L. KING.

MUD-SIPHONS.

No. 177,522. Patented May 16, 1876.

Fig. 1.

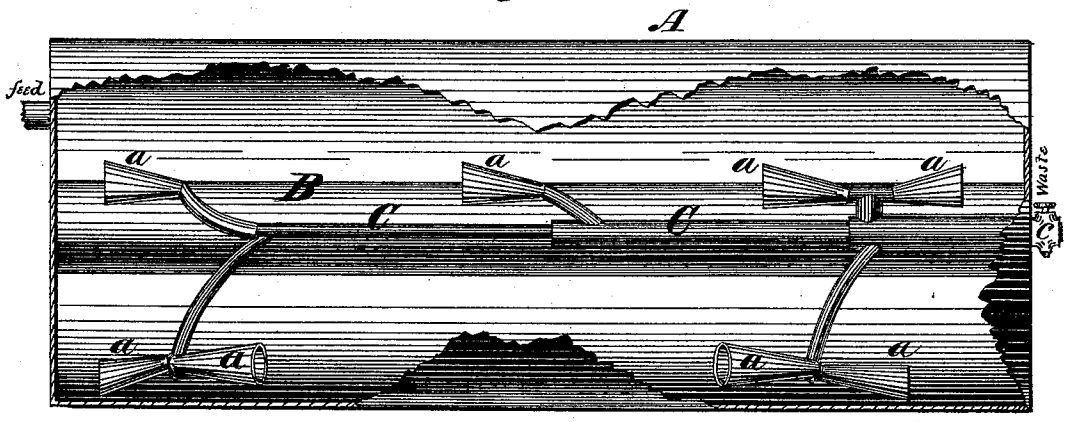
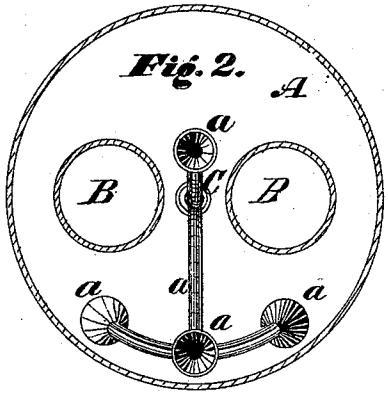


Fig. 2.



Witnesses

Theo. H. Watterson

Lewis King Inventor

By Connolly Bros. & McGehe Attorneys

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

LEWIS KING, OF ETNA, PENNSYLVANIA.

IMPROVEMENT IN MUD-SIPHONS.

Specification forming part of Letters Patent No. **177,522**, dated May 16, 1876; application filed March 31, 1876.

To all whom it may concern:

Be it known that I, LEWIS KING, of Etna, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Mud-Siphons; and I do hereby 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a longitudinal vertical section. Fig. 2 is a transverse section.

This invention relates to mud-siphons or devices for washing out the mud from steam-boilers, and consists in attaching to a boiler a pipe or tube, which passes along about the center, and diverges in several different ramifications, each branch terminating under the water-line in a funnel or bell mouth, near the surfaces where the mud usually collects, so that when put into operation the mud will all be sucked into the funnels, and so pass out.

Referring to the accompanying drawings, A is a two-flue boiler; B, one of the flues. C is a horizontal pipe, lying under the water-line, passing out through one end or side, and provided outside with a stop-cock, *c*. Inside there branch out from pipe C a number of feeders, *a*, radiating in different directions, varying with the form of boiler, and each terminating in a bell-mouth or funnel, round, oval, or other shape, of greater area than the pipes. In the illustrations, there are four of the feeders so situated as to lie between and near the top surfaces of the two flues B, and in close proximity to their mud-collecting surfaces. Besides these there are six, three near each end, lying close to the bottom of the boiler, extending in different directions. The number or location of feeders is not essential, so long as they are under water and close to the mud-surfaces.

The apparatus is not put into use till it becomes necessary to clean out the mud from the boiler, for which purpose the fires are usually neglected. Then the water is turned on with a full head through the feed-pipe of the boiler. After filling the latter, it seeks an outlet, which it finds through the various feeders *a*. But these, by reason of their shape and the force of the current, cause each an eddy in the water in front and around it. This stirs up the mud in the proximate and adjacent surfaces, which then whirls into the vortex and is carried off with the water through pipe C, which is made of increasing diameter, to meet the requirements of the feeders. A few minutes suffice to carry off all the mud deposited.

I am aware that a patent has been granted, August 17, 1875, for a boiler-cleaner having pipes extending into the water; but they are to keep up a constant circulation, the mud being collected in and drawn off from a superposed reservoir, and the pipes are not located near the mud-surfaces. I therefore disclaim the use of a reservoir, as my devices are intended to be merely used at intervals after the mud has settled in the boiler. The invention of Kemp, referred to, is to prevent the deposit of sediment in the boiler by giving it a reservoir to collect in. Mine is for no such purpose, as I allow the sediment to collect, and then carry it off by suction.

What I do claim, and desire to secure by Letters Patent, is—

The herein-described mud-siphon, consisting in a pipe or pipes communicating with the interior of the boiler, and having, under the water-line inside, wide-mouthed vortex-forming feeders, located near the different mud-collecting surfaces, arranged and operating substantially as and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand this 21st day of March, 1876.

LEWIS KING.

Witnesses:

NORMAN KING,

JOHN R. MCKEE.