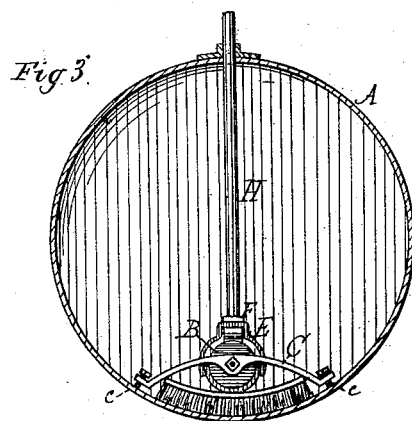
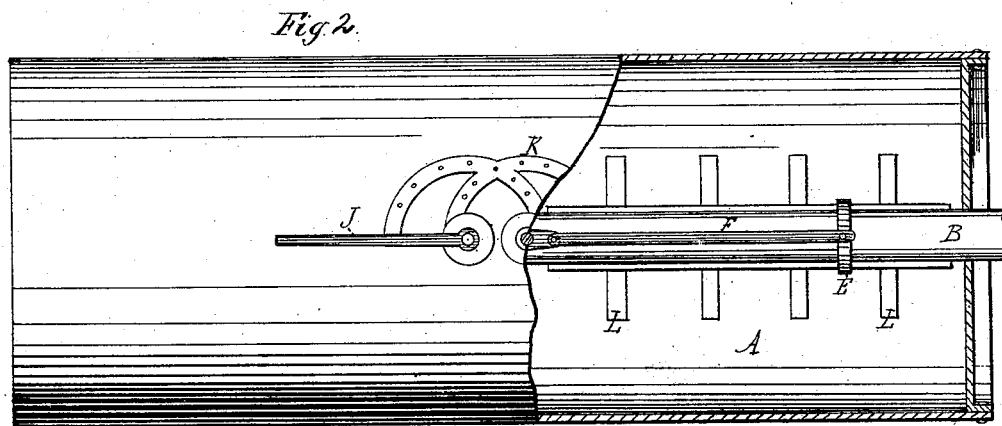
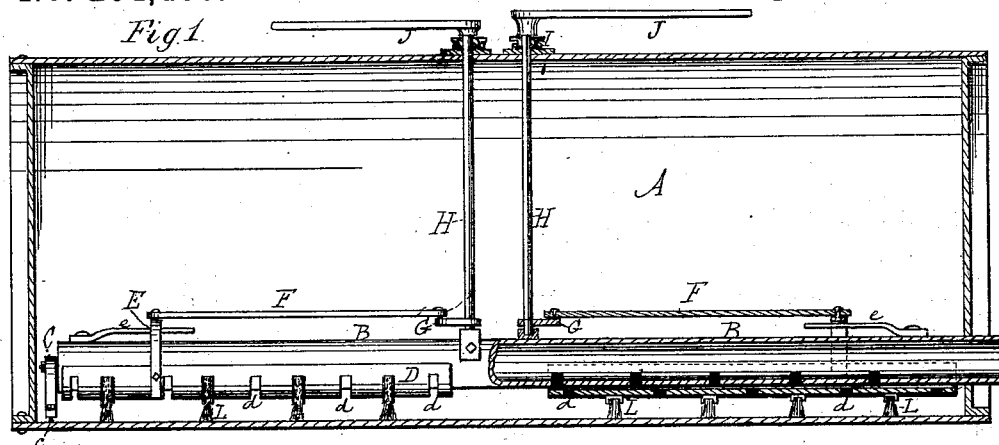


(No Model.)

H. STANTON.  
BOILER CLEANER.

No. 264,486.

Patented Sept. 19, 1882.



Witnesses:  
A. B. Robertson.  
Wm. Turner.

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# UNITED STATES PATENT OFFICE.

HENRY STANTON, OF FLUSHING, OHIO.

## BOILER-CLEANER.

SPECIFICATION forming part of Letters Patent No. 264,486, dated September 19, 1882.

Application filed March 1, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY STANTON, a citizen of the United States, residing at Flushing, in the county of Belmont and State of Ohio, have invented certain new and useful Improvements in Boiler-Cleaners; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to that class of boiler-cleaners in which a perforated pipe is used having a valve to close or open the perforations as desired; and the invention consists in the peculiar construction and arrangement of parts hereinafter more fully described, and then particularly claimed.

In the accompanying drawings, Figure 1 shows a vertical longitudinal section of a boiler having my improved cleaner attached, and represented partly in section. Fig. 2 is a plan view of the same with the top of one end of the boiler removed, and Fig. 3 a vertical transverse section.

A represents the boiler; B, a pipe passing through one of the heads, and provided at its outer end with a blow-off cock, (not shown;) but this blow-off cock is not essential. Its inner end is closed and carries the bracket C, each arm of which is provided with a set-screw, c, the end of which rests on the bottom of the boiler, by which means the free end of the pipe may be adjusted as to height. The under side of the pipe is provided with a series of apertures or slots, which are ordinarily kept closed by a semicircular valve, D, having holes d of similar form, but at different distances apart, for a purpose that will be hereinafter explained. The valve is held to its place by a yoke, E, which rests on top of a spring-bar, e, fastened to the top of the pipe B. Pivoted to this yoke is one end of a connecting-rod, F, whose other end is attached to the crank G at the lower end of the rock-shaft H, whose upper end passes through a stuffing-box at I, and is provided with a lever, J, by moving which the valve

can be moved lengthwise, so as to open the valves as desired. Attached to the top of the boiler is a semicircular index-bar, K, having marks to correspond with the holes in the pipe.

To the bottom of the valve D stirrers L are attached, which stirrers I prefer to make in the form of wire brushes of such shape as to fit the bottom of the boiler; but I propose sometimes to make the stirrers of plates of metal of suitable shape, either in one piece to fit the bottom of the boiler, or they may be made up of a series of smaller pieces of thin metal and set at an angle, so as to scrape over the bottom of the boiler, and thus stir up the sediment. These stirrers are attached to the valve in any convenient manner, but preferably by screws, so as to be easily removed or replaced, and, if preferred, a series of arms or brackets may extend from the edges of the valve to the ends of the stirrers with spring-connections between the arms, and the stirrers or the arms may be made of thin steel, so as to press the stirrers downward with just sufficient force to keep them in contact with the bottom of the boiler. The spring-bar e serves as a means of keeping the valve close against the pipe, so as to always keep it tight ordinarily, whether there is any pressure of steam or not, and yet allow the valve to slide freely.

In the description so far I have referred only to one valve and the other attachments; but for large boilers I prefer to use two or more of each, as shown in the drawings, in which the shafts for operating the valves are arranged close together, or nearly so, in which case the levers should be arranged at different heights on their shafts, so as not to interfere with each other's motions; or the shafts may be arranged farther apart, if preferred, so that the levers will not interfere with each other.

In constructing the parts I prefer to use a pipe of about two inches bore in a boiler of forty inches diameter, or in that proportion, and would have the openings made about five-eighths of an inch by two inches, but do not wish to limit myself to the exact proportions, either as to the size of the pipe or the openings therein. The apertures in the pipe and valve

should be so arranged that they will not all open at once, but should be so made that they may be opened one at a time or in sets of two or three, and the size of the aperture should be varied according to the number intended to be open at once, the proportions I believe to be best being such as will give an amount of opening in each set or the number open at once rather less than the area of the bore of the pipe.

The operation is as follows: The blow-off cock, if there be one, being first opened, the lever J is operated, and thus the valve D is moved, which, as it carries the brushes, stirs up the sediment in the bottom of the boiler, and as one or more of the openings in the pipe are uncovered by the same operation the mud is forced into the pipe D by the pressure of the steam and water above it and out at the open end. By moving the lever over either one of the index-marks and then moving it slightly backward and forward for a few times each side of said index-mark, the sediment near the opening or openings in the pipe corresponding with said index-mark is readily removed, and quickly, and by moving the lever or levers from mark to mark on the index or indexes the sediment may be readily and thoroughly removed from the whole length of the bottom of the boiler.

By the use of the two separate valves not only is either of the valves more readily operated, but one end of the boiler may be cleaned without operating the other valve, which is very convenient when more sediment collects at one end of the boiler than it does at the other end, which is generally the case, owing to the difference in the heat acting on the different ends of the boiler. In the same manner the arrangement of the apertures in the pipe in sets to be opened in succession will also be found to be a valuable feature, and especially when taken in connection with the index, for it is found that in most boilers there are places where the sediment accumulates faster than in others, and by opening the pipe oftenest at the opening nearest the point where the sediment accumulates fastest the sediment may be removed therefrom without wasting the water by opening the valves at those points where there is no necessity of removing the sediment.

What I claim as new is—

1. The combination, with a boiler, of a perforated pipe and a valve covering the openings therein, of stirring devices attached to

and moving with said valve, and devices, substantially as described, for moving said valve, whereby the act of moving the valve will also give motion to the stirring devices, as set forth, substantially as described.

2. In a boiler-cleaner, the combination, with the single perforated pipe B, extending approximately the entire length of the boiler, of the two separate independent valves D, one at each end of the pipe B, and operating devices, substantially as described, for separately moving said valves, whereby either end of the boiler may be cleaned separately or both ends simultaneously, as set forth.

3. The combination, with a boiler, of a perforated pipe, a valve provided with holes adapted to uncover the holes in said pipe at different times, suitable devices to operate said valve, and an index to show which aperture or apertures in said pipe are open, substantially as described, whereby the sediment may be removed from any part of the boiler separately, as set forth.

4. The combination, in a boiler-cleaner, of the perforated pipe B and the valve D, with the rock-shaft H, working at its upper end in a bearing, I, and supported at its lower end in a step secured to the top of the pipe B, the crank G, connected to the valve and rock-shaft, and the lever J, substantially as and for the purpose specified.

5. The combination, in a boiler-cleaner, of the perforated pipe B, with the valve D, the sliding yoke E, attached to said valve, and the spring e, secured to the pipe at one end, and having its other end fitting under the yoke and adapted to hold the valve and pipe closely together, and yet allow the valve to slide freely, substantially as described.

6. In a boiler-cleaner, the combination, with the perforated pipe B, valve D, rock-shaft H, crank G, spring e, and pitman F, of the yoke E, serving as a support for the valve and a connection between the valve and pitman, substantially as and for the purpose specified.

7. The combination, in a boiler-cleaner, of the reciprocating stirrers, suitable means for supporting and connecting said stirrers, and pipe B, and the bracket C, provided with set-screws c, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY STANTON.

Witnesses:

ALVERSON D. PETERS,  
WILLIAM WILSON.