

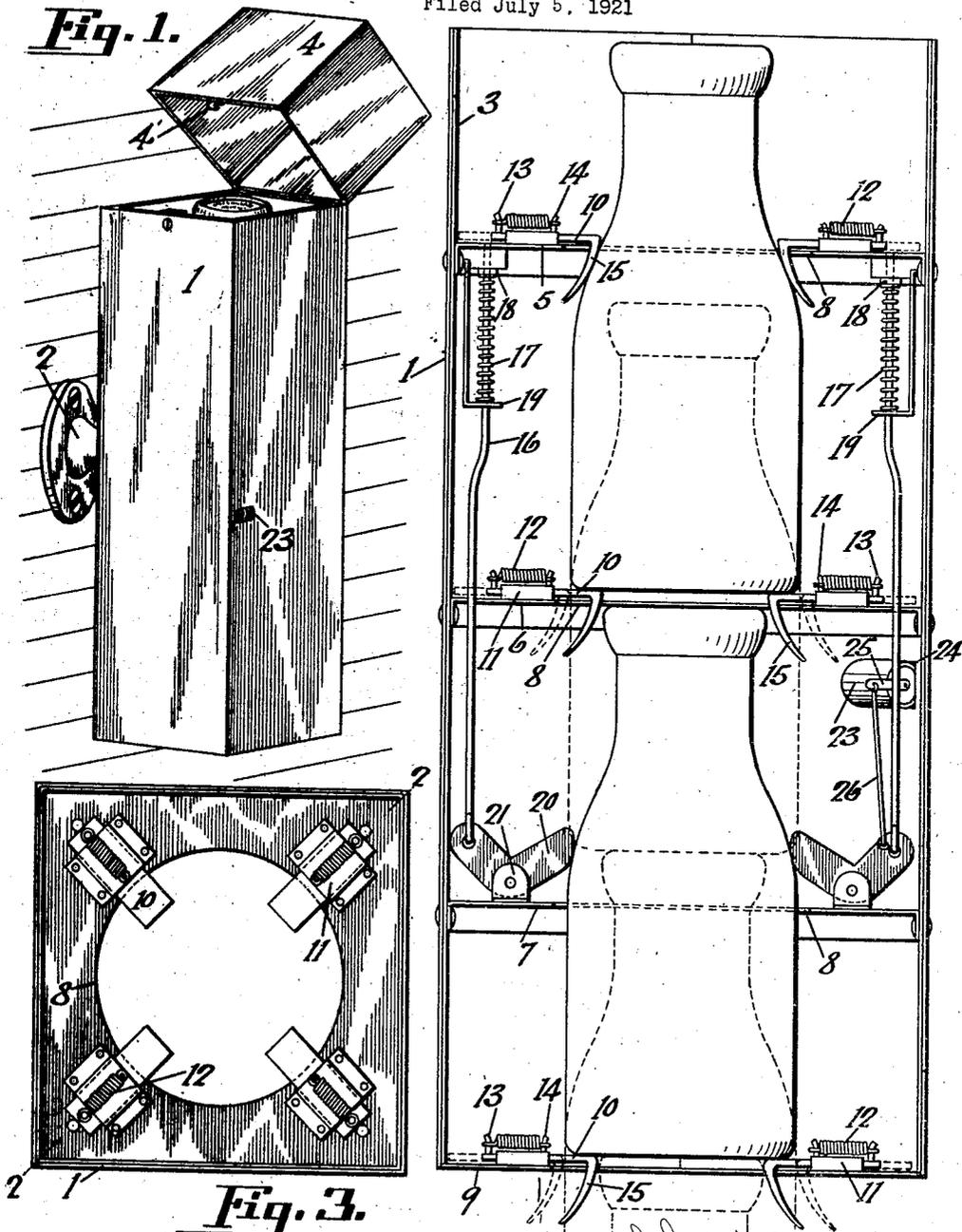
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C. F. SHOENFELT ET AL

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BOTTLE HOLDER

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UNITED STATES PATENT OFFICE.

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BOTTLE HOLDER.

Application filed July 5, 1921. Serial No. 482,410.

To all whom it may concern:

Be it known that we, CHARLES F. SHOENFELT, residing at Vandalia, in the county of Montgomery and State of Ohio, GEORGE H. COOK, of Dayton, in the county of Montgomery and State of Ohio, and FREDERICK H. COOK, of Tippecanoe, in the county of Miami and State of Ohio, all citizens of the United States of America, have invented certain new and useful Improvements in Bottle Holders, of which the following is a specification.

Our invention relates to a safety deposit box for milk bottles and the like, in which the delivery man may deposit the bottle of milk for the customer, and the customer in turn redeposits the empty bottle to be returned.

While one of the primary objects of the invention is to prevent the bottle being stolen or removed by unauthorized persons, an equally as important feature of the invention is to compel the return of empty bottles by requiring the insertion of an empty bottle in order to release the full bottle.

The object of the invention is to simplify the structure as well as the means and mode of operation of such safety devices, whereby they will not only be cheapened in construction, but will be more efficient in use, positive in operation, automatic in action, easily operated and unlikely to get out of repair.

A further object of the invention is to provide an improved form of container and lockable closure therefor, and independent of additional locking means for the inserted bottle.

Further object of the invention is to provide a container having means for counting or registering the bottles inserted in or removed therefrom.

A further object of the invention is to provide bottle locking means, operated by the insertion of a second bottle, thereby necessitating the return of empty bottles by the customer.

With the above primary and other incidental objects in view as will more fully appear in the specification, the invention

consists of the features of construction, the parts and combinations thereof, and the mode of operation or their equivalents as hereinafter described and set forth in the

In the accompanying drawings, wherein is shown the preferred but obviously not the only embodiment of the invention, Fig. 1 is a perspective view of the bottle holder or deposit box with the lid raised showing the device attached to the side of a building. Fig. 2 is a vertical sectional view on the diagonal line 2-2 of Fig. 3. Fig. 3 is a top plan view of the bottle locking devices

Like parts are indicated by similar characters of reference throughout the several views.

The device forming the subject matter hereof, comprises a housing or container to be fixedly mounted in any suitable and convenient position as by being firmly attached to a house, a post planted in the ground, or other structure conveniently located for the delivery of milk or other bottled products. The bottles may be easily and quickly deposited therein by the delivery-man without preliminary manipulation or unlocking of the device, yet the device will discourage petty thefts by making it more difficult and inconvenient for an unauthorized person to remove the deposited bottle of milk. It is quite true that a thief having the intention of stealing the bottle of milk would abnormally provide himself with an empty bottle which as hereafter described is necessary to release the full bottle. However, such thefts are not ordinarily premeditated, and a milk thief does not usually go provided with a supply of empty milk bottles. The primary purpose, however, other than the prevention of petty thievery is to compel the return of the empty bottles by the customer. Milk distributors lose quite considerable sums each year thru the loss of bottles, the return of which is neglected by the purchaser. Such bottles are frequently used as containers for other commodities and in many instances are merely neglected and allowed to accumulate in vast quantities at the ex-

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pense and loss of the distributor. The present device is designed to compel the customer to return an empty bottle for each full bottle received. To this end the construction embodies locking means for the full bottle, which is released only on the introduction of an empty bottle, into the device. It will also discourage carelessness in the handling and breakage of bottles by the customer, inasmuch as the customer is under the necessity of providing a new bottle in order to secure his full bottle of milk.

Discussions frequently arise between the delivery-man and the consumer relative to the number of bottles of milk delivered. This is particularly true when some bottles may have been stolen, or the delivery-man may have forgotten to deliver bottles on one or more occasions. To obviate such difficulties the present device has been provided with a counter or register operated by the insertion of the bottle by which the bottles passing thru the device are automatically counted.

In the accompanying drawings, 1 is the housing or container which in the present instance has been shown of elongated rectangular form which obviously may be of other shape as for instance, cylindrical. This container 1 is securely supported in an elevated position by means of the bracket arm 2, secured to a suitable support as the side of the housing, a supporting post or other structure. The housing or container 1 is preferably of sheet metal, the walls of which are lined with asbestos board or other material of non heat conducting properties. The purpose of this lining 3 is to protect the contents of the holder or container against the heat in summer and cold in winter. The top of the housing 1 is provided with a hinged box like closure 4, having a spring lock 5. The closure lid 4 is of sufficient capacity that it will permit the insertion of a print of butter or carton of eggs or other commodities usually delivered by the milk distributor. Such additional commodities may be located within the top of the container or holder, and projects within the closure lid. Located within the interior of the housing 1 are a plurality of spaced diaphragms 5, 6 and 7, each having therein a circular opening 8 of sufficient diameter to permit the passage of a bottle of milk there-thru. The housing or container is also provided with a like bottom plate 9 having a similar opening to permit the insertion of the bottles from the bottom. The diaphragms 5 and 6 and the bottom plate 9 are each provided with a plurality of radially disposed spring actuated plungers 10 reciprocating within keepers or guides 11 secured to the diaphragms and plate, and retractible outwardly in a radial direction against the tension of springs 12. The springs 12 engage

studs or pins 13 at one end carried by the keeper or guide 11, and similar studs or pins 14 at their outer end carried by the plunger 10. The heads of these reciprocating plungers are provided with downturned curved cam fingers 15, with which the head of the successive bottle engages to retract the plungers against the tension of the spring 12. The plungers 10 carried by the intermediate diaphragm 6 and the bottom plate 9 form yielding support or rests upon which the bottles are carried. The uppermost series of plungers carried by the diaphragm 5 possess a locking function, and by their engagement with the shoulder or swell of the bottle they prevent removal from the holder. To effect this locking engagement of the uppermost series of plungers, each plunger is provided with a vertically disposed reciprocating locking rod 16, extending thru registering holes in the diaphragms 5 and 6 by which the rod is guided, and impelled upwardly by means of springs 17 engaging at one end collars 18 carried by such rod, and at opposite end stirrups or brackets 19, which form abutments for the spring. At their lower ends these stop rods 16 are operatively connected with substantially L-shaped levers 20, pivoted to lugs or ears 21, upon a perforated diaphragm or plate 22, located intermediate the diaphragm 6 and bottom plate 9. These L-shape levers 20 normally overhang the central opening of the plate 22 and extend into the path of movement of bottles inserted thru the bottom plate 9. The engagement of the inserted bottle with these projecting control levers, rocks such levers about their pivotal connection with the ears 21, thereby retracting the stop rods 16 against the tension of their spring 17 throwing the upper end of the stop rod out of the path of travel of the plunger 10 carried by the upper diaphragm 5. These plungers are then free to reciprocate against the tension of their spring as the bottle contained in the upper portion of the holder and resting upon the plunger of the diaphragm 6 is lifted therefrom.

Mounted within the housing 1 at any convenient point is a counter or register 23 the counting wheels of which or indicators are visible thru an opening or window 24 in the wall of the holder. This register or counter 23 may be of any suitable or convenient form that shown in the drawings being a conventional type of counter now in use. The operating lever 25 of this counter has been shown connected by a link 26 with one of the control levers 20. The construction is such that each time the lever 20 is oscillated by the insertion of a bottle the lever 25 of the counter will be actuated in unison to add one upon the wheels or counting elements of such register.

The operation of the device is substan-

tially as follows: The delivery man inserts a full bottle of milk into the holder or container 1 thru the bottom plate 9. The pressure of the head of the bottle upon the retractible plunger 10 carried by the plate 9 forces these plungers outwardly or radially to permit the bottle to pass upwardly thru the plate 9 whereupon the plungers 10 are spring actuated to their inward positions beneath the bottom of the bottle to form rests or supports therefor. In inserting the full bottle thru the bottom of the holder the delivery man engages the empty bottle therein upon the end of the full bottle pushing it upwardly and causing the head of the empty bottle to engage the retractible plunger carried by the medial diaphragm 6 forcing them outwardly against their spring tension in like manner, until the empty bottle is in the upper portion of the holder. The plungers 10 carried by the medial diaphragm 6 thereupon spring back into place beneath the bottom of the empty bottle and then support it in its elevated position. The insertion of the full bottle has caused the engagement and oscillation of the pivoted L-shaped lever 20 with which the shoulder or swell of the bottle has a camming action, thereby retracting the locking rod 16 out of engagement with the plungers 10 of the uppermost diaphragm 5. This leaves these locking plungers free to reciprocate and the delivery man lifts the empty bottle out of the top of the holder. The locking plungers are retracted against the tension of their spring by the lifting of the bottle. If butter, eggs or other commodity are to be delivered also, these are placed in the top of the holder upon the uppermost diaphragm 5 and the closure lid 4 is pressed down, causing its spring lock to be automatically engaged.

In order to secure the bottle of milk, the consumer must unlock the housing and remove any package which has been placed in the top of the holder, in addition to the milk. An empty milk bottle is then introduced through the bottom plate 9 engaging the full bottle of milk then resting upon the plunger of the bottom plate 9 elevating such full bottle thru the intermediate diaphragm into the upper portion of the holder. The retracted plungers 10 of the diaphragm 6 and bottom plate 9 will then spring back into place to support the two bottles in position. However, the empty bottle in the mean time has held the oscillating levers 20 in operated position to retract the locking rod 16 so that the full bottle is released by the plungers upon the diaphragm 5 and free to be removed. Without a bottle in the lower portion of the device to hold the levers 20 in oscillated position and the locking rod 16 retracted, the locking plungers 10 upon the diaphragm 5 will remain locked in their

innermost position, and in such relation as to intercept the bottle of milk and prevent its removal therethru.

From the above description it will be apparent that there is thus provided a device of the character described possessing the particular features of advantage before enumerated as desirable, but which obviously is susceptible of modification in its form, proportions, detail construction and arrangement of parts without departing from the principle involved or sacrificing any of its advantages.

While in order to comply with the statute the invention has been described in language more or less specific as to structural features, it is to be understood that the invention is not limited to the specific details shown, but that the means and construction herein disclosed comprise but one of several modes of putting the invention into effect, and the invention is therefore claimed in any of its forms or modifications within the legitimate and valid scope of the appended claims.

Having thus described our invention, we claim:

1. A bottle holder through which the bottles are movable axially in a vertical direction, locking means for preventing the removal of a bottle therefrom and means to release said bottle by the insertion of a second bottle.

2. A bottle holder capable of containing a plurality of bottles through which the bottles are axially movable in a vertical direction, and having an ingress and an exit for the bottles in the bottom and top thereof, means controlling the exit to prevent the removal of a bottle and means engaged by a bottle inserted axially through the ingress for enabling the removal of a bottle axially through said exit opening.

3. In a bottle holder requiring the insertion of a bottle to propel to the exit another already in the holder, a container, bottle retaining means to prevent the removal of the bottle contained therein, and control means extending into the path of a second bottle insertable within the container, said second bottle contacting the first bottle to propel the same past the retaining means released by the engagement of the second bottle with said control means.

4. In a bottle holder, a container, a retainer in the path of movement of a bottle inserted therein, a lock for said retainer, and a movable member also extending into the path of movement of an inserted bottle and by its movement under the influence of the bottle unlocking said retainer to enable the removal of a prior inserted bottle.

5. In a bottle holder, a container, having ingress and exit openings, a spring actuated defent extending into the path of movement

- of a bottle therethrough, a locking plunger movable into and out of the path of said detent, and a control member also extending into the path of movement of the bottle adapted upon engagement of a bottle therewith to withdraw said locking plunger.
6. A housing having a lockable closure, bottle retaining means within said housing for locking a bottle against removal independent of said closure, said housing having an access opening independent of said lockable closure and means for disengaging the bottle retaining means by the insertion of a second bottle through said access opening.
7. In a bottle holder, a container, bottle engaging members therein spaced apart a distance greater than the corresponding extent of a bottle to be engaged, one of said members being adapted to prevent the removal of the engaged bottle and the other being adapted to effect the release thereof when engaged by a second bottle.
8. In a bottle holder, a container, two series of retractable plungers arranged in spaced relation therein, and retractable by the movement of a bottle in relation therewith, one set of said plungers being adapted to support the bottle in elevated position within the container, the other set of plungers being adapted to prevent the withdrawal of the bottle therefrom, and means extending into the path of a second bottle insertable within the container for releasing the first mentioned bottle.
9. In a bottle holder, a container, having a capacity for two superposed bottles, means for independently supporting said bottles within the container, detent means engageable with one of the bottles to prevent the removal thereof and means engageable with the other bottle for releasing the first mentioned bottle.
10. In a bottle holder, a container having a capacity for two superposed bottles, means for independently supporting said bottles within the container, a retractable plunger projecting into the path of travel of one of the bottles to limit the movement thereof, a locking member movable into and out of the path of the plunger to lock the same against withdrawal from the path of the bottle, and a lever engaged by the second bottle and operatively connected with said locking member to release the plunger upon the insertion of the second bottle.
11. In a bottle holder, a container having capacity for two superposed bottles, yielding supports for the respective bottles in spaced relation one above the other, means for locking one of the bottles in relation with its support, and means controlled by the insertion of the second bottle for releasing the first mentioned bottle.
12. In a bottle holder, a container having capacity for two superposed bottles, yielding supports for the respective bottles in spaced relation one with the other, a plurality of radially disposed retractable plungers extending into the path of one of the bottles for locking the same in relation with its support, a movable stop for each plunger and a plurality of movable control members one for each stop operatively connected therewith and actuated by the insertion of a second bottle to release the first bottle.
13. In a bottle holder, a container, means for supporting a bottle therein, a movable member actuated by the engagement of a bottle therewith, and a counter device operatively connected with said movable member.
14. In a bottle holder, a housing, a lockable closure therefor, detent means for locking a bottle within the container independent of the lid and means unlocking the bottle detent independent of the lockable closure.
15. In a bottle holder, a housing having ingress and exit openings through which a bottle is passed in an axial direction, a plurality of radially disposed plungers located at spaced intervals throughout the path of movement of the bottle through the housing, means for locking one set of said plungers, in position to arrest the movement of the bottle through said housing, and trip means for engagement by a second bottle to release said plungers to permit the removal of the first bottle.
16. In a bottle holder, a housing through which a succession of bottles are passed in longitudinal alinement one with another, a plurality of series of radially disposed plungers normally projecting into the path of movement of the bottles, the respective sets of plungers being independently operable by the engagement of the bottles therewith, means for locking one set of plungers against retraction to arrest the movement of a bottle, and trip means extending into the path of a succeeding bottle.
17. In a bottle holder, a housing, retractable supports located at spaced intervals upon which a bottle successively rests, said supports being retractable by the engagement of the bottle therewith, substantially as specified.
18. In a bottle holder, a housing, through which the bottle is passed in a vertical direction, a succession of retractable stop members projecting into the path of movement of the bottle through said housing and retracted by engagement of the bottle therewith, said stop members being automatically returned to the path of the bottle after the passage thereof to prevent return movement and support the bottle in successive stages of movement through the housing.
19. In a bottle holder, a housing through

which one bottle is propelled by the engagement of a second bottle therewith, stop means for preventing return movement of the bottles and a detent for limiting forward movement of the advance bottle until the second bottle has reached a predetermined position.

In testimony whereof, we have hereunto

set our hands this 18th day of June, A. D. 1921.

CHARLES F. SHOENFELT.
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Witnesses:

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