G. C. LUCKENBILL.

NON-REFILLABLE BOTTLE.

APPLICATION FILED JAN. 22, 1914.

1,181,602.

Patented May 2, 1916.

Fig. 1.

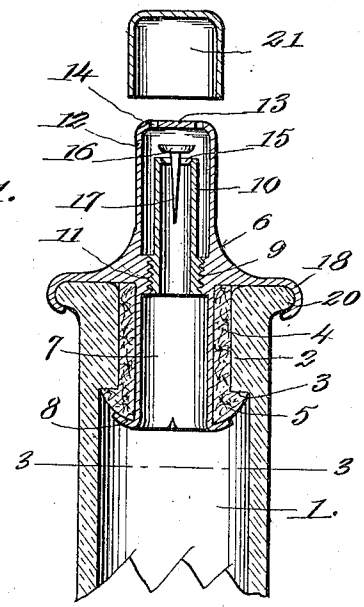


Fig. 2.

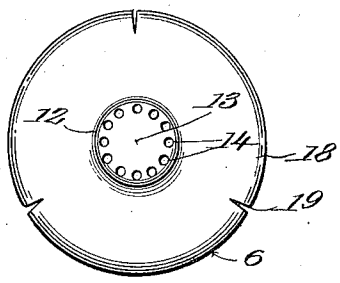
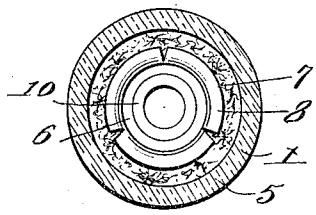


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

GEORGE C. LUCKENBILL, OF SUPERIOR, WISCONSIN.

NON-REFILLABLE BOTTLE.

1,181,602. Specification of Letters Patent. Patented May 2, 1916.

Application filed January 22, 1914. Serial No. 813,738.

To all whom it may concern:

Be it known that I, GEORGE C. LUCKENBILL, citizen of the United States, residing at Superior, in the county of Douglas and State of Wisconsin, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

This invention relates to the protection of bottles against clandestine or unauthorized refilling, and thereby a substitution of spurious inferior article for that with which the bottle has been filled by those responsible for its contents; and consists in an arrangement hereinafter described of tubular and valvular construction, a protecting guard against interference with the valve by any attempt to reach the same by wires or other instruments, and can be made and applied to the bottle at low cost after it has first been filled, so that refilling without detection becomes impracticable.

The invention further resides in the provision of means so constructed and arranged as to provide for automatic fastening of the device to bottles, the construction of which is little different from the construction of bottles now in general use.

The above and additional objects are accomplished by such means as are illustrated in their preferred embodiment in the accompanying drawings, described in the following specification and then more particularly pointed out in the claim which is appended hereto and form a part of this application.

In describing my invention in detail reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a longitudinal sectional view of the means comprising the present invention whereby a bottle is made non-refillable; Fig. 2 is a top plan view of the device, the cap having been removed; and Fig. 3 is a section on the line 3—3 of Fig. 1.

Referring now to the drawings by numeral, 1 designates, as an entirety, a bottle, particularly the neck thereof. The bore of the neck 1 is constricted at its mouth by the provision of an enlargement 2 formed integrally with the bottle neck, such enlargement providing an annular shoulder 3, the purpose of which will subsequently appear. Within the constricted portion of the bore of the bottle neck, a hollow or tubular cork stopper 4 is arranged, the said stopper being enlarged at its lower extremity as at 5, the enlarged portion engaging the shoulder 3 aforesaid, such engagement providing a means whereby a removal of the said stopper is made impracticable.

Upon the top of the bottle neck 1 is disposed a specially constructed casing or housing 6, comprising a hollow tubular extension 7, the lower extremity of which is flared outwardly as at 8 and bent to overlap the enlarged extremity 5 of the stopper, the said flared end 8 providing a retaining element whereby the said stopper is supported in engagement with the shoulder 3. The bore of the extension 7 is open to the bore of the bottle neck 1, as well as to the bore of the casing 6, the bore of the latter being constricted and interiorly threaded as at 9 to provide for the retention, within the casing, of a tubular valve casing 10, the lower extremity of which is enlarged and exteriorly screw threaded as at 11, the said threads engaging the threads 9 of the casing 6. A hollow extension 12 of the casing 6, in axial alinement with the extension 7, provides a housing for the valve casing 10, the latter, as is illustrated to advantage in Fig. 1 of the drawings, being inclosed therein. The top of the extension 12, and thus the bore of the casing 6, is closed as at 13 except as to apertures 14 formed therein. The upper extremity of the valve casing 10 is beveled as at 15 to provide a valve seat against which a beveled edge valve 16 is normally seated, the said valve having a stem 17 depending therefrom to insure the retention of the said valve in operative relation with the casing 10.

An annular outwardly directed flange 18 is formed integrally with the casing 6, the periphery of the flange being slit at various points throughout its circumference as indicated at 19 to provide for the forced bending of the said flange over an annular flange or enlargement 20 of the bottle neck, such construction serving as a locking means, in addition to that afforded by the engagement between the enlarged end 5 of the stopper and the shoulder 3, whereby the entire casing 6 is fastened to the bottle neck 1. A cap 21, of any suitable form, is provided to form a closure for the outlet opening 14 of the

casing, the construction of the cap, and its relation to the casing 6 being apparent upon reference to Fig. 1 of the drawings.

In assembling the various parts of the device, the tubular extension 7 of the casing 6 is first passed through the vertical bore of the stopper 4, whereupon its flared extremity is bent to overlap and engage the enlarged end 5 of the stopper, in this manner locking the stopper incapable of movement independent of the casing 6. The valve casing 10 is then adjusted within the tubular extension 12 until the valve seat 15 is disposed at a point adjacent yet in spaced relation to the top or closure 13 of the casing 6. The valve 16 is first placed in valve casing 10 and then said casing 10 is adjusted within the tubular extension 12 until the valve 16 is disposed at a point adjacent, yet in spaced relation to, the top or closure 13 of the casing. The parts having been thus assembled, it is apparent that by the forced insertion of the stopper 4 within the bottle neck 1, the enlarged extremity 5 of the stopper will underlap and abut the shoulder 3 formed by the constricted portion of the bore of the neck. Finally the flange 18 is bent to overlap the enlargement 20 of the bottle neck, which, with the automatic locking means just recited, will securely and permanently fasten the entire device in the desired manner to and upon the bottle.

When it is desired that the contents of the bottle should be dispensed, the bottle is inverted to thus permit the contents to first enter the bore of the tubular extension 7, second the bore of the valve casing 10, and finally the bore of the extension 12 where it is free to pass out through the apertures 14 formed therein. When inverted, it is apparent that the valve 16 will disengage the valve seat 15 and open communication between the casing 10 and the extension 12, however, should the bottle be righted, the said valve will immediately return to its normal position to automatically close communication between the said casing and the said extension to thus prevent a fraudulent refilling of the bottle.

From the above, taken in connection with the accompanying drawings, it will be noted that vertical adjustment of the valve casing 10 may be effected by a rotation of the said casing; that by constructing the extension 12 somewhat larger than the casing 10, an air space is provided therebetween; and that the only operation necessary to the locking of the device to the bottle is the forced insertion of the stopper into the neck thereof, and subsequently the forced arrangement of the flange 18 over and beneath the periphery of the enlargement 20 of the bottle neck.

In reduction to practice, I have found that the form of my invention, illustrated in the drawings and referred to in the above description, as the preferred embodiment, is the most efficient and practical; yet realizing that the conditions concurrent with the adoption of my device will necessarily vary, I desire to emphasize the fact that various minor changes in details of construction, proportion and arrangement of parts may be resorted to, when required, without sacrificing any of the advantages of my invention, as defined in the appended claim.

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

In combination with a bottle, a closure therefor, comprising a hollow casing, a tubular extension formed integrally with the said casing, said extension adapted to extend within the neck of said bottle, means carried by said extension and engageable with the neck of the bottle for locking the said closure against removal therefrom, an annular flange formed integrally with the said casing, said flange adapted to extend beyond the edge of the bottle neck over which it extends, a hollow valve casing adjustable within said casing, a valve operating within said casing, said valve being normally seated upon a valve seat formed at one end of said valve casing, a stem depending from said valve to form a guide means therefor, the said seat and one end of the said casing forming stop means whereby the movement of the said valve is limited, and removable means adapted to be arranged over the said casing to form a closure therefor, as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE C. LUCKENBILL.

Witnesses:
F. E. DUNDON,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."