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C. HERZOG

2,520,684

SELF-CLOSING DISPENSING DEVICE

Filed Dec. 28, 1948

FIG. 5.

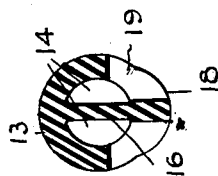


FIG. 6.

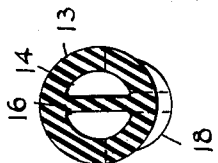


FIG. 3.

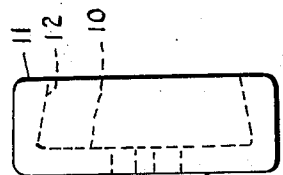


FIG. 7.

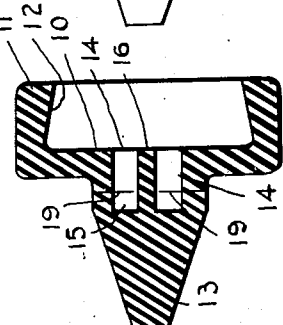


FIG. 1.

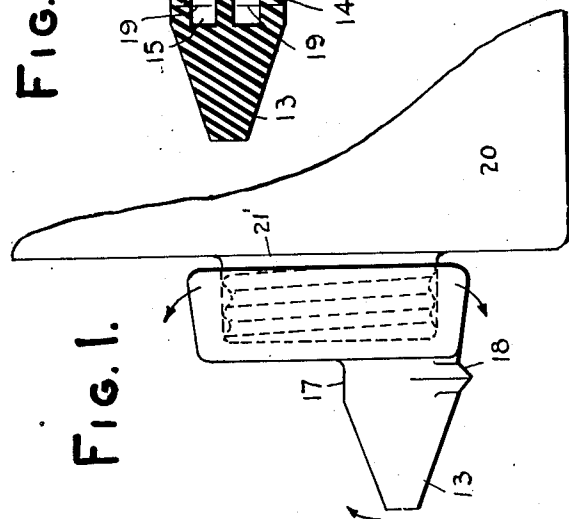


FIG. 8.

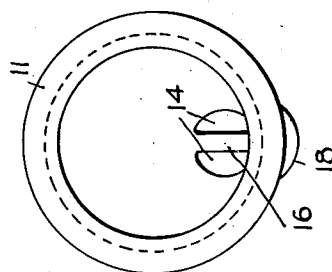


FIG. 4.

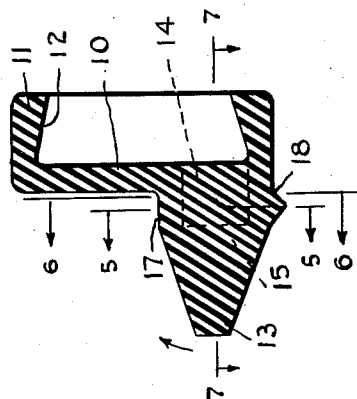
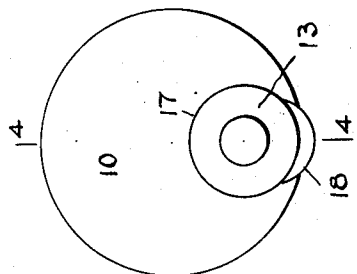


FIG. 2.



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SELF-CLOSING DISPENSING DEVICE

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Application December 28, 1948, Serial No. 67,729

7 Claims. (Cl. 222-490)

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My invention relates to a self-closing dispensing unit.

An important object of the invention is to provide a device of the above mentioned character adapted to be applied to a liquid holding container to permit of the convenient discharge of the contents and the proper cutting off of such discharge to prevent the spilling of the liquid.

A further object of the invention is to provide a dispensing unit adapted to be mounted upon the neck of a container and having parts thereof placed under tension for securely holding the unit in place and other parts placed under compression and serving to close the outlet opening or slit of the device.

A further object of the invention is to provide an internal web which is tensioned to close the slit or slits.

A further object of the invention is to provide a device of the above mentioned character which is of simplified construction and may be readily made integral.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings, forming a part of this application, and in which like numerals are employed to designate like parts throughout the same:

Figure 1 is a side elevation of a dispensing unit embodying my invention, showing the same applied to a liquid holding container,

Figure 2 is a front end elevation of the same,

Figure 3 is a bottom plan view of the unit,

Figure 4 is a vertical section taken on line 4-4 of Figure 2,

Figure 5 is a vertical section taken on line 5-5 of Figure 4,

Figure 6 is a similar view taken on line 6-6 of Figure 4,

Figure 7 is a horizontal section taken on line 7-7 of Figure 4, and,

Figure 8 is a rear end elevation of the device.

The dispensing device is preferably formed integral and made from resilient material, such as rubber, natural or artificial. The device is preferably made from "neoprene," when it is used for handling oil or the like, as this material will not deteriorate upon contact with oil. This device comprises an adaptor including an end 10 having an annular flange 11, increasing in thickness toward its free end for affording an outwardly converging inner wall 12. Formed integral with the end 10 adjacent to its periphery is an axial operating member or arm 13. This

member is provided with a pair of spaced longitudinal passages 14 leading into the recess of the flange 11 and having closed ends 15. The passages 14 are separated by a web 16 extending axially of the operating member 13, as shown. The operating member 13 preferably tapers toward its free end and has an inner cylindrical portion 17, provided upon its bottom with a segmental radial rib or flange 18. The operating member 13 is provided with circumferentially extending openings, preferably in the form of slits 19, spaced from the ends 15 and leading into the passages 14. These slits are disposed at a right angle to the longitudinal axis of the web 16. These slits pass through the longitudinal center of the rib 18. The slits are disposed upon opposite sides of the web 16 and preferably extend for less than 90 degrees.

The numeral 20 designates a container for the liquid to be dispensed, such as a metal container for holding oil. This container or can is equipped with the usual screw-threaded neck 21 for receiving the usual cap, not shown. The neck 21 is mounted upon the end of the can adjacent to one side thereof, as is customary. The slits 19 are arranged at the bottom, when the adaptor is applied to the neck and the flange 11 receives the neck therein, and when the can is horizontally arranged upon its side, for convenient dispensing, Figure 1. Since the device is formed of rubber it is flexible and resilient and all parts are integral. Due to the taper of the inner face 12, the flange 11 is distorted when applied to the neck 21, Figure 1, and its original cylindrical outer surface is then deformed to taper forwardly. This places the flange of the adaptor under tension, which tends to move the adaptor toward the container 20 for securely holding the dispensing unit upon the neck. This arrangement also exerts forces in opposite directions at the top and bottom of the adaptor which are transmitted to the operating member 13 and serve to place parts thereof under compression which tends to retain the slits 19 closed. The web 16 retains the slits 19 closed before the operating member is flexed. When the outer end of the operating member 13 is flexed by being moved upwardly, Figure 1, the slits 19 are opened and the liquid will discharge from the container. This upward movement of the operating member 13 stretches the web 16 longitudinally. When the operating member is released it returns to the normal straight condition and is aided in such returning action by the web 16 which is then under tension. The web 16 therefore pulls

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the operating member in the direction to close the slits 19. This closing of the slits 19 is also aided by the distortion of the adaptor as applied to the neck of the container.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same, and that various changes in the shape, size, and arrangement of parts may be resorted to without departing from the spirit of my invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. A dispensing device to be applied to a part of a container for holding liquids, said device being integral and formed of resilient material and including an adaptor to receive the part of the container, said adaptor including a flange having an inner wall which converges toward its free end, and an operating member carried by the adaptor and extending axially of the adaptor and provided with a longitudinal passage leading into the flange and a circumferentially extending elongated opening leading into the passage and arranged adjacent to the adaptor.

2. A dispensing device to be applied to a container for holding fluids, said device being formed of resilient material and including an adaptor to be mounted upon a part of the container and an operating member secured to the adaptor, said operating member having passages and a web between the passages, said web being permanently secured to the adaptor and to the operating member, said operating member being provided in its side with openings leading into the passages, said openings being disposed upon opposite sides of the web.

3. A dispensing device to be used in connection with a container for holding liquids, said device comprising an adaptor and a resilient operating member carried by the adaptor, said operating member being adapted to be flexed laterally and having longitudinal passages and a web between the passages, said adaptor having elongated openings upon opposite sides of the web and extending transversely of the passages and leading into the same.

4. A dispensing device to be applied to a container for holding liquids, said device comprising a tubular adaptor to be applied to the container and a resilient operating member secured to the adaptor and extending axially thereof, the operating member being laterally flexible, the operating member having longitudinal passages leading into the adaptor and a web between the passages, said operating member having circum-

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ferentially extending slits upon opposite sides of the web and leading into the passages.

5. An integral dispensing device formed from rubber, said device comprising an adaptor including an end and a flange, the flange having an inner wall tapering toward the free end of the flange, an operating member carried by the end and extending axially of the adaptor and having longitudinal passages leading into the flange and a web between the passages, said operating member having slits upon opposite sides of the web and leading into the passages.

6. A dispensing device to be applied to a part of the container for holding liquids, said device being formed integral of resilient rubber and including an adaptor, said adaptor including a surrounding flange to receive a part of the container, said flange having an inner wall which converges toward its free end, and an operating member secured to the outer end of the adaptor and extending axially of the adaptor and provided with a longitudinal passage leading into the flange, said member being provided in its side and adjacent to the adaptor with a self closing opening leading into the passage, the member including an outer portion closing the outer end of the passage and extending beyond the passage for a substantial distance.

7. A dispensing device to be applied to a container for holding liquids, said device comprising an adaptor to be applied to a part of the container and a resilient elongated operating member secured to the outer end of the adaptor and extending axially beyond the same, said operating member having longitudinal passages formed therein which lead into the adaptor and form a web between the passages, said web being permanently attached to the adaptor and to the operating member, said operating member having self closing openings formed in its side upon opposite sides of the web and leading into the passages, the self closing openings being opened by the bodily lateral flexing of the operating member.

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