J. C. SCHAFFER.
Bottle-Stopper.

No. 217,159. Patented July 1, 1879.

Fig. 1.

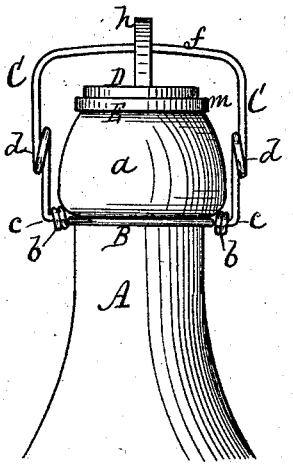


Fig. 2.

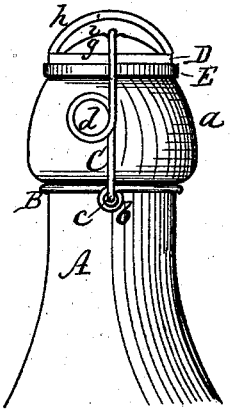


Fig. 3.

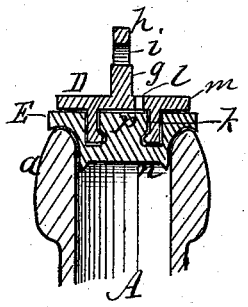


Fig. 4.

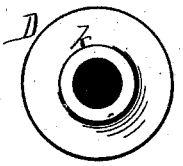
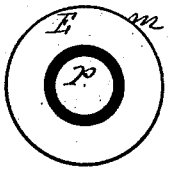


Fig. 5.



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UNITED STATES PATENT OFFICE.

JACOB C. SCHAFFER, OF ROCHESTER, NEW YORK, ASSIGNOR OF ONE-HALF HIS RIGHT TO HENRY L. BECKER, OF SAME PLACE.

IMPROVEMENT IN BOTTLE-STOPPERS.

Specification forming part of Letters Patent No. **217,159**, dated July 1, 1879; application filed April 14, 1879.

To all whom it may concern:

Be it known that I, JACOB C. SCHAFFER, of the city of Rochester, county of Monroe, and State of New York, have invented a certain new and useful Improvement in Bottle-Stoppers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is an elevation of my improvement attached to a bottle. Fig. 2 is a similar view, looking at right angles to Fig. 1. Fig. 3 is a section. Figs. 4 and 5 are detail views.

My improvement relates to stoppers for bottles holding fermented liquids, where great pressure results from the gas within the bottle.

The invention consists in the construction and arrangement, hereinafter more fully described.

This invention belongs to that class of bottle-stoppers in which a wire band is secured around the neck of the bottle, with a wire yoke which presses down upon the stopper, the latter being provided with a rubber packing, resting on top and within the neck of the bottle.

A represents the neck of the bottle, having the usual enlargement *a* at the top. B is the wire band attached around the neck and beneath the enlargement, and provided on two opposite sides with eyes *b b*, formed by coiling the wire as usual.

C is the wire yoke, having journal ends *c c*, which enter the eyes *b b* of the neck-band. At the sides the yoke is formed with two coils, *d d*, formed by bending the wire once or more around, thereby forming springs auxiliary to the inherent spring of the yoke itself, which is made of spring-wire. The top of the yoke forms a straight length, *f*, extending from side to side, and it is all made in one piece.

D is the metallic portion of the stopper, and E is the rubber packing which forms the bottom of the same. The part D is formed with a cam-shaped saddle, *g*, on top, which is inclined on the two opposite sides, and has a notch in the center, as shown.

Above and around the saddle is a circular band, *h*, which leaves a slot, *i*, between itself and the saddle, of such size as to allow the insertion of the yoke through the same, and the proper play of the yoke from one side to the other in riding up over the saddle.

It will be seen that the stopper is strung upon the yoke, and can be turned on and off from the bottle on either side indifferently, thus greatly facilitating the work of bottling.

It will also be seen that this stopper is attached directly to the yoke without intermediate parts, and is not connected with the neck-wire or any extension of the same.

In riding up over the saddle the yoke produces pressure upon the stopper, by reason of its inherent elasticity, and this spring action is greatly enhanced by the side coils, *d d*, which form springs in themselves.

The stopper is opened by simply bracing the thumbs against the neck of the bottle and drawing with the fingers against the yoke; or it may be opened in the reverse position by bracing with the fingers against the neck and pushing with the thumbs against the yoke. When the yoke is pushed off it carries the stopper with it, and the latter hangs loose on the wire.

On the under side of the metallic portion D is a projecting cylindrical thimble, *k*, which is hollow on the inside; but the bottom of the thimble is contracted, which makes said opening of corresponding form, so that it will embrace and hold any body inserted therein. A hole, *l*, is made through the top of the part D, opening into the thimble.

The packing E has a flange, *m*, which rests on top of the bottle, also a block, *n*, which rests within and fills the neck; and on the inside and on top is formed a knob, *p*, which fits within and fills the opening in the thimble *k*, above described.

In attaching or connecting the rubber packing with the metallic frame the central knob or enlargement, *p*, is pressed into the socket of the thimble and expands so as to fill the same, and thereby holds the packing firmly in place. The confined air in the thimble is expelled through the hole *l*. The body *n*, resting outside the thimble, is packed closely against the neck.

By the means above described a more se-

cure and effective attachment is made between the rubber and the metal, and there is less danger of their separation in removing the stopper, and a better packing is also produced, than in the ordinary stoppers in use.

In ordinary stoppers an enlargement or knob is made on the metal, which extends down into a corresponding socket in the rubber, and the latter is consequently made so thin and light at the bottom that it is liable to be torn open.

By forming the enlargement on the rubber greater thickness is given, and consequently greater strength is produced. Two frictional surfaces are also produced between the rubber and metal, which hold the parts together more firmly.

I am aware of the English Patents No. 1,469 of 1876 and No. 4,000 of 1873, and I disclaim the construction of bottle-stopper fastenings therein shown and described; and I am also aware that a bottle-stopper has been constructed of a solid metallic plate having on its under side a cavity in which a knob or button on the elastic stopper is arranged; but in such stoppers a thin button on the elastic stopper is necessary, and it must fit loosely in the socket of the metallic plate, thereby rendering the connection very fragile and insecure. This loose fit results from the fact that there is no provision for the escape of air in the cavity when placing the button of the elastic stopper therein, and hence the cavity must be larger than the button on the elastic stopper. This objection I overcome by making a vent-hole in the metallic cap-plate, and thereby I am enabled to make the knob on my elastic packing of sufficient size to fit snugly within and entirely fill the hollow cylindrical thimble, and thus the socket can be extended down farther, and a rigid, firm, and strong connection between the packing and the cap-plate provided.

Having thus described my invention, I do not claim, broadly, a neck-band, yoke, or rubber stopper, as I am aware the same are well known.

I claim—

1. The yoke C, formed of a single piece of wire, with the vertical arms bent to form the coils *d d* between the straight length *f* and the lower ends of the arms, in combination with the wire ring B, having eyes to which the lower ends of the yoke are pivoted, and the stopper consisting of a metallic plate-carrying the elastic packing E, and constructed on its upper surface with the elevated band *h* and saddle *g*, the latter being inclined gradually downward on each side from the notched center thereof, all substantially as shown and described, for the purpose set forth.

2. The metallic cap-plate D, constructed with the air-vent *l*, opening into the hollow projecting cylindrical thimble *k*, in combination with the elastic packing E, having the knob *p*, constructed to entirely fill the cylindrical thimble and afford a firm connection with the cap-plate, substantially as and for the purpose described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JACOB C. SCHAFFER.

Witnesses:
R. F. OSGOOD,
EDWIN SCOTT.