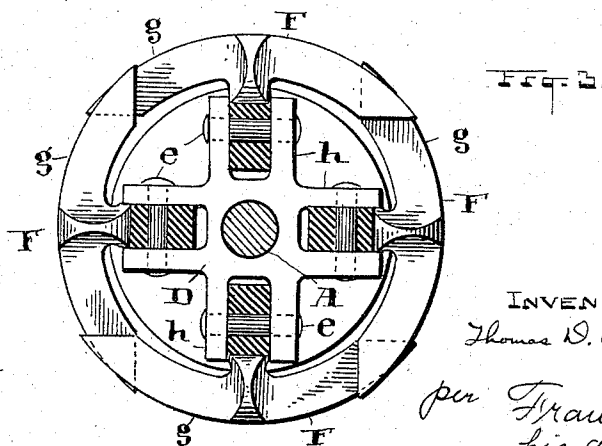
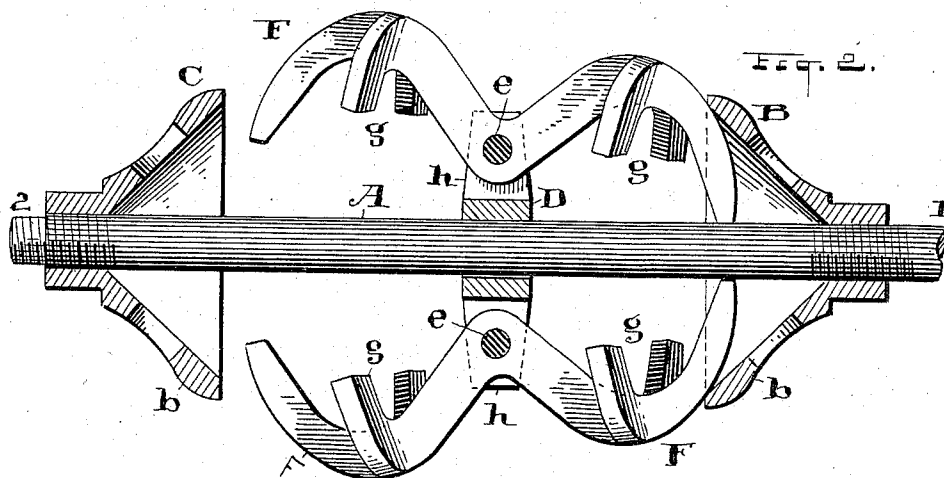
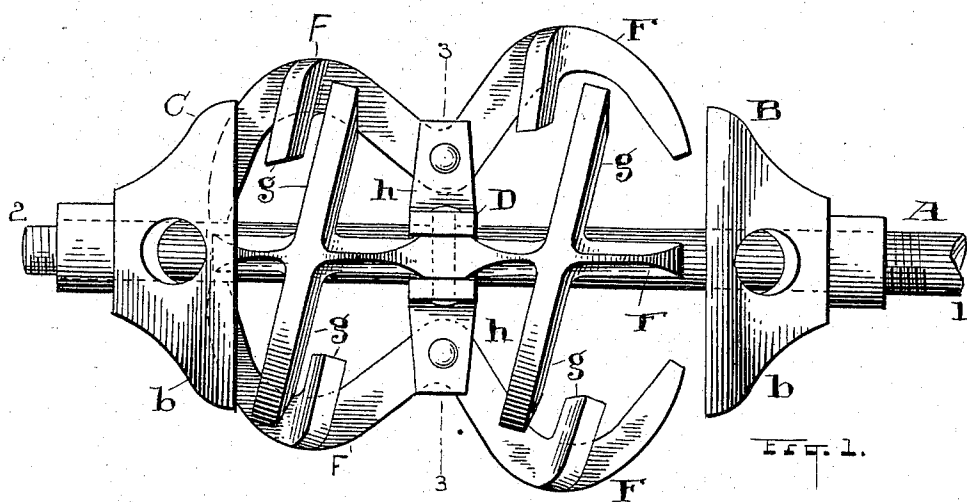


(No Model.)

T. D. S. RUGGLES.
FLUE CLEANER.

No. 570,506.

Patented Nov. 3, 1896.



ATTEST

Dr. B. Moser
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INVENTOR

Thomas D. Self Ruggles

per Frank Higley
his attorney

UNITED STATES PATENT OFFICE.

THOMAS D. SELF RUGGLES, OF KENT, OHIO.

FLUE-CLEANER.

SPECIFICATION forming part of Letters Patent No. 570,506, dated November 3, 1896.

Application filed June 12, 1896. Serial No. 595,371. (No model.)

To all whom it may concern:

Be it known that I, THOMAS D. SELF RUGGLES, a citizen of the United States, residing at Kent, in the county of Portage and State of Ohio, have invented a new and useful Improvement in Flue-Cleaners, of which the following is a specification.

My invention relates to the class of flue-cleaners or flue-scrapers which are provided with scraping arms or blades adapted to enter the flue and engage the inner surface of the same; and the object of my invention is to provide a device with arms which may be operated automatically and without the use of screws or springs to thrust the scraping-arms against the inner surface of the flue.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation; Fig. 2, a longitudinal section, and Fig. 3 a cross-section on line 3 3 of Fig. 1.

Like letters refer to like parts in the several views.

In the drawings, A represents a central rod which has a screw-threaded section at 1 for engaging a handle, and at the other end at 2 is squared or flattened, so that it may be engaged by a wrench. Upon the rod A are collars B and C, having bell-shaped extensions *b b*, which project inwardly and engage the converging ends of the scraping-arms, as shown in Figs. 1 and 2. Upon the rod A, between the collars B and C, is a collar or frame D. The frame or collar D is adapted to slide upon the rod A and is provided with a series of arms *h h*, to which a series of scraping blades or arms F F F F are attached by pivots *e e e e*, as shown in Figs. 1 and 2.

The scraping-arms on each side of the pivot *e* turn outwardly and at their ends converge sufficiently, so that when engaged by the adjacent collar the ends engaged will be drawn inwardly and the opposite ends thrown outwardly.

The scraping-arms are provided with diagonal cross-arms *g g g g*, which are adapted to fit the inner surface of the flue.

The collars B and C are screwed upon the rod A, so that the same can be readily removed.

The operation of the device is apparent

from the drawings. When the device is thrust into a flue, the collar B engages the convergent ends of the adjacent scraping-arms F and the opposite arms are thrown outwardly, as shown in Fig. 2, and against the inner surface of the flue. The more resistance the outer arms receive from the soot or other substance the more strongly will these arms be forced outwardly by the engagement of the other ends of the scraping-arms by the collar B. When the device is drawn outwardly, the action of the arms will be reversed and the opposite arms will be thrown outwardly by the collar C, as shown in Fig. 1.

It has been customary to employ springs or screws to project outwardly the scraping arms or blades of the flue-cleaner. Where springs are employed, the action of heat draws the temper of the springs and the same become useless, and where a screw is used the same is liable to become corroded by gases, so that it cannot be used. With my device the scraping-arms are operated automatically and screws and springs are not employed.

In the drawings a series of four arms on each side are shown. The number, however, is not material to my invention.

What I claim, and desire to secure by Letters Patent, is—

1. In a flue-cleaner, in combination, a rod, having a sliding collar provided with scraping arms or blades adapted to engage the flue on either side of the collar and having convergent ends, the arms on either side of the sliding collar being adapted to be thrown into contact with the flue by the engagement of the opposite convergent ends with a fixed collar attached to the rod, substantially as shown and described.

2. In a flue-cleaner, in combination with a central rod provided with collars B and C, scraping arms or blades pivoted to a sliding collar, the scraping-arms being provided with diagonal cross-arms and having convergent ends and being adapted to engage the inner surface of the flue on either side of the pivot, substantially as shown and for the purposes described.

3. In a flue-cleaner, the central rod A, the

collars B and C attached to the rod, the sliding frame or collar D having arms *h*, and the scraping-arms F pivoted to the collar D substantially as shown and described.

- 5 4. In a flue-cleaner, the rod A, the collars B and C attached to the rod A and having bell-shaped extensions *b*, *b*, the sliding collar

D having arms *h*, and the scraping-arms F pivoted to the collar D, substantially as shown and described.

THOMAS D. SELF RUGGLES.

Witnesses:

MARK G. McCASHIR,

H. H. LINE.