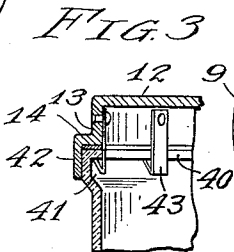
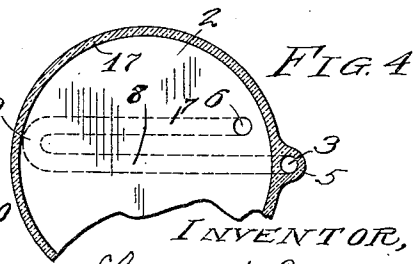
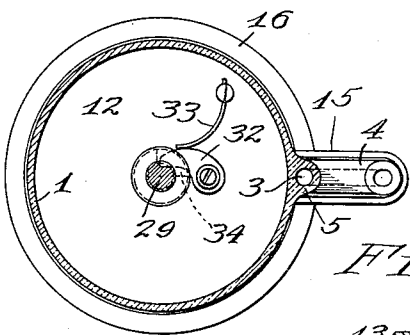
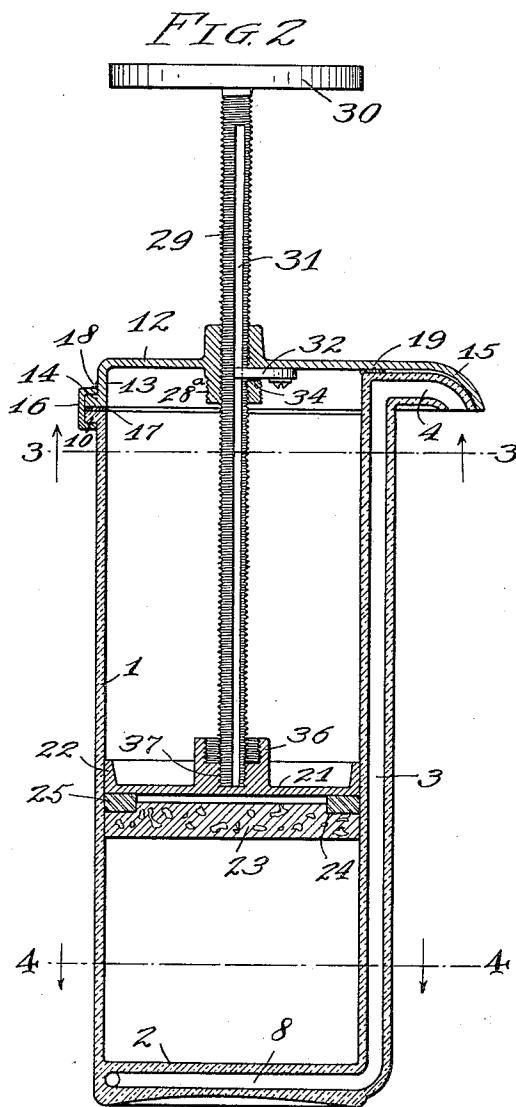
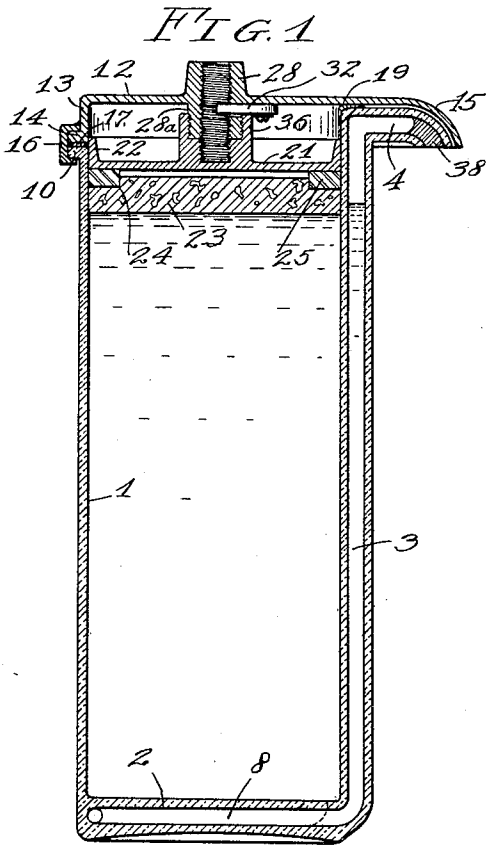


C. L. COX.
 NON-REFILLABLE RECEPTACLE.
 APPLICATION FILED APR. 10, 1911.

1,065,224.

Patented June 17, 1913.



WITNESSES:
 Brennan & West
 Hugh B. McGill.

INVENTOR,
 Clarence L. Cox
 BY Hull & Smith
 ATTYS.

UNITED STATES PATENT OFFICE.

CLARENCE L. COX, OF CLEVELAND, OHIO.

NON-REFILLABLE RECEPTACLE.

1,065,224.

Specification of Letters Patent.

Patented June 17, 1913.

Application filed April 10, 1911. Serial No. 619,958.

To all whom it may concern:

Be it known that I, CLARENCE L. COX, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Non-Refillable Receptacles, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention relates to liquid containers and has for its object the production of a device of this character which shall be absolutely proof against being refilled after having been emptied of the original charge introduced therein at the time of sealing. The advantages of such a container are obvious and such a device has been sought for many years. Many of the former containers have depended for their non-refillable character upon the necessity of breaking them to permit the withdrawal of the liquid originally contained therein. These devices have not received very favorable reception because of the consumer's fear of the particles of glass liable to be contained in the liquid. Other devices have depended upon valves which should permit the withdrawal of the original contents but prevent the introduction of a new charge of liquid. These valves have either been inoperative from principle, or so complicated as to become inoperative through accidents, or so expensive as to be impossible of commercial use.

According to my invention, I provide a movable piston which can be moved forward to expel the original contents of the receptacle but which cannot be moved back to its original position without first breaking the receptacle. In this way I avoid the objection raised to the method first above described since the receptacle is not broken in advance of withdrawing the contents therefrom, but must be broken, at least in part, before it can be refilled, and after such breaking it is either impossible to refill it, or impossible to impose it upon a purchaser.

Generally speaking, my invention may be defined as consisting of the combinations of elements recited in the claims hereto annexed and illustrated in the drawings accompanying and forming a part hereof, wherein:

Figure 1 is a vertical central cross sectional view of the complete receptacle illustrating the same as filled with liquid and in

condition for shipment; Fig. 2 is a similar view illustrating the same in half emptied condition and showing the means for operating the same; Fig. 3 is a transverse cross sectional view taken substantially on the line 3—3 of Fig. 2 and looking upwardly; Fig. 4 is a transverse cross sectional view taken on the line 4—4 of Fig. 2 and looking downwardly; and Fig. 5 is a sectional detail view of a modified form of cover securing means.

Describing the parts by reference characters, my receptacle comprises a container 1 of cylindrical or prismatic shape, and preferably of circular cross section as shown, although a container of polygonal cross section could be employed without departing from the scope of my invention. The bottom of the container is closed as at 2, and leading from the bottom is a discharge duct or passageway 3 preferably terminating in a down-turned spout 4. In the embodiment illustrated herein, this duct or passage way is formed in a longitudinal rib or protuberance 5 formed integral with the side of the container, and the spout 4 is formed at the extreme upper end of the container, although both duct and spout might obviously be formed otherwise without departing from the scope of my invention. The duct 3 communicates with the interior of the receptacle through a port 6 formed in the bottom 2 and is preferably connected thereto by means of the oppositely extending transverse passage ways 7 and 8 connected by a sharp or abrupt bend 9. The object of this construction will be later described. The upper end of the receptacle is preferably formed with an integral outwardly projecting lip 10 adapted for the reception of a cover member. This cover member consists of a circular metallic plate 12 having a down-turned annular flange 13 of approximately the same shape as the body 1 of the container and provided with a laterally projecting lip 14 similar to the lip 10. This cover member is also provided with a laterally extending shield 15 adapted to overlie the spout 4 and prevent injury thereto. The possibility of so protecting the spout is one of the chief reasons for continuing the duct 3 clear to the top of the receptacle. In the embodiment illustrated in Figs. 1 and 2 this cover is secured to the receptacle by means of an annular clip 16 having inwardly extending ears adapted to embrace the outer

faces of the lips 10 and 14 and to compress them upon a gasket 17 introduced therebetween. In order to prevent the removal of this cover for fraudulent purposes, this clip
5 is preferably brazed or welded thereto as shown at 18. Suitable packing material is introduced between the shield 15 and spout 4 as shown at 19.

The piston or ejecting member of my receptacle consists of a metallic plate 21 shaped
10 to fit snugly inside the body 1 thereof and to be slid therealong, and having an upwardly turned lateral rim 22. Below this piston is introduced a flat disk 23, preferably of cork, adapted for the immediate
15 contact of the liquid, the rear edge of this disk being preferably recessed as at 24 for the reception of a rubber ring or gasket 25. In order to permit the shifting of this piston to expel the liquid from the container, the
20 cover plate 12 is formed with a central, internally threaded boss 28 adapted to receive an elongated threaded push rod 29 provided with an operating wheel or handle 30
25 by means of which the piston can be shoved to the very bottom of the container. In order to prevent the retraction of the piston so as to aspirate a new charge of liquid into the container by way of the spout 4, I provide
30 the push rod 29 with a longitudinal groove 31 adapted to cooperate with a pawl 32 pivoted to the cover plate 12 and impelled thereagainst by means of a spring 33. The cover plate 12 is illustrated as having an internal
35 boss 28^a forming a continuation of the boss 28 and provided with a slot 34 in its wall through which the pawl 32 extends. With this construction it is obvious that the withdrawal of the push rod 29 is impossible,
40 unless the cover 12 be first removed which would necessitate the breaking of the body or else would be so expensive as to deter any person from making a practice of doing it. Furthermore, it is impossible to
45 refill the receptacle by introducing liquid under pressure through the spout 4 since the rearward movement of the piston is prevented by the push rod.

In the embodiment illustrated herein, the
50 boss 28^a is formed with external threads and the piston 21 is formed with an internally threaded boss 36 adapted to engage therewith. The base of the boss 36 is formed with a socket 37 adapted to receive
55 the end of the push rod 29. This socket is formed with internal threads of the same pitch as those in the boss. When the push rod is introduced therein it seats itself against the bottom of the recess 37 and
60 when the rod is further rotated the piston is revolved and unscrewed from the boss. The threads upon the exterior of the boss are of the same pitch as those upon the interior. This construction permits the push
65 rod to operate as a key and prevents the

bottle from being drawn upon by any person unless he employs a threaded instrument having the same pitch as the push rod. Of course if the receptacle be of polygonal shape and the piston therefore non-rotatable,
70 the interlocking feature between the piston and cover either has to be omitted and the recess 37 made as a smooth socket, or the size of the plate 21 decreased so as to permit its rotation. In case a designing
75 person attempts to evade the non-refillable character of the receptacle by employing an ungrooved push rod he is met by another difficulty: when he withdraws the smooth
80 push rod he leaves the piston behind. And even though he grapples for the piston, he can raise only the plate 21 since the disk 23 will remain behind. And if he tries to fill the bottle through the spout 4 by pressure
85 after withdrawing his smooth rod the friction between the rubber ring 25 and the wall of the receptacle will be so great as to cause the receptacle to burst before the piston will move. In fitting up these recep-
90 tacles, the cork sheet 23 with its gasket 25 is introduced and then the piston 21 secured to the cover plate 12 as illustrated in Fig. 1. The gasket 17 is applied at the same time and the clip 16 applied and irremovably
95 attached to the cover member. The liquid may either be introduced before the piston is applied or it may be applied later via the spout 4. In the latter case the air in the receptacle is preferably first exhausted by means of an air pump. A plug or stopper
100 38 of cork or wax is preferably inserted in the spout 4 as shown in Fig. 1.

The receptacles and push rods are preferably shipped separately both for the purpose of compactness and to prevent abstraction
105 of the contents. When it is desired to withdraw the contents of the receptacle, the piston is first unscrewed from its connection with the cover in the manner above described and the liquid ejected as desired.
110

The outlet duct 3 is connected to the interior of the receptacle by means of the reversely extending ducts 7 and 8 in order that it may be impossible to remove liquid from
115 the receptacle by drilling a hole through the cover and afterward draining or siphoning the contents away. Furthermore, the abrupt bends in the duct and particularly the bend 9 materially impede the introduction
120 therethrough of a flexible capillary pipe by means of which gas under pressure might be introduced so as to eject the liquid contents.

In Fig. 5 I have illustrated a modified and simplified expedient for securing the
125 cover to the receptacle. In this view, the receptacle body 1 is shown as having an inwardly projecting lip 40 at its upper end, said lip forming the upper wall of a groove
130 41 and being of a size to permit the intro-

duction of a piston into the receptacle. The cover plate 12 is formed with the annular flange 13 and lip 14 as before, said lip terminating in a depending skirt 42 adapted to surround the upper end of the receptacle. Secured to the inner surface of the flange 13 are a plurality of resilient snaps or hooks 43 adapted to engage beneath the lip 40 and hold the cover securely in place. Obviously it would be totally impossible to remove this cap from the container without destroying one or the other.

While I have described the pawl 32 as directly engaging the groove 31 formed in the sides of the push rod, it is obvious that, without departing from the scope of my invention and without serious change in construction, the pawl could be caused to engage a ratchet wheel slidably sleeved on the rod 29 and having a key or finger engaging the groove 31.

While I have necessarily described my invention in detail, I do not propose to be limited to such details, except as the same may be positively included in the claims hereto annexed or may be rendered necessary by the prior state of the art.

Having thus described my invention, what I claim is:

1. A non-refillable receptacle for liquids, comprising, in combination, a container having a bore of uniform cross section and a closed end and a discharge duct communicating with said closed end, a cover member irremovably secured to the other end of said container and having a threaded aperture therethrough, a piston slidably mounted in said container and closely fitting therein, a threaded push rod adapted to be introduced through said aperture and to advance said piston so as to eject the liquid, said push rod having a longitudinal groove in its side, and a pawl pivoted to the inner surface of said cover member and adapted to cooperate with said groove for preventing the withdrawal of said push rod and the rearward movement of said piston.

2. A non-refillable receptacle for liquids, comprising, in combination, a container having a bore of uniform cross section and a closed end and a laterally projecting discharge spout adjacent the other end, said discharge spout communicating with the interior of said container by means of a duct formed in the wall thereof and opening thereinto adjacent its closed end, a cover member secured to said other end of said container and having a laterally projecting shield overlying said spout and protecting the same, and a piston slidably mounted in said container and closely engaging the walls thereof and adapted when advanced to eject liquid through said discharge spout.

3. A receptacle for liquids, comprising, in combination, a container having a bore of

uniform cross section and a closed end and a discharge duct communicating with said closed end, a cover member irremovably secured to the other end of said container and having an inwardly projecting externally threaded boss, said boss having a perforation therethrough, an impervious disk in said container and making tight contact with the walls thereof, a push plate between said cover and disk and adapted to press said disk forwardly, said plate being rotatable in said container and having an axial internally threaded recess adapted to engage said boss, and a member adapted to be inserted through said perforation to unscrew said plate from said boss and to advance the same so as to press said disk forwardly and eject the liquid through said discharge duct.

4. A receptacle for liquids, comprising, in combination, a container having a bore of uniform cross section and a closed end and a discharge duct communicating with said closed end, a cover member irremovably secured to the other end of said container and having an externally threaded internal axial boss, said boss having a threaded perforation therethrough, a piston in said container and closely fitting against the walls thereof and having an axial internally threaded recess adapted to engage said boss and also having a recess of substantially the same size as the perforation through said boss and having internal threads of the same pitch as the threads in said perforation, and a threaded member adapted to be introduced through said perforation and to engage the piston for unscrewing the same from said boss and for advancing the same so as to eject the liquid through said discharge duct.

5. A receptacle for liquids, comprising, in combination, a cylindrical container having a closed end and a discharge duct communicating with said closed end, a cover member irremovably secured to the other end of said container and having an externally threaded internal axial boss, said boss having a perforation therethrough, a piston in said container and closely fitting against the walls thereof and having an axial internally threaded recess adapted to engage said boss, and a member adapted to be introduced through said perforation and to engage the piston for unscrewing the same from said boss and for advancing the same so as to eject the liquid through said discharge duct.

6. A non-refillable receptacle for liquids, comprising, in combination, a container having parallel walls and a closed end and a discharge duct communicating with said closed end, the other end of said container being formed with an outwardly projecting lip, a cover member having an outwardly projecting lip corresponding to said first lip and registering therewith, an annu-

lar clip surrounding said lips and having inwardly projecting ears embracing the outer edges of the same, said clip being welded to said cover member, a piston in
5 said container and closely engaging the walls thereof, means for advancing said piston to eject the liquid from said container through said discharge duct and means for

preventing the rearward movement of said piston.

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

CLARENCE L. COX.

Witnesses:

HAROLD E. SMITH,
BRENNAN B. WEST.

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