(No Model.)

J. H. BULLARD.

BOTTLE SEAL.

No. 568,016. Patented Sept. 22, 1896.

Fig 1

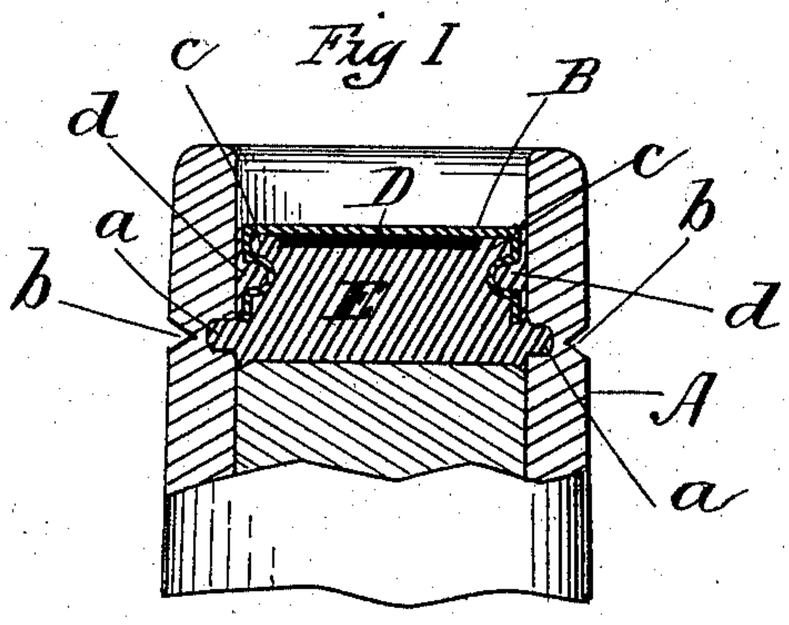


Fig 2

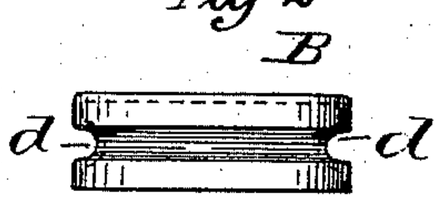


Fig 3.

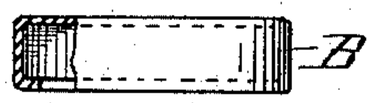


Fig 4

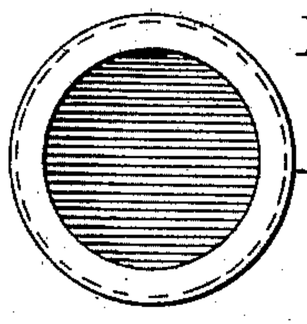
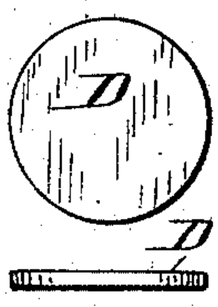


Fig 5



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UNITED STATES PATENT OFFICE.

JAMES H. BULLARD, OF SPRINGFIELD, MASSACHUSETTS.

BOTTLE-SEAL.

SPECIFICATION forming part of Letters Patent No. 568,016, dated September 22, 1896.

Application filed November 9, 1895. Serial No. 568,462. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. BULLARD, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Metallic Bottle-Seals, of which the following is a specification.

This invention relates to metal seals for the mouths of bottles, designed to be permanently fastened to the inside of the bottle-neck, which portion of the bottle must be mutilated by breaking off a part thereof in order to remove the metal seal therefrom; and the invention consists in a metal cup having projections on the side walls thereof, and a bottle-neck having an annular groove on the interior thereof, and a plastic material engaging said groove in the bottle-neck and the projections of the walls of the metal sealing-cup, and, hardening therein, thereby interlocking said sealing-cup and said bottle-neck.

In the drawings, which form a part of this specification, Figure 1 shows a portion of the neck of a bottle, a metal seal therein, and a plastic material on top of the cork, uniting said seal and bottle-neck, all in section. There is also shown in said view a disk embedded in the plastic in the cup, made of a metal or other material harder than that from which the cup is made. Fig. 2 shows a metal cup in side elevation. Fig. 3 shows a metal cup having the edges of the open end thereof inturned, as shown by the sectional portion of said figure. Fig. 4 is a bottom plan view of Fig. 3. Fig. 5 is a plan and elevation of a protective disk of steel or other hard substance.

In the drawings, A represents a portion of the neck of a bottle, having two grooves therein, one on the inside of the neck and the other on the outside thereof, both in the same horizontal plane and lettered, respectively, *a* and *b*. Said groove *a* is provided as a means for locking the seal B in the neck of the bottle, in the position shown in Fig. 1, by means of any suitable plastic material, said groove *b* being provided simply to make a breaking-line between the portions of the bottle-neck above and below the grooves *a* and *b*.

The metal cup B is made of any suitable metal, as brass or steel, and has provided in the side wall thereof an annular rib *d*, projecting inwardly in such position in said wall of the cup as to leave the annular space *c* above said rib *d* for the reception of the plastic material E. In place of a cup made with the annular rib *d*, it would be just as effective for the purposes of this invention to make the cup as shown in Figs. 3 and 4—viz., with the lower edge thereof turned inwardly toward the center of the cup and left substantially at right angles to the wall thereof.

In cases where extra security is desired a steel disk D may be placed in the metal cup in the position shown in Fig. 1, where it will be held in place by the hardening of the plaster-of-paris or cement, thus rendering more difficult the insertion of any tool for cutting away the plastic filling within the cup B and groove *a*. If desired, the cup B may be made of steel and hardened, thus dispensing with the use of the disk D, or said cup may be made of some vitreous substance provided with the necessary inwardly-projecting retaining rib or parts without departing from the spirit of my invention, which is to secure a hardened metallic or other inverted cup having suitable projections therein to the inside neck of a bottle by means of a plastic material, which forms the interlocking medium between said cup and an annular groove in the interior of said bottle-neck, so as to render the removal of the cork impracticable, except by breaking off the portion of the bottle lying above the grooves *a* and *b* in the neck thereof.

In operating this invention the cork is put in in the usual manner and far enough to leave the top thereof below the groove *a* in the neck of the bottle, and a quantity of plaster-of-paris or hydraulic cement or other suitable substance is applied to the top of the cork and to the inside of one of the metal seals and the latter introduced into the neck of the bottle and pressed down therein to a position shown in Fig. 1—viz., to such a point that the bottom edge of the cup B shall not pass by the upper edge of the groove *a*. A sufficient quantity of plastic is used to completely fill the cup and the space between the outside of the cup and the inside of the bottle-neck. In case it is desired to place a disk of hardened material within the cup, as

shown, said disk is dropped into the cup before the plastic is applied thereon, and then the process is as above described. After said plastic has become hard the seal is firmly locked thereby in the neck of the bottle and can only be removed for the purpose of withdrawing the cork by breaking off the portion of the bottle-neck above the grooves *a* and *b*, the body of plastic being thereby broken off, leaving the top of the cork exposed.

Another advantage obtained by this invention is that the seal is rendered useless, being filled with the hard plastic, and cannot be used again.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A bottle, provided with an interior groove in its neck, and the stopper which is forced down into the neck below the groove, combined with a filling which is poured into the neck upon the top of the cork, and a cup-shaped seal which is embedded in the filling and provided with a groove in its sides, substantially as shown.

2. A bottle, having a groove *a*, in its neck, and a stopper which is forced below the groove in the neck, combined with a filling which is poured into the neck upon the top of the stopper, and an inverted metallic cap which is sunk in the filling below the top of the neck, substantially as described.

3. A bottle having a groove *a* formed in the inner side of its neck, and a corresponding groove *b* in its outer side, combined with a stopper that is forced into the neck below the grooves, a filling of cement that is poured into the neck above the stopper, and an inverted grooved metallic cap that is embedded in the filling below the top of the neck, substantially as set forth.

4. A bottle, having the grooves *a b*, made in its neck, and the stopper that is forced down in the neck below the grooves, combined with a filling that is poured into the neck upon the top of the stopper, an inverted grooved cup-shaped cap that is embedded in the filling below the top of the bottle, and a disk D, that is placed inside of the cap, substantially as specified.

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