

No. 661,088.

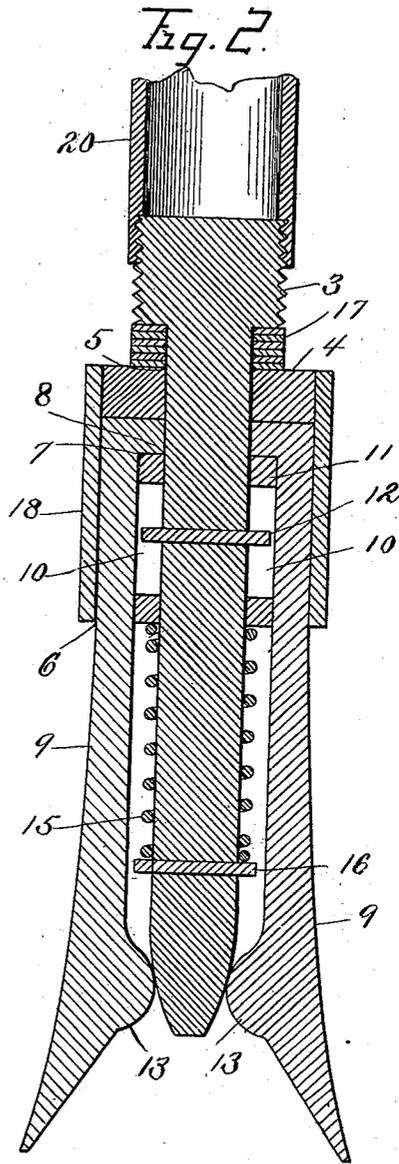
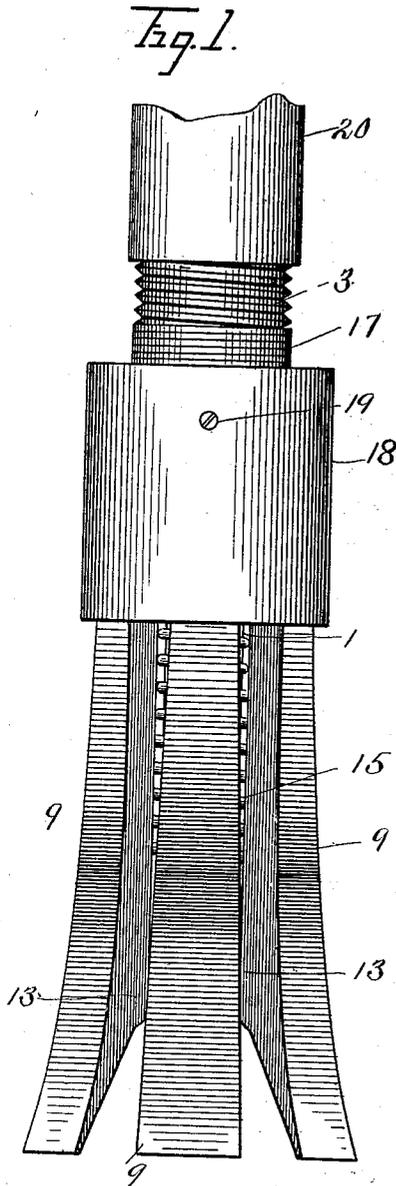
Patented Nov. 6, 1900.

W. B. STOUT.
FLUE SCRAPER.

(Application filed Dec. 21, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses
E. A. Ryan
J. Wilson

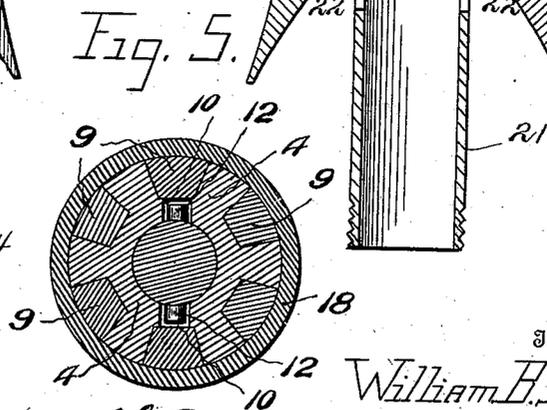
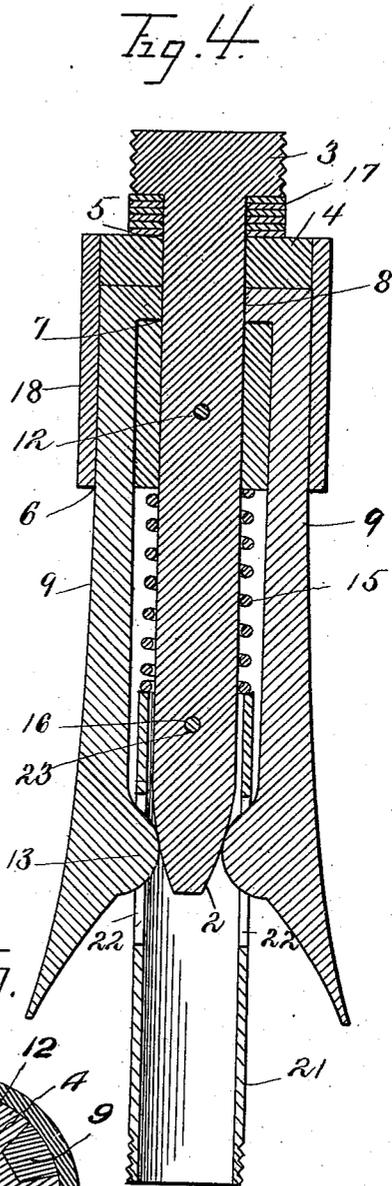
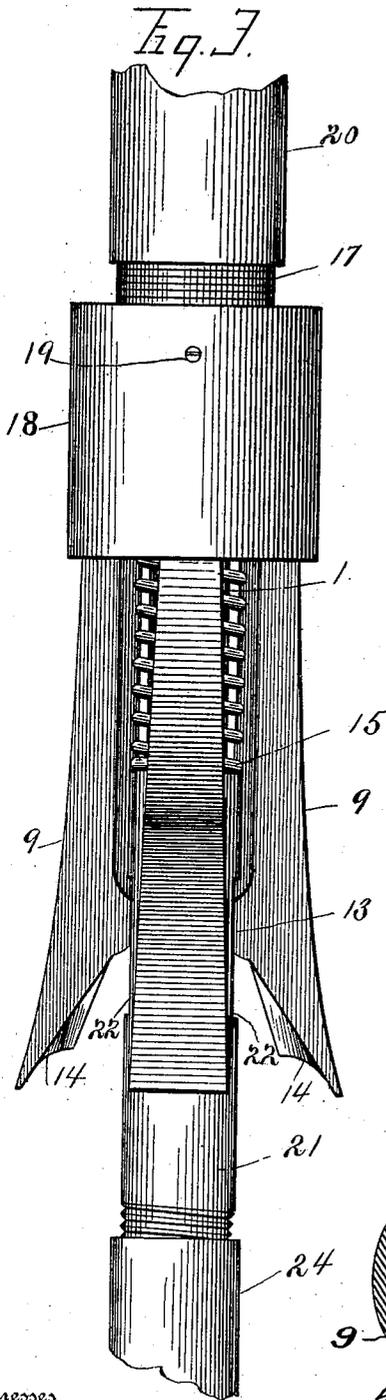
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

WILLIAM B. STOUT, OF NEW ORLEANS, LOUISIANA.

FLUE-SCRAPER.

SPECIFICATION forming part of Letters Patent No. 661,088, dated November 6, 1900.

Application filed December 21, 1899. Serial No. 741,169. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM B. STOUT, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented certain new and useful Improvements in Flue-Scrapers; 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 make and use the same.

The invention relates to flue-scrapers.

The object of the invention is to provide a simple, durable, and inexpensive flue-scraper which will effectively remove from the tubes or flues any accumulation of foreign matter, as well as scale and incrustation.

To this end the invention consists in certain features of construction and combination of parts, which will be hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of my improved flue-scraper. Fig. 2 is a longitudinal sectional view. Fig. 3 is a side elevation showing an attachment applied to the scraper whereby it may be made of double action—that is to say, capable of being operated by two persons, one at each end of the flue. Fig. 4 is a longitudinal sectional view through Fig. 2.

In the drawings the same reference characters indicate the same parts of the invention.

1 denotes an expanding-rod, one end of which is tapered, as at 2, and the other end of which is provided with a screw-threaded collar 3.

4 denotes a head having a central aperture 5, through which the rod projects. This head is provided with longitudinal radial recesses 6, the base-walls of which at their rear ends are provided with sockets 7 to receive the lips 8 at the rear ends of the scraper-blades 9. The base-walls of two of these recesses are provided with slots 10, through which and an aperture 11 in the rod projects a transverse pin 12, thereby permitting of a slight longitudinal movement of the rod with respect to said head. The blades, which fit in said radial recesses, are gradually curved throughout their entire length and are provided with a beveled end 13 and with a curved heel 14. The construction of the blade is such that it is self-sharpening.

15 denotes a coil-spring placed upon the rod in advance of the head and confined between the head and a transverse pin 16.

17 denotes washers placed upon the rod between the rear end of the head and the collar.

18 denotes a sleeve placed upon the head and secured thereto by screws 19. This sleeve is to prevent the displacement of the scraper-blades.

20 denotes an operating-rod engaged with the screw-threaded collar.

In operating the free end of the operating-rod is inserted through the flue to be cleaned and the flue-scraper drawn a slight distance within the end of the tube. It is then given a forward lunge or push, and this action is repeated until the tool has passed through the tube its entire length. In drawing the scraper backward through the tube the spring will yield and allow the scraper-blades to move toward each other, thus permitting of an easy backward movement. In projecting the scraper forward to remove the accumulation or incrustation the force of the spring, as well as that applied to the operating-rod, is exerted to force the tapering end of the expanding-rod forward and spread the scraper-blades apart, so as to cause them to dig into the accumulation and remove same. The scraper is reciprocated back and forth within the tube and gradually being moved from the forward to the rear end of the boiler, and at each reciprocation of the tool the incrustation is removed from the flue.

If it be desired to operate the device at both ends of the flue—that is, for two persons to manipulate the tool—I remove each alternate scraper-blade and place upon the tapering end of the expanding-rod a sleeve 21, having longitudinal slots 22 to permit the heels of the blades projecting therethrough and engaging the tapering end of the expanding-rod. The transverse pin 16 will of course first be removed and after the sleeve has been placed in position will be inserted through holes 23 in said sleeve and its hole in said expanding-rod. The forward end of the sleeve is screw-threaded and is adapted to receive an operating-rod 24. As the ends of the scraper-blades wear away the washers above referred to may be removed one at a time, so as to permit the tapering point of the expanding-rod

to have a greater forward movement, and thereby expand the blades to compensate for wear.

5 From the foregoing description, taken in connection with the accompanying drawings, the construction, operation, and advantages of my improved flue-cleaner will be readily apparent without requiring an extended explanation.

10 It will be seen that the device is simple of construction, that said construction permits of its manufacture at small cost, and that it is exceedingly well adapted for the purpose for which it is designed, and it will of course
15 be understood that various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

20 Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. The combination with an expanding-rod, of a spring-pressed head engaged therewith
25 and having a sliding movement thereon, said head being provided with longitudinal apertures, a pin inserted through said apertures and the expanding-rod to limit the movement of said head on said rod, said head being provided with longitudinally-radial recesses, the

base-walls of which at their rear ends are provided with sockets, scraper-blades provided with lips at their rear ends to engage said sockets and provided with heels at their forward ends on their contiguous sides adapted
35 to be engaged by the expanding-rod, and a sleeve connected to said head and surrounding the rear ends of the scraper-blades to hold them in the longitudinal recesses, substantially as set forth.

2. In a flue-scraper, the combination with the expanding-rod, of a spring-pressed head engaged therewith and having a limited movement thereon, scraper-blades seated in said head and provided with heels, a sleeve connected to said head to hold the scraper-blades
45 in position, said expanding-rod adapted to engage said heels and expand said scraper-blades, and a sleeve connected to the outer end of the expanding-rod and provided with
50 slots through which the heels of said scraper-blade project in order to be actuated by the expanding-rod, substantially as set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM B. STOUT.

Witnesses:

R. E. L. C. RIES,
JNO. J. HIGGINS, Jr.