C. P. BOSSERT.

DISPENSING VALVE.

APPLICATION FILED DEC. 16, 1919.

1,358,280.

Patented Nov. 9, 1920.

Fig. 1.

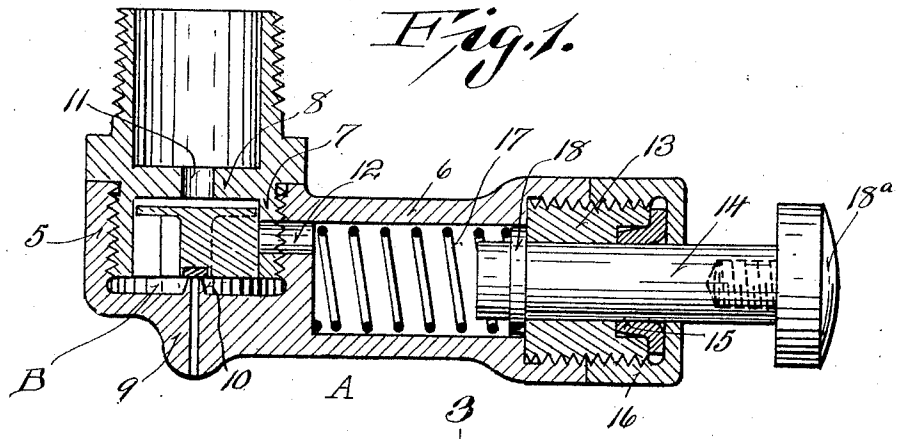


Fig. 2.

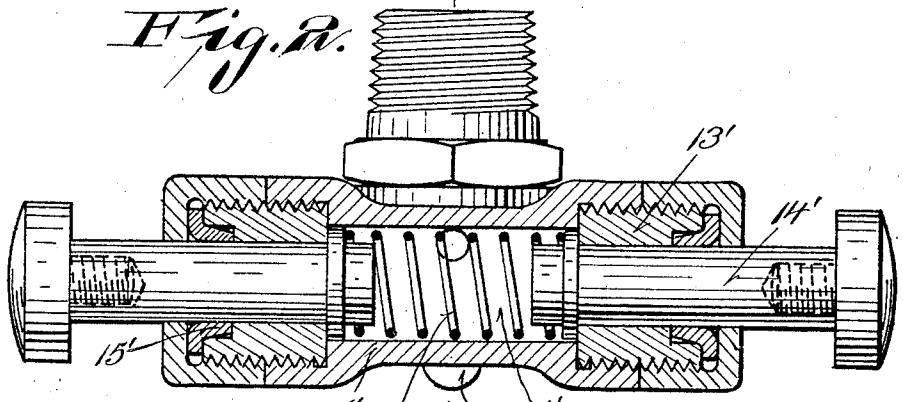


Fig. 3.

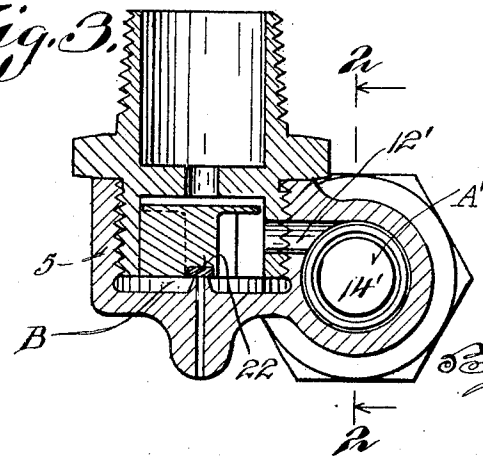


Fig. 4.

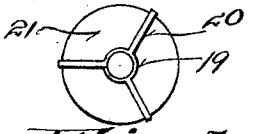
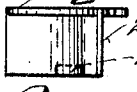


Fig. 5.



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UNITED STATES PATENT OFFICE.

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DISPENSING-VALVE.

1,358,280. Specification of Letters Patent. Patented Nov. 9, 1920.

Application filed December 16, 1919. Serial No. 345,419.

To all whom it may concern:

Be it known that I, CHARLES P. BOSSERT, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Dispensing-Valves; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to new and useful improvements in dispensing valves, more particularly of that type adapted to discharge a limited quantity of liquid upon each actuation of the operating member of the valve, such valves being particularly adapted for use in dispensing soap and the present valve structure having particular applicability in connection with a common soap supply pipe which would extend over a plurality of lavatory units.

It is in general the object of my invention to simplify and otherwise improve the construction and to increase the efficiency of valves for this purpose, and to provide for a most convenient disposition of the valve and ready operation thereof with respect to the lavatory arrangement described.

It is more particularly my object to provide a simple and exceedingly positive valve arrangement for procuring the desired discharge action of the valve, which is operable by pressure of the fluid flowing within the device to procure the desired closing position of said valve member.

A further object resides in the provision of a dispensing valve having associated therewith a pair of operating plungers whereby the device may be actuated from either side of a common supply means.

With the above and other objects and advantages in view, which will be apparent as the description proceeds, my invention resides in the novel features of construction, combination and arrangement of the parts as hereinafter described and defined by the appended claims.

In the accompanying drawings:

Figure 1 is a sectional view through a dispensing valve structure embodying my invention.

Fig. 2 is a sectional view through the plunger cylinder portion of a valve structure provided with a pair of operating plungers, the plane of this section being indicated by the line 2—2 of Fig. 3.

Fig. 3, is a sectional view on the line 3—3 of Fig. 2.

Fig. 4 is a bottom view of the valve member.

Fig. 5 is a side elevational view of the valve member.

Referring now more particularly, to the embodiment shown in Fig. 1, my invention comprises a cup shaped casing member 5 having a hollow cylindrical extension 6 projecting radially from its side wall and forming a plunger chamber A said casing member 5 having a tubular section 7 threaded therein and provided with an intermediate partition 8 whereby to define a valve chamber B within the cup shaped section, the tubular member 7 being adapted for threading engagement with a pipe or other source of supply.

The bottom of the casing 5 is provided with a nozzle enlargement 9 through which extends the discharge passage of the device, said passage also extending through a raised valve seat 10 on the inner surface of the bottom. The partition 8 is provided with an inlet port 11, and a port 12 extends through the lower portion of the tubular member 7 and the wall of the casing 5 for connecting the valve and plunger chambers.

The outer end of the casing portion 6 has threaded therein a bearing plug 13 through which is slidable a plunger 14, and the outer end of the plug is counter-sunk for the reception of the laterally turned end portion of a packing member 15 which has its other end portion clamped between the end of the plug and a cap member 16 threaded thereon.

The plunger is resiliently urged to outward position by a coil spring 17 disposed in the plunger chamber and bearing against a shoulder 18 on the inner end portion of the plunger, this shoulder abutting the plug 13 to limit outward movement of the plunger, and a head member 18ª has its shank threaded in the outer end of the plunger.

The valve member disposed in the chamber B comprises a hub portion 19 from which projects a series of radial wings 20 slidably engageable with the inner periphery of the lower portion of the tubular member whereby to hold the valve member centered in the chamber, these wings being connected at their upper ends with a plate portion 21 having a diameter slightly less than the diameter of the chamber and adapted to engage

against the partition 8 to close the inner portion 11. The lower end of the hub portion 19 is recessed to receive a plug 22 adapted to engage in the raised valve seat 10 and thus close the discharge port of the valve.

The valve member thus normally engages by gravity on the seat of the discharge port, and when in this position liquid may flow through the inlet port 11 around the plate portion 21 into the valve chamber and from thence through the port 12 into the plunger chamber A, this flow being positively induced by suction on the outward stroke of the plunger to fill the plunger chamber with its proper charge of liquid. When the plunger 14 is shoved inwardly to procure the discharge operation of the device, the rush of fluid into the valve chamber will impinge against the plate portion and valve member thus raising said valve member to close off the inlet port 11 whereby only the proper amount of liquid will be discharged from the device, and when such proper amount has been discharged, the valve member will drop by gravity and by the pressure of fluid flowing through the inlet port 11 to close the discharge port of the device.

I have thus provided a very simple dispensing valve structure which is highly efficient and positive in its operation to discharge a predetermined quantity of liquid and to prevent the possibility of leakage.

Figs. 2 and 3 show a modified structure permitting the use of plunger members at either side of the device to procure the discharge operation, and in this structure, I provide a measuring chamber A′ formed by the cylindrical casing 6′ which extends tangentially with respect to the side of the valve chamber casing 5 and which communicates therewith by a port 12′ corresponding to the port 12. Bearing plugs 13′ are threaded in the ends of the casing 6′ for the plungers 14′ which are resiliently urged to outward position by a spring 17′ coiled in the chamber and bearing against the shouldered inner end portions of both plungers. The usual packing members 15′ are provided for the plungers at the outer ends of the bearing plugs. Thus, movement of either plunger will procure the desired discharging operation of the device. This arrangement is particularly applicable in connection with a double row of lavatory basins having a common supply pipe extending centrally thereover and carrying the dispensing valves.

While I have shown and described a preferred embodiment of my invention, it will be appreciated that various changes and modifications of structure may be employed to meet differing conditions of use and manufacture, without departing in any manner from the spirit of my invention.

What is claimed is:

1. A valve of the class described including a valve chamber having an inlet port and an outlet port, a valve member movable to selectively close either of said ports, a measuring chamber in communication with the valve chamber, means for drawing in and expelling fluid from said measuring chamber, and a plate portion carried by the valve for procuring positive movement of the valve by flow of fluid through the valve chamber.

2. A valve of the class described including a valve chamber provided with an inlet port in its top and an outlet port in its bottom, a valve member movable in the valve chamber for selectively closing either of said ports and normally seating by gravity to close the outlet port, a measuring chamber communicating with the valve chamber, means for drawing fluid in and expelling fluid from the valve chamber, said valve being movable by flow of fluid from the measuring chamber to close the inlet port of the valve chamber.

3. A valve of the class described including a valve chamber having an inlet port in its top and an outlet port in its bottom, a valve member in the chamber including a hub portion, radial wing portions slidaby engaging the wall of the chamber and a plate portion at its upper end, said valve member being adapted to close either of said ports, a measuring chamber communicating with the valve chamber and means for drawing fluid into and expelling fluid from the measuring chamber.

4. A valve of the class described including a valve chamber having an inlet port and an outlet port, valve means operable instantaneously to flow of fluid through said chamber for controlling said ports, a plunger chamber having its intermediate portion in communication with the valve chamber, a pair of plungers slidable through the ends of the plunger chamber and means resiliently urging said plunger outwardly.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in the county of Milwaukee and State of Wisconsin.

CHARLES P. BOSSERT.