No. 616,442. Patented Dec. 27, 1898.

J. L. ADAMS.

DEVICE FOR PREVENTING REFILLING OF BOTTLES.

(Application filed Aug. 20, 1897.)

(No Model.)

Fig. 1.

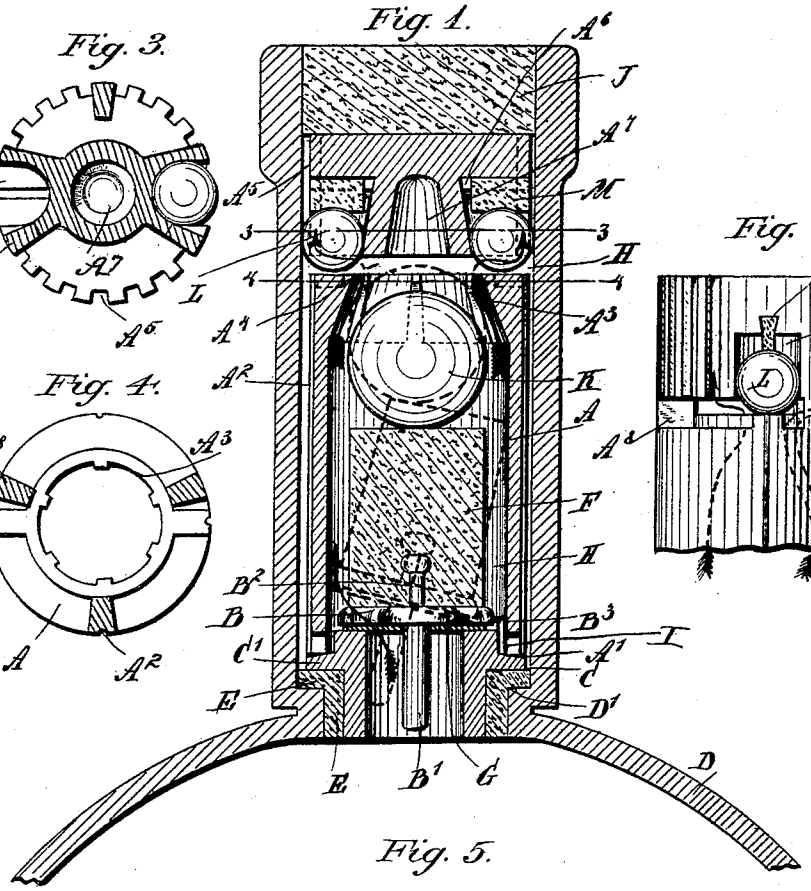


Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

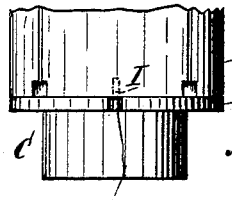


Fig. 6.

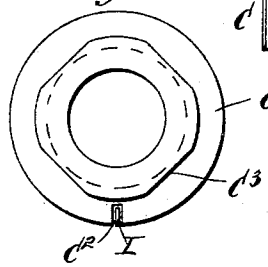


Fig. 7.

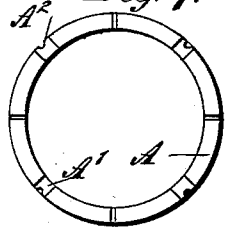
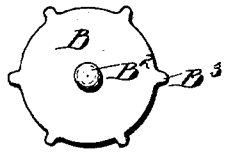


Fig. 8.



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DEVICE FOR PREVENTING REFILLING OF BOTTLES.

SPECIFICATION forming part of Letters Patent No. 616,442, dated December 27, 1898.

Application filed August 20, 1897. Serial No. 648,945. (No model.)

To all whom it may concern:

Be it known that I, JOHN LESTER ADAMS, of New York city, in the county and State of New York, have invented a new and Improved Device for Preventing the Refilling of Bottles, of which the following is a full, clear, and exact description.

My invention relates to means for preventing the refilling of bottles, and has for its object to produce a device of the above-indicated class which will consist of few parts, which will readily fit bottles of substantially the usual shape, which cannot be removed or tampered with after it is once inserted, and which consists entirely of glass and cork or similar material which will have no effect upon the flavor of the liquid contained in the bottle.

My invention will be fully described hereinafter, and its novel features will be pointed out in the appended claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a sectional elevation of a bottle-neck with my improved device therein. Fig. 2 is a side elevation showing the upper end of my improved device. Fig. 3 is a cross-section of the same substantially on the line 3 3 of Fig. 1, one of the locking-balls L being omitted. Fig. 4 is another cross-section on the line 4 4 of Fig. 1. Fig. 5 is an elevation showing the valve-seat and the lower end of the shell resting thereon. Fig. 6 is a plan of the valve-seat. Fig. 7 is an inverted plan of the shell, and Fig. 8 is a plan of the valve.

My improved device consists of three main parts—namely, a body or shell A, substantially cylindrical in shape, so as to fit closely within the neck of the bottle, a valve B within said shell, and a valve-seat C, upon which the shell and valve are adapted to rest. In order to make a tight joint between the valve-seat C and the neck of the bottle D, I interpose a cork washer E between the bottle and the seat, said cork preferably bending over a flange or shoulder D′ provided at the junction of the neck of the bottle with the body of the bottle. The valve-seat C is made of glass and consists of a hollow body having a peripheral flange C′, adapted to rest on the cork E. The valve B is likewise made of glass and comprises a disk forming the valve proper and a stem B′, extending downwardly, also a headed projection B^2, extending upwardly. The periphery of the disk B is corrugated, as shown at B^3 in Figs. 1 and 8. The headed projection B^2 is adapted to enter a central aperture in a cork F, which is thus connected with the valve B and serves to make it buoyant. On the under side of the valve-disk B is arranged a washer G, made of paper or like material. The valve is arranged within the central space H in the shell A, and when it is desired to assemble the parts the valve-seat is connected to said shell by passing a strip of paper or cardboard I into a notch C^2 in the flange C′ of the valve-seat C, the upper end of the said strip I fitting between the upper end of the valve-seat and the inner surface of the shell. (See Figs. 5 and 6.) The strip I is merely for the purpose of holding the valve-seat C to the shell A before they are inserted into the neck of the bottle, so as to facilitate the putting together of the device. The upper end of the valve-seat is made with straight or approximately straight portions C^3, as shown in Fig. 6, so that when the shell A is fitted around said upper portion of the seat free spaces will be formed between the seat and the shell wherever said straight portions occur. The lower end of the shell is provided with transverse openings A′, adapted to register with the free spaces above mentioned, and on its outside the shell is provided with longitudinal grooves A^2, preferably communicating with said transverse apertures A′.

Above the shell is located an ordinary cork J, it being understood that this cork is removed when it is desired to pour the liquid out of the bottle. In that case the longitudinal grooves A^2, in connection with the transverse apertures A′ and the free spaces at the recessed portions C^3, form air-passages leading to the central space H. The necessary vent is thus provided to permit of a regular outflow of the liquid. The longitudinal channels A^2 are not absolutely necessary, but are provided in order that the required vent may be had even when the shell A fits very tightly into the neck of the bottle.

Upon the cork F, which practically forms

a part of the valve B, is adapted to rest a ball K, which is for the purpose of preventing the valve from rising so far as to cause its stem B′ to leave the bore of the valve-seat C. (See dotted lines in Fig. 1.) The ball also serves as a weight to assist in carrying the valve back to its closing position. The upward movement of the ball is limited by its engagement with a seat A^3, which is preferably conical and ribbed, as shown in Figs. 1 and 4, so that when the valve is open and the ball in engagement with its seat the liquid may freely pass out through the bore of the seat C, the central space H, the channels between the ribs A^3, a transverse chamber A^4 arranged above said ribs, and longitudinal channels A^5 produced in the cylindrical surface of the shell at its upper end.

In order to prevent a removal of the device from the bottle after it is once inserted therein, I provide a locking arrangement constructed as follows: The upper end of the shell has recesses A^6, whose inner walls are inclined outwardly toward their lower ends, (see Fig. 1,) thereby forming a wedge in conjunction with the neck of the bottle. In said recesses I arrange the balls L, which are pressed downwardly by springs or elastic cushions M, which may consist of strips of cork, and the said balls are of such dimensions as to simultaneously engage the inner wall of the bottle's neck and the inner walls of the recesses A^6. The central portion of the shell A at its upper end may be recessed, as shown at A^7, for the purpose of reducing the weight of the device.

To insert the device in the bottle, the cork washer E is placed around the valve-seat C, the valve is put on, the ball K is inserted into the central space H of the shell A, and the shell and the valve-seat are connected by means of the strip I, as described. The device is then inserted into the neck of the bottle and driven home until the cork E is in tight engagement with the shoulder D′. Finally the cork or stopper J is inserted, as usual. It will be obvious that any attempt to remove the shell A from the bottle's neck will be unsuccessful, since any upward pull on said shell will cause the balls L to wedge between the inner wall of the recesses A^6 and the neck of the bottle, and the neck will break if such attempt is persisted in.

In pouring out the liquid the valve assumes the position indicated by dotted lines in Fig. 1, the passage through which the liquid flows out being indicated by the arrows. The passage through which the air is let in at the same time has been fully described hereinbefore. Since the valve is made to float, it is impossible to refill the bottle by inverting it and holding the neck under the liquid; also, when the bottle is upright the ball K will close the valve, and thus make it impossible to force any liquid in by pressure.

I desire it to be understood that various modifications may be made in my device without departing from the nature of the invention. I have shown two balls L as a locking device; but one may be sufficient, or, if desired, a greater number may be employed. The connection between the top part of the shell A and the lower part thereof can be made by three bars or studs A^8 or any other number of studs, or, if found convenient, the upper part may be made separate from the lower part.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

A device for preventing the refilling of bottles which comprises a hollow valved shell adapted for insertion into a bottle's neck, and having in its outer surface a recess with an inclined surface whose lower or inner end is nearer the periphery of the shell than its upper or outer end, a rolling locking device, such as a ball, held in said recess against said inclined surface, and arranged to project from the periphery of the shell, and a spring or elastic cushion engaging the upper or outer surface of the locking device to force it inward longitudinally of the shell toward the narrow end of said recess, substantially as described.

JOHN LESTER ADAMS.

Witnesses:
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