(No Model.)

A. P. UREY.

FEED WATER ALARM.

No. 326,465. Patented Sept. 15, 1885.

Fig. 2.

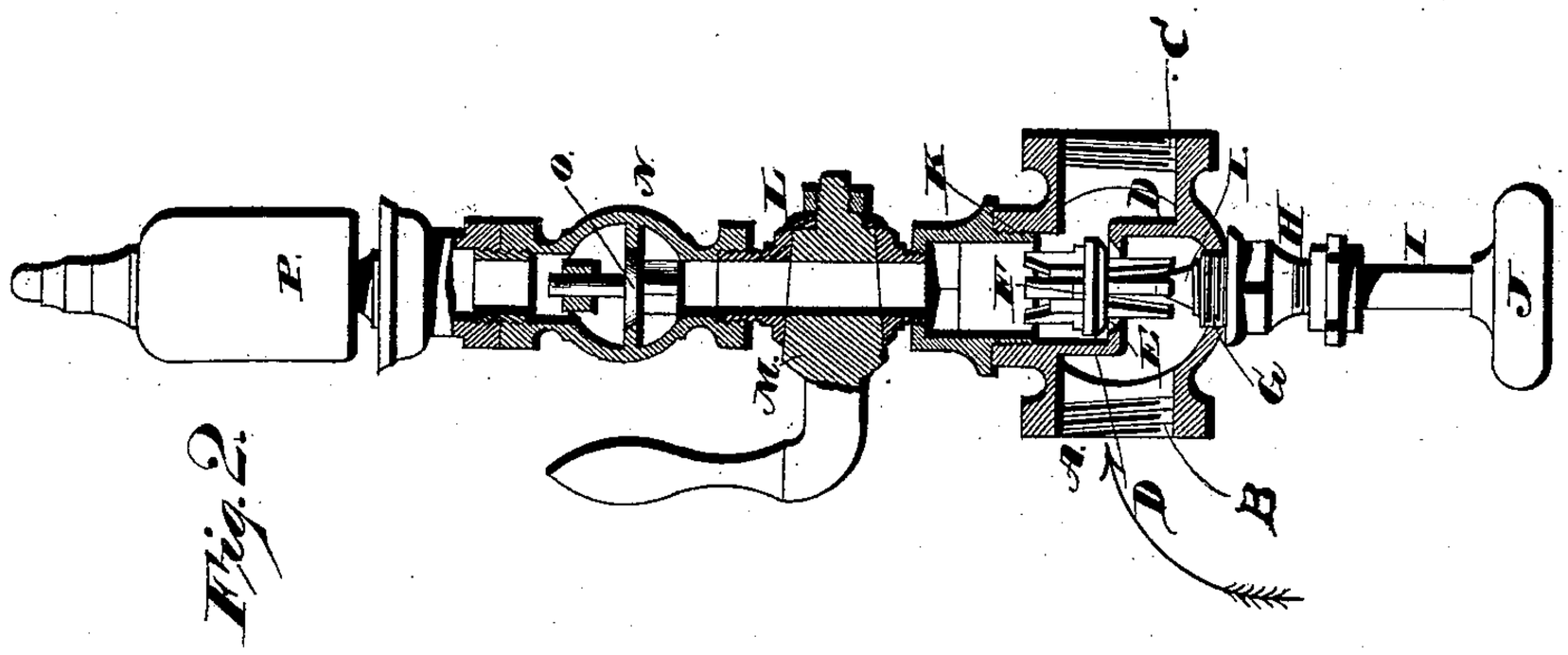
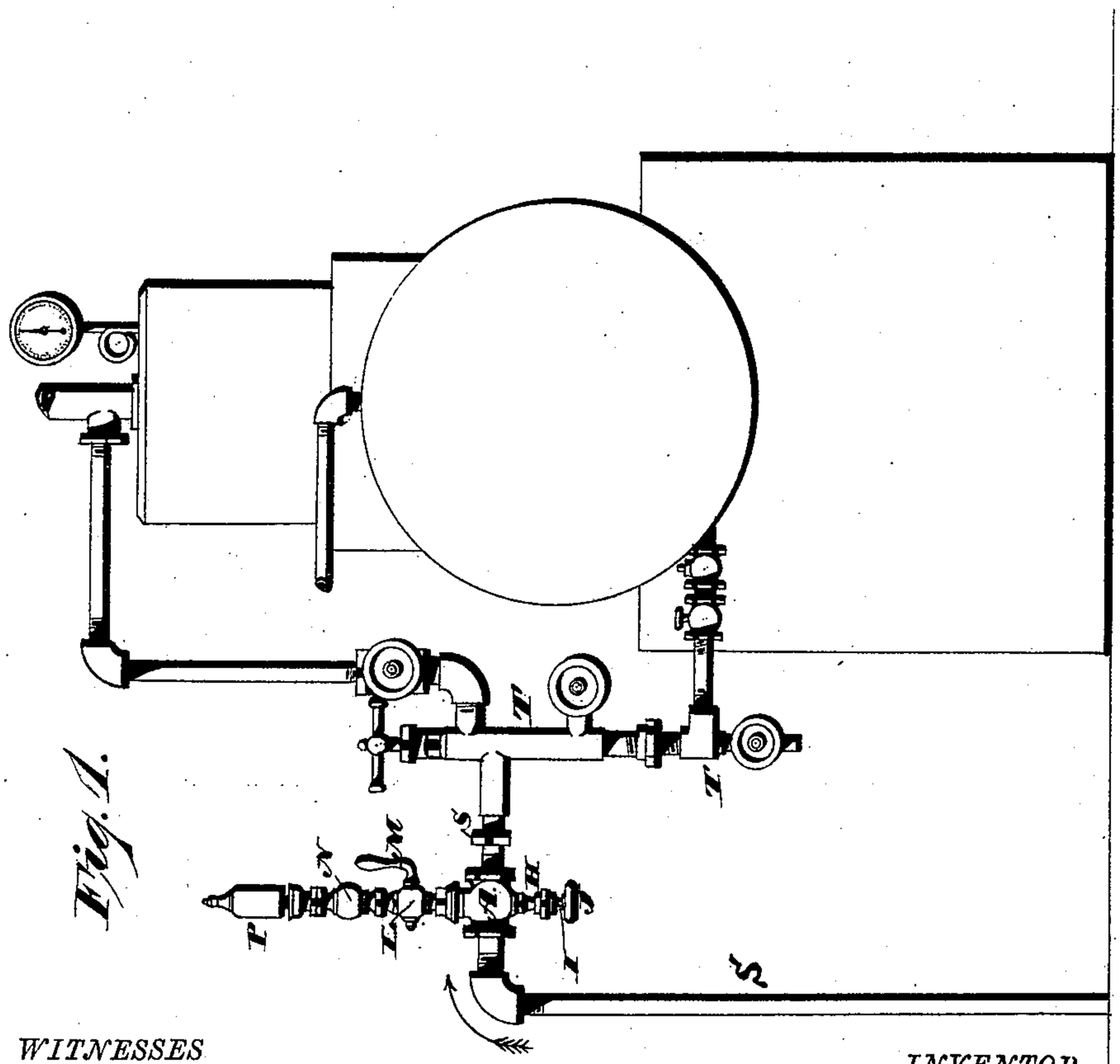


Fig. 1.



WITNESSES

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UNITED STATES PATENT OFFICE.

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FEED-WATER ALARM.

SPECIFICATION forming part of Letters Patent No. 326,465, dated September 15, 1885.

Application filed July 13, 1885. (No model.)

To all whom it may concern:

Be it known that I, ADAM P. UREY, a citizen of the United States, and a resident of Sandy Lake, in the county of Mercer and State of Pennsylvania, have invented certain new and useful Improvements in Feed-Water Alarms; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side view of my improved feed-water alarm for steam-boilers, showing the same arranged in position for operation, and Fig. 2 is a vertical sectional view of the feed-water alarm detached from its connections.

The same letters refer to the same parts in both the figures.

This invention relates to an improved feed-water alarm for steam-boilers, the purpose of which is to indicate, automatically, by a suitable alarm, when the injector shall fail to work, thus enabling precautions to be taken and repairs to be made before dangerously-low water results from the non-working of the injector.

The invention has for its object to provide a device of this class which shall possess superior advantages in point of simplicity, durability, certainty of action, and general efficiency; and with these ends in view it consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, A designates a suitable casing, which is in practice arranged upon the suction-pipe S, closely adjoining the injector T, and the side openings of which, B C, lead to the well and to the injector, respectively. The said openings B C are separated by a diagonal partition, D, having a seat, E, for an upwardly-opening check-valve, F. The lower end of the casing has an opening, G, and a stuffing-box, H, affording a bearing for a vertically-adjustable screw-threaded stem, I, the lower end of which is provided with a handle, J, by means of which it may be manipulated so as to force the check-valve F in an upward direction from its seat. The upper side of the casing A is provided with an opening, K, to which is connected a casing, L, having an ordinary one-way valve, M, and the upper end of which is in turn connected with another casing, N, in which is arranged an upwardly-opening air-valve, O. To the upper end of the casing N is attached a steam-whistle, P, of ordinary construction.

The operation of this invention will be readily understood by those skilled in the art to which it appertains, from the foregoing description, taken in connection with the drawings hereto annexed. As long as the injector continues in operation, the feed-water will pass through the casing A in the direction indicated by an arrow, raising the check-valve F on its passage, so as to pass through the seat. When the injector stops working on account of scales or other impurities interfering with its operation, or for any similar reason, the check-valve will drop to its seat, and the steam rushing from the boiler, which would otherwise pass directly into the well, will then raise the valve O and sound an alarm by blowing the whistle. The attention of the engineer or other attendants being thus attracted the necessary repairs may soon be made, and before any serious injury results. The instant the injector stops working, the check-valve F will drop to its seat, and will thus retain a column of water standing in the suction-pipe, making it, especially in case of deep wells, much easier to start the injector than otherwise it would be.

When it shall be desired to blow steam from the boiler back through the connecting-pipes and through the injector, for the purpose of cleaning the same, this may be effected by simply turning the screw-threaded stem I so as to raise the check-valve F from its seat, and closing the cock or valve N. Steam may then be blown back through the device and through the connecting-pipes and the suction-pipe without sounding the alarm-whistle.

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

1. In a feed-water alarm for steam-boilers, the combination of a suitable casing having laterally-extending openings, whereby it may be mounted upon the suction-pipe closely adjoining the injector, a diagonal partition sep-

arating the said openings, and having a valve-seat, an upwardly-opening check-valve mounted in the latter, a casing connected to the upper end of the said main casing and having a one-way cock, a casing connected to the upper end of the latter casing and having an upwardly-opening air-valve, and a steam-whistle connected to the upper end of the said valve-casing, all constructed and operating substantially as and for the purpose herein set forth.

2. In a feed-water alarm for steam-boilers, the herein-described casing having laterally-extending openings separated by a diagonal partition having a seat for an upwardly-opening check-valve, in combination with a screw-threaded stem working in the lower end of the said casing, and adapted to raise the said check-valve from its seat, a one-way cock arranged above the said casing, an upwardly-opening air-valve, and an alarm-whistle, all arranged and operating substantially as and for the purpose herein shown and specified.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

ADAM POE UREY.

Witnesses:
ISAAC H. ROBB,
J. B. GILMORE.