Oct. 14, 1924. 1,511,974

F. W. LINDEMANN

DUAL VALVE

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FIG. 1

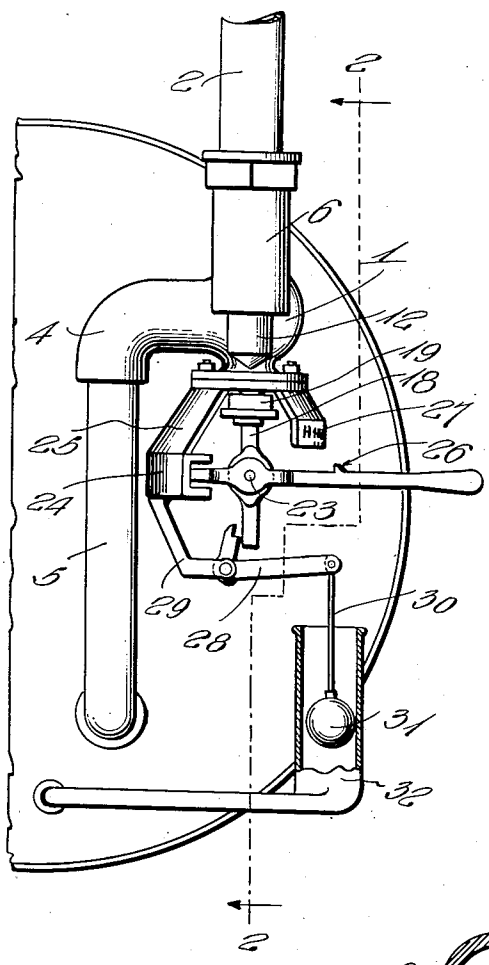



FIG. 2

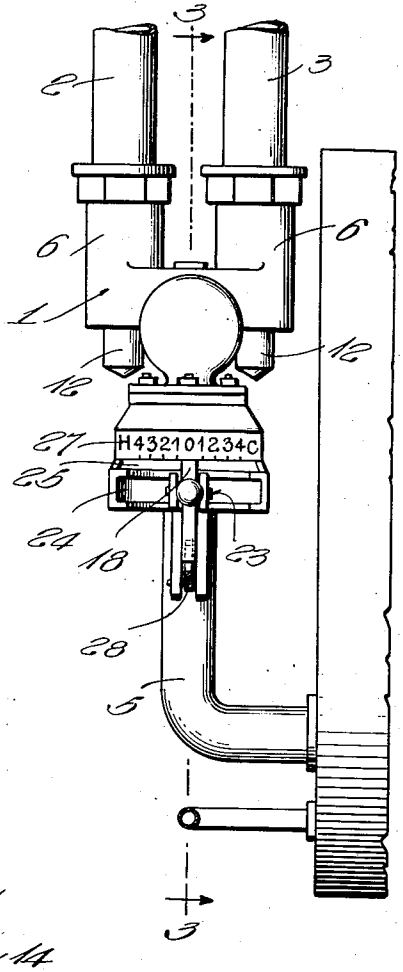
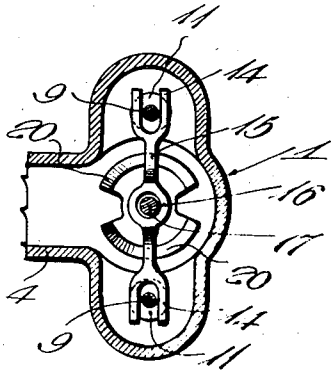



FIG. 3




Witness

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Fig. 3

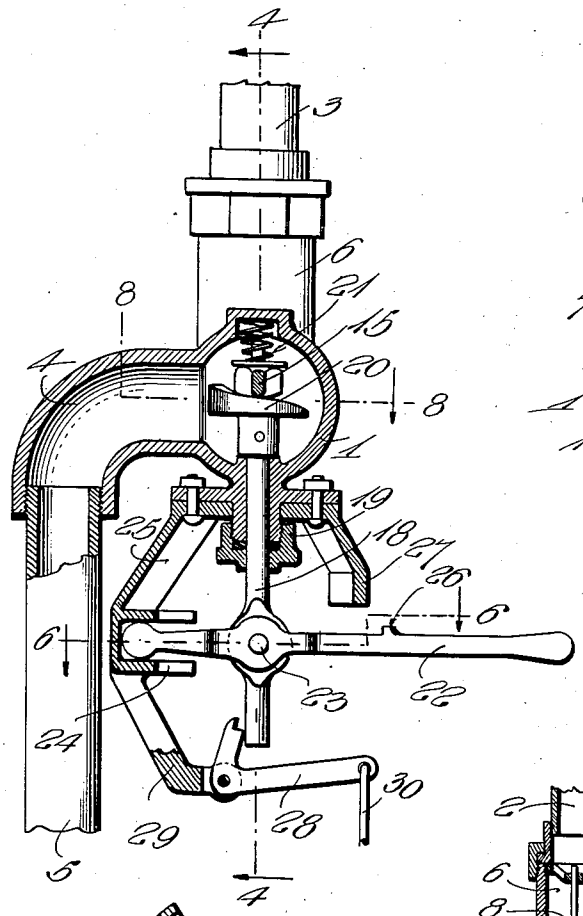
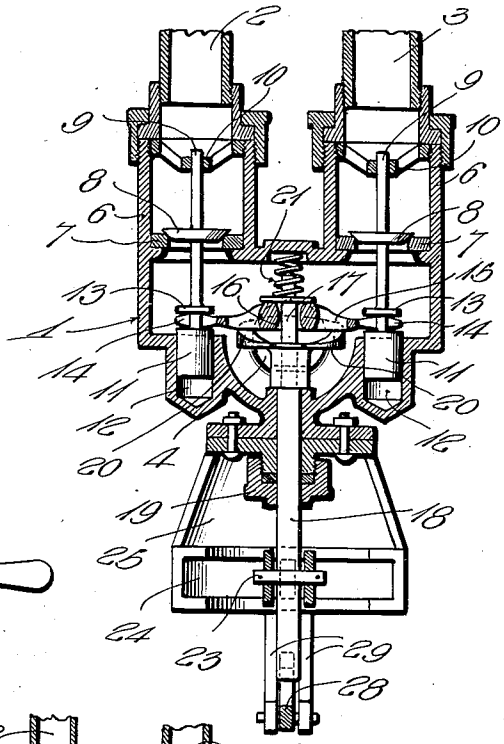


Fig. 4



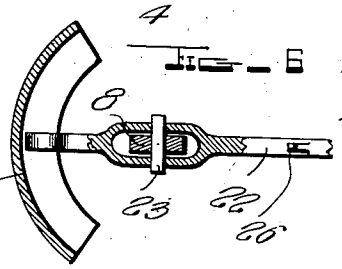


Fig. 6

Fig. 5

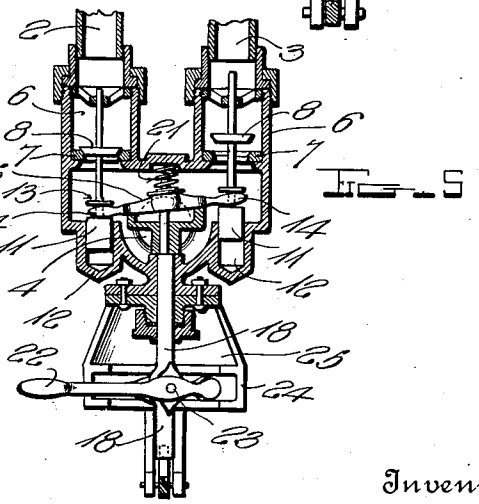
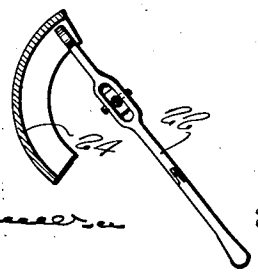


Fig. 7



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Patented Oct. 14, 1924. 1,511,974

# UNITED STATES PATENT OFFICE.

FREDERICK W. LINDEMANN, OF ST. PAUL, MINNESOTA.

## DUAL VALVE.

Application filed August 16, 1923. Serial No. 657,742.

*To all whom it may concern:*

Be it known that I, FREDERICK W. LINDEMANN, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Dual Valves; and I do 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.

My invention relates to improvements in valves and the present disclosure is directed primarily to one which is intended for filling washing machines of laundries, and one object is to provide a device of the class set forth having a cold water valve, a hot water valve, and common operating means for the two valves which is movable in one manner to open either one of said valves, or movable in another manner to open both valves.

Another object is to provide a unique dash pot arrangement in connection with each of the valves to prevent them from hammering when closing.

With the foregoing in view, the invention resides in the novel subject matter hereinafter described and claimed, the description being supplemented by the accompanying drawings.

Figure 1 is an elevation of a valve constructed in accordance with my invention, applied to one end of a washing machine.

Fig. 2 is an elevation partly in section as indicated by line 2—2 of Fig. 1.

Fig. 3 is a vertical sectional view on substantially line 3—3 of Fig. 2.

Fig. 4 is a sectional view at right angles to Fig. 3 as indicated by line 4—4 thereof.

Fig. 5 is a view similar to Fig. 4 but illustrating a different position of parts.

Fig. 6 is a horizontal sectional view on line 6—6 of Fig. 3.

Fig. 7 is a view similar to Fig. 6, but showing a different position of parts.

Fig. 8 is a horizontal section on line 8—8 of Fig. 3.

In the drawings above briefly described, the numeral 1 designates a suitable valve casing having a cold water inlet 2, a hot water inlet 3, and a common outlet 4 adapted to be connected by a pipe 5 with a washing machine or other tank. The pipes 2 and 3 communicate with cylindrical portions 6 of the casing 1, said portions being provided with removable valve seats 7 with which a pair of valves 8 co-act, said valves having stems 9 whose upper ends are suitably guided as indicated at 10, while their lower ends are provided with enlarged plungers 11 operable in dash pots 12 which are formed as parts of the casing 1 and are in the present disclosure, in downwardly spaced relation with the valves 8.

Immediately above the plungers 11, I have shown collars 13 on the stems 9, and forks 14 on the end of a cross arm 15, are received between said plungers and collars to loosely connect the ends of said arm with the valve stems. The center of the cross arm 15 is provided with an opening 16 loosely receiving the reduced upper end 17 of an operating shaft 18 which enters the casing 1 through a suitable stuffing box 10. This shaft carries a pair of arcuate inclined cams 20 to engage the lower edge of the cross arm 15, the cams being secured upon the shaft, and a coiled spring 21 normally holds said cross arm downwardly to close both valves 8 when the cams 20 are neutrally positioned. It will be seen however, that by turning the shaft 18 in one direction or the other, one or the other of its cams 20 may be brought into engagement with the cross arm 15, thus producing opening of one or the other of the valves 8, as will be seen by reference to Fig. 5. Furthermore, by raising the shaft 18 with the cams either in a neutral position or in some other position to which they have been turned, the cross arm is raised bodily and consequently both valves will be opened, thus, either hot water or cold water, or a mixture of desired proportions, may be permitted to pass through the casing 1, to the washing machine or the like.

For operating the cam carrying shaft 18 in the desired manner, I prefer to provide a hand lever 22 which is pivoted between its ends to the lower end of said shaft as indicated at 23, the inner end of this lever being engaged with a channel shaped track 24 connected at 25 with the lower end of the casing 1 and disposed in concentric relation with the shaft. By merely swinging the lever 22 horizontally, the shaft 18 will be turned in the desired manner, and by pulling upwardly on said lever, said shaft will be raised. This lever preferably carries a suitable indicator 26 co-operable with an arcuate indicating plate 27 depending

from the casing 1, so that the operator can see at a glance, the proper position of the lever to obtain water of desired temperature.

In order that it shall not be necessary to manually hold the valve in completely open position, I prefer to provide a pivotel latch 28 carried by a bracket arm 29 which extends downwardly from the track 24, said latch being connected by a rod or the like 30, with a float 31 within a suitable float chamber 32 in communication with the washing machine or other container to be filled. As soon as the water level rises to the required extent, the float trips the latch 28 and the valve will automatically close, but due to provision of the plungers 11 and dash pots 12, no hammering will take place, incident to the closing operation.

From the foregoing, taken in connection with the accompanying drawings, it will be seen that I have provided an exceptionally compact and desirable valve arrangement for carrying out the objects of the invention, and since excellent results may be obtained from the details disclosed, they may be followed if desired, but within the scope of the invention as claimed, numerous changes may be made.

I claim:—

1. A device of the class described comprising a pair of spaced valves movable in the same direction for opening, a cross arm rockably connected at its ends to said valves and having an opening between its ends, a rotatable and axially movable shaft passing loosely through said opening, and cam means carried by said shaft and engaging said cross arm, said cam means being operative upon rotation of the shaft to cant said cross arm and open one or the other of the valves and serving upon axial movement of the shaft to bodily move the cross arm and open both valves.

2. A device of the class described comprising a valve containing casing, a valve operating shaft extending from said casing, a curved track carried by the casing in concentric relation with the extending portion of the shaft, and a lever pivoted to said extending portion of the shaft between its ends, one end of said lever being engaged with said track.

3. A structure as specified in claim 2; together with a bracket arm carried by said track, and a latch for holding said shaft in valve-open position, said latch being mounted on said bracket arm.

4. A device of the class described comprising a pair of spaced valves movable in the same direction for opening, a cross arm rockably connected at its ends to said valves and having an opening between its ends, a rotatable and axially movable shaft passing loosely through said opening, and means carried by said shaft and engaging said cross arm whereby the same is actuated to open either or both of said valves.

5. A device of the class described, comprising a valve casing, a valve operating shaft extending from said casing, a curved track carried by the casing in concentric relation with the extending portion of the shaft, a lever pivoted to said extending portion of the shaft between its ends, one end of said lever being engaged with said track, a bracket arm carried by said track, a latch pivoted to said bracket arm for holding said shaft in valve-opening position. and means connected with said latch for automatically disengaging the same from said shaft, whereby the valves are permitted to close when the water in the washing machine has reached a predetermined level.

6. A device of the class described, comprising a valve casing, a valve operating shaft extending from said casing, a curved track carried by the casing in concentric relation with the extending portion of the shaft, a lever pivoted to said extending portion of the shaft between its ends, one end of said lever being engaged with said track, a bracket arm carried by said track, a latch pivoted to said bracket arm for holding said shaft in valve-opening position, a float chamber in communication with the washing machine, a float within said chamber and connected with one arm of said latch whereby the latch is disengaged from said shaft and the valves permitted to close when the water in the washing machine has reached a predetermined level.

7. A device of the class described comprising a valve casing, a valve operating shaft extending from said casing, an extension on said casing having thereon an arcuate indicating plate, a curved track carried by said extension, a lever pivoted to said valve-operating shaft and an indicator carried by said lever and co-operable with the indicating plate on said extension of the casing.

In testimony whereof I have hereunto affixed my signature.

FREDERICK W. LINDEMANN.