

No. 676,872.

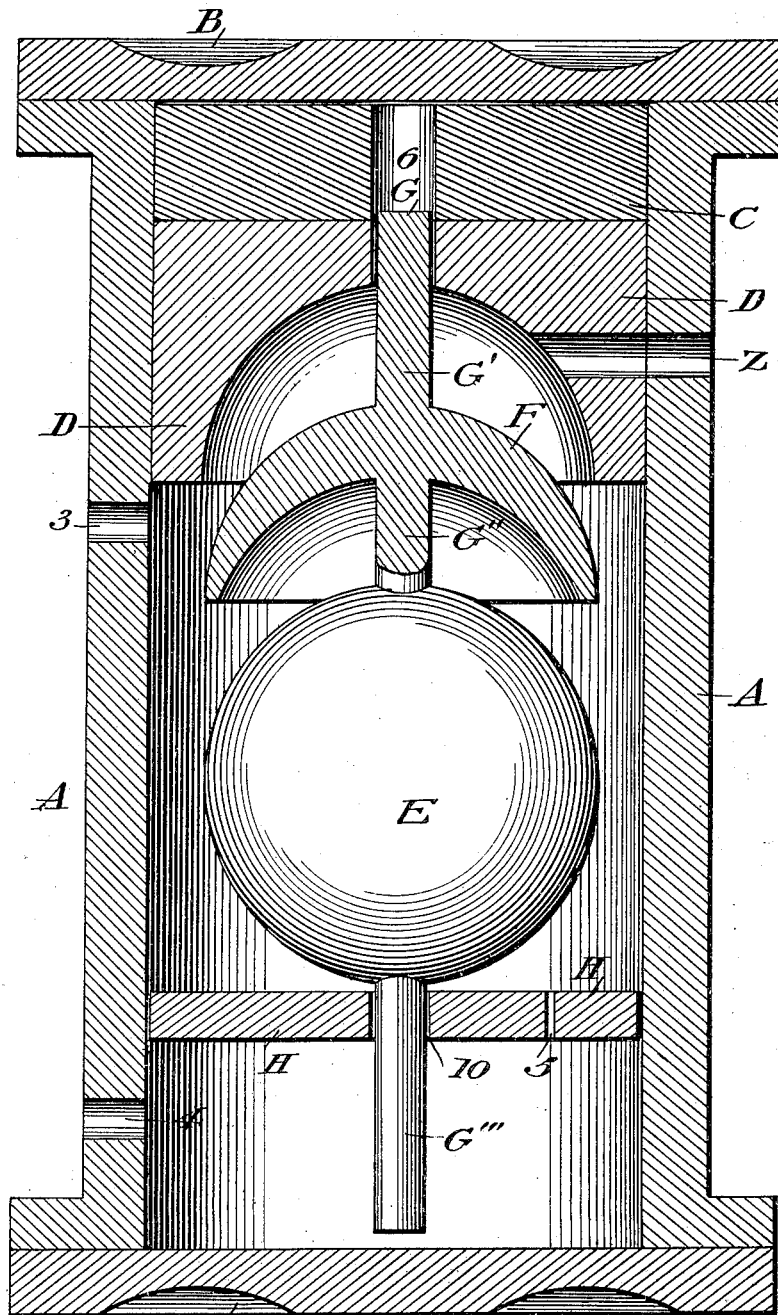
Patented June 25, 1901.

P. M. BUCKLAND.  
FEED WATER REGULATOR.

(Application filed May 22, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses: B

Fig. 1.

Inventor:

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by his Attorney,  
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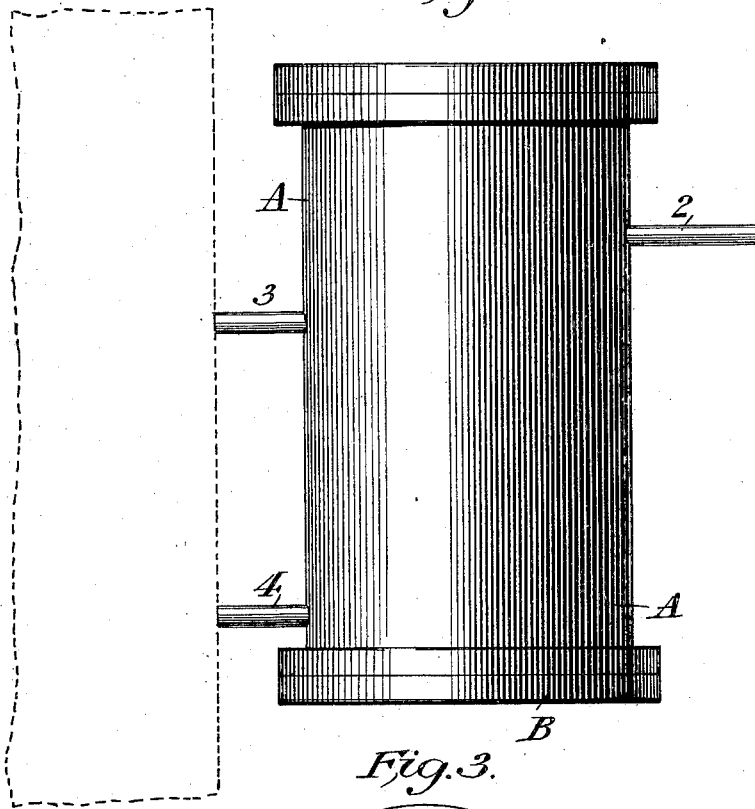
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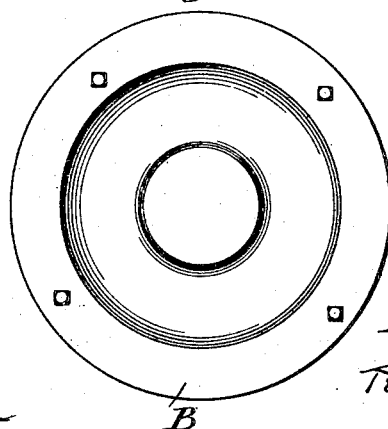
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*Fig. 2.*



*Fig. 3.*



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# UNITED STATES PATENT OFFICE.

PETER M. BUCKLAND, OF HINTON, WEST VIRGINIA.

## FEED-WATER REGULATOR.

SPECIFICATION forming part of Letters Patent No. 676,872, dated June 25, 1901.

Application filed May 22, 1900. Serial No. 17,576. (No model.)

*To all whom it may concern:*

Be it known that I, PETER M. BUCKLAND, a citizen of the United States, residing at Hinton, in the county of Summers and State of West Virginia, (whose post-office address is Hinton, West Virginia,) have invented certain new and useful Improvements in Feed-Water Regulators; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in automatic water-governors consisting of a cylinder with a float-valve therein; and one object of my invention is to provide an automatic water-regulator that will be automatic and reliable in its operation and will maintain the water in a boiler at a uniform height therein.

Another object is to provide a water-regulator that can be made and sold at a very low price, and another object is to provide a water governor or regulator that can be easily attached to any make of steam-boiler.

I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a transverse sectional view of my entire device. Fig. 2 is a side view of my device, and Fig. 3 is an end view of same.

Similar letters and figures of reference refer to similar parts throughout the several views.

The cylinder A constitutes the body of my device. Through the sides of this cylinder are three openings to be fitted with pipes. The openings 3 and 4 lead into the boiler to which my device is attached, and the opening 2 leads to the pump-engine or other steam water-feed. The ends of the cylinder are provided with solid heads B, which can be secured by bolts. A block C is in the upper end of the inside of the cylinder, through the center of which is a hole 6. Below the block C is a block D, the inside face of which is hollowed out to receive the bell or valve F. Near the lower inside end of the cylinder is a partition H, provided with a hole 10 in the

center and a small hole 5 near one side. All the above-named parts are stationary when the device is in operation. Loosely fitted in the center of the cylinder is a round or square float E, preferably of copper, to be used as a float or regulator. Extending upward and downward from the float E is a stem G. The upper part of this stem is marked G', the center part G'', and the lower part G'''. Slightly above the float E is fitted to the stem G a crown or bell F, which when at its highest point is adapted to fit in the hollow portion of the block D for the purposes that will hereinafter appear. The parts E, G, and F are all virtually in one piece and are adapted to have a movement up and down parallel with the length of the cylinder. The stem G' operates in the hole 6 and the stem G''' in the hole 10. The small hole 5 in the partition H is for the purpose of slowly draining the water from the upper portion of the cylinder to prevent the unnecessary opening and closing of the valve by the swaying to and fro of water in moving boilers.

My device must be attached to a boiler by pipes from openings 3 and 4 at a height on the boiler so that when the water adjusts itself through the opening 4, the required standard height will then be at the center of the copper float E. The float E will then be lowered, and thus open the steam-outlet 2 and allow the steam to flow through the pipes to the water-pump engine or other steam water-feed until the water is raised up in the boiler to the standard height, and it adjusts itself through opening 4, up through partition H, and through the hole 5, thus raising the float E up, seating the bell-valve F, and closing the steam-outlet 2 until the water is again needed. Thus it is apparent that the pump-engine or other steam water-feed used will be put to work automatically when the water is needed and automatically stop its flow when the required amount is in the boiler. It can now be seen that there will not be a variation of more than two inches in the height of the water in the boiler at any time.

It is evident that changes in and modifications of the device herein shown and described may be made without departing from the spirit of my invention or sacrificing its advantages.

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

An automatic water-governor consisting of  
5 a cylinder A, with heads B on each end, an opening 2, and openings 3 and 4 leading into the boiler, a block C on the upper end of the cylinder and a block D, with a concave opening in its lower face, immediately below the  
10 block C, a partition H near the lower part of the cylinder, a hole 6 through the center of the blocks D and C, to act as a guide for the

stem G', a hole 10 through the center of the partition H to act as a guide to the stem G'', a float E and a bell F suspended in the cylinder by a stem G, all substantially as described and for the purposes specified. 15

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

PETER M. BUCKLAND.

Witnesses:

J. B. DOUGLASS,  
C. H. LILLY.