(No Model.)

W. F. ANNABLE.

FLUE CLEANER.

No. 379,091. Patented Mar. 6, 1888.

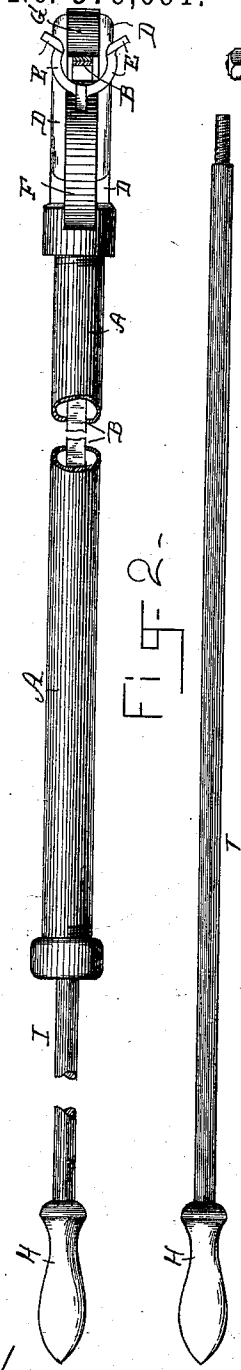


Fig. 2.

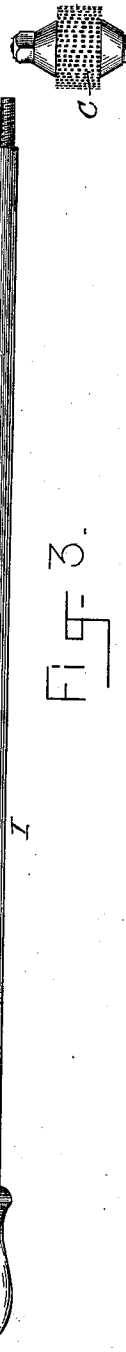


Fig. 3.

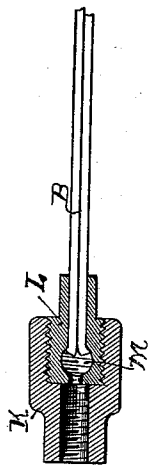


Fig. 4.

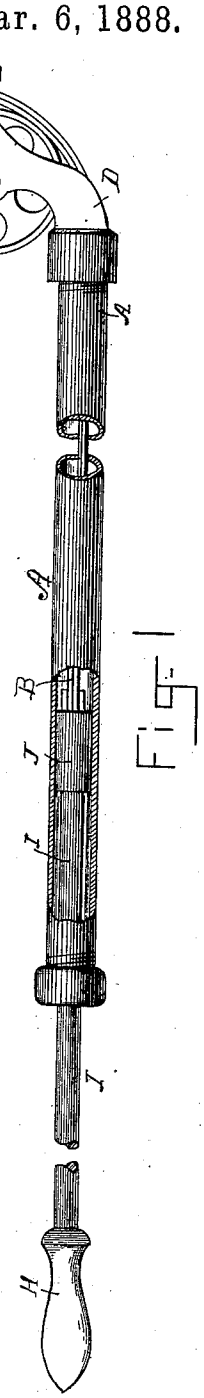


Fig. 1.

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UNITED STATES PATENT OFFICE

WILLIAM F. ANNABLE, OF SALEM, MASSACHUSETTS.

FLUE-CLEANER.

SPECIFICATION forming part of Letters Patent No. 379,091, dated March 6, 1888.

Application filed September 19, 1887. Serial No. 250,074. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. ANNABLE, of Salem, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Flue-Cleaners, of which the following, taken in connection with the accompanying drawings, is a specification.

The object of this invention is to provide an improved device for cleaning the flues of vertical boilers, and to make such device more portable and much easier to operate than those hitherto known.

A flue-cleaner has hitherto been used consisting of a curved tube provided with supporting-legs and a flexible rod or metallic ribbon introduced through such tube, and having at its upper end a flue-cleaning brush or scraper, such rod or ribbon bearing with friction upon the inner walls of the curved tube when reciprocated through it in working the brush.

By my invention the direction of movement of the reciprocating ribbon is changed from horizontal to vertical, not by a curved tube with its necessary friction and liability to clog by soot scraped down, but by means of wheels against which its opposite sides bear, said wheels having bearings in a bracket at one end of the straight tube. I also make the handle and operating-rod detachable from the ribbon, so as to shorten the device for transportation or storage. I have further devised a simple and efficient means of affixing the flue-cleaning brush to the end of the ribbon.

In the drawings, Figure 1 is a side view of the device complete, showing the brush protruding and the horizontal tube partly in section. Fig. 2 is a top view, the brush cut away to show the bracket and wheels more perfectly. Fig. 3 represents the removable rod and handle. Fig. 4 is a sectional detail.

A is a straight tube, through which reciprocates the flat metallic ribbon B, carrying at its free end the flue scraper or brush C, of any preferred style. D is a bracket fixed upon the end of said tube A, from which it extends obliquely about as shown, having at its upper or outer end a tapering ribbed rest, E, formed of three radial flanges, the tips of which are adapted to enter the lower end of each of the vertical tubes of the boiler, and thus to hold the device steady while the tube is being cleaned. In ordinary practice the tube will rest within the door-frame of the boiler and be supported thereon while in use.

F and G are wheels having their bearings in the bracket D and arranged to deflect the ribbon B upwardly on a curve, without friction, as it passes between the faces of said wheels. When, in place of the ribbon, a small rod is used to reciprocate the flue-brush C, the faces of these wheels will be grooved; but I much prefer a double steel ribbon formed of two flat contiguous strands as combining the desired longitudinal strength and lateral flexibility. I therefore use the plane-faced wheels shown, and of such size as is most convenient. These wheels ease the movement of the reciprocating brush and render the operation less laborious than has heretofore been the case. They also obviate clogging of the tube, which would be liable to occur with the extremity of the tube upturned amid the falling soot.

H is a handle at the extremity of a rigid rod, I, running into the straight tube A, and connected with the inner end of the ribbon B, so as to be detachable for convenience in handling. By preference the rod I is screw-threaded at its end, and enters a like socket in a plug, J, fixed to the end of the ribbon within the tube A. The total length of the device is thus reduced and the implement made more portable and compact.

Fig. 4 illustrates my means of connecting the brush or scraper to the ribbon. The shank K of the brush is internally threaded to receive a screw-plug, L, which is slotted to admit the ends of the ribbon edgewise. The slot in the plug terminates in a perforation, M, within which the extreme ends of the ribbon are upset or made to diverge enough to prevent its withdrawal longitudinally. A similar device may unite the reciprocating rod I to the other end of the ribbon.

I claim as my invention—

1. The combination of straight tube A, bracket D, and deflecting-wheels F G with the reciprocating brush C and rod or ribbon B, substantially as set forth.

2. The tube A, bracket D, and wheels F G,

in combination with the brush C, ribbon B, and removable reciprocating handle and rod H I, substantially as set forth.

3. The brush C, having threaded shank K and the slotted and perforated plug L therein, in combination with the ribbon B, having its ends in said slot and perforation, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 8th day of September, A. D. 1887.

WILLIAM F. ANNABLE.

Witnesses:
ELIHU G. LOOMIS,
A. H. SPENCER.