No. 753,245. PATENTED MAR. 1, 1904.

W. S. DORMAN.

BOTTLE SEAL.

APPLICATION FILED SEPT. 15, 1903.

NO MODEL.

Fig. 1.

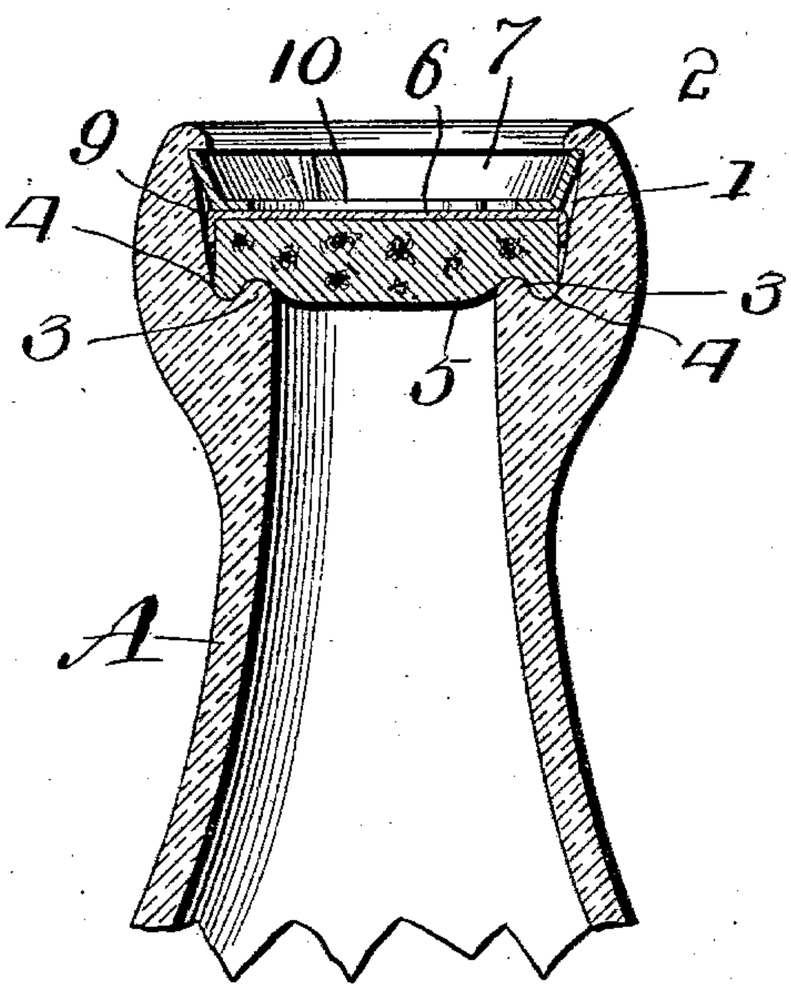


Fig. 2.

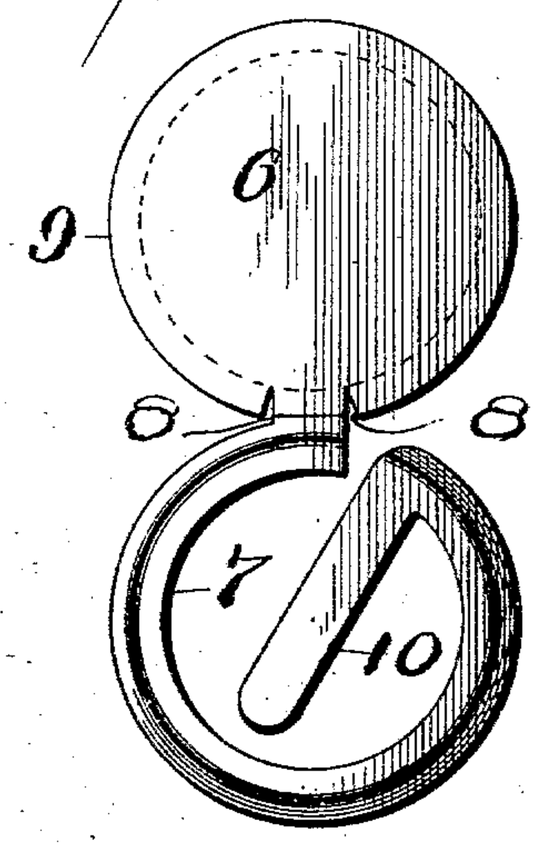


Fig. 3.

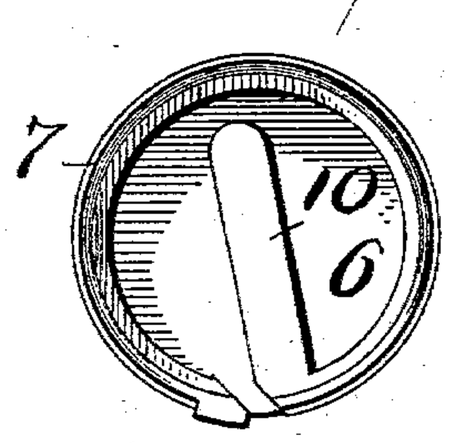


Fig. 4.

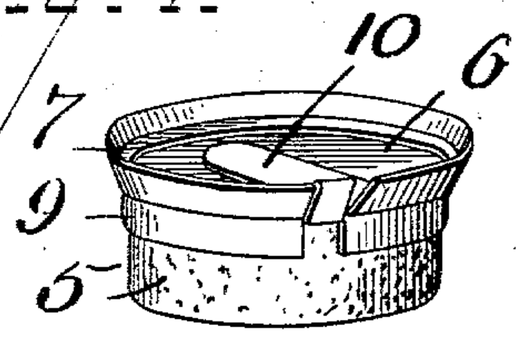
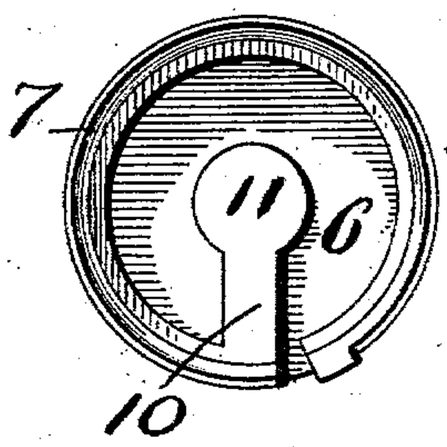


Fig. 5.



WITNESSES.

Wm. F. Doyle.

Wm. E. Oliver.

INVENTOR

Wm. S. Dorman

BY A. G. Hopkins,

Attorney

No. 753,245. Patented March 1, 1904.

UNITED STATES PATENT OFFICE.

WILLIAM SAMUEL DORMAN, OF NEW YORK, N. Y.

BOTTLE-SEAL.

SPECIFICATION forming part of Letters Patent No. 753,245, dated March 1, 1904.

Application filed September 15, 1903. Serial No. 173,238. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SAMUEL DORMAN, a citizen of the United States, residing at New York city, in the State of New York, have invented new and useful Improvements in Bottle-Seals, of which the following is a specification.

My invention relates to improvements in bottle-seals; and the object is to provide an improved bottle-seal which is simple in construction, effective and durable in attaining the purposes of its use, which is readily and conveniently applied and when applied will effectively seal the bottle, and which may be readily released and removed by manipulation without the intervention of a tool. My improvements also embody with such a seal a bottle formed with a projecting annular bead or ridge about its mouth and a shouldered groove about the bead and overhanging the same.

The improvements consist in the novel construction of parts and their aggroupment in operative combination, as will be hereinafter specified, and the novelty asserted particularly pointed out and distinctly claimed.

My present improvements are intended and designed as an improvement on that certain bottle-seal shown and described in my earlier Letters Patent, No. 716,392, dated December 23, 1902, wherein is shown and described a bottle-seal with an integral laterally-expansible retaining-ring lying flat on and in contact with the top of the disk or stopper and extending beyond the periphery thereof. This device serves the purpose with reasonable certainty and effectiveness; but to increase these desirable and essential qualities in a bottle-seal I turn or curve the body of the retaining-ring or circular tongue upward in cross-section on a median line, so that it will expand into a seat in the mouth of the bottle and engage with its upper edge under a shoulder, thereby securely locking the seal or stopper against removal by gaseous pressure from within.

I have fully and clearly illustrated my improvements in the annexed drawings, to be taken as a part of this specification, and to which reference being made, Figure 1 is a vertical sectional view of a bottle-neck having my improved bottle-seal applied. Fig. 2 is a plan view of a blank cut out to form the disk or cap and the retaining-ring, the portion of the disk which is to form the depending annular flange being indicated by the dotted lines. Fig. 3 is a plan view of the cap-disk with the retaining-ring or tongue and finger-piece complete. Fig. 4 is a perspective view of the bottle-seal complete. Fig. 5 is a plan view of the disk or cap with the retaining-ring or tongue provided with a finger-piece terminating in a circular disk.

In the drawings where similar parts appear in the different illustrations they are designated by the same reference-notations.

A designates the bottle-neck, formed adjacent to its mouth with a comparatively broad interior annular groove or recess 1, preferably somewhat flared in upward direction, as shown, and terminating at its upper end or border in an overhanging shoulder 2, under which the upper edge of the retaining-ring engages and is held. At the lower end or border of the recess 1 a shoulder is formed with an annular bead or ridge 3, closely adjacent to the interior and behind which is a circular groove 4. This formation of this lower shoulder affords a certain and sure sealing-seat for the cork or other compressible part constituting the sealing element of the device, since when the cork is forced down into place its under surface will be made to conform to the contour of the bead or ridge and enter the surrounding groove and tightly seal the bottle against escape of the gas from the inside or the ingress of air from the outside. In its natural form or shape the cork or seal 5 consists of a circular disk of the proper size to readily enter the mouth of the bottle and fit over the opening in the neck, substantially as shown in the drawings.

To make the bottle-seal, a sheet-metal disk 6 is cut or stamped out and integral therewith a retaining-ring or tongue 7. At the base of the retaining-ring the metal of the disk is slit, as at 8, so that the annular depending flange 9 may be formed on the disk without distortion or displacement of the metal of the disk or cap and so that the base of the retaining-ring may be turned up and

over the disk, as indicated. The depending annular flange may then be formed and the disk and flange thus made to form a cap in which the cork 5 or other yielding and elastic seal or closure is arranged and held, and then the tongue or ring is turned or bent in cross-section to the proper shape or formation, so as to stand when turned over and down on the face of the cap with its outer edge directed upward and outward to overhang the perimetral edge of the cap. The free end portion 10 of the retaining-ring is stamped to reach inward and lie flat on the face of the cap to serve as a finger-piece by which the retaining-ring may be manipulated and the seal be released and removed. This finger-piece may consist of a plain extension or it may terminate in a circular disk 11, as seen in Fig. 5 of the drawings. The retaining-ring thus made is then turned over and down on the face of the cap with its turned-up edge extending beyond the peripheral edge of the cap, and because of the yielding and resilient character of the material of which the retaining-ring is made it may be contracted to pass into the mouth of the bottle and then expand into locking position with the upper edge lodged under the shoulder 2 of the bottle before or at the instant the setting implement is released in pressure. Any suitable contractile-spring tool may be used to effect this locking. The retaining-ring being integrally connected to the cap, it is utilized as the means for releasing the seal and removing it from the bottle, because the ring may be withdrawn or removed by simply grasping the free end of the ring and drawing it from its seat and then exerting force sufficient to tip the cap and cork and lift the whole out.

Having described my invention, what I claim is—

1. A bottle-seal formed with an integral laterally-expansible retaining-ring lying on the top of the stopper with its lower edge on the stopper and its other edge directed upward and outward.

2. A bottle-seal formed with an integral retaining-ring disposed in a vertically-curved direction on the top of the stopper with its lower edge resting on the stopper and its outer and upper edge extending beyond the perimeter thereof.

3. A bottle-seal formed with an integral retaining-ring curved in cross-section and directed upwardly and outwardly and disposed on top of the stopper with its upper edge extending beyond the perimetral edge of the stopper.

4. A bottle seal or stopper comprising a cap-disk, a retaining-ring having its base integral therewith and arranged to lie on the cap and curved in cross-section and standing with its upper and outer edge adapted to be resiliently expanded beyond the perimetral edge of the cap.

5. A bottle seal or stopper comprising a cap-disk, a retaining-ring having its base integral therewith and curved in cross-section and lying on the cap-disk with its lower portion, and with its upper portion directed outward and extending beyond the perimetral edge of the cap, and formed with an inwardly-turned flat finger-piece extending inwardly on the face of the cap.

6. A bottle-seal consisting of a stopper, a disk-cap on the stopper, an expansive retaining-ring having one end integral with the cap and its body bent in cross-section and disposed with its lower edge on the face of the cap and its upper edge extending beyond the perimetral edge of the cap, and its free end extended to form a finger-piece adapted to lie flat on the surface of the cap.

7. A bottle-seal comprising a stopper of compressible material, a metal cap secured on the stopper, an expansive retaining-ring having its base integral with the cap and curved in cross-section to lie on one edge upon the cap with its upper edge reaching beyond the perimetral edge of the cap and having a flat extended free end portion adapted to lie flat upon the face of the cap, substantially as described.

8. A bottle having its neck formed with an interior annular recess having an overhanging shoulder at its upper end and a shoulder at its lower end formed with a bead or ridge, and a circular groove behind the ridge, combined with a stopper, and a cap into which the stopper is fitted formed with a retaining-ring lying on the cap and bent in cross-section to lie with one portion on the cap and the other extending outward and upward to expand and engage under the overhanging shoulder of the recess in the bottle-neck, substantially as described.

9. A locking-cap for a bottle-stopper, consisting of a flanged metal cap and an expansive retaining-ring having one end integral with the cap and formed of a strip of sheet metal bent in cross-section on a median line and arranged to overhang the edge of the cap, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM SAMUEL DORMAN.

Witnesses:

CHAS. E. RIORDON,

A. G. HEYLMUN.