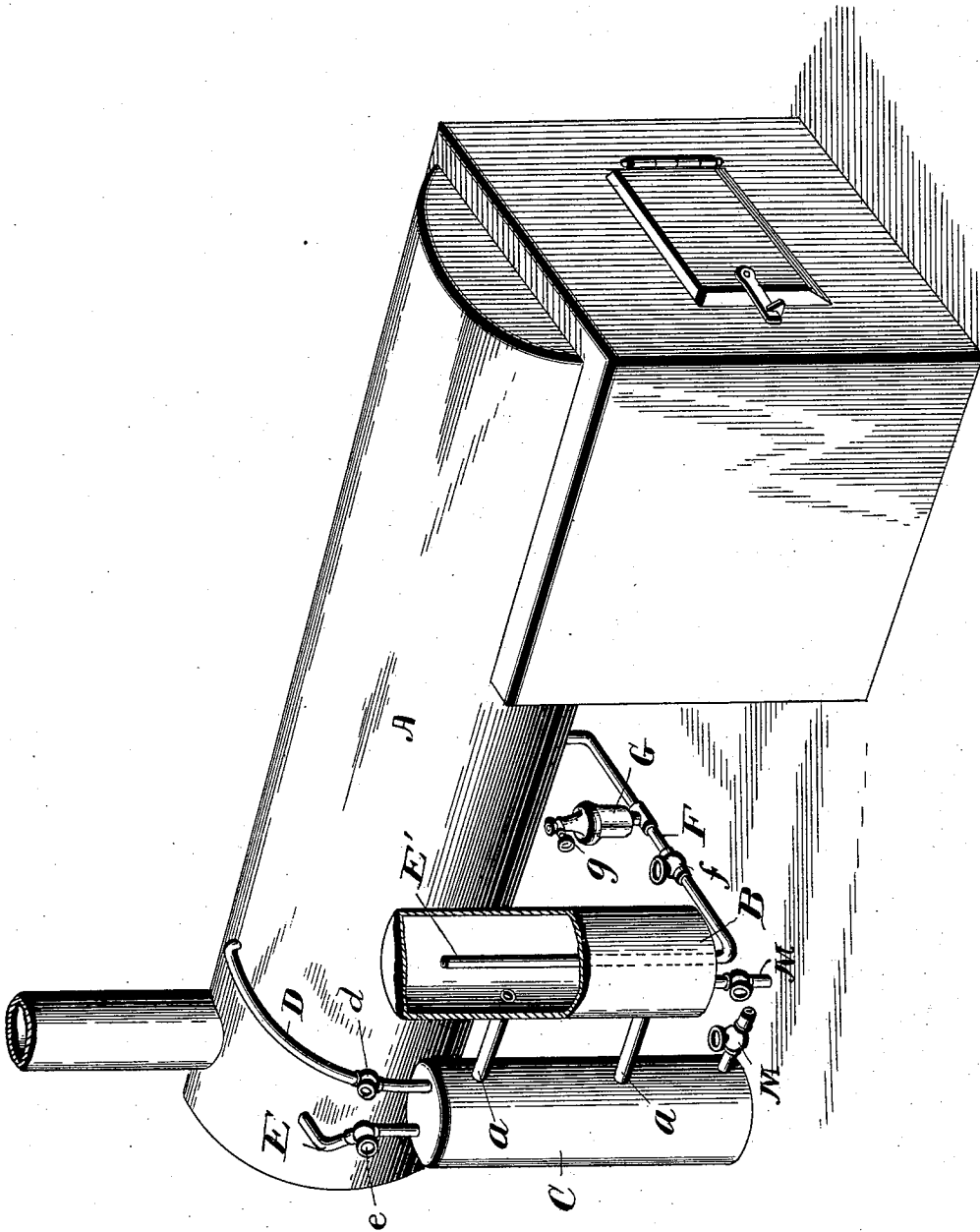


(No Model.)

D. N. BAXTER.
BOILER CLEANER.

No. 468,863.

Patented Feb. 16, 1892.



Witnesses

Albert Spiden.
Van Buren Hillyard.

Inventor

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UNITED STATES PATENT OFFICE.

DANIEL N. BAXTER, OF BEARDSTOWN, ILLINOIS.

BOILER-CLEANER.

SPECIFICATION forming part of Letters Patent No. 468,863, dated February 16, 1892.

Application filed May 5, 1891. Serial No. 391,644. (No model.)

To all whom it may concern:

Be it known that I, DANIEL N. BAXTER, a citizen of the United States, residing at Beardstown, in the county of Cass and State of Illinois, have invented certain new and useful Improvements in Boiler-Cleaners; 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 appertains to make and use the same.

This invention relates to boiler-cleaners and anti-incrustating devices, and has for its object to purify water in steam-boilers and prevent the formation of scales therein.

The object of the invention is to prevent as far as possible the entrance into the boiler of mud or sediment from the sediment-chambers and to remove from the water in the boiler all foreign matter and loosen and prevent the formation of scales on the sides of the boiler or flues.

The improvement consists of the novel features and the peculiar construction and combination of the parts, which will be hereinafter more fully described and claimed, and which are shown in the annexed drawing, which is a perspective view of a boiler, showing the application of my invention thereto, one of the sediment-chambers being broken away to show the stand-pipe therein.

The boiler A, mud or sediment drums B and C, and the connections between the drums and the boiler are practically of the same construction and operation as shown in my former patent for a like invention, No. 370,306, granted September 30, 1887. Each of the mud or sediment drums is provided with a blow-off cock M, and the two drums are connected together by short nipples *a a*. The drum C is connected at its upper end with the steam-space of the boiler by the pipe D and with the boiler at the water-line by the pipe E. The drum B is provided with the stand-pipe E', which extends from the bottom thereof to within a short distance of the top of the drum, the lower end of the stand-pipe being connected with the boiler by the return-pipe F. The lubricator or oil-containing receptacle G is connected with the return-pipe F and is provided at its upper end with the cock *g*, through which the lubricant is supplied to the vessel G. The purified water

in its passage through pipe F to the boiler takes up a certain quantity of oil, which passes into the boiler with the water. The oil rising through the water in the boiler serves as a carrier and causes the impurities in the water to rise to the water-line and escape to drum C, through pipe E.

The oil serves to prevent the formation of scales within the boiler and keeps the same lubricated.

The sediment in the drum B cannot pass therefrom to the boiler because of the stand-pipe E.

The pipes D, E, and F are provided with cocks *d*, *e*, and *f*, respectively, whereby communication with the boiler through either of the said pipes may be cut off. When the sediment accumulating in the drum is to be removed, the cocks *e* and *f* are closed and the cock *d* opened. On opening either of the cocks M, the pressure of the live steam will blow off the sediment through the said cock M. To establish communication between the drums and the boiler whereby a circulation is obtained, the cock *d* is closed and the cocks *e* and *f* opened. The circulation is as follows: from boiler through pipe E, drum C, short pipes *a a*, drum B, stand-pipe E', return-pipe F to boiler. The heavier sediment is precipitated in drum C and the lighter in drum B. The water standing a longer time in the latter permits the lighter bodies to settle. Moreover, the agitation is not so great in the drum B as in the drum C. Hence ample facility is afforded for the settling of the lighter substances.

The circulation is effected by three natural forces, the first being condensation, for as the water condenses it seeks its level, the second being that the steam forces its way, carrying all impurities with it, and the third being high pressure, too low pressure causing circulation continually as long as there is over fifteen pounds of steam, carrying out and depositing all impurities in settling-drums, leaving the boiler with clean soft water.

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

The hereinbefore shown and described boiler-cleaner, composed of the following instrumentalities combined substantially in

the manner specified: two sediment-drums B and C, each provided with blow-off cocks and connected together by short pipes *a a*, the pipe D, having cock *d* and connecting the
5 steam-space of the boiler with the top portion of the drum C, the pipe E, connecting the top of the said drum C with the boiler at the water-line, the stand-pipe E' within the drum B, the return-pipe F, connecting the lower
10 end of the stand-pipe with the lower portion

of the boiler and having cock *f*, and the lubricator or oil containing receptacle G, located in the pipe F, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in 15 presence of two witnesses.

DANIEL N. BAXTER.

Witnesses:

P. T. TENDICK,

I. P. KNOPP.