(No Model.)

J. AUSTIN.

WATER FEEDER FOR BOILERS.

No. 343,529. Patented June 8, 1886.

Fig. 1

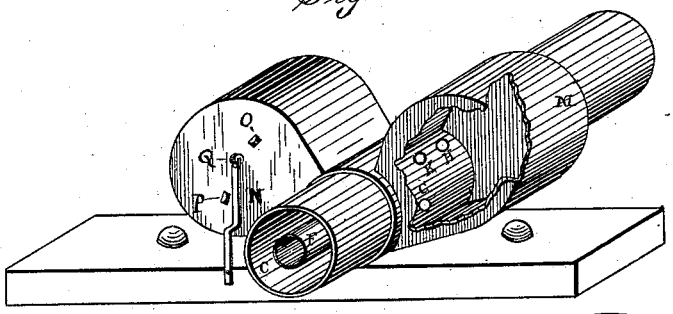


Fig. 2

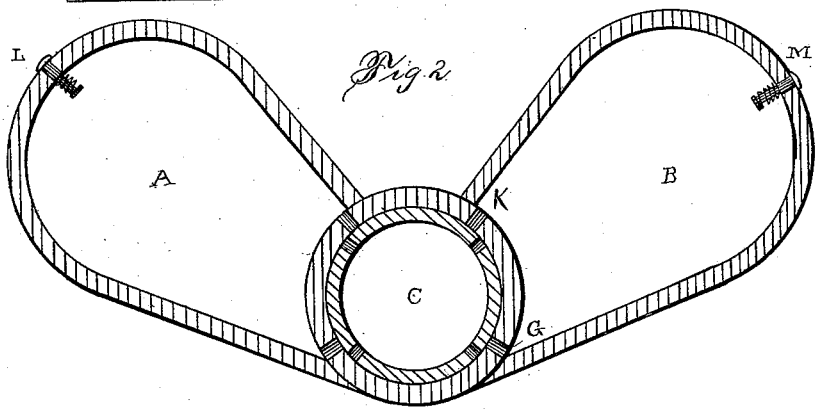
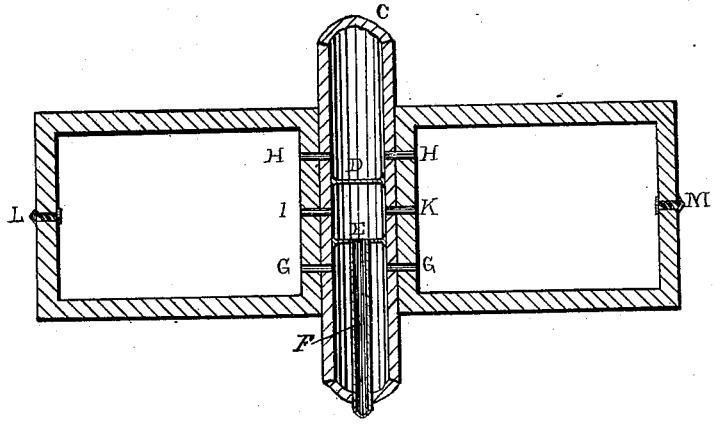


Fig. 3



Witnesses:
E. K. Campbell
Harold E. Knight

Josiah Austin
Per E. D. Campbell

UNITED STATES PATENT OFFICE.

JOSIAH AUSTIN, OF NEAR EAST LIBERTY, OHIO.

WATER-FEEDER FOR BOILERS.

SPECIFICATION forming part of Letters Patent No. 343,529, dated June 8, 1886.

Application filed June 12, 1885. Serial No. 168,544. (No model.)

To all whom it may concern:

Be it known that I, JOSIAH AUSTIN, a citizen of the United States, residing near East Liberty, in the county of Logan and State of Ohio, have invented a new and useful Water-Feeder for Boilers, of which the following is a specification.

My invention is an improved water-feeder for boilers; and it consists, essentially, in providing two supply and condensation chambers pivoted on the supply-pipe in such manner as to alternately receive a supply from the reservoir and feed the same to the boiler, and automatically assume the positions adapted for these purposes, and to automatically regulate the inflow and outlet and steam pipes; also in supplying each chamber with an automatic spring exhaust to allow of the escape of any extra steam in using the feeder as a hot-water feeder.

Figure 1 is a perspective view of my device; Fig. 2, a sectional end view showing the relative position vertically of my steam and outflow pipes. Fig. 3 is a top view.

A B are my water-chambers; C, supply-pipe; D E, diaphragms or partitions across the supply-pipe; F, steam-exhaust pipe; G, ports for outlet of water from the chambers; H, ports for inlet of water from the supply-pipe; I K, steam-ports; L M, spring-valves for escape of steam.

N is a spring-piece rigidly attached at its lower end, and having a roller, Q, on its upper end.

O P are two notches on the side of the chamber B, into which the roller Q alternately fits.

The construction and operation are as follows: On the supply-pipe leading from a reservoir into the boiler I pivot the V-shaped balanced supply-chambers so as to fit neatly. The supply-pipe has two partitions across it inside the part forming the pivot, and on one side of these partitions, near the bottom, are the outlet-ports G. H. The space between the partitions forms a steam-chest, into which a steam-pipe from the boiler leads. From the top of this chest, on either side, is a port for the escape of steam into the chambers A B.

In the collar of the chambers, that encircles the supply-pipe C, I make corresponding openings. These openings are arranged in such manner that when the chambers are empty they are balanced, as shown in Fig. 2, and all the ports are closed; but when one of the chambers is tilted the outlet-port on the side of the lower chamber is opened and the water is allowed to flow into the boiler. The steam-port on that side is also opened, and the steam admitted to the chamber, where it is condensed. In this position the supply-port of the raised chamber is also opened, and as the lowered chamber is supplying the boiler the upper chamber is being filled. As soon as the water in the upper chamber overbalances that in the lower one the position of the chambers reverses, the chambers turning on their pivot, the full chamber descending and the empty one ascending. As the chambers turn the outlet-port on the side of the ascending one is closed and the outlet-port on the side of the full chamber opening, allowing the boiler to be supplied from the full chamber.

To prevent the chambers turning on their pivots too soon after the chamber being filled overbalances the one being emptied, I employ a vertical spring-piece rigidly attached at the bottom, and carrying on its upper end a small roller, Q, which fits alternately into the notches O P with sufficient pressure to prevent the chambers turning until the desired amount of water is admitted into the upper chamber. This spring I may make adjustable, so as to regulate the amount of water that will overbalance.

By fitting my chambers air-tight on their pivot I am enabled to receive my supply for the chambers from a cistern or other body lower than the chambers, as the condensation of the steam produces suction enough to raise the water from twelve to fifteen feet.

I also propose to use my device as a lubricator under steam-pressure by making it small and the ports proportionately smaller.

What I claim is—

1. In a steam-boiler water-feeder, the pivoted chambers A B, the inlet and outlet ports H G, diaphragms D E, steam-ports I K, and steam-pipe F, as and for the purpose set forth.

2. In a steam-boiler water-feeder, the combination, with the pivoted chambers A B, of the pipe C, ports G H, steam-ports I K, and

spring-valves L M, as and for the purpose set forth.

3. The combination, with the pipe C, and the chambers A B, ports G H I K, of the spring-piece N, and notches O P, as and for the purpose set forth.

4. In a steam-boiler water-feeder, the combination, with the pivoted chambers A B, the inlet and outlet ports H G, and the diaphragm D, as and for the purpose set forth.

JOSIAH AUSTIN.

Witnesses:
MARIA J. KNIGHT,
E. K. CAMPBELL.