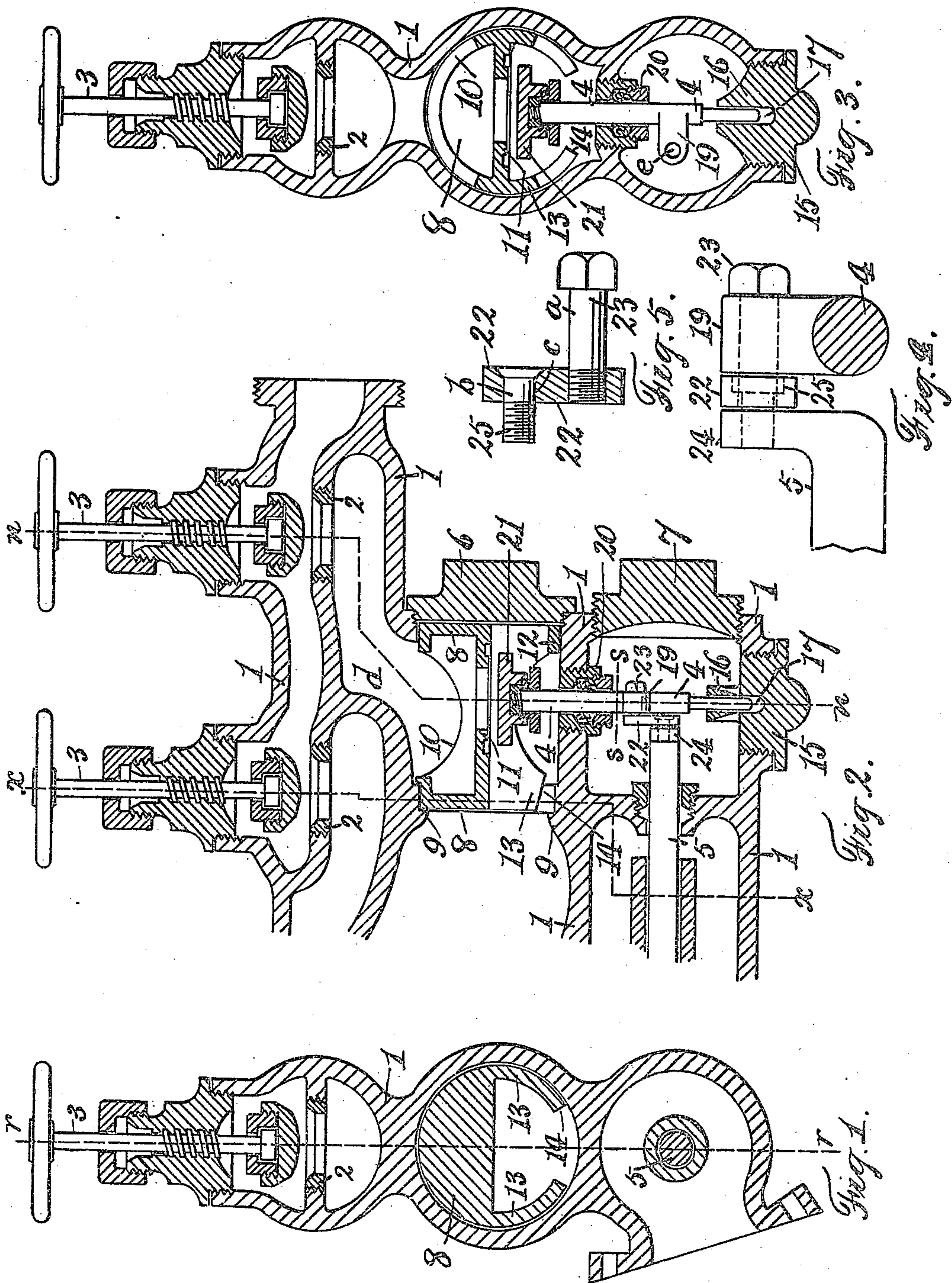


W. H. BICE.
WATER FEED REGULATOR.
APPLICATION FILED SEPT. 21, 1909.

963,019.

Patented June 28, 1910.



Witnesses
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UNITED STATES PATENT OFFICE.

WALTER H. BICE, OF MAPLE LODGE, ONTARIO, CANADA, ASSIGNOR OF ONE-SIXTH TO
WILLIAM R. COLBY AND ONE-HALF TO ALFRED WESTMAN, OF LONDON, CANADA.

WATER-FEED REGULATOR.

963,019.

Specification of Letters Patent. Patented June 28, 1910.

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To all whom it may concern:

Be it known that I, WALTER H. BICE, a subject of the King of Great Britain, and a resident of Maple Lodge, in the county of Middlesex, in the Province of Ontario, Canada, have invented new and useful Improvements on Water-Feed Regulators, of which the following is a specification.

This invention relates to improvements on water feed regulators as set forth in an application for a United States Patent Serial No. 485,766 dated March 25th, 1909. And it consists of improvements in a water feed regulator which will be more positive and sensitive in action and less expensive to manufacture, and it also consists of the improved construction and novel combination of parts of the same as will be hereinafter first fully set forth and described and then pointed out in the claims.

Reference is had to the accompanying drawings forming part of this specification, wherein—

Figure 1 is a vertical sectional view of my improvements on the line *x, x*, of Fig. 2. Fig. 2 is a sectional view of a portion of the water feed regulator on line *r, r*, of Fig. 1. Fig. 3 is a vertical sectional view of Fig. 2 on the line *n, n*, of Fig. 2. Fig. 4 is a cross sectional view on the line *s, s*, of Fig. 2. Fig. 5 is a longitudinal sectional view of the link. In these views the regulating valve spindle, the removable spindle, and the upper spindles are shown in full line.

In the accompanying drawings the numeral 1 indicates the body of the water feed regulator, 2 the upper valve seats, 3 the upper valve spindles, 4 the regulating valve spindle and 5 the movable spindle.

6 and 7 are plugs which are screwed or otherwise secured in the body 1, as shown, in the case of the plug 6 when the latter is secured in place it forms a cap over and holds in place the removable body 8. This removable body 8 is fitted to and inserted in the body 1, as shown, until the end of said removable body 8 abuts against the annular flange 9. One-half of the body 8 is formed hollow and with an opening 10 which opens into the portion, *d*, of the body 1 of the water feed regulator, and said body 8 is formed with the valve seat 11. The lower part of this body 8 is formed with the semi-annular ring portions 12 and 13, and a portion of the semi-annular ring 13 is cut away at 14.

15 indicates a guiding plug which is secured in the body 1, as shown, and this plug 15 is formed with the guide 16 in which the hollow portion 17 is formed.

4 as before described indicates the regulating valve spindle which is held in place by the hollow portion 17 of the guiding plug 15, and the packing box 20.

19 indicates an arm on one side of the regulating valve spindle 4 and this valve spindle 4 extends up through the packing box 20 and is surmounted by the valve 21 which is fitted to and abuts against the valve seat 11.

22 designates a link which is pivotally secured at one end to the arm 19 by the screw 23, the plain shank, *a*, of which passes through a plain opening, *e*, in said arm 19, and the other end of said screw 23 is screwed or otherwise secured in said link 22, and said link 22 is also pivotally secured to the crank 24 of the movable spindle 5, by a screw 25, the plain shank, *b*, of which passes through a plain opening, *c*, in said link 22 and is screwed or otherwise secured in said crank 24, of said movable spindle 5.

The operation of this improvement is as follows;—As the movable spindle 5 is turned to raise or lower the regulating spindle 4, this movable spindle 5 being pivotally or flexibly connected to the regulating spindle 4, by the link 22, and connections as before described, the regulating spindle 4 is raised or lowered and consequently the valve 21 is raised toward or lowered from the valve seat 11 in the body 8, to increase or decrease the passage or valve seat 11 in the body 8 and thus govern the flow of water to the boiler.

The inner one of the semi-annular rings 13 is cut away, as shown, at 14, to permit the removable body 8 to be inserted even when the valve 21 is above the lower face of said inner semi-annular ring 13. And by means of the removable body 8 in which the valve seat 11 is situated, and the movement of the regulating spindle and valve on the upper end thereof, and the movable spindle, together with the link connection between the movable and regulating spindles makes this invention more positive and simple in action and less expensive in construction.

Having thus described my invention, I claim;—

1. In a device of the class described, a re-

movable body partly formed hollow and with the semi-annular ring portions, the inner one of which is partly cut away, and which is formed with a valve seat, in combination with a regulating valve mounted on a valve spindle, and means for supporting said removable body and said regulating valve spindle.

2. A water feed regulator comprising a casing adapted to communicate with a water supply and with a boiler formed with an upper and a lower compartment, a removable hollow cylindrical body mounted in said upper compartment and provided with an apertured partition constituting a valve seat, a valve arranged in the upper compartment and extending in said member and adapted to engage said seat for shutting off the supply of water to the boiler, a stem projecting in said lower compartment, and a spindle operatively-connected with the stem for shifting it to move the valve to and from said seat.

3. A water feed regulator comprising a casing adapted to communicate with a water supply and with a boiler formed with an upper and a lower compartment, a removable hollow cylindrical body mounted in said upper compartment and provided with an apertured partition constituting a valve seat, a valve arranged in the upper compartment and extending in said member and adapted to engage said seat for shutting off the supply of water to the boiler, a stem projecting

in said lower compartment, and a spindle operatively-connected with the stem for shifting it to move the valve to and from said seat, and said cylindrical member cut-away below said partition whereby communication is established between that portion of the member above the valve seat and the chamber when the valve is unseated.

4. A water feed regulator comprising a casing adapted to communicate with a water supply and with a boiler formed with an upper and a lower compartment, a removable hollow cylindrical body mounted in said upper compartment and provided with an apertured partition constituting a valve seat, a valve arranged in the upper compartment and extending in said member and adapted to engage said seat for shutting off the supply of water to the boiler, a stem projecting in said lower compartment, a spindle operatively-connected with the stem for shifting it to move the valve to and from said seat, and a removable plug engaging with said casing for maintaining said member within the upper compartment.

In testimony whereof, I have signed in the presence of the two undersigned witnesses.

WALTER H. BICE.

Witnesses:

P. J. EDMUNDS,
N. GRAHAM.