(No Model.)

G. L. WAITT.

BOTTLE STOPPER.

No. 342,057. Patented May 18, 1886.

Fig. 1.

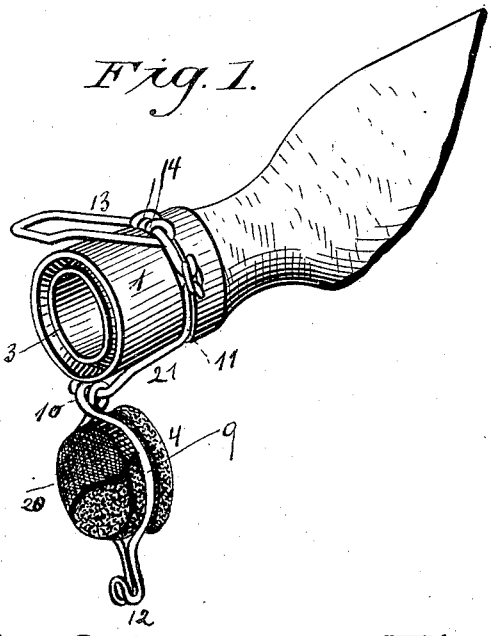


Fig. 3.

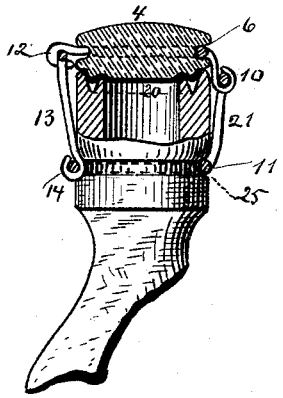


Fig. 2.

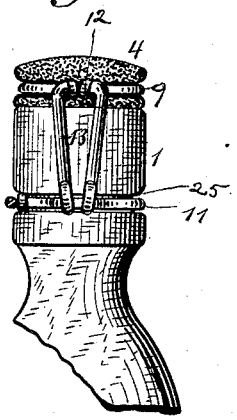
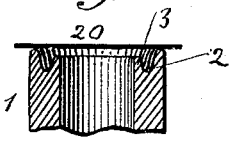


Fig. 4.



WITNESSES

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BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 342,057, dated May 18, 1886.

Application filed October 22, 1885. Serial No. 180,668. (No model.)

To all whom it may concern:

Be it known that I, GEORGE L. WAITT, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Bottle-Stoppers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to that class of bottle-stoppers in which the stopper proper, carried by a swinging yoke, fits into a recess formed in the neck of the bottle. In devices of this class the stopper-body is customarily made of india-rubber, and is liable to taint or injuriously affect the contents of the bottle, and for such reason the use of india-rubber is deemed prejudicial to bottling interests, and of late cork stoppers alone have been used for closing bottles containing fermented and effervescent beverages.

It is the aim and object of the present invention to provide a bottle-stopper which shall be simple in construction and effective in operation, and in which the contents of the bottle are brought in contact with a neutral surface or film interposed between an india-rubber or elastic stopper of a special shape and such liquid contents. This neutral surface or film, consisting of tin-foil or other suitable material, is placed upon a circular biting-edge or annular rim formed in the neck of a bottle upon a horizontal shoulder formed a suitable distance from the mouth of the bottle. This annular rim surrounds the discharge-orifice in the shoulder of the bottle-neck, and serves to force the neutral film of tin-foil into the bottom surface of the elastic stopper, when proper pressure is brought to bear upon the same for forcing it into its seat.

In connection with these means for preventing the stopping device from tainting the contents of the bottle, I provide a special fastening device for the stopper, in order to insure the formation and maintenance of a liquid-tight joint. This fastening consists of an angular yoke pivoted to a neck-wire or band and grasping a stopper between its component members or branches. This stopper is formed with an annular groove in its periphery for the reception of the yoke, and it is capable of being reversed, so that it can be used either side downward. The free end of the stopper-carrying yoke terminates in a hook, and is capable of engaging with a spring-bail or fastening-lever, which is also hung upon the neck-wire, and normally tends to press outward from the bottle-neck, its release from the yoke being effected by pressing it in an inward direction.

My invention, briefly outlined in the above statement, will be hereinafter more fully described, and then set forth in the claims.

In the drawings, Figure 1 is a perspective view showing the stopper when open and with a packing-film attached thereto. Fig. 2 is an elevation showing the stopper fastened. Fig. 3 is a section showing the stopper pressed upon its seat. Fig. 4 is a detail view of the bottle-neck and packing-film.

The reference-numeral 1 designates the neck of a bottle, the mouth of which is provided, at a suitable distance from the upper edge, with an annular shoulder, 2, which extends from the inner wall of said neck to an annular rim or vertical flange, 3, surrounding or serving as a border for the aperture in the bottle-neck leading to the mouth thereof. This annular rim or flange 3 is made sharp or V-shaped, or is otherwise made of such a shape or configuration that it will readily enter or bite into an elastic stopper introduced into the mouth of the bottle. The neck of the bottle is made flaring or tapering on its outside, and its inner wall, 3, may be made straight or flaring in an inward and upward direction from the shoulder 2.

The stopper proper (marked 4) is made of india-rubber or other elastic material, and is of such a size and shape that it will fill the mouth of the bottle and rest upon the annular rim or flange 3. The stopper-body has an annular peripheral groove, 6, and flat faces, so that said stopper can be reversed and used either face downward when the rubber becomes worn or hard on either face. The annular groove in the stopper-body serves to receive an angular yoke or frame, 9, which consists of two parallel arms or branches having their lower ends formed into eyes 10, for pivotally connecting said yoke with the wire or band 11 encircling the neck of the bottle.

The upper or horizontal members of the stopper-carrying yoke fit into the groove in the stopper-body, and such members are brought together in front of said stopper-body and fashioned into a downwardly-extending hook, 12. This hook is adapted to engage with a vibrating bail or spring-lever, 13, which is formed of a piece of wire bent into a loop form and having the lower ends of its vertical branches formed into eyes 14, through which passes the neck wire or band 11. This spring bail or lever is of such a shape that its natural tendency is to spring in an outward direction, or away from the neck of the bottle, and hence it is evident that after it has been made to slip under and engage with the hook 12 of the yoke 9 it will spring outward and insure the firm retention of the yoke, and consequently firmly hold the stopper in its seat in the bottle.

In order to release the spring bail from the yoke it is forced in an inward direction, the tapering shape of the bottle-neck admitting of such movement, and in consequence thereof the bail passes beyond the hook on the yoke and the latter is free to swing on its pivotal joints with the neck band or wire.

It is evident that the manipulation of the bail required to release the stopper can be performed with ease and celerity, a simple inward movement of the bail in grasping the bottle-neck being all that is needed.

In practice I preferably place a piece of tin-foil, 20, upon the annular rim of the bottle-neck, such piece being cut without any special regard to the size of the mouth of the bottle, except that it should lie upon the annular rim and extend to the wall of the bottle-neck. This piece of tin-foil placed loosely in position is smoothed out in the act of closing the bottle, it being evident that the annular biting edge will force the foil into the elastic substance of the stopper. In such manner I interpose a neutral film or surface between the contents of the bottle and the elastic stopper and prevent the impregnation of the liquid by said stopper, or the corrosion thereof by such liquid contents.

Instead of placing the tin-foil loosely in position it can be applied as a bottom or partial covering to the elastic stopper, its edges being tucked into the annular groove in the stopper before the branches or arms of the yoke are pressed into said groove. Furthermore, in place of using tin-foil I can use a wafer of cork or other flexible or pliable material possessing the advantages and properties heretofore attributed to tin-foil.

Referring again to the wire or band which encircles the neck of the bottle, I would add that the same is seated in a groove, 25, made in said bottle-neck, and that it has a vertical loop or elongated eye, 21, which receives the swinging yoke carrying the stopper. The object of such loop or eye extending in an upward direction from the neck-wire is to avoid the objectionable length of the swinging yoke and the dangling of the stopper at a distance from the neck of the bottle.

It is evident that when the yoke is slipped to the top of the loop 21 the stopper can be fitted into the bottle-mouth and retained by the spring-bail, and when the bottle is opened the yoke is slipped down one of the vertical branches of the loop 21 toward the neck-wire, so as to close against the bottle.

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

1. The combination, with a bottle having an inner annular shoulder, 2, and biting-rim 3, and the ordinary outer rim, with a smooth-faced solid stopper-body made of elastic material, and devices, substantially as shown, for mounting the stopper upon the bottle-neck and pressing it upon the inner and outer rims of the bottle-mouth, substantially as herein set forth.

2. An elastic stopper having an annular peripheral groove and flat top and bottom faces, in combination with a swinging yoke seated in said groove, and a bottle carrying the yoke, and a locking device for the yoke, substantially as set forth.

3. The combination of the neck-wire 11, formed with the vertical loop 21, with the stopper-yoke 9 10 12, the stopper 4, and the spring fastening-bail 13, substantially as herein set forth.

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

GEORGE L. WAITT.

Witnesses:
EWELL A. DICK,
A. M. TANNER.