May 3, 1927. 1,627,065

S. M. RUMBOUGH

CAP

Filed Feb. 18, 1924

Fig. 1.

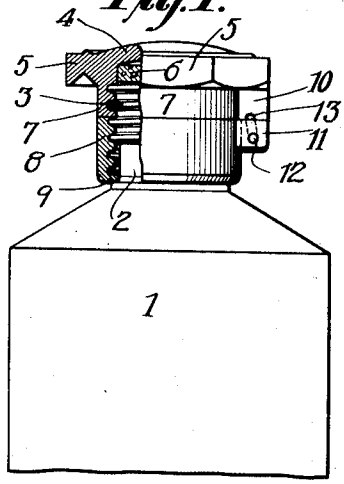


Fig. 2.

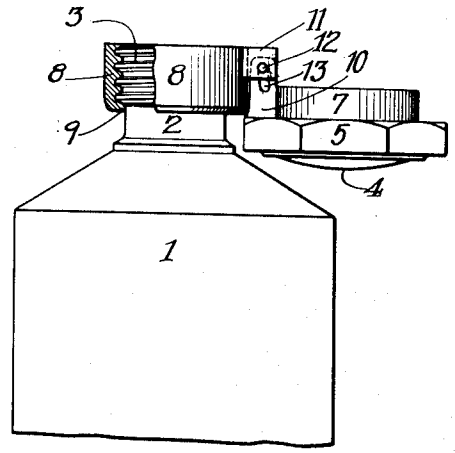


Fig. 3.

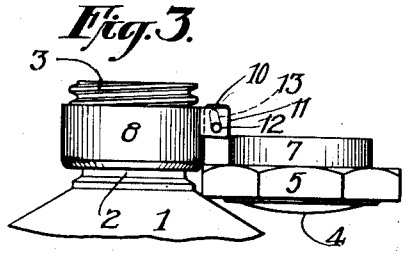


Fig. 5.

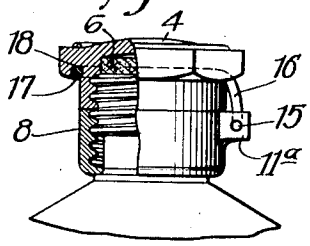


Fig. 7.

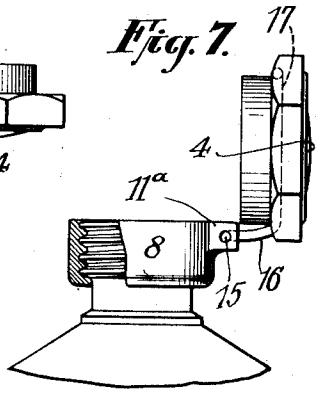


Fig. 6.

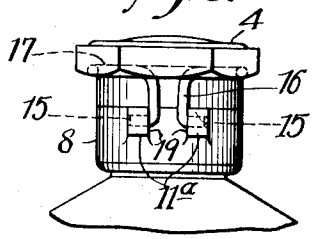


Fig. 4.

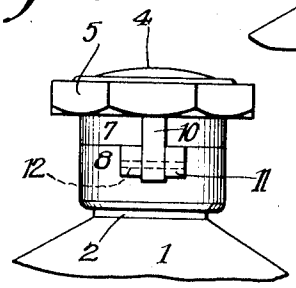
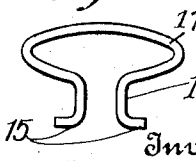


Fig. 8.



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UNITED STATES PATENT OFFICE.

STANLEY M. RUMBOUGH, OF NEW YORK, N. Y.

CAP.

Application filed February 18, 1924. Serial No. 693,431.

My invention aims to provide an improved cap for collapsible tubes, sprinkler tops and other receptacles. The accompanying drawings illustrate an embodiment of the invention.

Fig. 1 is a side elevation of the upper end of a collapsible tube with the cap partly in section in the closed position;

Fig. 2 is a similar view showing the cap in an open position;

Fig. 3 is a similar view showing the cap locked open;

Fig. 4 is a side elevation with the parts in the position of Fig. 1;

Figs. 5 to 8 illustrate an alternative embodiment of the invention, Fig. 6 being a view from the right of Fig. 5;

Fig. 7 is a view with the cap opened and Fig. 8 is a detail.

Referring to the embodiment of the invention illustrated the collapsible tube 1 is provided with a neck having a plain cylindrical portion 2 and a threaded end portion 3 of larger diameter. The tube is closed by means of a cap 4 having a flange 5 of polygonal contour, or milled for turning it easily. The head of the cap carries a packing disc 6 of cork or the like and the body 7 of the cap is internally threaded to engage the upper part of the neck.

The cap is connected to a retaining ring 8 internally threaded also to engage the threaded part 3 of the neck, and having an internal flange 9 which engages the shoulder on the lower side of the threaded portion 3 of the neck so as to prevent upward movement beyond the position of Fig. 2. The cap has a lug 10 extending down alongside the retaining ring and between a pair of ears 11 on the latter carrying a pin 12 which passes freely through a slot 13 in the lug 10.

Fig. 1 shows the closed position. When the tube is to be opened the cap and retaining ring are unscrewed to approximately the limit of their movement, or until the body of the cap is free of the threads on the neck. The cap is then swung back to the position of Fig. 2. In closing, it is only necessary to swing the cap over the top of the neck and screw it down, at the same time screwing the retaining ring 8 down with it.

The elongated slot 13 serves to lock the cap open. With the parts in the position of Fig. 2, the pin being in the remote end of the slot 13, the cap can be swung freely about the pin 12 to the closing position. If, after opening it as in Fig. 2, the ring and cap together be screwed down onto the neck, as in Fig. 3, the cap, striking the top of the tube 1, will be moved up with respect to the ring 8 so as to bring the near end of the slot 13 into engagement with the pin 12. The portion of the lug 10 projecting above the pivot pin will then be so great as to prevent the cap from being swung upward. The cap will, therefore, be locked open and the tube may be tilted to squeeze the contents out or to shake them out, without the cap getting in the way. In fact, even in the position of Fig. 2 the slot will tend to hold the cap against accidental swinging from the neck of the tube. In this position, if the tube be tilted the tendency is for the cap to fall, the slot 13 sliding on the pin 12 to bring the latter into the near end of the slot and thus prevent the cap from swinging. Thus it will automatically lock itself open.

For greater security in this locking operation, and to hold the parts rigidly together the slot 13 is preferably inclined as indicated, the remote end of the slot being inclined away from the center of the cap. The result is that the parts hang loosely, with a certain play between the lug 10 and the side of the retaining ring 8, so that the cap can be freely manipulated while the tube is held upright. But when the tube is inverted, the weight of the cap will, acting through the inclined slot 13, press the lug 10 against the side of the ring 8 and take up the looseness referred to. Or, holding the tube upright as in Fig. 3 and screwing the ring 8 down, the cap will be pressed upward and against the side of the ring so as to take up the looseness and lock it rigidly in place.

The retaining ring is not necessarily threaded on the neck of the tube. It may be a simple ring turning on the neck and retained thereon in various ways. For example, it may be a wire loop fitting a reduced part of the neck with ears at the ends for hinged connection with the cap. The hinge may be of various designs and the cap also may be of any usual or suitable design fitting either over or within the neck of the tube.

Referring to the embodiment of the invention illustrated in Figs. 5 to 8, the retaining ring 8 is formed with ears 11^a which are each provided with a circular aperture to receive the extensions 15 which project

outwardly from the depending arms 16 formed on a spring ring 17.

This ring is seated in a groove 18 formed in the cap and it may be held in said groove by its inherent spring quality or the metal of the cap may be pressed over to secure it in place. In either case the arms 16 will have sufficient resilience to hold them with a spring pressure against the surfaces 19 of the ears 11a. The extensions 15 form pivots or trunnions for the cap and because of the resilience of the arms 16 the cap will be yieldingly held or locked in any position to which it is swung. Fig. 7 shows the retainer 8 adjusted level with the top of the threaded part 3 of the neck and the cap 4 swung open and yieldingly held in a vertical position. It will be understood that the above arrangement provides a spring hinge connection between the cap and the retainer whereby the cap can be yieldingly locked in various angular open positions regardless of the angular position of the container.

In fact, though I have described with great particularity of detail certain embodiments of the invention, it is not to be understood therefrom that the invention is restricted to the particular embodiments disclosed. Various modifications thereof in detail and in the arrangement of the parts may be made by those skilled in the art without departure from the invention as defined in the following claims.

What I claim is:—

1. A container having a threaded neck in combination with a cap screwing thereon, a retainer ring also screwing on the threaded neck, a spring wire ring having a portion fixedly secured to the cap and having downwardly extending resilient arms formed with laterally extending pintle portions which engage the retainer ring.

2. A container having a threaded neck in combination with a cap screwing thereon, a retainer for the cap turning on said neck and having outwardly extending ears, a spring ring having a portion fixedly embedded in a groove in the cap and having resilent arms formed with portions which pivot in bearings formed in said retainer.

In witness whereof, I have hereunto signed my name.

STANLEY M. RUMBOUGH.