No. 700,344. Patented May 20, 1902.

G. LISPENARD.

BOTTLE STOPPER.

(Application filed Nov. 16, 1900.)

(No Model.)

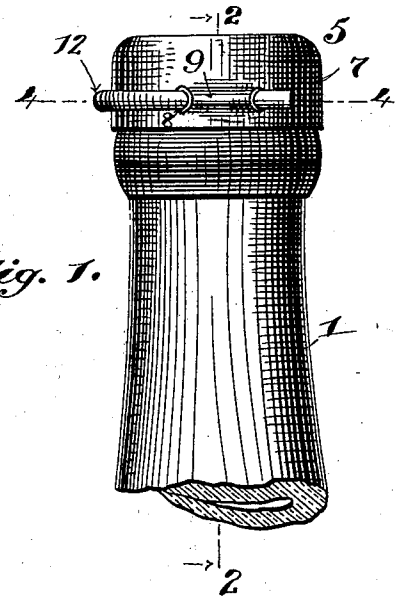


Fig. 1.

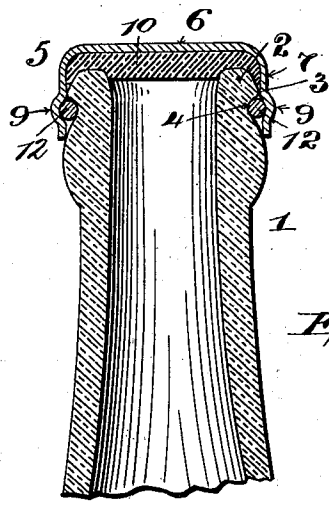


Fig. 2.

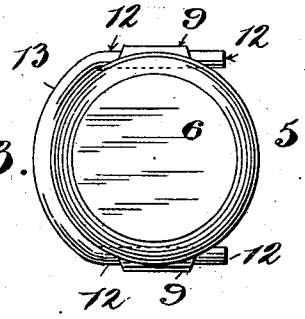


Fig. 3.

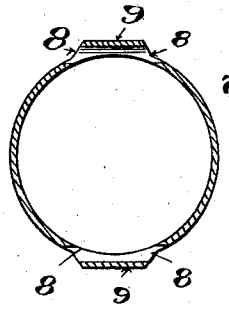


Fig. 4.

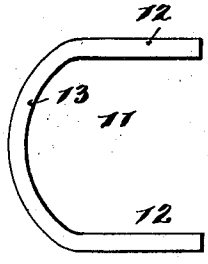


Fig. 5.

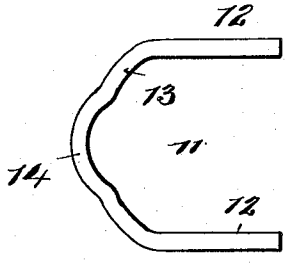


Fig. 6.

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UNITED STATES PATENT OFFICE.

GEORGE LISPENARD, OF BROOKLYN, NEW YORK, ASSIGNOR TO CHARLES L. CURTIS, OF BROOKLYN, NEW YORK.

BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 700,344, dated May 20, 1902.

Application filed November 16, 1900. Serial No. 36,711. (No model.)

To all whom it may concern:

Be it known that I, GEORGE LISPENARD, a citizen of the United States, and a resident of the city of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Bottle-Stoppers, of which the following is a specification.

My invention relates to devices for stoppering bottles, and especially to that class wherein metallic or other capsules or caps are detachably secured to the neck of the bottle to stopper the same. Devices of this class have been employed in connection with the circumferential rim or flange formed at the top of the neck of the bottle, the capsule or cap being applied by crimping the lower edge of the cap under said rim. This has to be done with considerable nicety, for the cap must be capable of being readily removed, and if too great a pressure is necessary for this purpose the stopper is objectionable and substantially worthless for practical purposes. The adjustment of the tightness with which the cap engages the rim of the neck necessarily being accommodated to facility of removal permits the cap to be blown off very often while in transit or storage. Many other means have been employed for detachably securing these capsules to neck-bottles, in all of which either difficulty of application, intricacy of attaching or detaching means, or lack of permanency of attachment during storage or shipment have created serious objections to their use.

It is the object of my invention to provide a bottle-stopper in which these objections are overcome and which is economical of manufacture, easy of application, and which will resist the internal forces of the bottle to prevent inadvertent removal of the cap and which can be readily removed.

My invention therefore consists in the structure and novel combination of parts hereinafter described, and further pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a side elevation of the neck of a bottle provided with a stopper made in accordance with my invention. Fig. 2 is a sectional elevation on the line 2 2, Fig. 1. Fig. 3 is a plan view; Fig. 4, a transverse sectional view through the cap on the line 4 4, Fig. 1. Fig. 5 is a plan view of the key, and Fig. 6 is a plan view of the key slightly modified.

In the drawings, 1 indicates the neck of a bottle of any desired construction or of any preferred material, provided at its upper end with a circumferential rim or flange 2, having a shoulder 3 and circumferential annular groove 4. For the purposes of my improvements it is not necessary that the rim be a solid flange, as it may be formed of a series of projections suitably spaced apart. It also need not be made integrally with the bottle, but may be applied thereto in any desired way. Neither need it be round, for it may be of any desired shape. However, I prefer the integrally-formed continuous circular flange, as shown.

At 5 is the cap comprising a top crown 6 and a depending annular side or flange 7. At points preferably diametrically opposite each other the flange 7 is pierced by holes or apertures 8, which aline with each other as to each side, and between the apertures on each side the depending flange of the cap is bulged outwardly, as indicated at 9.

As to the cap I do not limit myself to the construction shown, as it will be apparent that it may be variously constructed without departing from the spirit of my invention, the only essential being a crown-piece and depending flange and the alining apertures in the flange.

A disk 10 of resilient material, constituting a seal and made of cork or any other desirable material, is set in the cap against the crown-piece thereof.

At 11 is the key, which is U-shaped and which comprises the parallel (or substantially parallel) side pieces 12 and the connecting cross-bar 13, the cross-bar being curved to conform approximately to the curve of the cap, so that a snug fit against the cap-flange will be had. This key is preferably made of wire and of sufficient strength to form a rigid connection between the bottle and the cap and to permit of its being handled by an automatically-operating machine and for insertion through the cap for the affixture of the latter and from withdrawal therefrom without bending.

The parts being constructed as before stated, the cap is placed upon the bottle and pressed down thereon with considerable force, so as to compress the seal and to bring the alining apertures 8 in the cap-flange in line with the groove 4, and while in this position the ends of the key are passed through the apertures into the groove 4, the pressure in the inside of the bottle or the expansibility of the seal, or both, pressing the arms of the key forcibly against the shoulder 3, thereby firmly securing the cap to the bottle. In order to remove the key, it is only necessary to press on the cap and to insert the nail of the finger between the cap and the connecting-bar of the key, when the same can be readily pulled out. If it is desired to use a special tool to withdraw the key, the connecting-bar may be provided with an outwardly-extending bend 14, allowing of its insertion, or the key may be provided with a ring or wire to pull it out with.

I do not claim the combination, with a bottle, of a flanged cap for the mouth thereof, the neck of the bottle and the flange of the cap being provided with matching grooves, a wire intermediate between the neck and the cap and locking the cap to the bottle by lying partly in each groove, and an opening through the flange of the cap into its groove through which the wire can be withdrawn from its locking position with both grooves.

Having described my invention, I claim—

1. In a bottle-stopper, the combination of a bottle having a circumferential rim or flange, a cap having a crown-piece and depending flange, transversely-alining apertures in said flange, and a key having two parallel arms, each of which arms is adapted to be passed transversely through two of said apertures, and beneath the said rim or flange of the bottle to bind the cap on the bottle, subtsantially as described.

2. In a bottle-stopper, the combination with the bottle having a circumferential rim or flange, a cap having a crown-piece and depending flange, a plurality of alining apertures in said cap, and a key, comprising two parallel arms, each of which is adapted to be passed transversely through two of said apertures and a resilient disk between the bottle and the crown-piece, substantially as described.

3. In a bottle-stopper, the combination with a cap having a circular and depending flange provided with alined and tangentially-disposed apertures, a bottle-stopper having a circumferential rim or flange, and a key having parallel arms or prongs, each arm or prong extending tangentially through the apertures and under said rim.

4. As a new article of manufacture, a bottle-stopper comprising a capsule-like cap having a crown-piece and a depending flange with a plurality of alined apertures formed therein on each side, and a key having parallel arms or prongs each of which passes through two of the alined apertures, as set forth.

5. As a new article of manufacture, a bottle-stopper comprising a capsule-like cap having a crown-piece and depending flange, a plurality of transversely-extending and alining apertures formed in the flange and diametrically disposed relatively to each other, and a key comprising two parallel arms or prongs and a connecting cross-bar, each prong being adapted to be passed through two of said alining apertures, as set forth.

6. A bottle-stopper comprising a capsule-like cap, having a crown and a depending flange, and holes formed in the flange diametrically disposed relative to each other, an outwardly-extending furrow or channel formed in the flange between each set of apertures, and a key comprising parallel arms or prongs and a connecting cross-bar adapted to pass through said alining apertures, and lie in said furrow, as set forth.

7. The combination with a bottle, of a flanged cap for the mouth thereof, the neck of the bottle and the flange of the cap being provided with matching grooves, a wire having parallel arms located intermediate between the neck and cap and locking the cap to the bottle by lying partly in each groove, and an opening through the flange of the cap into its groove, through which the wire can be withdrawn from its locking position, with both grooves, substantially as described.

Signed at the city, county, and State of New York this 15th day of November, 1900.

GEORGE LISPENARD.

Witnesses:
CHAS. G. HENSLEY,
SOPHIE SEKOSKY.