

(No Model.)

J. E. CLERC.

DEVICE FOR CLOSING BOTTLES OR SIMILAR VESSELS.

No. 487,385.

Patented Dec. 6, 1892.

Fig. 1.

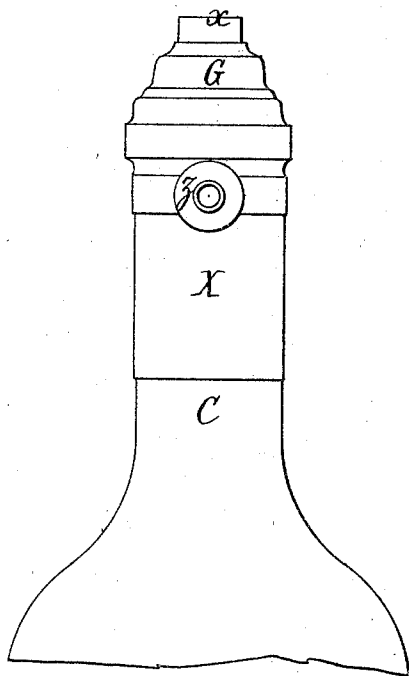


Fig. 2.

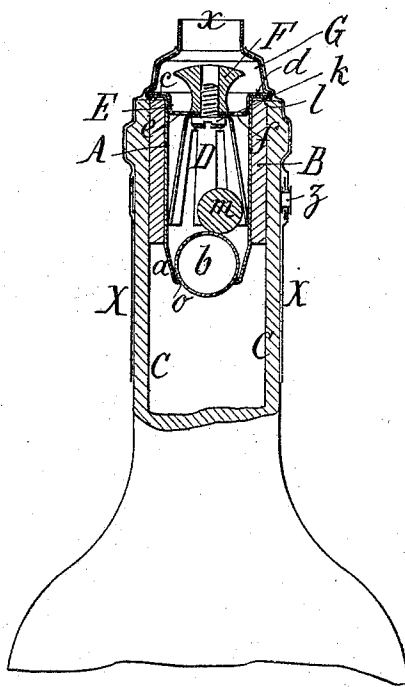


Fig. 4.

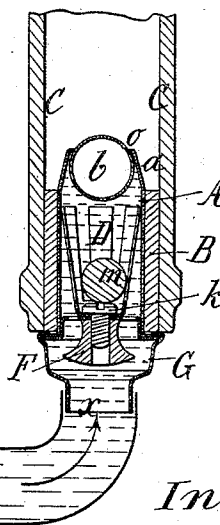
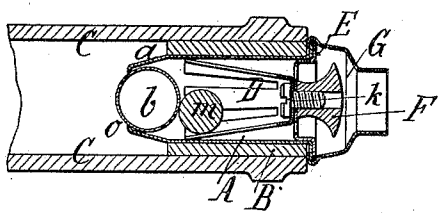
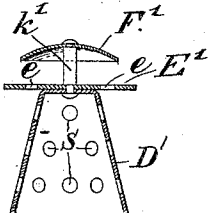


Fig. 3.



Witnesses: Fig. 5.



Inventor:

Herbert Bloppan.
Peter A. Ross.

Jules E. Clerc.
by Henry Conner
his Attorney

UNITED STATES PATENT OFFICE.

JULES EMMANUEL CLERC, OF BORDEAUX, FRANCE.

DEVICE FOR CLOSING BOTTLES OR SIMILAR VESSELS.

SPECIFICATION forming part of Letters Patent No. 487,385, dated December 6, 1892.

Application filed July 28, 1892. Serial No. 441,471. (No model.)

To all whom it may concern:

Be it known that I, JULES EMMANUEL CLERC, a citizen of the French Republic, residing at Bordeaux, in the department of Gironde, France, have invented certain new and useful Improvements in Devices for Closing Bottles and Similar Vessels to Prevent Fraudulent Refilling, of which the following is a specification.

Several devices for closing bottles have been proposed with the view of preventing the fraudulent refilling of the bottle with a liquid of inferior quality to that which it originally contained, and some of these constructions employ as an obturating device a metal ball or sphere which allows the liquid to be poured out but prevents the introduction of other liquid into the bottle. These devices, however, have not been entirely satisfactory. In fact, it is always possible, with certain precautions, to introduce liquid. It is sufficient for that purpose to incline or reverse the bottle and to then force in liquid, the ball occupying by virtue of its weight a position sufficiently distant from its seat to leave a passage for the liquid. It is this defect which I seek to correct by the device which forms the object of my present application for patent.

My invention is based upon the employment of a floating obturating-ball or check-valve—that is to say, a ball of less specific gravity than the liquid. I construct this ball hollow and by preference of aluminium; but it may be of other material. It is thus impossible to introduce liquid when the bottle is turned upside down, since the liquid forced in carries the ball with it and forces it against its seat. To secure the ball in this closing position even when the bottle is in the horizontal position, I employ an additional ball which is smaller and of heavier material and which drives forward the first ball under the action of the liquid.

My invention differs from previous constructions in the combination of parts which compose the obturator and in those which complete the closing.

In the accompanying drawings, Figure 1 is a side elevation of my device seen applied to the neck C of a bottle, and Fig. 2 is a vertical axial section of the same. Fig. 3 is a view

similar to Fig. 2, but showing the positions of the moving parts when the bottle lies on its side; and Fig. 4 is a similar view showing the positions of the parts when the bottle is inverted. Fig. 5 illustrates a slight modification which will be hereinafter described.

A is a sheath or socket, the sheath fitted onto a tubular stopper B, of cork, rubber, or the like, which latter fits into the neck of the bottle. On the outer end of the sheath A is a flange c, which is supported on the outer end of the stopper B, and the inner end a of the sheath is contracted and conical and has in it an aperture o. The obturating-ball b (seen detached in Fig. 6) is within the sheath A and controls the aperture o, the conical extremity of the sheath forming a seat for said ball, which operates as a valve, opening outward.

Within the sheath A, above or exterior to the ball, is a sort of conical or flared hood or cage D. This cage may be struck up from sheet metal; and it consists of a base having in it an aperture h and of light flaring fingers, which project inwardly.

E is a flanged plate of circular form. The flange d of this plate rests on the flange c of sheath A, and the cage D is secured to the plate by a screw k, which passes through the hole h in cage D and a hole g in plate E and screws into a hole i in an exteriorly-arranged knob or button F.

Before introducing the cage D into the sheath A the ball b is introduced and also a smaller heavy ball m. When the cage D has been placed so that the flange d rests on the flange c of the sheath A, the parts are secured firmly together by means of an open cap G. This union is effected by flange l on the cap G, which rests on, embraces, and takes under the flanges c and d. In the plate E are suitable apertures e and f for the passage of liquid in filling the bottle or vessel.

After the device described has been inserted in the neck of the bottle, as seen in Fig. 2, its removal is prevented by means of a capsule X, which incloses the neck of the bottle and the fillet thereon. This capsule may have any of the known securing devices, such as an eyelet z, for example.

The bottle is filled, of course, before the application to it of my device, and when being

emptied the liquid passes out through the opening α in the cap G; but after it is empty it cannot be refilled for the reason that the heavy ball m rests on the floating ball b and prevents it from rising from its seat even when submerged. If the bottle be laid on its side, as seen in Fig. 3, in order to cause the ball b to roll away from its seat, the heavier ball m will roll down the incline formed by the flaring cage D and force the ball b up to its seat; or if the bottle be inverted, as in Fig. 4, and an attempt be made to fill it while in this position, the ball b will rise on the incoming liquid and close the aperture o . The enlarged head of the knob F forms a screen, which is interposed between the aperture or passage α and the ball b in such a manner as to prevent the insertion of a wire or rod at the aperture α and the disturbance of the ball b thereby.

The only object in forming the cage D of fingers is to leave a free passage through it for the liquid. It is only necessary that apertures shall be provided in the cage for this purpose, and these may be formed in any way.

I utilize the knob F (which as here shown is a nut) to form the screen to prevent the introduction of a wire; but it is obvious that this construction may be varied without departing from my invention. For example, I may substitute for the assembled devices seen in Figs. 2, 3, and 4 those illustrated in Fig. 5, wherein the cage D' is cone-shaped and has in its wall apertures s for the passage of the liquid. This cage is riveted to a flat apertured disk or plate E' by means of a stem k' , on the top of which is riveted a screen F', which takes the place of the head of the button F, previously described.

It will be seen that the two balls b and m are inclosed within a double conical cage or inclosure and that the heavier ball m is exterior to the lighter ball b . This is the essential characteristic of the device. It is not absolutely essential that the ball b shall be hollow so long as it is light enough or that the ball m shall be smaller than the ball b so long as it does not impede the outflow of the liq

uid; but I prefer to make them as described. The balls will be, of course, of such size that they cannot pass each other within the inclosure they occupy. The stopper B is only a soft packing and is not absolutely essential to the device.

Having thus described my invention, I claim—

1. In a device for preventing the fraudulent filling of a bottle or other vessel, the combination, with a tubular sheath having a conical valve-seat at its inner end and an apertured conical cage within said sheath and exterior to said valve-sheath, of a light ball or ball-valve b within said sheath and a heavier ball m within said sheath and exterior to the ball b , said balls occupying the double conical inclosure formed by the valve-seat and the cage, substantially as set forth.

2. In a device for preventing the fraudulent filling of a bottle or other vessel, the combination, with a tubular casing having a valve-seat at its inner open end, the open cap G at the outer end of said sheath, the apertured and flared cage fixed in said sheath and forming with the contracted inner end of the latter an inclosure for the balls, the lighter ball b within said inclosure, and the heavier ball m , also within said inclosure and exterior to the ball b , of the screen within the cap G to prevent the insertion of an instrument for displacing the ball b , substantially as set forth.

3. A device for preventing the fraudulent filling of a bottle or other vessel, having a double conical inclosure containing a light ball-valve b , controlling the filling-inlet, and a heavy ball m , arranged exterior to the ball b , whereby the ball m serves to hold the ball-valve to its seat when the bottle is erect and when it is horizontal or inclined, as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JULES EMMANUEL CLERC.

Witnesses:

ED. DE SANTA COLOMA,
BERRIEUX.