

Dec. 22, 1931.

F. DRUMMOND

1,837,764

LIQUID VENDING DEVICE

Filed Dec. 2, 1929

2 Sheets-Sheet 1

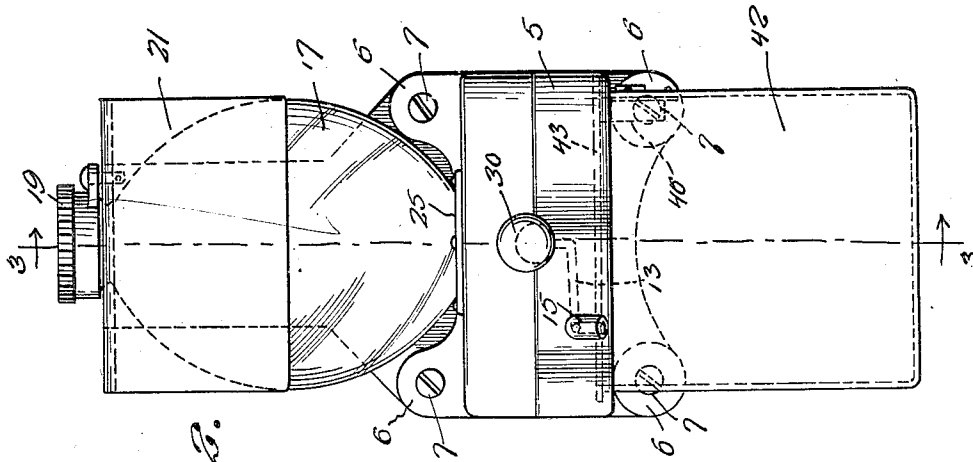


Fig. 2.

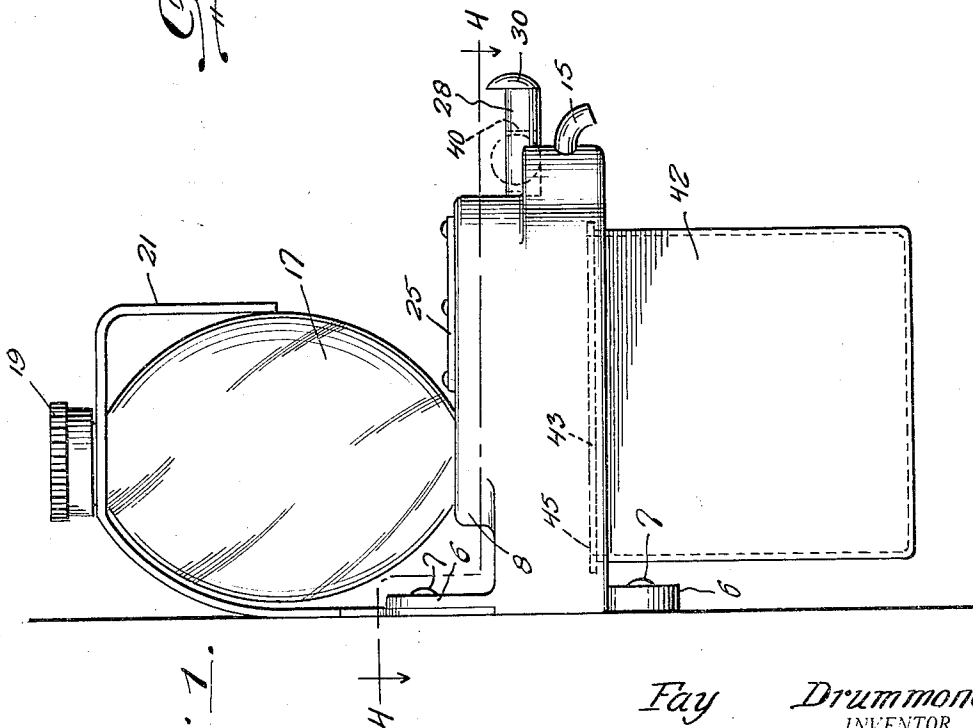


Fig. 1.

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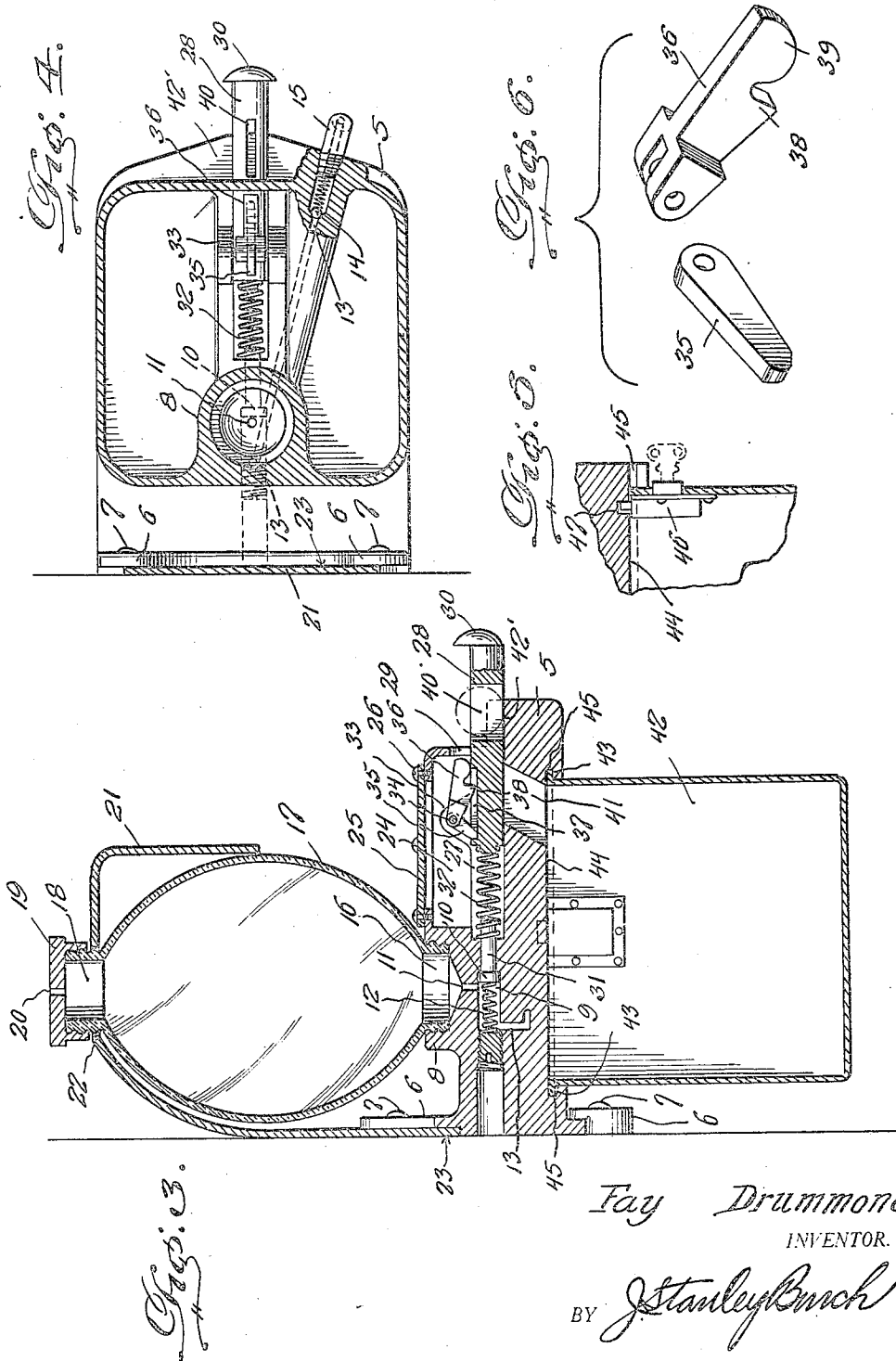
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FAY DRUMMOND, OF KANSAS CITY, MISSOURI

LIQUID VENDING DEVICE

Application filed December 2, 1929. Serial No. 411,103.

My invention relates to a device for vending liquid commodities of various kinds, and has more particular reference to improved coin-controlled means to positively discharge small quantities of liquid merchandise, which means is in the nature of a simple and practical device adapted to be conveniently placed in stores and public places.

The primary object of the present invention is to provide a liquid vending device of the above kind which is extremely simple and compact in construction and efficient and reliable in operation.

Other objects of the invention will appear as the nature of the same is better understood, and the invention consists in the novel form, combination and arrangement of parts hereinafter more fully described, shown in the accompanying drawings and claimed.

In the drawings:

Figure 1 is a side elevational view of a liquid vending device embodying the present invention.

Figure 2 is a front elevational view thereof.

Figure 3 is a central section taken on line 3—3 of Figure 2.

Figure 4 is a horizontal section taken on line 4—4 of Figure 1.

Figure 5 is a fragmentary vertical section illustrating the means for locking the coin receptacle in position relative to the supporting base; and

Figure 6 is a developed perspective view showing the detents for controlling the movements of the plunger which actuate the liquid ejecting piston.

Referring more in detail to the drawings, the present device includes a supporting base 5 in the form of a cast metal bracket provided with ears 6 whereby the base can be conveniently fastened upon a wall or supporting surface by screws 7 or the like. The base 5 is provided at the top with an internally threaded nipple 8, and is formed below this nipple with a cylindrical chamber 9 in which a piston 10 is slidably fitted, the nipple 8 communicating with the chamber 9 through a passage 11 which is located rearwardly of the outward limit of movement of the piston

10 and forms an intake port for the chamber 9. A spring 12 is interposed between the piston 10 and the inner wall of the chamber 9 for normally yieldingly holding the piston 10 in its outermost position. Leading downwardly from the inner end of the chamber 9 and then forwardly and laterally through the front of the supporting base 5 is a passage 13 through which the liquid is discharged from the device. The outer end of this passage is suitably enlarged to provide a valve chamber containing a normally spring seated check valve 14, as shown in Figure 4, which check valve is adapted to be unseated by the pressure of the liquid discharged through the passage 13 as will later become apparent. This check valve prevents liquid from dripping from the discharge passage after actuation of the piston 10, to any material extent. Threaded in the base 5 at the outlet end of passage 13 is a suitable spout 15 which turns downwardly as shown in Figure 1 so that the liquid discharged may be readily caught.

The nipple 8 is threaded to detachably receive the bottom outlet neck of a suitable glass or other liquid reservoir 17, and this reservoir is further provided with a top filling neck 18 having a threaded cap or other closure 19 which is formed with a central air inlet or vent 20. Obviously, when air is admitted into the top of the receptacle 17 through the port 20, the liquid in such receptacle may readily flow therefrom through the port 11 into the chamber 9 and passage 13 so as to fill said chamber 9 and passage 13. The liquid in the chamber 9 and passage 13 may then be forcibly ejected by moving the piston 10 inwardly through the medium of actuating means to be later described. It is of course to be understood that inward movement of the piston 10 causes a certain displacement of liquid from chamber 9 into passage 13, thereby causing a corresponding ejection of liquid through the discharge spout 15. Further, as soon as the piston 10 is released and allowed to return to normal position, the check valve 14 will seat and prevent further flow of liquid from the device until the piston 10 is again operated. In order to protect the reservoir 17 against breakage, a sheet

metal guard 21 is fitted thereover. This guard consists of a sheet of metal of a shape to extend upwardly at the back of the receptacle 17 forwardly over the top thereof and downwardly for a short distance at the front of the same, the upper intermediate portion of the guard being perforated to receive the filling neck 18, as at 22. The rear lower end portion of the guard 21 is preferably fastened behind the upper ears 6 of the base 5 by means of the adjacent screws 7 as clearly shown in Figures 3 and 4 at 23.

Formed in the top of the base 5 forwardly of the nipple 8 is a recess 24, the top of which is closed by a removable cover plate 25 bolted or otherwise secured in place as at 26. In the bottom of the recess 24 there is formed a groove 27 providing a horizontal guideway in which is slidably fitted a plunger 28 that projects through an opening 29 in the front wall of the recess 24 and terminates at its outer end in a knob or finger-piece 30. A cylindrical opening is provided in the base 5 to connect the chamber 9 with the recess 24 and in which is slidably fitted the stem 31 of the piston 10, which stem 31 projects some distance into the recess 24 and is horizontally alined with the plunger 28. A spring 32 is positioned in the groove 27 between the inner end of the plunger 28 and the inner wall of the groove 27 to normally yieldingly hold the plunger 28 in its outer position, at which time the inner end of said plunger is in spaced relation to the outer end of stem 31. A pair of opposed ears 33 project upwardly from the side walls of the groove 27 within the recess 24, and these ears carry a transverse pin 34 on which are pivoted a pair of detents 35 and 36. The detent 35 extends downwardly and rearwardly into a longitudinal groove 37 provided in the upper side of the plunger 28 for limiting the outward movement of said plunger under the action of spring 32. The detent 36 extends forwardly and has a depending lug 38 normally engaged in the groove 37 but normally spaced from the outer end of said groove, thereby permitting limited inward movement of the plunger 28 of an amount insufficient to cause the plunger to engage and operate the stem 31 of piston 10. The detent 36 further has a rounded nose 39 at its outer free end, for a purpose which will presently become apparent. Formed through the portion of the plunger 28 which is normally outwardly of the recess 24 is a coin slot 40, and provided in the base 5 coincident with the groove 27 is a further coin slot 41 which leads through the bottom of the base 5. The base 5 has a supporting ledge 42' forwardly of the front wall of recess 24 and below the forward or outer portion of plunger 28 so as to support a coin inserted in the slot 40 of the plunger as indicated by dotted lines in Figure 3. The

arrangement is such that when a coin is placed in the slot 40 of plunger 28 and the plunger 28 is pushed inwardly or rearwardly, the coin will be carried rearwardly with the plunger so as to ride under the nose 39 of detent 36 and lift the latter so as to disengage its stop lug 38 from the groove 37 of plunger 28. When the detent 36 is thus released from the plunger, the latter may then be pressed inwardly to a further extent for engaging the stem 31 and causing rearward movement of piston 10 for ejecting a small quantity of liquid outwardly through the spout 15 as generally described above. As the plunger moves inwardly, the slot 40 will aline with the slot 41, thus permitting the coin to pass from the plunger through the base 5 into a suitable coin receptacle 42 suspended from said base. When the plunger is released, the springs 12 and 32 will return the parts to normal position in an obvious manner, the detent 36 lowering by gravity so as to again position its stop lug 38 within the groove 37 whereby inward movement of the plunger 28 sufficient to actuate the piston 10 will be prevented unless a coin is inserted in the slot 40 of plunger 28 of a proper nature to engage and release the detent 36. Obviously, the limited inward movement of plunger 28 is necessary in order to permit movement of the coin into engagement with detent 36 for release of the latter prior to actuation of piston 10.

The coin receptacle 42 is preferably in the nature of a rectangular metallic box open at the top and having its upper edges flanged outwardly as at 43. The under side of the base 5 is formed with a recess 44, the front and rear walls of which are under cut to form transverse guide ways 45 adapted to slidably receive the flanges 43 on the front and rear walls of the coin receptacle 42. The recess 44 is open at one side of the base 5 as shown clearly in Figure 5, thus permitting the coin receptacle to be slid laterally into or out of engagement with the base. The receptacle 42 may thus be readily attached for collection of coins deposited in the device or removed for collection of the coins from said receptacle 42 after the device has been in use for any period of time. Suitable means may be provided for locking the coin receptacle 42 in place against unauthorized removal, and such means is shown as preferably embodying an ordinary sliding-bolt lock 46 attached to the inside of the side wall of the receptacle 42 adjacent the open side of recess 44, the sliding bolt of lock 46 being adapted for projection upwardly into a suitable keeper recess 47 provided in the underside of the base 5 in position to receive the bolt of lock 46 when the coin receptacle 42 is properly positioned in engagement with the base 5.

The operation has been fully dealt with as the description proceeded, and it is accord-

ingly believed that the purpose, operation and advantages of the invention will be readily understood and appreciated by those skilled in the art without more detailed explanation.

5 Obviously, the invention provides a very simple, compact and efficient vending device of the character indicated, and one which may be economically manufactured and conveniently maintained in working order.

10 Minor changes in details of construction are contemplated within the spirit and scope of the invention as claimed.

What I claim as new is:

1. In a liquid vending device of the class
15 described, a base having a pump chamber and a discharge passage leading from said pump chamber, a piston movable in said pump chamber and operable to discharge liquid therefrom, a liquid reservoir supported on
20 the base and communicating with said pump chamber, yieldable means to normally retract said piston, a plunger for operating said piston, means associated with the plunger for limiting its forward movement prior to actu-
25 ating engagement with the piston, and means for subsequently releasing said limiting means to permit the plunger upon further movement inwardly of the guide way to actuate the piston thereby forcibly ejecting fluid
30 from the pump chamber through said discharge passage.

2. In a liquid vending device of the class described, a base having a pump chamber and a discharge passage leading from said pump
35 chamber, said base further having a recess in the top thereof forwardly of said pump chamber and being formed with a guide way in the bottom of said recess, a piston movable in the pump chamber and operable to discharge
40 liquid from the latter, a plunger movable in said guide way and operable to actuate the piston, means associated with the plunger for limiting its forward movement prior to actu-
45 ating engagement with the piston, and means for subsequently releasing said limiting means to permit the plunger upon further movement inwardly of the guide way to actuate the piston thereby forcibly ejecting fluid
50 from the pump chamber through said discharge passage, yieldable means to normally retract the piston and the plunger, and means to limit outward movement of said plunger.

In testimony whereof I affix my signature.

FAY DRUMMOND.

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