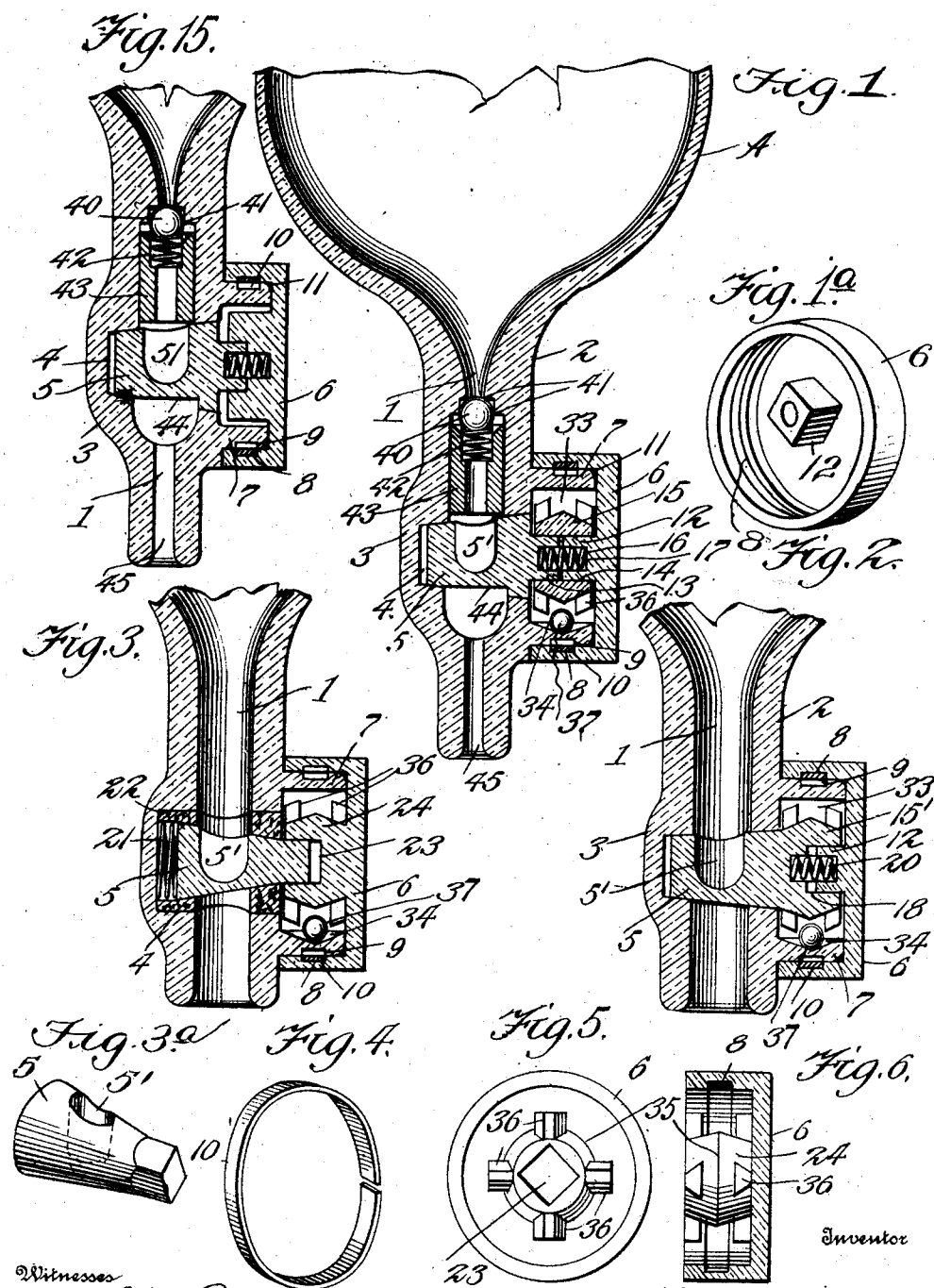


No. 879,000.

PATENTED FEB. 11, 1908.

M. W. PITNER.
NON-REFILLABLE BOTTLE.
APPLICATION FILED JUNE 5, 1907.

2 SHEETS—SHEET 1.



Witnesses

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Inventor

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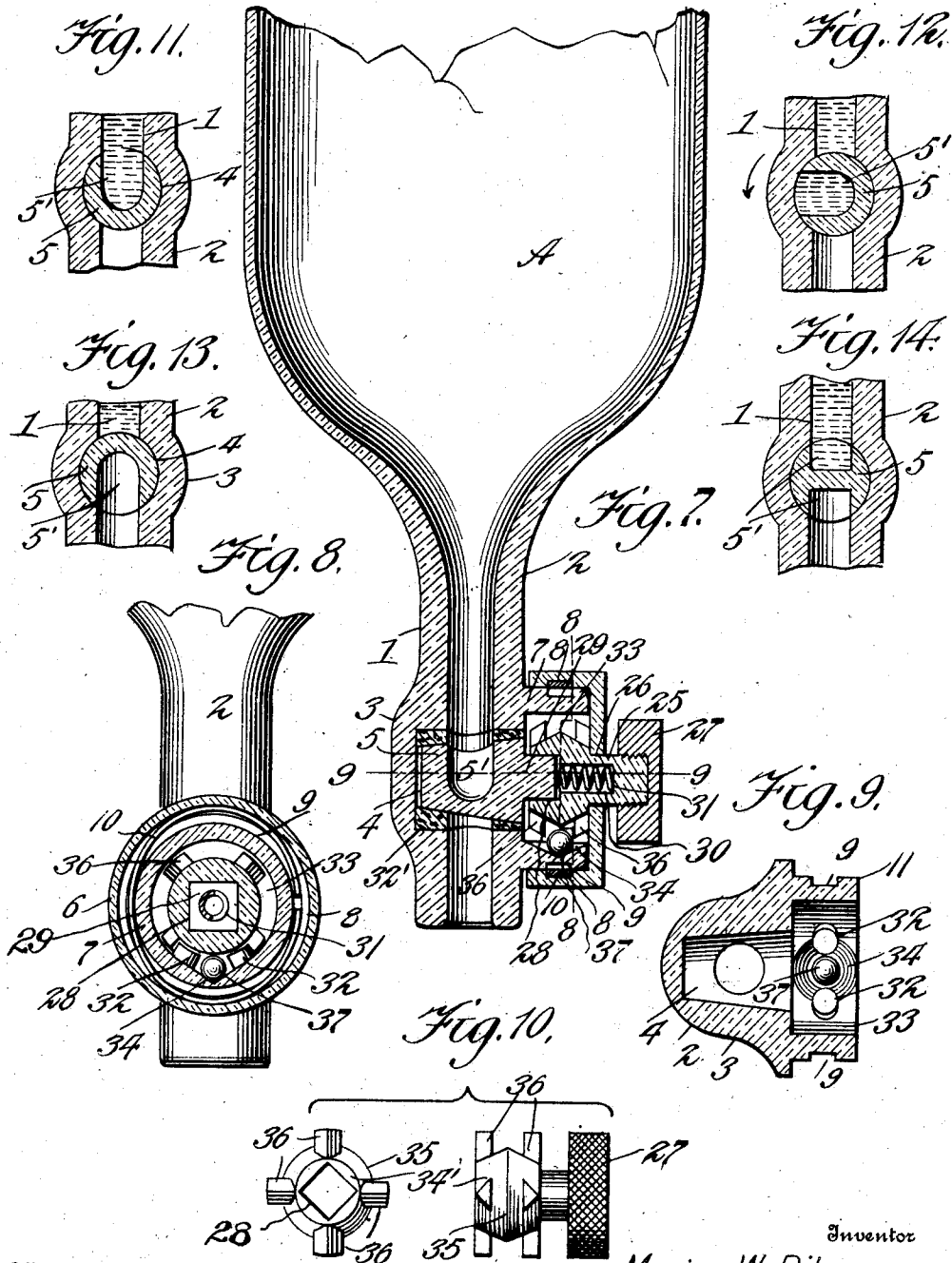
Attorney

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

MARION W. PITNER, OF CHICAGO, ILLINOIS.

NON-REFILLABLE BOTTLE.

No. 879,000.

Specification of Letters Patent.

Patented Feb. 11, 1908.

Application filed June 5, 1907. Serial No. 377,394.

To all whom it may concern:

Be it known that I, MARION W. PITNER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

This invention relates to a non-refillable container provided with a stopper or closing member having one or more cups and adapted to be turned by hand when the container is held in predetermined positions so that a person can draw off all or a part of the contents in an easy and convenient manner, the cup or cups being filled when brought into communication with the interior of the container and emptied when moved to communication of the outlets of the container.

The invention has for its principal object to provide a closing device for a container or bottle which is proof against tampering with so that re-filling is impossible to all intents and purposes, and in which the closing member for the passage of the container is locked against actuation except when the container is inverted or in substantially such position.

A still further object is to provide a container having a passage that is permanently cut out of communication with the atmosphere so that the container cannot become soiled by the entrance of foreign matter, thus rendering washing unnecessary when the container is to be re-filled by the bottling concern or agents to whom the container belongs.

Another object of the invention is the provision of a closing device for a container which includes a closing member for the passage of the container and a resilient means for holding the closing member on its seat, in combination with an actuating means that serves to prevent access to the closing member, said means being controlled by a locking device which automatically unlocks when the container is inverted and held in a vertical or inclined position, whereby the contents of the container can be readily drawn off by operating the actuating means.

A further object is the employment of a closing device of the character referred to which includes a breakable part which is adapted to be broken by the original bottler or person authorized thereby to permit the closing member of the device to be removed for re-filling the container, it being understood that after the bottle is re-filled, the

parts of the closing device are re-placed and sealed by another breakable member to take the place of that one which was broken to permit the parts to be taken out. In this connection, it may be remarked that the sealing members may be provided with the trade-mark and other suitable descriptive matter indicating the ownership of the container and the like.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawings, which illustrate certain of the embodiments of the invention, Figure 1 is a sectional view of the neck portion of the bottle with the preferred closing device applied thereto. Fig. 1^a is a perspective view of the cap-like member for actuating the valve and for inclosing the locking device for the valve. Figs. 2 and 3 are sectional views of modified forms of the device. Fig. 3^a is a perspective view of the closing member shown in Fig. 3. Figs. 4, 5 and 6 are detail views of parts of the device. Fig. 7 is a sectional view of the neck portion of a bottle showing a further modification of the closing device. Fig. 8 is a section on line 8—8, Fig. 7. Fig. 9 is a transverse section of the neck portion of the bottle on line 9—9, Fig. 7. Fig. 10 represents detail views of the actuating means for the closing member shown in Fig. 7. Figs. 11, 12 and 13 are detail sectional views of the closing member showing the pocket thereof and illustrating the manner of emptying the bottle. Fig. 14 is a detail sectional view showing a modified form of pocket or cup arrangement of the closing member. Fig. 15 is a sectional view of a further modification.

In the present instance, I have elected to illustrate my invention carried out in connection with a bottle of ordinary form, but I desire to have it understood that the closing device is adapted for use with any other suitable container.

Referring to the drawings, A designates a container provided with a passage 1 formed by a neck 2. The neck is preferably enlarged at 3 and is hollowed out to form a chamber 4 for receiving the closing member or stopper 5 of the device. The chamber 4 is circular in cross-section and may be made

tapering, as shown in Figs. 1 and 2, or cylindrical, as shown in Figs. 3 and 7. In the first-mentioned figures, the closing member 5 is tapered and has a liquid-tight fit in the chamber 4, while in Figs. 3 and 7, a bushing of cork or other suitable material is fitted in the chamber 4 in which the closing member is seated. The closing member may be provided with one or more cups or depressions 5' arranged in its curved surface and disposed in alinement with the inner and outer portions of the passage 1, whereby the turning of the closing member will bring the cups into communication with the inner portion of the passage, as clearly shown in Fig. 11 and in communication with the outer portion when turned through half a revolution, as shown in Fig. 13. In other words, material can be removed from the container only by the cup or cups as the closing member is actuated. The cups are so arranged that at no time will the interior of the container communicate with the atmosphere, thus making a seal of the closing member whereby no foreign matter can enter the container to soil the same and necessitate cleaning.

By reference to Fig. 12, it will be evident that the closing member effectively stops the passage at an intermediate as well as the filling and emptying position of the pocket, and while the closing member is being turned in the direction of the arrow, the cup conveys its contents to the discharge end of the passage 1 while the solid portion of the member 5 closes the upper portion of the passage.

For actuating the closing member to draw off the contents of the container, an actuating means is provided which is connected with the member only for rotary movement and is incapable of moving the said member longitudinally so that danger of unseating the member by a person tampering with the device is averted. The advantage of this feature is apparent when it is understood that it would be possible by means of a pump or suitable apparatus to force liquid into the container to re-fill the latter if the closing member could be moved from its seat but a trifle.

The actuating means preferably takes the form of a cap-like member 6 that fits over a circular flange or boss 7 molded or otherwise formed on the bottle neck 2, and in the internal cylindrical surface of the cap is a groove 8 that registers with a groove 9 in the external surface of the flange 7. These grooves are for the purpose of receiving a split elliptical spring 10 that forms a locking device for holding the cap non-removably in position after once being assembled on the flange 7. The outer edge of the flange is preferably rounded at 11 so as to permit the spring and cap to be placed over the flange, it being understood that the spring is engaged in the slot of the cap preparatory to the slipping of

the latter over the flange and as soon as the spring registers with the groove of the flange, it will snap into place. This locking spring, while preventing removal of the cap, permits of the latter to be freely rotated for the purpose of actuating the closing member.

As shown in Fig. 1, the actuating member or cap 6 has a central inwardly extending projection 12 of non-circular cross-section, as shown in Fig. 1^a, and the adjacent end of the closing member has a projection 13 of the same shape as the projection 12, both of which projections extend into a non-circular opening 14 of a disk 15 which latter serves to couple the actuating member with the closing member only for rotation of the latter. The projections 12 and 13 are provided with sockets 16 into which projects a helical compression spring 17 that constantly urges the closing member 5 in such a direction as to hold it in engagement with its seat.

With a construction of the character described, the cap 6 can be freely turned by hand for the purpose of bringing the pocket or pockets of the closing member successively into filling and emptying position, so that when a person holds the bottle inverted in one hand and turns the cap in the other hand, the contents of the container can be easily and conveniently drawn off.

The construction shown in Fig. 2 differs from that shown in Fig. 1 in that the closing member 5 and disk 15' are made integral and the disk has a socket 18 into which the non-circular projection 12 engages, and a spring 20 serves to hold the closing member seated. In Fig. 3, the closing member is acted on by a helical compression spring 21 disposed between the inner end of the chamber 4 and adjacent extremity of the closing member to thereby tend to press the latter outwardly or in the direction of the taper of the member so as to keep the latter firmly seated or in engagement with the bushing 22. The smaller end of the closing member is non-circular, as shown in Fig. 3^a, and fits into a non-circular opening 23 in the disk-like portion 24 which, in this instance, is formed integral with the cap or actuating member 6.

Referring now to the construction shown in Figs. 7 to 10, inclusive, it will be observed that the closing member is actuated by a key 25 that projects through the opening 26 of the cap 6 and has a wheel 27 whereby the key can be conveniently turned, the inner end of the key being provided with a non-circular socket 28 for receiving the non-circular projection 29 of the closing member and also provided with a bore 30 communicating with the socket to receive a spring 31 that holds the closing member firmly in engagement with the bushing 32'.

In order to prevent the closing member from being actuated in a manner to permit re-filling of the container, a suitable locking

device is provided which prevents the actuating means from operating unless the container is held in an emptying position, or in other words, inverted. This locking device comprises in one of its embodiments a chamber 33 formed by the cap 6 and flange 7 that has a depression 34 formed in the internal surface of the flange 7 at a point which is uppermost when the bottle is upright and lowermost when the bottle is inverted, and at opposite sides of this depression, as shown in Figs. 8 and 9, are stops 32, the purpose of which will hereinafter appear. The disk member 15 in Fig. 1 or disk portion 15' in Fig. 2, 24 in Fig. 3 and 34' in Fig. 7, is formed with a central ridge 35, and projecting radially from the disk member or portion 15 are sets of projections or teeth 36, the corresponding teeth or projections of the sets being arranged opposite each other and the sets being spaced so as to pass at opposite sides of the stop 32. Arranged within the chamber 33 is a ball 37 that is confined at the depression 34 by the stops 32, and the ball is of such size as to prevent it passing by either of the stops. The purpose of this ball is to interlock with the teeth or projections 36 so as to prevent the disk of the actuating means from turning when the container is in any other position than that which will permit the ball to rest in the bottom of the depression. That is to say, when the ball occupies the position shown in Figs. 7, 8 and 9, the actuating means can be freely turned, but as soon as the position of the container or bottle is changed so that the ball will run into the path of one set of projections 36 or the other, it will lock the actuating means and prevent the closing member from turning. The ridge 35 causes the ball to roll into the path of the teeth or projections when the bottle is in any other position than that which will permit liquid to be drawn off, thus locking the parts and preventing unauthorized re-filling. The cap 6 serves as a sealing means for preventing access to the locking device and the closing member and this cap is intended to be destroyed by the bottler or packer when the containers are returned to him for re-filling so that the closing member can be taken out to permit ready filling thereof. After the parts are re-assembled, a new sealing cap is applied and the container is again ready for market.

As a further safeguard against refilling of the container a ball valve is arranged in the passage 1 of the container at a point intermediate the inner end of the passage and the closing member 5 and is arranged to normally close said passage for preventing liquid from flowing into the container. As shown in Fig. 1 the ball valve 40 is adapted to engage the seat 41 by virtue of a comparatively light spring 42 which normally holds the valve seated when the material is passing

out. In the passage 1 is a weight 43 disposed between the valve and closing member and this weight is counterbored to receive the spring 42. When the bottle is in upright position the weight positively insures the seating of the ball valve and when the bottle is inverted the weight can drop only when the flat portion 44 of closing member 5 comes directly under the weight, at which time the ball valve will be free to open to permit liquid to pass. The outer end of the passage 1 may be reduced as indicated at 45, Fig. 1, so as to prevent the insertion of a crooked wire to move the closing member off its seat. In a closing device of this character two safeguards are provided against the refilling of the container, namely, the locking device for preventing the turning of the closing member 5 and the weighted ball valve at the inner end of the passage 1.

Referring to Fig. 15 an anti-refilling device for a container is illustrated that is substantially the same as the construction shown in Fig. 1 except that the locking device for preventing the turning of the closing member 5 except when the bottle is in predetermined position is dispensed with. A cap or sealing member 6 is free to turn when the bottle is held in any desired position, but it is impossible to supply material to the container for the reason that the weighted ball valve closes the passage of the container. To draw off the material from the bottle the latter is inverted and the cap 6 rotated. By turning the cap through 180° the flat portion 44 will be brought opposite the weight 43 so that the latter can drop and permit the valve 40 to move off the seat 41 under the weight of the material in the bottle. The material thus flows past the ball valve and fills the hollow of the weight space between the top of the latter and seat 41. By turning the closing members still further the flat portion 44 will move away from the weight and the curved part of the closing member will lift the weight and thereby cause the valve 40 to seat and as soon as the cup 5' of the closing member communicates with the hollow of the weight the material will deposit in the cup and will be emptied therefrom when the closing member is turned another half revolution. It will thus be seen that by a continuous rotation of the cap 6 while the bottle is inverted will periodically open and close the valve 40 to admit material into the space below the valve and will also bring the cup 5' periodically into position to receive the material permitted to pass the valve.

From the foregoing description taken in connection with the accompanying drawing, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention,

together with the apparatus which I now consider to be the best embodiment thereof, I desire to have it understood that the apparatus shown is merely illustrative and that
 5 such changes may be made when desired, as are within the scope of the claims.

Having thus described the invention, what I claim is:—

1. A container having a passage which
 10 communicates with the interior and exterior of the container, a closing member closing the passage and having one or more indentures or cups, said indentures being adapted to communicate with either the outer or
 15 inner portion of the passage by moving the closing member, and a device which automatically locks the closing member when the container is in predetermined position.

2. A container having a passage which
 20 communicates with the interior and exterior of the container, a closing member closing the passage and having one or more indentures or cups, said indentures being adapted to communicate with either the outer or
 25 inner portion of the passage by moving the closing member, an automatically actuated locking device dependent upon gravity for locking and unlocking the stopper, and an actuating means for the closing member.

3. A container having a passage which
 30 communicates with the interior and exterior of the container, a closing member closing the passage and having one or more indentures or cups, said indentures being adapted to
 35 communicate with either the outer or inner portion of the passage by moving the closing member, an actuating device for the closing member, and a device which automatically locks the closing member when the container
 40 is in predetermined position.

4. A container having a passage, a closing member for the passage, a locking device which prevents movement of the closing member except when the container is in prede-
 45 termined position, and a part attached to the container for preventing removal of the closing member, said part being removable only by breakage.

5. A container having a passage, a closing
 50 member for the passage and provided with one or more liquid containing cups, and actuating means for the closing member, said actuating means being removable only by breakage.

6. A container having a passage, a closing
 55 member for the passage, actuating means for the closing member, said actuating means being removable only by breakage, and a locking device which prevents movement of the
 60 closing member except when the container is in predetermined position.

7. A container having a passage, a closing member for the passage, a locking device for preventing movement of the closing mem-
 65 ber, except when the container is in predeter-

mined position, and an actuating device which prevents removal of the closing member or the locking device, said actuating means being removable only by breakage.

8. In a device of the class described, a con-
 70 tainer provided with a grooved portion, a stopper actuating device having a registering grooved portion, and a resilient member for engagement in both grooves.

9. In a device of the class described, a con-
 75 tainer provided with a grooved portion, a stopper actuating means having a groove registering with that of the said portion, a member engaging in both grooves, and a locking device for preventing movement of the
 80 actuating means except when the container is held in predetermined positions.

10. A container having a passage, a movable closing member manually actuable to convey material from one portion of the pas-
 85 sage to the other, and a resilient means for holding the member in engagement with its seat.

11. A container having a passage, a closing member for the passage, an actuating device
 90 for the member, a resilient means for holding the member in engagement with its seat, and a locking device for the movement of the closing member except when the container is in
 95 predetermined positions.

12. A container having a passage, a closing member for the passage, an actuating device connected with the member for rotary move-
 100 ment only, and a resilient means between the device and member for holding the latter in engagement with its seat.

13. A container having a passage, a closing member for the passage, an actuating device connected with the member for rotary
 105 movement only, a resilient member for holding the closing member in engagement with its seat, and a locking device for preventing movement of the closing member except when the container is in predetermined posi-
 110 tions.

14. A container having a passage, a closing member for the passage, a resilient means for holding the member in engagement with
 115 its seat, an actuating device for the member, and a resilient member permitting movement of the actuating device and for preventing removal of the closing member and actuating device.

15. A container having a passage, a closing member for the passage, a resilient means
 120 for holding the member in engagement with its seat, an actuating device for the member, a locking means for preventing the movement of the closing member except when the container is in predetermined positions, and
 125 a resilient member permitting movement of the actuating device and for preventing removal of the closing member and actuating device.

16. A container having a passage, a mov- 130

able closing member having one or more cups therein for the passage, a resilient means for holding the member in engagement with its seat, and a device preventing access to the closing member and removable only by breakage.

17. A container having a passage, a manually movable closing member for the passage, resilient means for holding the member in engagement with its seat, and an actuating device for the closing member arranged to prevent access to the latter and removable only by breakage.

18. A container having a passage, a manually movable closing member for the passage, resilient means for holding the member in engagement with its seat, an actuating device for the closing member arranged to prevent access to the latter and removable only by breakage, and a locking means for preventing movement of the closing member except when the container is in predetermined positions.

19. A container having a passage, a closing member for the passage, an actuating device for the closing member arranged to prevent access to the latter and removable only by breakage, and a locking means for preventing the movement of the closing member except when the container is in predetermined positions, a member of which couples the actuating device with the closing member.

20. A container having a passage, a closing member for the passage, an actuating means for the member, and a locking device for preventing movement of the closing member except when the container is in predetermined position, said device comprising an element movable by the actuating means, and a ball in locking engagement with the element except when in predetermined positions.

21. A container having a passage, a closing member for the passage, an actuating means for the member, and a locking device for preventing movement of the closing member except when the container is in predetermined position, said locking device comprising a chamber having a depression, a movable element in the chamber connected with the actuating means, and a locking body free to move into and out of the depression and adapted to have locking engagement with the element except when in the depression.

22. A container having a passage, a closing member for the passage, an actuating means for the member, and a locking device for preventing movement of the closing member except when the container is in predetermined position, said locking device comprising a movable element operated by the

actuating means, and a body adapted to have locking engagement with the element except when the container is in predetermined positions.

23. A container having a passage, a closing member for the passage, an actuating means for the member, and a locking device comprising a chamber having a depression, stops at opposite sides of the depression, a disk-like element in the chamber provided with projections, and a ball cooperating with the stops and projections to prevent the movement of the element except when the container is in predetermined positions.

24. A container having a passage, a closing member in the passage and adapted to be actuated to permit material to flow through the latter, a valve in the passage between the inner end of the latter and closing member, and means actuated by the closing member for seating the valve.

25. A container having a passage, a closing member in the passage and adapted to be actuated to permit material to flow through the latter, a ball valve in the passage located between the inner end of the latter and the closing member, a weight in the passage for holding the valve seated, and a spring interposed between the weight and valve.

26. A container having a passage, a closing member in the passage, a spring pressed valve in the passage, and a sealing member for preventing removal of the closing member and valve, said sealing member serving to actuate the closing member and removable only by breakage.

27. A container having a passage, of varying diameter, a valve adapted to seat against the shoulder at one end of the restricted portion of the passage and disposed within the other portion of the latter, a spring arranged to hold the valve in engagement with the seat except while material is passing outwardly through the passage, and a sealing member for preventing access to the parts except by breakage of the member.

28. A container having a restricted passage, a ball valve adapted to close the passage, a rotary closing member in the passage disposed between the restricted portion and outlet of the latter and provided with a flattened portion, and a weighting member adapted to fit between the closing member and valve and arranged to move away from the latter when the flattened portion of the closing member is in alignment with the weighted member.

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

MARION W. PITNER

Witnesses:

JOHN L. FLETCHER,
CHATTIN BRADWAY.