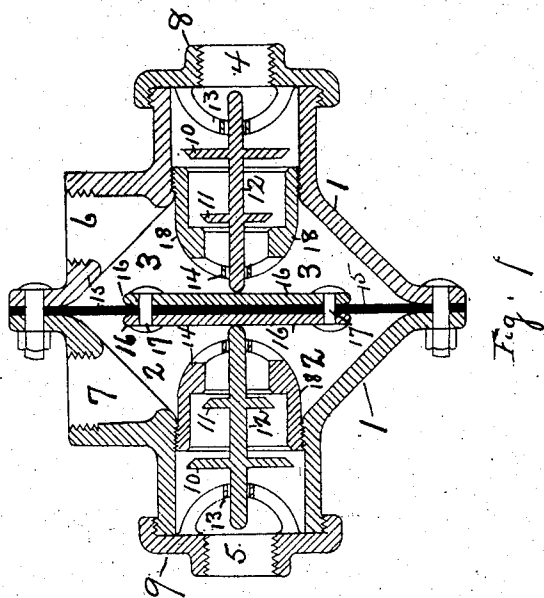
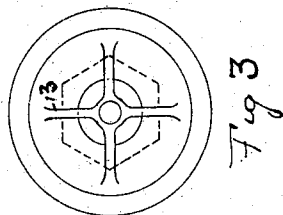
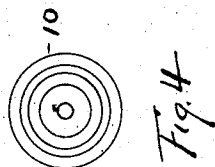
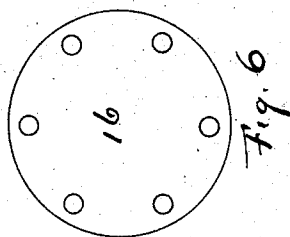
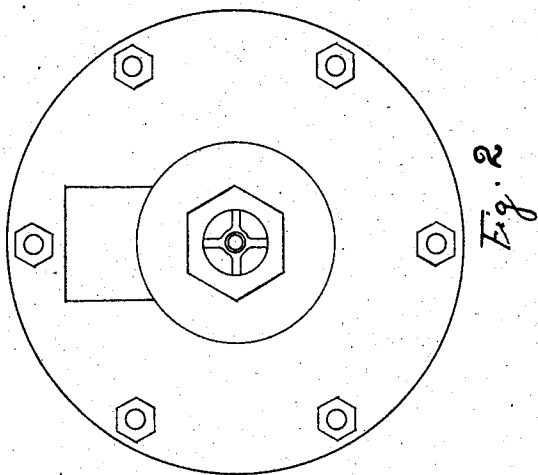


No. 790,584.

PATENTED MAY 23, 1905.

S. MANNING & W. B. ARMSTRONG.
DEVICE FOR EQUALIZING THE PRESSURE OF FLUIDS.
APPLICATION FILED JAN. 3, 1905.



Witnesses:

Dudley R. Wood
Lottie Prior

Samuel Manning and
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UNITED STATES PATENT OFFICE.

SAMUEL MANNING AND WILLIAM B. ARMSTRONG, OF ALBANY, NEW YORK.

DEVICE FOR EQUALIZING THE PRESSURE OF FLUIDS.

SPECIFICATION forming part of Letters Patent No. 790,584, dated May 23, 1905.

Application filed January 3, 1905. Serial No. 239,307.

To all whom it may concern:

Be it known that we, SAMUEL MANNING and WILLIAM B. ARMSTRONG, citizens of the United States of America, and residents of the city and county of Albany, State of New York, have invented certain new and useful Improvements in Devices for Equalizing the Pressure of Fluids, of which the following is a specification.

Our invention relates to equalizing pressure devices; and the object of our invention is to produce a mechanism by means of which the pressure of the flow of fluid in the pipes conveying fluid from separate sources may be equalized without mixing the fluid. We accomplish this object by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section; Fig. 2, a plan; Fig. 3, an end elevation; Fig. 4, a plan of the valve; Fig. 5, an end elevation after removal of the cap; Fig. 6, a plan of the plate 16 attached to the diaphragm.

Similar numerals refer to similar parts throughout the several views.

For the purpose of providing a means whereby hot and cold water may be delivered to a bath especially adapted for use in institutions where children or incompetent people are treated it is advisable to have a means so arranged that the water shall not be delivered too cold, so as to produce a chill, or so hot as to scald. This means should be automatic and so arranged that it would be quite impossible to get out of order.

We arrange a casting 1, separated into two compartments 2 and 3, each compartment having a port 4 5 at the sides of the casting and also each casting provided with a port 6 and 7, respectively. Within each compartment 2 and 3 we arrange a series of valves controlling the ports 4 and 5, respectively, and on the casting at each port 4 and 5 we arrange a cap 8 and 9, respectively. The valves aforesaid are preferably disks 10 and 11, mounted on a stem 12, the stem being properly supported in spiders 13 and 14 or in any suitable manner.

The separating-wall 15 between the compartments 2 and 3 is preferably a diaphragm, which may be constructed of a steel plate, to which we preferably arrange on each side thereof a plate 16 16, which may be secured by bolts 17 17 or in any suitable manner. The stems 12 12, carrying the disks 10 and 11, respectively, we arrange to engage with the plates 16 16 on opposite sides of the diaphragm 15.

Within each compartment 2 and 3 we place a cage 18, which may be threaded to mesh with suitable threads in the casting, and which cage is provided with a valve-seat for the disk 10 and a smaller more contracted valve-seat for the disk 11, the cages 18 18 being so situated in reference to the ports 4 and 5 that the fluid entering the compartments 2 and 3, respectively, will be obliged to pass through said cages, respectively. When the partition is in its normal position, the disks 10 11 are opened, as shown in Fig. 1. When the fluid enters the ports 4 and 5, it must pass through the cages 18 into the compartments 2 and 3 and be discharged through 6 and 7. When the pressure of the fluid entering the port 4 is the same as the pressure of the fluid entering the port 5, the partition will remain open. When, however, the pressure is greater in the fluid entering one of these ports, the diaphragm 15 will be acted upon, being forced away from the port through which the fluid having the greater pressure enters, and the disks 10 and 11 will be partially or wholly closed, depending upon the difference between the pressure of the fluid entering opposite sides of the casting. Thus the flow of fluid having greater pressure will be checked, so that at the discharge the pressure of the two fluids will be substantially the same. In case the difference of pressure is considerable the valves will be closed and remain so until the pressure from the opposite side opens them. The relation between the disks 10 and 11 can be arranged in such a manner that one of said disks will close before the other or so that the smaller of said disks may never tightly

close, depending upon the adjustment required for practical working of the device.

What we claim as our invention, and desire to secure by Letters Patent, is—

5 A casting divided into two compartments; a removable cage placed within each compartment; a valve-seat in each cage; a valve-stem passing through said cage; supports for said valve-stem; a disk on said valve-stem adapted to engage said seat; a diaphragm separat-

ing said two compartments with which said valve-stem engages, substantially as described.

Signed at Albany, New York, this 14th day of December, 1904.

SAMUEL MANNING.

WILLIAM B. ARMSTRONG.

Witnesses:

CHAS. A. SUSSDORFF,
WALTER E. WARD.