A. BOWSER.

LIQUID DISPENSING APPARATUS.

APPLICATION FILED OCT. 4, 1918.

1,316,557.

Patented Sept. 23, 1919.

2 SHEETS—SHEET 1.

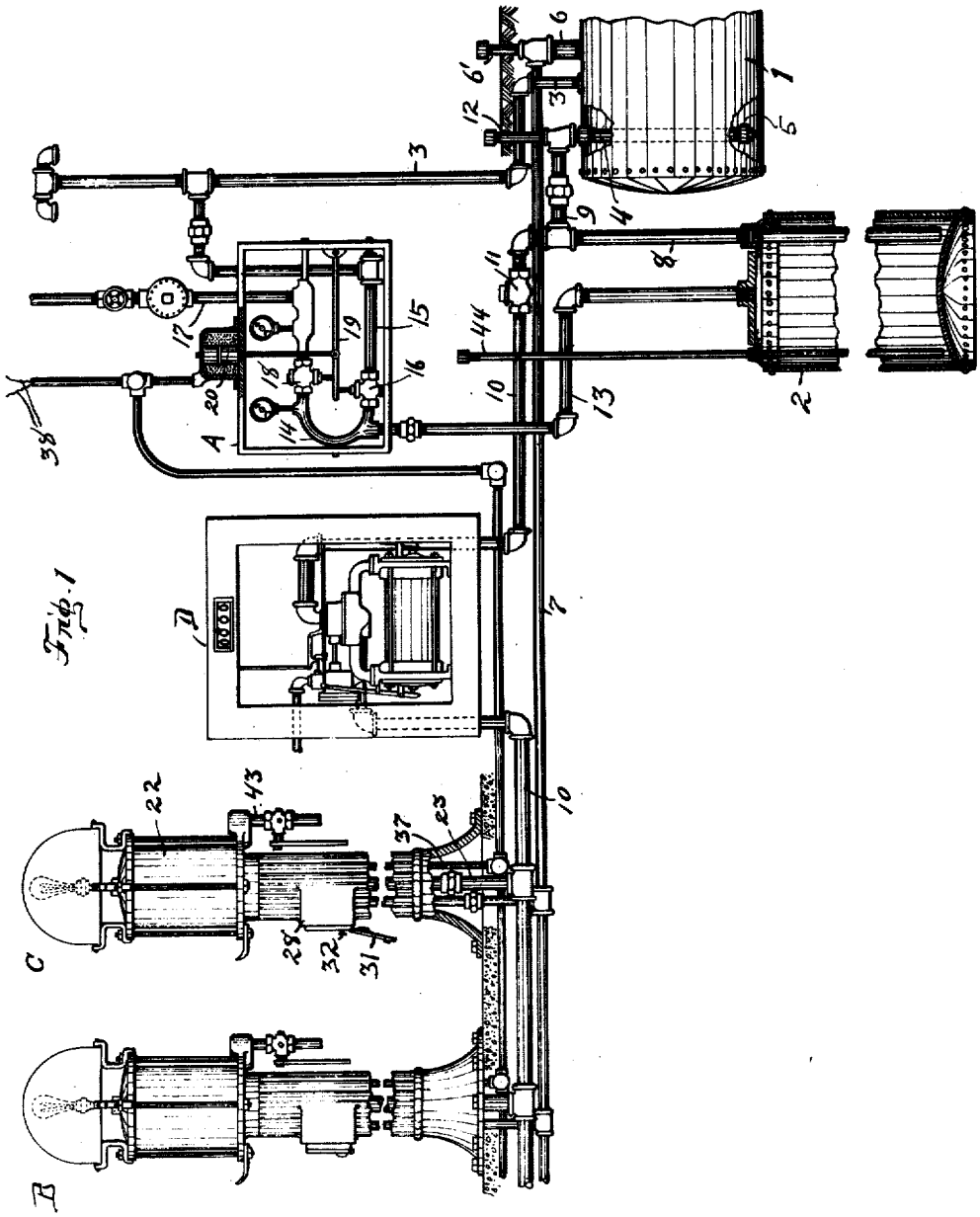


Fig. 1

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2 SHEETS—SHEET 2.

Fig. 2.

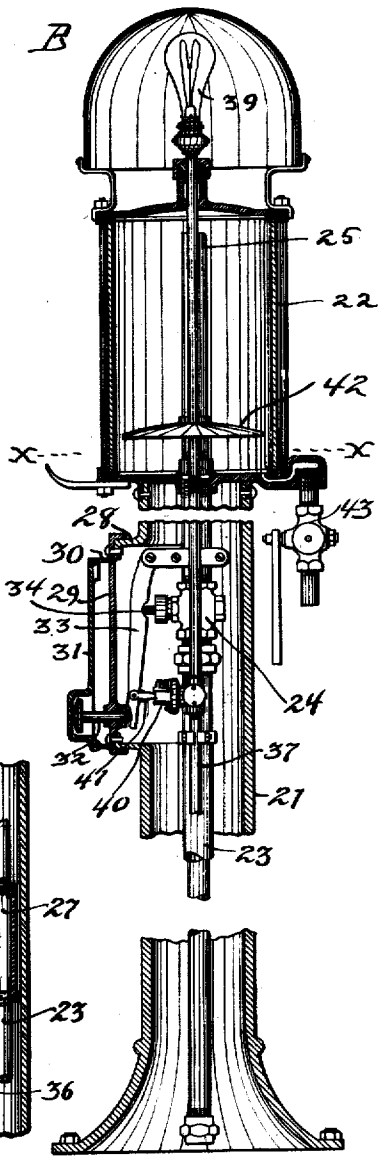


Fig. 3

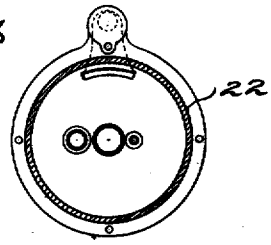


Fig. 5.

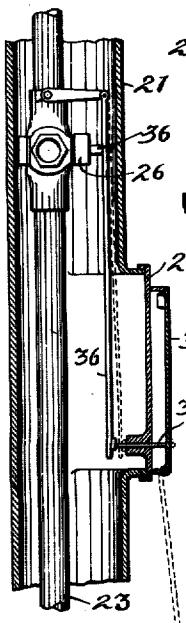
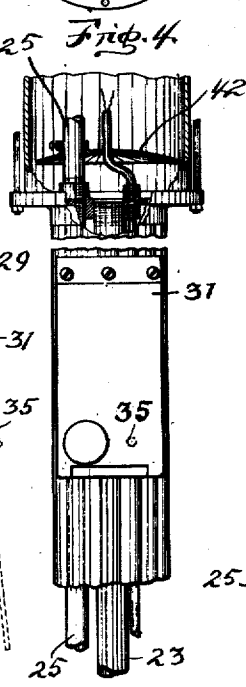


Fig. 4.



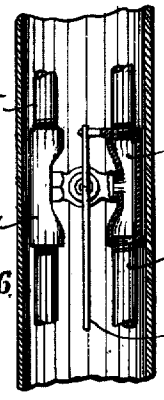


Fig. 6.

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UNITED STATES PATENT OFFICE.

AUGUSTUS BOWSER, OF FORT WAYNE, INDIANA.

LIQUID-DISPENSING APPARATUS.

1,316,557. Specification of Letters Patent. Patented Sept. 23, 1919.

Application filed October 4, 1918. Serial No. 256,795.

To all whom it may concern:

Be it known that I, AUGUSTUS BOWSER, a citizen of the United States of America, and resident of Fort Wayne, in the county of Allen and State of Indiana, have invented certain new and useful Improvements in Liquid-Dispensing Apparatus, of which the following is a specification.

This invention relates to improvements in liquid dispensing apparatus and the object thereof is to afford facilities by means of which gasolene and oils or other liquids may be dispensed in definite quantities without the necessity of operating a pump.

The object of the invention is accomplished by the construction illustrated in the accompanying drawings, in which:—

Figure 1 is an elevation showing a general arrangement of parts constituting a complete installation, portions being cut away and in section;

Fig. 2 is a side elevation in vertical section showing a dispensing head, portions being cut away;

Fig. 3 is a transverse section of Fig. 2 on the line x—x thereof;

Fig. 4 is a detail view showing a front elevation of a portion of a dispensing head;

Fig. 5 is a vertical section through a part of the supporting stand for the head, the plane being at right angles to that of Fig. 4, showing a by-pass valve arranged in connection with the supply-pipe and showing also the operating lever for the valve; and

Fig. 6 is a detail view showing the by-pass valve arranged in connection with the supply-pipe and overflow pipe and showing also the operating lever, a portion of the view being in vertical section.

Similar numerals of reference indicate corresponding parts throughout the several views and referring now to the same:—

1 is a reservoir for holding a supply of liquid, and 2 is an auxiliary tank situated in a plane lower than the reservoir. A vent-pipe 3 has communication with the reservoir at the top thereof, and a discharge pipe 4 extends into the reservoir and is provided with a foot-valve 5 at its lower end. A fill-pipe 6 has communication with the reservoir at the top thereof and through which the reservoir is recharged, there being an extension 6′ connected with the fill-pipe proper. A drain-pipe 7 has communication with the fill-pipe 6 and is used for the return of surplus liquid.

A discharge pipe 8 extends into the auxiliary tank and has communication with the lower part thereof, and has connection with the discharge pipe 4 of the reservoir through the medium of a connecting-pipe 9. A supply-pipe 10 of the dispensing apparatus has communication with the discharge pipe 8 through a check-valve 11. The auxiliary tank is supplied with liquid from the reservoir through the pipes 4, 9 and 8 which function as a siphon, there being an extension-pipe 12 connected with the discharge-pipe 4 through which the siphon may be primed by supplying a sufficient initial quantity of liquid to establish action in the siphon. The auxiliary tank has in communication with its upper end an air-pipe 13 through which air-pressure is applied for expelling liquid from the tank, the liquid passing out through the discharge pipe and check-valve 11 into the supply-pipe 10 when the pressure is applied. The pipe 13 also serves as an exhaust pipe when the tank is being refilled. The air is applied and exhausted through the medium of a controlling mechanism A having connection with the air-pipe 13. The controlling mechanism is comprised of a manifold 14 having communication with the air-pipe 13 and also with an exhaust pipe 15 through an escape-valve 16. An air supply pipe 17 has communication with the manifold through a throttle-valve 18. The throttle-valve and the escape-valve are operated simultaneously by a lever 19 which is actuated by means of an electro-magnet 20. The exhaust-pipe may, if so desired, be connected with the vent-pipe 3 so that the latter will convey the exhaust to its final discharge. B and C are discharge heads through which the liquid is dispensed, and D is a meter having connection with the supply-pipe 10 for ascertaining the quantity of liquid passing therethrough. The particular construction of the meter is immaterial to the present invention as any other suitable meter may be employed instead of that shown. Each of the dispensing heads is comprised of a sup-

porting stand 21 upon the top of which is supported a vessel 22 the vertical walls of which are of transparent material, such as glass. The vessel has a supply-pipe 23 leading from its bottom and which has a throttle-valve 24 in connection therewith for controlling the flow of liquid therethrough. The pipe 23 has connection with the main supply pipe 10. The vessel 22 has also an overflow pipe 25 that communicates with the upper portion of the vessel and extends down through the stand 21 in parallel relation with the supply-pipe 23. Located conveniently within the stand is a by-pass valve 26 connecting the supply-pipe 23 and the overflow pipe 25 through the medium of suitable T-connections 27.

In the front of the stand is a chambered protuberance 28 having a lid 29 for closing the same, and the latter has a flange 30 extending outwardly with a lid 31 hinged thereto. A push-button 32 is mounted with its stem extending through the lid 29 so as to engage an operating lever 33, the latter having bearing connection against the stem 34 of the valve 24. A pin 35 also is slidably mounted in the lid 29 with its inner end bearing against an operating lever 36 which is pivotally mounted and has also bearing relation against the stem 36 of the by-pass valve 26. The pin 35 is so proportioned that when the lid 31 is in closed position the valve 26 will be held open through the medium of the lever 36 and the pin 35, thus permitting the content of the vessel 22 to pass out through the upper part of the supply-pipe 23 and the by-pass valve into the overflow pipe. Also the lid 31 incloses the push-button 32 so that it may not be operated without opening the lid.

A conduit 37 extends up through the stand 21 and leads to the magnet 20 and contains wires 38 for exciting the magnet and for supplying a lamp 39 at the top of the dispensing head. An electrical switch 40 is arranged in connection with the conduit and is adapted to be closed by a plug 41 that is mounted upon the operating lever 33 when the latter is pressed inwardly by applying pressure to the push-button 32. A baffle-disk 42 is mounted within the lower part of the vessel 22 over the upper end of the supply-pipe 23 and is for the purpose of causing the liquid to rise evenly as the vessel is being filled. A discharge nozzle 43 has communication with the lower end of the vessel 22 through which the liquid is finally dispensed.

It is the intention that the electrical wires will have connection with a suitable source of energy, and the pipe 17 will have connection with a suitable source of air under pressure. The pipe 44 communicating with the lower part of the auxiliary tank 2 is used for the purpose of extracting foreign matter that may accumulate in the bottom of the tank.

In the operation of the invention the reservoir is charged through the fill-pipe 6, and also the tank 2 and the siphon are initially filled through the pipe 12. By pressing upon the push-button 32 the switch 40 is closed and the valve 24 is opened through the medium of the lever 33 so that the magnet becomes excited with the effect that the lever 19 becomes drawn upwardly, which movement opens the air-valve 18 and permits the exhaust-valve 16 to close. Thus, air-pressure enters through the pipe 13 into the tank 2, which forces the liquid contained therein out through the discharge pipe 8, the supply-pipes 10 and 23, into the vessel 22. This operation is continued until the vessel is filled to the level of the overflow pipe opening. The push-button is then released, the switch thereby is opened and the valve 24 is closed. Any surplus liquid flows down through the overflow pipe 25 and is carried back to the fill-pipe 6 through the pipe 7. When the switch is opened the magnet 20 drops to its normal position, together with the lever 19, causing the air-valve 18 to close and the exhaust-valve 16 to open, so that the air introduced into the tank 2 is released and discharged through the exhaust-pipe 15. When thus released of air-pressure the tank becomes automatically refilled through the siphon. The liquid contents of the vessel is then dispensed through the nozzle 43 in such quantities as desired. The vertical walls of the vessel, being of glass, admits observation of the liquid as it enters the vessel and as it is removed therefrom, and the patron is thus permitted to ascertain the quantity of liquid purchased.

When the operation of the apparatus is to be temporarily suspended, the lid 31 is closed and locked thus concealing the push-button, and the by-pass valve is thereby held open by the pressure of the door against the pin 35 which actuates the valve through the medium of the lever 36. The contents of the vessel thereby is permitted to drain through the feed-pipe and valve into the overflow pipe 25.

What I claim is:—

1. In dispensing apparatus of the class described, including a reservoir and an auxiliary tank and a siphon arranged for supplying the latter from the former, the siphon having a foot-valve, a dispensing head including a stand and a transparent measure and an overflow pipe for the measure communicating with the reservoir, a supply pipe extending through the stand and having a throttle-valve located therein, means for alternately supplying air under pressure to the auxiliary tank and re-

leasing it therefrom and including an electric switch for controlling the same located in the stand, and means for simultaneously actuating the throttle-valve and switch.

2. In apparatus of the class described, a supply-pipe and a measuring vessel; an overflow-pipe for the vessel; means for supplying liquid through the supply-pipe to the vessel; and a by-pass valve having connection between the overflow pipe and the supply-pipe adapted for draining the vessel.

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

AUGUSTUS BOWSER

Witnesses:
W. G. BURNS,
MATILDA METTLER.