

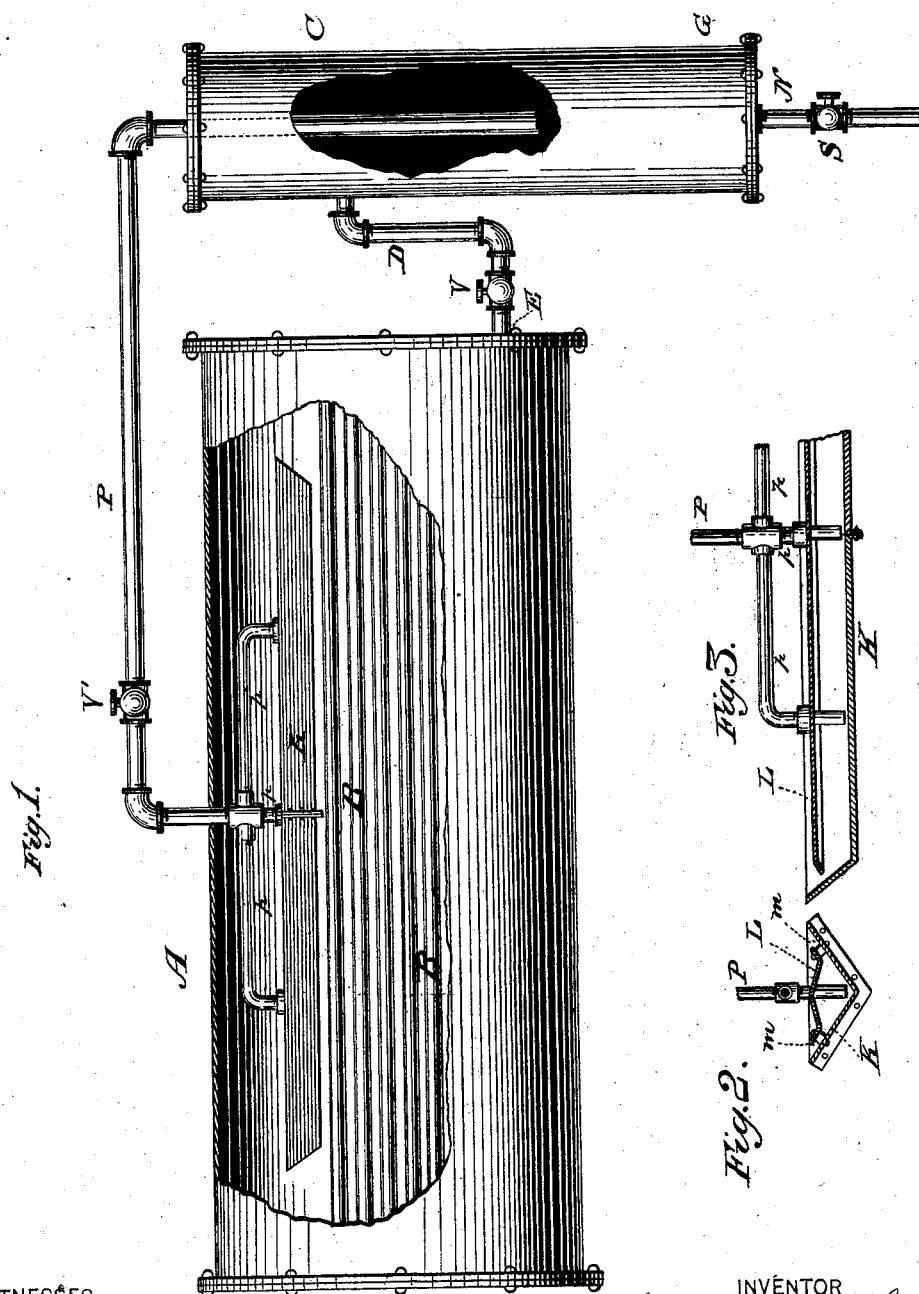
(No Model.)

J. E. MENDENHALL.

BOILER CLEANER.

No. 261,468.

Patented July 18, 1882.



WITNESSES
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BOILER-CLEANER. *

SPECIFICATION forming part of Letters Patent No. 261,468, dated July 18, 1882.

Application filed May 4, 1882. (No model.)

To all whom it may concern:

Be it known that I, JAMES E. MENDENHALL, a citizen of the United States, resident at Springfield, in the county of Clarke and State of Ohio, have invented a new and valuable Improvement in Boiler-Cleaners; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a side view, partly in section, of my device. Fig. 2 is a cross-sectional view of the trough, and Fig. 3 is a side view of the same.

This invention has relation to steam-boiler cleaners or lime-extractors; and it consists in the construction and novel arrangement of the sediment-trough and its cap-plate, the clearing-drum, and pipes leading from the cap-plate to the clearing-drum and from the latter back to the boiler, all as hereinafter set forth.

In the accompanying drawings, the letter A designates the boiler, and B B the flues therein.

C represents a cylinder or drum external to the boiler, and connected thereto by a pipe, D, leading from the top of the drum or cylinder C to the boiler, the connection with the boiler being made at E, or below the water-line. A perforated plate or diaphragm, F, is located transversely in the middle part of the drum, separating its upper from its lower portion or mud-receiver, G. Sometimes the upper or clearing chamber, H, of the drum is filled with charcoal or other filtering substance.

Longitudinally in the boiler is located a sediment trough or concave plate, K, which extends horizontally over the flue-pipes B. An inverted concave plate or cap-plate, L, of somewhat narrower dimensions, is located over the more depressed portion of the sediment-trough, a passage or passages, *m*, being left or formed between the edge of the cap-plate and the sediment-trough. The cap-plate and the sediment-trough are usually provided with lugs or ears, and bolts or rivets are passed through, connecting them together. Washers may be intro-

duced between the trough and the edge of the cap-plate on the rivets or bolts, whereby the plates are separated sufficiently to form the passages *m*. Exit tubes or pipes *p* lead from the cap-plate L to a pipe, P, which extends from the boiler to the lower part of the drum C.

N represents a discharge pipe or spout leading from the bottom of the sediment-chamber G of the drum, and provided with a stop-cock, S. The pipe D, which leads from the top of the drum to the boiler, is also provided with a check-valve at V, and a check-valve, V', is arranged in the pipe P.

The operation is as follows: The lime and dirt in the boiler rise to the top of the water before settling to the bottom of the boiler or on the flues. As the sediment-trough and its cap-plate are arranged above the flues, the sediment is caught thereby and settles through the passages *m* into the deepest part of the trough, which is under the cap-plate. From this place or chamber between the trough and cap-plate it is discharged by the steam-pressure through the pipe P into the lower chamber, G, of the drum C. In this drum the sediment settles in the chamber G, while the clear water, rising, passes back into the boiler by the return-pipe D. The sediment is finally blown out of the lower chamber of the drum through the discharge-pipe N.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

A steam-boiler cleaner or lime-extractor consisting, in connection with the boiler and a sediment-receiving drum, of the longitudinal horizontal sediment-trough K above the flues, the cap-plate L above said trough, and the passage or passages *m* between the trough and cap-plate, the sediment-carrying pipe P, and the return-pipe D, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JAMES EDWARD MENDENHALL.

Witnesses:

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