

No. 649,164.

P. GEISER & E. JOHNSON.

Patented May 8, 1900.

FLUE CLEANER.

(Application filed Dec. 30, 1899.)

(No Model.)

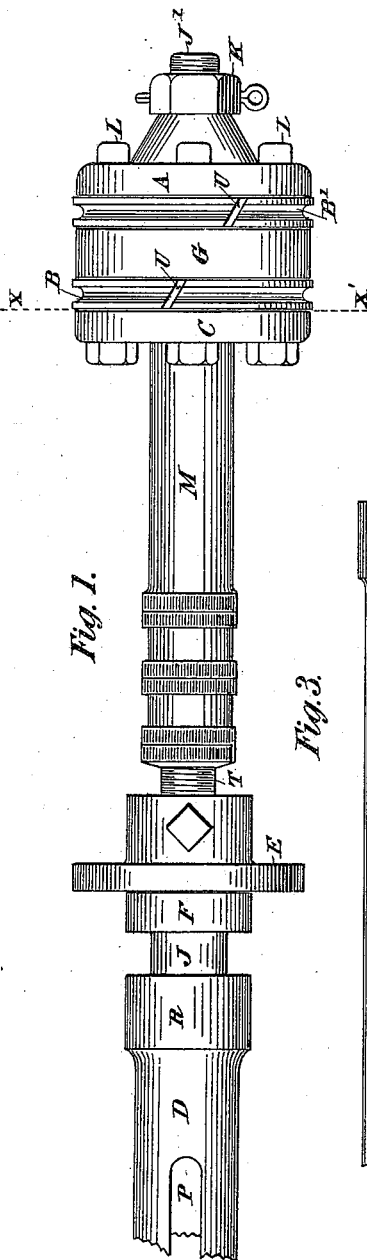


Fig. 1.

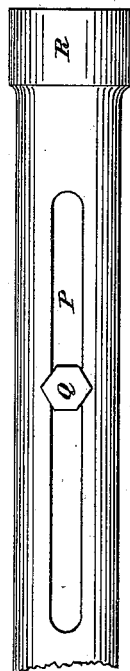


Fig. 3.

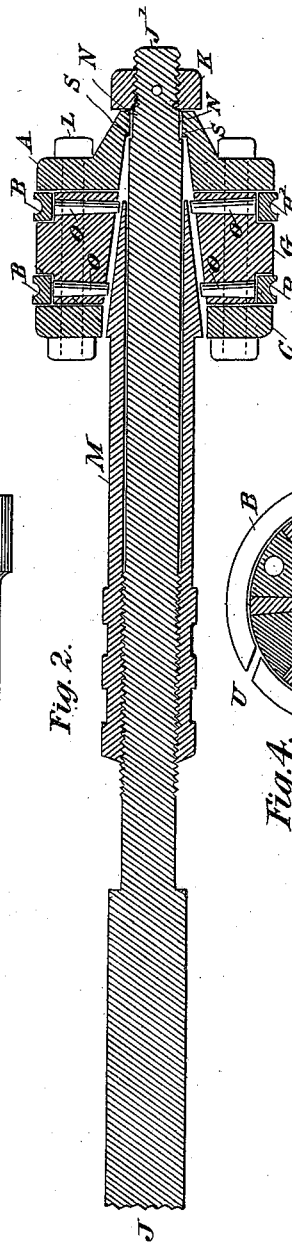


Fig. 2.

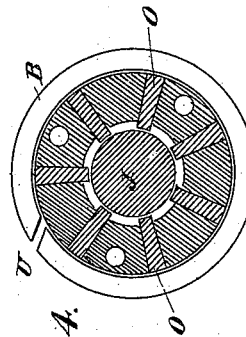


Fig. 4.

Witnesses  
Lewis A. Embury  
Sophia Kurn

Peter Geiser  
Edward Johnson Inventors

By Attorney  
A. Lincoln Embury

# UNITED STATES PATENT OFFICE.

PETER GEISER AND EDWARD JOHNSON, OF LOUISVILLE, KENTUCKY.

## FLUE-CLEANER.

SPECIFICATION forming part of Letters Patent No. 649,164, dated May 8, 1900.

Application filed December 30, 1899. Serial No. 742,055. (No model.)

*To all whom it may concern:*

Be it known that we, PETER GEISER and EDWARD JOHNSON, citizens of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented a new and useful Improvement in Flue-Cleaners, of which the following is a specification.

The object of our contrivance and the purpose of our invention are to afford a convenient and effective mode of cleaning flues, and more especially of scraping away the hard scales which become attached to the inside of boiler-flues; and the principal feature of our invention is the fact that the head of the cleaner can be inserted into a flue of slightly-greater diameter than its own, after which the cutting edge can be expanded to the actual caliber of the flue in the manner described below.

Figure 1 is an elevation of the contrivance. Fig. 2 is a longitudinal section of the contrivance, excluding pipe D and the guide E. Fig. 3 is a view of the pipe with its shoulder. Fig. 4 is cross-section of the head at the point indicated on Fig. 1 by the dotted line X X'.

The same letters refer to the same parts on all the figures.

D is a metallic pipe having along part of its length a slot P and at one end the shoulder R. Within it slides the metallic rod J J', bearing at one end the pin Q, running in said slot. Outside of said pipe it bears the shoulder F and beyond that the guide E, which is rigidly attached to it. Beyond said guide said rod is threaded, as shown at T, forming an external screw, which should extend about two inches. Beyond that it extends through the expanding-mandrel M and the head described below and terminates in a thread J'. At the point N is a shoulder designated by that letter. The expanding-mandrel M has an internal screw engaging the screw T on the rod. Said mandrel passes partly through the head and within said head becomes conical and converges toward a point.

The head is constructed as follows: There is a grooved bull-head G. In the circumference of each of the grooves are three or more holes tapering inward, placed substantially at equal intervals. In each of these holes is fitted a tapering pin, which when free to drop

exactly fits into its hole, leaving its exterior face flush with the exterior of the groove. Around each of said grooves and its pins is an expanding ring B and B', the expansion being allowed by reason of the cross-cuts U. Nearest the guide is the back head C, which prevents the band B from sliding off. On the other side of the bull-head G is the front head A, which prevents the band B' from sliding off and having an internal shoulder S corresponding to the shoulder N. K is a nut working on the screw J', which is the end of the rod J. The bull-head G, the front head A, and the back head C are rigidly held together by the bolts L.

Having now described the various parts of our invention, we will proceed to explain the manner in which it may be conveniently operated.

The head is inserted in the end of the flue. By appropriate mechanical means the expanding-mandrel M is revolved on the thread of the rod, so as to travel toward the head. The enlarging exterior of its cone is thereby pressed outward against the tapering pins O, which in turn press outward the expanding rings B B' until the real diameter of the flue is reached. The head is then pushed through the flue by means of the pipe D, with its shoulder R, and the rod J, with its shoulder F, and the rings B B' cut away the scales or other obstructing substances. If the cutting cannot be done by one operation, the rings may be partially expanded and part of the obstructions cut away and then further expanded and other obstructions cut away. If the obstructions are extraordinarily firm, the pipe D may be used as a ram by drawing it back as far as the pin Q will permit and then violently pushing it forward, so that the shoulder R is brought abruptly against the shoulder F. At all times the head, excepting so far as the bands B B' are expandible, is rigidly attached to the rod J J' by the pressure of the nut K pressing the internal shoulder S in the front head A against the shoulder N on said rod.

The guide E keeps the whole contrivance in an accurate way parallel with the flue. It is not an essential feature of our invention.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In flue-cleaners, the combination of a rod J J', having a shoulder F, and bearing a nut K; together with an expanding-mandrel M, engaging said rod by an internal screw, said  
5 rod bearing a nut K; also a head consisting of the bull-head G, the expanding rings B B' encircling the grooved ends of said bull-head, in the circumference of which are holes tapering inward, in which are fitted the tapering pins O, and the back head C and the front  
10 head A, the latter having an internal shoulder S to correspond with the shoulder N on said rod; also the pipe D having a slot P, sliding on said rod, which bears a pin Q, projecting through said slot, together with the  
15 shoulder F on said rod and the shoulder R on said pipe, all substantially as described.

2. In flue-cleaners, the combination of a rod J J' having a shoulder N and bearing a nut  
20 K; together with a mandrel M, engaging said rod by an internal screw, and terminating in a cone; also a head consisting of the bull-head G, the expanding rings B B' encircling

the grooved ends of said bull-head in the circumference of which are holes tapering inward, in which are fitted the tapering pins O, and the back head C and the front head A, the latter having an internal shoulder S to correspond with the shoulder N on said rod, all substantially as described. 25 30

3. In flue-cleaners, the combination of a rod J J' together with an expanding-mandrel M, engaging said rod by an internal screw, and terminating in a cone; also a head consisting of the bull-head G, the expanding rings B B'  
35 encircling the grooved ends of said bull-head, in the circumference of which are holes tapering inward, in which are fitted the tapering pins O, and the back head C and the front head A, the entire head being rigidly attached  
40 to the rod, all substantially as described.

PETER GEISER.

EDWARD JOHNSON.

Witnesses:

A. L. DEMBITZ,  
FRANK PARDON.