

N. SHAW.

Grate Bar.

No. 94,345.

Patented Aug. 31, 1869.

Fig 1

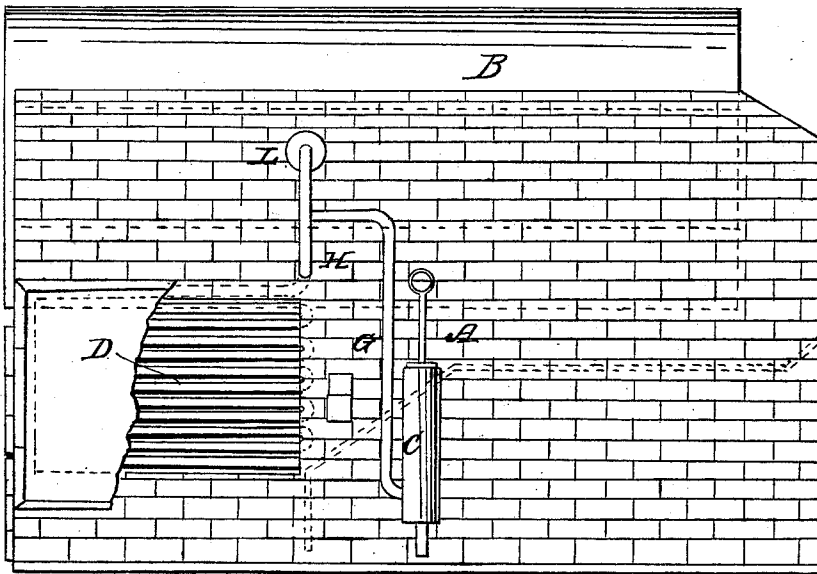
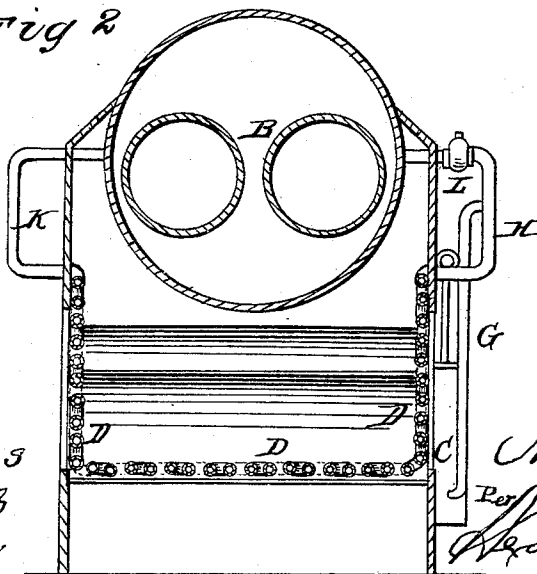


Fig 2



witnesses
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United States Patent Office.

NOAH SHAW, OF WEST EAU CLAIRE, WISCONSIN, ASSIGNOR TO HIMSELF, JAMES F. MOORE, WILLIAM W. LEA, AND ALVIN B. ALDEN.

Letters Patent No. 94,345, dated August 31, 1869.

IMPROVEMENT IN HOLLOW GRATE-BARS.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, NOAH SHAW, of West Eau Claire, in the county of Eau Claire, and in the State of Wisconsin, have invented certain new and useful Improvements in Hollow Grate-Bars; 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 arrangement of hollow grate-bars, connected with each other, with a pump, and with the boiler, in a manner and for purposes that will hereinafter be fully set forth.

In order to enable others skilled in the art to which my invention appertains, to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a side elevation of my invention.

Figure 2 is a vertical section view of the same.

Letter A represents the mason-work upon which the boiler B is placed, and which is provided with a door upon each side, merely to show the arrangement of the bars inside the furnace.

To the side of the arch, or at any convenient distance from it, is placed the pump C, which is used to supply the bars D with water, which passes through the pipe G into them, through the arm H.

These bars are all hollow, and are connected together by return elbows, so as to form one continuous bar up the sides of the arch and across the bottom

of the furnace, and have an arm or pipe, H and K, on each side, which connect them with the boiler.

These bars serve as a protection to the sides of the arch, and give a much greater heating-surface, not only economizing the fuel, but heating the water before it passes into the boiler.

That portion of the bars which sustains the fuel is situated in a plane parallel to the boiler longitudinally, and slightly inclined upward at one side, thereby causing all steam generated in the grate to pass into the boiler through the pipe K, it being prevented from passing through the pipe H by means of the check-valve L.

This valve is so constructed that it prevents water or steam from passing into the boiler from the pipe H, but allows them to flow freely outward, so that there is a current of water continually flowing through the bars, whether the pump is in action or not.

Having thus described my invention,

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

The pump C, pipe G, hollow bars D D, with their continuations H K, and check-valve L, when arranged with reference to boiler B, substantially as specified.

In testimony that I claim the foregoing, I have hereunto set my hand, this 7th day of May, 1869.

NOAH SHAW.

Witnesses:

LEVI E. LATIMER,
GEO. BARTON.