(No Model.)

J. T. THOMPSON.

STEAM FLUE CLEANER.

No. 604,551. Patented May 24, 1898.

Fig. 1.

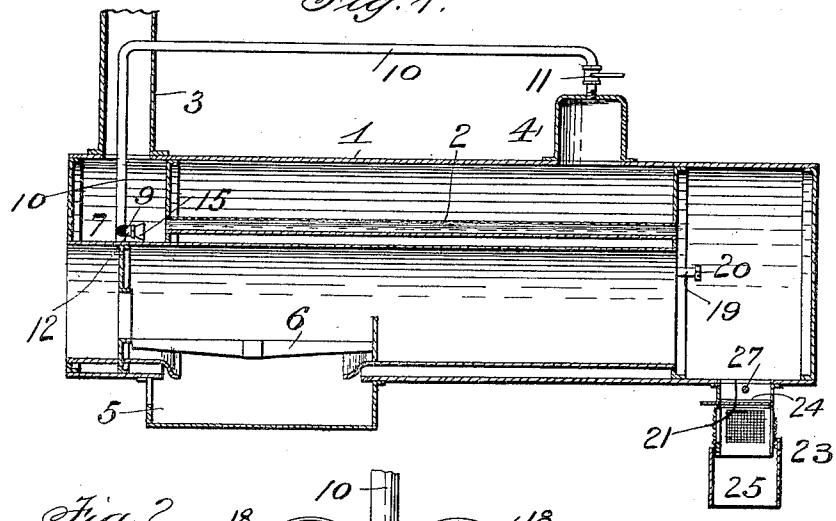


Fig. 2

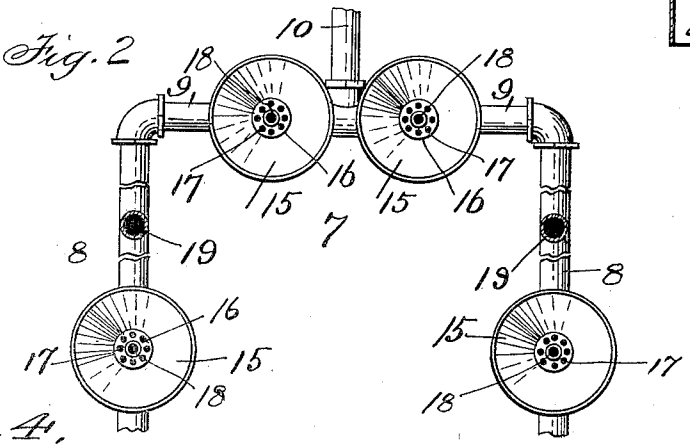


Fig. 4.

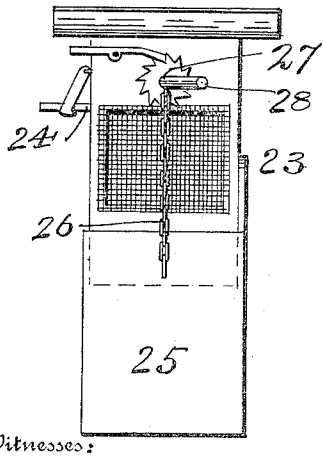
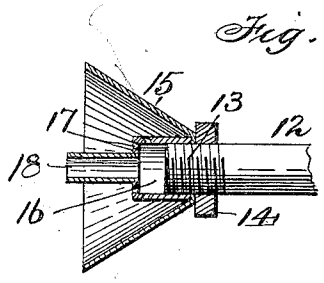


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOSEPH T. THOMPSON, OF HATTON, NORTH DAKOTA.

STEAM FLUE-CLEANER.

SPECIFICATION forming part of Letters Patent No. 604,551, dated May 24, 1898.

Application filed July 27, 1897. Serial No. 646,123. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH T. THOMPSON, a citizen of the United States, and a resident of Hatton, in the county of Traill and State of North Dakota, have invented certain new and useful Improvements in Steam Flue-Cleaners; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to steam boiler-flue cleaners of that class or description in which the flues are cleaned by means of steam taken from the boiler and forced through the flues.

The object of the invention is to provide an improved construction of such flue-cleaner which shall possess superior advantages with respect to efficiency in use.

The invention consists in the novel construction and combination of parts hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of a steam-boiler and furnace with my improvements applied thereto. Fig. 2 is a detail sectional view on the line *x x*, Fig. 1. Fig. 3 is a detail sectional view of one of the steam-funnels. Fig. 4 is a detail elevation of the clinker and ash discharge device.

In the said drawings the reference-numeral 1 designates a steam-boiler, 2 the flues, 3 the smoke-stack, 4 the steam-dome, 5 the ash-pit, and 6 the grate, which may be of any ordinary or suitable construction.

The numeral 7 designates the flue-cleaner, located in the smoke-box, comprising two vertical pipes 8, connected together by a cross-pipe 9, with which is centrally connected a pipe or pipes 10, leading to the steam-dome and provided with a quick-acting throttle-valve 11. At suitable points said pipes 8 and 9 are provided with short pipes 12, having screw-threaded ends 13. Engaging with said ends is a nut 14, against which abuts a funnel 15, and on the extremity of said pipes is a head 16, formed with a number of inclined holes 17, and secured to the end of each of said heads is a tube 18.

The numeral 19 designates two pipes connected with the vertical pipe 8 and extending through two of the flues at opposite sides of the boiler. These pipes project a short distance beyond the end of the boiler and are provided with holes or perforations 20 for forcing the clinkers and chunks down to the discharge device.

In the bottom front end of the boiler there is an opening 21, provided with an ash-discharge 23, consisting of a rectangular casing bolted to the boiler and provided with a slide-valve 24 near its upper end. The sides of this casing are perforated or formed with openings provided with wire-gauze covers, so that the steam from the flue-cleaner may escape therethrough and thus be prevented from escaping back into the fire-box. Fitting on the end of said casing is a vertically-movable extension 25, which when the steam-cleaner is used may be lowered to the ground, thereby preventing sparks and cinders from flying around. Secured to said extension at opposite sides are chains 26, the other ends of which are secured to a shaft 27, journaled in the casing and provided with an operating-crank 28 at one end. By this means the extension may be raised and lowered.

The operation will be readily understood. When it is desired to clean the flues, steam is admitted through the pipes 8, 9, and 10, which will escape through the small pipes and heads connected with pipes 8 and by means of the funnels will be directed to the flues, and, passing therethrough, will effectually clean the same. At the same time the steam will also pass through the two tubes or pipes which extend through the flues and, escaping through the heads thereof, will force the cinders or chunks into the discharge-casing, the valve of which is opened and the extension let down.

By means of the funnels 15 the steam is directed to all the flues of the boiler, thereby insuring perfect cleaning of the same.

The funnels and perforated heads are placed some distance from the flues, so as to allow for the expansion of the steam and also to allow the flues to be cleaned by scrapers, if desired.

Having thus fully described my invention, what I claim is—

1. In a steam-boiler, the combination with

the vertical and transverse pipes located in the smoke-box, and connected with the boiler, of the short pipes connected with said pipes, the perforated heads, the tubes connected therewith and the funnels, substantially as described.

2. In a steam-boiler, the combination with the vertical and transverse pipes, and the pipe connected with the boiler and transverse pipe, of the short pipes connected with the said vertical and transverse pipes, the perforated heads, the tubes, the funnels, and the pipes extending through the flues and provided with perforated heads, substantially as described.

3. The combination with a steam-boiler, of the ash-discharge consisting of the casing secured to the lower part of the boiler, provided with a slide-valve and having perforations in its sides, the vertically-movable extension and means for raising and lowering the same, substantially as described.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

JOSEPH T. THOMPSON.

Witnesses:
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