

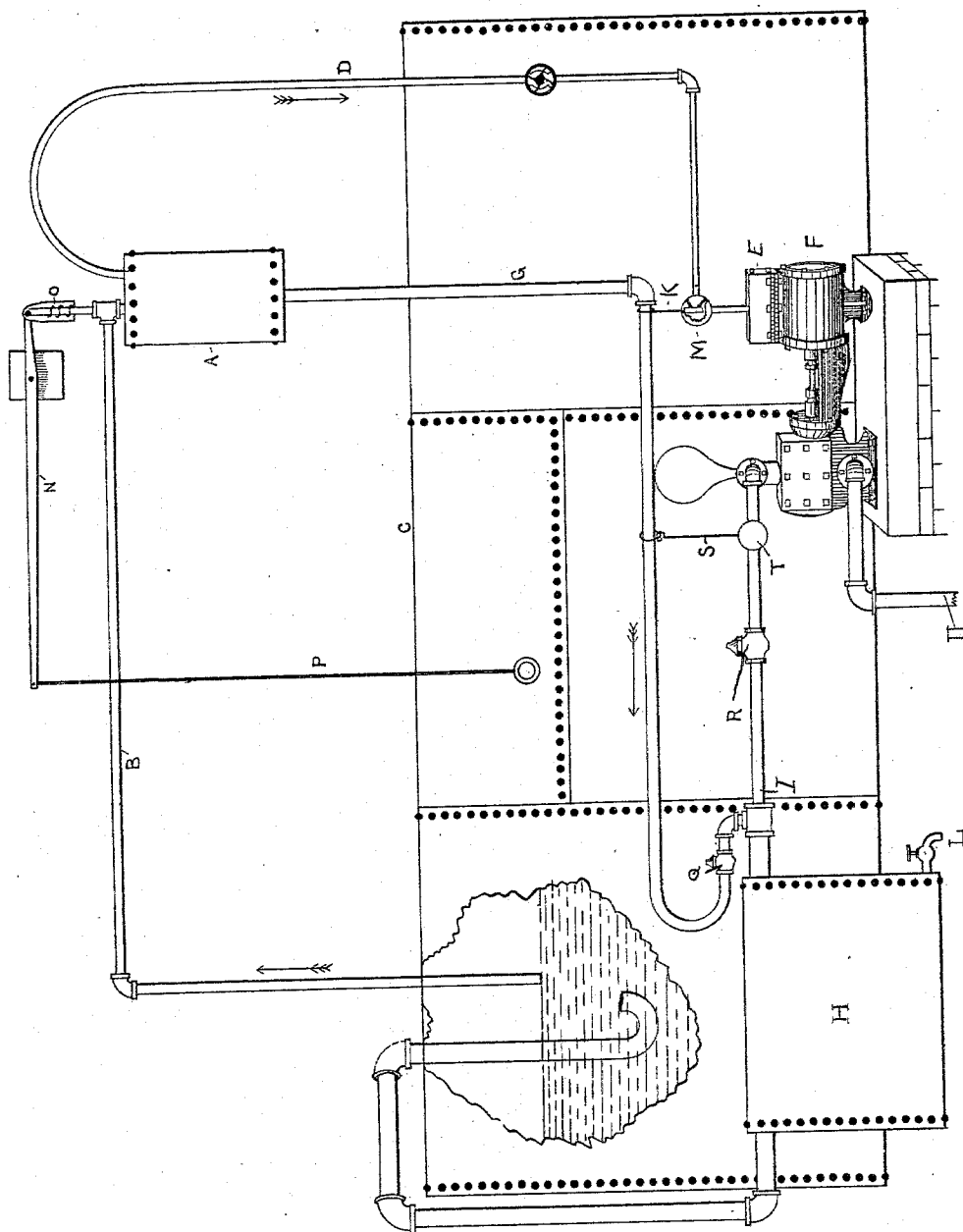
(No Model.)

J. AUSTIN.

AUTOMATIC BOILER SKIMMER AND THROTTLER.

No. 546,290.

Patented Sept. 17, 1895.



Attest:

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UNITED STATES PATENT OFFICE.

JOSIAH AUSTIN, OF MARION, OHIO.

AUTOMATIC BOILER SKIMMER AND THROTTLER.

SPECIFICATION forming part of Letters Patent No. 546,290, dated September 17, 1895.

Application filed March 23, 1894. Serial No. 504,814. (No model.)

To all whom it may concern:

Be it known that I, JOSIAH AUSTIN, a citizen of the United States, and a resident of Marion, in the county of Marion and State of Ohio, have invented a new and useful Improvement in Automatic Boiler Skimmers and Throttlers, of which the following is a specification.

My invention relates to certain improvements in automatic boiler skimmers and throttlers, as will be hereinafter fully described and claimed.

In order that my invention may be fully understood, I will describe the same, with reference to the accompanying drawing, which is a side elevation of my device.

In said drawing, A represents a separating-chamber for the steam and water, suspended by means of the spring O from the pivoted beam N and movably supported on the pipe G, which leads from the bottom of the chamber A to the feed-pipe I.

Q represents a check-valve located in the pipe G to prevent any water returning from the said pipe I.

B represents a pipe leading from the water-line of the boiler to the upper end of the chamber A, and through which steam passes from the boiler C to the chamber A, and through the chamber A and pipe D to the steam-chest E of the pump F. The pump F, which is located at any convenient point, is connected with a suitable supply by means of a pipe U, and is adapted to pump water through the pipe I and settling-drum H to the boiler.

R represents a check-valve to prevent any reflux of water from the boiler or chamber H entering the pump.

T represents a suitable valve located in the pipe U, and it is connected with the pipe G through the rod S. This valve during the operation of the device is held open; but when there is a surplus amount of water in the boiler, which is also communicated to the chamber A, this said chamber drops, and with it the pipe G, and in this manner shuts off the supply of water from the pump.

M represents a suitable steam-valve located in the steam-pipe D, and also connected with the pipe G through the medium of the rod K. This valve is adapted to be closed in the same manner as the valve T and shut off steam from

the pump F when there is too much water being forced into the boiler. When a single pump is used to supply two or more boilers, this valve may be dispensed with, as it might happen that while one boiler is being supplied with too much water the remaining boiler or boilers may not be supplied with a sufficient amount.

The operation of my device is as follows: Steam from the boiler enters through the pipe B, and, passing through the chamber A, enters the pipe D and is conducted to the pump F, which, after being set in motion, pumps water through the pipe I into the settling-drum H and to the boiler C. As the steam passes through the pipe B it carries with it any scum, &c., which might be in the boiler, which is separated from the steam in the chamber A. This foreign matter settles at the bottom of the chamber and passes out from it through the pipe G into the pipe I, when it is forced by the supply-water into the drum H. When it reaches the drum H, it, together with any foreign matter in the supply-water, settles at the bottom of the drum, from where it is drawn off through the cock L. If, however, there should be a surplus amount of water pumped into the boiler C, so as to cover the end of the pipe B, water will pass into the pipe B and then into the chamber A. This causes the chamber A to descend against the action of the spring O, it being permitted by the flexibility of the pipes connected therein, and as the chamber descends it carries with it the pipe G, which as it moves downward closes the two valves T and M, which shut off the water-supply from the pump. As soon as the water in the boiler drops to its normal level the water in the chamber A passes out of it and into the pipe I. This permits the spring to raise the chamber A and pipe G up again, and thus opens the valves T and M, after which the feeding operation is continued. The cord P, attached to the lever N, is used to regulate the distance the chamber A is to drop.

Dry steam can be used to feed the pump, if desired, and the above principle can be applied to supplying steam to any steam-trap or boiler-feeder.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In an automatic skimmer and throttler, the combination of a pump, having a pipe connection with a steam boiler, a chamber having a pipe connection with the boiler and pump, suitable means for movably supporting said chamber, and suitable connections for controlling the movement of valves located in the pipe connections between the pump and boiler, and chamber and pump substantially as and for the purpose set forth.
2. In an automatic skimmer and throttler, the combination of a pump, a suitable pipe connection between said pump and boiler, a settling drum located in said pipe connection and a chamber connected by pipes with the boiler, and also with the settling drum and pump substantially as and for the purpose set forth.
3. In an automatic skimmer and throttler, the combination of a suitable water supply, having a pipe connection with a boiler, a settling drum and valve located in said pipe connection, a suitable chamber in communication with said boiler and movably supported by means of a pipe which also forms a communication between the chamber and pump, and having a valve located therein, and suitable connections between the valves located in the water supply pipe and pipe connection between the chamber and pump, with the pipe connecting the chamber and settling drum, substantially as and for the purpose set forth.
4. In an automatic skimmer and throttler, the combination of a suitable pump F, having a suitable pipe connection I with a boiler, a chamber A having a pipe connection B with the boiler, and a pipe connection D with the pump, a flexible pipe connection G between said chamber A and a waste exit, valves located in said pipe connections I and D and suitable connections between said valves and the flexible pipe connection G, substantially as set forth.

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