(No Model.)

F. J. FREESE.

FLUE SCRAPER.

No. 561,385. Patented June 2, 1896.

Fig. 1

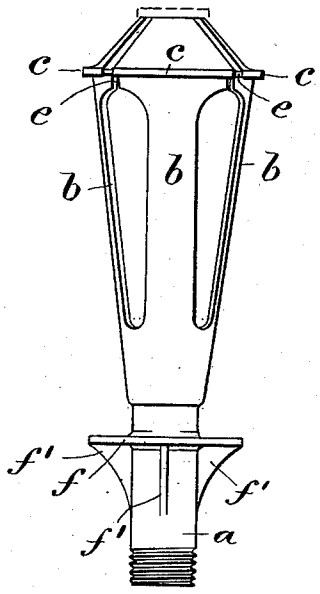


Fig. 2

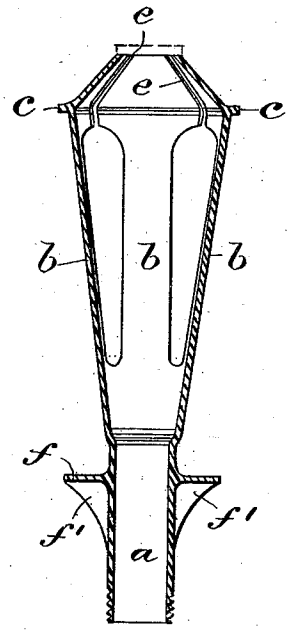


Fig. 3

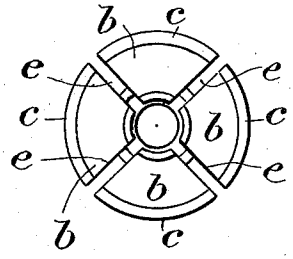
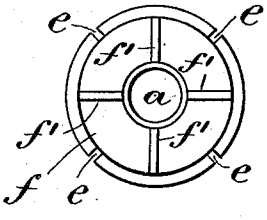


Fig. 4



Witnesses

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UNITED STATES PATENT OFFICE.

FRANCIS JOSEPH FREESE, OF MONTREAL, CANADA.

FLUE-SCRAPER.

SPECIFICATION forming part of Letters Patent No. 561,385, dated June 2, 1896.

Application filed April 23, 1894. Serial No. 508,731. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS JOSEPH FREESE, of the city of Montreal, in the district of Montreal and Province of Quebec, Canada, have invented certain new and useful Improvements in Flue-Scrapers; and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention relates to devices for scraping and cleaning the flues of boilers and the like, and has for its object to simplify, improve, and reduce the cost of the construction thereof; and to such ends the invention consists in the device hereinafter particularly described and claimed. For full comprehension, however, of the invention reference must be had to the annexed drawings, forming a part of this specification, in which like symbols indicate corresponding parts, and wherein—

Figure 1 is a side elevation of flue-scraper head; Fig. 2, a longitudinal section thereof; Figs. 3 and 4, end views, respectively, of the outer and inner ends of the scraper-head.

My invention calls for the simple act of casting the entire head, including the spring-fingers and neck or carrying portion, as an integral piece and by removing a temporary binding or stay securing the article in complete and flexible condition.

a is the tubular neck portion, screw-threaded at its end to allow of its being connected to the usual handle, (not shown,) and *b b b* are the flexible fingers, each carrying a peripheral scraping edge *c* at the apices of the angles formed between the inner main lengths and the outer end or head sections. The inner main lengths are narrower than the head-sections and separated by the open spaces *d d*, the head-sections, which are of triangular form, being simply separated, as shown in this case, by saw-cut openings *e e*.

f is an auxiliary rigid scraping edge located upon the neck *a* and serving to collect and carry forward what particles the scraping edges fail to.

Inclined webs *f' f' f'* are preferably arranged, as shown, in connection with the auxiliary scraping edge *f*, to assist in centering the scraper on its withdrawal.

The flue-scraper is simply cast in one piece, as shown, the fingers being in their expanded position and temporarily connected together by a thin binding-web between their head-sections where the saw-cuts now appear, and which web is afterward cut away, leaving the ends free and the finger flexible; or the temporary binding can be in the form of a ring situated at the outer end, as shown by dotted lines in Figs. 1 and 2.

What I claim is as follows:

A flue-scraper in the form of a single open-ended cast tubular section hollow and unobstructed throughout its entire length and its forward portion being of an elliptical conoidal form larger in diameter near its forward end than at such end and throughout its rearward portion, and being slitted from its open end rearward for the purpose set forth.

FRANCIS JOSEPH FREESE.

Witnesses:
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R. ALF. KIMBER.