

E. G. FELTHOUSEN,
Flue-Cleaner.

No. 214,500.

Patented April 22, 1879.

FIG. 1.

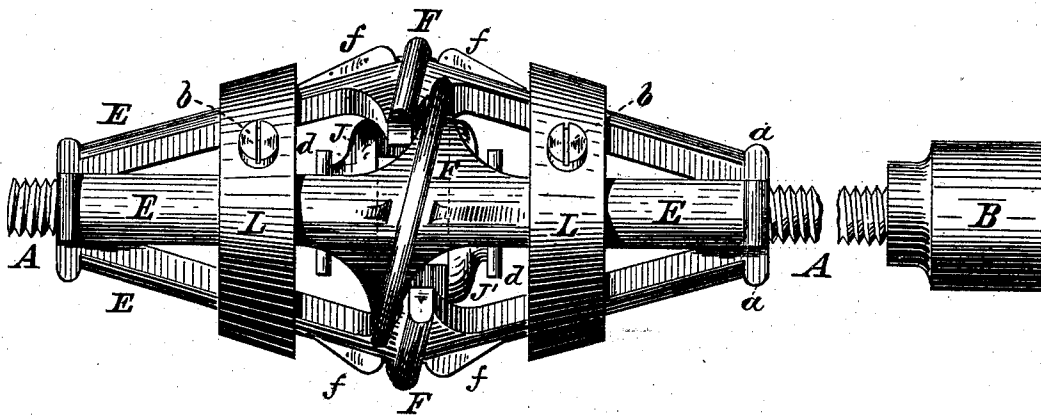


FIG. 2.

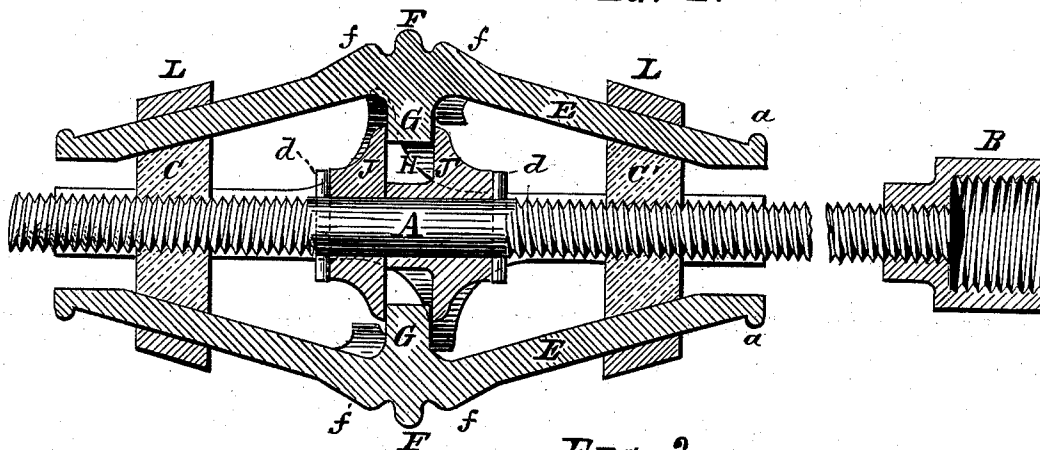
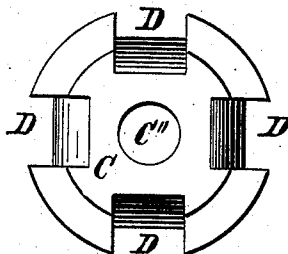


FIG. 3.



Witnesses:

Michael Stark
Frank Hirsch

Inventor:

Edward G. Felthousen,
by Michael J. Stark,
Attorney.

UNITED STATES PATENT OFFICE.

EDWARD G. FELTHOUSEN, OF BUFFALO, NEW YORK.

IMPROVEMENT IN FLUE-CLEANERS.

Specification forming part of Letters Patent No. **214,500**, dated April 22, 1879; application filed December 2, 1878.

To all whom it may concern:—

Be it known that I, EDWARD G. FELTHOUSEN, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Flue-Cleaners; and I do hereby declare that the following description of my said invention, taken in connection with the accompanying sheet of drawings, forms a full, clear, and exact specification, which will enable others skilled in the art to which it appertains to make and use the same.

This invention has special reference to adjustable flue-cleaners; and it consists in the peculiar arrangements of parts and details of construction, as hereinafter first fully set forth and described, and then pointed out in the claims.

In the drawings, already referred to, which serve to illustrate my invention more fully, Figure 1 is an elevation, Fig. 2 a longitudinal sectional elevation, and Fig. 3 an end view, of a part of my improved flue-cleaner, like parts being designated by corresponding letters of reference in all the figures.

A is the spindle of my improved flue-cleaner. It consists of a cylindrical rod, having a right-hand screw-thread on one end, and a left-hand thread on the other end, one of these ends being provided with a socket, B, for the insertion of a hand-rod. (Not shown.) Upon this spindle are placed two disks, C C', having centrally an aperture threaded to fit the respective threads on the spindle A. These disks are made beveling on their periphery, they being frustums of a cone, and they have four notches, D, also beveled at their bottom, within which are placed and working four scraper blades or bars, E, which have on their outer side helical projections F, serving as scrapers. These scraper-bars have on their inner concave side projections G, engaging in a groove, H, formed between two fixed disks, J J', placed centrally upon the spindle A, and on their ends are projections, a, to limit the movement of the disks C C', as hereinafter described.

The projections F are spirally arranged, so as to allow each of the sections to pass their

adjacent section when the scraper is contracted to its smallest diameter, which has the effect of producing a continuous circular projection, even if the scraper is expanded to its largest diameter.

On both sides of these projections F are provided tapering projections *f*, serving as guides to the tube, and prevent the spiral projection F from striking the end of the boiler-flues to be cleaned.

Upon the disks C C' are placed tapering rings L, fastened by screws *b*, which rings serve to keep the scraper-bars E within the notches D in said disks.

In operation, the spindle A, being turned, causes the disks C C' to move toward or from each other, as the case may be, and thereby to move the scraper-bars E, the shanks of which are oppositely inclined to move radially toward or from the spindle A, they being held in proper position by reason of the projections G, arranged between the disks J J'. These disks, for the sake of cheapness, are placed loosely upon the spindle A, and are retained the proper distance apart by said projections G, and prevented from moving out of proper position by pins *d*. These disks may, however, be permanently affixed to or directly cast upon the spindle A without changing the nature of my invention.

It is obvious that the flue-scraper, as described, can be readily adjusted to any desired size within its compass, and that, the parts being all cast and requiring but little finish and fitting, my scraper can be manufactured and sold at a very low figure as compared with the price of other adjustable flue-scrappers.

Having thus fully described my invention, I claim as new and desire to secure to me by Letters Patent of the United States—

1. A flue-scraper the blades of which are in the form of a convexo-concave bar, having a projection, G, on the concave, and on the convex side a spirally-arranged cutter-edge, F, provided with a longitudinal guiding-rib, *f*, in combination with the disks J J', all constructed and arranged to operate as set forth.

2. The spindle A, having the right and left

screw-thread, and the disks J J', in combination with the internally-threaded conical disks C C', having the beveled notches D and rings L, the concavo-convex bars E, having the projections G, and the spiral ribs F, the whole being arranged for operation as specified, for the object stated.

In testimony that I claim the foregoing as

my invention I have hereto set my hand and affixed my seal in the presence of two subscribing witnesses.

EDWARD G. FELTHOUSEN. [L. S.]

Attest:

MICHAEL J. STARK,
FRANK HIRSCH.