

UNITED STATES PATENT OFFICE.

JOHN GILBERT SURMAN, OF HEALING, ENGLAND.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 636,585, dated November 7, 1899.

Application filed August 25, 1898. Serial No. 689,508. (No model.)

To all whom it may concern:

Be it known that I, JOHN GILBERT SURMAN, clerk in holy orders, a subject of the Queen of Great Britain, residing at the rectory, Healing, county of Lincoln, England, have invented certain new and useful Improvements in Bottles that Cannot be Refilled, of which the following is a specification.

This invention relates to that class of bottle-stoppers designed to prevent the refilling of bottles after the original contents have been discharged.

The chief object of my present invention is to provide a novel bottle-stopper which is very simple in construction, embodies but few parts, is easily applied, and is effective and reliable in use.

To accomplish this object, my invention consists in the features of construction and the combination or arrangement of parts hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a sectional elevation of the upper part of a bottle fitted with my improved stopper. Fig. 2 is a section on the line *a b* of Fig. 1, and Fig. 3 is a section on the line *c d*. 4 is the upper part of the bottle in section. The neck of the bottle is slightly tapered, as shown.

The numeral 5 in Figs. 1 and 2 indicates the outer shell of my improved stopper, which is similarly tapered to fit the neck of the bottle.

The numeral 11 indicates a ring of cement laid in an annular groove or cavities to render the stopper fluid-tight and secure it in position, the cement being such as will expand greatly and break the glass neck if heat is applied to loosen the stopper. Nearly all the ordinary cements in common use have the property of expanding to a greater or less degree when heated. Those in which fish-glue is an ingredient, as well as rubber cement, and those containing lime, which are especially adapted to be used in cementing glass, expand considerably under heat and are well suited for use in securing the shell 5 in the neck of a bottle in the manner described.

The stopper consists of an external shell

having three or more ribs 6 6 6, which act as guides to the ball 7. The cover of the stopper is formed with a central opening 8 for the outward passage of the fluid. The lower end of the shell of the valve forms a seat for the ball, forming a fluid-tight valve.

9 is a cork which may be inserted into the neck of the bottle above the stopper to retain the contents. After removing the cork the bottle may be emptied in the usual manner, the ball rolling off the seat to the upper part of the ribs 6, being prevented from falling out by the disk 10, attached to the ribs, which disk also prevents tampering with the ball. In case of an attempt being made to refill the bottle, the ball-valve becomes closed, and this prevents refilling.

The valve and ball may be made of any suitable materials. The ball 7 is formed of a material which has the same specific gravity as the fluid in the bottle, and if this is for any reason not practicable it may be weighted to any required degree to produce the same results.

I claim—

The combination with a bottle having a tapering neck, of the bottle-stopper consisting of the tapering shell formed in a single piece with the exterior annular groove, the depending conical bottom wall having a center orifice, the flat top wall above said groove, having a center orifice and the radial, interior ribs, the disk set between the inner edges of the said ribs, at a distance below the flat top wall of the shell, a ball-valve playing along the inner edges of the radial ribs between said disk and the conical bottom wall of the shell, and a ring of cement lying in the said exterior annular groove below the flat top wall of the shell, all substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN GILBERT SURMAN.

Witnesses:

GEORGE C. DOWNING,
FRED C. HARRIS.