

No. 731,485.

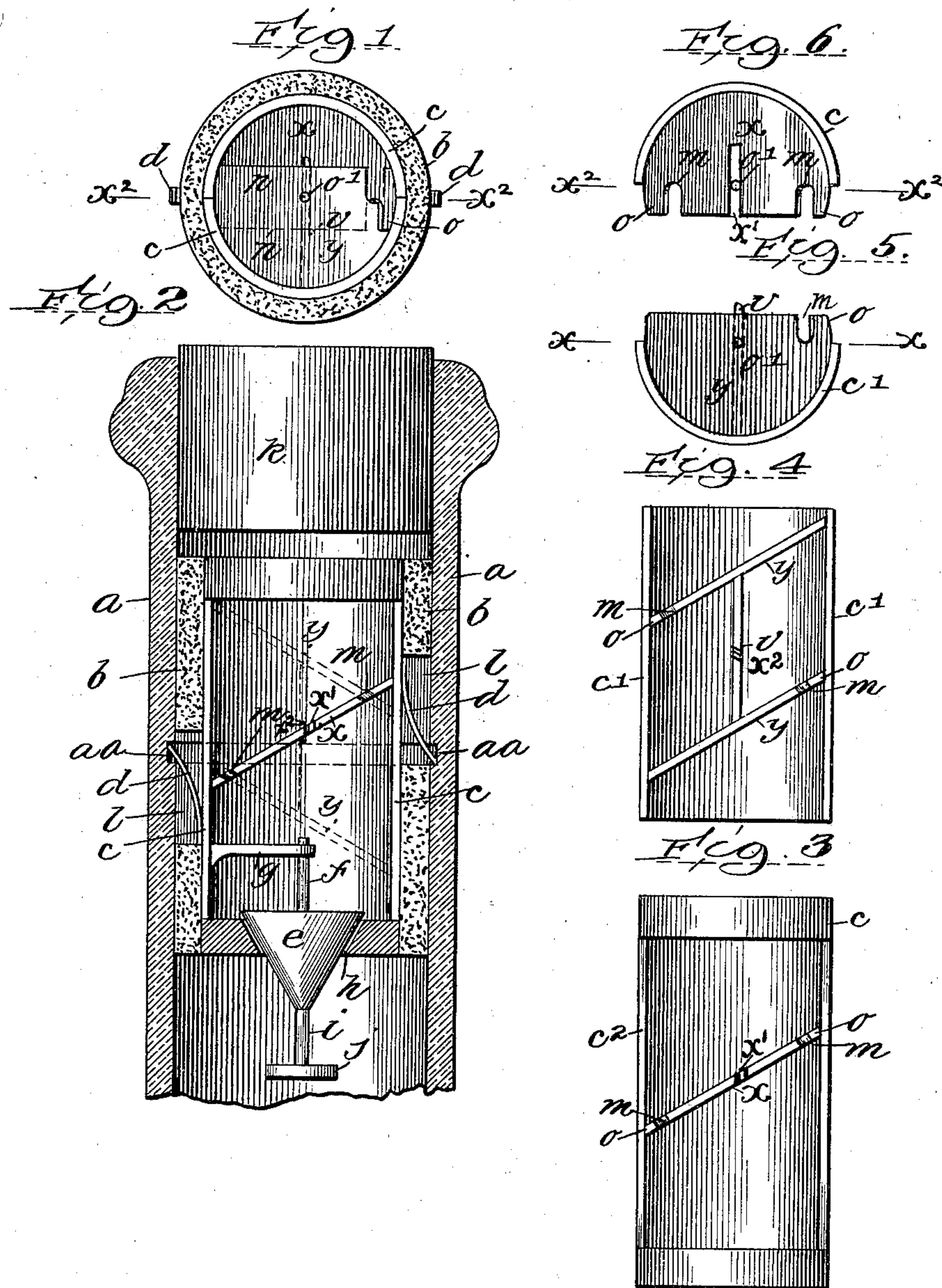
PATENTED JUNE 23, 1903.

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CORK FOR MAKING BOTTLES NON-REFILLABLE.

APPLICATION FILED NOV. 18, 1901.

NO MODEL.



Witnesses:

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by

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## UNITED STATES PATENT OFFICE.

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## CORK FOR MAKING BOTTLES NON-REFILLABLE.

SPECIFICATION forming part of Letters Patent No. 731,485, dated June 23, 1903.

Application filed November 18, 1901. Serial No. 82,670. (No model.)

*To all whom it may concern:*

Be it known that I, HUGO MELCHIOR, a citizen of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in Corks to Make Bottles Non-Refillable, which are fully set forth in the following specification, reference being had to the accompanying drawings, forming a part hereof, and in which—

Figure 1 shows my said new device in plan or top view without the bottle-neck, the same being a sectional view on a horizontal plane taken just below the top of the shell *c*. Fig. 2 shows my said device in a bottle in longitudinal section, together with the septum and diaphragms of the removed half in broken outlines to show the relative positions of the said several parts. Fig. 3 shows the tubular metallic shell *c* with its internal diaphragm exposed by the removal of the semicylindrical cover from its place on the cylinder *c*. Fig. 4 shows the cylindrical cover *c'* with its fixed diaphragms *y y* and septum *v* turned half-way around, so as to show its inside structure. Fig. 5 shows the diaphragms *y* in top view; and Fig. 6 shows the diaphragm *x* in top view, said diaphragms being shown separated or drawn away from their common axis, so as to show their entire structure and how they overlap.

Like letters of reference denote like parts in all figures.

The object of my invention is to construct a valved bottle-cork through which fluids may readily pass from the bottle, but to which nothing can be returned by that same discharging-channel.

To attain said desirable ends, I construct my bottle and its said cork mechanism in substantially the following manner, namely: Within the neck of my bottle is a channel *a a*, which extends, preferably, around the entire circumference of the neck, and into said neck is placed a shell *b*, of cork, which surrounds a metallic shell *c*, which is provided with a conical valve-seat at its lower end, and into said seat is fitted a correspondingly-coned valve *e*, seated in the valve-seat *h*. Stems *f* and *i* at the opposite ends of said valve guide and hold it within its place. A bracket-guide *g*, with a hole in its end, holds the freely-pass-

ing valve-stem *f*, and the cross-bar *j* on the stem *i* catches the lower end of the valve-seat *h* to check the valve. Diagonally across the tube *c* at about an angle of thirty degrees to the axis of said shell is secured a diaphragm *x*, which extends radially beyond the opening *c<sup>2</sup>* and the axis of said tube *c* from about a fifth to a third of the radius of said cylinder, more or less, as circumstances may require. Said extension or overlapping and interlocking of said diaphragms is clearly indicated in Fig. 1; also, in another form, equally clear, in Figs. 5 and 6. The opening *c<sup>2</sup>* is closed with a cover *c'*, having the same radius as said shell, and therefore forms a part of said shell, and within said shell are two parallel diaphragms *y y*, having the same angle to the shell-axis as the diaphragm *x*. Each of said diaphragms also extends beyond the axis of its shell in about the same proportion as was shown to be the case with the diaphragm *x*, and the free edge of each of said diaphragms is provided with one notch *m*, and the free edge of the diaphragm *x* is provided with two notches *m*. All of said notches are cut beyond a plane through and parallel to the shell-axis *c'*. A vertical partition *v* extends to the edges *n* of the parts *y y* and connects said parts. The said part *v* may also extend beyond said edges *y*. The said parts *x* and *v* are also notched at their intersections with notches *x'* and *x<sup>2</sup>*, and there may be several of said septums *v* in each half of said parts *c* and *c'*. The object of said partitions is to present obstructions to efforts to reach and tamper with the valve *e* and to prevent the possible inflow of any liquids. In connection with said facts it is evident that the farther said diaphragms overlap the better, provided sufficient room is left for the free outflow of liquid through the valve and between said interposed obstructions.

Oppositely-pointing springs *d* in slots *l* in the cork shell *b* pass their free ends into the annular groove *a a* and securely lock my said mechanism into the neck of the bottle. A common cork *k* closes the top of the bottle-neck and keeps my said mechanism free from dust.

It is evident that by properly inverting my bottle its liquid contents will flow through my said cork as freely as can be desired, but



that on erecting the bottle the valve *e* will close by gravity and effectually prevent any influx of liquids. It is also evident that the valve cannot be tampered with to let liquids  
5 pass into the bottle.

The spurs *o* of the diaphragm *x* pass into the shell *c'*, and the spurs *o* of the diaphragms *y* pass into the shell *c*, and thus hold the cover *c'* in place laterally, while the cylindrical ends  
10 of the shell *c* hold said cover in place longitudinally. Said notches *m* allow the overlapping of said diaphragms, as shown and clearly indicated in Figs. 5 and 6.

What I claim is—

15 1. The combination with a circumferentially-grooved bottle-neck, of a shell provided with locking-springs whose free ends are in opposite top and bottom sides of said groove, a gravity-acting valve, and two or more sets  
20 of overlapping diaphragms, notched at their intersections, and inclined to the axis of said shell in about equal-angled opposite directions, substantially as specified.

2. The combination with a circumferentially-grooved bottle-neck, of a cork-jacketed 25 shell with locking-springs held in the top and bottom sides of said groove, a gravity-acting valve and two or more sets of overlapping diaphragms, notched at their intersections, and inclined to the axis of said shell in opposite 30 directions of about equal angles, substantially as specified.

3. The combination with a circumferentially-grooved bottle-neck, of a shell provided with locking-springs whose free ends are in 35 opposite top and bottom sides of said groove, a gravity-acting valve, and two or more sets of intersecting diaphragms with free edges provided with notches to receive the opposite 40 edge, of a diaphragm, substantially as specified.

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Witnesses:

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