

Aug. 19, 1924.

J. M. HOTHERSALL

1,505,265

CLOSURE

Filed June 5, 1922

Fig-1

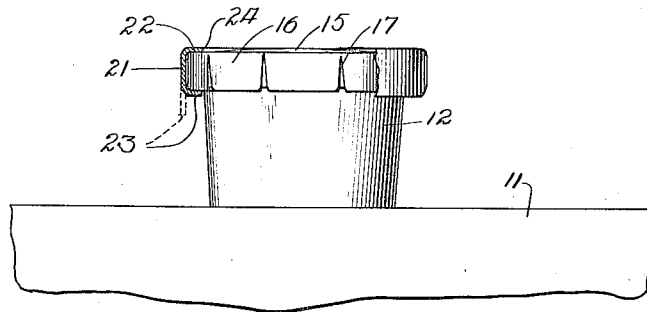


Fig-2

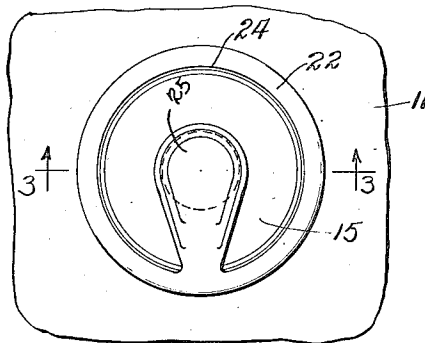
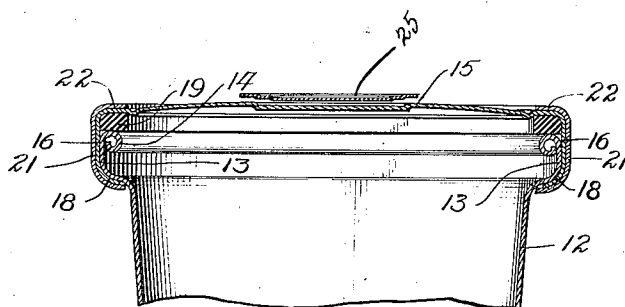


Fig-3



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UNITED STATES PATENT OFFICE.

JOHN M. HOTHERSALL, OF BROOKLYN, NEW YORK, ASSIGNOR TO AMERICAN CAN COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

CLOSURE.

Application filed June 5, 1922. Serial No. 565,986.

To all whom it may concern:

Be it known that I, JOHN M. HOTHERSALL, a citizen of the United States, residing in Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Closures, of which the following is a specification.

This invention relates in general to bottle and nozzle caps and closures and has more particular reference to closures of this sort adapted to be removed and replaced by flexing of the closure itself. Such flexing is accomplished by pressing upon the top of the closure causing it to snap off the bottle or container or at least to snap into a shape that permits its being pulled off.

Manifestly such containers provided with such closures must be carefully handled in shipment and in storage to prevent accidental flexing and releasing pressure being applied to the closure. My invention has for a principal object the provision of means which can be readily removed or torn away for holding the cap or container to its locking shape or against flexing, wherefore the necessity for careful handling and careful arrangement in storage is eliminated.

The invention has for a further object the provision of a structure accomplishing the above result which will not add materially to the cost of the package nor prevent the closure being relocked in place where such relocking is contemplated or desired.

Numerous other objects and advantages of the invention will be apparent as it is better understood from the following description, which, taken in connection with the accompanying drawings, discloses a preferred embodiment thereof.

Referring to the drawing,

Figure 1 is a partial side elevation of a container provided with a closure in which my invention is embodied, parts being shown in section;

Fig. 2 is a top plan view thereof; and

Fig. 3 is a section taken vertically through said closure.

For the purpose of illustrating my invention I have shown on the drawing a container 11 of any usual or preferred construction and provided with a pouring nozzle 12. This nozzle at its top is provided with an outstanding shoulder 13 beneath a bead 14. The flexing closure in the present instance comprises a cap having a domed flexible

center 15 and a flange 16 slit at intervals at 17 and turned in beneath the shoulder 13 at 18. A gasket 19 of rubber or other suitable material is included in the cap and is adapted to engage the bead 14. The cap thus described is so proportioned and of such material that when the domed flexible center 15 is pressed inwardly from the position shown in Fig. 2 the flange 16 expands and the cap may be removed. This cap may be locked again in position by pressing upon its sides to throw the flexible body of the cap up past its central plane and back into the position shown in Fig. 1 relocking the cap in tight engagement with the nozzle. The body or domed part 15 is thus movable to a releasing position below its central, intermediate or neutral plane, or from the latter position to one above said plane, the last being its normal locking position. This neutral plane lies substantially and usually in the top marginal part of the cap.

Manifestly a cap thus constructed pressed upon in transit or in storage (and very little pressure is needed) will spring open and permit leakage of the contents of the container. To prevent this I provide means for preventing, for such time as may be desired, the expansion of the flange 16 and also in the present instance to prevent the flexing from the position shown in Fig. 1. This means comprises a soft metal ring or annulus 21, which embraces the flange 16 about the periphery of the cap. It has a part 22 overlying the top of the cap and a part 23 rolled in under the inwardly extending part 18 of the flange and in under the shoulder 13. This band or ring is constructed with the part 22 turned in and the part 23 is extending downward. In this form it is placed over the cap and the part 23 moved from the position shown in dotted lines in Fig. 1 to that shown in full lines.

The doming 15 of the cap is or may be very slight and in any event the edge 24 extends up and protects this dome against movement under the flexing pressure to and past its central plane, this in addition to the confinement of the flange 16 against expansion. It will be manifest, however, that either by confinement or by preventing flexure the cap is protected in shipment and the possibility of leakage is eliminated. The ring may be readily torn away to permit flexing of the cap to open the container, a

hand-hold portion 25, overlying the cap and adapted to be pulled to tear across the ring, being provided for this purpose.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description, and it will be apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing all of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof.

I claim:

1. A closure for nozzles, bottles and the like, comprising a cap having a vertically movable top and locking sides operated thereby adapted under pressure exerted on the top to expand at the sides to permit its removal and upon pressure upon the sides to contract to lock it in place, and removable means for holding the sides in locking position.

2. A closure for nozzles, bottles and the like, comprising a cap having a vertically movable top adapted to be flexed from one side of a central plane to the other, said cap having locking means operated by said top for engaging the bottle or nozzle, said lock-

ing means opening and closing in accordance with the said flexure of the top to release and lock said cap in place, and tearable and removable means interlocked with the cap for holding said locking means in securing position.

3. A closure for nozzles, bottles and the like, comprising a cap having a movable top and locking sides operated thereby adapted under pressure exerted on the top to expand the said sides to permit its removal and upon pressure upon the sides to contract them to lock the cap in place, and a continuous strip adapted to be positioned about the sides of said cap to hold them in locking position, said strip being provided with a hand-hold portion for tearing the same away.

4. A container having a shouldered pouring opening, a cap having a slit flange embracing the part of the container about said opening and bent under said shoulder and having a domed and movable top cooperating with said flange for the expansion of the latter and also for holding its parts under said shoulder, and removable means embracing said slit flange to hold its parts in locking position under said shoulder.

JOHN M. HOTHERSALL.