H. W. PUTNAM.

Bottle-Stopper and Stopper-Fastener.

No. 207,982. Patented Sept. 10, 1878.

Fig. 1.

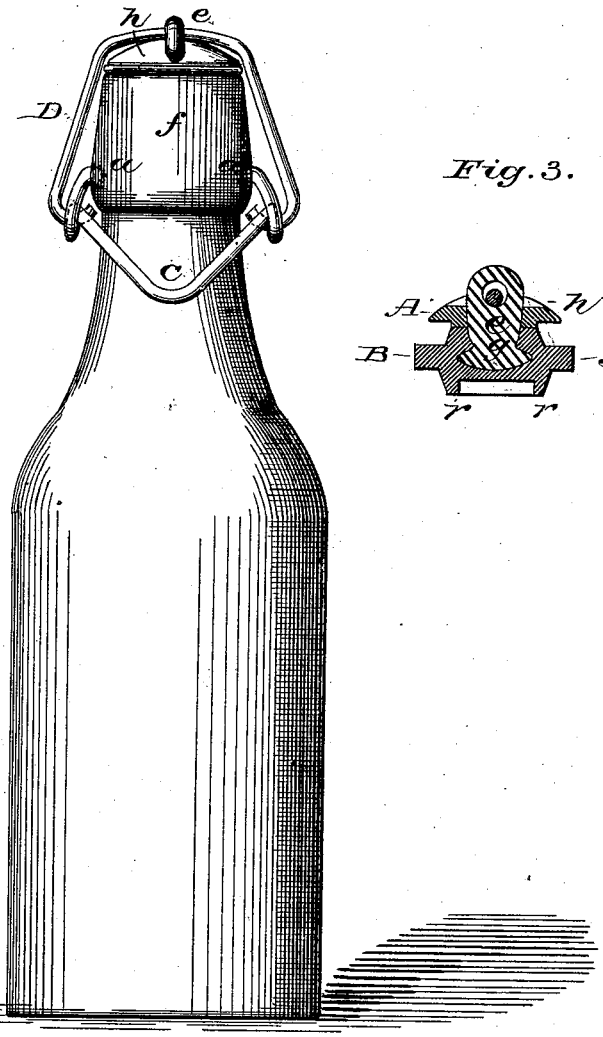

Fig. 2.

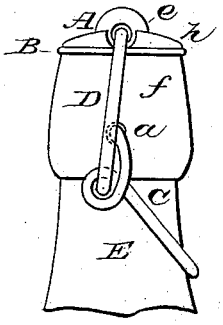

Fig. 3.

Fig. 4

Witnesses:

W. L. Bennern

W. H. Isaacs

Inventor:

Henry William Putnam

by his Att

C. S. Fenwick

UNITED STATES PATENT OFFICE.

HENRY W. PUTNAM, OF BENNINGTON, VERMONT.

IMPROVEMENT IN BOTTLE-STOPPERS AND STOPPER-FASTENERS.

Specification forming part of Letters Patent No. **207,982**, dated September 10, 1878; application filed March 30, 1877.

To all whom it may concern:

Be it known that I, HENRY WILLIAM PUTNAM, of Bennington, county of Bennington, and State of Vermont, have made an invention of certain new and useful Improvements in Bottle-Stoppers; and that the following is a full, clear, and exact description and specification of the same.

The object of these improvements is to dispense with the metallic band usually applied to the neck of a bottle to hold the stopper thereto, to enable a piece of rubber to be readily vulcanized upon a portion of the stopper-body, and to increase the sealing of the bottle by the stopper.

The improvements are set forth at the close of this specification. Some of them may be used separately from the others; but as, in my opinion, all of them are important, I have represented in the accompanying drawings a bottle to which all the improvements are applied.

In the said drawings, Figure 1 represents a face view of the said bottle with the stopper devices applied to it. Fig. 2 represents a side view of the same. Fig. 3 represents a section of the stopper. Fig. 4 represents a top view of the stopper.

The stopper represented in the accompanying drawings is a compound one, composed of a metallic stopper-body, A, and an elastic member, B. This compound stopper is held to the bottle, which may be of glass or pottery, by means of a lever, C, and a yoke, D, the yoke being connected pivotally with the stopper by being inserted through a solid eye made transversely through the head of the stopper-body, while the lever C is connected pivotally with the bottle E.

Previous to this invention it has been customary to connect the bail or the lever with the bottle by means of a metallic band secured to the neck of the bottle. In order that this band may be dispensed with, the bottle is, according to my invention, constructed with socket-fulcrums *a*, in which the ends of the lever are received, so that the lever may take hold of the bottle directly. These socket-fulcrums are, in the present example, depressions formed in the substance of the head *f* of the bottle, and, when the bottle is of glass, are produced by compressing the bottle-neck in dies or tongs of suitable form while the glass is hot enough to be plastic, a plug being inserted in the bottle-neck to prevent it from being distorted. If preferred, the socket-fulcrums may be formed in lugs molded upon the bottle-neck. The lever and the yoke also may be transposed, the ends of the yoke being engaged in the socket-fulcrums, and the lever being suitably formed, so as to intervene between the bottle-stopper and the yoke. But, in order that my invention may be embodied, the yoke or the lever must be secured to the stopper-body laterally by passing it through a solid eye in the head of said body, so that the material of the stopper-body itself prevents the displacement of the yoke by a movement crosswise of its length, and the use of a supplementary catch or spring-pin to hold the yoke in place is dispensed with.

The rubber member B is held to the stopper-body A by means of a button-headed projection, *g*, of said body, which projection is engaged in a hole in the rubber. The necessity of forming the rubber member with this hole requires the use of a core in the mold in which the rubber is vulcanized.

In order that the use of a special core may be saved, the stopper-body A is constructed of two pieces—viz., the cap-piece *h* and the button-headed attachment *e*. In order that these two pieces may be conveniently secured to each other, the cap-piece *h* is perforated centrally, and the attachment *e* is constructed with a shank, which is inserted in said cap-piece and projects above, the projection of the shank being provided with a solid eye to permit the yoke D to be passed through it over the cap-piece, so as to secure the two pieces together.

By reason of the construction of the stopper-body of said two pieces the button-headed attachment may be used in the mold in which the rubber member B is vulcanized, and the rubber may be vulcanized directly upon it. After the vulcanization the attachment with the rubber upon it may be secured to the cap-piece.

If deemed best, some other means of securing the two pieces together than the yoke may be used, and the forms of the cap-piece and

the upper end of the attachment may be modified according to such means.

In order to insure the tight sealing of the bottle-mouth, the rubber member or stopping device B is constructed with a thin cylindrical flange, *r*, at its under side. When the rubber is forced down in the bottle this flange is pressed against the wall of the neck, and, being elastic, is forced firmly against the same by the pressure of the contents of the bottle against the inner wall of the flange.

In order to insure the outward pressure of the cylindrical flange, the rubber member is constructed with a circular flange, *s*, of larger diameter than the bore of the neck of the bottle. This circular flange is above the cylindrical flange, but is below the head or top of the rubber member, so that when the rubber member is applied to the stopper-body there is an annular space or groove between the under side of the cap-piece and the upper side of the circular flange. Hence, when the compound stopper is forced downward in the bore, this circular flange obstructs the descent of the circumferential portion of the rubber member, while the central part descends more readily, the result being that the circular flange is bent upward, thereby causing the rim of the rubber beneath it to turn outward and bear strongly outward against the wall of the bottle-neck.

Each of the improvements, as hereinafter claimed, may be used without the others, or two of them or the whole of them may be used simultaneously, as deemed expedient.

I am aware that the devices of which the first combination hereinafter recited is composed have been used in other combinations. I therefore do not claim them either separately or in any other combination than one which embodies all the peculiarities recited.

I claim as my invention—

1. The combination, substantially as before set forth, of the stopper-body with the bottle by means of the lever pivoted in socket-fulcrums, constructed in one piece with the bottle, and the yoke inserted through a solid eye formed in the stopper-body and connected pivotally with the lever.

2. The bottle-stopper composed of the cap-piece, the button-headed attachment, made separately from such cap-piece, but secured to it for use, and the rubber member which incloses the rim and bottom of the button-head of said attachment, substantially as before set forth.

3. The rubber stopping device, constructed, substantially as before set forth, with both the cylindrical flange at its lower side and the circular flange arranged above the said cylindrical flange and below the top of the rubber stopping device, of which it forms part.

Witness my hand this 27th day of March, A. D. 1877.

HENRY WILLIAM PUTNAM.

Witnesses:
E. L. SWIFT,
WILLIAM G. T. WRIGHT.