

(No Model.)

J. LIBROWICZ.
PROTECTIVE BOTTLE STOPPER.

No. 484,330.

Patented Oct. 11, 1892.

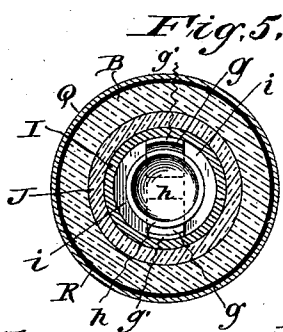
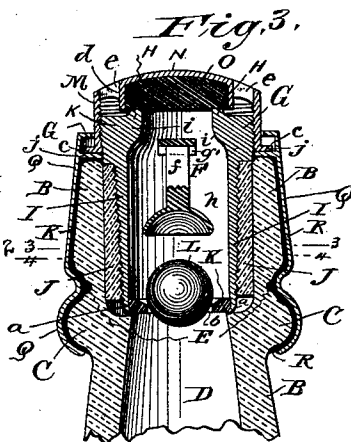
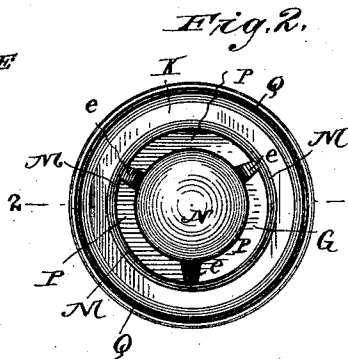
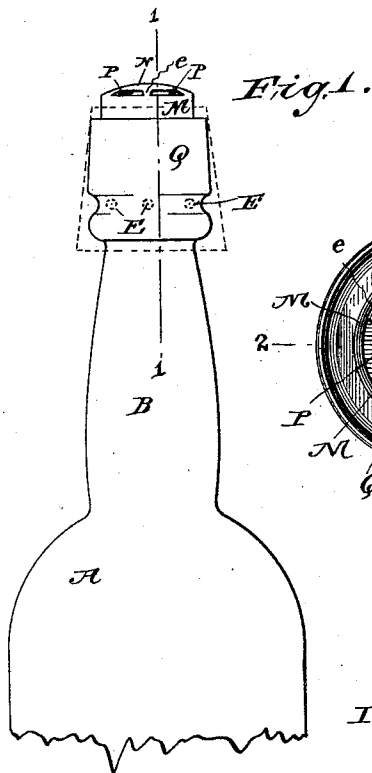


Fig. 4.

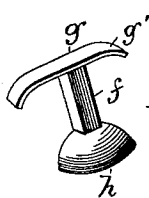
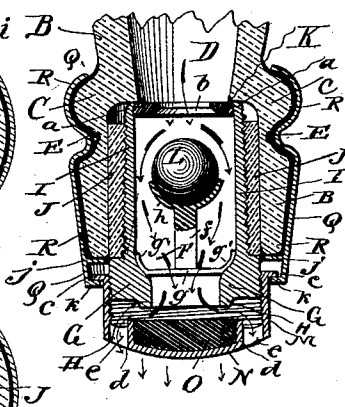


Fig. 7.

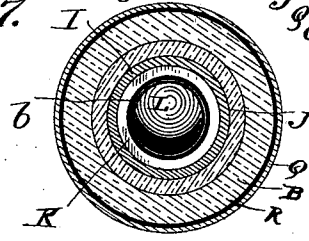


Fig. 6.

Attest:
C. W. Benjamin
J. A. Baker.

Inventor:
Julius Librowicz
by Joseph L. King
att'y.

UNITED STATES PATENT OFFICE.

JULIUS LIBROWICZ, OF NEW YORK, N. Y.

PROTECTIVE BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 484,330, dated October 11, 1892.

Application filed April 29, 1892. Serial No. 431,121. (No model.)

To all whom it may concern:

Be it known that I, JULIUS LIBROWICZ, a citizen of the United States of America, residing at New York, county of New York, State of New York, have invented certain new and useful Improvements in Protective Bottle-Stoppers, of which the following is a specification.

My invention has relation to bottle-stoppers or seals for bottles which are intended to be permanent in their nature, and has for its object to provide a seal which shall effectually close the bottle for shipment and for actual use, and also to provide devices for the prevention of unlicensed picking or opening the seal for the purpose of refilling the bottle with a spurious article.

My invention is specially designed to be used by manufacturers of or dealers in certain special brands of liquors, bitters, and the like, so as to enable them to guard against the refilling of the bottle with an imitation of their particular brand of liquor, &c., after the genuine article has been removed.

My invention therefore resides in the construction shown and described herein, and further pointed out in the claims.

In the drawings, Figure 1 represents a side elevation of the upper portion of the bottle provided with my stopper; Fig. 2, an enlarged plan view of the stopper and ferrule, the bottle being broken away below the same; Fig. 3, an enlarged sectional elevation showing the stopper inserted in and secured to the neck of the bottle, said section being taken on the line 2 2, Fig. 2. In this view both the ball-seal and the cap-seal are shown as being down, as hereinafter described; Fig. 4, a like view of Fig. 3 with the parts inverted and the ball and cap seals detached and in their respective positions during the process of pouring the contents from the bottle; Fig. 5, a transverse section through Fig. 3 on the line 3 3, looking upward; Fig. 6, a like view on the line 4 4, looking downward; Fig. 7, a detached view of the ball-stop to be hereinafter described.

In the drawings, A is the bottle, B the neck thereof, and C circumferential rings formed thereon of any number or shape. D is the

passage through the bottle. The bottle may have a series of indentations E, which are shown in dotted lines in Fig. 1. The use of these will be hereinafter described. They are, however, not essential, and may be eliminated.

The body of the stopper comprises the conical plug F, having a central passage there-through, the upper portion of which is provided with a screw-threaded annular enlargement G and the upwardly-extending annular lip H. Below the boss G the body F is reduced in diameter and extended downward in the shape of a cone I, which conical extension is exteriorly screw-threaded and is provided with a cork covering J, which cork covering does not extend the full length of the conical extension I, the lower portion *a* of which is contracted for the purpose of receiving the annular ring E, which is provided with a cylindrical and conical opening *b*, the conical portion of which forms a seat for the ball L.

The cylindrical cap M, interiorly screw-threaded, is adapted to move on the boss G, said cap being provided with an annular flange *c*. The cap M has a centrally-disposed head N, having downwardly-projecting circular walls *d*, in which head is secured a block O, of rubber or some other elastic material. The head N is connected with the cap M by the arms *e*, between which and the walls *d* are formed slots or openings P, better shown in Figs. 1 and 2. The block O is adapted to be screwed down upon the annular lip H, which forms a seat therefor, for the purpose of sealing the bottle when it is desired to ship the same, and when in use—that is, when the contents of the bottle are being intermittently withdrawn—the ball rests upon the annular ring K and effectually closes the bottle for temporary use. When the cap M and block O are removed from the closed position, as shown in Fig. 3, to the open position, as shown in Fig. 4, the contents of the bottle may be freely withdrawn, as indicated by the arrows.

The foregoing describes an effectual seal for the bottle, which may be used under the two conditions before enumerated—that is, for the purpose of withdrawing the contained

liquid and while packed for shipment. It is intended, however, that the capabilities of the device shall be further extended, and to this end I have provided additional means for preventing the picking of the bottle for the purpose of refilling it with a spurious article, to do which the seal of the bottle will have to be picked, or, in other words, the ball L removed from its seat and held away from it while the process of refilling goes on. To prevent this, I use a device which I term the "ball-stop," which is shown complete in Fig. 7. This stop comprises the stem *f*, cross-arm *g*, having the curved ends *g'*, and cup *h*, which cup is preferably hemispherical in shape. The cup should be of such a width in relation to the interior diameter of the conical extension I of the stopper that the ball cannot pass between it and said extension when the bottle is inverted, and should be preferably located in relation to the ball, when seated on the annulus K, so that a tool or instrument cannot be inserted through the opening in the stopper down to the ball to raise it from its seat and suspend it therefrom.

The boss G is provided interiorly with a shoulder *i*, and against this shoulder the cross-arm *g* of the ball-stop is pressed. The stop is placed in position before the annular ring K is set in position and when the passage through the lower portion of the stopper is free and clear. The stop should be made of some material which is elastic enough to enable the cross-arm *g* to retain the same in place by being sprung under the shoulder *i* and rigid enough to prevent the same from being forced out of the top opening of the bottle by the insertion of a tool under the cross-arm. The cup *h*, however, is made larger than the opening through the stopper above the shoulder *i*, and, together with the cross-arm *g*, will render tampering with the stopper in this regard more difficult. If desired, however, the entire ball-stock could be cast integral with the body of the stopper itself, and thereby effectually do away with any tampering in this respect. After the stop has been set in position (if a detachable one is used, as shown) the ring K is placed in the lower portion of the conical extension I of the stopper, and the end *a* thereof is then compressed or spun around it, so as to hold it in place.

The cap M of the stopper is secured from removal (and likewise the stopper itself) by the ferrule Q. This prior to being spun onto the bottle is in the shape of a truncated cone, as illustrated in dotted lines in Fig. 1. It is provided with an inwardly-extending flange *j*, which is adapted to embrace the top of the neck of the bottle and assist in holding the ferrule in place. In order to prevent the cap M from being entirely removed from the body of the stopper, another flange *k*, concentric with the flange *j*, is formed on the uppermost portion of the ferrule, against which the flange *c* of the cap M strikes when being

unscrewed and which limits its upward movement. When the ferrule is secured to the neck of the bottle, as hereinafter set forth, the removal of the stopper from the bottle cannot be accomplished without destroying a part of the ferrule itself, and as this must be attended by considerable labor and the consequent destruction of the ferrule (which necessitates the placing of an entirely-new ferrule on the neck of the bottle) such tampering for the purpose of refilling the bottle will not either be economical or expeditious, and for these reasons I consider the structure to be at least a practical protection against the refilling of bottles. After the stopper has been placed within the bottle the ferrule, which has then substantially the shape illustrated in dotted lines in Fig. 1, is placed about the neck of the bottle, its flange *j* resting on the top thereof. It will be there noticed that the base of the ferrule has a much wider flare than the compressed ferrule. It is made this way for the purpose of permitting a binding material, preferably plaster-of-paris, as shown in heavy black lines R in the various figures, to be poured between the ferrule and the bottle, some of the plaster entering the indentations E in the neck of the bottle, so as to give it a firm hold thereon. Before the plaster is set the ferrule is spun or otherwise compressed into the annular recess and about the annular rib C on the neck of the bottle, so as to bind the ferrule to the bottle firmly. After this is done the upper edge of the ferrule is turned down in any suitable manner to form the annular flange *k*. It will thus be seen that the ferrule cannot be removed except by destroying it and that it is firmly held to the neck of the bottle, consequently firmly retaining the stopper in the bottle, at the same time permitting the cap M to be moved up and down, but preventing it from being withdrawn entirely from the stopper. I prefer to make the stopper and ferrule separate; but, if desired, they can be cast in one piece, in which case I prefer to make the stopper of some soft ductile metal, of which the ferrule will also be made. In fact, the kind of metal used for the stopper itself is entirely immaterial, it being regulated entirely by the cost of the device. When the ferrule and stopper are made in one piece, it is not necessary that the flange *k* be formed, as the stopper will then be held in the bottle by the integral ferrule, and means other than said flange *k* can be used for the purpose of confining the said cap to the stopper. The cork covering J forms a part of the stopper, and wherever the word "stopper" is used it is intended to include said covering, (unless otherwise specified,) although I do not limit myself to a cork covering, as rubber or other elastic material may be used; nor do I limit myself to any covering, as the stopper may be made of some elastic material, whereby the presence of the elastic covering will be rendered unnecessary. It is apparent that many changes may be

made in the herein-described structure without departing from the spirit of my invention.

What I claim is—

5 1. The combination, in a stopper having a central passage, of the movable cap adapted to work on the top thereof, a head on said cap, an elastic block in said cap, a seat on the stopper, adapted to coact with said elastic
10 block, and openings in said cap, substantially as described.

2. The combination, with a bottle, of the stopper having a central passage or opening therein, a movable cap adapted to close the
15 opening through the top of said stopper, openings in said cap, and a ferrule adapted to be secured to the bottle to confine the stopper in the bottle and limit the movement of said cap, substantially as described.

20 3. The combination, with a bottle, of the stopper having a central passage, a movable seal, and a seat for the same, located in said central passage, devices in said passage for limiting the movement of said seal, a perforated cap adapted to move about the top of
25 said stopper to close the opening in the same, and a ferrule adapted to be secured to the neck of the bottle to retain the stopper within the same, substantially as described.

30 4. The combination, with the stopper F, having a central passage, of the annular seat K, having an opening therethrough, the ball-stop secured in said passage, having a cup *h*, stem *f*, and arm *g* for supporting said cup, and the ball L, substantially as described.
35

5. The combination, with the stopper having a central passage, of the ball L and perforated seat K for the same, located in said passage, the ball-stop having the cup *h* and
40 cross-bar for supporting the said cup within the passage, and the perforated movable cap M, having the head N, block O within said head, and perforations P, and a seat on the stopper, adapted to coact with the elastic
45 block O, substantially as described.

6. The combination, with the bottle, of the stopper F, having a central passage, the ball L, a perforated seat K within said passage, the ball-stop having the cup *h*, stem *f*, and
50 cross-arm *g* for supporting said cup within the passage, a perforated cap M, having the head N and elastic block O, adapted to coact with a seat on the top of the stopper, and a ferrule Q, adapted to be firmly secured to the
55 neck of the bottle, provided with the flange *k* for confining the stop and cap thereof in the bottle and limiting the movement of said cap, substantially as described.

7. The combination, with the bottle, of a
60 ferrule secured to the bottle and a stopper

having a central passage, a movable seal therein, a stop for limiting the movement of said seal, and means for closing the upper portion of said central passage, all being confined within the bottle by said ferrule, substantially as described. 65

8. In a bottle-stopper, the stopper having a screw-threaded extension I, a central passage through said stopper, a shoulder *i* within said passage, an annular ring K, having the seat *b*
70 located within said passage, the ball L, adapted to close the opening through said annular ring K, the ball-stop having the hemispherical cup *h*, stem *f*, and cross-bar *g*, adapted to be secured against the shoulder *i*, and an
75 elastic covering J on the conical extension I, substantially as described.

9. The combination, with the stopper having a central passage and screw-threaded extension I, of an elastic covering J about said extension, a shoulder *i* within said passage, an
80 annular lip H about the passage at the top of the stopper, an annular ring K, having the seat *b* located within said passage, the ball L, adapted to be seated in the ring K, the cup *h*
85 within said passage, the screw-threaded boss G on the upper portion of the stopper, and a cap M, having the slot P, head N, and elastic block O, adapted to move on said boss, substantially as described. 90

10. The combination of a bottle having the ferrule secured thereto, a flange *k* on the same with a stopper having a passage there-
95 through, a screw-threaded extension I, an elastic covering J on said extension, a shoulder *i* within said passage, an annular lip H about the passage at the top of the stopper, an annular ring K, having the seat *b* located within said passage, the ball L, adapted to be
100 seated in the ring K, the cup *h* within said passage, the screw-threaded boss G on the upper portion of the stopper, and a cap M, having the slot P, head N, and elastic block O, adapted to move on said boss and confined in its movements by the said flange *k*, sub-
105 stantially as described.

11. The combination, with the stopper having a central passage, said passage having a contracted upper section, of the apertured
110 seat K, a ball L, adapted to close the aperture in the seat, and a stop detachably secured to the contracted portion of said passage, substantially as described.

Signed at New York, county and State of New York, this 28th day of April, 1892.

JULIUS LIBROWICZ.

Witnesses:

BENEDICT S. WISE,
M. F. DALY.