

H. PARK.
 Heating Attachment for Steam-Boilers.
 No. 207,298. Patented Aug. 20, 1878.

Fig. 1.

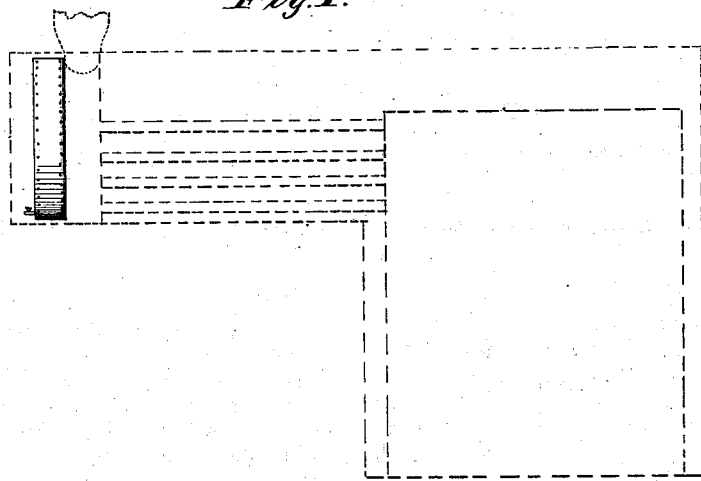


Fig. 2.

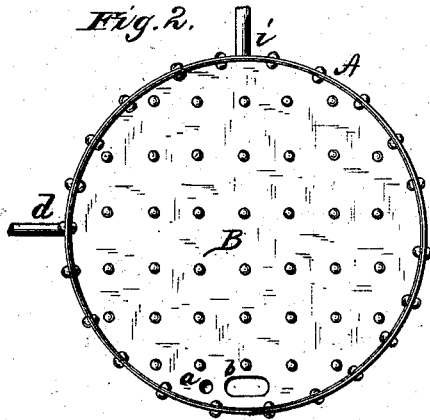
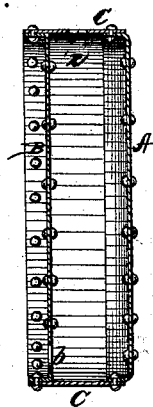


Fig. 3.



WITNESSES
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UNITED STATES PATENT OFFICE.

HORACE PARK, OF KENTON, OHIO.

IMPROVEMENT IN HEATING ATTACHMENTS FOR STEAM-BOILERS.

Specification forming part of Letters Patent No. **207,298**, dated August 20, 1878; application filed May 15, 1878.

To all whom it may concern:

Be it known that I, HORACE PARK, of Kenton, in the county of Hardin, and in the State of Ohio, have invented certain new and useful Improvements in Heating Attachments for Steam-Boilers; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a feed-water heater and water-purifier, applicable more particularly for return-flue steam-boilers, as will be hereinafter more fully set forth.

In the annexed drawing, to which reference is made, Figure 1 is a side elevation of my invention, showing its application to a boiler. Fig. 2 is a front view of the heater, and Fig. 3 is a vertical section of the same.

My feed-water heater and mud-drum is preferably made in circular form, and consists of two heads, A B, and a rim, C. The heads A and B are both formed with flanges, which are riveted to the rim C, as shown.

At the bottom of the outer head, B, is a hand-hole, *b*, and a small opening, *a*, for a blow-off cock. About the center, in the side of the rim C, is the water-inlet *d*, and in the top of the rim is the outlet *i*, to communicate, by a pipe or otherwise, with the interior of the boiler.

For portable boilers, such as locomotives, &c., the drum A B C is to be placed in the smoke-box. For ordinary return-flue boilers in brick furnaces the drum will be placed at the rear end of the boiler in the furnace as an abutment for the heat to strike just before it enters the flues.

The water-supply for the boiler all passes through the drum before entering the boiler. The water enters at the center of the side of

the drum, and is taken from the top of the drum through a small pipe to the boiler. The water-current from where it enters to where it is taken out is of such a nature that it will not carry any heavier material or substance than water, and whatever sediment or mud there may be in the water will accumulate at the bottom of the drum, and can be blown out at the blow-off cock *a* when required.

In the pipe from the outlet *i* to the boiler I do not intend to have any check-valve, but to leave the full pressure of the boiler on the drum.

In portable boilers this mud-drum prevents the smoke-box end from getting hot. It utilizes a large amount of heat that would otherwise be lost. It purifies the water by precipitating the impurities to a point where they can be blown out at any time. It makes the water boiling hot before it enters the boiler; and by its use a return-flue boiler is made entirely practicable.

I am aware that it is not new to locate a feed-water heater in the smoke-box of a locomotive or other steam-boiler, and I do therefore not claim such, broadly, as my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The feed-water heater or mud-drum A B C, provided with central water-inlet *d*, top outlet *i*, and bottom blow-off *a*, all constructed and arranged substantially as shown, and for the purposes described.

In testimony that I claim the foregoing I have hereunto set my hand this 12th day of April, 1878.

HORACE PARK,

Witnesses:

JOHN R. SELDERS,
J. C. MCCOLLOUGH.