

Jan. 10, 1928.

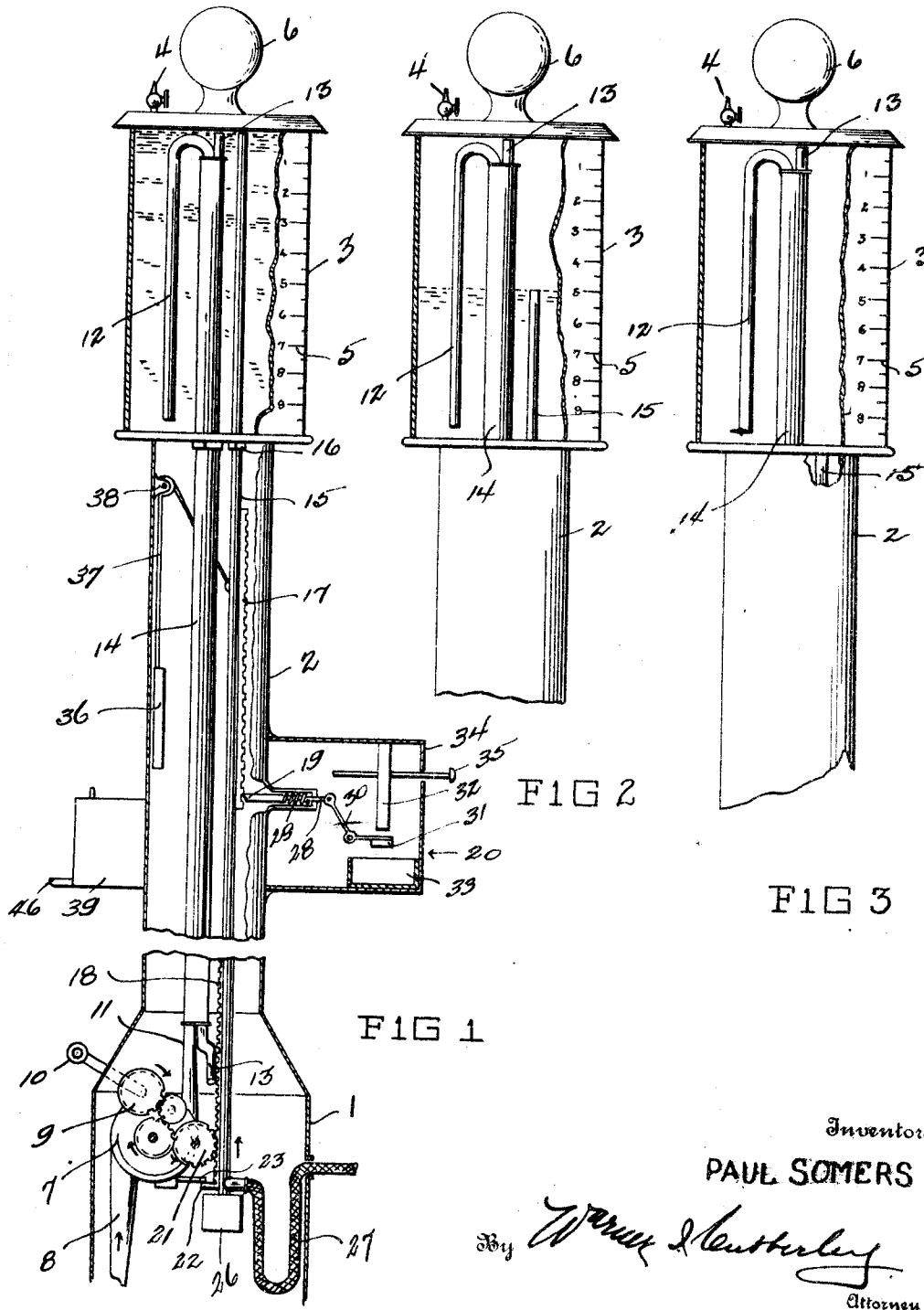
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1,655,666

COIN CONTROLLED LIQUID DISPENSING APPARATUS

Filed Aug. 29, 1925

2 Sheets-Sheet 1



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COIN CONTROLLED LIQUID DISPENSING APPARATUS

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2 Sheets-Sheet 2

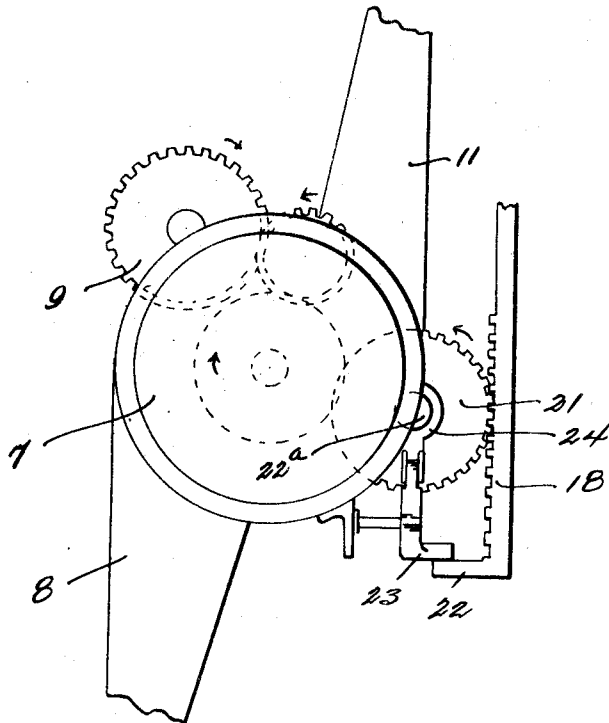


FIG 4

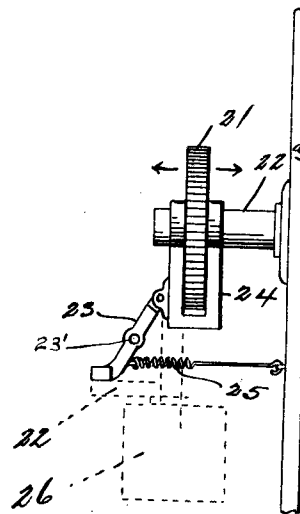


FIG 5

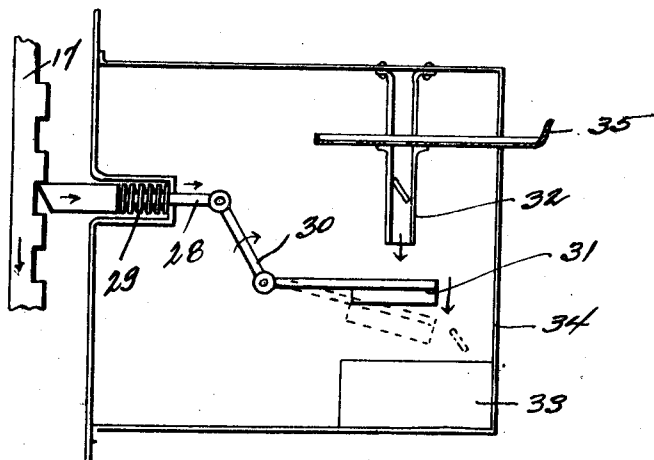


FIG 6

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UNITED STATES PATENT OFFICE.

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COIN-CONTROLLED LIQUID-DISPENSING APPARATUS.

Application filed August 29, 1925. Serial No. 53,273.

My invention has reference, in its broad aspect, to improvements in check or coin controlled automatic liquid dispensing apparatus, and more particularly it is my purpose to provide an apparatus of this general character which may be used to dispense automatically certain quantities of gasoline, fuel oil or the like, in amounts commensurate with the value of the coin placed in my control device thereby adapting my apparatus to use in places, such as public highways, roads, or the like, remote from service stations or other established retail markets. Furthermore, my dispensing apparatus may be used to vend soda water, soft drinks, or in fact any liquid, and it needs no attendant to operate it once the service line or storage tank has been filled.

I am well aware that coin controlled dispensing devices have been heretofore used, but my apparatus differs from others in the art in that I provide a gravity actuated feed outlet or discharge element which automatically determines the quantity of liquid to be dispensed, and which is directly controllable through latch trip mechanism affected by a coin of a certain denomination inserted in the apparatus by the purchaser. My apparatus may, furthermore, be refilled from a service or storage tank or line without danger of loss in liquid or derangement of the control apparatus, and in its construction and operation it combines to a high degree simplicity and durability, with accuracy and efficiency.

The structural elements and other means employed to accomplish the above and other equally important objects and advantages will be hereinafter more fully described in detail and specifically pointed out in the claims appended hereunto and forming a part of this specification, but the scope of my invention may only be determined by the limits defined in the claims.

In the accompanying drawing wherein is illustrated the preferred embodiment of my invention;—

Figure 1 is a sectional side view of my dispensing assembly,

Figure 2 is a view of the dispensing tank half filled, and shows the position of the discharge pipe,

Figure 3 is a view of the dispensing tank when empty,

Figure 4 is a detail view of my refill pump and stop mechanism,

Figure 5 is a detail view of my stop mechanism and pump clutch,

Figure 6 is a sectional side view of my coin controlled release catch or trip for my discharge pipe.

In the several views of the drawings wherein like characters of reference designate like or similar parts;—

The numeral (1) designates the hollow base of my apparatus, and (2) the hollow standard rising therefrom and on which is mounted my glass dispensing tank (3). The tank (3) is provided with a suitable air vent (4), graduations (5) and a ball shaped cap (6).

Within the hollow base (1) is mounted a rotary pump (7) having a service connection (8) to a storage tank or pipe line (not shown), and through the instrumentality of gear connections (9) the pump is adapted to be actuated by a hand lever (10), or by a small motor (not shown) if desired. The pump (7) draws liquid, such as gasoline, from the storage tank and directs the same into an intake pipe (11). The intake pipe (11) extends into the dispensing tank (3) and is formed with a downward bend (12) so that it discharges to the bottom of the tank, and mounted adjacent to the intake pipe (11) is an overflow pipe (13) which returns any excess liquid to the storage tank or service line (not shown). The intake pipe and overflow pipe are preferably mounted in a common cylindrical casing (14).

The discharge pipe (15) of my dispensing apparatus is mounted for free movement in a vertical path by a bearing (16) in the floor of the dispensing tank (3), and is provided with toothed elements (17) and (18) which are engaged respectively by the latch (19) of my coin control apparatus (20) and the gear wheel (21) of my pump (7). Consequently, when my pump is actuated in the direction of the arrows in Figure (1) the pipe (15) is moved upwardly, and I have provided a finger (22) on the end of the toothed element (18) which engages a trip lever (23) at the limit of upward movement of the pipe 15 to move the gear (21) out of engagement with the said element (18) when the pipe (15) is raised to the required extent. To this end gear (21) is slidable on a pin (22') and is coupled with the lever (23) mounted on fixed pivot (23') by a yoke (24) so that when the finger 22 engages

the lever (23), said lever will be moved against the tension of the spring (25) to move the yoke (24) and slide the gear (21) on the pin (22) to disengage the same from the toothed element (18), thus uncoupling the pump from the pipe (15), and the normal limit of upward movement of the pipe (15) is at a level with the liquid in the dispensing tank (3) when the same is full. A suitable spring (25) returns the lever (23) and gear (21) to their normal position as soon as the finger (22) is disengaged from the lever (23) upon downward movement of the pipe (15) as gasoline or the like is withdrawn thereby reengaging gear (21) with element (18).

On the lower end of the discharge pipe (15) I have affixed a counter-weight (26) which functions to facilitate the movement of the pipe downwardly since such downward movement is induced by gravity and a flexible hose (27) communicates with the lower end of the discharge pipe to facilitate dispensing; this is the "filling" hose commonly found in gasoline service stations.

As has been described, the discharge pipe (15) normally moves downwardly under the influence of its own weight and of the weight (26), and naturally the liquid in the tank (3) follows the level of the pipe (15) since it flows therein to be dispensed. As has heretofore been stated, the pump (7) is uncoupled from the pipe (15) by throwing out gear (21) from engagement with element (18) as soon as the tank has been filled. The tank is then ready to be discharged, but in order to control such discharge I provide the latch (19) of my coin control apparatus (20), which same functions to prevent downward movement of the pipe (15) by engagement with toothed element (17). The latch (19) is formed with a shank (28) about which is a spring (29) which normally tends to force the latch to engage the teeth of the toothed element (17). Engaging the latch shank (28) is a bell crank lever (30) the weighted arm (31) of which is disposed below a coin chute (32) so that a coin of a certain denomination placed in the chute will drop upon the arm (31) to depress the same and thereby pull the latch from engagement with the toothed element (17) thereby permitting the pipe (15) to move downwardly until the coin falls from the arms (31) and passes into the box (33). The limit of downward movement for each coin inserted is usually one notch, and the sensibility of the latch (19) is adjusted to be affected by the weight of a coin of a certain denomination. A suitable housing (34) is provided for my coin control apparatus, and a slide plate (35) is designed to govern the denomination and facilitate inserting coins therein. Manifestly therefore, the denomination of the coin will con-

trol the operation of my apparatus since the apparatus can be set to receive quarters, dimes, half-dollars or the like, any of which will release the latch (19) when set for that denomination to permit the pipe (15) to move downwardly to dispense the proper quantity of liquid. A counter weight (36) is provided with a cord (37) trained over a pulley (38) and engaging the pipe (15) to stabilize its operation.

For purposes of convenience I also provide an automatic change making device with my apparatus designated (39) and having a cup (46) from which proper change can be withdrawn with facility. The type of change making apparatus to be used is conventional.

While the operation of my dispensing apparatus is believed to be clear from the foregoing, it is pointed out that should the dispensing tank (3) be empty it can be readily refilled by a purchaser and then emptied in part or in full depending upon the amount of liquid, such as gasoline, desired. While in the foregoing, there has been illustrated and described such combination and arrangement of elements as constitute the preferred embodiments of my invention, it is nevertheless desired to emphasize the fact that interpretation of the invention should only be conclusive when made in the light of the subjoined claims.

I claim:—

1. A device of the type described, comprising a liquid retaining receptacle, a discharge pipe mounted for movement there-within, toothed elements carried on opposite sides of said pipe one above the other, means engaging one of said toothed elements for raising said discharge pipe within the receptacle to be disposed above the level of the liquid therein, means engaging the other toothed element for holding said discharge pipe in a predetermined raised position, in combination with a coin controlled device for releasing said latter means whereby said pipe may move downwardly under its own weight.

2. A device of the type described, comprising a liquid retaining receptacle, a movable gravity actuated liquid discharge pipe mounted to extend within the receptacle, toothed elements carried by said discharge pipe, means engaging one of said toothed elements for raising said discharge pipe within the receptacle to be disposed above the level of the liquid therein, means engaging the other toothed element for holding said discharge pipe in a predetermined raised position, in combination with a coin controlled device for releasing said latter means whereby said pipe may move downwardly of its own weight.

3. A device of the type described, comprising a liquid retaining receptacle, a pump

device for filling said receptacle, a discharge
 pipe movably mounted and extending into
 said receptacle for gravity actuation in a
 downward path, toothed elements carried by
 5 said discharge pipe, means operably con-
 nected with the pump and engaging one of
 said toothed elements for raising said dis-
 charge pipe within the receptacle to be dis-
 posed above the level of the liquid pumped
 10 therein, means for releasing said pipe raising
 means, means engaging the other toothed
 element for holding said discharge pipe in
 a predetermined raised position, in com-
 bination with a coin controlled device for
 15 releasing said latter means whereby said
 pipe may move downwardly of its own
 weight to permit the liquid in the receptacle
 to flow therethrough.
 4. A device of the type described, com-
 20 prising a liquid retaining receptacle, a pump
 device for filling said receptacle, a discharge
 pipe movably mounted and extending into
 said receptacle for gravity actuation in a
 downward path, a pair of toothed elements
 25 carried one above the other on opposite sides
 of said pipe, means operably connected with
 the pump and engaging one of said toothed
 elements for raising said discharge pipe
 within the receptacle to be disposed with its
 30 mouth above the surface of the liquid pump-
 ed therein, means for releasing said pipe
 raising means, means engaging the other
 toothed element for holding said discharge
 pipe in a predetermined raised position, in
 35 combination with a coin controlled device
 for releasing said latter means whereby said
 pipe may move downwardly of its own
 weight to permit the liquid in the receptacle
 to flow therethrough.
 In testimony whereof, I affix my signature 40
 hereunto,

PAUL SOMERS.