

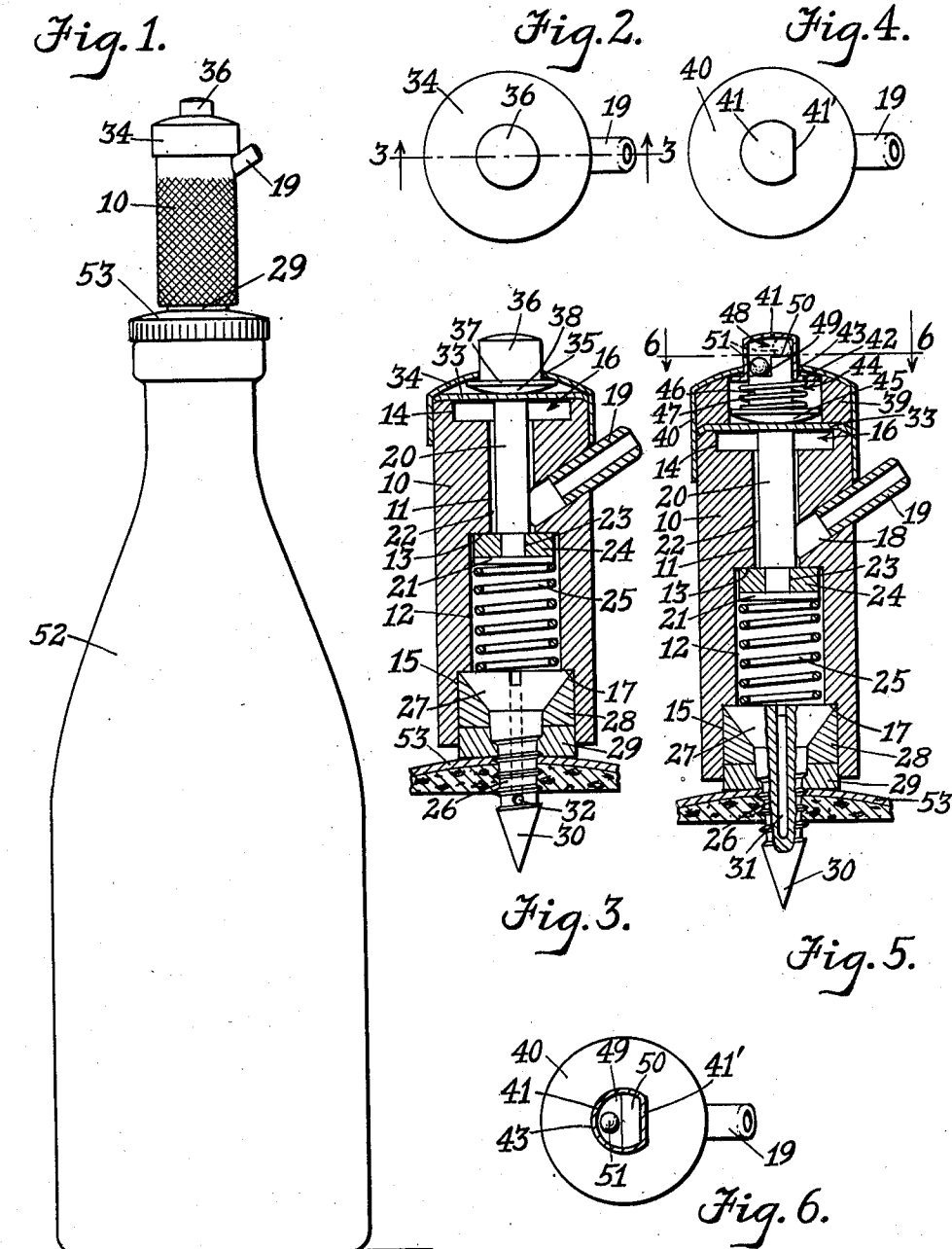
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DETACHABLE SIPHON DEVICE

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DETACHABLE SIPHON DEVICE.

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Our invention relates to siphon bottles and more particularly to a small siphon device for use on bottles containing carbonated waters and the like.

5 The primary object of our invention is to provide a siphon device, or siphonette, which may be applied to any of the various kinds of bottles containing carbonated or gas-charged liquids and having the usual form of cork-lined metal cap, to withdraw therefrom a part or all of its contents in a small and forcible stream like that from a so-called siphon bottle.

10 A further object is to provide a detachable siphonette, of the character described, which readily may be attached to the usual type of stopper cap without permitting the escape of gas, which is held on the cap ready for use so as to keep it effectively sealed and which readily may be detached from the cap after use or when the bottle has been emptied.

15 Other objects and advantages will appear hereinafter and while we show herewith and will describe a preferred form of construction, we desire it to be understood that we do not confine ourselves to such preferred form but that various changes and adaptations may be made therein without departing from the spirit of our invention as herein-after claimed.

Referring to the drawings which accompany this specification and form a part thereof,

20 Fig. 1 is a side view of a common form of bottle with a siphonette, embodying the principles of our invention, applied thereto.

Fig. 2 is an enlarged plan view of the siphonette shown in Fig. 1, by itself.

25 Fig. 3 is a sectional view of the siphonette shown in Fig. 2, taken on line 3—3 of that figure.

Figs. 4 and 5 are views, corresponding to Figs. 2 and 3, respectively, of a slightly modified form of siphonette.

30 Fig. 6 is a sectional view of the top part of the siphonette shown in Figs. 4 and 5, the section being taken on line 6—6 of Fig. 5.

Both the preferred form shown in Figs. 1, 2 and 3 and the modified form shown in Figs. 4, 5 and 6 have many features in common which are designated by like reference numerals in the corresponding figures. Included in these is a cylindrical body or shell 10 having an axial bore the diameter of which

varies in its different parts, there being a relatively small bore-section 11, adjacent the upper end, a larger bore-section 12 below this, which forms an annular shoulder 13 between the two sections 11 and 12, and two much larger bore-sections 14 and 15 at the upper and lower ends, respectively, the upper one forming a recess 16 and the lower one forming an annular shoulder 17 between it and section 12. A radial hole 18, of relatively small diameter, is drilled through one side of shell 10, so as to intersect bore-section 11 adjacent shoulder 13, hole 18 being so drilled that its axis makes a slightly acute angle, upwardly, with that of section 11. The surface of shell 10 is knurled, as shown in Fig. 1.

A small tube 19, fitting tightly in hole 18 and projecting outwardly therefrom, is fixed therein to serve as a nozzle. A plunger rod 20, having a disc 21 fixed on its lower end, is inserted upwardly through bore-section 11 and recess 16, the diameter of said plunger rod being somewhat smaller than that of section 11 so that an annular space 22 is left within the latter. The plunger rod has an annular groove 23 cut around it just above disc 21 and a soft rubber washer 24, adapted to seat on shoulder 13, is fitted therein. A compressed helical spring 25 is inserted in bore-section 12, against disc 21, and a screw 26, having a head 27 whose diameter is approximately equal to that of bore-section 15 of shell 10, is inserted in said section 15 with its head 27 turned upwardly and in contact with shoulder 17 and the lower end of spring 25. A plug 28, fitting under screw-head 27 so as to hold it in contact with shoulder 17 and partially filling bore-section 15, in which it fits tightly, is forced into said section 15 against screw-head 27. A soft rubber washer 29, also fitting tightly in bore-section 12 and around screw 26, is forced into the former against plug 28, the thickness of said washer 29 being such that it projects somewhat below the end of shell 10.

Screw 26 is equipped with a sharply tapering cone point 30 and its length is such that this point projects approximately a half inch below washer 29. A vertical duct or channel 31, shown in Fig. 5, is formed through the screw by intersecting longitudinal and radial holes drilled therein, the position of the lower opening 32, of said channel, being just above cone point 30, as shown in Fig. 3.

In the preferred form of siphonette, shown in Figs. 1, 2 and 3, a rubber diaphragm 33 is stretched over the upper end of shell 10 so as to cover recess 16 therein and a tight-fitting cap 34, with a central opening 35 is fixed thereon so as to clamp the marginal edge of said diaphragm 33. A push-button 36, with a retaining flange 37 on its lower end and a rounded face 38, in contact with diaphragm 33, is mounted in cap 34 so as to project through opening 35.

In the modified form, shown in Figs. 4, 5 and 6, diaphragm 33 is held on the upper end of shell 10 by a clamping ring 39 which fits in a cap 40, similar to but somewhat deeper than cap 34. Instead of the solid button 36, a hollow push button 41, with a retaining flange 42, is mounted in the cap so as to project through the opening 43 therein. A plunger button 44, having a rounded head 45 in contact with diaphragm 33, and a shank 46 which extends upwardly into button 41, is mounted between the former and the latter, with a weak helical spring 47 around shank 46 and under slight compression between flange 42 and head 45, tending to hold push button 41 and plunger button 44 apart.

Push button 41 is made with a flat side 41', preferably the side adjacent nozzle 19, as is clearly shown in Figs. 4 and 6, and opening 43 is made to conform thereto so that the former cannot turn in the latter. Shank 46, of plunger button 44, is also made with one flat side, as is shown in Fig. 6, so that it cannot turn in button 41. The length of shank 46 is such that a space 48 is left between its upper end and the top of push button 41 and a square transverse notch 49 is cut therein so as to increase that space on the side thereof which is opposite the flat side. The extreme end 50 of shank 46 is beveled slightly toward notch 49, as shown in Fig. 5. A metal ball 51, small enough to rest loosely in notch 49, and to roll into space 48 above beveled end 50 of shank 46, as indicated in dotted lines, is placed in push button 41.

Either of the two forms of siphonette shown may be attached to a bottle 52, having the usual cork-lined metal cap 53, by placing cone point 30 in the center of the cap, giving the siphonette a sharp enough rap to cause cone point 30 to puncture the cap and to penetrate it as far as the screw threads and then screwing it down thereon until washer 29 presses tightly against the upper surface of the cap. This brings opening 32, of channel 31 in screw 26, below the cap and well within the bottle. As is evident the gas contained in the bottle immediately rushes through channel 31 into bore section 12 around spring 25 but cannot escape into

annular space 22 and out through nozzle 19 so long as washer 24 is in contact with shoulder 13.

When using the preferred form of siphonette downward pressure on button 36 operates against diaphragm 33 and through plunger rod 20 to force washer 24 off of its seat 13, against the action of spring 25, and permits gas or liquid to flow out of the bottle through nozzle 19 according as to whether the bottle is held in an upright position or is tipped into a pouring position. Care, therefore, must be exercised, with this form of siphonette, not to press the button except when the bottle is held in a pouring position, otherwise gas will escape and the pressure within the bottle will be reduced.

When using the modified form of siphonette pressure on button 41 will operate plunger rod 20 only when the bottle has been tipped into a pouring position and ball 51 has rolled into space 48 above beveled end 50. Otherwise ball 51 will be in notch 49 and pressure on button 41 will operate only to compress spring 47 without acting on plunger rod 20. This latter arrangement is designed to insure against wastage of gas.

It is evident that when one bottle has been emptied our siphonette readily may be unscrewed from the cap thereof and used on another bottle in the same way.

Having thus illustrated and described our invention, we claim:

1. A siphon device comprising a cylindrical shell; a nozzle fixed in one side of said shell; a cone-pointed screw in the lower end of said shell adapted to puncture the usual stopper cap of a bottle, said screw having a channel with an outer opening adjacent its point and an inner opening within said shell; a spring-actuated valve within said shell adapted to control the flow of a fluid there-through; a push-button in the upper end of said shell, adapted to open said valve, and means, connected with said push button, for preventing the opening of said valve thereby, except when said shell is held in an inclined position, toward the nozzle side thereof.

2. A detachable siphon device comprising a cylindrical shell; a screw-threaded tube fixed in the lower end of said shell so as to project a predetermined distance therebelow; a cone point on said tube; a nozzle fixed in one side of said shell; a spring-actuated valve within said shell, adapted to control the flow of a fluid therethrough, and means, in the upper end of said shell, for opening said valve only when said shell is held in an inclined position, toward the nozzle side thereof.

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