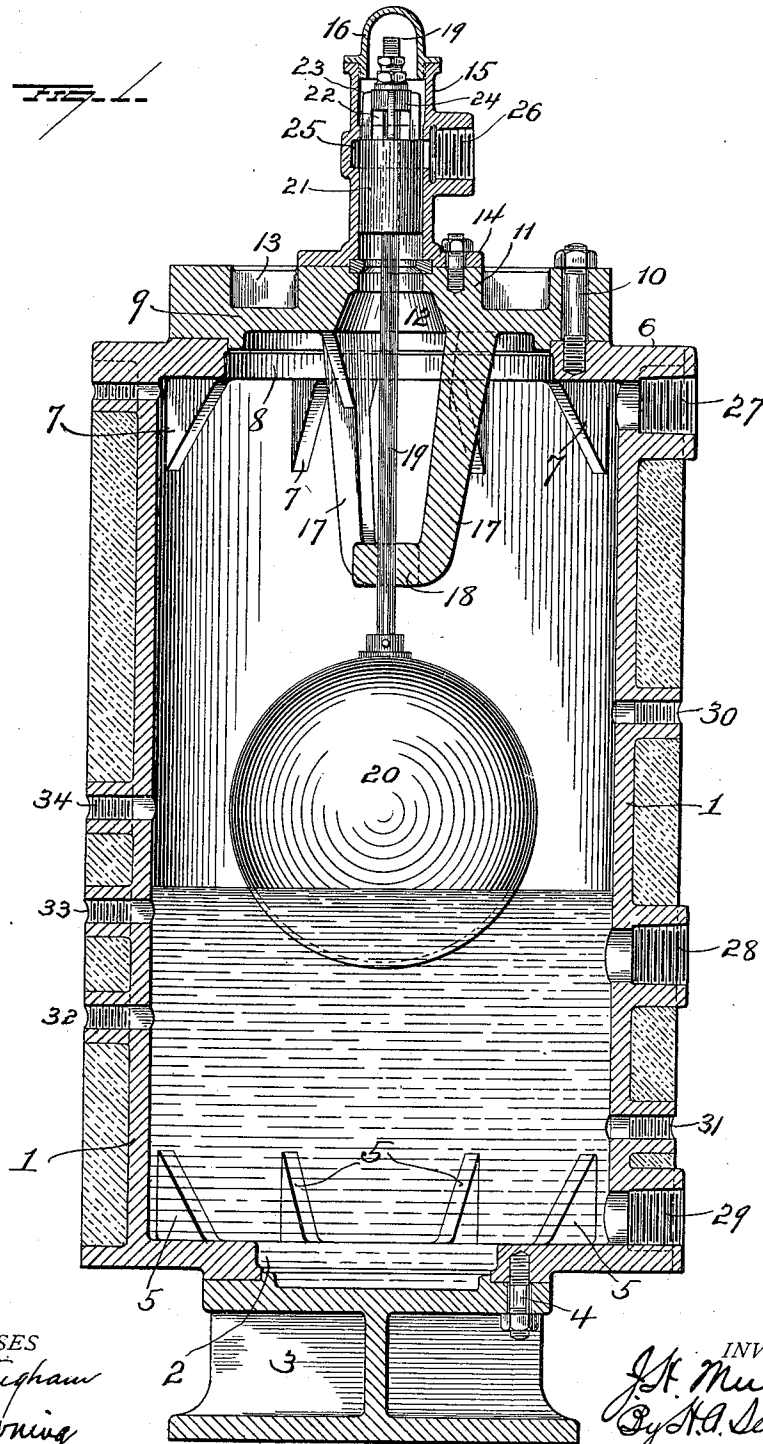


J. H. MURRAY.
FEED WATER CONTROLLER OR REGULATOR.
APPLICATION FILED NOV. 27, 1911.

1,052,267.

Patented Feb. 4, 1913.

2 SHEETS—SHEET 1.



WITNESSES
E. J. Whitham
G. F. Downing

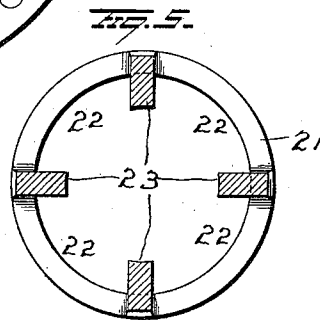
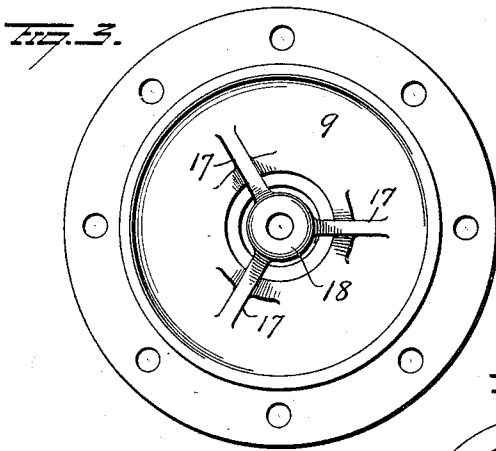
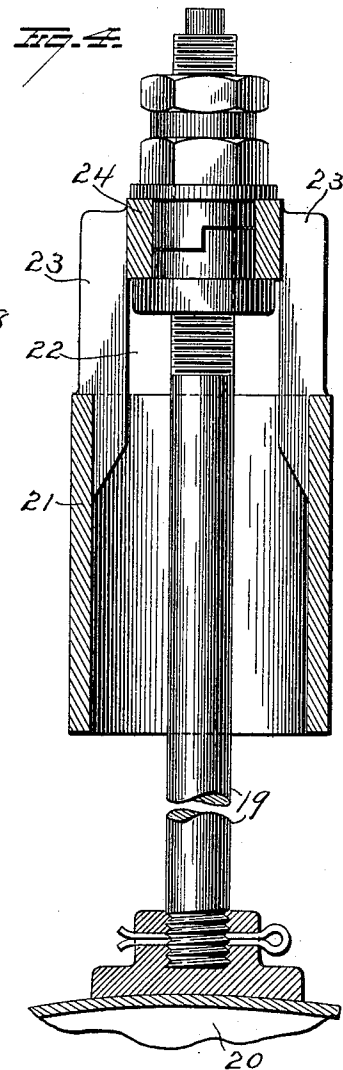
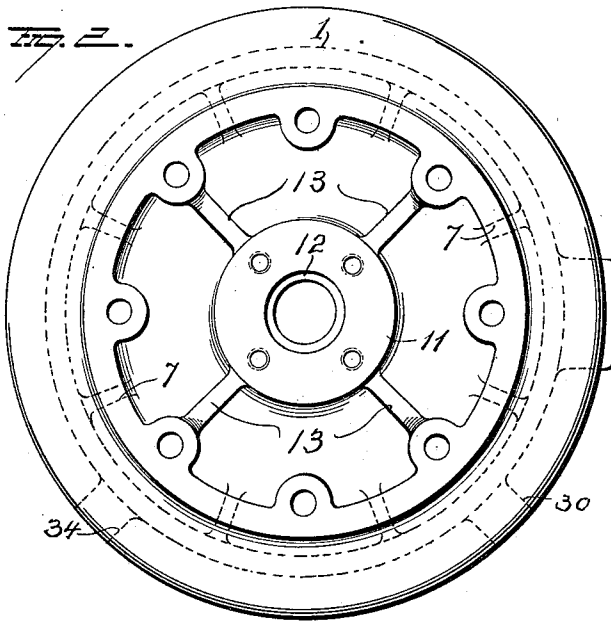
INVENTOR
J. H. Murray
By *H. A. Seymour*
Attorneys

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2 SHEETS—SHEET 2.



WITNESSES
E. Nottingham
G. J. Downing

INVENTOR
J. H. Murray
G. H. Seymour
 Attorneys

UNITED STATES PATENT OFFICE.

JAMES H. MURRAY, OF FAIRFIELD, MAINE.

FEED-WATER CONTROLLER OR REGULATOR.

1,052,267.

Specification of Letters Patent.

Patented Feb. 4, 1913.

Application filed November 27, 1911. Serial No. 662,716.

To all whom it may concern:

Be it known that I, JAMES H. MURRAY, of Fairfield, in the county of Somerset and State of Maine, have invented certain new and useful Improvements in Feed-Water Controllers or Regulators; 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.

This invention relates to improvements in feed water controllers for steam boilers,—the object of the invention being to provide simple and efficient means which will operate accurately and automatically to control the supply of feed water to one or more boilers and maintain the level of the water in the boiler or boilers approximately uniform, and constant.

With these and other objects in view the invention consists in certain novel features of construction and combinations of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view partly in section and partly in elevation showing an embodiment of my invention. Fig. 2 is a plan view. Fig. 3 is a bottom plan view of the cover. Fig. 4 is a sectional view illustrating the valve. Fig. 5 is a transverse sectional view of the valve.

1 represents the body portion or cylinder of my improved controller which may be provided in its bottom with an opening 2 normally closed by means of a base 3 on which the cylinder 1 is located and the latter is rigidly secured to said base by means of bolts 4. The lower portion or bottom of the cylinder is braced by means of triangular lugs 5 cast integral with the wall and bottom of the cylinder at the juncture thereof. The top 6 of the cylinder is similarly braced by means of lugs 7 and the said top 6 is made with a large central opening 8 which is normally closed by means of a cover 9 secured to the cylinder top by means of bolts 10. The cover 9 is provided centrally with an annular flange 11 surrounding an opening 12 and in order to strengthen said cover, radial ribs 13 are provided. The base 14 of a valve casing 15 is secured by means of bolts upon the annular flange 11 of the cover 9,—said valve casing being thus so disposed as to communicate with the central opening 12 in the

cover. The valve casing 15 is provided at its upper end with a removable cap or hood 16 whereby access may be had to the valve within said chamber for the purpose of making any adjustment of the valve in case a different water level might be desired.

The cover 9 is provided with a series of depending arms 17 and the lower ends of these arms are rigid with a ring or collar 18 through which a valve rod 19 is guided. A float 20 is secured to the lower end of the rod 19 and the upper end of said rod passes through and is secured to a valve 21 which is vertically movable within the valve casing 15. The valve 21 is made cylindrical in form and constructed with a series of large openings 22 formed by arms 23 connecting the lower portion of the valve with the smaller upper portion 24 thereof, and to this upper portion 24, the valve rod 19 is secured by means of suitable nuts as clearly shown in Fig. 4. The valve casing 15 in which the valve is vertically movable, is provided interiorly with an annular duct 25 communicating with a nipple 26 adapted for the reception of a pipe leading to the motor end of a pump,—said pump being suitably connected to supply water to the boilers.

The cylinder 1 is provided at or near its upper end with a tap 27 for the reception of a steam pipe leading from the steam dome of the boiler. The cylinder 1 is also provided with a tap or nipple 28 to receive a pipe connected with the boiler or boilers approximately at the normal water level so that the water level in the boilers and the water level in the cylinder 1 will be always the same. The cylinder 1 may also be provided near its bottom with a tap or nipple 29 for the reception of a drain pipe. A suitable gage may be provided and connected with the cylinder at the points 30—31 and a series of gage cocks may be provided at 32, 33 and 34.

With the construction and arrangement of parts above described the water level will be the same in the cylinder 1 as in the boiler or boilers and the steam pressure within the cylinder 1 will be approximately the same as the steam pressure in the steam dome of the boiler and hence the valve connected with the float 20 will be balanced and its movements will be accurately controlled by the varying level of the water. When the water level descends, the float 20 will also

descend and cause sufficient downward movement of the valve 21 to move the opening 23 thereof into alinement with the annular duct 25 in the valve casing,—thus permitting
 5 steam to pass from the interior of the cylinder 1 upwardly through the cylindrical valve 21 and escape from the latter and from the duct 25 to the steam pipe connected with the nipple 26, said steam pipe conducting the steam to the motor end of a pump, as previously explained. It will be
 10 observed that as the steam which supplies the pump first enters the cylinder 1 before reaching the valve, any condensation which
 15 might occur will take place within said cylinder rather than in the valve or valve casing.

Various slight changes might be made in the details of construction of my invention
 20 without departing from the spirit thereof or limiting its scope and hence I do not wish to restrict myself to the precise details herein set forth.

Having fully described my invention, what
 25 I claim as new and desire to secure by Letters-Patent, is,—

1. In a feed water controller, the combination of a cylinder having steam and water connections, a cover on said cylinder, said
 30 cover having an opening communicating with the cylinder and surrounded by a seat, a valve casing secured on said seat and having a steam outlet, a valve movable in said casing and comprising a tubular lower portion closely fitting said valve casing, and an
 35 upper portion consisting of a plurality of arms and a collar at the upper ends of said arms, a float in the cylinder, a rod connected with the float and adjustable devices
 40 connecting said rod with the collar at the upper end of the valve.

2. In a feed water controller, the combination with a cylinder provided with steam and water connections, of a cover on said
 45 cylinder having an opening surrounded by a seat, said cover also having integral depending arms supporting an integral collar in line with the opening in said cover, a valve casing mounted on the seat on the
 50 cover and having a steam outlet, a valve in

said casing, said valve having a cylindrical lower portion closely fitting said casing and having an upper portion comprising a plurality of spaced arms and a collar at the
 55 upper end of the latter, a float in the cylinder, and a rod secured to said float, passing up through the first mentioned collar and secured at its upper end to the collar at the upper ends of the arms of the valve.

3. In a feed water controller, the combination with a cylinder provided with steam
 60 and water connections, and a cover on said cylinder having a central opening surrounded by a seat, of a valve casing mounted on said seat and having a steam outlet and an
 65 annular duct communicating therewith, a valve in said casing, said valve comprising a lower cylindrical part closely fitting within said casing to open and close said steam duct, and an upper part consisting of a collar and a plurality of spaced arms connecting
 70 said collar with the cylindrical lower portion of the valve, a float in the cylinder, a rod secured at its lower end to said float, and means adjustably connecting the upper
 75 end of said rod with the collar at the upper end of the valve.

4. In a feed water controller, the combination with a cylinder provided at its respective
 80 ends with braced heads having openings, and also provided with steam and water connections, and covers removably secured to said heads respectively, of a valve casing having a steam outlet, mounted on one of said heads, said valve casing provided
 85 with a removable cap, a valve having a lower cylindrical portion closely fitting said casing and having lateral openings above said cylindrical portion, a float in said cylinder, a rod secured at one end to said float, and
 90 means connecting the upper portion of said rod with the upper end of said valve.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

JAMES H. MURRAY.

Witnesses:

NAPOLÉON ST. PETER,
 M. S. GOODRICH.