No. 45,112.

PATENTED NOV. 15, 1864.

A. ALBERTSON:
STOPPING BOTTLES.

Fig: 1

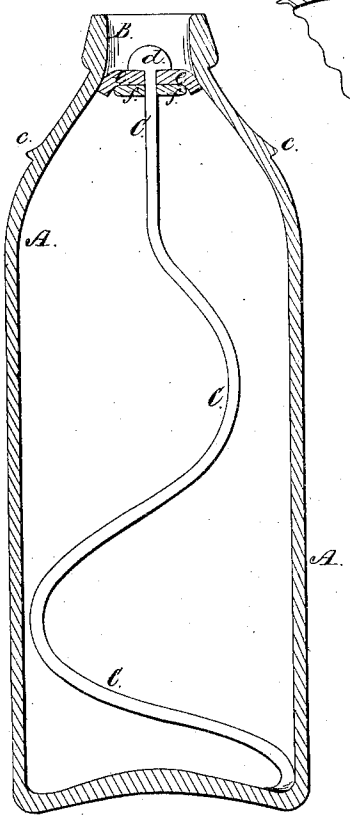


Fig: 3.

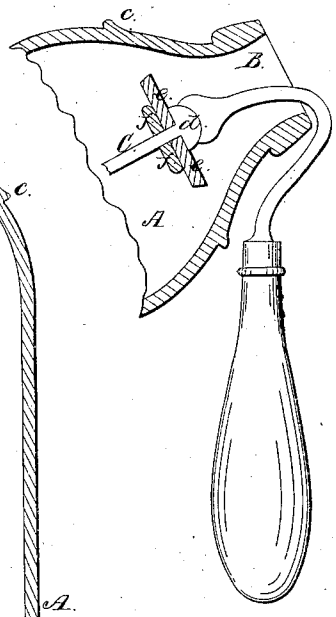
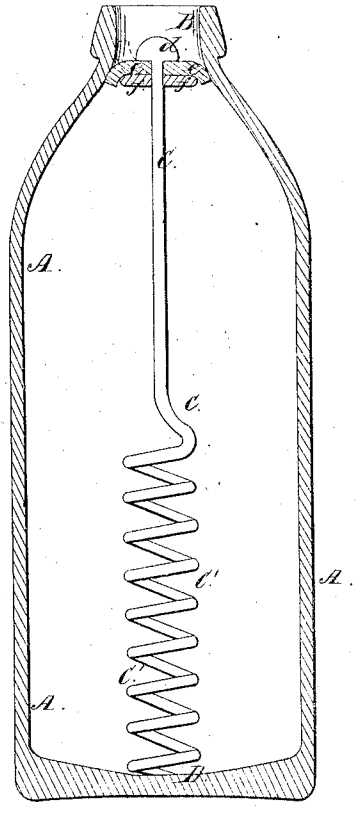


Fig: 2.



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UNITED STATES PATENT OFFICE.

ALBERT ALBERTSON, OF NEW YORK, N. Y., ASSIGNOR TO J. N. McINTIRE OF SAME PLACE.

IMPROVEMENT IN STOPPING BOTTLES.

Specification forming part of Letters Patent No. 45,112, dated November 15, 1864.

To all whom it may concern:

Be it known that I, ALBERT ALBERTSON, of New York, of the county of New York, in the State of New York, have invented a new and useful Improvement in Bottle-Stoppers; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this application.

My invention relates to that kind of bottle-stopper which closes the mouth of the bottle from within the bottle.

Previous to my present invention, several bottle-stoppers of this class have been suggested and made the subjects of Letters Patent to myself and others—as, for instance, one in which a floating ball is employed within the bottle, which is intended to float up into the neck of the bottle (as the latter is filled with any liquid) and there coming in contact with the internal surface of the bottle-neck form a tight joint or close the bottle; or, as for an instance, the one patented to me in which a valve is pressed upward against the internal surface of the bottle-neck by a spiral spring having its upper end secured to the rod of said valve and its lower end supported on an annular shoulder in the neck of the bottle; but all of the modes heretofore suggested are subject to objections, which it is the object of my present invention to overcome. In the floating (confined) stopper the closing is not effectually done, and in the device just mentioned, involving the spiral spring and valve, the necessary form of bottle renders the neck liable to be broken off very easily and the spring subject to derangement and catches and retains dirt.

My present invention consists in a stopper composed of a valve or cork, in combination with a spring-rod, the whole so constructed that it can be inserted into the bottle, and so that the spring will act to hold the cork or valve up against the interior of the bottle-neck, all as hereinafter to be fully explained.

To enable those skilled in the art to make and use my invention, I will proceed to describe the construction and operation of one of my new bottle-stoppers, referring by letters to the accompanying drawings, making part of this application, and in which—

Figure 1 is a vertical or longitudinal section of a (soda-water) bottle having one of my improved stoppers applied to it. Fig. 2 is a similar view of another bottle, and showing a modification of my said invention involving a different form of spring-rod; and Fig. 3 represents (in connection with the mouth of a bottle) an instrument which may be employed advantageously as an "opener" of my improved bottle-stoppers.

In the several figures, A represents a bottle, of any desirable design or form, and having a perfectly plain mouth, B—that is, without any annular internal shoulders or ledges. The stopper is composed of a rubber disk, *e*, (or washer of other suitably pliable and elastic material,) confined on a rod, C, between the head *d* of said rod and a metallic washer or collar, *f*, soldered or otherwise fastened to said rod near its headed end. Said rod C extends for a short distance from its head *d* about straight, and for the balance of the way is formed into a helical curve and properly made to constitute a spring bearing upon the interior of the bottom of the bottle, as seen at Fig. 1; or said rod C may be made straight for some distance beyond its head *d* and then formed into a spiral spring, as seen at Fig. 2, which rests upon the bottom of the bottle.

The form of "spring-rod" seen at Fig. 1 is best adapted to the ordinary form or shape of bottles, while that seen at Fig. 2 should have the bottle made (as shown in said figure) with the internal surface of its bottom dished out or depressed at the center, so as to induce the lower end of the spiral spring C′ to center itself in the bottle, when inserted and pressed down to confine the stopper in the bottle, as will be presently explained.

The diameter of the head *d*, it will be observed, is much less than the internal diameter of the neck B of the bottle, while the diameter of the washer or collar *f*, it will be seen, is nearly or about equal to the diameter of the interior of neck B. The object and effect of this mode of construction are to admit of the entire stopper or valve being readily

forced down into the bottle through the neck B, and to prevent it being forced outward through said neck again after it has been inserted.

After the stopping device, composed of the rubber disk *e*, spring-rod C, with its head *d* and collar *f*, has been completed or constructed as shown, the spring-rod (with its spring *c'*, when made as shown at Fig. 2) is put down through the neck B into the body of the bottle until the disk *e* rests on the edge or mouth of the bottle. The head *d* is now pressed on downward until the disk *e* is doubled up around the head *d*, as illustrated by the red lines at Fig. 2, and is forced down below the bulge of the neck, where it is free to distend itself again into its normal condition. The head *d* is then released from pressure, when the said disk *e* will be forced upward (or outward) again by the distention of the spring of rod C, (resting on the bottom of the bottle, and which was compressed to get the disk *e* down through the neck B,) and come in contact with the internal surface of the neck of the bottle and effectually close it up, as seen. After the disk has once been forced down through the neck B it cannot be forced by any pressure from within the bottle out again, since the disk *f* is so large in diameter as not to admit of its passing through the neck with the disk *e* doubled over its edge, (thus coming between said edge and the surface of the neck B.) Thus it will be seen that the valve portion of the stopping device, though readily inserted into the bottle, cannot be readily forced out; but it will be understood that this peculiarity of valve does not form any part of my present invention which may be used with any other form of valve which can be readily forced down through the neck and cannot be easily forced out again.

A bottle supplied with my new stopper may be filled in the same manner that bottles are filled provided with a device such as shown in Letters Patent granted to me on the 26th day of August, 1862, or in any other desirable manner. To open the bottle the head *d* is depressed (by means of an opener, as seen in Fig. 3, or in any other manner) and the contents poured out.

If deemed expedient, bottles may be formed with an annular rib, *c*, and an opener made with spring-catches, which will catch over the said rib.

Having fully explained my new bottle-stopper, and not wishing to limit myself to an precise construction of valve, (so long as it is made capable of easy insertion and so as to be pressed up from within without passing through the neck,) or to any precise form of spring-rod, what I claim, and desire to secure by Letters Patent, is—

A stopper or closing device for bottles, composed of a valve or cork, in combination with a spring-rod or its equivalent, the whole constructed to operate substantially as hereinbefore described.

In testimony whereof I have hereunto set my hand and seal this 20th day of October, 1864.

ALBERT ALBERTSON. [L. S.]

In presence of—
J. N. McINTIRE,
ANDREW J. TODD.