

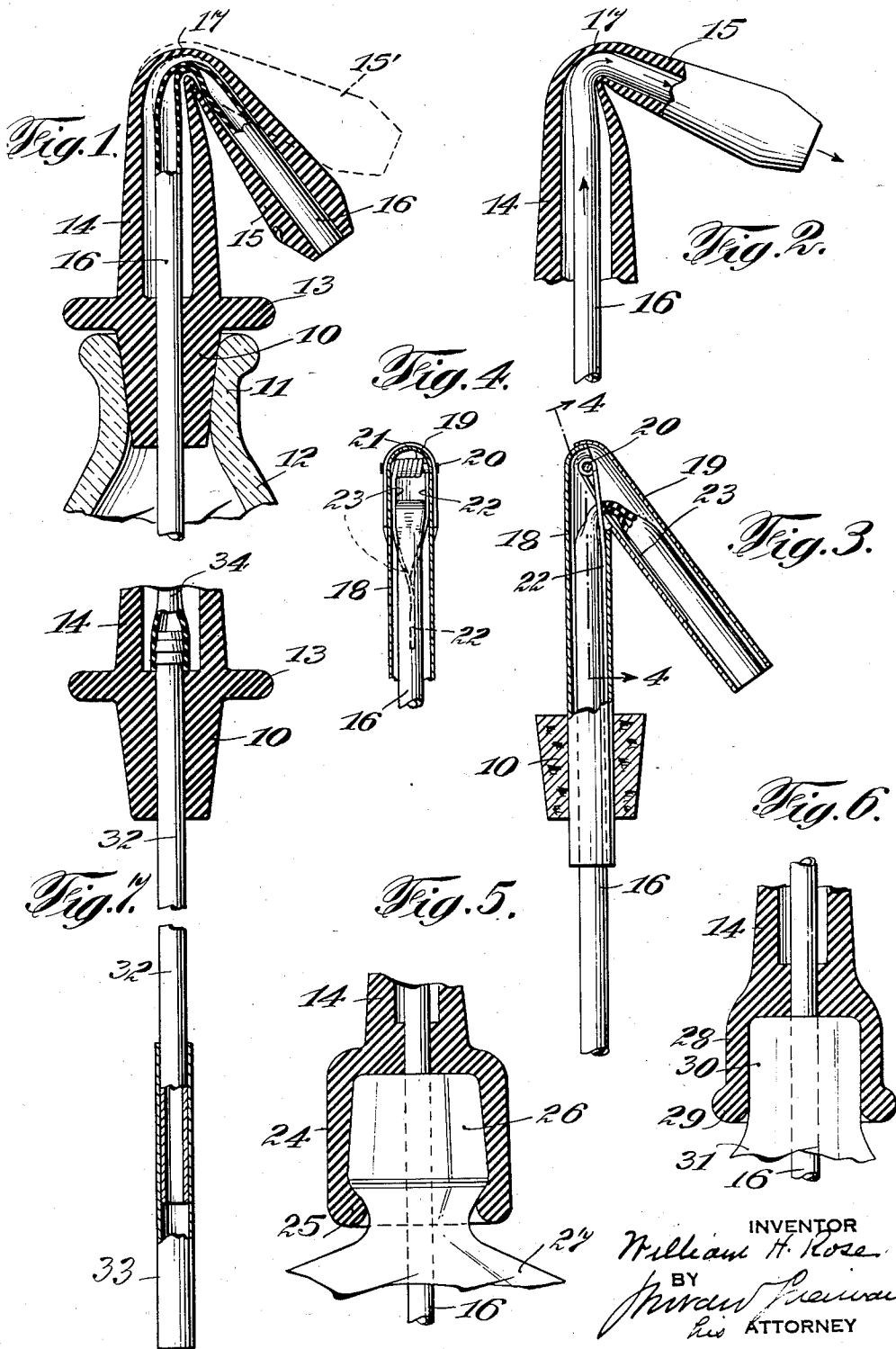
May 28, 1935.

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2,002,835

SIPHON DEVICE

Filed May 11, 1934



UNITED STATES PATENT OFFICE

2,002,835

SIPHON DEVICE

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Application May 11, 1934, Serial No. 725,047

4 Claims. (Cl. 137—20)

My invention relates to container closures and refers particularly to closures for containers containing an aerified, or a gasified liquid, the removal of said liquid being effected by the pressure of said air or gas.

The closures generally adapted for containers of the character described, and known as siphons, consist of mechanical contrivances made of metal and having metal seated valves.

Such devices are expensive in production, are liable to become inoperative, are not adapted for use except with the container to which they are fixedly attached, and are not of such construction that worn, or inoperative, parts may be replaced.

My invention overcomes all of the above mentioned, and other disadvantages and objectionable features incident to the present known siphon devices and presents a device of this character of simple and economic production, not liable to become inoperative, capable of being readily and effectively applied to different containers and in which worn or inoperative parts may be readily and inexpensively replaced.

In my device, I take advantage of the bending of a rubber tube to produce a perfect seal to prevent the passage of liquid therethrough, and have invented means whereby such bending may be readily and effectively accomplished and released.

The device of my invention, its ease of operation and its many advantages over the present employed siphon devices may be readily recognized and appreciated by a consideration of the accompanying drawing in which similar parts are designated by similar numerals.

Figure 1 is a vertical cross-section of one form of my device in closed position.

Figure 2 is a fragmentary vertical cross-section of the device of Figure 1 in open position.

Figure 3 is a vertical cross-section of a modified form of my device.

Figure 4 is a section through the line 4—4 of Figure 3.

Figure 5 is a fragmentary vertical cross-section of a modified form of my device.

Figure 6 is a fragmentary vertical cross-section of a modified form of my device.

Figure 7 is a fragmentary vertical cross-section of a modified form of my device.

The particular form of the device of my invention illustrated in Figures 1 and 2, comprises a container closure member consisting of the lower element 10 adapted to fit within the neck 11 of a container 12, a flange 13 adapted to abut upon the upper face of the neck 11, and an upwardly ex-

tended hollow closure element 14, the extension 15 of which is bent downwardly in its normal position. For purposes of rigidity of construction, I prefer to have the walls of the lower portion of the element 14 and the end portion of the element 15 somewhat thicker than the intermediate walls for reasons explained later.

A rubber tube 16 extends upwardly from the bottom portion of the container 12 through the opening of the element 14 and into and partially through the opening in the element 15.

The device is preferably of soft rubber and of such construction that when it is in its normal position the angular portion 17 of the elements 14, 15 will cause the tube 16 to be bent and closed and thus preventing the escape of liquid therethrough, while the raising of the element 15 into the position shown in dotted lines in Figure 1 and in full lines in Figure 2 will open the tube 16 at its previously closed position, thus allowing the gas in the container 12 to force the liquid therein outwardly through the tube 16 and the open end of the element 15.

As the rubber tube 16 will expand upwardly when the pressure thereon is released, I provide for a space between it and the outer members 14, 15 at 17, and by having the walls of the outer member thinner at that point than elsewhere, the bending of that member at that point is more positive.

It is evident, therefore, that when the element 10 is inserted within the neck of a container containing an aerified, or a gasified liquid, the normal position of the device will prevent the escape of the liquid, and in order to obtain a portion of said liquid all that is necessary is to raise the element 15, the height to which it is raised governing the rapidity of flow of the liquid, while the release of the element 15 will immediately close the device from further liquid exit.

The modified form of my device shown in Figures 3 and 4 consists of a cork, or stopper member 10 through which is passed a tube 18 of hard rubber, metal, glass or other suitable material to which a second tube 19 is pivotally attached by means of the pivotal member 20. A coiled spring 21 is carried by the pivot 20, one end portion 22 of the spring 21 abutting upon the inner face of the tube 18 and the other end portion 23 of the spring 21 abutting upon the inner face of the tube 19. The springs 21, 22, 23 retain the tubular members 18 and 19 in the position shown, thus closing the tube 16 and preventing the exit of liquid. If however, the tube 19 be raised from its normal position, the tube 16 will

be opened, allowing the exit of liquid from a container to which the device is applied.

The modified form of the device of my invention shown in Figure 5 is similar to that previously explained except that the portion 24 of the device adapted for applying it to a container has an inwardly inclined flange 25 to allow of the attachment to the outer face of the under side of the neck 26 of the container 27.

10 The modified form of the device of my invention shown in Figure 6 is similar to that previously explained except that the portion 28 of the device adapted for applying it to a container has an outwardly extended head flange 29 to allow of the attachment to the outer face of the neck 30 of the container 31.

20 The modified form of the device of my invention shown in Figure 7 has a telescopic tube consisting of the elements 32 and 33, to allow of the proper placement of the lower end of the tube 33 with respect to the bottom of the container, a rubber tube 34 being affixed to the upper end of the tube 32.

25 It will thus be seen that my device is of economic construction, that it is easily and positively controlled, that it is of application to various sizes of containers, that the length of the exit tube can be readily changed to meet the requirements of the container bottom, and that its several parts may be readily exchanged and replaced.

30 It is further evident that the closing of the exit tube by the bending thereof requires considerably less force than would be necessary to close it by external pressure upon a straight portion of the tube and hence, the particular form of bending closure means accomplished by the device of my invention allows of its practical and effective application for the purposes to which my invention is adaptable, and further, the bending of the tube produces a perfect seal which is most difficult of accomplishment by any external pressure, which is extremely important in a siphon device to prevent the escape of the gas under pressure within the container.

45 I do not limit myself to the particular sizes, shapes, numbers, arrangements or materials of

parts as shown and described, as these are given simply for the purpose of describing the device of my invention.

What I claim is:—

1. In a siphon device, in combination, an upwardly extended resilient tubular member capable of attachment to the neck of a container, a second resilient tubular member carried by the upper portion of said first tubular member and angularly movable with respect thereto and a compressible tube within said tubular members, the normal position of said tubular members being such as to effectively bend and close said compressible tube the resiliency of said tubular members returning them to their normal relationship after they have been moved from said normal relationship.

2. In a siphon device, in combination, an angular resilient tubular member adapted to be attached to the neck of a container and a compressible tube within said tubular member, the normal angle of said member being such as to effectively bend and close said compressible tube, and the movement of one portion of said tubular member being such as to open said tube.

3. In a siphon device, in combination, an angular resilient tubular member adapted to be attached to the neck of a container, the walls in the middle portion of which are thinner than in the end portions thereof and a compressible tube within said tubular member, the normal angle of said member being such as to effectively bend and close said compressible tube, and the movement of one portion of said tubular member being such as to open said tube.

4. In a siphon device, in combination, an angular resilient tubular member adapted to be attached to the neck of a container and a compressible tube within said tubular member, the normal angle of said member being such as to effectively bend and close said compressible tube, and the movement of one portion of said tubular member being such as to open said tube, the resiliency of said tubular members returning them to their normal relationship after they have been moved from said normal relationship.

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