

(No Model.)

E., W. & T. W. HAZLEHURST & J. WOLSTENHOLME.
BOTTLE STOPPER.

No. 415,507.

Patented Nov. 19, 1889.

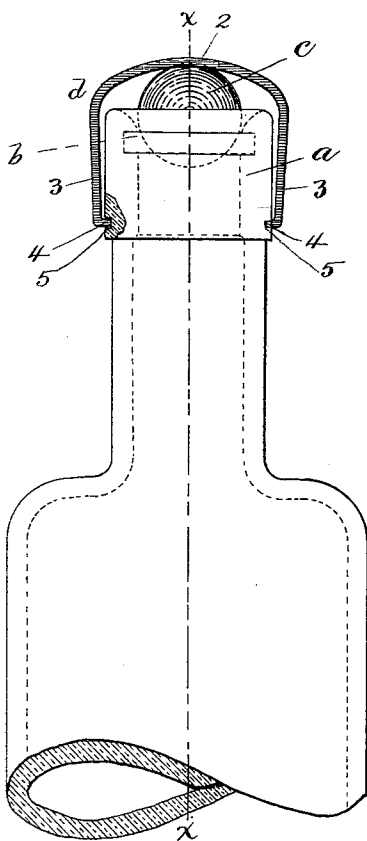


FIG. 1.

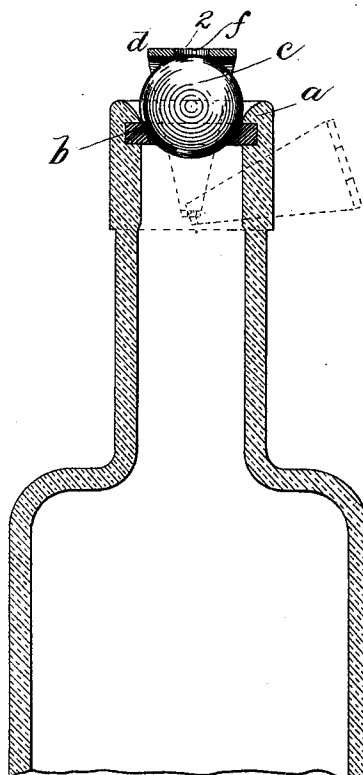


FIG. 2.

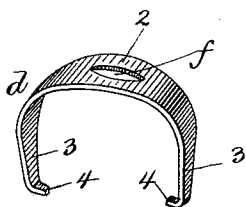


FIG. 3.

WITNESSES.

A. F. Macdonald.
A. E. Harrison.

INVENTORS

Edmund Hazlehurst
William Hazlehurst
Thomas William Hazlehurst
James Wolstenholme
Wm. Brown Corsey
Atty.

UNITED STATES PATENT OFFICE.

EDWARD HAZLEHURST, WILLIAM HAZLEHURST, THOMAS WILLIAM HAZLEHURST, AND JAMES WOLSTENHOLME, OF OLDHAM, COUNTY OF LANCASTER, ENGLAND.

BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 415,507, dated November 19, 1889.

Application filed March 27, 1889. Serial No. 304,976. (No model.) Patented in England October 20, 1884, No. 13,842.

To all whom it may concern:

Be it known that we, EDWARD HAZLEHURST, (book-keeper,) WILLIAM HAZLEHURST, (joiner,) and THOMAS WILLIAM HAZLEHURST, (insurance agent,) all of 22 St. Thomas Street, (north,) Oldham, and JAMES WOLSTENHOLME, (rate collector,) of 21 Coppice Street, Werneth, Oldham, Lancaster county, England, have invented certain new and useful Improvements in Bottle-Stoppers, (for which we have obtained a patent in Great Britain, No. 13,842, bearing date October 20, 1884,) of which the following is a specification.

This invention relates to bottle-stoppers composed of a ball or spherical stopper pressed against a rubber seat in the neck of a bottle by a yoke or bail which is pivoted to the exterior of the neck of the bottle.

The invention has for its object to provide an improved bail or holder for the spherical stopper; and to this end it consists in a bail composed of a stout rigid strip of metal bent into an arch and having its extremities pointed and turned inwardly to serve as trunnions, which are inserted in depressions or pockets formed in the exterior of the neck of the bottle, the yoke being slightly elastic, so that said trunnions can be sprung apart preparatory to entering the pockets, but not sufficiently yielding to permit the trunnions to be sprung out of the pockets, excepting unless a considerable force is exerted, so that the yoke retains itself in engagement with the bottle-neck without the aid of a band or ring encircling said neck. The central part of the yoke is provided with an orifice, the edges of which constitute seats which bear on the spherical stopper and hold the yoke in engagement therewith, all of which we will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side view of the neck of a bottle having our improved stopper. Fig. 2 represents a section on line *x x*, Fig. 1. Fig. 3 represents a perspective view of the bail detached from the bottle.

The same letters of reference indicate the same parts in all the figures.

In the drawings, *a* represents the neck of 50 a bottle, within which is an annular seat or gasket *b* of yielding material, as rubber, inserted in a groove in the inner surface of the neck.

c represents the stopper, which is a sphere 55 of glass or other suitable material, the seat *b* being formed to fit the stopper, as shown in Fig. 2.

d represents the bail or holding device, which is a stout strip of metal, preferably 60 iron or steel, bent to form an arched top 2 and substantially straight sides 3 3, on the ends of which are formed inwardly-projecting trunnions or pivots 4 4, which engage with pockets 5 5, formed in the sides of the 65 bottle-neck. The arms or sides 3 3 are adapted to be sprung outwardly to enable the trunnions 4 4 to spring into the pockets 5 5; but the metal of the bail is so thick and is of such temper that a considerable degree of force is 70 required to spring said arms apart, so that the bail cannot be easily detached from the bottle-neck, the force required being greater than could be exerted on the stopper by pressure within the bottle. The arched top of the 75 bail is increased in width at its central portion and there provided with an orifice *f*. The edges of said orifice bear upon the spherical stopper when the bail is in operative position, the highest part of the stopper projecting 80 into the orifice and being above the edges that bear on the stopper, as shown in Fig. 2, so that the bail and stopper are sufficiently interlocked to prevent the bail from slipping off from the stopper until sufficient lateral pressure is 85 exerted on the bail to depress the stopper and permit the bail to pass over its highest part, the seat *b* yielding to permit such depression. When the bail is moved to place on the stopper, it presses the latter downwardly into the 90 yielding seat *b* until its orifice *f* is directly over the stopper. The expansion of the seat then causes the highest part of the stopper to project into said orifice, as above described.

It will be seen that the stout and but 95 slightly-flexible bail having the trunnions and the central orifice holds itself in engagement with the neck of the bottle, and is held

in engagement with the stopper by the expansion of the seat forcing the stopper into said orifice.

Instead of having the orifice *f*, the bail-top 5 may have a cavity formed in its under side for the same purpose.

We are aware that a spherical stopper bearing on a yielding seat within the neck of a bottle is not new. We are also aware that 10 wire bails or stopper-holders have been provided with inwardly-bent ends which enter pockets in the sides of a bottle-neck, and we do not, therefore, claim the spherical stopper and the yielding seat therefor; nor do we claim, 15 broadly, a stopper-holding bail having ends which are sprung into sockets in the bottle; but

What we do claim is—

The combination of a bottle having pockets 5 5 in the exterior of its neck and a yielding seat *b* within its neck, a spherical stop-

per fitting said seat, and the improved stopper-holding bail composed of a single comparatively stiff piece of metal bent to form a top 2, having a central orifice or cavity, and 25 sides 3 3, having trunnions 4 4, which are sprung into the pockets 5 5, said orifice or cavity being formed to receive the highest portion of the stopper, whereby the stopper and bail are interlocked, as set forth. 30

In testimony whereof we have signed our names to this specification, in the presence of two subscribing witnesses, this 26th day of February, A. D. 1889.

EDWARD HAZLEHURST.

WILLIAM HAZLEHURST.

THOMAS WILLIAM HAZLEHURST.

JAMES WOLSTENHOLME.

Witnesses:

ARTHUR E. HALL,

ALBERT E. HALL,

9 Mount St., Manchester, England.