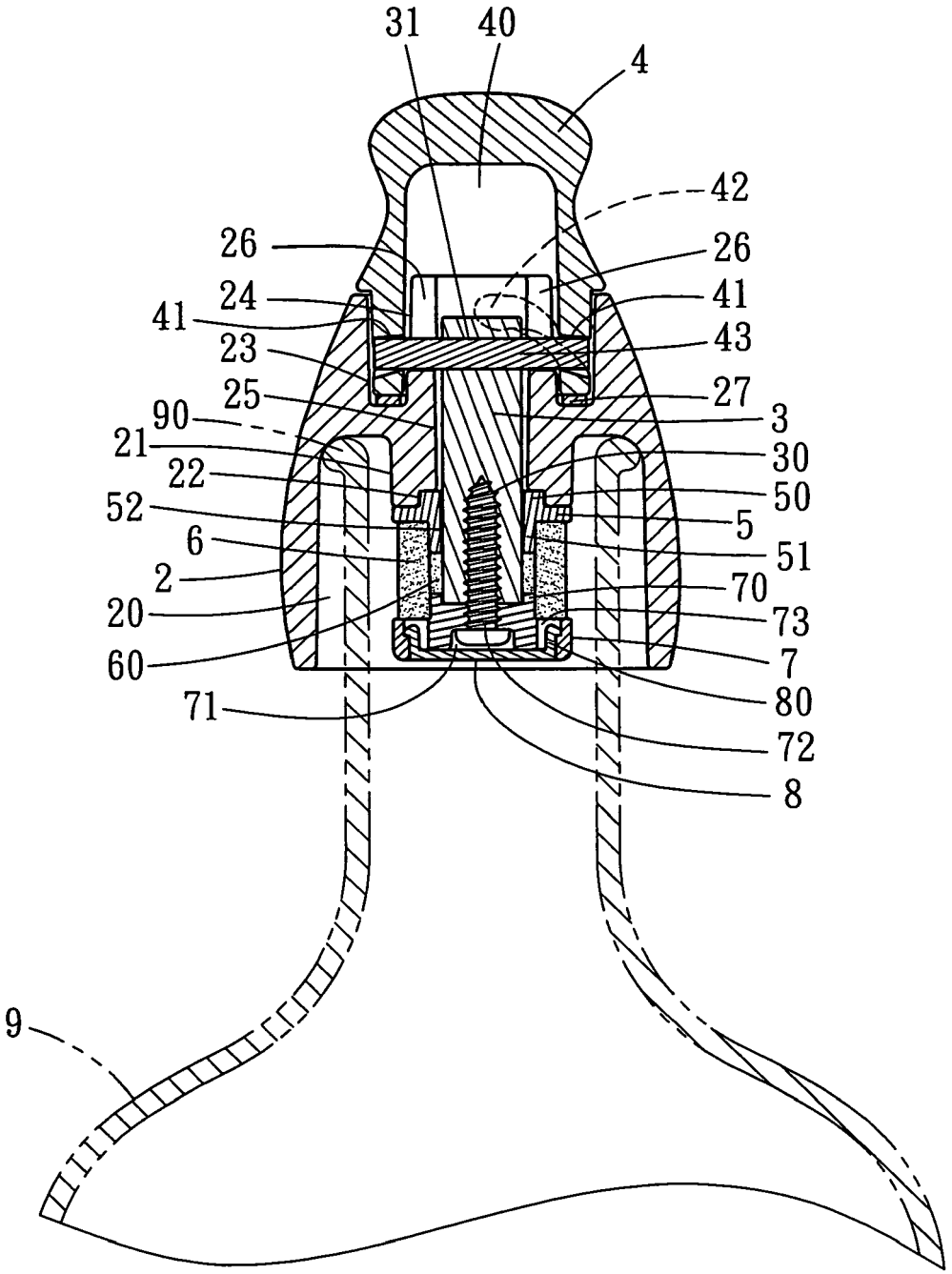
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FIG.5

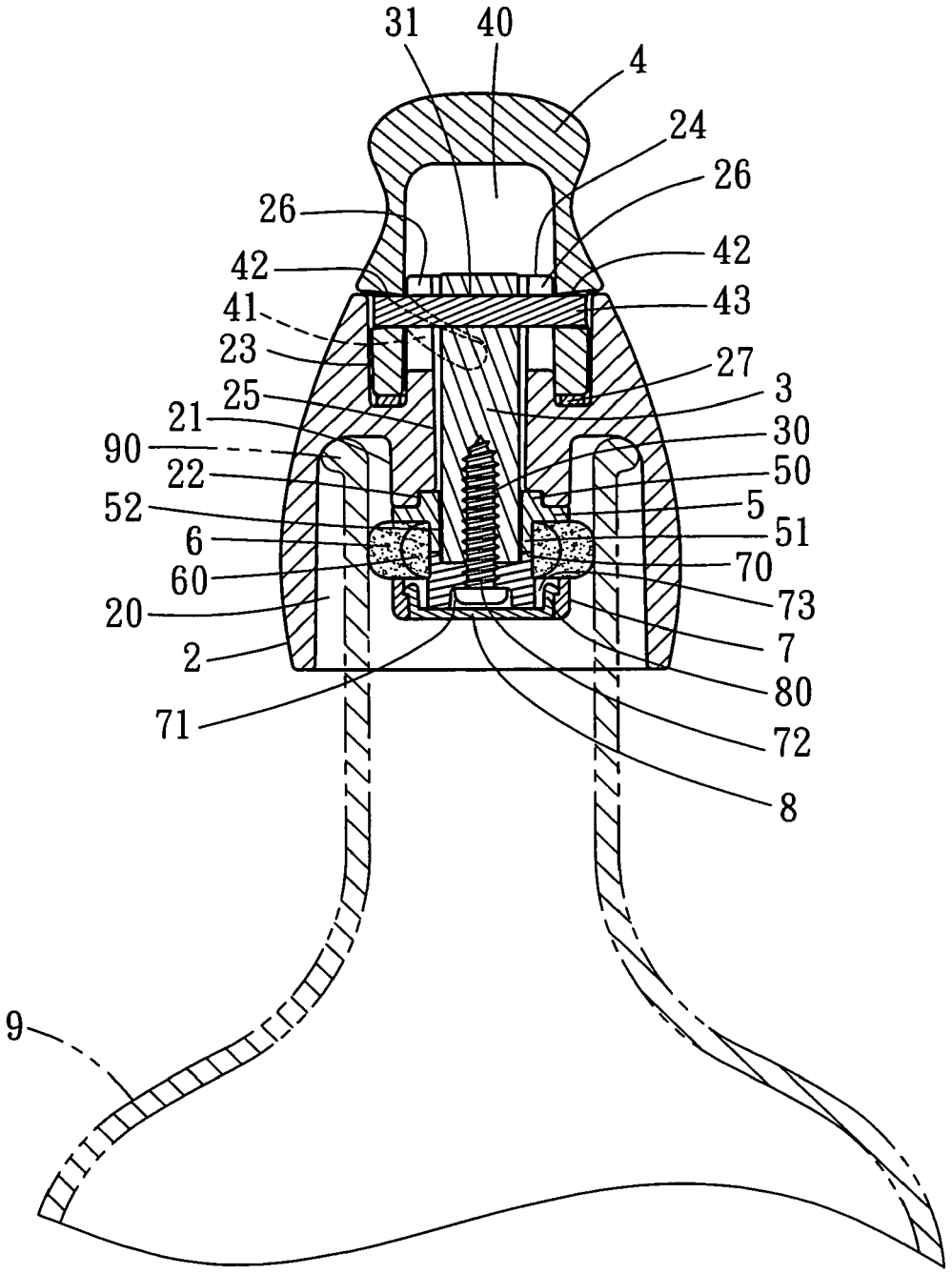
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FIG.6

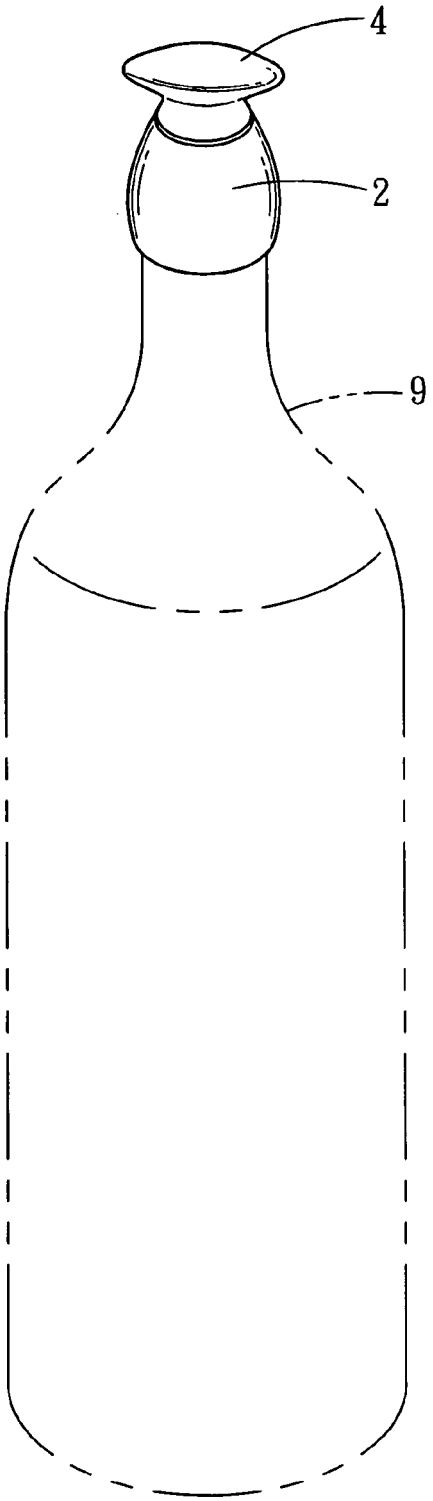

FIG.7

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EUROPEAN SEARCH REPORT

Application Number
EP 08 00 1052

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	GB 399 429 A (DANIEL MAXWELL HUNTING; JULIAN OLIVER HILLING) 5 October 1933 (1933-10-05) * page 1, line 104 - page 2, line 18; figures 1-5 *	1-6	INV. B65D39/12
A	FR 2 853 630 A (SEB SA [FR]) 15 October 2004 (2004-10-15) * page 12, line 1 - page 14, line 5; figures 1-4 *	1-6	
A	BE 494 559 A (INTERPA CORPORATION) 1 July 1950 (1950-07-01) * page 3, line 41 - page 4, line 1; figures 4,5 *	1-6	
			TECHNICAL FIELDS SEARCHED (IPC) B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	24 June 2008	Appelt, Lothar

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 08 00 1052

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24-06-2008

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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FR 2853630 A	15-10-2004	NONE	
BE 494559 A		NONE	

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