A WINE BOTTLE OPENER

THIS invention relates to a wine bottle opener, and more specifically to a device for removing a cork from a wine bottle by pumping air into the wine bottle.

Generally, wine bottles are sealed with a cork, and a bottle opener (often referred to as a corkscrew) is required to remove the cork from the bottle. FIG. 1 of the drawings illustrates a conventional corkscrew 1 which consists of a handle 10 and a helical metal rod 11 extending from the handle. As can be seen, a cork 19 fitted in the neck 18 of a bottle 17 serves to seal wine (not shown) in the bottle from ambient air. To remove the cork 19 from the bottle 17, the helical rod 11 is screwed into the cork by manually pressing this rod against the cork and rotating the handle 10, whereafter the handle is manually pulled away from the bottle 17 to draw the cork out of the bottle neck 18. To ensure a proper seal in the neck of the bottle 17, the cork 19 is sized to form a tight fit within the bottle neck. As a result, it usually requires some effort to remove the cork with such a corkscrew. Also, if the helical rod 11 is not properly inserted into the cork 19, pulling the cork away from the bottle 17 can cause the cork to break, often making it difficult to remove the remaining portion of the cork, and sometimes causing chips of the cork to drop into the wine in the bottle.

It is an object of the present invention to provide a wine bottle opener which is capable of removing a cork from a wine bottle conveniently and relatively quickly.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention is described in more detail below with reference to the accompanying drawings, in which:

FIG. 1 shows a cross-sectional view of a conventional wine bottle opener;

FIG. 2 shows an exploded, perspective view of a wine bottle opener according to the present invention;

FIG. 3 shows a perspective view of an assembled wine bottle opener according to the invention;

FIG. 4 shows a cross-sectional view of the wine bottle opener of the invention with a hand lever in an intermediate position during the pumping of air into a wine bottle;

FIG. 5 shows the wine bottle of FIG. 4 with the hand lever in a lowered position;

FIG. 6 shows the wine bottle of FIG. 4 with the hand lever in a raised position; and

FIG. 7 shows a cross-sectional view of the wine bottle opener in a cork release condition.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

FIGS. 2 to 7 of the drawings illustrate a preferred embodiment of a wine bottle opener according to the invention. The wine bottle opener includes a main body 2 which defines an internal chamber 20 (see FIG. 5). An upper end of the body 2 has a connecting portion 21, and a lower end of the body 2 has a connecting portion 22. A lever base 3, which is fixed to the upper connecting portion 21, defines a central aperture 30 having a recessed portion 31 at its lower end. A pivot base 32 extends upwardly from the lever base 3 and includes a pair of apertures 33 for accommodating a pivot shaft 34 (see FIG. 2).

A piston rod 4 extends through the central aperture 30 in the lever base 3 and into the internal chamber 20 of the main body 2. A pivot base 40 extends upwardly from the piston rod 4 and includes a pair of apertures 41 for receiving a pivot shaft 42. A piston 44 is connected to the lower end of the piston rod 4 via a spigot 45 on the piston 44 and a socket 43 in the piston rod 4.

The pivot base 40 is pivotally connected to a hand lever 5 via a pivot lug 53 on the hand lever. The pivot lug 53 defines an aperture 54 which is sized to receive the pivot shaft 42 when this shaft extends through the apertures 41 on the pivot base 40. The hand lever 5 is also pivotally connected to the pivot base 32 via a connecting member 55. In this regard, a pivot shaft 52 extends through an aperture 56 in the connecting member 55 and through a pair of apertures 51 in a lever pivot base 50. Similarly, the pivot shaft 34 extends through an aperture 57 in the connecting member 55 and through the pair of apertures 33 in the pivot base 32.

A valve base 6 in the main body 2 defines a bore which has an air intake 60 at an upper end thereof, and which defines an internal chamber 61 below the air intake 60. A non-return valve 62 and a spring 63 are located within the internal chamber 61, as shown most clearly in FIG. 5 of the drawings. A needle 64 has an air intake 641 for allowing air into the needle and a discharge port 642 for discharging air from the needle.

A sleeve 7 is fixed at its upper end to the connecting portion 22 of the main body 2. At the lower end of the sleeve 7, an internal projecting ring 71 is provided with two opposed notches 72 (see FIG. 2), and an external projecting ring provides a shoulder 73 on the outside of the sleeve 7 (see FIG. 5).

A further, outer sleeve 8 extends around the sleeve 7 and has an internal projecting ring 81 at its upper end.

As can be seen in FIG. 5 of the drawings, an cup member 9 locates within the sleeve 7 and has a lower flange 93 which is connected to the bottom of the outer sleeve 8. The top of the cup member 9 defines a central aperture 91 through which the needle 64 extends, and the outer surface of the cup member 9 carries two corresponding helical projections 92.

With reference now to FIGS. 4, 5 and 6 of the drawings, in use, the neck 18 of a wine bottle 17 is inserted into the cup member 9 so that the needle 64 penetrates and passes through a cork 19 in the bottle, as shown, and the discharge port 642 of the needle 64 is located

inside the wine bottle 17. The hand lever 5 is then displaced downwardly in the direction of the arrow in FIG. 5 and upwardly in the direction of the arrow in FIG. 6 in a reciprocal fashion. When the hand lever 5 is displaced into its upper position (see FIG. 6), the piston rod 4 and the piston 44 are displaced upwardly within the main body 2 drawing air into the internal chamber 20. When the hand lever 5 is displaced into its lower position (see FIG. 5), the piston rod 4 and the piston 44 are displaced downwardly within the main body 2 pumping air in the internal chamber 20 into the air intake 60 of the valve base 6, through the non-return valve 62, through the needle via the air intake 641, and out of the needle through the discharge port 642 inside the wine bottle, thereby increasing the pressure in the bottle 17. With continued pumping of air into the wine bottle 17 as described above, the pressure in the wine bottle increases until there is sufficient pressure to force the cork 19 upwardly out of the neck 18 of the bottle 17.

Once the cork 19 has been removed from the bottle 17, the outer sleeve 8 and the cup member 9 are rotated clockwise relative to the sleeve 7. This rotation causes the notches 72 on the sleeve 7 to ride along the helical projections 92 on the cup member 9, thereby displacing the sleeve 7 upwardly out of the sleeve 8. As the sleeve 7 is displaced out of the sleeve 8, the needle 64 is withdrawn upwardly out of the cork 19 to release the cork, as shown in FIG. 7 of the drawings. Rotation of the sleeve 8 and the cup member 9 in a counter-clockwise direction displaces the sleeve 7 back into the sleeve 8 for further use.

It will be appreciated that the wine bottle opener described above allows for the convenient uncorking of a bottle of wine relatively quickly. In addition, since the cork is forced out of the wine bottle by internal pressure within the bottle, the cork will not be broken during uncorking.

CLAIMS

1. A wine bottle opener comprising:

   (i) a body defining an internal chamber;

   (ii) a needle arrangement extending from the body, the needle arrangement including a needle, an air inlet for allowing air into the needle, and an air outlet for discharging air from the needle;

   (iii) a cup member extending around the needle, the cup member being sized to receive a neck of a wine bottle having a cork such that, when the neck of the wine bottle is inserted into the cup member, the needle penetrates and passes through the cork to locate the air outlet of the needle arrangement within the wine bottle; and

   (iv) means within the internal chamber of the body for introducing air into the needle arrangement.

2. A wine bottle opener according to claim 1, wherein the means for introducing air into the needle arrangement is operable to increase the air pressure in the wine bottle above ambient air pressure.

3. A wine bottle opener according to claim 2, wherein the means for introducing air into the needle arrangement is manually operable.

4. A wine bottle opener according to any one of the preceding claims, wherein the means for introducing air into the needle arrangement includes a piston which is displaceable reciprocally within the internal chamber of the body for drawing air into the chamber when the piston is displaced in a first direction, and for pumping air into the needle arrangement when the piston is displaced in a second, opposite direction.

5. A wine bottle opener according to claim 4, including a pivotable lever for displacing the piston reciprocally within the internal chamber of the body.

6. A wine bottle opener according to any one of the preceding claims, including a non-return valve for regulating the flow of air through the needle arrangement.

7. A wine bottle opener according to any one of the preceding claims, wherein the air outlet of the needle arrangement is located proximate a free end of the needle.

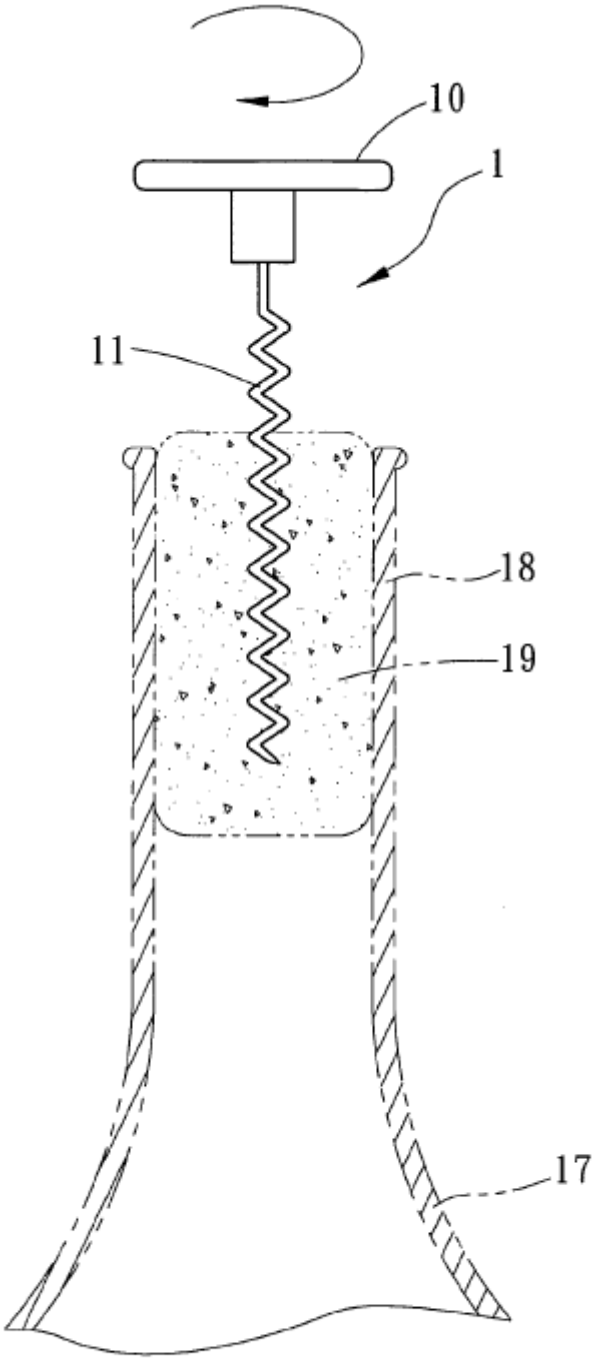

FIG.1
(PRIOR ART)

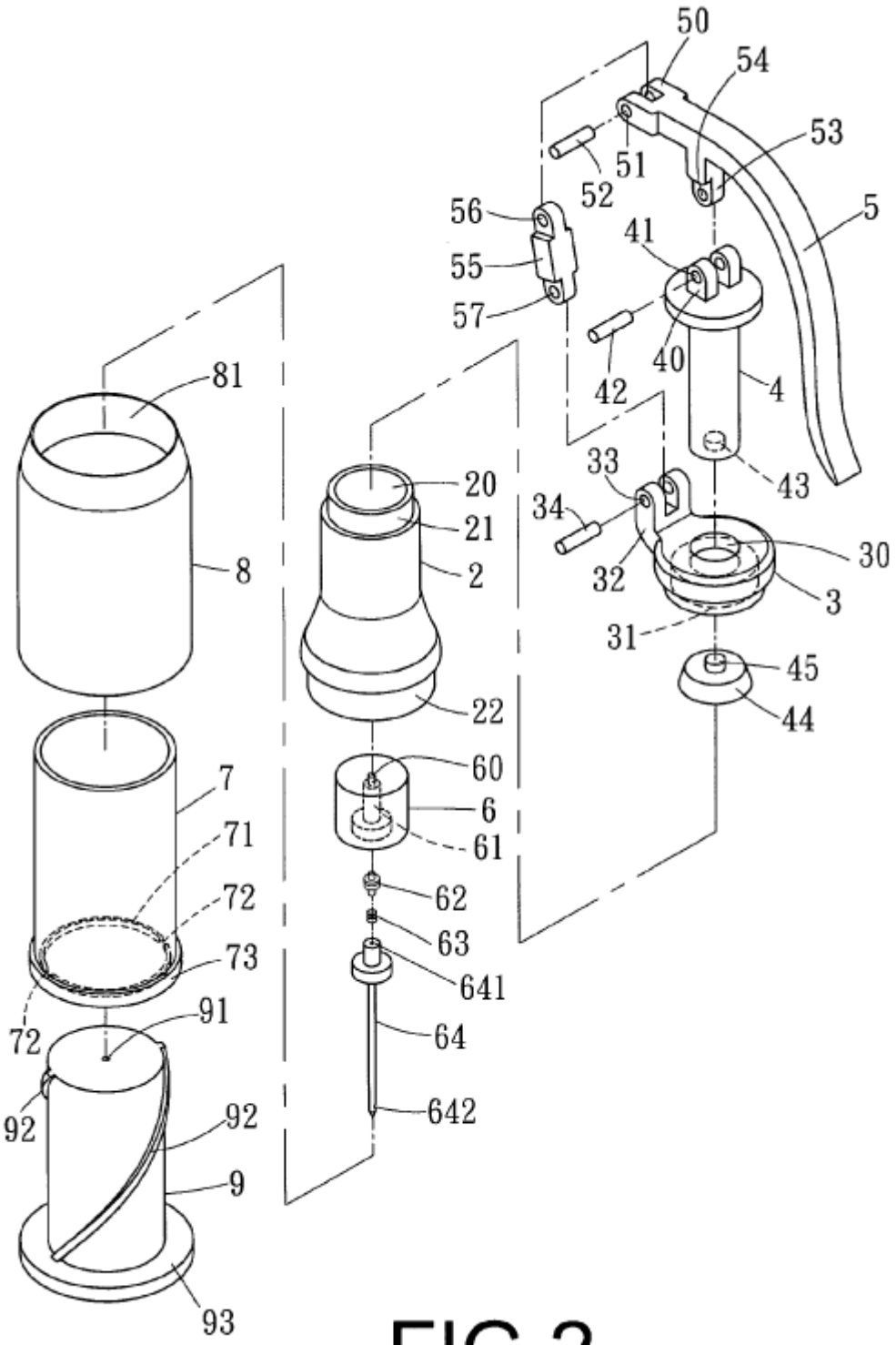
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FIG.2

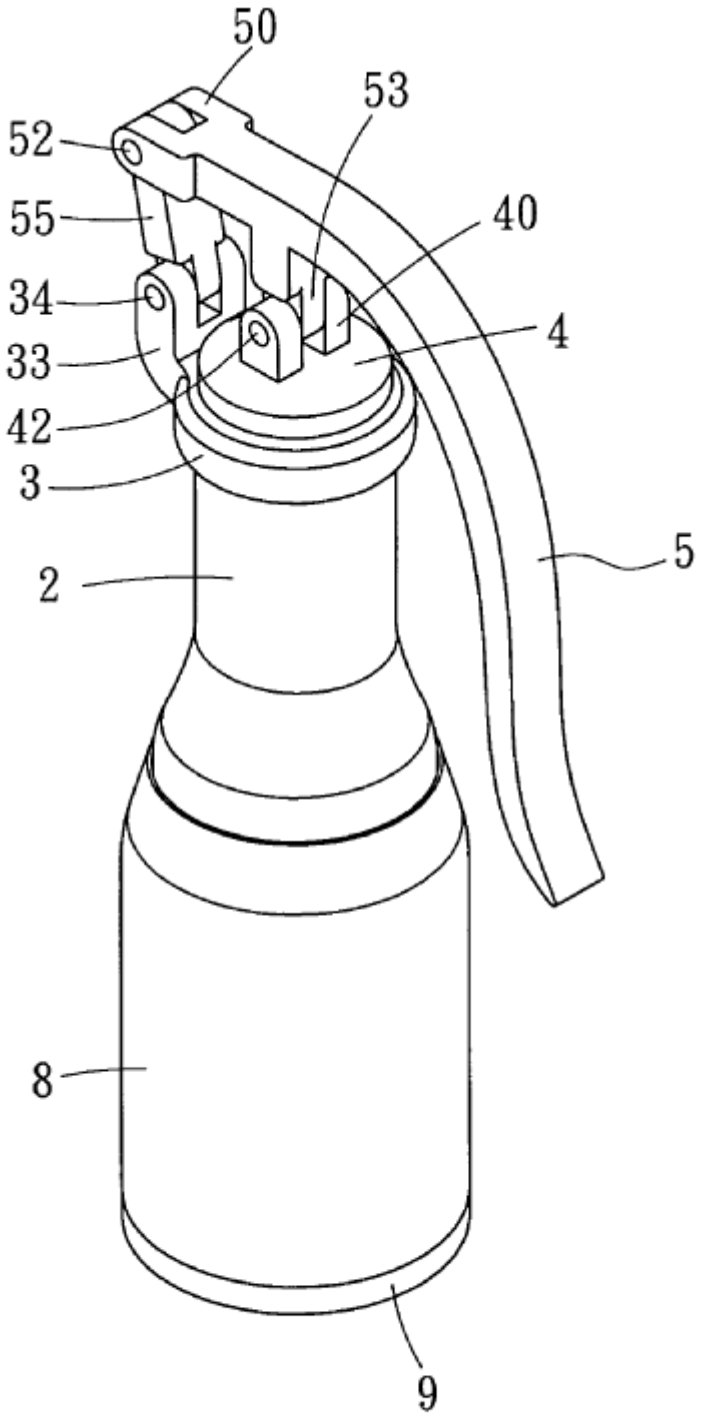

FIG.3

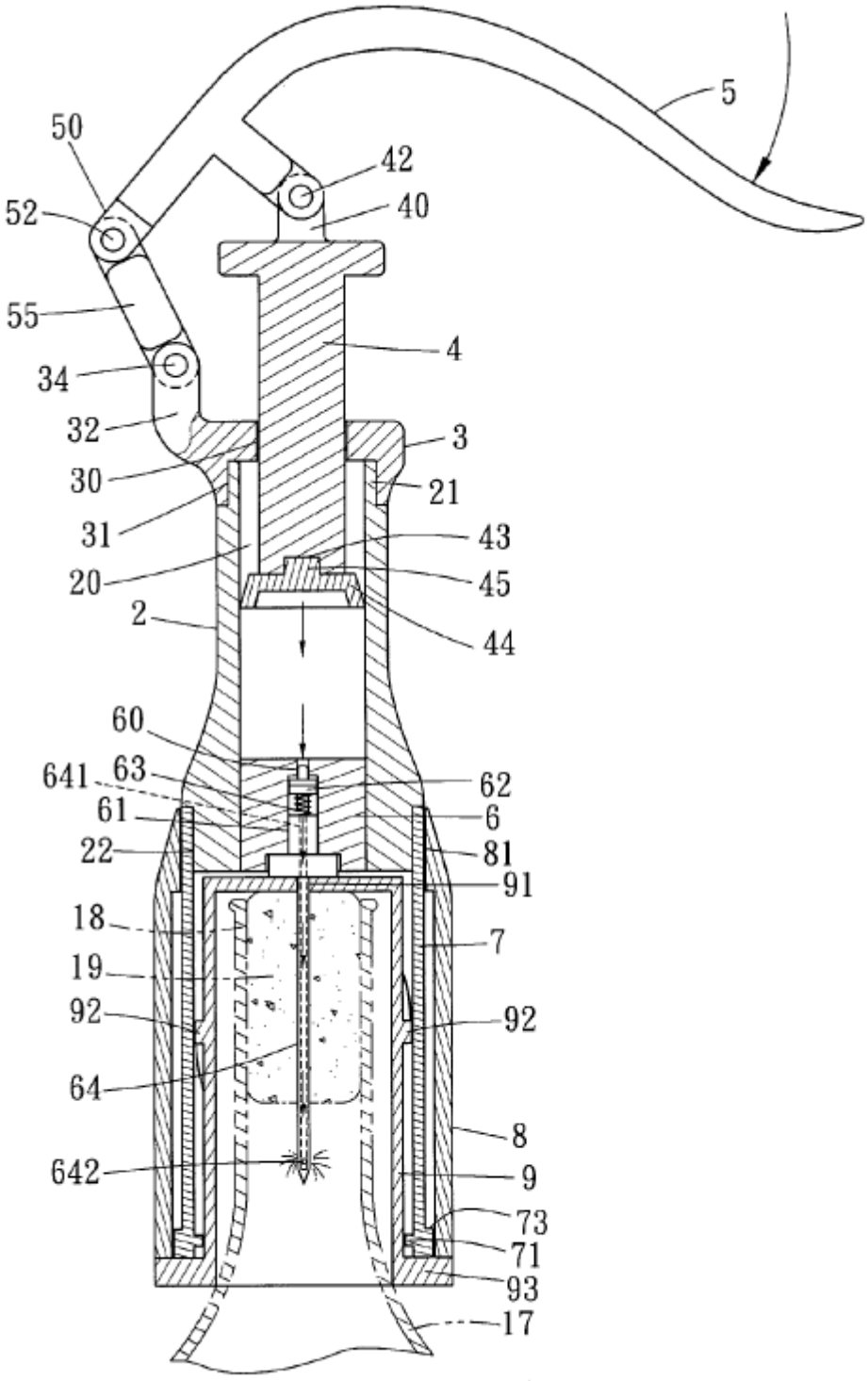
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FIG.4

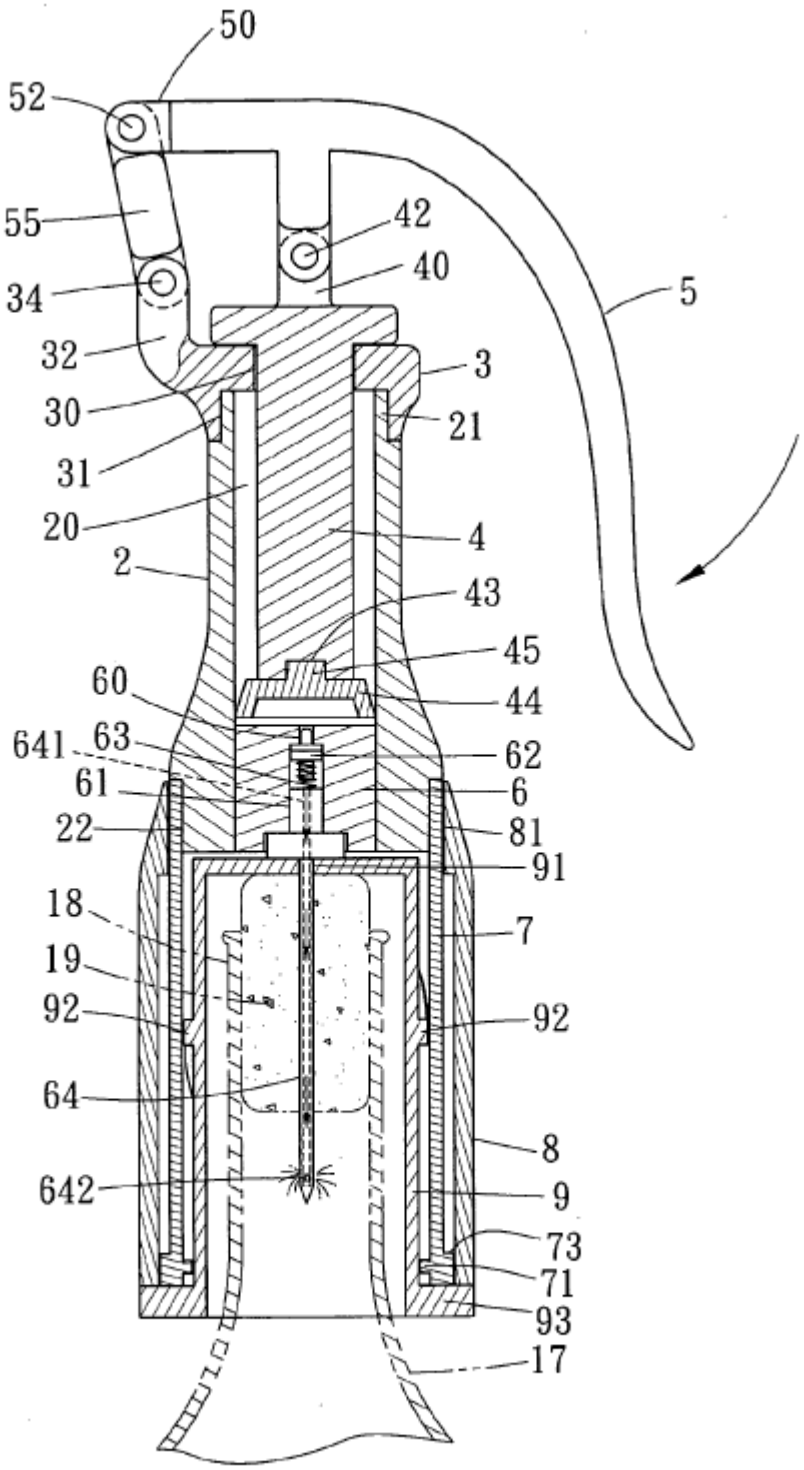
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FIG.5

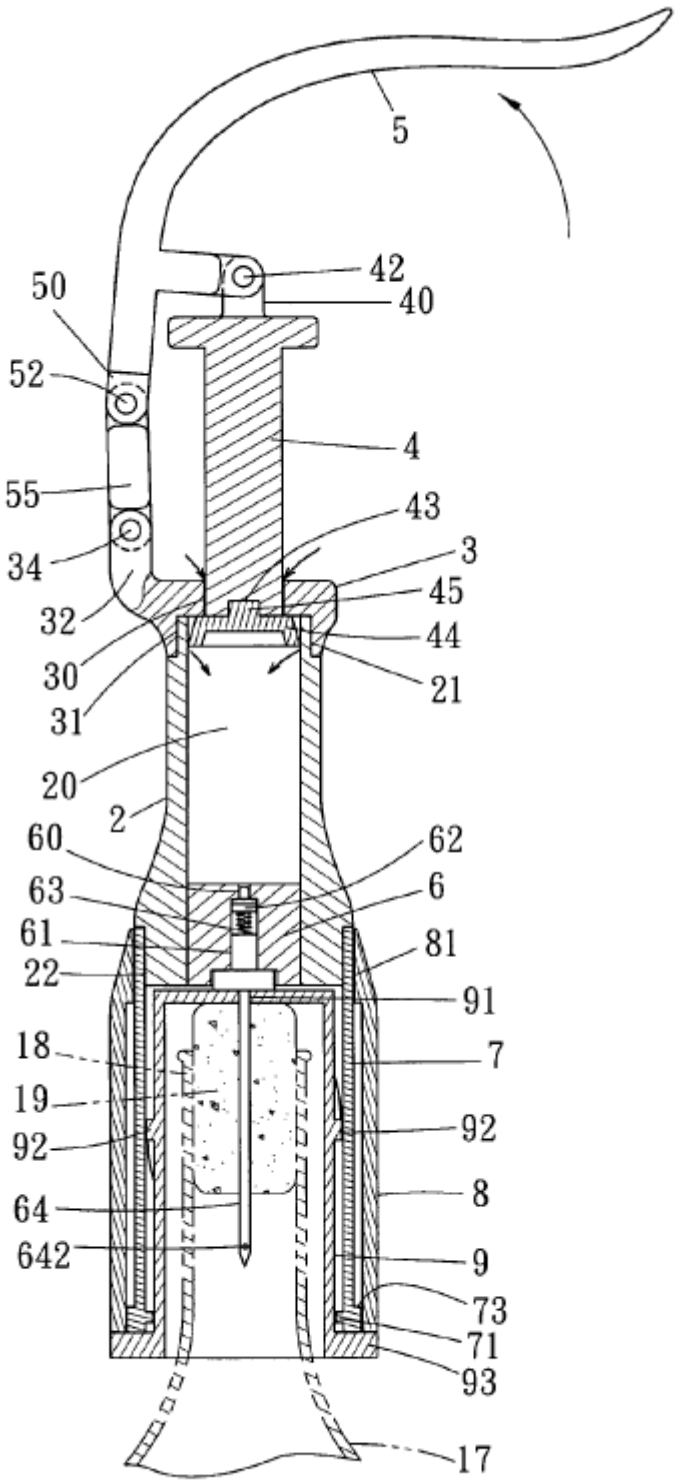
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FIG.6

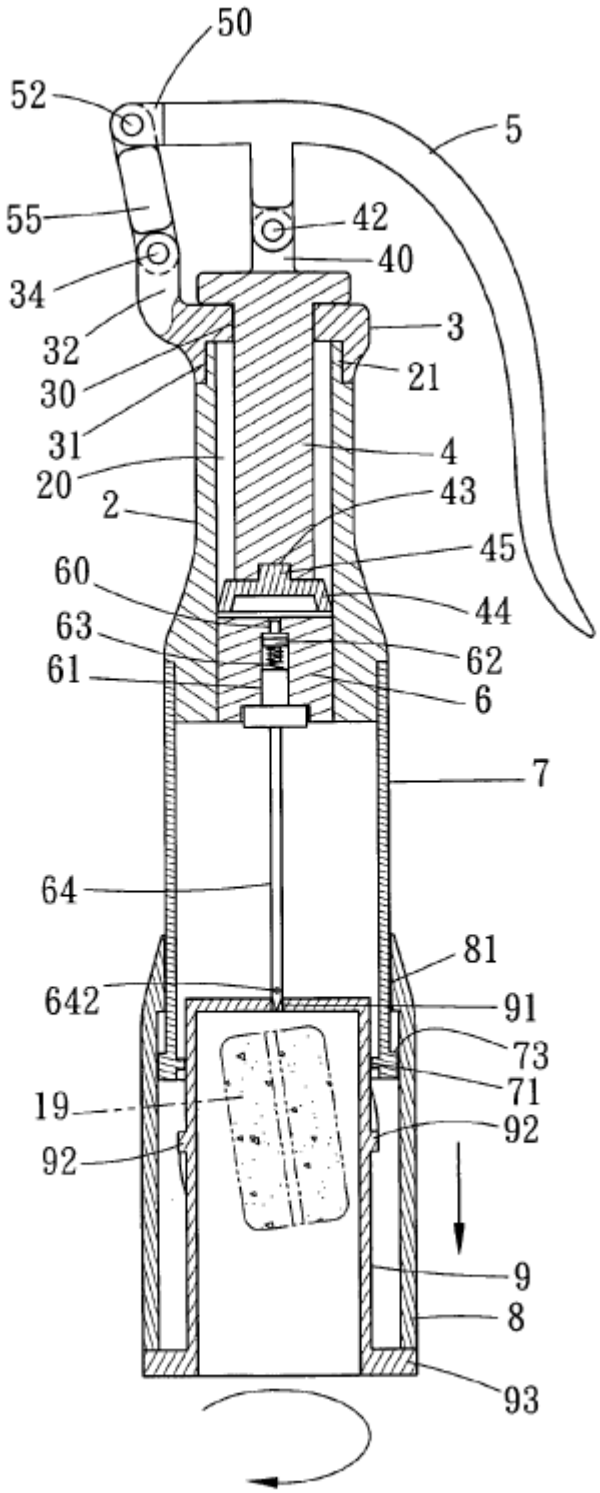
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FIG.7