(No Model.)

S. S. COOK.

BOILER TUBE CLEANER.

No. 346,727. Patented Aug. 3, 1886.

Fig. 1.

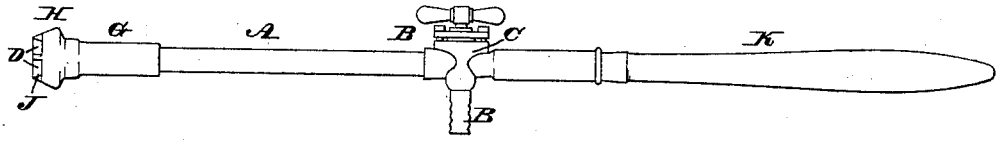


Fig. 2.

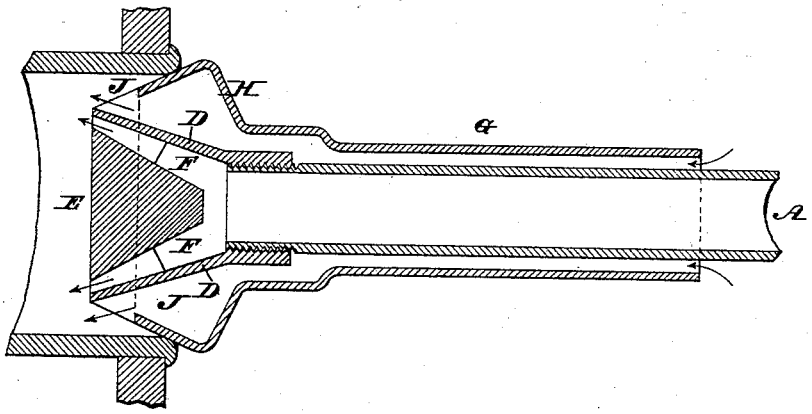
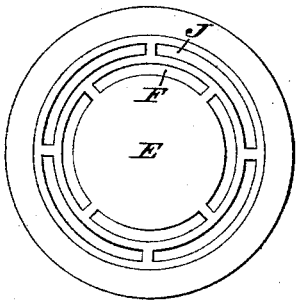


Fig. 3.



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BOILER-TUBE CLEANER.

SPECIFICATION forming part of Letters Patent No. 346,727, dated August 3, 1886.

Application filed April 23, 1886. Serial No. 199,959. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN S. COOK, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Boiler-Tube Cleaners, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 represents a side elevation of a boiler-tube cleaner embodying my invention. Fig. 2 represents a longitudinal section of a portion thereof on an enlarged scale. Fig. 3 represents an end view thereof on an enlarged scale.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of a boiler-tube cleaner which is of simple, inexpensive, and compact construction and effective in operation, as will be hereinafter set forth.

Referring to the drawings, A represents a tube, which is provided with a branch, B, and cock or valve C, said branch being connected with a pipe which supplies the tube A with steam, the supply being regulated by said cock. At the forward end of the tube is a head, D, which is somewhat flaring, and has within it a conical plug, E, between which and the head is a passage, F, whereby steam is directed to the inner periphery of the boiler-tube to be cleaned.

Surrounding the tube is a sleeve, G, which is open at one end, and has at the other end a head, H, which encircles the head D of the tube, said heads being separated, leaving the passage J, which opens into the boiler-tube, the end of the sleeve which faces the cock C constituting the inlet end of said sleeve and said head H the outlet end thereof.

The tube is provided with a handle, K, for convenience of handling and operation of the cleaner, and the head end is inserted into the boiler flue or tube, the head H of the sleeve abutting against the end of the boiler-tube, as seen in Fig. 2. Steam enters the tube A, and is directed through the same, escaping at the head D, and passes into the boiler-tube, thus cleaning the same. Air enters the sleeve G, and is warmed by contact with the tube A, and escapes at the head H, uniting with the steam in the boiler-tube, the hot air serving to prevent rapid condensation of the steam, the air also preventing the formation of a vacuum within the boiler-tube, whereby the effectiveness of the device for cleaning the boiler-tube is increased.

I am aware that it is not new to construct tube-cleaners for boilers with inlet-passages for air heated by the steam passing through the cleaner, and such I do not claim; but in the device shown and described herein the air-passages, which at one end are open to the outer air, surround the steam-pipe, so that the air is readily heated, and also enters the boiler between the inner surface thereof and the incoming steam, which is of advantage in the operation thereof in causing the incrustations that are on the inner surface of the boiler to be more readily removed therefrom by reason of the current of hot air employed in addition to the steam. The hot-air chamber on the outside of the steam-tube also serves to prevent rapid evaporation of the steam.

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

1. A boiler-tube cleaner having an inner steam-tube and an outer air-tube, the latter surrounding the former and open at one end to the atmosphere, all substantially as and for the purpose set forth.

2. A boiler-tube cleaner composed of the steam-pipe A, having a head, D, and plug E, forming passage F, and a surrounding sleeve, G, having head H, said pipe A and head being separated from the sleeve G and head H, having the passage J between said heads D and H, the handle K, branch B, and cock C, all of said parts being combined, arranged, and operated substantially as described.

STEPHEN S. COOK.

Witnesses:
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