Nov. 2, 1926. 1,605,228

C. HAMMER

SNAP ON AND OFF LUG FORMED CAP

Filed Feb. 18, 1926

Fig. 2.

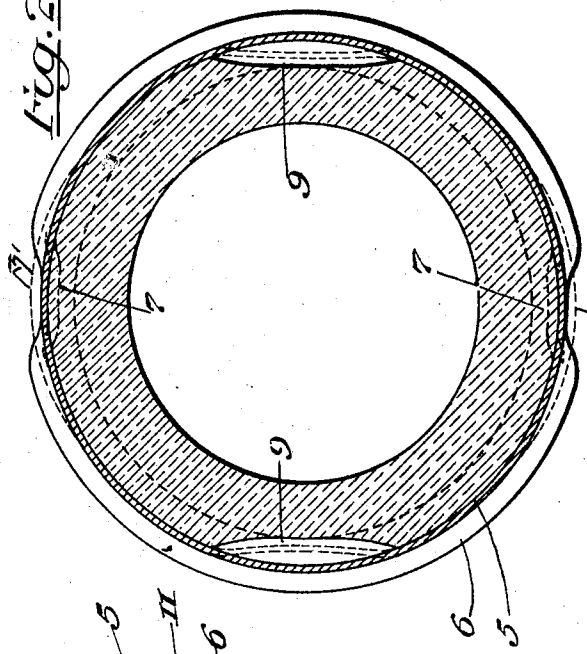


Fig. 1.

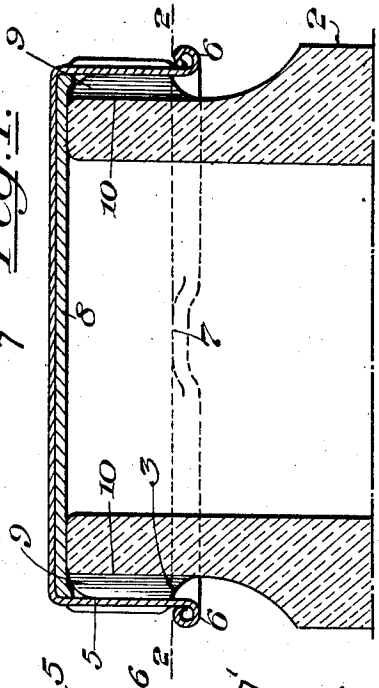


Fig. 4.

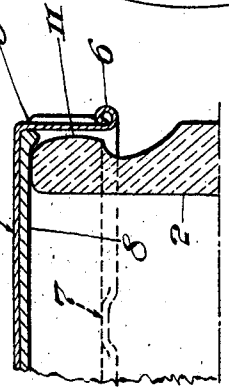


Fig. 3.

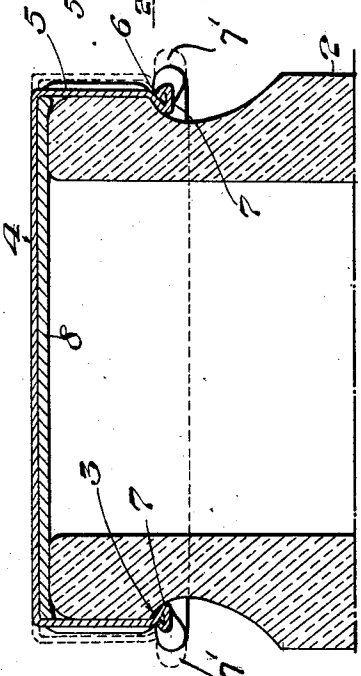


Fig. 5.

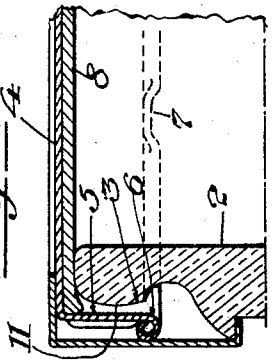
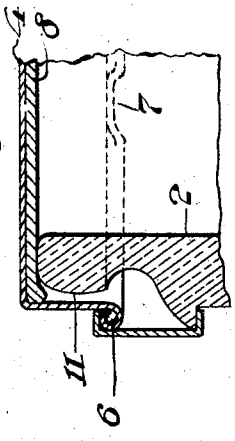


Fig. 6.



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by his Attorney

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UNITED STATES PATENT OFFICE.

CHARLES HAMMER, OF HOLLIS COURT BOULEVARD, NEW YORK, ASSIGNOR TO AMERICAN METAL CAP COMPANY, OF BROOKLYN, NEW YORK, A CORPORATION OF NEW YORK.

SNAP ON AND OFF LUG-FORMED CAP.

Application filed February 18, 1926. Serial No. 88,990.

This invention relates to metal caps or closures for glass containers, the object of the invention being to provide a snap-on and a snap-off lug cap thereby providing an improved sealed receptacle in which the cap may be readily snapped on either by hand or by machine and readily snapped off by the customer by simply lifting the cap from the container, without rotating, rocking or turning the cap.

It is common in this art to rotate caps on and off of containers or to have the caps held on by mere friction but the present improvement has to do with a lug cap or closure which may be both readily snapped on and snapped off while the top of the cap is level or parallel with the top of the container and which will be securely held upon the container without any liability of being prematurely knocked off.

In the drawings accompanying and forming a part of this specification, Fig. 1 is a vertical sectional view of this improved cap applied to a container; Fig. 2 is a horizontal sectional view of the container and cap on line 2—2 the dotted lines illustrating the manner in which the cap skirt is pressed inwardly to snap off the cap; Fig. 3 is also a vertical sectional view taken at right angles to Fig. 1 and showing in dotted lines the release of the lugs from the container shoulder; Fig. 4 is a vertical sectional view illustrating another way in which the cap may be released; Fig. 5 is a sectional view illustrating this improved cap in connection with one form of band closure; and Fig. 6 illustrates this improved cap with another form of band closure.

Similar characters of reference indicate corresponding parts in the several views.

Before explaining in detail the present improvement and mode of operation thereof, I desire to have it understood that the invention is not limited to the details of construction and arrangement of parts which are illustrated in the accompanying drawings, since the invention is capable of other embodiments, and that the phraseology which I employ is for the purpose of description and not of limitation.

The container, usually of glass, shown in the form of a bottle 2 has a rib or shoulder 3 at its mouth for the reception of this improved cap and this shoulder is constructed to permit the cap to be readily snapped on and for this purpose is provided with a curved outer surface somewhat rounded or tapering from its base toward the mouth of the bottle thereby to gradually spread the lugs of the cap outward as the cap is snapped on.

The cap comprises a top 4 having a depending corrugated resilient flange or skirt 5 substantially straight from top to bottom and having a strengthened or reinforced lower edge 6 shown as curled, rolled or beaded, having a plurality of inwardly pressed locking lugs 7 shown in the present instance as two diametrically opposed lugs formed from such curled or beaded edge. This curled or beaded lower edge not only strengthens the skirt and lugs, as do also the corrugations, and prevents cutting of the hands of the user, but it cooperates with the resilient skirt in such way as to enable the proper yielding of the lugs when the cap is snapped on and yet resists the premature snapping off of the cap. This depending skirt or flange is of resilient or springy material to permit the proper yielding of the lugs over the shoulder of the container when the cap is snapped on. The cap is usually provided with a suitable compressible member such as a ring gasket and as shown herein this compressible member is in the form of a liner 8 of suitable thickness for sealing the top of the container.

In applying the cap to the container it is located level or parallel with the top of the container and by suitable pressure as by hand or otherwise it is then forced downward so that the lugs or projections of the cap will spring or yield outwardly owing to the resilient flange and the shape of the shoulder and thus pass over the lip, rib or shoulder at the mouth of the container and then when thus snapped on the lugs lock or grip under the shoulder of the container.

The container shoulder 3 in one form is provided with a pair of lengthened recesses 9 at opposite sides, usually about the width of a thumb, thereby providing a space between the cap flange and the side wall 10 of the container at the base of the shoulder whereby when the pressure of the hand is exerted on the resilient flange, those por-

tions of the skirt opposite the recesses 9 of the container will be squeezed or pressed inwardly, see Fig. 2, and as these recesses are located intermediate the locking lugs or projections of the cap this inward squeezing of the cap flange or skirt forces the lugs outward and from under the shoulder of the bottle as illustrated in dotted lines 7' Figs. 2 and 3, thereby releasing the cap so that it can be readily snapped off while the top is level or parallel with the top of the container.

The same result is also obtained see Fig. 4 by making the skirt of the cap slightly larger than the shoulder of the container thus leaving a space 11 between the shoulder of the container and the flange of the cap to permit the flange to be squeezed or pushed inward thereby releasing the lugs in the manner just described.

The lugs of the cap may be preformed or may be formed subsequent to the application of the cap by machinery if preferred, but in practice it is preferable to preform the lugs since a much more efficient form of lug is obtained.

From the foregoing it will be observed that I am able to provide an improved cap having practically a straight flange having two oppositely located lugs, that can be readily snapped on and readily released by the pressure of the hand, while the top of the cap is always level or parallel with the top of the container so that the cap can both be applied and removed in a straight or vertical direction, the removal being obtained by merely squeezing the cap skirt intermediate its pair of opposed lugs.

I am entirely familiar with the fact that containers are provided with recessed shoulders or lips at the mouth thereof and that caps are provided with lugs but in all of these structures of which I am aware, the cap either has to be rotated on or off by first registering with the recesses in the lip. This requires too much time when it is remembered that millions of containers are sealed per day whereas in the present improvement the cap can be quickly and readily snapped on thus very materially saving time and labor in the packaging of millions of containers per day, and when on the cap will effectively hold without any risk of being prematurely knocked off and moreover the cap is more efficiently held on to the container since it is held in position not only by the gripping or locking action of the lugs, but also by the spring action of the flange or skirt.

This improved cap does away with the necessity of rotating the cap on or off, the lugs of which frequently scrape and scratch the underside of the container threads causing them to chip or break off especially if the container is made of brittle glass, and furthermore the cap can be readily released by the mere pressure or squeezing of the cap by the hand of the user or customer so that the difficulty of getting the cap off, which it not infrequently present when the cap has to be rotated off, due to its sticking and binding is eliminated and the cap can be reused as often as desired, so that the housewife can always maintain the container in sealed condition.

It is to be understood that by describing in detail herein any particular form, structure or arrangement, it is not intended to limit the invention beyond the terms of the several claims or the requiremets of the prior art.

Having thus explained the nature of my said invention and described a way of constructing and using the same, although without attempting to set forth all of the forms in which it may be made, or all of the modes of its use, I claim:

1. A metal cap adapted for use with a container having a shoulder at its mouth and comprising a top having a depending resilient skirt provided with a pair of diametrically opposed inwardly extending locking lugs, the container shoulder having a pair of relatively wide recesses intermediate the lugs forming a space between the side wall of the container and the skirt thereby to permit the cap to be readily snapped off on the squeezing of the cap skirt at such recesses.

2. A sealed receptacle comprising a container having a shoulder or lip at the mouth thereof and a metal cap comprising a top having a depending resilient skirt provided with a strengthened or reinforced lower edge having formed therefrom a pair of diametrically opposed inwardly extending locking lugs, the resiliency and size of the skirt being such that the cap can be readily snapped on over the shoulder of the container and have its lugs grip under such shoulder and prevent its premature knocking off from the container, said skirt and container being formed one relative to the other to provide a space between the skirt and the side wall of the container intermediate such lugs whereupon by squeezing the cap skirt between such lugs the cap can be readily snapped off while the top is parallel with the mouth of the container.

3. A sealed receptacle comprising a container having a shoulder or lip at the mouth thereof and a shoulder located therebelow, a metal cap comprising a top having a depending resilient skirt provided with a strengthened or reinforced lower edge having formed therefrom a pair of diametrically opposed inwardly extending locking lugs, the resiliency and size of the skirt being such that the cap can be readily snapped on over the shoulder of the container and have its

lugs grip under such shoulder and prevent its premature knocking off from the container, said skirt and container being formed one relatively to the other to provide a space between the skirt and the side wall of the container intermediate such lugs whereupon by squeezing the cap skirt between such lugs the cap can be readily snapped off while the top is parallel with the mouth of the container, and a detachable band seal for securing the cap to the shoulder located below the mouth shoulder.

4. A sealed receptacle comprising a container having a shoulder or lip at the mouth thereof and a shoulder located therebelow, a metal cap comprising a top having a depending resilient skirt provided with a strengthened or reinforced lower edge having formed therefrom a pair of diametrically opposed inwardly extending locking lugs, the resiliency and size of the skirt being such that the cap can be readily snapped on over the shoulder of the container and have its lugs grip under such shoulder and prevent its premature knocking off from the container, said skirt and container being formed one relative to the other to provide a space between the skirt and the side wall of the container intermediate such lugs whereupon by squeezing the cap skirt between such lugs the cap can be readily snapped off while the top is parallel with the mouth of the container, and a detachable band seal for securing the cap to the shoulder located below the mouth shoulder and comprising a band overlapping a part of the cap and underlapping said second shoulder.

5. A sealed receptacle comprising a container having a shoulder or lip at the mouth thereof and a shoulder located therebelow, a metal cap comprising a top having a depending resilient skirt provided with a strengthened or reinforced lower edge having formed therefrom a pair of diametrically opposed inwardly extending locking lugs, the resiliency and size of the skirt being such that the cap can be readily snapped on over the shoulder of the container and have its lugs grip under such shoulder and prevent its premature knocking off from the container, said skirt and container being formed one relative to the other to provide a space between the skirt and the side wall of the container intermediate such lugs whereupon by squeezing the cap skirt between such lugs the cap can be readily snapped off while the top is parallel with the mouth of the container, and a detachable band seal for securing the cap to the shoulder located below the mouth shoulder and comprising a band overlapping the top of the cap and underlapping said second shoulder.

Signed at New York city, county of New York and State of New York, this 16th day of February, 1926.

CHARLES HAMMER.