

R. BOVA.
NON-REFILLABLE BOTTLE.
APPLICATION FILED JULY 24, 1909.

986,042.

Patented Mar. 7, 1911.

Fig 1

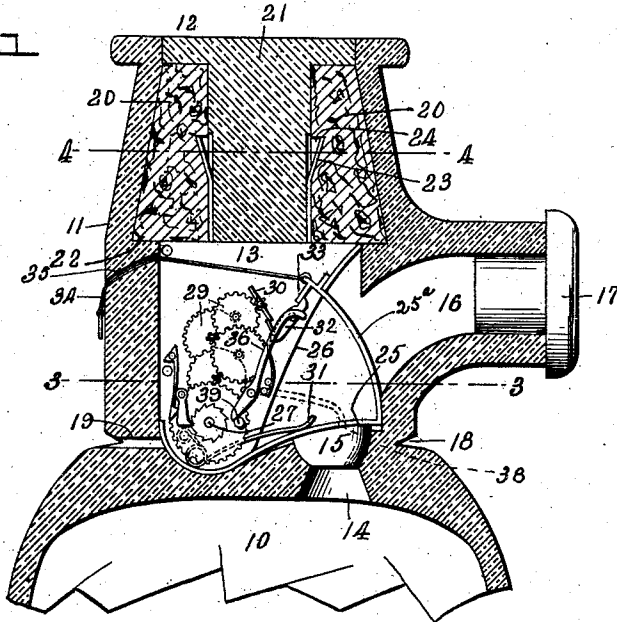


Fig 3

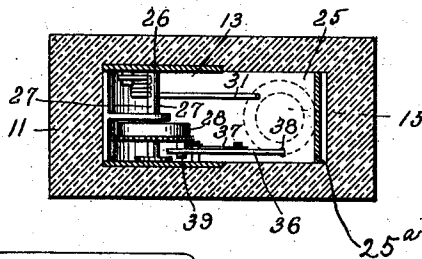


Fig 2

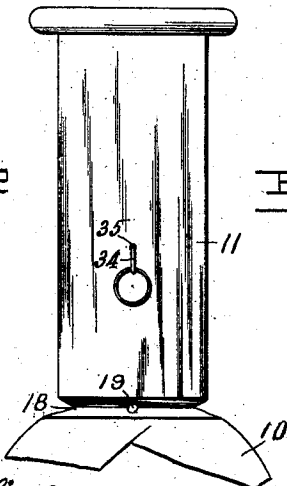
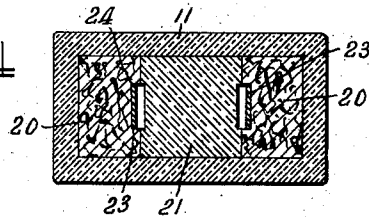


Fig 4



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NON-REFILLABLE BOTTLE.

986,042.

Specification of Letters Patent.

Patented Mar. 7, 1911.

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To all whom it may concern:

Be it known that I, RAPHAEL BOVA, a subject of the King of Italy, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

My invention relates to that type of non-refillable bottle which is disclosed and claimed in United States Letters Patent No. 581,432, Schumacher, dated April 27, 1897. This type of bottle is one in which use is made of a timing mechanism located within the neck of the bottle and controlling means which locks a valve in such a manner that the valve is automatically locked closed at the end of a predetermined and definite time interval during which the bottle is being emptied. It is not necessary that the bottle be emptied all at once, but on the contrary it may be emptied by a series of operations, a portion of the liquid being poured from the bottle at each operation, and the sum total of the times during which liquid is poured from the bottle being predetermined and definite. Such a bottle is very useful in dispensing liquor of various kinds as it prevents a bottle being repeatedly filled and emptied by a dispenser, and thus prevents him from selling from the bottle a liquor other than that contained in the original package.

In addition to the timing mechanism, use is often made of non-removable stoppers in the structure of non-refillable bottles, the stopper being located in the neck of the bottle, and the neck of the bottle being provided with the weakened portion where the neck may be broken off and the contents of the bottle thus removed. Thereafter it is impracticable to simulate an original package after having refilled the bottle, as the neck and the stopper cannot be readily joined.

It is the object of my invention to produce an improved non-refillable bottle embodying both of the above named features, i. e., a bottle provided with a non-removable cork and a breakable neck, associated with which is a timing mechanism controlling the locking of a valve and determining the time of discharge of the contents of the bottle.

The various structural details, together with their advantages and advantages of my improved bottle as a whole, will be fully

pointed out in the following specification in connection with the drawing, in which,

Figure 1 is a sectional elevation of my improved bottle showing the arrangement of the parts, Fig. 2 is an elevation of the same not in section, Fig. 3, is a sectional view taken on line 3—3 of Fig. 1, and Fig. 4 is a sectional plan view taken on line 4—4 of Fig. 1.

Referring to the drawing 10 is the main body of the bottle which is provided with a neck portion 11, in which are located the non-removable stopper 12 and the timing mechanism 13. An opening 14 leads from the interior of the bottle to the neck, and is adapted to be closed by the valve 15 of the timing mechanism, while the neck 11 has a branch opening 16 on its side adjacent the opening 14. This opening is intended to be used in drawing the contents from the bottle, and is closed by a simple cork 17, as is usual in bottles of the common type.

The neck of the bottle is rectangular and adjacent the body, and below the timing mechanism, is provided with a groove 18 to facilitate its removal together with the parts located within it. An aperture or hole 19 extends from the groove through the wall of the neck, and is adapted to receive the end of a pointed tool wherewith the neck may be broken off with ease.

The removable stopper is rectangular to fit the rectangular neck and is made in three parts, two similar wedge-shaped parts 20 and a central T-shaped part 21 which fits between them. The upper portion of the neck of the bottle is made tapering as shown, and at its juncture is a shoulder 22. The central portion 21 is provided with spring members 23 adapted to enter recesses 24 on the inner sides of the members 20. In corking up the bottle the members 20 are first put in place, and then the member 21 is shoved down between them, the spring members 23 carried by the member 21 entering the recesses 24 when the member 21 is pressed home. The top of the member 21 forms a neat continuous cover for the cork as a whole, while the bottom of the member presses the side members 20 into firm engagement with side walls of the neck and with the shoulder 22 on which they rest.

The valve 15 which controls the opening 14 through which liquid is to be discharged is carried by a pivoted member 25 which is

locked in closed position of the valve by the timing mechanism after the elapse of a predetermined time. The timing mechanism comprises a main frame 26, a main arbor 27 in the lower part of the frame, a barrel 28 carrying a spring for operating the mechanism, and the train of gears 29 which actuate the fly 30 in the upper part of the frame. Preferably the valve carrying member 25 is pivoted to the main arbor, and is spring pressed toward the valve seat by the spring 31. A pivoted stop 32 is biased to a position where it engages the fly 30 and stops the mechanism. On the member 25 is a pin 33 for engaging the end of this stop and moving it away from the fly to permit the mechanism to operate. A string or other operating device 34 is attached to the end of the member 25 and passes to the outside of the bottle through the hole 35 in the wall of the neck. It will be noted that the end of the member 25 extends upwardly from the main body of the member, and is curved in form and of such length that it extends beyond the front of the opening 16 when the pivoted member is in its lower or valve closing position. This extension 25^a is of the same width as the main body of the pivoted member, and prevents access being had to the timing mechanism or to the valve through the mouth or opening 16. It acts as a shield. Whenever it is desired to draw liquid from the bottle the string is pulled, thus raising the valve 15 from its seat when the liquid may be drawn off through the opening 16. Upon the release of the string the valve is returned to its normal position where it closes the opening 14 and stops the flow of liquid. The liquid may thus be drawn off from the bottle until it is emptied.

It is in order to limit the time during which the liquid may be drawn from the bottle that I provide the timing mechanism. As previously stated the member 25 carries a pin for disengaging the stop from the fly and causing the timing mechanism to start. Pivoted to one side of the main frame is a detent 36 which is normally held in an upright position by a spring 37, but which when lowered to the dotted line position shown in Fig. 1, is adapted to engage a recess 38 in the member 25 and hold it down in its normal position in which the valve 15 closes the opening 14. The barrel 28 carries a pin 39 which is adapted to engage and move the detent 36. The timing mechanism when wound up thus controls the detent and hence the valve and the time interval during which liquids can flow as follows. The spring carried by the barrel 28 is wound up by a suitable key before the mechanism is placed in the bottle, and when in place, the valve 15 closes the mouth of the filled bottle. When it is desired to draw liquid from the bottle, the valve is raised by the spring 34, and immediately the fly 30 is released, and the mechanism starts to run down at a rate determined by the fly as is usual in timing mechanisms. It will run down until the pin 39 on the barrel comes into engagement with the end of detent 36. The detent is thus pressed down by the pin and into engagement with the member 25. When the member 25 is released the valve is closed and the detent follows it, its end projecting into the recess 38 and preventing the valve from being again raised from its seat. It is, of course, evident that liquid may be drawn from the bottle a number of different times, the sum total of this time being predetermined, and when the total time reaches that predetermined amount the valve will be closed, and it will be impossible to open it from the outside. Preferably the mechanism is so adjusted that it takes a little longer time to run down than is usually taken to pour the contents from the bottle in a continuous stream, and in this way the entire removal of the contents is insured, while the replenishing of the contents is prevented.

When the bottle is emptied the neck may be broken off and sent to the factory or to the bottle works, where the mechanism may be removed as well as the stopper and they may both be used again. The non-removable stopper is a means of preventing the mechanism from being tampered with by the dispenser or other person using the bottle. The mechanism is, of course, inserted from the mouth of the bottle before the non-removable stopper is put in. This mechanism and stopper are both very cheap comparatively, and when we take into consideration that they may be used several times, the cost is quite moderate. The advantages of using a bottle of this type more than pay for the slight cost incident to its manufacture.

It is to be noted that the main opening or mouth is quite large and that the bottle may therefore be easily filled. The branch opening through which the liquid is drawn is small, but ample enough to serve its purpose, the liquid being usually drawn out in small quantities at a time.

While I have described the best form of my invention now known to me it is obvious that many changes may be made in its specific embodiment without departing from its generic spirit, and I desire to cover all such modifications in the annexed claims.

What I claim is,—

1. A non-refillable bottle comprising a main body, an opening in said main body, a neck surrounding said opening and having an outlet, a pivoted valve coöperating with said opening to control the flow of liquid from said bottle, and a timing mechanism for locking said valve independently of

the flow of liquid therethrough and of the position of the bottle.

2. A non-refillable bottle comprising a main body, an opening in said main body, a hand operated valve cooperating with said opening to control the flow of liquid from said bottle, a timing mechanism for locking the valve, said timing mechanism being set in operation by the opening of the valve, a casing for said valve and timing mechanism, and a valve operating member connected to the valve and extending without the casing.

3. A non-refillable bottle, a normally closed outlet, hand operated means for opening said outlet independently of the position of the bottle, means for automatically closing the same, and timing mechanism for locking the valve closed after the lapse of a predetermined time.

4. In a non-refillable bottle, a normally closed outlet, a valve for closing said outlet,

timing mechanism for locking said valve, a stop operated by the opening of the valve to start the mechanism, and a detent controlled by the timing mechanism, said detent locking the valve closed after the lapse of a predetermined time interval.

5. In a non-refillable bottle, a discharge opening, a valve for said opening, a timing mechanism for locking said valve, said timing mechanism being housed adjacent to said valve, a mouth for said bottle communicating with said opening, and a guard for preventing access to said mechanism and valve from said mouth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

RAPHAEL BOVA.

Witnesses:

OTTO L. MULOT,
LEWIS LANZER.