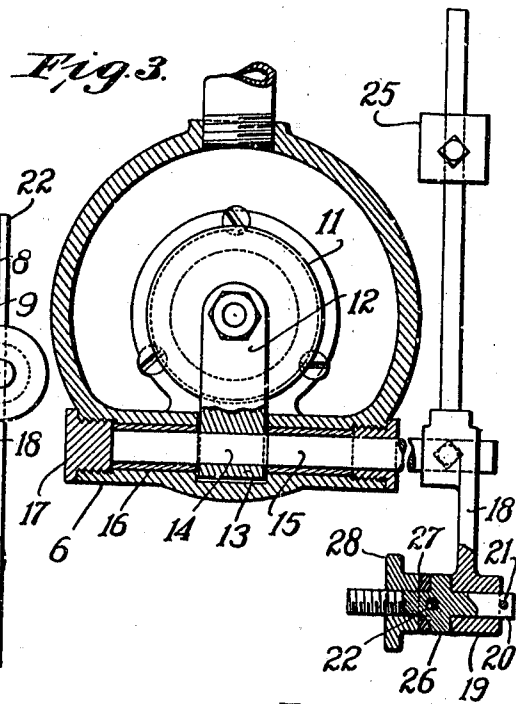
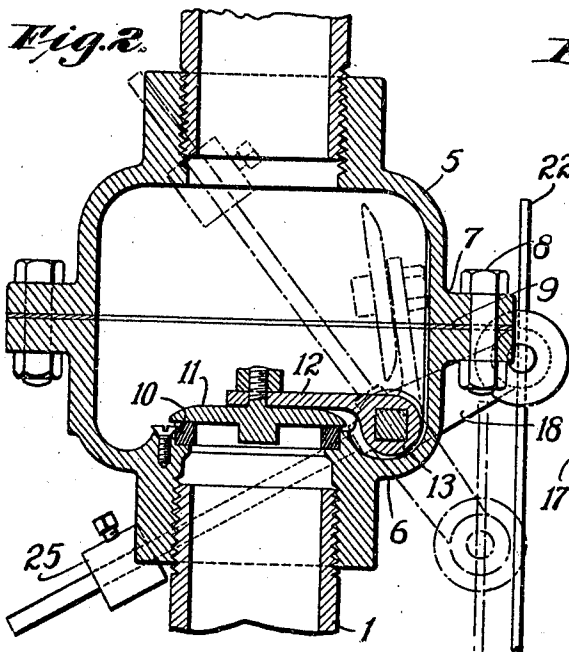
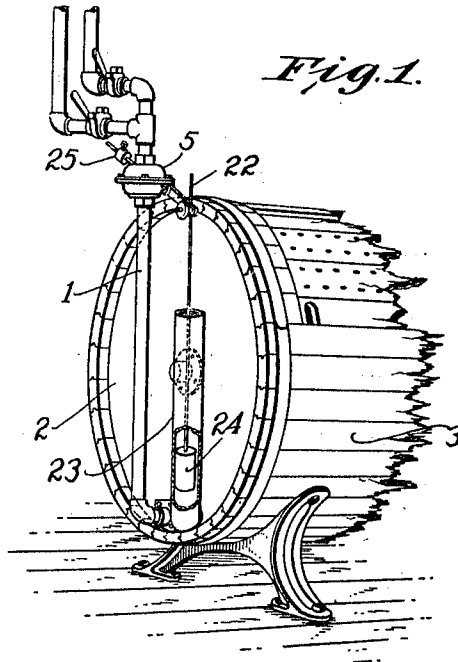


S. B. DANE.
 SUPPLY CONTROLLER FOR WASHING MACHINES.
 APPLICATION FILED FEB. 17, 1908.

945,083.

Patented Jan. 4, 1910.



Witnesses:

Ed Wurdeman
Charles H. McDermott

Inventor:

Sidney B. Dane
Phillips Van Eeren & Fish
Attys

UNITED STATES PATENT OFFICE.

SIDNEY B. DANE, OF LYNN, MASSACHUSETTS.

SUPPLY-CONTROLLER FOR WASHING-MACHINES.

945,083.

Specification of Letters Patent.

Patented Jan. 4, 1910.

Application filed February 17, 1908. Serial No. 416,231.

To all whom it may concern:

Be it known that I, SIDNEY B. DANE, citizen of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Supply-Controllers for Washing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to an apparatus or device for regulating the water supplied to washing machines, and its object is to provide a simple and efficient means whereby the supply is automatically shut off when the water reaches a predetermined height in the machine, thereby insuring the introduction of the proper amount of water without any care or attention on the part of the user.

With this object in view, one feature of the present invention contemplates so constructing and arranging the supply valve that it may be operated in shutting off the supply by direct connection with a float or device which is acted upon by the water when it rises to a certain height in the washing machine, thus avoiding the use of complicated connections and tripping devices between the float or other controlling device and the valve, with a resulting reduction in the cost of the apparatus and an increase in the reliability and certainty of its action.

The valve is preferably so constructed and arranged that when it is opened by the operator in connecting the washing machine with the water supply it is moved out of and to one side of the water as it flows to the machine and remains in this position until acted upon by the float or other controlling device. It is also so arranged and mounted that when acted upon by the controlling device and moved into the path of the water, the water will act upon the valve to quickly bring it against its seat. This insures the quick and proper closing of the valve. It also enables the valve to be closed by a comparatively slight initial movement under the influence of the controlling device, and by the application of but little force to the valve. The valve is thus well adapted for operation by direct connections with a float or other controlling device operated by the rise of water in a small chamber communicating with the machine.

In addition to the features of invention above referred to, the present invention also consists in certain novel features of construction and arrangement of parts hereinafter described and claimed, all of which may be obvious to those skilled in the art, from the following description:

The present invention will be clearly understood from an inspection of the accompanying drawings, in which—

Figure 1 is a perspective view of part of a washing machine with the water supply pipe and water regulating device connected thereto; Fig. 2 is a cross sectional view of the valve casing and part of the connections between the valve and the float; and Fig. 3 is a sectional plan view taken through the valve shaft.

The water is supplied to the washing machine through a supply pipe 1 connecting with the lower end of the casing 2 of the machine 3. A valve casing through which the water flows is fitted to the supply pipe 1 and is made in two sections 5 and 6 so as to be readily accessible for inspection and repairs. The sections are provided with circular flanges 7, and are joined together by bolts 8 pressing between the flanges a packing 9 which insures a water tight joint. Besides the outlet to the washing machine the casing is provided with an inlet through which the supply pipe delivers the water. Just above the casing the pipe branches into two lines of piping one delivering hot water and the other cold water, each being provided with a shut-off valve.

The portion of the casing which fits over the supply pipe 1 is reduced and extends upward into the interior of the casing to form a support for a valve seat 10. A valve 11 when in closed position rests upon the seat and is bolted to an arm 12, which extends parallel to the valve seat toward one side of the casing and is provided with a circular hub 13 which fits into a recess in the casing. The hub 13 has a rectangular opening which engages and holds the arm upon a similar shaped portion 14 on a shaft 15. The shaft 15, except for the portion upon which the hub of the arm 12 fits, is round and is mounted in an opening extending through the casing. The opening is so constructed that the rectangular portion may be readily introduced or removed in assembling the parts or in removing the shaft or valve for repairs. To provide bearings for the round portion

of the shaft 15, sleeves 16 are inserted in the opening in the valve casing, and are held in place by the plugs 17. One end of the shaft 15 projects beyond the casing and on the projecting portion of the shaft is fastened a lever arm 18.

One end of the lever arm is enlarged to form a pivotal bearing 19 for a short shaft 20 held from longitudinal movement in the bearing by means of a cotter pin 21. Adjustably secured to the short shaft 20 is a rod 22 which extends through the shaft, above, and below the shaft. The portion which extends below the shaft passes within a chamber 23 communicating with the washing machine, and has fastened on its end a float 24. On the other side of the lever 18 is a counterbalance 25 arranged to slide along the lever arm to balance the weight of the float 24. The means for adjustably securing the rod 22 to the pivoted shaft 20 consists in the following construction: The shaft 20 has a collar 26 of the same diameter as the bearing, and the collar has a recess upon one face which registers with a hole bored through the shaft so that the rod may pass through the shaft and rest in the circular recess in the collar. A washer 27 is provided on the shaft which is pressed against the rod 22 by means of the thumb nut 28, thereby clamping the rod in the recess on the collar.

In operating washing machines under ordinary conditions, about the same quantity of water is supplied the machine for each succeeding washing operation, and it is only necessary after the washed clothes are taken out of the machine and the dirty water allowed to escape through a waste pipe, for the operator to grasp the lever arm 18 and turn the shaft 15, thereby swinging the valve 11 from the position shown in full lines to that shown in dotted lines, Fig. 2, thus allowing the water to flow through the supply pipe to the washing machine, with the valve located out of and to one side of the path of the water. During the opening of the valve the shaft 20, to which is clamped the float rod 22, turns in its bearing 19, thereby returning the float to the position at which it was previously adjusted to shut off the water. The operator having in this easy manner started the water flowing to the machine, may now turn his attention to filling the machine with a batch of dirty clothes, or other work about the laundry, relieved of any anxiety about timing his return to the machine to shut the water off at the proper height. By the construction described the water supplied to the machine enters the communicating chamber until it reaches the height at which the float was positioned and causes the float to rise, thereby tipping the valve into the path of the water, which exerts its pressure upon the back of the valve, forcing and holding it upon its seat, thereby shutting off the water.

In the succeeding washing operation, should it be desired to wash a smaller or larger batch of clothes, consequently requiring, to insure the proper result, a different amount of water in the machine, the operator simply unclamps the washer which presses the rod 22 into the recess in the collar 26, and raises or lowers the float in the chamber, as the case may be, securely clamping the rod in position after the adjustment. After opening the valve in the manner described, the operator is assured that the water will be cut off at the height to which the float has been adjusted.

This construction described may be readily and conveniently assembled or disorganized for inspection or repairs, is simple in construction, and requires but few parts, so that it is not liable to get out of order or to become worn and inaccurate in operation.

To remove the valve at any time for any reason the bolts 8 are removed, and the sections of the casing spread apart to allow the lower end of the supply pipe to turn on its threaded connection with the washing machine. The plugs 17 are then removed, when the shaft 15 may be withdrawn, leaving the valve loose on its seat, in which position it is easily picked up and examined. To replace, the valve is placed upon the seat with its hub in the opening of the casing. The shaft is then introduced into the opening in the casing until the rectangular portion engages the similar shaped opening in the hub of the valve. The sleeves 16 are then positioned over the round portion of the shaft, and the plugs 17 inserted to hold the shaft and sleeves in position. The connections between the shaft and float are of simple construction, readily assembled and disorganized, and easily and simply adjusted to perform the desired function.

Having set forth the nature and object of the invention, and specifically described one form of apparatus in which it may be embodied, what is claimed is:—

1. An apparatus for regulating the water supplied to washing machines, having, in combination, a valve casing provided with a valve seat, a valve constructed and arranged so as to be moved out of and to one side of the path of water flowing through the casing, a chamber, a float located in the chamber and connected to tilt the valve into the path of the water when the water reaches a certain height in the machine, thereby causing the water pressure to force and hold the valve upon its seat, substantially as described.

2. An apparatus for regulating the water supplied to washing machines, having, in combination, a chamber communicating with the washing machine, a float located in the chamber, and a supply valve connected to be moved into the path of the water in the

supply pipe by the float when the water reaches a certain height in the washing machine, substantially as described.

3. An apparatus for regulating the water supplied to washing machines, having, in combination, a water supply valve so supported that when open it occupies a position out of and to one side of the path of water flowing to the machine, a float and means comprising a rod and a lever arm connecting the float and valve acting when the water has reached a predetermined height in the machine to tilt the valve into the path of the water, thereby causing the water pressure to force and hold the valve in a closed position, substantially as described.

4. An apparatus for regulating the water supplied to washing machines, having, in combination, a casing provided with a recess, a water supply valve provided with an arm extending into the recess, a shaft journaled in the casing and provided with a polygonal portion engaging and supporting the valve arm, sleeves mounted in the casing on opposite sides of the polygonal portion forming bearings for the shaft, and means for rocking the shaft when the water reaches a predetermined height in the machine, substantially as described.

5. An apparatus for regulating the water supplied to washing machines, having, in

combination, a water supply valve so supported that when open it occupies a position out of and to one side of the water flowing to the machine, a chamber, and a float located in the chamber and connected to the valve by means of an adjustable rod and a lever arm to operate the valve upon a slight initial movement of the float, substantially as described.

6. An apparatus for regulating the water supply to washing machines, having, in combination, a water supply valve so supported that when open it occupies a position out of and to one side of the path of water flowing to the machine, a shaft connected to the valve and a lever arm mounted upon the shaft, a float chamber, a float in the chamber, a shaft rotatably mounted on the lever arm and an adjustable rod connecting the float to the rotatable shaft whereby when the water has reached a predetermined height in the machine the lever arm acts to tilt the valve into the path of the water thereby causing the water pressure to force and hold the valve in a closed position, substantially as described.

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

SIDNEY B. DANE.

Witnesses:

IRA L. FISH,

CHARLES W. McDERMOTT.