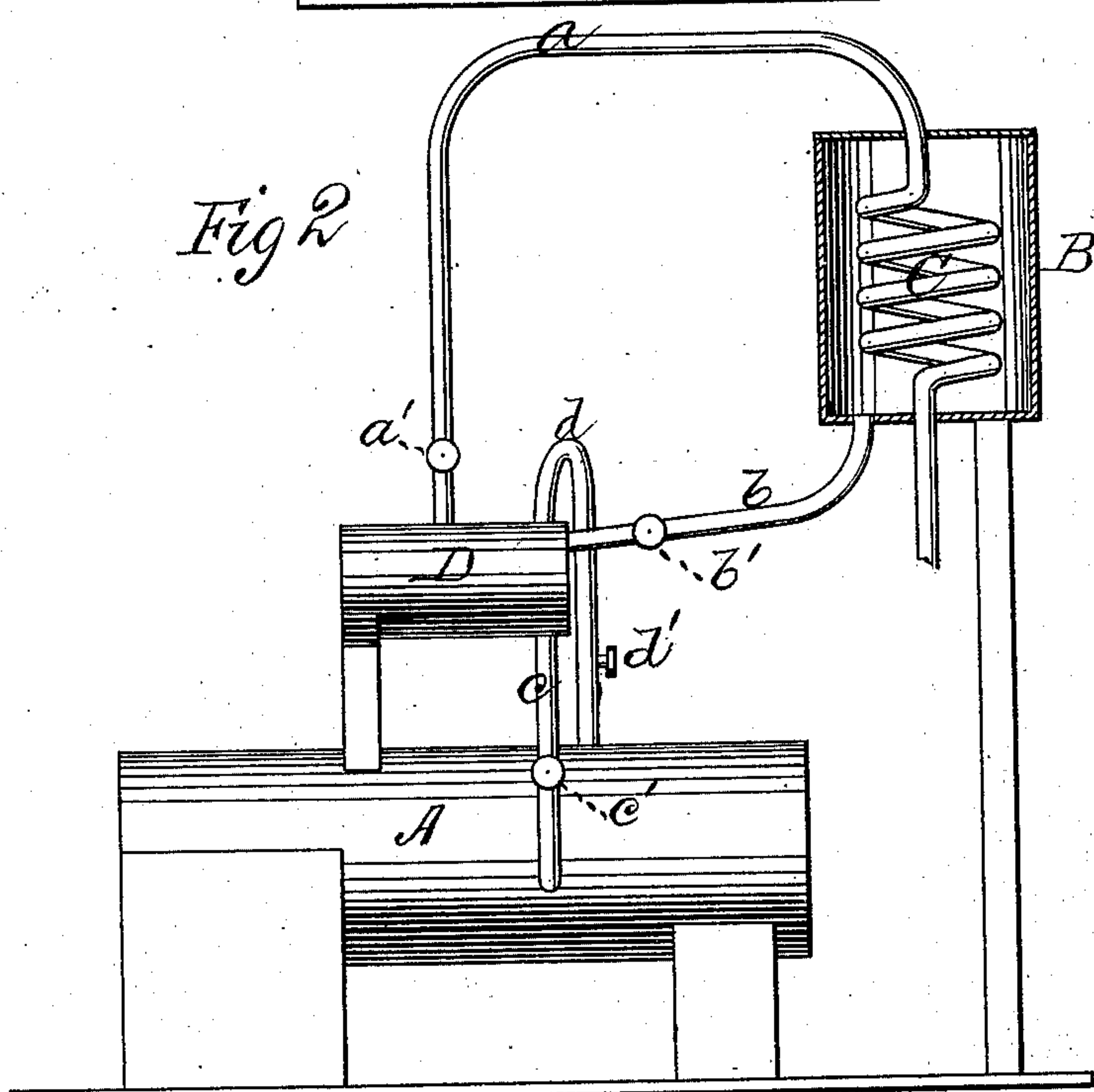
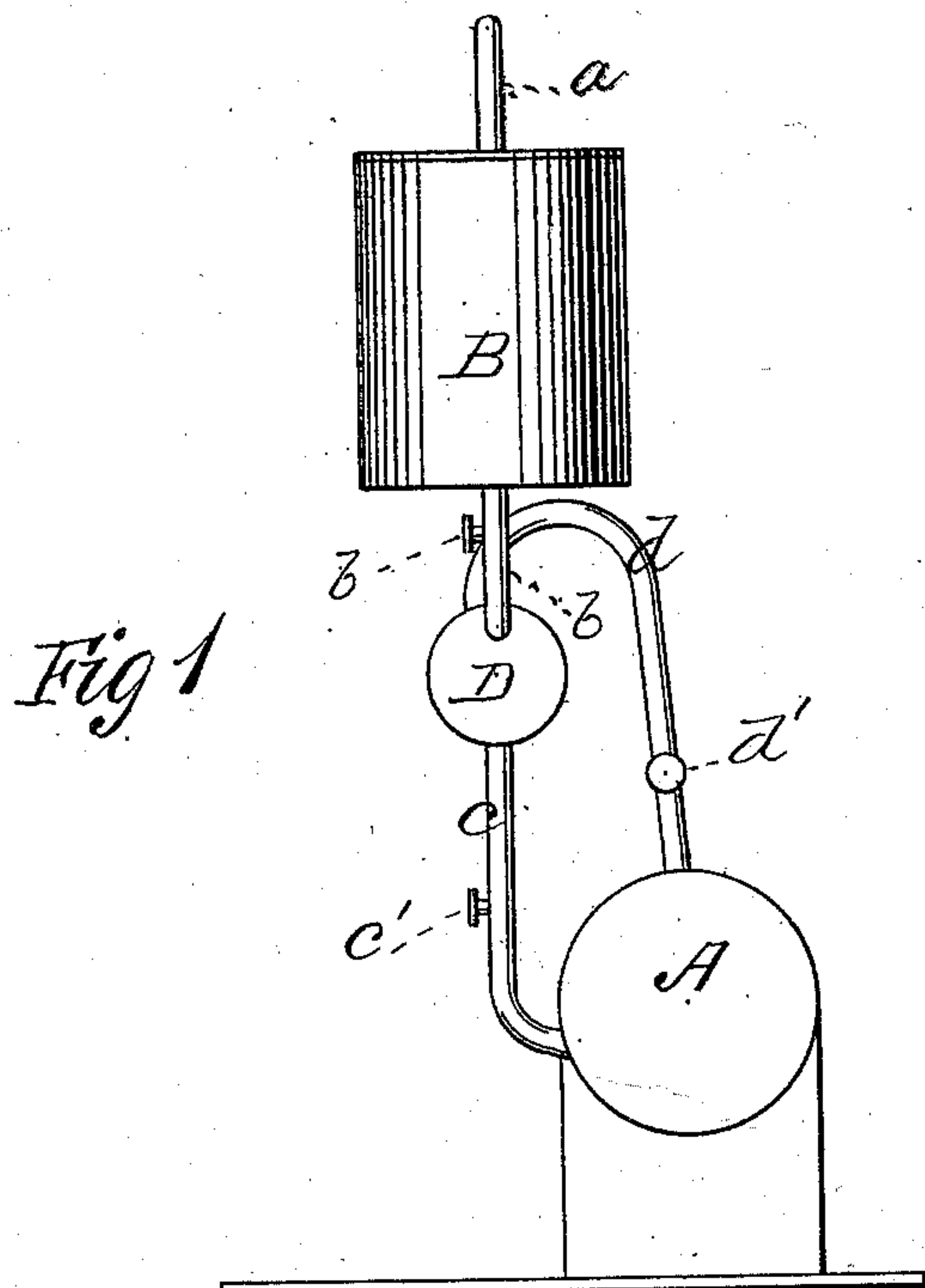


J. B. HYDE.  
Heater and Feeder for Steam-Boilers.

No. 198,113.

Patented Dec. 11, 1877.



WITNESSES  
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ATTORNEY

# UNITED STATES PATENT OFFICE.

JAMES B. HYDE, OF WHITESBOROUGH, TEXAS.

## IMPROVEMENT IN HEATER AND FEEDER FOR STEAM-BOILERS.

Specification forming part of Letters Patent No. **198,113**, dated December 11, 1877; application filed October 6, 1877.

*To all whom it may concern:*

Be it known that I, JAMES B. HYDE, of Whitesborough, in the county of Grayson and State of Texas, have invented a new and valuable Improvement in Heater and Feeder for Steam-Boilers; and do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of an end view of my improved feeding apparatus, and Fig. 2 is a side view thereof.

This invention has relation to improvements in feeders for supplying feed-water to steam-boilers.

The nature of my invention will be clearly set forth in the accompanying description and in claims appended thereto.

The object of the invention is to devise a reliable and expeditious means for supplying feed-water, which, by dispensing with the usual forcing-pumps, will be economical and of simple construction.

In the annexed drawings, the letter A designates a steam-boiler, and B the reservoir or tank from which the feed-water is to be drawn. The tank is elevated upon a suitable support above the level of the boiler, and is provided with a coiled pipe, C. This extends through the bottom of the tank, and is connected, at its upper end, with the injecting-drum D by means of a pipe, *a*, having a stop-cock, *a'*, at some convenient point therein. The tank is also connected with the feeder by a pipe, *b*, having a similar cock, *b'*, or in lieu thereof a check-valve of any effective description. The feeding-drum is above the boiler, and is connected with the water-space of the boiler by means of a pipe, *c*, opening into the lower side of the said drum, and provided with a stop-cock, *c'*.

The said drum is also connected with the steam-space of the boiler by means of a pipe, *d*, opening into the upper part of the drum, and likewise provided with a stop-cock, *d'*.

The operation of my improved feeder is as follows: The tank being supplied with water, the stop-cock *b'* of pipe *b* is opened, and the feeder D filled. The stop-cocks *a'* *b'* of the pipes *a* *b*, leading from the drum into the tank, are then closed, and those *c'* *d'* of pipes *c* *d*, leading, respectively, from the said drum into the water and steam spaces of the boiler, opened. Steam will then rush up pipes *d* into the interior of the drum, and, by displacement, force the water down pipe *c* into the water-space of the boiler. This being accomplished, the cocks *c'* *d'* are closed, and the cocks *a'* *b'* in pipes *a* *b* again opened. The steam in the drum will rush up pipe *a* through coil C, and, if not condensed, will pass out at the lower end of said coil, thus leaving the drum empty, and causing it to be again filled with water. The waste-steam, in passing through the coil C, will materially raise the temperature of the water in the tank, and cause it to be delivered to the boiler in a tepid condition.

What I claim as new, and desire to secure by Letters Patent, is—

The combination, with the boiler A, the feeding-drum D, and the valved pipes *c* *d*, leading, respectively, from the water and steam spaces of the boiler into said drum, of the tank B, having steam-coil C, the valved pipe *a*, leading from said coil into said drum, and the valved pipe *b*, connecting the drum and tank, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JAMES BOYD HYDE.

Witnesses:

W. D. LIGER,  
THOS. V. HYDE.