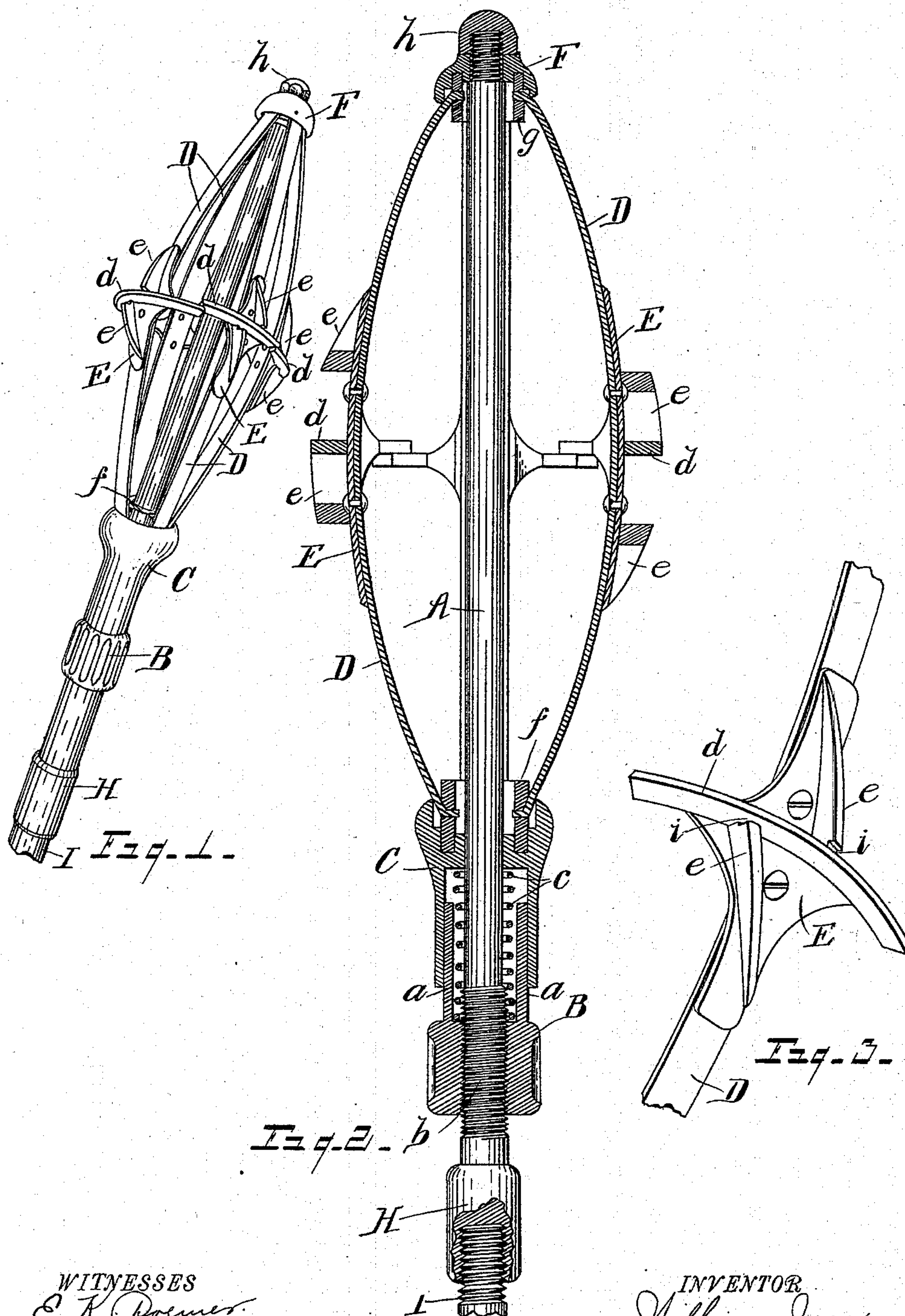


(No Model.)

W. JESS.
FLUE CLEANER.

No. 528,132.

Patented Oct. 23, 1894.



WITNESSES
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UNITED STATES PATENT OFFICE.

WILLIAM JESS, OF DELRAY, MICHIGAN.

FLUE-CLEANER.

SPECIFICATION forming part of Letters Patent No. 528,132, dated October 23, 1894.

Application filed November 3, 1893. Serial No. 489,951. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM JESS, a citizen of the United States, residing at Delray, in the county of Wayne, State of Michigan, have
5 invented certain new and useful Improvements in Flue-Cleaners; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to
10 make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to a flue cleaning device, for cleaning the smoke flues of boilers, and consists in a certain construction and arrangement of parts as hereinafter fully set forth, the essential features of which being
15 pointed out particularly in the claims.

20 The object of the invention is to produce a flue-scraper of simple and strong construction, in which the arrangement is such that the scraping rib or flange is made to conform to the interior of the flue, and to accommodate itself to the varying diameter thereof.
25 This object is attained by the mechanism illustrated in the accompanying drawings, in which—

30 Figure 1 is a perspective view of my improved device. Fig. 2 is an enlarged horizontal section through the same. Fig. 3 is an enlarged perspective in detail of one of the sections of the scraping rib.

Referring to the letters of reference, A designates the stem upon which the scrapers are mounted, and which is provided with a threaded shank *b* upon which is screwed a collar B having an annular flange *a* which
35 forms a socket or cup in which is seated the coiled spring *c* surrounding said stem. C designates a sleeve adapted to slide over the flange *a* of said collar, and having a closed outer end against which one end of said
40 spring bears.

45 D designates a series of spring arms which is bowed longitudinally and upon which at their longitudinal center, the scraper heads E are secured. These heads are provided with a transverse segmental rib *d*, and with
50 the oblique acuminated and slightly curved ribs *e* that are intercepted by said rib *d*, be-

ing located on opposite sides thereof and at an angle thereto, said ribs *e* standing in separate parallel planes and having a slight opening *i* in their upper edges adjacent to the
55 face of the ribs *d*, for the passage of the soot and some distance apart, there being a slight opening *i* in the upper edge of said ribs *e* adjacent to the face of the rib *d* for the passage
60 of the soot.

The arms D are arranged about the stem A, their rear ends being detachably secured in a revoluble ring *f* seated in the end of the sleeve C and the outer ends of said arms being secured in like manner in a ring *g*
65 journaled in the cap F that fits over the outer end of said stem and is secured by the nut *h*. The arrangement of the parts is such, that, when the arms are so secured, the ends of the segmental ribs *d* will lap, as shown in Fig. 1,
70 to permit of the free action of each of said spring arms, so that the circular rib formed by said segments *d*, may expand and contract diametrically to accommodate itself to the varying surfaces of the interior of the flue,
75 whereby contact with the inner wall of the flue is always assured, and the scraping of its entire surface effected.

The elongation of the spring arms D is provided for in the sliding sleeve C, which is
80 held forward against said arms by the tension of the spring *c*, but which will slide rearwardly upon the annular flange *a*, when the resistance of said spring is overcome, thus allowing said sleeve to vibrate, and keeping the
85 scrapers at all times in contact with the wall of the flue. The proper tension is applied to said spring by turning the threaded collar B, as will be well understood.

H designates a threaded socket of the shank
90 of the stem A, into which a rod I is screwed, of sufficient length to enable the passing of the scraper head through the flue. When the scraper is entered in a flue and reciprocated therein, the contact of the oblique ribs *e*, with
95 the wall of the flue, will cause a slight rotary motion of said scraper as it is moved longitudinally through the flue, whereby the soot is perfectly removed and entirely withdrawn from the flue by means of the segmental rib
100 sections *d*. The opening *i* at the ends of the oblique ribs *e*, prevents the accumulation of

soot in the angle between the ribs *d, e*, as the scraper rotates.

This improved scraper is simple and effective, and by its use the flues may be quickly and perfectly cleaned, and as the scraping ribs are the only wearing parts, should they become broken or worn out, they may be readily replaced.

Having thus fully set forth my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a flue scraper, the combination of the stem, the rotary rings mounted thereon, the curved spring arms secured at their ends in said rings, the scrapers mounted on said arms said scrapers consisting of the segmental rib-sections and the oblique acuminate ribs that are intercepted by said segmental ribs being located on opposite sides thereof and upon separate planes, one of said rings being mounted to slide on said stem to permit of the free movement of said arms.

2. In a device for the purpose set forth, the combination of the stem, the rings journaled thereon, the spring arms detachably secured at their ends in said rings, the scraper heads

secured to said arms, said scrapers consisting of the segmental rib-sections and the oblique acuminate ribs that are located on opposite sides of said rib-sections in separate planes and intercepted thereby, the sleeve mounted to slide upon said stems and bearing against one of said rings, the spring in said sleeve and the screw collar for placing tension upon said spring, whereby provision is made for the longitudinal movement of one end of said arms.

3. The combination of the stem, the curved spring arms mounted thereon and detachably secured at their ends, the scrapers attached to said arms consisting of the segmental ribs intercepting the acuminate ribs which are located on opposite sides of said segmental ribs in separate planes and stand at an angle thereto.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM JESS.

Witnesses:

E. S. WHEELER,
E. K. ROEMER.