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A. F. McDONNELL

CLOSURE FOR CONTAINERS

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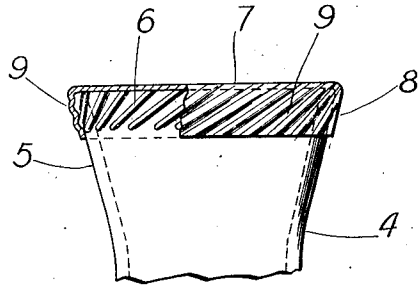


Fig. 1

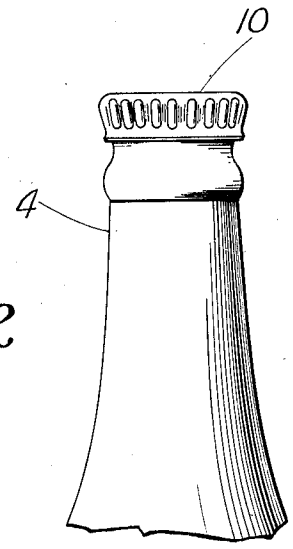
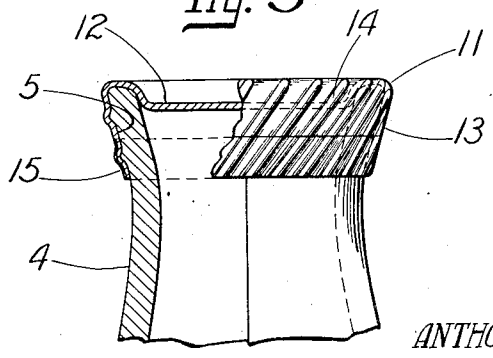


Fig. 2

Fig. 3



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UNITED STATES PATENT OFFICE.

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CLOSURE FOR CONTAINERS.

Application filed October 29, 1927. Serial No. 229,710.

My invention relates more particularly to that class of closures for bottles, jars, and other rigid containers in which the bottle neck, for example, is enlarged by a peripheral bead or otherwise around the mouth of the bottle, and the cap, for example, that known as the "Crown" cap, which is provided with a cork or other lining in its crown to seal the mouth of the bottle, is crimped or compressed to form a contracted rim bound tightly around the neck of the bottle, and secured against displacement thereon by the enlargement around the mouth of the bottle.

The Crown cap has heretofore generally been removed when desired by a special tool for the purpose which often distorts the cap in removal so that it cannot be used again even for temporarily closing the container, as when only part of the contents is to be used at a time.

The primary object of my invention is to provide a neck for bottles, jars and similar containers so formed that the cap, when crimped or compressed thereon, as by means of the ordinary crimping machines in common use, will be securely held in place against leakage and displacement, and yet can be easily removed by hand without the use of any tool, and after removal can be easily replaced on the neck for temporarily closing the container when only part of its contents have been used.

To this and other ends, my invention consists broadly of a container, for example, a bottle, having a neck formed with peripherally and upwardly inclined beads or shoulders to engage inward projections, or some of the corrugations, if a Crown cap, on the inside of the rim thereof and lift the cap off the neck as the cap is turned, and with upwardly and outwardly inclined parts by which the rim of the cap, when crimped or contracted around the neck, is locked in place and which, when the cap is turned by hand, will act to expand the rim and ease the lifting of the cap off the neck.

My invention also consists more specifically, in forming the peripherally and upwardly inclined shoulders on the upper sides of beads raised around the neck of the bottle, the undersides of which when the several beads overlap, serve with the outwardly inclined parts of the neck, to engage the inward cap projections and lock the cap in place.

The inclined shoulders on the neck may also be formed of inclined grooves in the neck.

The broad invention and the specific form thereof above briefly stated are not claimed herein but are described and claimed in a separate application for patent filed by me April 17, 1928, Serial No. 270,750.

The present application is specifically for another specific form of my broad invention not shown or described in my said other application, and consists in the combination with a neck of a container, for example a bottle, having peripherally and upwardly inclined shoulders or beads and upwardly and outwardly inclined parts as above described, of a paper cap having a pliant metal binding around the lower edge of its rim, the said metal binding as well as the paper inside thereof being adapted to be crimped or contracted around the neck of the bottle and having projections on its inside adapted to engage the inclined shoulders, so that the cap will be securely locked on the neck by the upwardly and outwardly inclined parts of the neck, and when the cap is turned by hand the inclined shoulders on the neck will engage the projections on the inside of the cap and lift the cap off the neck, while the upwardly and outwardly inclined parts of the neck will act to expand the rim of the cap and ease the lifting of the cap off the neck.

In order that this specific form of my invention may be fully understood, I shall first describe in detail the mode in which I at present prefer to carry the invention into practice, and then particularly point out the invention in the claims.

Reference is to be had to the accompanying drawings forming part of this application in which like parts are designated by the same numbers in all the figures.

Figure 1 is a sectional side view illustrating a form of a bottle neck and all-metallic cap embodying my broad invention, as more

clearly shown, described, and claimed in my other application for patent filed April 17, 1928, Serial No. 270,750, but not claimed herein.

Figure 2 is a side view illustrating a bottle neck embodying my broad invention as more clearly shown, described, and claimed in said other application for patent, but not claimed herein, the said bottle neck being provided with an ordinary Crown cap.

Figure 3 is a sectional side view of a bottle neck embodying my broad invention as claimed in my said other application for patent, and showing the specific embodiment of said invention forming the subject of the present application.

In the crude illustration of my invention shown in Figure 1, number 4 designates the neck of the bottle formed with a part 5 expanding upwardly and outwardly toward the mouth of the bottle.

6 designates overlapping beads formed around the neck of the bottle and inclined upwardly and peripherally toward the mouth of the bottle so that the upper sides of said beads will form shoulders inclined upwardly and peripherally toward the mouth of the bottle.

7 designates a metal cap having a rim 8 which is in this case adapted to be crimped or contracted around the neck of the bottle by being formed with upwardly and peripherally inclined corrugations 9 corresponding to the beads 6 on the neck of the bottle. When the rim 8 is thus crimped or contracted around the neck of the bottle, it is securely locked thereon by the upwardly and outwardly inclined part 5 of the neck as well as by the engagement of the internal projections on the rim, formed by the corrugations 9, with the inclined shoulders formed by the undersides of the beads 6 on the neck.

When the cap 7 is turned by hand, the inclined shoulders formed by the beads 6 of the neck, will engage the projections formed by the corrugations 9 on the inside of the rim 8 and thereby lift the cap off the neck, the upwardly and outwardly inclined part 5 acting at the same time to expand the corrugated rim 8 which is flexible, and ease the lifting of the cap from the neck.

As stated, this specific construction is not claimed in the present application.

In the specific embodiment of my invention shown in Figure 2, the form of the neck 4 is the same as that described in connection with Figure 1, but the cap 10 shown is an ordinary Crown cap which when crimped on the neck is locked thereon by the upwardly and outwardly expanding part 5 of the neck as well as by the engagement of the projections formed by the corrugations on the inside of the cap rim with the inclined beads on the neck.

When this Crown cap is turned by hand, the projections formed by the corrugations on the inside of the rim thereof, engage the inclined shoulders formed by the beads on the neck, and thereby cause the cap to be lifted off the neck. At the same time, the upwardly and outwardly expanding part 5 of the neck expands the rim of the cap which is flexible by reason of its corrugations and thereby eases the lifting of the cap from the neck.

As stated, this specific embodiment of my invention is not specifically claimed in the present application.

In the specific embodiment of my invention shown in Figure 3, which is specifically claimed in this application, the neck 4 is formed with the upwardly and outwardly expanding part 5 and the upwardly and outwardly inclined beads forming inclined shoulders as previously described. The cap 11 in this case is formed of stiff paper with a depressed crown 12 to fit in and seal the mouth of the bottle, and with a rim 13 formed in this case with a peripheral series of overlapping, upwardly and peripherally inclined corrugations 14 corresponding to the beads on the neck. Around the lower edge of the rim 13 is fixed a pliant metal binding 15 having upwardly and peripherally inclined corrugations corresponding to those on the paper body and on the neck.

When the pliant metallic binding 15 is crimped or contracted around the neck of the bottle, the cap is securely locked on the neck by the upwardly and outwardly inclined part 5 of the neck as well as by the engagement of the projections formed by the internal corrugations on the binding and paper body with the corresponding beads on the neck.

When this cap is turned by hand, the engagement of the projections on the inside of the rim 13, formed by the corrugations on the stiff but pliant binding 15, with the inclined shoulders formed by the upwardly and peripherally inclined beads on the neck, causes the cap to be lifted off the neck, the inclined part 5 at the same time acting to expand the flexible rim of the cap and ease the lifting of the cap off the neck.

As the cap and its metal binding is not unduly distorted by this described removal from the neck of the bottle, and is flexible as well as pliant, it may be temporarily replaced on the neck of the bottle by turning it down on the same, for covering the contents of the bottle when only a part of the contents has been used and it is desired to protect the remainder.

It is evident that the specific form of my broad invention illustrated in Figure 3 may be varied in detail without departing from the boundaries of my specific invention as defined by the following claim.

I claim as my invention:

A bottle or other container having its neck formed with shoulders inclined peripherally

and upwardly toward the mouth of the container and with a part inclined outwardly and upwardly toward the mouth, in combination with a cap formed of paper having a pliant metallic binding around its rim, said metallic binding being adapted to be crimped or contracted around the neck of the container and being formed with internal projections to engage the inclined shoulders on the neck of the container, so that, when the cap is turned, the inclined shoulders on the neck of the container will lift the cap off the neck and the upwardly and outwardly inclined part of the neck will expand the rim and ease the lifting of the cap.

In testimony whereof I affix my signature.

ANTHONY F. McDONNELL.