No. 793,567. PATENTED JUNE 27, 1905.

H. COALE & L. S. GREENSFELDER.

BOTTLE SEALING CAP.

APPLICATION FILED DEC. 30, 1904.

Fig. 1.

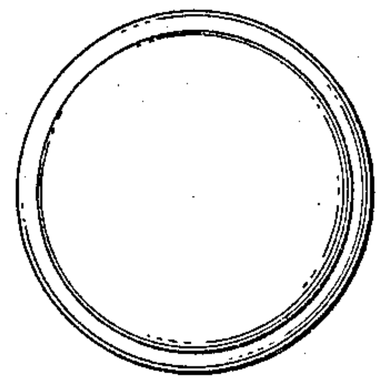


Fig. 2.

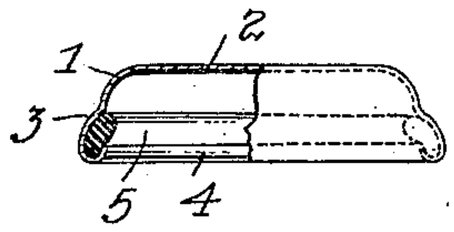


Fig. 3.

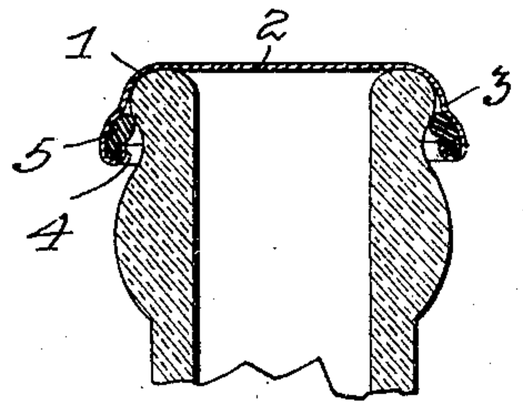
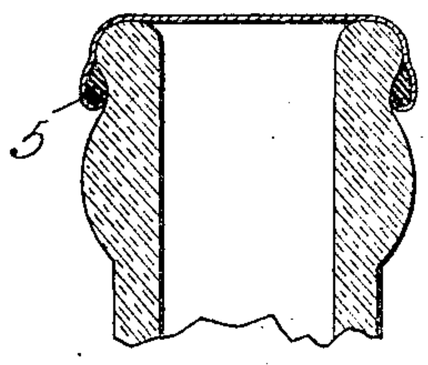


Fig. 4.



Attest:
C. L. Middleton
R. C. Durand

Inventors.
HARVEY COALE.
LEWIS S. GREENSFELDER.

By Spear, Middleton, Donaldson & Spear
Attys.

No. 793,567. Patented June 27, 1905.

UNITED STATES PATENT OFFICE.

HARVEY COALE AND LEWIS S. GREENSFELDER, OF BALTIMORE, MARYLAND.

BOTTLE-SEALING CAP.

SPECIFICATION forming part of Letters Patent No. 793,567, dated June 27, 1905.

Application filed December 30, 1904. Serial No. 238,998.

To all whom it may concern:

Be it known that we, HARVEY COALE and LEWIS S. GREENSFELDER, citizens of the United States, residing at Baltimore, Maryland, have invented certain new and useful Improvements in Bottle-Sealing Caps, of which the following is a specification.

The invention relates to sealing-caps for bottles of the general class known as the "crown;" and it concerns more particularly a sheet-metal sealing-cap carrying permanently within its depending flange a ring packing adapted to bear on the outer side of the bottle when the closure is set into locking engagement with the shoulder formed on the exterior of the bottle.

The invention consists in the features and combination and arrangements of parts hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of the improved bottle-sealing device. Fig. 2 is a part side elevation and part sectional view of the same. Fig. 3 is a sectional view of a bottle with our sealing device applied thereto as a temporary stopper—that is, before the sealing-cap is subjected to pressure which forces the depending flange inwardly and permanently locks the closure to the bottle; and Fig. 4 is a view similar to Fig. 3 with the closure permanently locked to the bottle—that is to say, with the parts in the position assumed by them after the flange of the cap has been forced inwardly to lock the said cap to the exterior shoulder to such an extent as requires the application of considerable force, such as may be exerted by the use of the implement known as the "Crown bottle-opener."

In carrying out our invention we make the sealing cap or crown of substantially the shape of a truncated cone. The upper corner, as shown at 1, is rounded to fit the bottle-lip and merges into the flat top portion 2, adapted to extend across the bottle-mouth, and the downwardly-flaring side or flange 3. This flange at the point of widest diameter is turned inwardly and upwardly, as at 4, so as to grasp the lower edge of a ring packing 5 of any suitable material—such, for instance, as rubber. The proportion of the parts is such that the packing lies partly within and partly outside of the groove formed by turning inwardly and upwardly the lower edge of the depending flange. This packing is firmly gripped by the upturned edge and is carried permanently by the cap. It slightly overhangs the upturned edge, and this is rendered more pronounced because of the general conical form of the cap by which the packing lying along the inwardly-inclined wall or flange has its upper part of smaller diameter than the lower part, which is grasped by the upturned edge.

It will be observed that the packing-ring is located at some distance below the upper side of the cap and in the horizontal plane of the shoulder on the exterior of the bottle, and the relation of the parts is such that when the cap is placed on the bottle the overhanging or inwardly-projecting free upper part of the packing will engage beneath the said shoulder and the cap will thereby be retained, requiring slight force to remove it. A temporary stopper will thus be provided.

When the cap is to be permanently locked to the bottle until such time as it is desired to remove it by a suitable tool, the depending flange is forced inwardly in a direction substantially transverse to the axial line, and this causes the cap to be locked into connection with the shoulder on the bottle or the portion of the bottle-head which is of smaller diameter as compared with the upper portion. The locking effect, as illustrated in the present embodiment of our invention, takes place by the gasket and the lower part of the flange being pressed inwardly beneath the shoulder on the bottle. When so pressed inwardly, the upturned edge of the depending flange finds room to lie within the groove beneath the shoulder on the bottle, and at the same time the packing is forced into strong sealing contact with the bottle-head. The necessary close contact between the rubber packing and the bottle-head is also assured without interference on the part of the upturned edge because of the fact that the pack-

ing, as above stated, overhangs or projects within the vertical plane of the said edge.

We prefer to lock the cap to the bottle by means of a tool known in this art as the "cone-die," and one of the purposes of the conical shape of the cap is to enable the locking effect to be accomplished with such a tool.

We do not limit ourselves to the form of the implement or apparatus for uniting the cap with the bottle—as, for instance, a spinning action may be employed—and while we prefer the conical form of the cap we do not wish to limit ourselves in this particular, as some of the novel features of our invention may be employed in connection with caps of a different form from that disclosed herein.

By having the packing below the shoulder and at the extreme lower edge of the sealing-cap it will be remote from the contents, thus preventing contamination of the same.

We claim as our invention—

1. A bottle-sealing cap having a depending flange with its edge turned inwardly and upwardly, and a packing-ring held within the groove between the said upturned edge and the inner side of the flange, substantially as described.

2. A bottle-sealing cap having a depending flange with its edge turned inwardly and upwardly and a packing-ring held within the groove formed by the said upturned edge and the inner side of the flange overhanging the upturned edge, substantially as described.

3. A bottle-sealing cap having a depending flange with its edge turned inwardly and upwardly, and a packing held within the groove formed by the said upturned edge and the inner side of the flange, said packing projecting above the said edge and with its upper edge at a distance below the top of the cap, substantially as described.

4. A bottle-sealing cap of substantially the form of a truncated cone providing a depending flaring flange with packing material arranged to lie between the depending flange and the bottle-head, substantially as described.

5. A bottle-sealing cap of substantially the form of a truncated cone providing a plain depending flaring flange with packing material carried permanently on the inner side of said depending flaring flange, substantially as described.

6. A bottle-sealing cap having a depending flange flaring outwardly and having its edge turned inwardly and a ring packing held within the cap by the said edge and lying along the inclined inner side of the flange, substantially as described.

7. A bottle-sealing cap having a depending flange flaring outwardly and having its edge turned inwardly and upwardly, and a packing-ring held within the groove formed between said edge and the flaring flange and lying along the inclined inner side of the flange to overhang the said edge.

8. A bottle-sealing cap of substantially the shape of a truncated cone with the edge of its depending flange turned inwardly and upwardly, and packing material held within the groove formed between the said upturned edge and the inner side of the flange, substantially as described.

9. A bottle-sealing cap having a packing-ring on the inner side of its depending flange projecting inwardly beyond the metal of the flange to normally engage beneath a part of the bottle-head to serve as a temporary stopper, said cap being adapted to be locked to the bottle by being deformed by pressure inwardly and transversely to the axial line of the bottle, substantially as described.

10. In combination with a bottle having a shoulder on its outer side, a sealing-cap having a depending flange with its edge turned inwardly and upwardly a packing held thereby, said packing engaging the shoulder and the upturned metal lying in the groove beneath the bottle-shoulder, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

HARVEY COALE.
LEWIS S. GREENSFELDER.

Witnesses:
W. J. BROWNLEY,
F. E. FUSTING.