March 31, 1931. E. H. FABRICE 1,798,151

SEALING CAP FOR BOTTLES

Filed Dec. 16, 1929

Fig. 1.

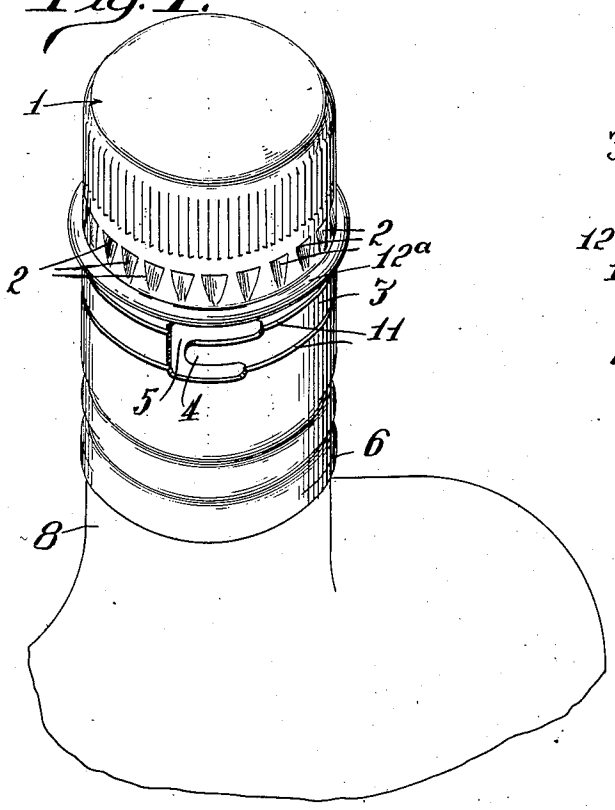


Fig. 2.

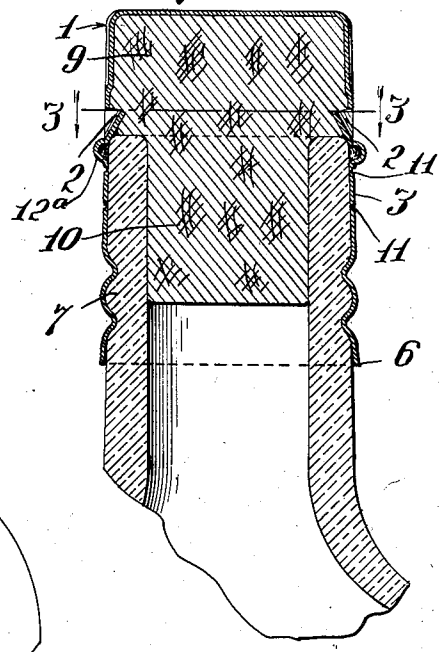


Fig. 4.

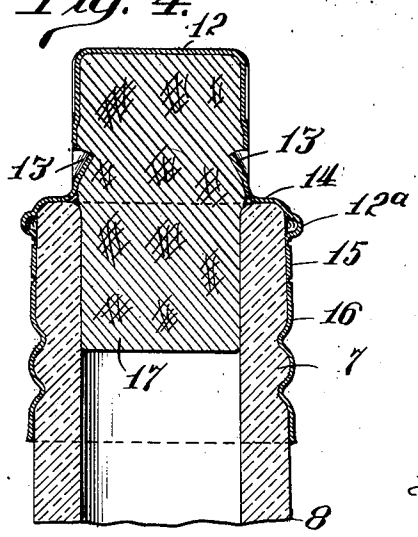
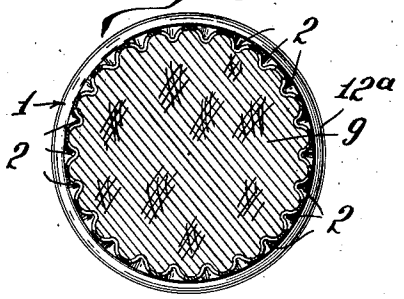


Fig. 3.



Inventor

Edward H. Fabrice

By Rudolph Moss & Co

Attorney

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UNITED STATES PATENT OFFICE

EDWARD H. FABRICE, OF CHICAGO, ILLINOIS, ASSIGNOR TO GUARDIAN SAFETY SEAL COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS

SEALING CAP FOR BOTTLES

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This invention relates to improvements in bottle seals and has for its object to provide a device of this character wherein a destructible metal cap is, in part, permanently associated with the bottle neck and, in part, permanently associated with the sealing cork for the bottle mouth and wherein an intermediate severable member integral with both the aforesaid parts of said seal prevents non-detachable breaking of said seal to thereby prevent tampering with the bottle contents from the time the bottle leaves the bottling establishment until it reaches the consumer.

The preferred embodiment of the invention is illustrated in the accompanying drawings wherein:

Fig. 1 is a perspective view of the upper end portion of a conventional type of bottle equipped with a sealing device constructed in accordance with the invention.

Fig. 2 is a central vertical section of the same.

Fig. 3 is a plan section of the same on the line 3—3 of Fig. 2.

Fig. 4 is a sectional view similar to Fig. 2 showing a modified form of construction.

The bottle seal of this invention comprises a cap of thin sheet metal, preferably aluminum or an aluminum alloy which presents an annularly knurled crown portion 1, an annular series of inwardly extending tapered projections 2 having their upper ends disposed below and proximate to the knurled crown portion 1, a severable strip 3 extending annularly of the cap below the series of projections or formations 2 and terminating in the tongue 4 lying within the slot 5, and a skirt portion 6 which is spun to hug closely the annular bead 7 of the bottle neck 8 and engage in the annular grooves above and below the bead 7.

The sheet metal of which the seal is composed is sufficiently stiff and strong to be incapable of destruction by the use of fingernails or a pocket-knife or the like so that the skirt portion below the strip 3 when spun upon the bead 7 and into the grooves bordering the same, is, to all practical intents and purposes, a permanent part of the bottle.

The projections 2 are formed by slotting the metal of the cap at regular intervals and forcing substantially triangular portions of the metal inwardly a gradually decreasing distance from the said slots to their lower ends, said projections 2 being thus tapered and vanishing at their lower ends, while their upper ends present sharp substantially arcuate edges.

Before the cap is mounted on the bottle neck, a cork 9 having a lower end portion 10 of a diameter to fit snugly in the bottle neck and an upper end portion of normally slightly larger diameter than the inner diameter of the cap, is forced into the latter while in a water-saturated state rendering it very readily compressible. Thus the larger diameter end portion 9 of the said cork which is of greater length than the distance separating the upper ends of the projections 2 from the head of the cap, will readily pass said projections 2 and will then expand so that said projections will dig into said cork and form therein corresponding depressions.

The cap and its contained cork are then forced into position on and in the bottle neck and the skirt portion 6 of said cap is then spun to engage the bead 7 and engage in the annular grooves bordering the latter.

As the cork dries, the engagement of the projections 2 with the same becomes gradually firmer so that by the time the bottle reaches the consumer, the projections 2 firmly engage the cork 9 to prevent the same from being withdrawn from and from being rotated relatively to said cap.

The strip 3 is bordered by annular scorings 11 which so weaken the metal that the tongue 4 at one end of said strip may be engaged between the thumb and a finger of the hand and pulled away from the bottle neck to thereby completely sever the connection between the skirt portion 6 and the upper portion of the cap. The latter is then, to all practical intents and purposes, a permanent part of the cork while the skirt portion remains permanently attached to the bottle neck.

As the strip 3 is torn out, it leaves raw

burred edges at the bottom of the crown portion of the device and at the top of the remaining skirt portion thereof. To reinforce the structure and to prevent contact of the fingers with the raw edge of the crown portion, I provide an annular bead 12^a disposed just above the upper wall of the slot 5 and below the formations 2. This bead projects sufficiently far outwardly from the outer or circumferential surface of the crown portion to effectually overhang the said raw edge and also provides a shoulder which is advantageous in effecting removal of said crown portion from the bottle and also provides an ornamental feature.

It will be noted that the sharp upper edges of said projections 2 are disposed substantially in a plane perpendicular to the longitudinal axis of the cap.

As shown in Fig. 4, the cap may comprise a crown portion 12 of smaller diameter than its skirt portion 16, said crown portion being equipped with the inwardly extending formations 13 corresponding to the formations 2 of Figs. 1 to 3, inclusive. Said crown portion is adapted to receive the upper end portion of a cylindrical cork 17 which, at its lower end, extends into the skirt portion and is adapted to enter the bottle mouth which said skirt portion encloses, the annular shoulder 14 of said cap being adapted to rest upon the rim of the bottle neck when the cork is inserted as shown in Fig. 4. Said skirt portion 16 is equipped with a severable strip 15 corresponding in all respects with the strip 3 of Figs. 1 to 3, inclusive, and the lower end portion of said skirt portion is similarly spun into engagement with the bead 7 of the bottle neck 8.

I claim as my invention:

1. A bottle seal comprising a sheet metal cap provided with an annular row of inwardly projecting formations presenting sharp upper edge portions disposed in a plane substantially perpendicular to the longitudinal axis of said cap and tapered toward their lower ends, a sealing cork having an upper end portion snugly fitting said cap and engaged by said formations to prevent its withdrawal from said cap, the skirt portion of the latter being adapted to be spun into engagement with formations on a bottle neck to prevent removal from the latter to thereby maintain said cork in sealing relation to the bottle neck, and a severable rip-strip disposed annularly of said cap between the skirt portion thereof and said formations.

2. A bottle seal comprising a sheet metal cap having a head at one end, an annular row of inwardly extending tapered projections between the ends of said cap, said projections having free upper edge portions severed from the body of the cap and opposing said head, said projections tapered toward their other ends and vanishing in the body of the cap.

3. A bottle seal comprising a sheet metal cap having a head at one end, an annular row of inwardly extending tapered projections between the ends of said cap, said projections having free upper edge portions severed from the body of the cap and opposing said head, said upper edge portions of said projections being disposed substantially in a plane perpendicular to the longitudinal axis of said cap, said projections tapered toward their other ends and vanishing in the body of the cap.

4. A bottle seal comprising a sheet metal cap having a head at one end, an annular row of inwardly extending tapered projections between the ends of said cap, said projections having free upper edge portions severed from the body of the cap and opposing said head, said projections tapered toward their other ends and vanishing in the body of the cap, the skirt portion of the latter being adapted to be spun into engagement with formations on a bottle neck to prevent removal from the latter to thereby maintain said cork in sealing relation to the bottle neck, and a severable rip-strip disposed annularly of said cap between the skirt portion thereof and said formations.

5. A bottle seal comprising a sheet metal cap having a head at one end, an annular row of inwardly extending tapered projections between the ends of said cap, said projections having free upper edge portions severed from the body of the cap and opposing said head, said upper edge portions of said projections being disposed substantially in a plane perpendicular to the longitudinal axis of said cap, said projections tapered toward their other ends and vanishing in the body of the cap, the skirt portion of the latter being adapted to be spun into engagement with formations on a bottle neck to prevent removal from the latter to thereby maintain said cork in sealing relation to the bottle neck, and a severable rip-strip disposed annularly of said cap between the skirt portion thereof and said formations.

6. A bottle seal comprising a sheet metal cap having a head at one end, an annular row of inwardly extending tapered projections between the ends of said cap, said projections having sharp, free, substantially arcuate upper edge portions severed from the body of the cap and opposing said head and lying in a plane substantially parallel with the latter.

7. A bottle seal comprising a sheet metal cap having a head at one end, an annular row of inwardly extending tapered projections between the ends of said cap, said projections having free upper edge portions severed from the body of the cap and opposing said head, said upper edge portions of said pro-

jections being disposed substantially in a plane perpendicular to the longitudinal axis of said cap, said projections tapered toward their other ends and vanishing in the body of the cap, the skirt portion of the latter being adapted to be spun into engagement with formations on a bottle neck to prevent removal from the latter to thereby maintain said cork in sealing relation to the bottle neck, and spaced from the latter, and an outwardly projecting annular bead formation disposed between said rip-strip and said formations.

EDWARD H. FABRICE.