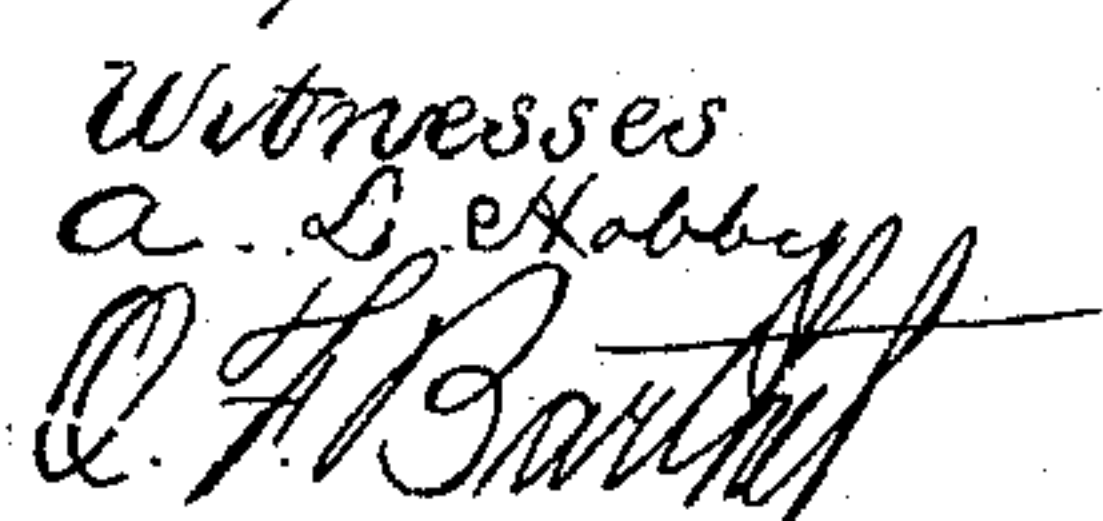


P. LOUZON.
BOILER CLEANER.

Patented June 23, 1896.



Inventor
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UNITED STATES PATENT OFFICE.

PETER LOUZON, OF DETROIT, MICHIGAN.

BOILER-CLEANER.

SPECIFICATION forming part of Letters Patent No. 562,548, dated June 23, 1896.

Application filed January 6, 1896. Serial No. 574,532. (No model.)

To all whom it may concern:

Be it known that I, PETER LOUZON, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Boiler-Cleaners, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to that class of boiler-cleaners in which the scum is collected on the surface of the water in the boiler and circulated by the aid of steam through a discharge-pipe into one or more sediment-chambers arranged outside the boiler, and then returned again into the boiler after being freed from sediment.

My invention consists in the peculiar arrangement and operation of a perforated collecting-pipe for gathering the scum-laden water in the boiler at any height of the water therein, and, further, in the combination of such scum-collecting pipe with an ejector, a discharge-pipe, sediment-chambers, and return-pipe, all as more fully hereinafter described, and shown in the drawings, in which—

Figure 1 is a diagrammatic sectional elevation of my apparatus, and Fig. 2 is a modified construction of the scum-collecting pipe.

A is the boiler.

B are sediment-chambers.

C is the discharge-pipe for carrying the scum-laden water from the boiler into the sediment-chambers.

D is the return-pipe into the boiler.

E is the feed-water pipe for the boiler, and F are the blow-off pipes from the sediment-chambers.

The inner end of the discharge-pipe C from the boiler terminates within the steam-space in a T-coupling C', the horizontal arm C² of which is about at the height of water to be carried in the boiler.

H is a perforated scum-collecting pipe extending in the longitudinal direction of the boiler. It is supported horizontally in the water-space of the boiler by means of an elbow branch pipe H', which enters a stuffing-box I, all so arranged that the pipe H is free to rise and fall with the level of the water in the boiler, in which it is kept in a floating condition by means of a suitable float or floats J, secured thereto.

The stuffing-box I is suitably secured to the arm C² and is made of non-corrosive metal and suitably large to receive a cylindrical head I', secured to the end of the elbow H'. In this manner the scum-collecting pipe can freely turn in the stuffing-box as on a pivot, and it is not liable to get fast.

I either use the construction of collecting-pipe shown in Fig. 2, in which the stuffing-box I forms the sole bearing and support of said pipe, and which construction is especially designed and applicable to boilers of medium and short length, or the construction shown in Fig. 1, in which the stuffing-box forms a bearing at or near the forward end, while the opposite end of the pipe H, which is farthest from the discharge-pipe, is provided with a lateral arm K, corresponding to the arm H', and this arm has a pivot engaging in a suitable bearing L, formed upon a supporting-standard K', which is provided with a foot M, resting on the upper tier of water-tubes in the boiler, and is clamped thereto by any suitable means. In this manner I provide for the pipe H two bearings, in which the same is eccentrically journaled near its opposite ends, and is thus kept in position to freely rise and fall with the level of the water and furnish an entrance through the perforations for the surface scum and water into the pipe.

To accelerate the circulation, I preferably secure in the T-coupling C' a suitable steam-nozzle O, which communicates through a steam-admission pipe N with the steam-space of the boiler, and a combining-cone O' in suitable relation to the steam and water inlets to form an ejector, by means of which the scum-laden water from the boiler is forced out through the discharge-pipe into the sediment chamber or chambers. Each sediment-chamber is preferably made of flanged cast-iron pipe, and is composed of a T member forming the upper section and a piece of straight pipe secured to the stem of the T member and forming a lower section or mud-leg. This form and construction has the advantage that it can be readily built of any required size, and any desired number can be connected together in a row. The discharge-pipe enters the upper portion of the first sediment-chamber and extends some distance down into the lower por-

tion, where it is provided with a plurality of lateral outlets S for the free discharge of the water into the chamber. Above the discharge-openings is placed a perforated diaphragm T to
 5 prevent any violent upward currents from the discharge of the water, and to thereby cause the sediment to fall to the bottom, from which it may be blown off from time to time through the valved blow-off pipe F. The water thus
 10 freed from sediment may be conducted through other sediment-chambers of the same description and is finally returned through the pipe D into the bottom of the boiler.

A valve R is placed in the discharge-pipe to
 15 regulate the circulation and a check-valve S' is placed in the return-pipe between the feed-pipe and the boiler to prevent any possible backflow from the boiler. Another valve R' is placed between the check-valve S' and the
 20 boiler, whereby the latter may be disconnected if circumstances should require.

What I claim as my invention is—

1. In a boiler-cleaner, the combination with the boiler and discharge-pipe, a T-coupling
 25 on the discharge-pipe, a stuffing-box secured to said coupling, a scum-collector having a pipe pivotally held in said stuffing-box, means for supporting the scum-collector on the surface of the water, and a steam-nozzle in said
 30 T-coupling and communicating with the steam-space of the boiler, substantially as described.

2. In a boiler-cleaner, the combination with the boiler, of the discharge-pipe C, the stuff-
 35 ing-box I at the inner end thereof within the boiler, the perforated collecting-pipe H pro-

vided with the elbow branch H', having the cylindrical head I' journaled within the stuffing-box, and the float J, substantially as described.

3. The combination with a boiler of the discharge-pipe provided with the stuffing-box I formed thereon, the perforated collecting-pipe H, provided with the elbow branch H', extending loosely into the stuffing-box and
 45 supporting one end of the collecting-pipe, and the arm K, supporting the opposite end of the collecting-pipe, and journaled in a bearing, supported by the boiler, substantially as described.

4. In a boiler-cleaner, the combination with the boiler, the discharge-pipe, of a plurality of sediment-chambers interposed between the discharge and return pipe, each sediment-chamber being formed of a T-shaped upper
 55 section by means of which the sediment-chambers are connected together and communicating at their upper ends and a lower section of pipe connected to the stem of the T-section and forming a mud-leg, and a screen between
 60 the upper and lower sections, a water-inlet pipe extending into the lower section of each chamber below the screen, the first pipe connecting with the discharge-pipe, and a return-pipe connected to the upper section of the last
 65 chamber, all substantially as described.

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

PETER LOUZON.

Witnesses:

M. B. O'DOHERTY,
 O. F. BARTHEL.