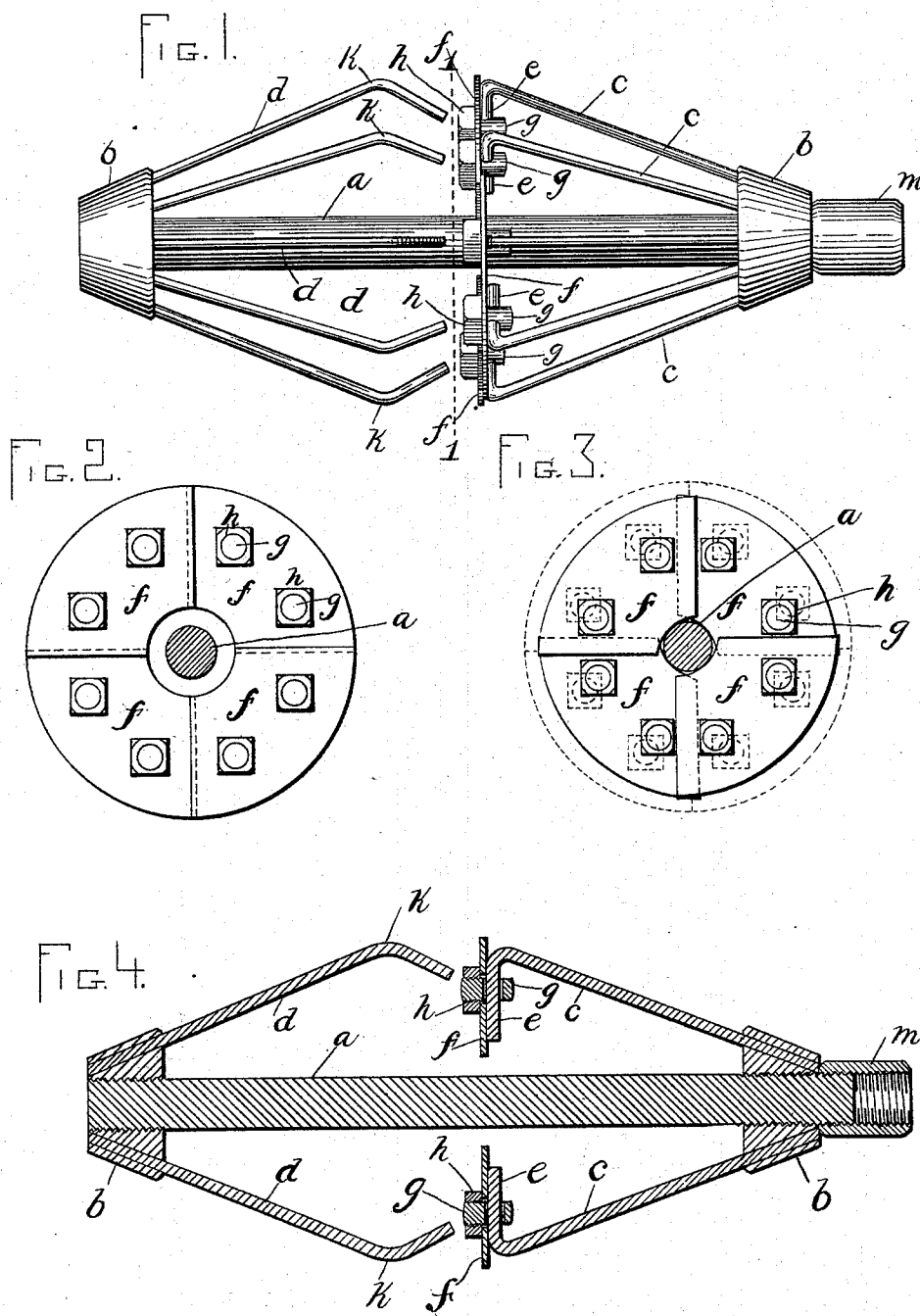


(No Model.)

D. HANSON.
TUBE OR FLUE CLEANER.

No. 527,972.

Patented Oct. 23, 1894.



WITNESSES
A. D. Hanson.
A. M. Ahl.

INVENTOR
Daniel Hanson
by *Myrtle Brown & Co.*

UNITED STATES PATENT OFFICE.

DANIEL HANSON, OF CHELSEA, MASSACHUSETTS.

TUBE OR FLUE CLEANER.

SPECIFICATION forming part of Letters Patent No. 527,972, dated October 23, 1894.

Application filed November 11, 1893. Serial No. 490,624. (No model.)

To all whom it may concern:

Be it known that I, DANIEL HANSON, of Chelsea, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Tube or Flue Cleaners, of which the following is a specification.

My invention relates to scrapers adapted to remove soot and other obstructions from boiler tubes or flues.

The object of my invention is to provide a simple and durable scraper adapted to automatically conform, to a certain extent, to the dimensions of the tube or flue to be cleaned, and to be adjusted to flues of different sizes. The construction by which I attain these objects is illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the device; Fig. 2, a transverse section on the line 1, 1, Fig. 1. Fig. 3 represents a similar section, showing the adaptability of the scraping plates to the dimensions of the flue. Fig. 4 is a longitudinal section.

Similar letters refer to similar parts throughout the several views.

Upon each end of a metallic rod *a* are fixed heads *b b*, of metal, from which two sets of resilient arms *c d* diverge toward each other. The ends *e* of the arms *c*, Figs. 1 and 4, are turned in toward the bar *a* and to said arms are adjustably secured the scraping plates *f*, by means of bolts *g* operating in connection with nuts *h*. The bolts *g* are bored through from side to side to receive the ends *e* of the arms *c* and, passing through orifices in the plates *f*, are secured the plates by threaded nuts *h*. The scraping plate is in four sections *f*, the edges of which overlap. The resilience of the arms *c* enables the plates *f* to

adapt themselves, within certain limits, to the different sizes of flues. When the nuts *h* are loosened from the plates *f*, said plates may be moved in or out and the scraper made to assume a new diameter, after which they are again secured to the ends *e* of the rods *c* by the tightening of said nuts.

The flexible arms *d* are inclined as shown, so that their outermost portions *k* project outwardly about as far as the outer edges of the plates *f*. Said arms form a guide, the object of which is to facilitate the insertion of the device into a flue.

The resilience of the arms *d* enables them to accommodate themselves to flues of larger or smaller diameter.

The rod *a* has upon one end of it a threaded socket by which it may be secured to the end of an operating rod or handle.

I claim—

The improved flue scraper comprising in its construction the rod *a*, the heads *b b* affixed to said rod, the diverging elastic arms *c* attached to one of said heads and provided with inwardly bent ends, the segmental scraping plates *f* adjustably secured to the inwardly bent portions of the arms, and the diverging elastic arms *d* attached to the other head *b* and having their ends inwardly inclined and separate from the scrapers, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 15th day of July, A. D. 1893.

DANIEL HANSON.

Witnesses:

DAVID B. WESTON,
I. W. LORING.