F. I. PEARCE.

Boiler Flue Cleaner.

No. 201,555. Patented March 19, 1878.

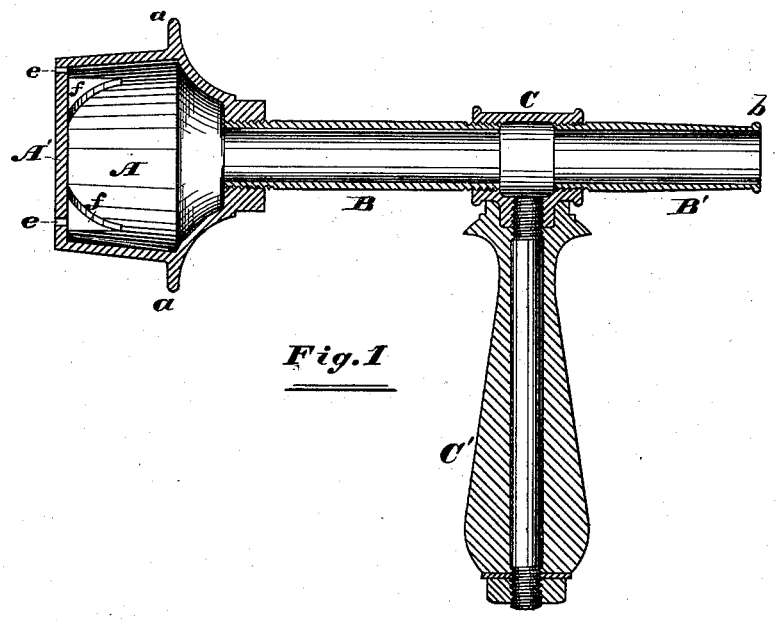


Fig. 1

Fig. 2

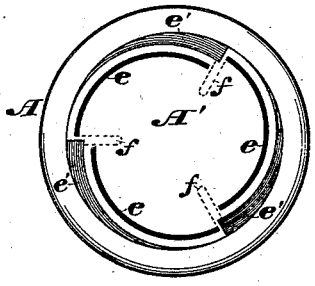
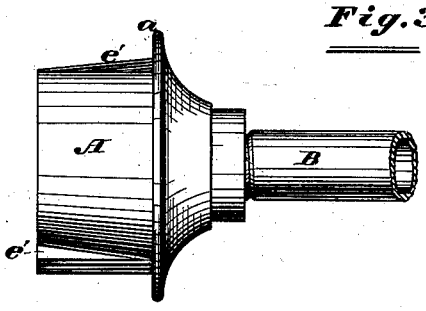


Fig. 3



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UNITED STATES PATENT OFFICE.

FRANK I. PEARCE, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN BOILER-FLUE CLEANERS.

Specification forming part of Letters Patent No. **201,555**, dated March 19, 1878; application filed August 27, 1877.

To all whom it may concern:

Be it known that I, FRANK I. PEARCE, of Chicago, in the county of Cook and State of Illinois, have invented a new, useful, and Improved Boiler-Flue Cleaner, which invention is fully set forth in the following specification, and shown in the accompanying drawing, in which—

Figure 1 is a central longitudinal section of a boiler-flue cleaner embodying my invention; Fig. 2, a front view thereof, and Fig. 3 a side view.

My invention relates to that class of boiler-flue cleaners by means of which steam is directed or injected into the flues for the purpose of thereby driving out the soot and other foreign matter; and my object is to improve the construction and operation of devices of this kind.

In the drawing, A *a* represent a hollow head or plug, made of cast metal, and adapted to enter the ends of the flues. In order to cause it to fit into the flues nicely I make it cylindrical and tapering in form, and provide it with a flange or seat, *a*, the latter of which is arranged to overlap the end of the flue into which the cleaner may be inserted, and close the flue tightly at that end. It is not essential, however, that the tapering form and the seat *a* should both be employed for the purpose referred to. The taper or bevel usually given to the pattern in order to enable the casting to be drawn from the sand with facility will generally be sufficient to allow the cleaner to be inserted easily into the flue; and if the plug thus tapered is made sufficiently long, the contact of its perimeter with the end of the flue will result in a sufficiently tight joint at the end into which the plug is inserted.

B is a steam-induction tube entering the outer end of the plug A, into which it may be screwed, as shown. B′ is also a section of the steam-induction flue, and C is a coupling, into which the parts B and B′ are screwed or otherwise fastened. The parts B and B′ are made of metal, and the outer end of the part B′ is provided with a small annular rib, *b*, to receive and firmly hold a flexible tube connected to a steam-discharging nozzle. C′ is a handle attached to the coupling.

The parts now described, in connection with other features of construction which I will hereinafter specify, constitute a simple and convenient tool or device for injecting steam into steam-boiler flues for the purpose of cleaning them; but in order to distinguish the essential features of my invention from those to which I make no special claim, I will here state that the features of construction to which I have already referred with some particularity have heretofore been in common use, and that I have thus described them only for the purpose of indicating how they may be employed in connection with my improvements, which I will now set forth, as follows:

A′ is a diaphragm or end wall, extending entirely across the inner end of the plug A, and, by preference, cast in the same piece therewith. *e e* are long narrow ports, slits, or openings in the part A′, and lying in the arcs of circles, respectively, each having different centers in a small circle whose center coincides with the center of the part A′, the said openings not meeting or intersecting each other, as shown in Fig. 2. These openings may be cast in the part A′, and it is not absolutely essential that they should be as nearly parallel to the perimeter of the plug as indicated in the drawing, so long as they are not concentric with the center of the part A′. I deem it preferable, in order to secure lightness and to economize in metal, to make the periphery of the plug A conform to the lines in which the openings *e e* lie, as represented at *e′ e′*.

In order to strengthen the device, if necessary, so as to retain the part A′ in its place with certainty when a high degree of steam-pressure is exerted, I cast on the interior of the plug the small webs *f f*, continuous with the periphery and the part A′.

By making the openings *e e* in this manner they tend to impart a spiral movement to the jets of steam injected into the flues, and this tendency is aided somewhat by the webs *f f*, though the latter are not essential except for the purpose of giving strength to the device. A spiral movement of the steam-jets through the flues renders the work more effectual; but, in addition to this feature of operation, it will be perceived that there is an advantage in casting all the parts of the plug in one piece.

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

1. A flue-cleaner for steam-boilers, wherein the eccentric-ports *e e* are made in the forward face of a hollow plug, substantially as and for the purposes specified.

2. A flue-cleaner for steam-boilers, the said cleaner consisting of a hollow plug cast in one piece, and having its rear face adapted to receive a steam-induction flue, and its front face consisting of the flat wall A′, having therein ports for the escape of the steam from the plug into the flues, substantially as and for the purposes specified.

FRANK I. PEARCE.

Witnesses:
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