(No Model.)

J. J. VARLEY.

STOPPER FOR BOTTLES, JARS, &c.

No. 525,370. Patented Sept. 4, 1894.

Fig. 1.

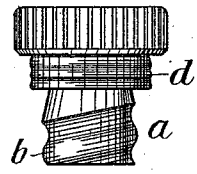


Fig. 2.

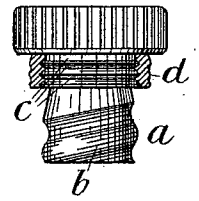


Fig. 3.

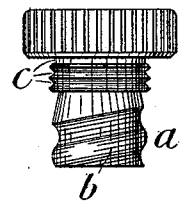
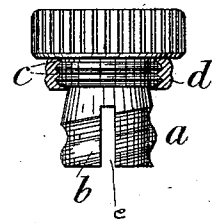


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN JAMES VARLEY, OF LONDON, ENGLAND.

STOPPER FOR BOTTLES, JARS, &c.

SPECIFICATION forming part of Letters Patent No. 525,370, dated September 4, 1894.

Application filed February 27, 1894. Serial No. 501,724. (No model.)

To all whom it may concern:

Be it known that I, JOHN JAMES VARLEY, a subject of the Queen of Great Britain, residing at London, England, have invented new and useful Improvements in Stoppers for Bottles, Jars, and the Like, of which the following is a specification.

My invention relates to screw-stoppers for bottles, jars and the like.

Such stoppers are usually provided with an india-rubber or other ring or seating placed upon the neck or stem of the stopper, which it has been before proposed to form with a single groove forming a ridge over which the ring was stretched, the upper edge of the ring entering the groove and the lower edge embracing part of the stem; the middle of the ring or seating resting upon the ridge was therefore caused to project beyond the edges or was of larger diameter than the edges with the result that only about one-third of the ring acted as a seating and was by this fact soon compressed at that part and rendered unsuitable for the object for which it was intended.

My invention has for its object to render the entire surface of the ring available for making the joint in the bottle neck and for this purpose in place of a single groove or ridge I make a number (preferably four or five) of grooves upon that part of the stem on which the seating is placed for the purpose hereinafter described.

In order to enable my invention to be fully understood I will describe the same by reference to the accompanying drawings, in which—

Figure 1 is an elevation of a screw-stopper made according to my invention. Fig. 2 is a similar view showing the india-rubber ring or washer in section. Fig. 3 is an elevation of the stopper without the ring; and Fig. 4 is a view similar to Fig. 2 showing a slight modification of the stopper.

Similar letters of reference indicate similar or corresponding parts in the several figures.

a represents a stopper made of any suitable material such as wood, composition or vulcanite as usual, and *b* is the screw-thread formed thereon adapted to screw into a corresponding screw-thread in the neck of the bottle to be closed.

c, *c* represent a series of shallow grooves which I form upon a cylindrical portion of the stem of the stopper on which the seating is placed, and *d* represents the usual india-rubber ring forming the seating. In the drawings only three grooves *c* are shown for the sake of clearness but in practice I use four or five grooves. This cylindrical portion is made long enough to allow the required number of grooves to be made thereon, and extending preferably from the stopper head to the end of the stem: the ring when applied having or assuming the same cylindrical form as the grooved stem itself, as distinguished from the objectionable conical form which it assumes when it is held by only a single groove. When this ring is placed upon a stopper provided with grooves as described the inner part of the ring will partly enter the grooves *c*, *c* and the outer surface of the ring will therefore be slightly depressed between the ridges upon which the ring rests, as clearly shown in Figs. 1, 2 and 4. This part of the ring will thereby be caused to retain its elasticity and at the same time be sufficiently rigid to make a perfect joint, that is to say, the whole surface of the ring will not be equally compressed but the part of the ring in the grooves *c*, *c* will be protected by the part which rests upon the ridges and will be maintained in an uncompressed state, while the exterior of the ring, when properly in place for use is substantially or nearly a flat surface, presenting the appearance of a section of a cylinder having a series of annular slight undulations caused by the series of grooves and their intervening ribs on the stem.

The stopper shown in Fig. 4 is substantially the same as that represented in Figs. 1, 2 and 3, except that I only show one groove which is made around a bead on the stopper just below the under side of the head.

e represents a slot which is sometimes formed in screw-stoppers when made of wood for the purpose of allowing for the contraction and expansion of the material.

A screw-stopper made according to my invention and fitted with an india-rubber ring as described will not require to be screwed into the bottle with such force as is now necessary and can be more easily removed from a bottle, and will be more persistently held to its position on the stopper because of close

clinging in the several grooves, and not easily displaced in use or handling.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. A screw stopper for bottles, jars and the like, having a cylindrical stem and having a number of similar grooves upon that part of the stem on which an elastic seating is placed, such grooves serving not only to hold the seating firmly to place, but also to hold it in a cylindrical form corresponding to that of the stem, as and for the purposes described.

2. A screw stopper having a cylindrical stem and having thereon a series of parallel grooves *c. c.* one above the other adapted to receive and retain and combined with an elastic tubular seating, which when stretched and applied to the stopper, covers the whole stem from its head to its screw-thread in the form of a cylindrical sleeve, as shown and described.

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