

No. 856,304.

PATENTED JUNE 11, 1907.

E. D. SCHMITT.

BOTTLE SEAL.

APPLICATION FILED OCT. 3, 1906.

Fig. 1.

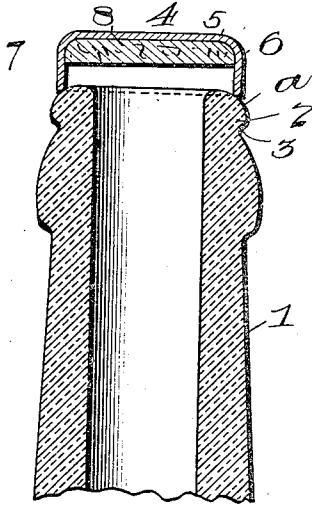


Fig. 2.

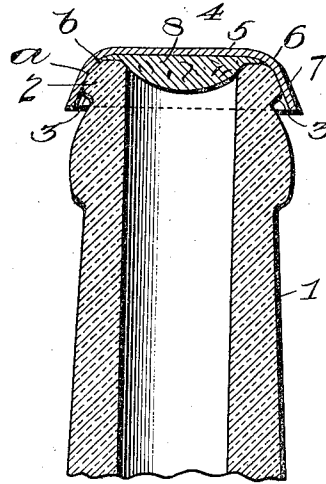


Fig. 3.

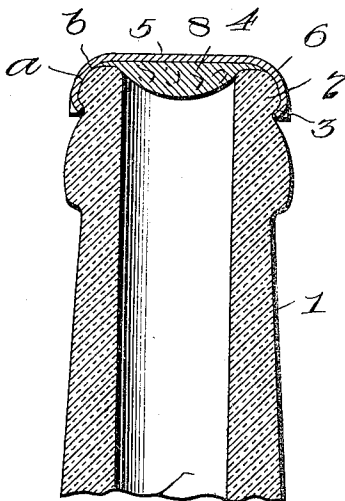
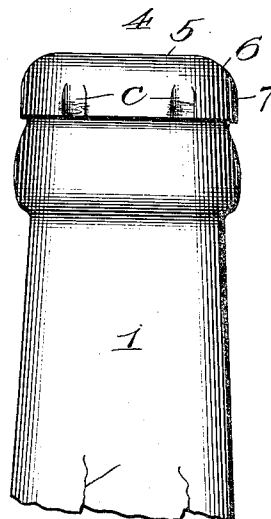


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

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BOTTLE-SEAL.

No. 856,304.

Specification of Letters Patent.

Patented June 11, 1907.

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To all whom it may concern:

Be it known that I, EDWARD D. SCHMITT, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Bottle - Seals, of which the following is a specification.

This invention relates to bottle seals especially adapted for application to bottles containing charged liquid. It belongs to that class of inventions of this character wherein the bottle is provided with an annular bead or locking shoulder adjacent to its mouth, and the closure or cap has a depending flange that is locked or crimped under the shoulder, and contains a compressible sealing member, usually of cork. In seals of this type now in use, or the type commonly known as the "crown," the entire sealing pressure is placed upon the cork or compressible sealing disk forcing it into close sealing contact with the upper edge of the bottle, and in nowise is the seal dependent upon contact between the bead on the bottle and the cap, either to form an auxiliary seal or to take the sealing pressure off the sealing disk at a given point, or for any purpose whatever. It is well known that cork, the material best suited for seals of this sort, varies in density and quality, and where its quality is poor, or the cork is soft, or the sealing pressure varies in different machines, exceeding that necessary to make a perfect seal, the cork is cut through by the upper edge of the bottle, thereby making what is known in the trade as a "leaker," or a seal that immediately upon or soon after application, leaks and permits the gases of the contents of the bottle to escape and render the beverage unfit for use. In applying seals wherein the cork or sealing disk is particularly dense, and the sealing pressure in a given machine is uniform, the full sealing pressure being placed upon the cork, the reaction after sealing is necessarily through the cork. This reaction due to the tendency of the cork to resume its normal thickness, causes the flange of the cap in locking it on the bottle, to take hold too high up or too near to the medial line of the bead on the bottle, or that portion at which its diameter is greatest. In such instances a strong lock is not effected, and the main objection to such a seal is that it blows off in the steaming process in sealing such beverages as are subjected to this process. Then

too irregularities in the formation in the upper edge of bottles frequently occur, such as what is known in the trade as "hair lips," which are small depressions, and where the sealing member or cork is cut through in the application of the seal to bottles having these imperfections, a leak occurs between the cork and that portion of the bottle where such imperfection is located.

Seals having corrugations in their flanges are open to the objection that air is freely admitted through the corrugations between the sides of the bottle-neck and the interior of the cap, reaching the sealing disk and drying it out, which in time destroys the seal.

In view of the conditions and objections above stated to seals in common use, my first object is to provide a bottle seal or closure that will embody such construction as to absolutely prevent the cutting of the cork disk, and one in which variations in the density of the sealing medium, or in its quality, will not prevent the making of a perfect seal, and one in which the point of locking the cap upon the bottle will be invariably the same, thus at all times making a positive and permanent seal.

A minor object is to so construct the cap with relation to the bead upon the bottle that an auxiliary seal will be effected between the metal of the cap and the glass of the bottle at a point outside of and adjacent to the cork, thereby preventing the admission of air from the outside to the sealing disk whereby said disk is prevented from being dried out, made brittle or otherwise deteriorating from the effect of outside influences.

With these objects in view the invention in the main consists in a construction in which the compressible sealing disk in the sealing operation will be compressed at its edge at or slightly beyond the central point of the upper edge of the bottle, and forcing the flange of the cap into close engagement with the bead from this point downward to a point at or near that at which the flange is crimped or pinched into locking engagement with the under surface of the locking shoulder or bead.

In the drawings illustrating my invention: Figure 1 is a sectional view of the upper portion of a bottle and a similar view of a cap in juxtaposition thereto. Fig. 2 is a view showing the cap upon the bottle just before the locking operation. Fig. 3 is a sectional view of the bottle-neck and cap showing the

latter applied, and Fig. 4 is a side elevation of the bottle-neck and cap.

Referring to the drawings, the numeral 1 designates a bottle of the kind commonly used in connection with "crown" seals, that is to say, a bottle having an annular laterally extending bead or locking shoulder 2, adjacent to its mouth. The lower portion of the bead forms a locking surface 3 against which the flange of the cap is crimped or pinched to lock the seal in place.

The numeral 4 designates the cap which in the present instance is formed with the flat upper portion 5, rounded edges 6, and vertical or substantially vertical flange 7.

The numeral 8 designates the sealing member of compressible material preferably cork, which is contained within the cap.

In carrying out my invention I provide a cap or securing member the internal diameter of which within the flange is less than the extreme diameter of the bead of the smallest bottle to which the cap is to be applied, so that when the sealing pressure is applied to the seal the flange engages the rounding portion *a* of the bead and is flared outwardly until the sealing disk 8 engages the upper edge of the bottle where it is compressed into a reduced edge extending to a point slightly beyond the center of the upper edge of the bottle, at which point the metal of the cap is forced into sealing contact with the bead at about point *b*, when the metal below this point is crimped or pinched under the bead, producing a firm lock and effecting a perfect seal, proof primarily against the escape of the gases of the contained liquid, and secondarily against the admission of outside air to the sealing member.

It will be seen that in applying the seal a portion of the full sealing pressure, at a given point will be removed from the compressible sealing disk and transferred to the bead at a point adjacent to the edge of the sealing member, thereby effecting an auxiliary seal between the flange of the cap and the bead. By this construction only a sufficient amount of the sealing pressure is applied to the compressible sealing member, whereby cutting of said member, which is so common in seals of this character, is prevented. I preferably only crimp the flange

of the seal beneath the bead at intervals, as shown at *c* Fig. 4, as I find in practice that this affords an ample lock or hold for the closure.

Claims.

1. In a bottle seal, the combination with a bottle having an annular external bead or locking shoulder adjacent to its mouth, a sealing member of compressible material, a hard metal cap or securing member having a flange of normally smaller internal diameter than the bead or locking shoulder upon the bottle, said cap or securing member adapted when it is applied to the bottle to confine the sealing member upon the edge of the bottle and to directly engage the bead or locking shoulder to form an auxiliary seal, and thereby remove further sealing pressure from the compressible sealing member to prevent cutting thereof, the flanges of the cap being adapted to be pinched or crimped into locking engagement with the locking surface of the bead or locking shoulder upon the bottle.

2. In a bottle seal, the combination with a bottle having an annular external bead or locking shoulder adjacent to its mouth and verging into the upper edge of the bottle, a sealing member of compressible material, a hard metal cap or securing member having a flange of normally smaller internal diameter than the bead or locking shoulder upon the bottle, said cap or securing member adapted when it is applied to the bottle, to confine the sealing member upon the edge of the bottle slightly beyond the central point of said edge to effect a seal, and adjacent to the edge of said sealing member and directly engage the bead or locking shoulder to form an auxiliary seal, and thereby remove a portion of the sealing pressure from the compressible sealing member to prevent cutting thereof, the flanges of the cap being adapted to be pinched or crimped into locking engagement with the locking surface of the bead or locking shoulder upon the bottle.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD D. SCHMITT.

Witnesses:

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