

(No Model.)

A. W. CHESTERTON.  
BOILER TUBE CLEANER.

No. 492,935.

Patented Mar. 7, 1893.

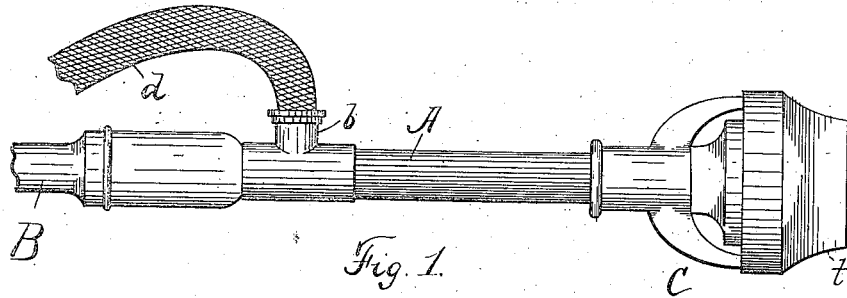


Fig. 1.

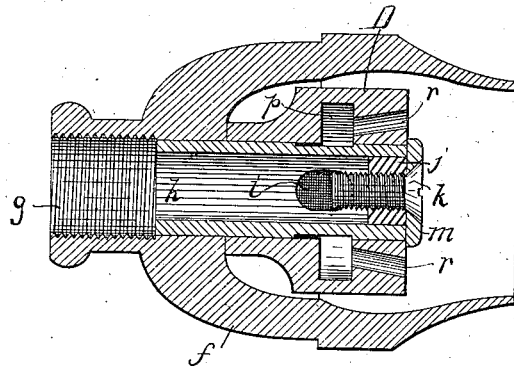


Fig. 2.

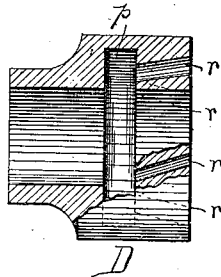


Fig. 3.

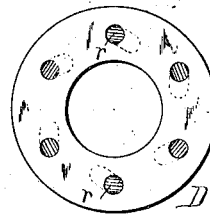


Fig. 4.

WITNESSES  
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# UNITED STATES PATENT OFFICE.

ARTHUR W. CHESTERTON, OF BOSTON, MASSACHUSETTS.

## BOILER-TUBE CLEANER.

SPECIFICATION forming part of Letters Patent No. 492,935, dated March 7, 1893.

Application filed May 23, 1892. Serial No. 434,042. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR W. CHESTERTON, of Boston, in the county of Suffolk, State of Massachusetts, have invented certain new and useful Improvements in Boiler-Tube Cleaners, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of my improved tube-cleaner; Fig. 2 a vertical longitudinal section of the nozzle; Fig. 3 a sectional view partly broken away, of the rotary head; and Fig. 4 an end elevation of the same.

Like letters of reference indicate corresponding parts in the different figures of the drawings.

My invention relates especially to steam flue cleaners for boilers; and it consists in certain novel features hereinafter fully set forth and claimed, the object being to produce a simpler, cheaper and more effective device of this character than is now in ordinary use.

In the drawings, A represents the body of the cleaner which comprises a pipe or section of tubing provided with a handle, B, at one end. Near the handle there is a nipple, b, to which a flexible pipe, d, is connected which may lead to any suitable steam supply.

C, represents the nozzle considered as a whole. The body or casing, f, of the nozzle is tubular and interiorly tapped and screw-threaded at, g, to receive the threaded outer end of the tube, A. The opposite end of the casing, f, is enlarged and exteriorly rabbeted or grooved to enter the boiler-tube or flue. A tube, h, is secured within the connection, g, and projects within the casing. A series of holes, i, are formed in the side of said tube and its inner end is closed by a head, j, which is tapped to receive a screw, k, whereby a washer, m, is secured, said washer serving to hold the rotary head, D, in position on said tube. The head, D, is tubular and fitted to rotate freely on the tube, h. Interiorly

said head is provided with an annular groove, p, which registers with the openings, i, of the tube when in position. Connecting the groove, p, with the outer end of the head and opening therethrough, there is a series of ports, r, all inclined at the same angle to said groove or the axial line of the head.

In use the nozzle is turned onto the hollow body, A, and its mouth, t, inserted in the flue. Steam being admitted through the pipe, d, it passes into the tube, h; through its opening, i, into the groove, p, of the rotary head, D. Thence it passes through the inclined ports, r, in the flue. The pressure of the steam delivered at an angle in this manner immediately imparts a rapid rotary movement to the head, D. This action causes the steam delivered into the flue under pressure to take a spiral motion.

In the use of steam cleaners of this class a portion of steam condenses in the flue or boiler tube and the moisture thus formed combined with the soot in said flue "cakes" or bakes onto the tube and forms a scale. This is extremely difficult to remove by steam delivered directly to the flue. By imparting the rotary motion described lateral pressure is delivered against the scale readily detaching it and cleaning the flue much more thoroughly than I find possible by the ordinary methods.

Instead of the ports, r, being formed in the head, D, I can enter the groove, p, by tubes projecting from the head and arranged at angles similar to said ports, the result being practically the same, but I deem the construction described, however, the more convenient and less liable to become inoperative or clogged.

To clean the nozzle or head, by turning out the screw, k, the washer, m, can be detached and the head removed in a manner which will be readily understood without a more explicit description.

Having thus explained my invention, what I claim is—

1. In a boiler tube cleaner, a nozzle comprising a casing; a tube in the supply thereof provided with steam openings; a loose head

on said tube provided with a groove register-  
ing with said openings and inclined ports  
leading from the groove through the wall of  
said head whereby steam may be delivered  
5 to the discharge of said casing and a rotary  
movement imparted to said head.

2. The nozzle, C, comprising the casing, *f*;  
the tube, *h*, secured therein provided with

openings, *i*, and head, *j*; the head, D, having  
the groove, *g*, and inclined ports, *r*, said head 10  
being mounted to rotate on the tube, substan-  
tially as described.

ARTHUR W. CHESTERTON.

Witnesses:

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O. M. SHAW.