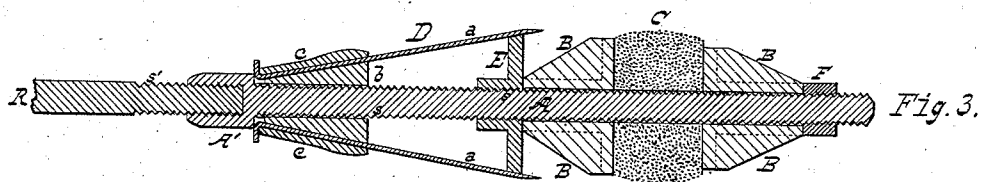
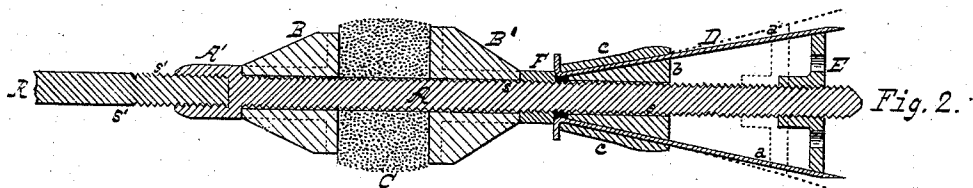
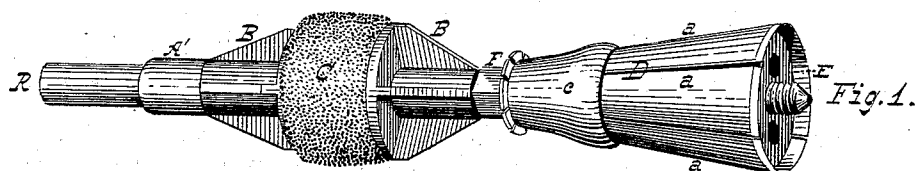


(Model.)

P. W. LAMB.
Flue Cleaner.

No. 232,406.

Patented Sept. 21, 1880.



Witnesses *Alex. Selkirk*
Charles Selkirk

Patrick W. Lamb
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UNITED STATES PATENT OFFICE.

PATRICK W. LAMB, OF ALBANY, NEW YORK.

FLUE-CLEANER.

SPECIFICATION forming part of Letters Patent No. 232,406, dated September 21, 1880.

Application filed May 12, 1880. (Model.)

To all whom it may concern

Be it known that I, PATRICK W. LAMB, of the city and county of Albany, and State of New York, have invented a new and useful
5 Improvement in Flue-Cleaners, of which the following is a specification.

The invention relates to expansive flue-cleaners for clearing flues of furnaces from any accumulation of deposits of smoke or other foreign substances.

The object of my invention is to provide an expanding scraper which will be yielding in its nature and be capable of being expanded or contracted in its diameter, so as to accurately
15 fit and fill the bore of the tubes, and which may be readily expanded and contracted while in the bore by simply turning its handle in the proper direction, and also to provide an elastic or yielding cleaner which may be readily adjusted to compensate for wear, and which will remove the loosened deposits from the flues.

To this end the invention consists in a conical-shaped scraper having several blades arranged in conical form and so combined with a
25 traveling follower as to be capable of being expanded or contracted in its diameter while in the flue.

The invention further consists in a flexible or yielding cleaner constructed of elastic material, combined with a gritty substance in
30 such manner that the said cleaner will be capable of having its body enlarged or expanded in its circumferential direction.

The invention further consists in the combination, with the elastic cleaner, of washers having conical-shaped leading or guiding ends, as more fully hereinafter specified; and the invention finally consists in the particular combination and construction of parts, as more
40 fully described.

In the accompanying drawings, in which similar letters of reference indicate like parts, Figure 1 represents a perspective view of a flue scraper and cleaner embodying my invention. Fig. 2 represents a sectional elevation
45 of the same, and Fig. 3 a sectional view with the parts arranged differently for accomplishing the same results.

The letter A indicates the stem of the device, which is provided with a screw-thread, s. A' indicates the attaching-collar, made solid with

said screw-threaded stem, and provided with bore s', for attachment to a rod, R, by which the device is operated.

The letter B indicates a clamping-washer
55 made with tapering flanges extending from said washer to the end of a sleeve cast solid with both the washer and flanges. This washer I denominate a "leader." The letter B' indicates a similar leader. These leaders are provided with a bore of a diameter sufficient to
60 freely receive the screw-threaded stem A.

C is an elastic cleaner, composed of rubber or other suitable material, with which is incorporated emery or other equivalent gritty substance. This elastic cleaner is also provided
65 with a bore of sufficient diameter to receive the screw-threaded stem A, and is clamped between the leaders B and B' on the stem.

The letter D indicates an expansion-scraper
70 composed of several slightly-curved blades, a, constructed from flat tempered steel and of a tapering form, as shown in Fig. 1. The said blades are secured to a block, b, by the conical band c and a screw or other suitable fastening
75 device. As thus constructed the scraper D is conical in form and is capable of being readily expanded.

The letter E indicates an expanding screw collar or follower, which fits the screw-threaded
80 stem A, and is adapted to work on the same and in the interior of the conical scraper from its open end, as shown in Figs. 2 and 3.

The letter F indicates a set-nut fitting the screw-threaded stem A, for clamping the lead-
85 ers B together for upsetting or expanding the elastic cleaner C.

I prefer to arrange the several parts or devices on the screw-threaded stem A in the manner shown in Figs. 1 and 2 for ordinary
90 work, as when thus arranged the scraper D, when the device is thrust forward through the flue, will cut or scrape the deposit on the surface of the bore, while the elastic cleaner will follow and carry the loosened deposits forward
95 after the scraper. In some cases I would arrange the several devices substantially as shown in Fig. 3, in which I would expand the scraper to a larger diameter than that of the cleaner, and would commence operations in the
100 flue at the most distant end and work the device in the flue short distances each time, and

gradually increase the distance at each thrust until the near end of the flue has been reached, when I would expand the elastic cleaner to the size of the bore, or slightly larger, and run the devices backward and forward alternately through the whole of the flue.

If desired, the several devices may be arranged on the screw-threaded stem substantially in the order shown in Figs. 1 and 2 of the drawings, with this difference: that the expanding scraper will be arranged with its larger and scraping end toward the attaching-collar A', and the elastic cleaner will be toward the rear end of the stem, in which case I would use the device to clean the flues by drawing it toward the operator.

In operating my improved device the scraper D should be expanded by the expanding screw-collar E to a diameter which will about correspond with the diameter of the flue to be cleaned. The elastic cleaner is also to be expanded in its diameter by forcing the leaders toward each other.

The scraper will, when the device is operated, loosen the deposit on the interior of the

flue, while the elastic cleaner will carry the loosened deposit out of the same. The emery or other gritty substance incorporated with the cleaner will scour the interior of the flue, effectually removing any particles left by the scraper.

Having thus described my invention, what I claim is—

1. The elastic cleaner C, composed of rubber or other similar material and a gritty material, in combination with mechanism for expanding said cleaner, substantially as specified.

2. The combination, with the screw-threaded stem A, elastic cleaner C, leaders B B', and nut F, of the expansion-scraper D and screw collar or follower E, substantially as set forth.

3. In a flue-cleaner, the combination, with an expansion-scraper, of an elastic gritty cleaner capable of expansion, substantially as and for the purposes set forth.

PATRICK W. LAMB.

Witnesses:

ALEX. SELKIRK,
CHARLES SELKIRK.