(No Model.)

W. W. MACVAY & R. SYKES.

STOPPERING OF BOTTLES.

No. 277,758. Patented May 15, 1883.

FIG. 2.



FIG. 4.



FIG. 1.

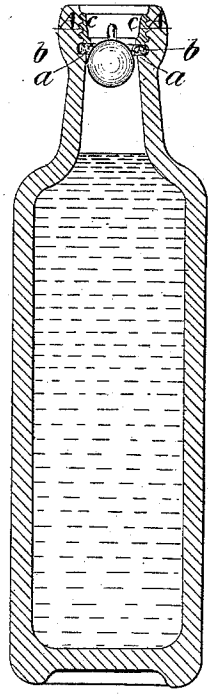


FIG. 5.

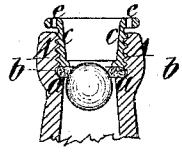
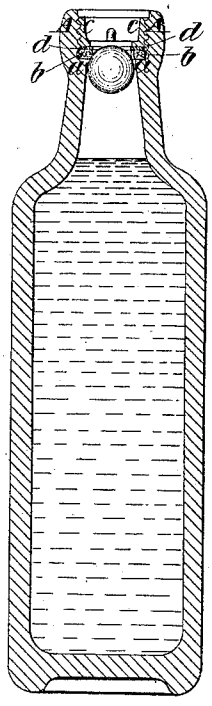


FIG. 6.



FIG. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM W. MACVAY AND RICHARD SYKES, OF CASTLEFORD, COUNTY OF YORK, ENGLAND.

STOPPERING OF BOTTLES.

SPECIFICATION forming part of Letters Patent No. 277,758, dated May 15, 1883.

Application filed March 5, 1883. (No model.) Patented in England February 22, 1877, No. 738; in France August 21, 1877, No. 119,991; in Belgium August 22, 1877, No. 42,884, and in Germany September 13, 1877, No. 785.

To all whom it may concern:

Be it known that we, WILLIAM WILSON MACVAY and RICHARD SYKES, subjects of the Queen of Great Britain, residing at Castleford, in the county of York, England, have invented new and useful Improvements in the Stoppering of Bottles, of which the following is a specification.

The object of this invention is to provide a tight, convenient, cheap, and neat means for stoppering bottles, more particularly those containing aerated liquids. For this purpose we form the inside of the bottle-neck with a screw-thread, and below this we form the neck with a ledge, which serves as a support for an india-rubber or other elastic washer or ring, on the top of which we by preference place a metallic or other hard washer. The cap or ferrule, which may be of glass, metal, wood, or other suitable substance for this purpose, is formed with a screw-thread corresponding with the screw-thread in the bottle-neck. When screwed sufficiently in the neck against the metallic washer it retains and compresses the aforesaid elastic washer, which thus forms a shoulder or seat for a glass or other ball or marble pressed against it by the gas-pressure of the liquid or fluid. The marble is dropped into the bottle first, and then the elastic washer is placed on the ledge, and on the top of this we place the metallic washer for the cap or ferrule to press against. The cap or ferrule is formed with milled edge or with two holes, in which a key is made to fit for turning it round, as required.

Figure 1 of the accompanying drawings is a vertical section through a bottle the neck of which is formed and fitted according to this invention. Fig. 2 is a plan of the stoppering cap or ferrule. Fig. 3 is a section through a bottle with a similar stoppering appliance, and Fig. 4 a plan of the cap or ferrule. Fig. 5 is a section through a bottle-neck with a slightly different form of cap or ferrule, and Fig. 6 a view of a bottle-neck with another form of ferrule.

The bottle-neck A is formed with a screw-thread, at the bottom of which there is a ledge or shoulder at *a*. On this shoulder we place an india-rubber or other elastic washer, *b*, forming the seating for the marble or other ball which has been previously dropped into the bottle.

c is the ferrule or cap, which holds the elastic washer *b* in place either by directly pressing on it, as shown at Fig. 1, or an interposed metallic or other hard washer, *d*, as shown at Fig. 3. In the former case the ferrule *c* is shown with two projections at the inner circumference for the purpose of affording facility for screwing it up or down, and in the latter with two notches for the same purpose. As shown at Fig. 5, the ferrule *c* is formed with two holes, *e*, for the same purpose, a key being made to fit the holes. In Fig. 6 the ferrule is shown with a milled edge for the purpose of screwing it up or down by simply taking hold of it between the fingers; but the form of the ferrule may be varied greatly without departing from the nature of this invention.

We are aware that it is not new to make a screw-thread in the neck of bottles. (See the British patents of Westwood, No. 434 of 1860, and Edwards, No. 1,617 of 1874.) An inner metal lining is also not new, as shown in the specification of Edwards' patent aforesaid. We are also aware that a screw-neck and metal ferrule have been combined with a washer, as in Walker's British Patent No. 1,797 of 1876, but in Walker's arrangement there is no distinct ledge and groove for the elastic ring, the ring being in the screw-thread. In our improvement there is a special ledge or shoulder, *a*, provided for the elastic ring, which ledge or shoulder is necessary to make a successful stopper, because when there is no ledge in the mouth the washer is only in the bottom thread of the

screw, where it is not compressed, and not being horizontal the washer receives a cant by the screw-thread, and there is in fact nothing to support the under edge of the washer. By providing a ledge in the mouth of the bottle to support the washer and a thimble to screw down upon the same, the washer is secured in its place, and a good cushion formed for the ball to come against, and the device rendered practically successful.

We claim as our invention—

The bottle-neck having an internal screw-thread and a recess with a shoulder, in combination with an elastic washer, a tubular ferrule securing the edges of the washer to the shoulder, and a ball-valve below the elastic washer, substantially as specified.

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