M. L. TOBRINER.

LIQUID DISPENSER.

APPLICATION FILED MAR. 10, 1913.

1,145,221.

Patented July 6, 1915.

3 SHEETS—SHEET 1.

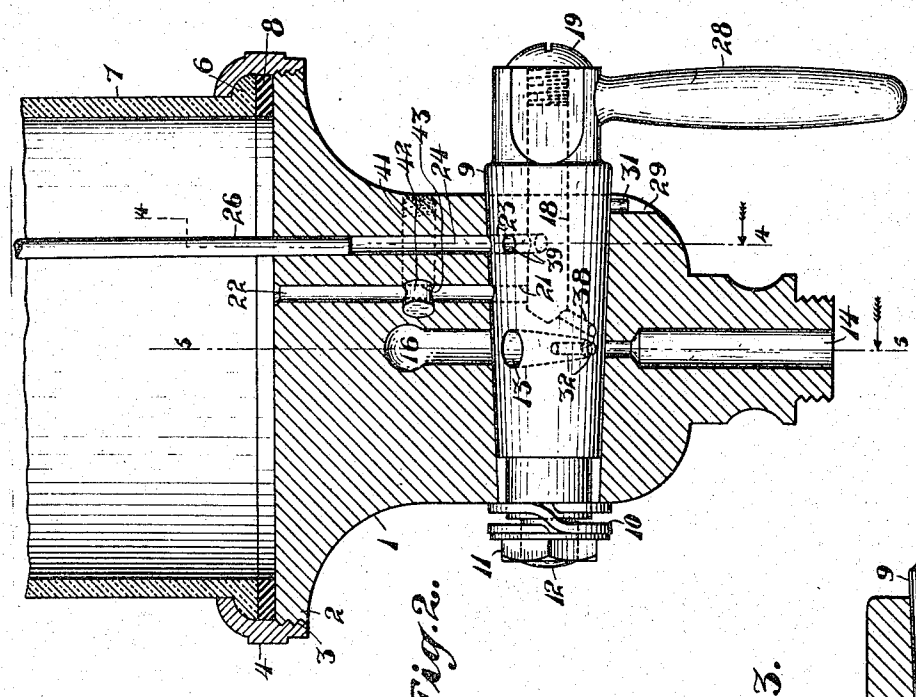


Fig. 2.

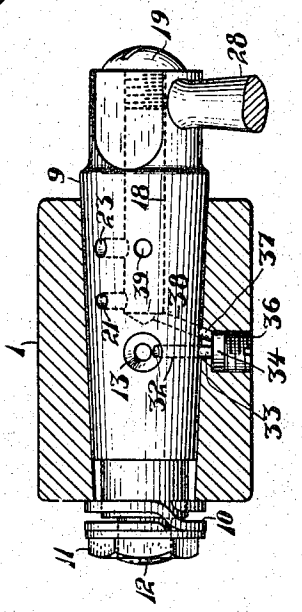


Fig. 3.

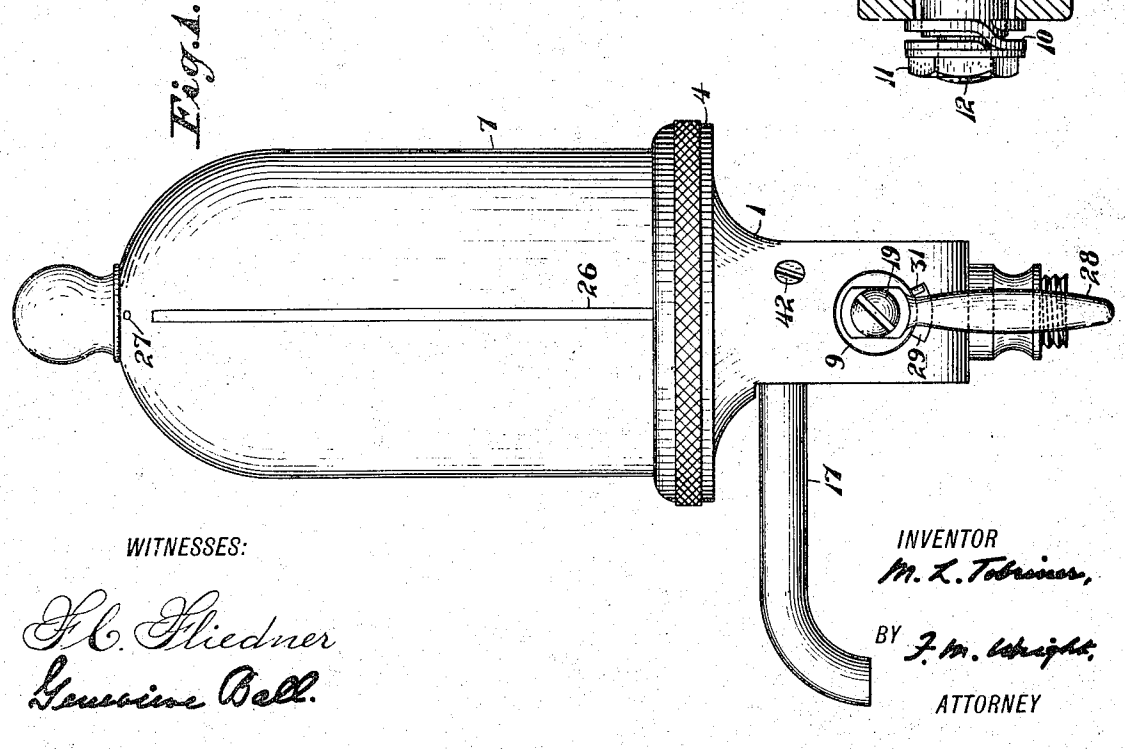


Fig. 4.

WITNESSES:

H. C. Fliedner

Genevieve Bell.

INVENTOR

M. L. Tobriner,

BY F. M. Wright.

ATTORNEY

M. L. TOBRINER.

LIQUID DISPENSER.

APPLICATION FILED MAR. 10, 1913.

1,145,221.

Patented July 6, 1915.

3 SHEETS—SHEET 2.

Fig. 4.

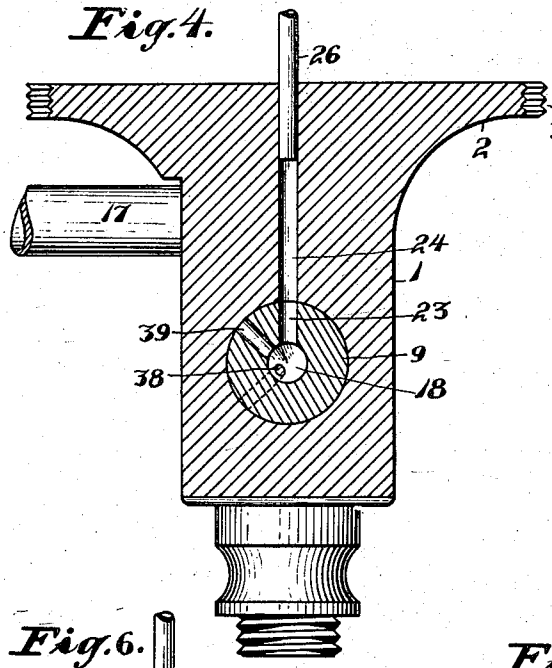


Fig. 5.

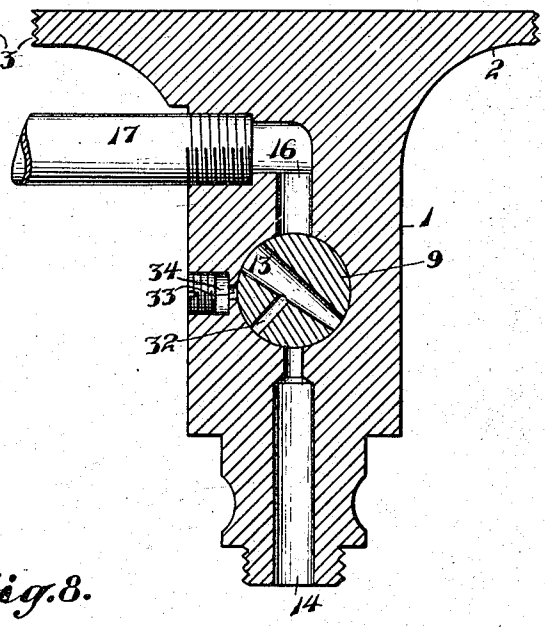


Fig. 6.

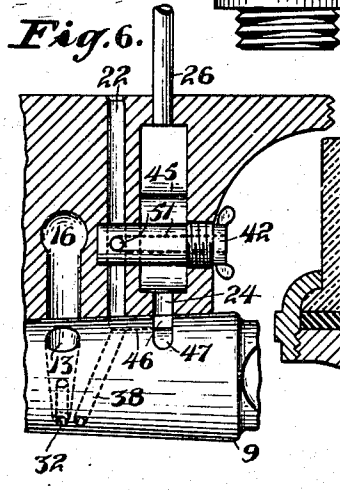


Fig. 8.

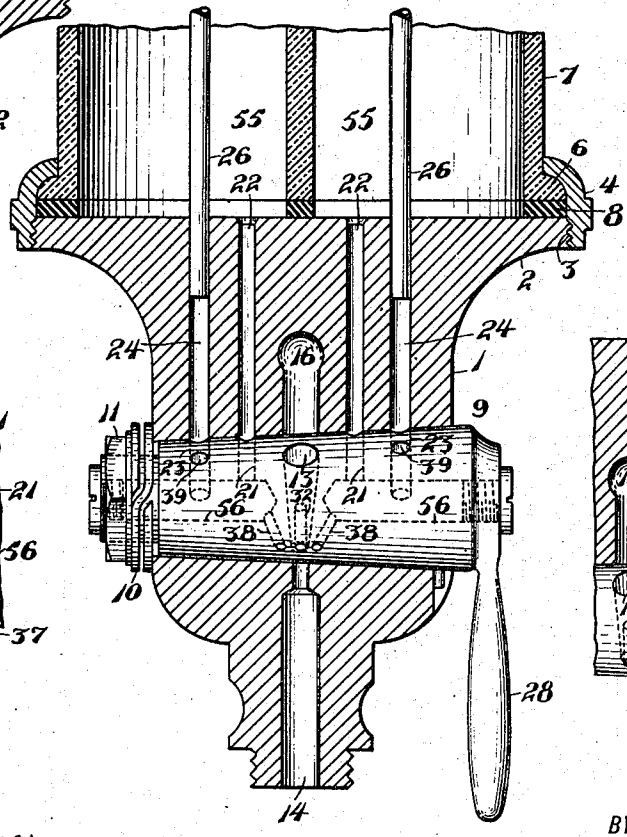


Fig. 7.

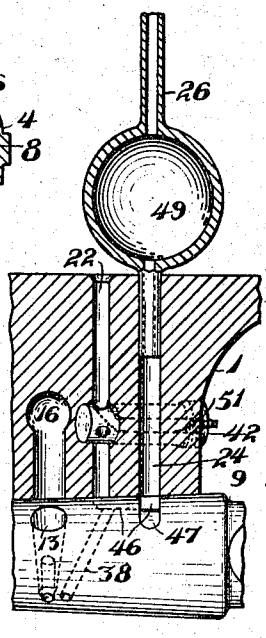
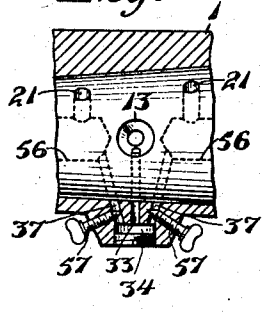


Fig. 9.



WITNESSES:

F. C. Fliedner

Genevieve Ball.

INVENTOR

M. L. Tobriner.

BY F. M. Wright.

ATTORNEY

M. L. TOBRINER.

LIQUID DISPENSER.

APPLICATION FILED MAR. 10, 1913.

1,145,221.

Patented July 6, 1915.

3 SHEETS—SHEET 3.

Fig. 10.

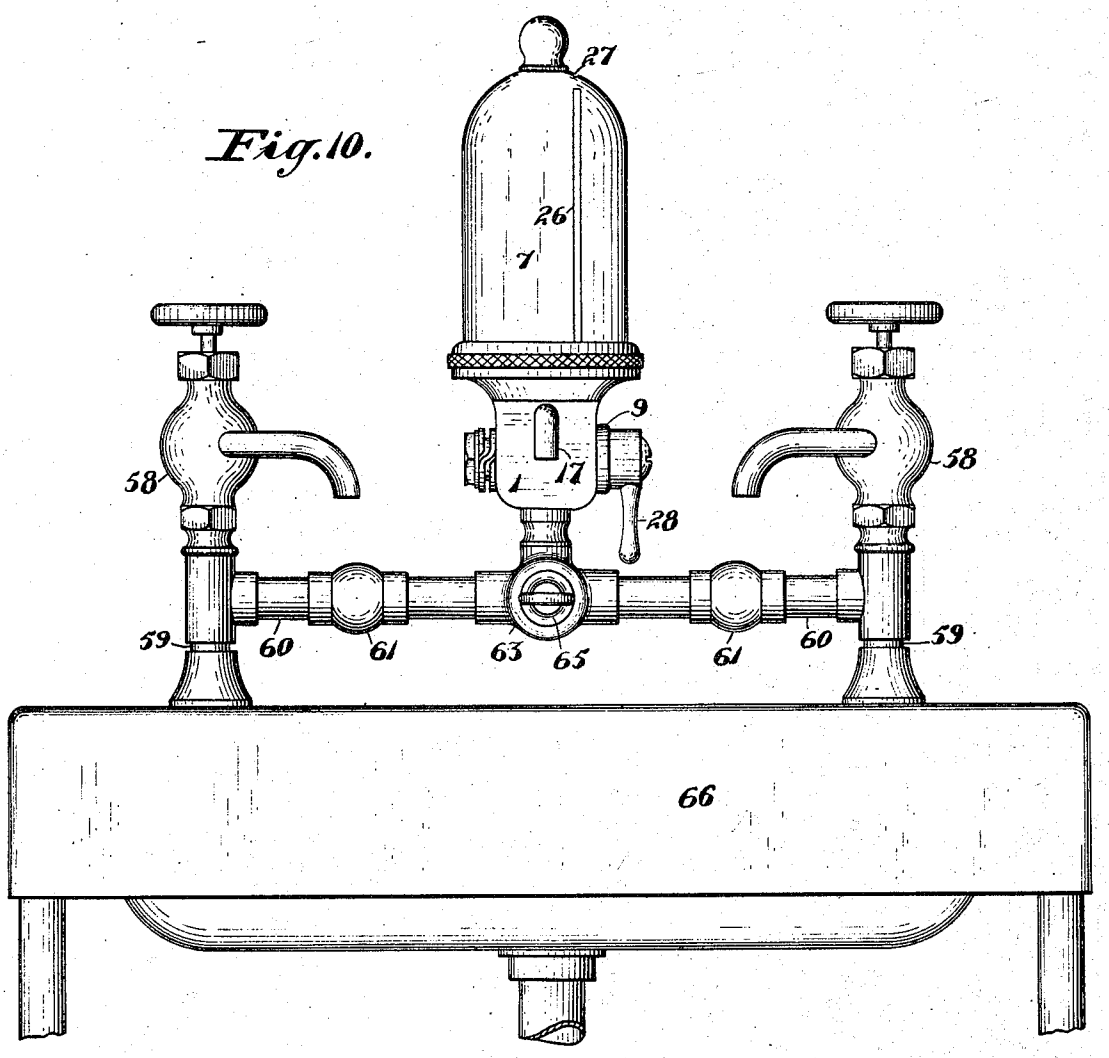
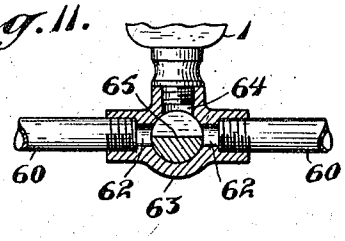


Fig. 11.



WITNESSES:

F. C. Fliedner

Genevieve Ball.

INVENTOR

M. L. Tobriner,

BY Thos. Wright,

ATTORNEY

UNITED STATES PATENT OFFICE.

MARION L. TOBRINER, OF SAN FRANCISCO, CALIFORNIA.

LIQUID-DISPENSER.

1,145,221. Specification of Letters Patent. Patented July 6, 1915.

Application filed March 10, 1913. Serial No. 753,458.

To all whom it may concern:

Be it known that I, MARION L. TOBRINER, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented new and useful Improvements in Liquid-Dispensers, of which the following is a specification.

One object of the present invention is to provide an apparatus for conveniently dispensing, from a receptacle provided therefor, a liquid to be mixed with water, and especially liquid soap for washing the hands.

A further object is to provide such an apparatus in which a measured and uniform quantity of liquid may be dispensed at each operation of the apparatus.

A further object is to provide such an apparatus by which any one or more of a plurality of such liquids can be selectively so dispensed.

A further object is to provide such an apparatus which can be used with hot and cold water faucets, simultaneously or separately, as desired.

In the accompanying drawing, Figure 1 is a side elevation of my improved soap faucet; Fig. 2 is an enlarged vertical longitudinal section of the lower portion thereof; Fig. 3 is a horizontal section thereof; Fig. 4 is a vertical transverse section on the line 4—4 of Fig. 2; Fig. 5 is a similar section on the line 5—5 of Fig. 2, certain parts being shown in side elevation; Figs. 6 and 7 are broken vertical sections, showing modifications of a detail of construction; Fig. 8 is a view similar to Fig. 2 of a modification of the invention; Fig. 9 is a horizontal section of said modification; Fig. 10 is a front view of a further modification; Fig. 11 is a detail sectional view thereof.

Referring to the drawing, 1 indicates a suitable base, having an enlarged flat circular top 2 and a threaded edge 3, on which can be screwed a clamp ring 4, having an inwardly extending portion adapted to clamp to the top 2 a flange 6 of a bell-shaped container 7, a rubber washer 8 being interposed between said flange and top to make a tight joint thereat. Said base is formed with a transversely extending conical aperture, in which is seated a conical valve 9, pressed inwardly by a spring 10 coiled around an outwardly extending end 12 of the valve, and compressed between the base 1 adjacent to said end and a nut 11 screwed upon said end. Said valve is formed with an outwardly flaring or enlarged transverse conduit 13, of which, when the valve is turned into the open position, the smaller end is connected with a conduit 14 in the lower portion of the base, which is formed for connection with a source of supply of water under pressure, and the larger end connects with a conduit 16 in the base leading to a discharge spout 17. Said conduit 13 thus forms a part of the conduit for the flow of water from said source of pressure to the discharge spout. Said valve is formed with a measuring chamber 18 therein, indicated by dotted lines in Figs. 2 and 3, closed at the outer end by a screw plug 19. To said chamber leads a conduit 21, extending transversely through the valve from its conical surface, and adapted, in that position of said valve, which prevents the flow of water to connect with a liquid supply conduit 22 in the base leading from the container 7, so that liquid soap, or other liquid, contained in the container 7 can flow therefrom by said conduits 21, 22 to the measuring chamber 18, and fill the same. To permit the proper venting of air from said measuring chamber there is provided air venting passage 23 leading from the measuring chamber to the surface of the valve, which passage, in the above described position of the valve, registers with a conduit 24 in the base into which fits the lower end of a tube 26, which leads upwardly within the container to a short distance from its top, so that the air from the measuring chamber can escape into the container above the level of the liquid therein. Thence it escapes to the outside atmosphere by means of a small hole 27 formed in the wall of the container at the top.

A pin 31 extends transversely outward from the valve into a recess 29 in the base 1 and the valve 9 can be turned by a handle 28 from its closed position, indicated by the abutment of said pin against one end of said recess to its open position indicated by the abutment of said pin against the other end thereof. Then by reason of the conduit 13 through the valve flaring outwardly, the rapid flow of the water therethrough produces suction in said conduit 13, which suction is employed to draw the liquid soap, or other liquid, from the measuring cham-

ber. For this purpose, there is formed in the valve, as best shown in Fig. 3, a passage 32, which in the open position of the valve, communicates with a conduit 33 in the base 1, which conduit 33 in like manner communicates with a chamber 34 in the base closed by a screw plug 36, which chamber communicates with a conduit 37 in the base, which, in said position of the valve, communicates with a conduit 38 in the valve, leading from said measuring chamber. Thus by the conduits 38 and 37, chamber 34, and conduits 33 and 32, the soap or other liquid is drawn from the measuring chamber to the conical conduit 13 and is then discharged with the stream of water.

The valve is provided with an auxiliary air opening 39, which in that position of the valve permitting discharge of the soap from the valve through the faucet, will register with the conduit 26. It is found that, with a device so constructed, a sufficiently large degree of suction is produced by the outward flow of water at ordinary city pressure to withdraw the soap from the measuring chamber with the first rush of water, so that there is first discharged from the nozzle water with a large proportion of soap, followed by plain water.

An important feature of the invention, especially important in the public lavatories, is that only a definite quantity of soap can be withdrawn at each operation, thus preventing waste of soap. This quantity can be regulated as desired by varying the length of the screw plug 19 which fills up the outer end of the measuring chamber.

It is sometimes desirable to close the soap supply conduit 22, as, for instance, when it is desired to remove the valve for cleansing purposes, and for this purpose there is formed in the base 1 a horizontal longitudinal recess 41 which traverses said conduit 22, and in this recess is inserted a plug 42 having therethrough a transverse hole 43 registering with the conduit 22. By turning the plug 42 so that the transverse hole 43 is out of register with the conduit 22, said conduit is closed.

It is sometimes necessary that the measuring chamber be larger than is permissible to be formed in the valve.

In Fig. 6 is shown a modification of the invention in which a measuring chamber 45 is formed as an enlargement of the conduit 24, and communicates with a conduit 46 in the valve, which conduit 46 likewise communicates with the passage 38 and has a circumferential extension 47, so as to register with the air conduit 24 in either position of the valve.

In Fig. 7, a measuring chamber 49 is shown as an enlargement of the air tube 26 itself, the parts and operation being otherwise the same as in the modification shown in Fig. 6. One or both of these measuring chambers 45 and 49 may be used in addition to that in the valve.

The liquid soap receiver is filled from a suitable supply vessel by means of a flexible tube, the outer end of which is applied, in the form of the invention shown in Figs. 1–5, to the outer end of the measuring chamber 18 instead of the screw plug 19, the latter being removed, the valve 9 having been first turned so as to open the conduit from the liquid container to the measuring chamber, or, in the form of the invention shown in Figs. 6 and 7, to the outer end of the screw plug 42, which in these forms is hollow, and contains a longitudinal conduit 51, with the outer end of which said tube is connected, the plug 42 being turned through the proper angle so that the inner end of the conduit 51 connects with the upper portion of the conduit 22. When such connection has been made, the supply vessel is then raised to a higher level than the container, and the soap flows from said vessel through the tube, and the proper conduits therefor, and enters said container, filling the same to the desired level, when, by turning the valve 9, or the plug 42, the supply can be cut off.

The reason why I do not provide a single conduit, leading from the measuring chamber to the conduit 13, but prefer two separate conduits 33 and 37 in the base and two separate conduits 32 and 38 in the valve, is that in the former case there is much greater probability of leakage of water to the measuring chamber due to the valve not being completely turned off, which leakage would seriously impair the efficiency of the device.

It is sometimes desirable to provide means for so using two or more different liquids, as, for instance liquid soap and antiseptic liquid. In such case, as illustrated in Fig. 8, a container is used having two compartments 55, one for each liquid, which compartments connect respectively with two measuring chambers 56 in the valve, one at each end, the necessary conduits for mixing the liquid with the water, as described in the first form of the invention, being now duplicated. Valves 57 are provided for closing either of the conduits 37.

In Figs. 10 and 11, I have illustrated the invention as used with hot and cold water faucets 58. The pipes 59 leading to these faucets are connected by branch pipes 60, having check valves 61 therein, with two conduits 62 of a three-way valve casing 63, the third conduit 64 leading to the base of my improved device in the manner described in the first form of the invention. The spout of the soap faucet and the hot and cold water spouts all discharge into a common basin 66. A valve 65 is provided,

which, in its normal position, partly closes each of the conduits 62 leading from the hot and cold water pipes respectively. By turning said valve 65 the proportion of hot and cold water supplied to the spout 17 may be varied as desired. This arrangement allows for the separate use of hot or cold water without soap, or with soap either separately or combined in any desired proportion.

I claim:—

1. In a device of the character described, the combination of a liquid container, a conduit provided with means for connecting it to a source of supply of water under pressure, a valve controlling the passage of water in said conduit and rotatable about its longitudinal axis, said valve having an opening extending transversely therethrough intermediate the ends thereof so as to form oppositely disposed openings in the periphery of the valve, said openings in the movement of the valve being adapted to communicate with portions of the conduit at opposite sides of the valve, said opening being tapered to form an outwardly enlarged portion, means for conducting liquid from the container to said outwardly enlarged portion, said means being operable with said controlling valve, and means for limiting the quantity of liquid passing through said conducting means upon each operation.

2. In a device of the character described, the combination of a liquid container, a support therefor formed with a water conduit and provided with means for connecting the conduit to a source of supply of water under pressure, a valve controlling the passage of water in said conduit, said valve having an opening therethrough to communicate with said conduit, which said opening has an outwardly enlarged portion, said support being formed with means for conducting liquid from the container to said outwardly enlarged portion said means being operable with said controlling valve, means for limiting the quantity of liquid passing through said conducting means upon each such operation, and an upwardly extending air pipe in said container, said support being provided with means for permitting the flow of air between said air pipe and said conducting means.

3. In a device of the character described, the combination of liquid containers, a conduit provided with means for connecting it to a source of supply of water under pressure, a rotatable valve controlling the passage of water in said conduit, said valve having a transversely extending opening therethrough with an outwardly enlarged portion, individual means for conducting liquid from the containers to said conduit, said means being operable with said controlling valve, means for limiting the quantity of liquid passing through said conducting means upon each such operation, and means for closing either conducting means at will.

4. In combination with a conduit, provided with means for connecting it to a source of supply of water under pressure, an outlet spout operatively associated with the conduit, a valve for controlling said conduit formed with an enlarged passage and movable into a position in which said passage communicates with the conduit, a liquid container, means forming a measuring chamber, an air conduit positioned in the container communicating with said measuring chamber, and having its upper end positioned above the supply of fluid in said container, a conduit from the container to the measuring chamber, a conduit from the measuring chamber to said passage, means for opening and closing said latter conduit, said means being operated by the movement of the valve, and independent means for closing said conduit leading from the container to the measuring chamber.

5. In combination with a conduit provided with means for connecting it to a source of supply of water under pressure, a valve for controlling said conduit formed with a tapered passage and movable into a position in which said passage communicates with the conduit, a liquid container, means forming a measuring chamber, a conduit between the container and measuring chamber, a cut off in said last mentioned conduit, a conduit from the measuring chamber to said passage, and means for opening and closing said latter conduit automatically with the opening and closing respectively of the valve.

6. In combination with a conduit provided with means for connecting it to a source of supply of water under pressure, a valve for controlling said conduit, formed with an enlarged passage and movable into a position in which said passage communication with the conduit, a liquid container, means forming a measuring chamber, a conduit from the container to the measuring chamber, a conduit from the measuring chamber to said passage, means for opening said latter conduit and closing the conduit to the measuring chamber automatically with the opening of the valve, and independent means for closing the conduit between the container and measuring chamber.

7. In combination with a conduit provided with means for connecting it with a source of supply of water under pressure, a valve for controlling said conduit, formed with a transverse passage enlarged at the outer end thereof and movable into a position in which the smaller inner end of said passage communicates with the conduit, liquid containers, said valve being formed with measuring chambers, one for each container, conduits from the containers to the

measuring chambers, individual conduits from the measuring chambers to said passage, and means for opening said latter conduits and simultaneously closing the conduits to the measuring chambers automatically with opening of the controlling valve.

8. In combination with a conduit provided with means for connecting it with a source of supply of water under pressure, a valve for controlling said conduit, formed with an enlarged passage and movable into a position in which said passage communicates with the conduit, liquid containers, means forming measuring chambers, said chambers being independently adjustable in size, conduits from the containers to the measuring chambers, conduits from the measuring chambers to said passage, and means, automatically operated with the opening of the controlling valve, for opening the conduit from, and closing the conduit to, either of the measuring chambers at will.

9. In combination with a conduit provided with means for connecting it with a source of supply of water under pressure, a valve for controlling said conduit, formed with a passage tapering from its inlet to its outlet end and movable into a position in which said passage communicates with the conduit, liquid containers, means forming measuring chambers, said chambers being adjustable in size, conduits from the containers to the measuring chambers, conduits from the measuring chambers to smaller end of said passage, air pipes in the several containers and communicating with the respective measuring chambers, and means for opening said latter conduits and simultaneously closing the conduits to the measuring chambers automatically with the opening of the controlling valve.

10. In a device of the character described, the combination of a water faucet, a container for liquid soap or the like, and a valve for permitting discharge of soap from the container, said valve permitting discharge of water through the faucet, and independent means for cutting off the discharge of soap while permitting the discharge of the water.

11. In a device of the kind described, the combination of a base adapted at its lower end for connection with a water supply, a container for liquid soap supported on the top of said base, said base having a vertically disposed conduit projecting upwardly from the lower end thereof, an outlet spout connecting with the upper end of said conduit, a transversely extending tubular valve plug in said base intermediate the ends of the conduit, said valve plug being rotatable about its longitudinal axis and having a transverse passage therethrough, said passage having a smaller inner end to communicate with the lower end of said conduit and an enlarged outer end for communication with the upper end of said conduit, said valve plug having a measuring chamber, a passage leading therefrom to the transverse passage of the valve, and an auxiliary passage leading from the chamber to the periphery of the valve, and said base having a vertical passage leading from the bottom of the container to the periphery of the valve for communication with said auxiliary passage, and said passage being constructed and arranged whereby the valve will operate to close communication between the container and measuring chamber and simultaneously establish communication between opposite ends of the water conduit.

12. In a device of the kind described, the combination of a base adapted at its lower end for connection with a water supply, a container for liquid soap supported on the top of said base, said base having a vertically disposed conduit projecting upwardly from the lower end thereof, an outlet spout connecting with the upper end of said conduit, a transversely extending tubular valve plug in said base intermediate the ends of the conduit, said valve plug being rotatable about its longitudinal axis and having a transverse passage therethrough, said passage having a smaller inner end to communicate with the lower end of said conduit, and an enlarged outer end for communication with the upper end of said conduit, said valve having in one end a measuring chamber, a conduit in the base establishing communication between the container and said measuring chamber, said valve having communicating passages 32 and 38, one of said passages connecting with the measuring chamber and the other of said passages connecting with said transverse passage through the valve adjacent the smaller end of the latter.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

MARION L. TOBRINER.

Witnesses:
F. M. WRIGHT,
D. B. RICHARDS.