T. ELLIOTT.

FEED WATER REGULATOR.

APPLICATION FILED JUNE 13, 1912.

1,067,904. Patented July 22, 1913.

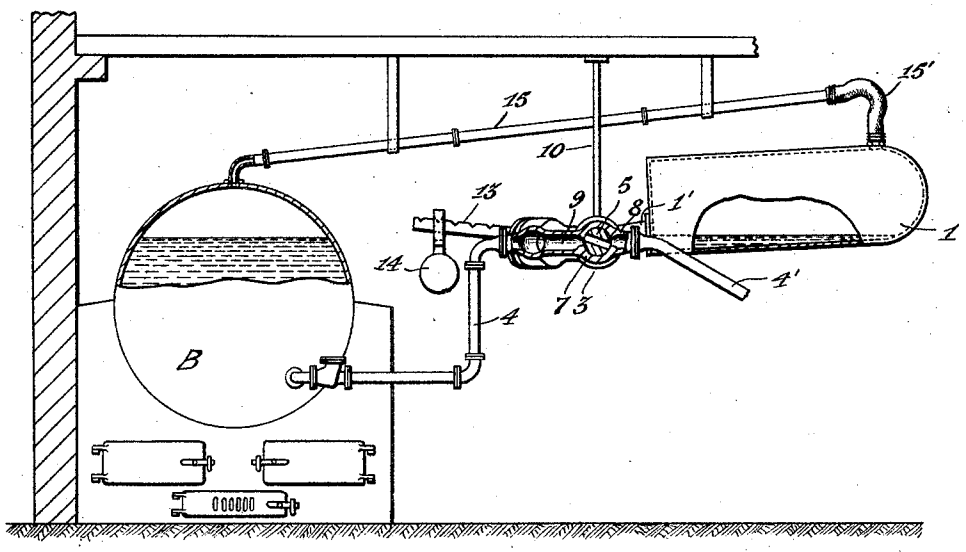


Fig. 1.

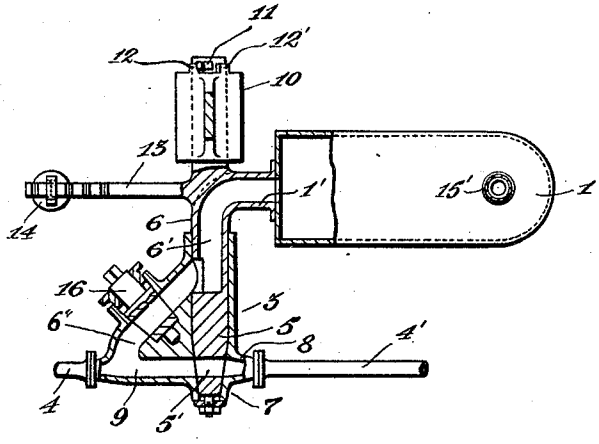


Fig. 2.

Witnesses

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UNITED STATES PATENT OFFICE.

THOMAS ELLIOTT, OF SEATTLE, WASHINGTON, ASSIGNOR OF TWO-NINTHS TO SAMUEL D. CROCKETT, TWO-NINTHS TO HARLEY J. ARMSTRONG, AND TWO-NINTHS TO STACY E. GRAYSON, ALL OF SEATTLE, WASHINGTON.

FEED-WATER REGULATOR.

1,067,904. Specification of Letters Patent. **Patented July 22, 1913.**

Application filed June 13, 1912. Serial No. 703,555.

To all whom it may concern:

Be it known that I, THOMAS ELLIOTT, a subject of the King of Great Britain, and a resident of the city of Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Feed-Water Regulators, of which the following is a specification.

The present invention pertains to a water controlled regulator of the above type primarily devised to regulate the inlet of water to a steam generator, and it consists in certain novel features and combinations of parts as set forth in the following description and succinctly defined in the annexed claims.

The object of the invention is to provide a simple and reliable feed water regulator that will respond to slight variations in the head of water in a boiler and maintain a nearly constant water level therein.

With reference to the accompanying drawing wherein similar reference characters designate corresponding parts throughout the several views: Figure 1 is a sectional side elevation of my improved regulator together with a boiler, and Fig. 2 is a sectional plan of the regulator.

Referring to the drawing, numeral 1 designates a vertically movable water chamber combined with an elevating means and operatively connected with a valve 3 which is connected at its delivery side with inlet pipe 4 of boiler B and with chamber 1. Valve 3, which as shown is of the rotary type, comprises a horizontally disposed rotatable plug 5 seated in a casing 7 and provided with a passage 5′ for connecting the casing inlet and delivery ports 8, 9 which are connected with a water supply pipe 4′ and inlet pipe 4 respectively. Plug 5 is provided with a stem part 6 whose outer end portion is journaled in a hanger 10 and carries a laterally projecting stop 11, which serves in conjunction with spaced apart shoulders 12, 12′ of hanger 10 to limit the angular movement of plug 5.

Secured to stem 6 is a laterally projecting arm 13 whereon a weight 14 for turning plug 5 to open valve 3 is adjustably positioned to overbalance and elevate chamber 1 which latter extends from the opposite side of the stem in the surface plane of the water in boiler B and has connection at its upper side with a flexible extension 15′ of a pipe 15 leading from the steam space of the boiler.

Chamber 1 comprises a cylindrical tank provided on its lower portion with a rigid neck 1′ which is secured to stem 6 and has communication with port 9 through a passage 6′ of the stem and an intermediate passage 6″ of casing 7, provided with a one way plug valve 16, whereby the chamber, providing valve 16 be open, will be constantly in communication with inlet pipe 4 of the boiler and connected with supply pipe 4′ when valve 3 is open.

In operation weight 14 is overbalanced by water which flows into chamber 1 from valve 3 through the connecting means just described and carries the chamber downwardly to a substantially horizontal position thereby turning plug 5 to close port 8. When the water level in boiler B falls below that in chamber 1 water flows from the chamber into the boiler through passages 6′, 6″, valve 16, port 9 and pipe 4 until the chamber is overbalanced by weight 14. The flow of water to and from chamber 1 can be restricted by partly closing valve 16.

Having thus described my invention what I claim as new, and desire to secure by Letters Patent of the United States of America, is:—

1. In combination, a steam generator, a valve casing provided with inlet and outlet ports and with an intermediate passage communicating with and extending in angular relation to said outlet port, a plug valve in said casing having one end portion provided with a passage for establishing communication between the inlet and outlet ports of said casing, the opposite end portion of said valve having a passage constantly communicating with the intermediate passage of said casing, a valve in the intermediate passage of said casing, a vertically movable water chamber fixed to said valve and constantly communicating with the last named passage thereof, a pipe extending from the steam space of said generator, a flexible connection between said pipe and said water chamber, a pipe leading from the outlet port of said casing to the water space of said generator, and a counter-balance means for said chamber.

2. In combination, a steam generator, a

valve casing provided with inlet and outlet ports and with an intermediate passage communicating with and extending in angular relation to said outlet port, a plug valve in said casing having one end portion provided with a passage for establishing communication between the inlet and outlet ports of said casing, the opposite end portion of said valve having a passage constantly communicating with the intermediate passage of said casing, a vertically movable water chamber fixed to said valve and constantly communicating with the last named passage thereof, a pipe extending from the steam space of said generator, a flexible connection between said pipe and said water chamber, a pipe leading from the outlet port of said casing to the water space of said generator, a counter-balance means for said chamber comprising a lever arm fixed to said valve, a weight adjustably mounted on said arm, and stop means for limiting rotary movement of said valve.

Signed at Seattle, Washington this 4th day of June 1912.

THOMAS ELLIOTT.

Witnesses:
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."