(No Model.)

B. HAIGH.

EXPANDING STOPPER.

No. 456,257. Patented July 21, 1891.

FIG:1.

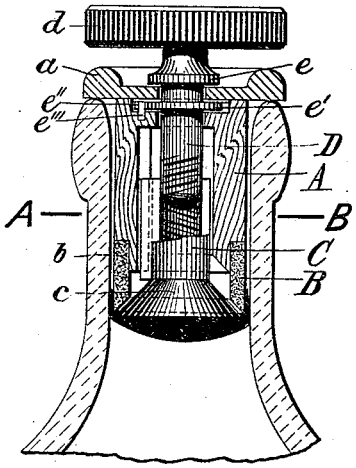


FIG:2.

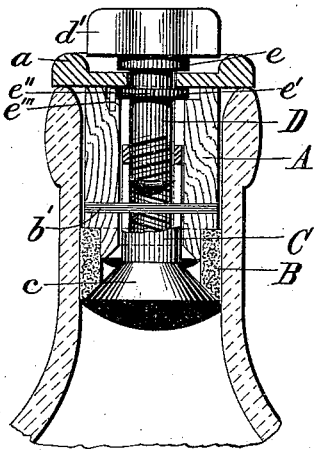
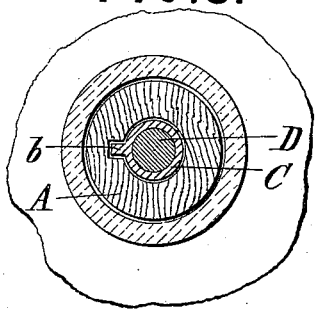


FIG:3.



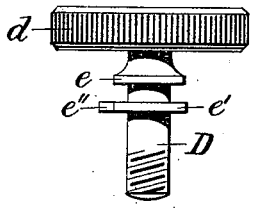
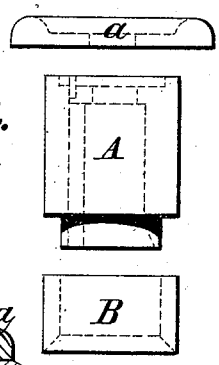


FIG:4.



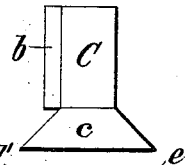
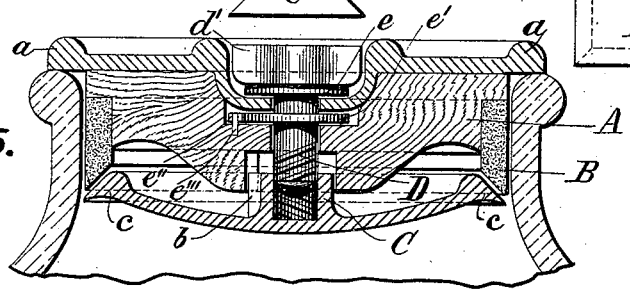


FIG:5.



WITNESSES.

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UNITED STATES PATENT OFFICE.

BENJAMIN HAIGH, OF LONDON, ENGLAND.

EXPANDING STOPPER.

SPECIFICATION forming part of Letters Patent No. 456,257, dated July 21, 1891.

Application filed June 20, 1890. Serial No. 356,039. (No model.) Patented in England March 4, 1889, No. 3,752; in France December 12, 1889, and in Belgium December 16, 1889.

To all whom it may concern:

Be it known that I, BENJAMIN HAIGH, a subject of the Queen of Great Britain, residing at 65 Glengall Road, Isle of Dogs, London, England, have invented certain new and useful Improvements in Stoppers for Bottles, Jars, and the Like, (for which I have obtained patents in the following countries: Great Britain, No. 3,752, dated March 4, 1889; in France applied for December 12, 1889; Belgium applied for December 16, 1889,) of which the following is a specification.

My invention relates to an improved self-contained stoppering device for closing the mouths or openings of bottles and jars, applicable also for use with other containing vessels or receptacles and for other similar purposes.

In the accompanying drawings, illustrative of my said invention, Figures 1 and 2 are vertical sectional elevations; Fig. 3, a horizontal section on line A B, Fig. 1; and Fig. 4, elevational views of the various parts shown detached of my improved stoppering device, adapted for closing the mouths of bottles and like vessels. Fig. 5 represents a sectional elevation of a jar having my improvements adapted thereto.

In Fig. 2 the stoppering device is shown in the closed position. Figs. 1 and 5 show the stopper inserted in the mouth of the bottle or opening of the vessel but not screwed home.

The stoppering device (shown in Figs. 1 to 4, inclusive,) comprises a preferably wooden plug A, bored centrally with a recess throughout its longitudinal axis and provided with a flange rim or capsule *a*, resting on the mouth of the bottle, being formed either in combination with A or separately, and by means of which the plug A is suspended in the mouth of the bottle. A circumferential groove or recess is formed on the lower convex surface of said plug, which is fitted or surrounded with a flexible ring, gasket, or annulus B, of any suitable material, such as india-rubber or the like, projecting sufficiently past the end and of a diameter, when in position, corresponding to that of the plug A, so as to permit of the ready insertion of the stoppering device in the bottle-mouth. A sleeve-piece C, formed with an internal screw-thread, slides vertically within the central boring of the plug, its rotation being prevented by a projection or web *b*, working in a groove formed in the interior of the plug A, or by a pin *b'*, Fig. 2, which is passed transversely through the plug A and the longitudinal slots or guides formed in the sleeve-piece C. This latter, which is provided with a conical termination *c*, is raised or lowered on rotating the screwed plug D by its milled head *d*, Figs. 1 and 4, or by its winged termination *d'*, Fig. 2.

When the stoppering device is inserted in the mouth of the bottle and the sleeve C raised on rotating the screwed plug or bolt D, the conical termination *c* of the sleeve C is raised or drawn up also, and so expands the flexible ring or annulus B, which expansion serves effectually to close the mouth of the bottle. The screwed stem or plug D, which is formed with flanges *e e'*, working one on each side of the capsule or flange *a* of the plug A, is cut with a quick screw-thread corresponding to that of the sleeve C, so that a half-turn will be sufficient to lock the stopper in the mouth of the bottle, or vice versa. To limit the rotation of the screwed plug or stem D and so prevent the accidental separation of the parts, the flange *e'*, which partially rotates in the recess formed below the capsule *a* in the plug A, is formed with a projection *e''*, engaging with the stop-pin *e'''*.

Fig. 5 is a sectional elevation of my stoppering device adapted for closing the mouth of a jar or wide-mouthed bottle or the like. The construction and working of the device here shown is exactly the same as that previously described with reference to Figs. 1 to 4, save only that the several parts are necessarily enlarged to coincide with the increased size of the opening of vessel to be closed.

I am aware that prior to the date of invention it has been proposed to employ bottle and like stoppers fitted with a ring or gasket of flexible material expanded or compressed by means of a conically-headed plug or bolt raised by a screw-threaded sleeve or nut. I therefore make no claim, broadly, for such a combination; but

What I claim is—

A stopper for bottles, jars, and the like, comprising a downwardly-projecting hollow plug A, suspended by a flange or capsule *a*, com-

bined with a bolt or stem D, formed with a screw-thread at its lower end and provided with flanges *e e'*, stop-piece *e''*, and pin *e'''*, an internally-screw-threaded sleeve-piece C, having a conical head, flange, or extension *c*, and longitudinal rib or shoulder *b*, sliding within a groove or guide formed in the plug A, substantially as herein set forth.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

BENJAMIN HAIGH.

Witnesses:
BENJAMIN KING,
CHARLES ENNIS.