J. S. & J. Q. A. TRESIZE.

FEED WATER REGULATOR.

No. 174,986. Patented March 21, 1876.

Fig. 1.

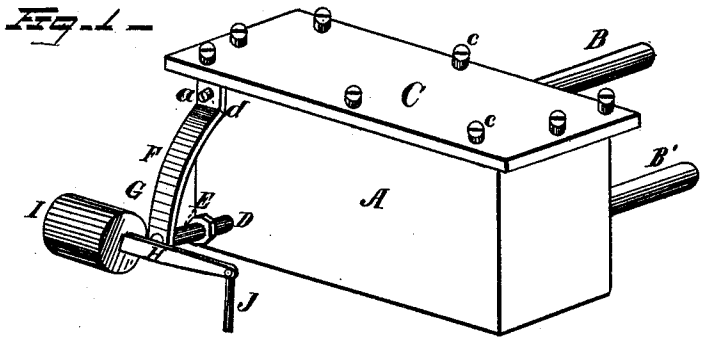
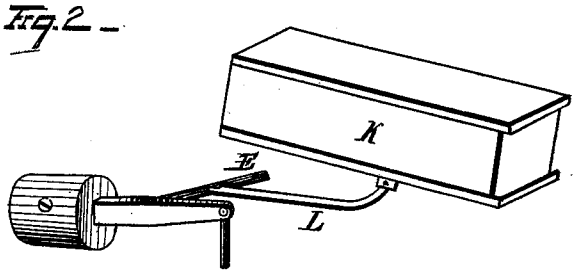


Fig. 2.



WITNESSES
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By

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UNITED STATES PATENT OFFICE.

JOHN S. TRESIZE AND JOHN Q. A. TRESIZE, OF SPRINGFIELD, ILLINOIS.

IMPROVEMENT IN FEED-WATER REGULATORS.

Specification forming part of Letters Patent No. **174,986**, dated March 21, 1876; application filed February 11, 1876.

To all whom it may concern:

Be it known that we, JOHN S. TRESIZE and J. Q. A. TRESIZE, of Springfield, in the county of Sangamon and State of Illinois, have invented certain new and useful Improvements in Feed-Water Regulators for Boilers; and we 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

Figure 1 represents a perspective view of our invention, and Fig. 2 shows the float and weight detached from the box and casing.

Our invention relates to feed-water regulators for boilers; and it consists in certain details of construction, which will more fully appear from the following description and claim.

A is a chamber connecting with the high and low water line of a boiler by the respective pipes B and B′. The top C of chamber A is removably secured by means of bolt *c*. The chamber A is preferably of rectangular form, in order that the greatest float-surface may be secured, and thereby render the float sensitive to any slight variation of the height of water in the boiler. To the lower corner of the chamber A there is secured a gland or stuffing-box, D, through which projects the rock-shaft E. A shaft-hanger, F, secured to the chamber A, at *a*, by bolt *d*, or otherwise, supports the rock-shaft in bearing G, outside of the stuffing-box or gland D. As the weight and valve-rod are supported by the end of the rock-shaft, the latter would rapidly wear the stuffing-box D, and cause the chamber to leak, were it not for the additional bearing G, that supports the outer end of said rock-shaft. To the outer end of the rock-shaft is rigidly secured a lever, H, one end of the same carrying an adjustable sliding weight, I, while the valve or connecting rod J is pivoted to its opposite end. The valve rod J may actuate a valve that supplies water to a pump or the boiler, or may govern the steam-valve of a steam-pump. The float K is of rectangular form and nearly fits the interior of chamber A. To the bottom of said float a lever, L, is pivoted, the opposite end of said lever being rigidly secured to the rock-shaft E. The connection between the float and the said lever may be formed with a knife-edge bearing, if desired. The float is formed of an outer metallic shell, which incases a filling of cork, wood, or other buoyant material. A float thus constructed has great leverage, to respond in a sensitive manner to any slight variation of the body of water in the boiler, and very little vertical space is required for its free movement, as the actuating-lever is pivoted to the bottom of the float, while there is nothing to obstruct its upper progress. The adjustable weight not only serves to counterbalance the float, but it also counterbalances the weight, and offsets the friction of the balanced valve to be operated.

The operation of the regulator is as follows: The water in the boiler and chamber A will always stand at the same level, and connecting-pipes B B′ also serve to keep the same pressure of steam on the upper or lower surface of the float. When the water in the boiler recedes or falls below any given point at which the float may be set, the float also falls and depresses the lever L, which, in turn, actuates the rock-shaft and the valve through the medium of the connecting-rod J. When the valve is turned on and admits water to the boiler, the float gradually rises until the water in the boiler has attained the desired height, when the valve is closed and remains in that condition until the water in the boiler again falls, when the operation is repeated.

Having fully described our invention, what we claim, and desire to secure by Letters Patent, is—

A feed-water regulator consisting of the rectangular chamber A, float K, lever L, pivoted to the bottom of the float, the rock-shaft E, stuffing-box D, and lever H, carrying the adjustable weight I on one end, and the valve-rod J on the opposite end, substantially as and for the purpose specified.

In testimony that we claim the foregoing we have hereunto set our hands this 8th day of February, 1876.

JOHN S. TRESIZE.
JOHN Q. A. TRESIZE.

Witnesses:
WALTER ORDWAY,
R. N. WHEELER.