

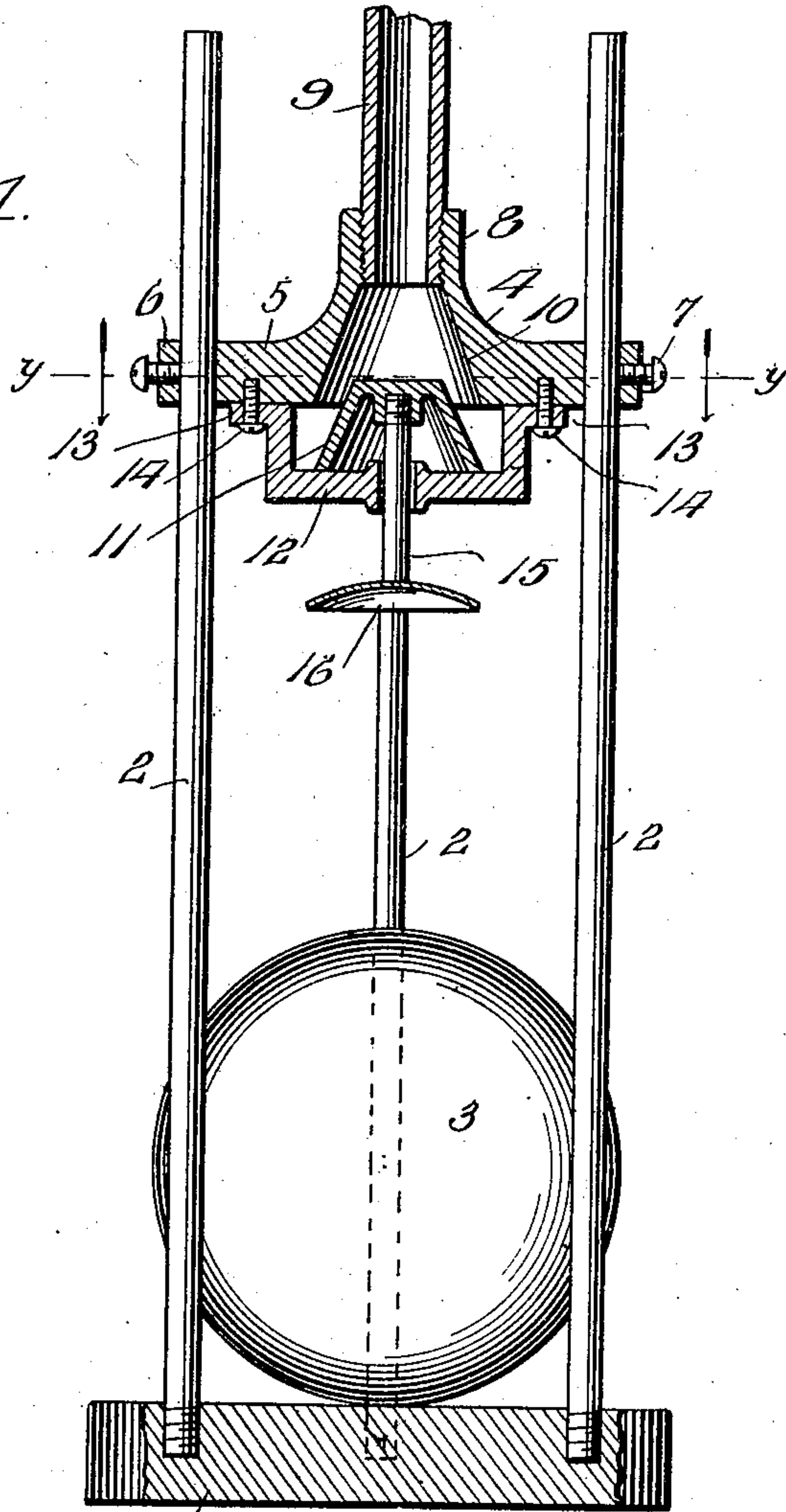
No. 876,867.

PATENTED JAN. 14, 1908.

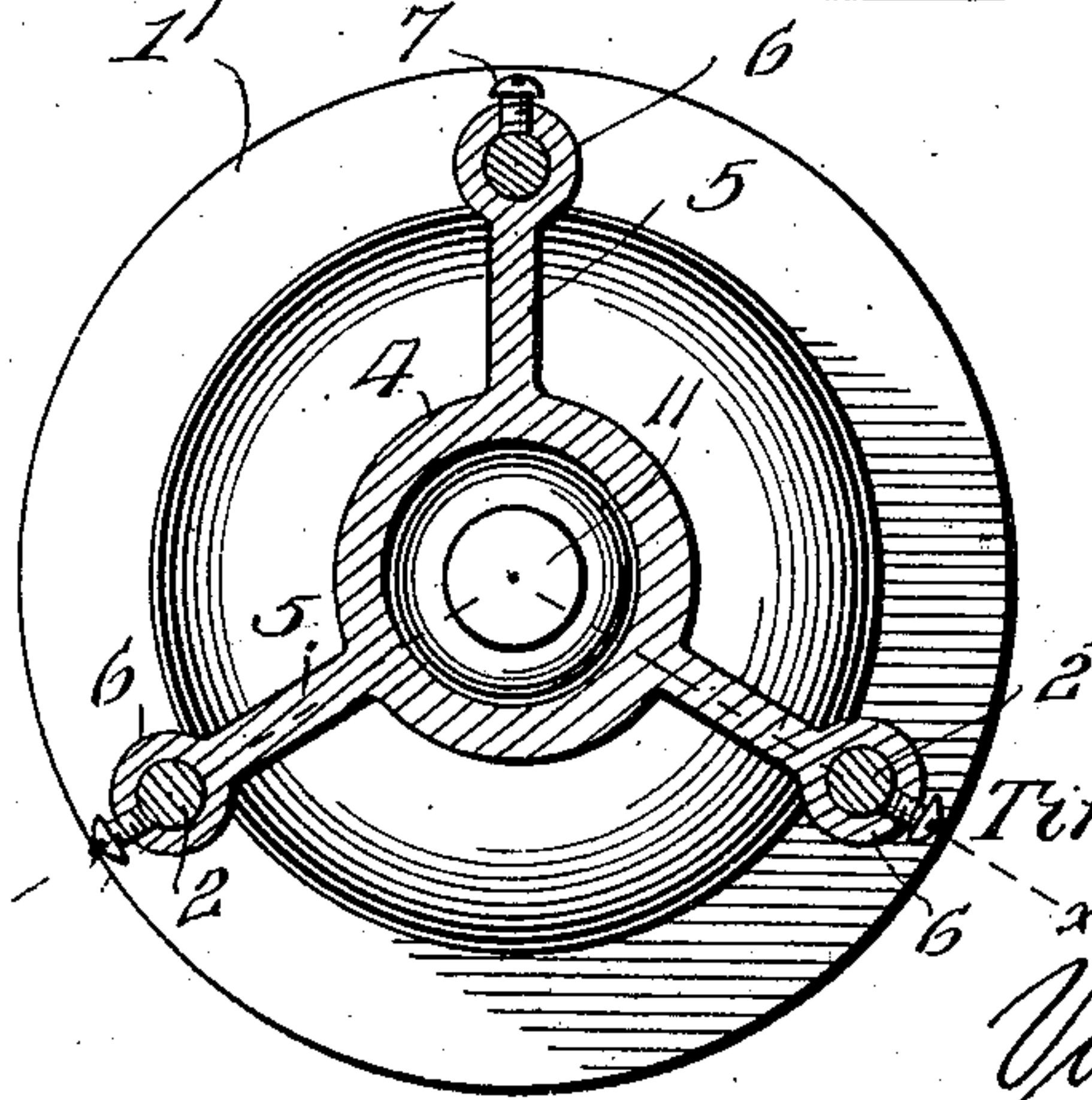
T. A. DUGGAN.  
VALVE.

APPLICATION FILED MAR. 8, 1907.

*Fig. 1.*



*Fig. 2.*



Witnesses

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# UNITED STATES PATENT OFFICE.

TIMOTHY A. DUGGAN, OF NEW ORLEANS, LOUISIANA.

## VALVE.

No. 876,867.

Specification of Letters Patent.

Patented Jan. 14, 1908.

Application filed March 8, 1907. Serial No. 361,384.

*To all whom it may concern:*

Be it known that I, TIMOTHY A. DUGGAN, a citizen of the United States of America, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented new and useful Improvements in Valves, of which the following is a specification.

This invention relates to float-controlled valves adapted for regulating the admission of water to boilers and other receivers, the object of the invention being to provide a simple, inexpensive, reliable and efficient valve of this type in which the seating action of the valve may be readily and conveniently regulated.

In the accompanying drawing,—Figure 1 is a vertical section on the plane indicated by the line  $x-x$ , Fig. 2. Fig. 2 is a sectional plan view taken on the line  $y-y$  of Fig. 1.

Referring to the drawing, 1 designates a suitable base, from which rise upright guide rods 2, which rods are arranged to form a guideway for a hollow metallic float 3, designed to rest normally upon the base 1. Arranged upon the rods above the base is a head 4 provided with a series of radial arms 5 equal in number to the rods, said arms being formed at their outer ends with eyes 6 slidably engaging the rods, whereby the head is adapted to be vertically adjusted thereon. Set screws 7 are carried by the eyes to engage the rods and thereby fix the head in adjusted position.

The head is further provided at its upper end with an internally threaded socket 8 to receive the outlet end of a water supply pipe 9, and below said socket is formed with a frusto-conical valve seat 10. A correspondingly shaped valve 11 is provided to enter said seat and cut off or control the inlet of water thereto from the supply pipe to the receiver. The valve is normally arranged within and supported by a cage or casing 12 open at top for communication with the port in the head and provided with any preferred number and arrangement of outlet ports for the flow of the entering water into the receiver. At its upper end the cage or casing is formed with lugs or flanges 13 for the passage of screws or other fastenings 14 which secure it to the underside of the head. The crown of the valve is formed with a threaded socket to receive the upper threaded end of the valve stem 15 which projects downward through and is vertically movable in a guide opening in the bottom of the casing and car-

ries at its lower end a concavo-convex shoe or abutment 16 adapted to be engaged by the float 3. If desired, the part 12 may be in the form of a yoke whose upright arms are provided with the laterally extending attaching flanges or lugs 13.

It will be understood from the foregoing description that the head 4 is vertically adjustable on the guide rods to suit the arrangement of the pipe 9, as well as to regulate the level of the water and the seating action of the valve 11. As the water entering the boiler or receiver through the supply pipe rises in the boiler the float 3 is carried upward and contacts with the shoe 16 and as the water continues to rise imparts movement through said shoe to the valve 11, whereby the latter will be controlled to gradually diminish the inlet of water and totally cut off the inlet of the same when the water in the boiler reaches the prescribed level. As the water falls below such level, the float falls therewith and thus allows the valve to open by gravity to permit of the inlet of more water until the prescribed level is again reached, when the valve will again be closed by the float to close the seat port 10. Hence the operation will be entirely automatic and the water in the boiler or receiver maintained at all times at the desired level.

Having thus described the invention, what is claimed as new, is:—

1. A device of the character described comprising a guide frame, a head slidably adjustable on the guide frame and provided with an inlet port and a depending support, a supply pipe connected with the head and communicating with the inlet port, means for securing the head in adjusted position, a gravity opening valve adapted when open to rest upon said support and movable upward to control the inlet in the head, a stem connected with said valve and slidably movable through the support, a shoe carried by the lower end of said stem, and a float movable in the guide frame below the head and adapted on its upward movement to engage said shoe.

2. A device of the character described comprising a guide frame, a head supported thereby and provided with a supply pipe connection and an inlet port, a support upon the base of the head, a gravity opening valve adapted when open to rest upon said support and vertically movable to control the port in the head, a stem connected with the



valve and movable through said support and provided at its lower end with a contact shoe, and a float movable in the guide frame and adapted to engage said shoe and impart  
5 upward closing movement to the valve.

3. A device of the character described comprising a guide frame, a head vertically adjustable thereon and provided with a supply pipe connection and an inlet port,  
10 means for securing the head in adjusted position, a support upon the base of the head, a gravity opening valve adapted when open to rest upon said support and vertically movable to control the port in the head, a stem  
15 connected with the valve and movable through said support and provided at its lower end with a contact shoe, and a float movable in the guide frame and adapted to engage said shoe and impart upward closing  
20 movement to the valve.

4. A device of the character described

comprising a base, guide rods rising therefrom, a head provided with a supply pipe connection, an inlet port and arms slidably engaging said rods, fastening devices carried  
25 by the arms to secure the head in adjusted position, a support upon the base of the head, a gravity opening valve adapted when open to rest upon said support and vertically movable to control the port in the head, a  
30 stem connected with the valve and movable through said support and provided at its lower end with a contact shoe, and a float movable in the guide frame and adapted to engage said shoe and impart upward closing  
35 movement to the valve.

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

TIMOTHY A. DUGGAN.

Witnesses:

CHAS. A. BYRNES,  
PAUL W. MALONEY.