W. P. Heffron,

Steam-Boiler Cleaner.

No. 67,112. Patented July 23, 1867.

Fig. 1.

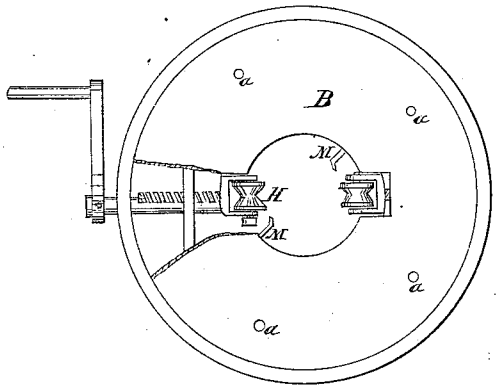


Fig. 2.

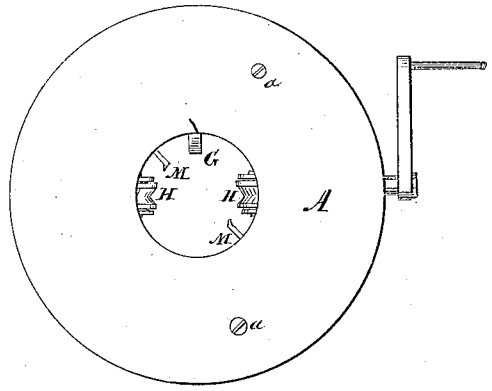


Fig. 3.

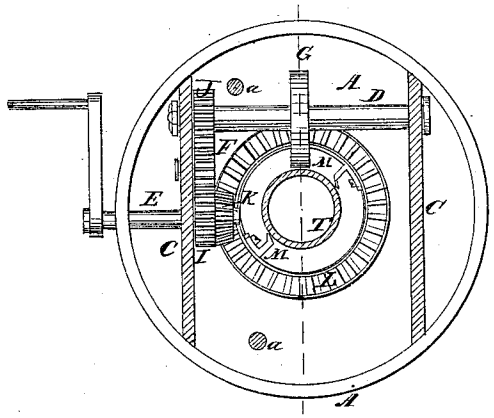
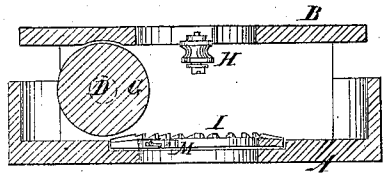


Fig. 4.



Witnesses:
Wm. L. Mann
J. M. Kentish.

Inventor:
William P. Heffron

United States Patent Office.

WILLIAM P. HEFFRON, OF CHICAGO, ILLINOIS, ASSIGNOR TO HIMSELF AND GEORGE H. SAYRE, OF SAME PLACE.

Letters Patent No. 67,112, *dated July* 23, 1867.

IMPROVEMENT IN BOILER-TUBE CLEANERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM P. HEFFRON, of Chicago, the county of Cook, and State of Illinois, have invented a new and useful improved Boiler-Tube Cleaner; and I do hereby declare and make known that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and the letters and figures marked thereon, which form part of this specification.

My invention consists in a novel device for removing the incrustations from the exterior of boiler-tubes in steam-boilers, which being arranged upon the tube gradually moves along upon the same from end to end, certain revolving cutters or scrapers in the mean time removing and scraping off from the tube all incrustations thereupon, the entire operation being accomplished simply by turning a crank.

To enable those skilled in the art to understand how to construct and use my invention, I will proceed to describe the same with particularity, making reference in so doing to the aforesaid drawings, in which—

Figure 1 represents an end view of my invention.

Figure 2 is the reverse end view of the same.

Figure 3 is end view shown in fig. 1 with plate B removed, and

Figure 4 is a sectional view, taken at the line *x* in fig. 3.

Similar letters of reference in the several figures denote the same parts of my invention.

A represents a cylindrical case, open at one end and closed at the other. The open end is closed, as shown by a circular plate, B, secured to the case A by means of posts *a*. Through the centre of the ends of the case are openings, as shown, in which the tube is arranged when the device is in operation. Within the aforesaid case are partitions C, which serve to support the shafts D E and the pinion F in suitable bearings, as shown in fig. 3. Upon the shaft E, upon which the handle is fixed, is the pinion I and a bevel-gear, K, the former of which, gearing with the intermediate pinion F, communicates motion to the shaft D by means of the pinion J. The bevel-gear K rotates the annular toothed ring L arranged in a suitable bed in the end of the case, to which are attached the cutters or scrapers M projecting radially inward, as shown in the drawings. Upon the shaft D is a wheel or roller, G, which may be corrugated, if desired, and which is designed to travel along upon the top of the tube T, as seen in fig. 3, and constitutes the feeding device, which moves the machine along upon the tube. The rollers H are adjustable by means of screws, as seen in fig. 1, and may be moved in or out to adapt the machine to different-sized tubes. The feed-rollers and cutters may be adjustable, also, in any suitable manner for like purpose.

The apparatus having been arranged upon the tube, as shown in fig. 3, the turning of the crank revolves the traveller G, which moves the machine along upon the tube, and also revolves the cutter-holder and cutters L and M M, which rest closely against the tube, and revolving continually around the same, with an advancing motion, thoroughly remove all incrustations therefrom, as desired.

Having described the construction and operation of my invention, I will now specify what I claim and desire to secure by Letters Patent:

1. I claim the combination of the travelling or feed-wheel G, and a series (one or more) of revolving cutters M, arranged and operating substantially as and for the purpose herein specified.

2. I claim the combination of the cutter-holder L with its cutters and travelling-wheel G, with the gearing shown for the purpose of operating the same, as and for the purpose set forth.

3. In combination with said travelling-wheel and revolving cutters, I claim the case A B provided with a central opening for the tube, arranged and operating substantially in the manner and for the purposes described and set forth.

WILLIAM P. HEFFRON.

Witnesses:

W. E. MARRS,

J. N. HERTHEL.