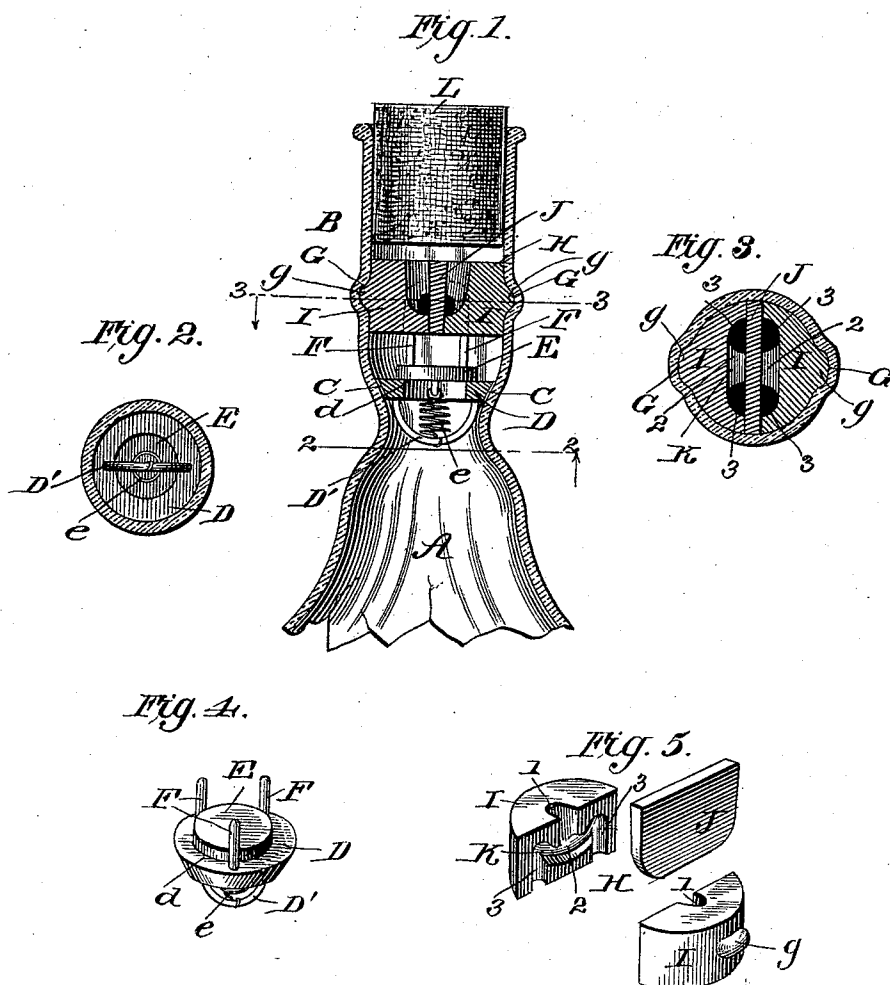


(No Model.)

C. B. SHELDON.
BOTTLE STOPPER.

No. 529,813.

Patented Nov. 27, 1894.



WITNESSES:
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BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 529,813, dated November 27, 1894.

Application filed February 2, 1894. Serial No. 498,919. (No model.)

To all whom it may concern:

Be it known that I, CEVEDRA B. SHELDON, residing at Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Bottle-Stopper, of which the following is a specification.

This invention is an improvement in that class of bottle stoppers which seeks to provide means for preventing the refilling of the bottle after it has been emptied of its original contents; and the invention consists in certain novel constructions and combinations of parts as will be hereinafter described and pointed out in the claims.

In the drawings—Figure 1 is a vertical longitudinal section of a portion of a bottle provided with my improvements. Figs. 2 and 3 are cross sectional views on about respectively lines 2—2 and 3—3 of Fig. 1, and Figs. 4 and 5 are detail perspective views.

The bottle A may generally be of any desired design and is provided with a neck B, which is drawn inward near its lower end or juncture with the bottle proper to form the seat C, for the plate D forming the valve seat. This plate D is fitted at its outer edge to the seat C and is securely cemented in place. Centrally the plate D has an opening forming the port and surrounding the same has a suitable valve seat *d*. The valve E is fitted to and bears above its seat and is arranged to open outward to permit the discharge of liquid from the bottle and to close inward to prevent any liquid being poured into the bottle. This valve is actuated by a spring *e*, which tends to hold it upon its seat, but yet has not sufficient tension to prevent the valve from opening to permit the outflow of the liquid when the bottle is uptilted. A special feature of my improvement is the location of this spring on the inner side of the valve so that in use the spring operates to seat the valve and the valve serves as a means to protect the spring from contact by any acid or the like that may be introduced into the neck of the bottle in attempting to effect an opening thereinto for the purpose of refilling the same. It is for this reason that I locate the valve spring on the inner side or within the bottle from the valve, so that after the bottle has been emptied the

spring will be effectually protected from the action of acids or the like which may be introduced with the wrong intent before described.

While the valve is preferably a plate as shown arranged to move bodily up from and down onto its seat it is manifest that I do not desire to be limited to any special form of valve as that might be varied without departing from my invention.

While the spring may preferably be a coil spring as shown and may also be connected with a bow D' dropped from the valve seat D it is manifest that the form of the spring and the manner of connecting the same may be varied without departing from the broad principle involved, that being the location of the spring in such manner that it will be protected by the closing of the valve on its seat against the injurious influences of acid introduced into the neck of the bottle.

On the upper side of the plate D I mount a number of upwardly projecting pins or rods F, which fit alongside of and serve as guides by which to direct the motion of the valve F in the ordinary use of the device and also to guide such valve to and from its seat if at any time the spring should be broken. This guiding of the valve is aided by forming it comparatively thick as shown to avoid any twisting thereof between the rods F. In the neck of the bottle above the upper ends of the rods F I form internally seats or sockets G, which preferably are formed by a proper formation of the flasks to enable them to be blown into the neck of the bottle as shown. These sockets G are preferably elongated in the direction of the circumference of the bottle neck for the purpose presently described.

To protect the valve from being opened by a wire or other instrument, I provide above it a guard H comprising two similar segmental sections I which are provided on their outer sides with projections *g*, fitted to the seats or sockets G. These projections are elongated similarly to the sockets G so that when fitted therein the formation of projections and sockets will operate to prevent any twisting of the sections and will consequently facilitate the introduction of the guard sections in the use of the device. The guard

section also has a central or spreading section J which for convenience of reference I term the spreader and in practice the two outer sections are first inserted into the neck of the bottle with their projections *g* fitting in their respective sockets G and the spreader J is then forced between the sections I and cemented or otherwise secured in place. This forms such a closure of the neck of the bottle as to prevent the introduction of any instrument by which to tamper with the valve; but in order to permit the outflow of liquid from the bottle as desired, I provide through the guard H a circuitous passage or passages K. While I do not desire to be limited to any special arrangement of such passages K, it is preferred to form them in the sections I and in the inner face of each of such sections as shown in the detail view. In specifically describing such passage K it may be said to be formed with a channel 1, leading centrally from the outer end of the section I, communicating at its inner end centrally with a cross channel 2 from the opposite ends of which channels 3 lead to the inner end of the section I, as shown. It will be seen that the channels 1 and 3 are so related that an instrument introduced into channel 1 will strike the lower wall of the channel 2 and be prevented thereby from getting into or through the channel 3, and that access can only be had to the valve by drilling through the guard H. To avoid this I form the several portions of the guard H of chilled iron or steel or other suitable drill-resisting material so that the drilling of the guard H would necessitate so much pressure or force as to break the bottle before it could be effected.

In operation when the bottle is to be filled its neck is entirely unobstructed, neither the valve nor its seat nor the guard H being in place, the filling operation being therefore quickly and conveniently accomplished. The plate D with the valve in position is then inserted and cemented or otherwise secured in place as shown and the guard is applied as before described, when the bottle will be as shown in Fig. 1 effectually sealed against the introduction of a refilling liquid. It is usual to prolong the neck above the sockets G sufficiently to receive a shipping cork L as shown.

Manifestly instead of the rods F the valve guide may be in the form of a tube.

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

1. A bottle having its neck drawn inward forming a seat for the valve seat, the valve seat fitted and connected to said inwardly drawn portion of the bottle neck, the valve and its actuating spring located on the inner side of the valve, substantially as set forth.

2. A non-refilling bottle stopper, having a valve opening to permit the discharge of liquid from and closing against the pouring of liquid into said bottle, the seat for said valve

having an upwardly projected valve guide and the valve guard arranged to rest on said guide when inserted in the bottle neck and means by which to secure the said guard in the bottle neck, substantially as set forth.

3. In a non-refilling bottle stopper, a valve guard divided longitudinally into sections having each section provided on its outer side with protuberances to enter sockets in the bottle neck and provided in the inner faces of said sections with circuitous passages and a spreader fitting between and forcing said sections outward, substantially as set forth.

4. The combination, with the bottle having its neck provided internally with sockets of the valve guard formed in sections having projections to enter said sockets and a spreader to force said sections apart to cause their projections to enter said sockets, such guard being provided with a circuitous passage or passages, substantially as set forth.

5. The improvement in bottle closures herein described, consisting of the bottle having its neck provided internally with sockets, the valve opening outward and closing inward, a spring by which to hold said valve closed, said spring being arranged on the inner side of the valve, whereby it is protected, as described and a guard formed in sections having protuberances to enter the sockets and formed in sections and provided with circuitous passages, as and for the purposes set forth.

6. A bottle having its neck provided with a valve opening outward to permit the discharge of liquid from and closing against the pouring of liquid into said bottle a spring for actuating said valve arranged on the inner side thereof and a valve guard arranged between said valve and the mouth of the bottle and having a circuitous passage all substantially as described whereby the spring is protected by the valve from the action of acids and the guard will protect the valve from mechanical interference substantially as set forth.

7. An improved non refilling bottle having its neck provided with a valve guard having a circuitous passage whereby to prevent the introduction past it of a valve manipulating tool, the valve located on the inner side of said guard and the valve actuating spring located on the inner side of the valve all substantially as described whereby the valve is protected against mechanical displacement and the destruction of its spring by acids substantially as and for the purposes set forth.

8. In a non-refilling bottle stopper a valve guard divided longitudinally into sections having circuitous passages formed in the inner faces of said sections and a spreader interposed between said sections substantially as set forth.

9. In a non-refilling bottle stopper a valve guard formed with a circuitous passage, and made in longitudinal sections and having a

spreader interposed between said sections substantially as set forth.

10. The combination of the bottle having its neck provided with internal sockets the valve guard formed in sections and provided on the said sections with protuberances entering said sockets and a spreader interposed between said sections and adapted to seat the projections thereof in the sockets of the bottle neck substantially as set forth.

11. A bottle provided with a valve opening to permit the discharge of liquid from and closing against the pouring of liquid into said bottle, a spring actuating said valve and arranged on the inner side thereof, and a valve guard arranged between said valve and the mouth of the bottle all substantially as de-

scribed whereby the valve is protected by the guard from mechanical interference and the spring is protected by the valve from the action of acids all substantially as and for the purposes set forth.

12. In a non-refilling bottle stopper, the bottle having its neck provided with internal laterally projected sockets and the valve guard formed in sections and having fixed protuberances to fit said sockets and means by which to adjust said valve guard to set its fixed protuberances in said sockets substantially as and for the purposes set forth.

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Witnesses:

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