(No Model.)

L. DUENNISCH.

FLUE CLEANER.

No. 331,691. Patented Dec. 1, 1885.

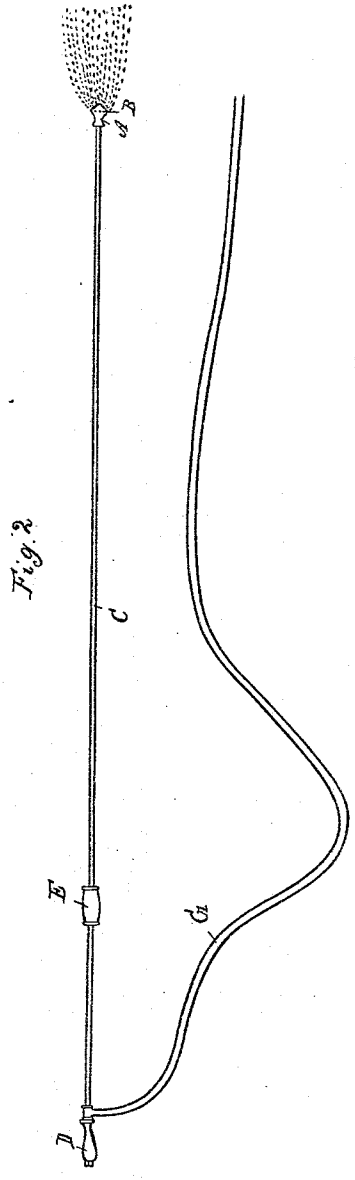


Fig. 2.

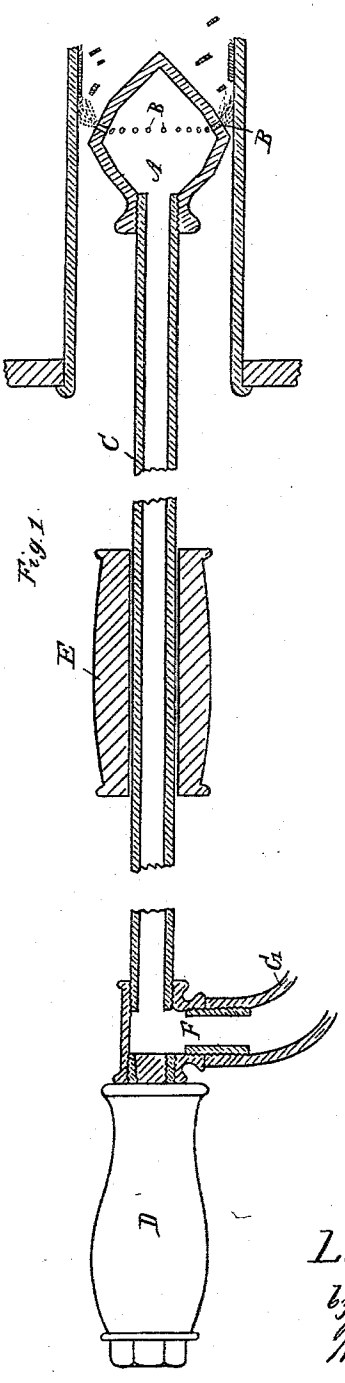


Fig. 1.

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UNITED STATES PATENT OFFICE.

LOUIS DUENNISCH, OF SANDUSKY, OHIO.

FLUE-CLEANER.

SPECIFICATION forming part of Letters Patent No. 331,691, dated December 1, 1885.

Application filed May 13, 1885. Serial No. 165,337. (No model.)

To all whom it may concern:

Be it known that I, LOUIS DUENNISCH, of Sandusky, in the county of Erie and State of Ohio, have invented new and useful Improvements in Flue-Cleaners; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to a new and useful improvement in boiler-flue cleaners of that class wherein steam is employed to remove the scale of soot from the flues.

My invention consists in the improved mode of applying the steam, and in the construction and arrangement of the different parts of the device in relation thereto.

In the drawings which accompany this specification, Figure 1 is a central longitudinal section, partially broken away, through my improved device, showing also its manner of operating. Fig. 2 is an elevation of the device complete for use.

A is a hollow head of just sufficiently smaller diameter than the size of the flues to permit of its being readily projected into the same. This head is provided near the base of its conical or rounding face with a series of small perforations, B, which are forwardly inclined, as shown.

C is a metal tube, to the open front end of which the head A is removably secured, said head being internally threaded to engage the external thread on the tube C. Its closed rear end is provided with a fixed handle, D, and a sliding handle, E, is sleeved upon it.

F is a nipple provided near the rear end of the tube, and G is a flexible connection secured to this nipple.

In practice the free end of the flexible connection is attached to the steam-space of the boiler or other source of steam. Steam entering through the flexible connection passes through the tube into the head and issues in a series of small steam-jets through the perforations in the head. The operator seizes the device with one hand on each handle, so as to prevent his hands from getting burned, and, manipulating it in the proper manner, inserts the head A into a boiler-flue, gradually projecting it into the flue to the rear end thereof. Each flue is thus operated upon once, or oftener, as found necessary. It will be seen that the perforations in the head A will produce steam-jets of very high tension, which, as the device is gradually pushed through the flue, are applied close to every portion of the scale and act with their full expansive force against it. Being furthermore inclined, the steam-jets act under and against the edge of the scale, and are thereby enabled to knock it off in flakes, which are blown out with force at the opposite end of the flue. Thus the steam in my flue-cleaner, instead of acting by frictional abrasion, as is the case with other flue-cleaners, more nearly resembles in its action the mechanical scrapers, as it loosens and detaches the whole body of the scale in flakes wherever it touches with full force, and the operation of cleaning a flue is thereby more thoroughly and expeditiously performed. The length of the tube C depends upon the length of the flues, and by providing it with the sliding handle the device can be easily manipulated without danger of burning the hand. The tube C may be made flexible or jointed, if required, to operate the device in a confined space, and a suitable valve may be inserted, if desired, at any convenient point in the device, to turn the steam on or off. The head A, which performs the functions of a steam-jet nozzle, may be provided with inclined annular apertures, instead of perforations, and it is preferably made contracting or tapering at both ends, so as to be inserted into the flues and projected backward and forward with less difficulty.

As I have made my improved mode of applying the steam the subject-matter of a concurrent application, I confine myself to claiming in this application the mechanical means for carrying it out. These means consist, substantially, in a steam-jet nozzle fixed to the end of a long tube arranged to conduct the steam to the nozzle, and serve as a handle to push the nozzle through the entire length of a boiler-flue, the steam-apertures of the nozzle being preferably so arranged as to discharge the steam close to and against the edge of the scale in the flues.

Under some conditions in which boilers are used it may be found more preferable to provide the head or nozzle with rearwardly-inclined discharge-orifices upon the rear face of

the head. The soot and dust will then be blown out toward the front.

I am aware of the Patents Nos. 72,348, 11,695, and 310,549, and make no claim to the constructions shown therein as forming part of my invention.

I attach importance to my sliding handle, which, it will be noticed, is free to slide upon the tube C for nearly its whole length. I attach importance also to my nozzle and to the perforations B near the largest periphery of the same, that their combined area be less than that of the tube C, for by this construction the steam is thrown out in jets with greater force under and against the edge of the scale.

I am also aware that chimney-cleaners, mops, and brushes have been provided with sliding handles; but in such devices, so far as I am aware, the sliding handle was connected with and operated the working parts of the device. My sliding handle is entirely independent of the other parts, as will be clearly understood.

What I claim as my invention is—

The improved flue-cleaner herein described, consisting of the tube C, provided at one end with a fixed handle, D, a nipple, F, adjacent to said handle, flexible steam-connection G, secured to said nipple, the nozzle A, spear-shaped in cross-section, removably secured to the opposite end of said tube, and the handle E, loosely and independently sleeved on said tube and free to slide thereon between said head A and connection G, as herein shown and described.

LOUIS DUENNISCH.

Witnesses:
S. C. WHEELER,
JAMES CONLEY.