

R. RIEGEL.
NON-REFILLABLE BOTTLE.
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938,706.

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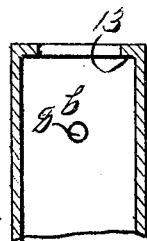
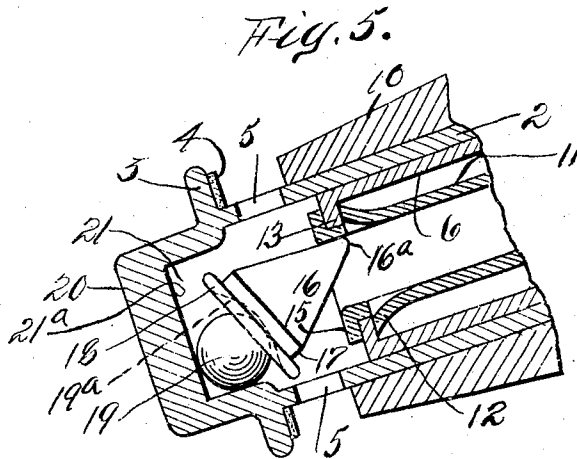
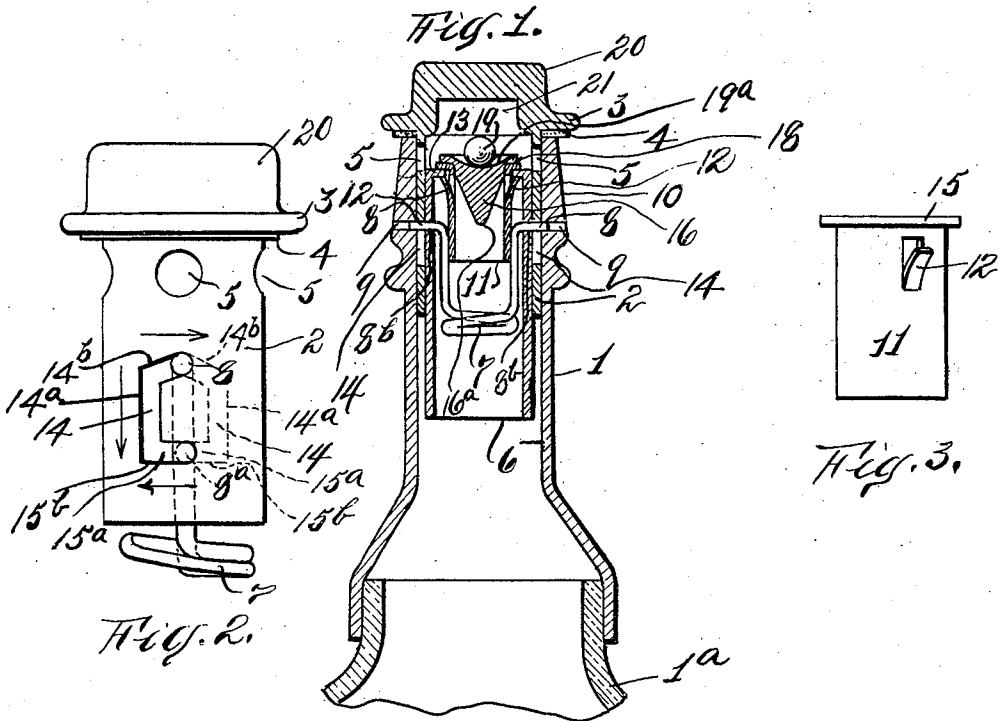


Fig. 4.

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UNITED STATES PATENT OFFICE.

RUDOLPH RIEGEL, OF HAWTHORNE, NEW YORK.

NON-REFILLABLE BOTTLE.

938,706.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, RUDOLPH RIEGEL, a subject of the Emperor of Germany, residing at Hawthorne, Westchester county, in the State of New York, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a clear, full, and exact description.

This invention has for an object to provide a device that may be inserted into the neck of a bottle, to render the bottle non-refillable, the parts which make up the device being organized and assembled in a manner to render them non-removable from the neck of the bottle after they have once been inserted therein.

After having described my invention I will point out the novel features thereof in the appended claims, reference being had to the accompanying drawing, forming part hereof, wherein:—

Figure 1 is a vertical sectional view of the neck and upper portion of the body of a bottle, having applied thereto my improved device; Figs. 2, 3 and 4 are, respectively, a side elevation of the main bushing, a perspective view of the valve seat and spring retainer, and a vertical sectional view of a portion of the auxiliary spring carrying element, and Fig. 5 is an enlarged sectional view showing the position of the parts when the bottle is tilted to allow its contents to flow therefrom.

In the drawings I have shown an attached metal neck 1, which is secured to the body portion 1^a of a bottle, although an integral glass neck would serve as well. Within the neck 1 I insert a snugly fitting longitudinally, movable, rotatable bushing 2, provided with a flange 3, beneath which I secure a washer 4 of rubber, felt or the like. The bushing 3 is perforated as at 5 for the passage of the contents of the bottle. Within the bushing 2 I insert an auxiliary bushing 6 which supports a spring 7. The upper ends 8 of the spring 7 are bent outwardly in order that they may pass through openings 8^b in the auxiliary bushing 6 and main bushing 2 and into opening 9 in the portion 10, of the neck 1. After the spring 7 has been compressed sufficiently to permit the bushing 6 to be inserted in the main bushing 2, until the ends 8 come opposite the openings 14, in the main bushing, whereby the spring will spread, and by a little manipulation cause the ends 8 to enter the openings 9 in the portion 10 of

the neck 1, I insert a keeper 11 having resilient projections 12, which, when the keeper is pressed home between the vertical members of the spring, as shown in Fig. 1, will expand and come to rest under the inwardly extending flange 13 of the keeper 11, as shown in Figs. 1 and 5. When the keeper 11 has been positioned, as above described, I drop upon the seat 15 of the keeper 11 a valve 16, the conical part of which lies within the bore of the keeper; the cylindrical or plug portion 17 (see Fig. 5) also passes into the bore of the keeper to aid in forming a liquid proof fit in connection with a flange 18, which rests upon the seat 15. To keep the valve seated, when the bottle stands vertical, I provide a weight in the form of a ball 19 which normally rests in the bowl 19^a of the valve 16.

The main bushing 2 carries a counter-bored head 20, the said counter-bore being indicated by 21 and serves as a receptacle for the ball 19 when the bottle is placed in a pouring position as indicated in Fig. 3, the distance between the end 21^a of the counter-bore and bottom of the bowl 19^a in the valve 16 being sufficient to cause the ball to act as a stop for the valve 16, when the bottle is inverted in order that the apex 16^a of the valve will not leave the bore of the keeper 11, whereby the valve will always reseat when the bottle is placed in an upright normal position. Fig. 3 clearly illustrates the action of the ball 19 and valve 16 when the bottle is placed in a pouring position in order that the contents of the bottle will flow through the openings 5.

In order to adapt the main bushing for longitudinal movement, in order to bring the openings 5 in communication with a receptacle, I provide the said bushing with two vertical slots 14, each of which, at the upper end thereof is in communication with angular or cam slots 14^b, and at the lower end with slots 15^a at a right angle thereto. Fig. 2 shows one of the said combination of slots in full lines, the other being diametrically opposite thereto and shown by dotted lines.

Fig. 1 shows the device in a closed position. Should I desire to extract some or all of the contents of the bottle, I rotate the bushing 2 to the right (see Fig. 2), whereby the cam slots 14^b will slightly raise the washer 4 from the end of the neck 1. I continue this movement until the ends 8 of

the spring 7 contact with the walls 14^a of the slot 14. I then pull the bushing upwardly until the ends 8 of the spring contact the walls 15^b of the lower slots 15^a. I then rotate the bushing to the left until the ends 8 of the spring stop further movement of the bushing. (See dotted lines 8^a). The bushing 2 will then be locked in an extended position as shown in Fig. 5. The auxiliary bushing 11 is kept from rotating when the main bushing is rotated by reason of the fact that the ends 8 of the spring pass through the said auxiliary bushing into the openings 9, as shown in Fig. 1. When the bushing 2 is extended or drawn out as described, the bottle may then be placed at an angle (as shown in Fig. 5) whereby the contents thereof will flow out.

To close the bottle or calk the bottle I turn the main bushing to the right until the ends 8 (indicated by 8^a Fig. 2) of the spring again contact the wall 14^a of the slot 14. I then push the bushing downwardly until the top wall of the cam slot 14^b is contacted. I then turn the bushing 2 to the left, whereby the cam slot 14^b will force the washer 4 against the end of the neck 1. From the foregoing description and drawing it is quite obvious that none of the parts can be withdrawn or disassembled without breaking the bottle. In order to take the cooperating devices out of the neck of the bottle it would be necessary to compress the spring sufficiently to cause the ends 8 to leave the openings 9 in the neck of the bottle. This cannot be done, as the keeper 11 prevents the compression of the ends of the spring, and the members 12 of the keeper prevent the withdrawal of the keeper, which would be necessary before the springs could be compressed.

Having now described my invention, what

I claim and desire to secure by Letters Patent is:—

1. In combination with a bottle having a neck provided with a bore, a longitudinally movable rotatable bushing provided with openings within said bore, said bushing being closed at one end, a valve seat within said bushing, a valve normally seated on said valve seat, said bushing being provided in the walls thereof with vertical slots, and cam slots in communication therewith, a spring within said bushing, the ends of which are adapted to pass through the said slots, said bottle neck being provided with openings adapted to receive the ends of said spring, said cam slot being adapted to force the top of said bushing against the upper end of said neck.

2. In combination with a bottle having a neck, provided with a central bore, a longitudinally movable rotatable bushing within said bore, provided with openings, an auxiliary bushing within the bushing first named, a spring carried by said auxiliary bushing, the ends of which are adapted to pass through openings in said bushings, said neck being provided with openings adapted to receive the ends of said spring, a flange carried by said auxiliary bushing, a keeper adapted for insertion in said auxiliary bushing, said keeper being adapted to prevent said spring from being compressed, projections on said keeper adapted to engage the flange on said auxiliary bushing and a weighted valve carried by said keeper.

Signed at New York city, N. Y., this 9 day of June 1909.

RUDOLPH RIEGEL.

Witnesses:

AUGUST SCHIERNT,
OTTO GIESSLER.