G. H. RHEUTAN.

Water Fronts for Horizontal Steam-Boilers.

No. 222,735. Patented Dec. 16, 1879.

Fig. 1.

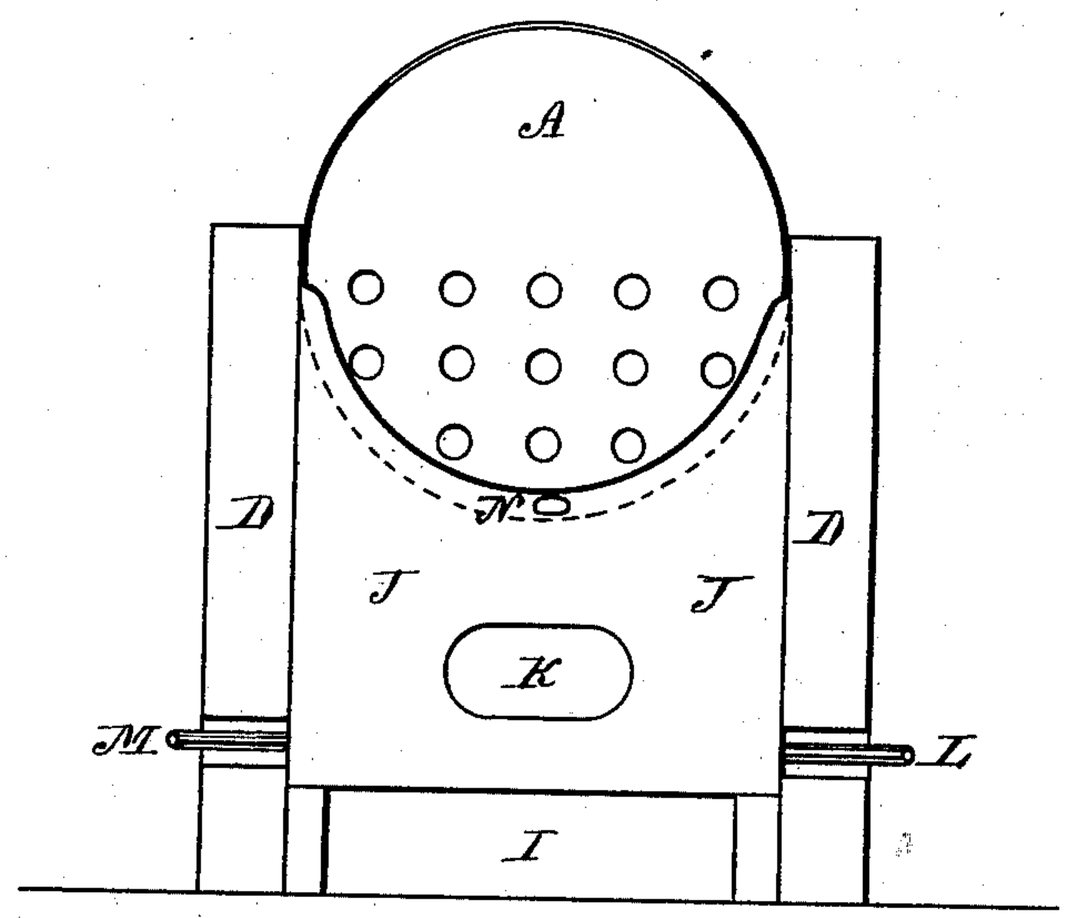

Fig. 2.

Witnesses

Wilmot Horton

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UNITED STATES PATENT OFFICE.

GARRIE H. RHEUTAN, OF HARTFORD, CONNECTICUT.

IMPROVEMENT IN WATER-FRONTS FOR HORIZONTAL STEAM-BOILERS.

Specification forming part of Letters Patent No. **222,735**, dated December 16, 1879; application filed February 1, 1879.

To all whom it may concern:

Be it known that I, GARRIE H. RHEUTAN, of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Water-Fronts for Horizontal Steam-Boilers; and I do hereby declare that the following is a full, clear, and exact description thereof, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

My improvement relates to horizontal cylindrical steam-generators, such as are commonly set in brick-work over the fire-box, and which are usually furnished with a return flue or tubes through the boiler back to the smoke-stack or chimney in front. The front end of such boilers has commonly been set upon an iron arch or support directly over the furnace, which becomes rapidly burned out.

The object of my invention is to furnish a support which is not liable to this objection, and at the same time to provide an additional heating-space in front of the fire-box, into which the feed-water can be pumped without danger, into which the impurities that are deposited in the boiler can settle without lying upon a heated surface, and from which they can readily be blown out or otherwise removed.

My invention consists in the construction and adaptation of the water-front as applied to boilers, as will be hereinafter described.

In the accompanying drawings, Figure 1 is a front view of a boiler having my improvement attached. Fig. 2 is a longitudinal section of the boiler and the brick-work in which it is set.

A is a cylindrical boiler, set in brick-work, excepting at the front, in the usual manner. B is the fire-box or furnace under the front end of the boiler.

C is a support for the rear end of the cylindrical part of the boiler, constructed in the usual manner, and around which the flame and heated gases from the fire pass to the rear.

D is the outer casing of brick, which is furnished with a door in the rear, at E, in the usual manner.

G are the return-flues, through which the heated gases pass to the smoke-box H, from which they pass to the smoke-stack. This is not shown in the drawings, but may be of any common construction.

J is the water-front, extending from the front end of the cylindrical part of the boiler down to the bottom of the furnace, and ending just above the ash-pit I, as shown in the drawings, where it rests upon proper supports each side of the opening to the ash-pit.

K is the furnace-door, which opens directly through the thickness of the water-front. L represents the inlet-pipe, through which water is fed into the boiler.

M is the blow-off pipe. This is placed near the bottom of the water-front, so that all the impurities from the water which settle in this part can be readily blown out.

N and O are hand-holes, through which the bottom of the cylindrical part of the boiler can be cleaned out.

By means of my invention the front part of the boiler is supported by the water-front, instead of being supported by brick and iron in the customary manner, and therefore is not liable to have its bearings destroyed by the heat of the furnace, as with the customary method of setting with an iron arch. My invention also gives a greater heating-surface with this form of boiler. It also permits the inlet-pipe to be at the front of the boiler, and in a comparatively cool part of the boiler. It also allows of the blow-off being where the deposit in the boiler is most likely to settle, and where it is not in direct contact with a highly-heated surface, so as to cause the metal to be burned, and admits of its being removed at any time while the boiler is in operation.

What I claim as my invention is—

In a cylindrical tubular boiler with smoke-box at front end formed by a prolongation of the cylindrical shell, a water-front consisting of plates riveted to the boiler, the rear plate being joined to the lower part of the cylindrical shell, and the front plate being joined to the plate forming the bottom of the smoke-box and extending below the grate, forming a front water-leg and a water-space between the furnace and the smoke-box, substantially as described.

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Witnesses:
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