

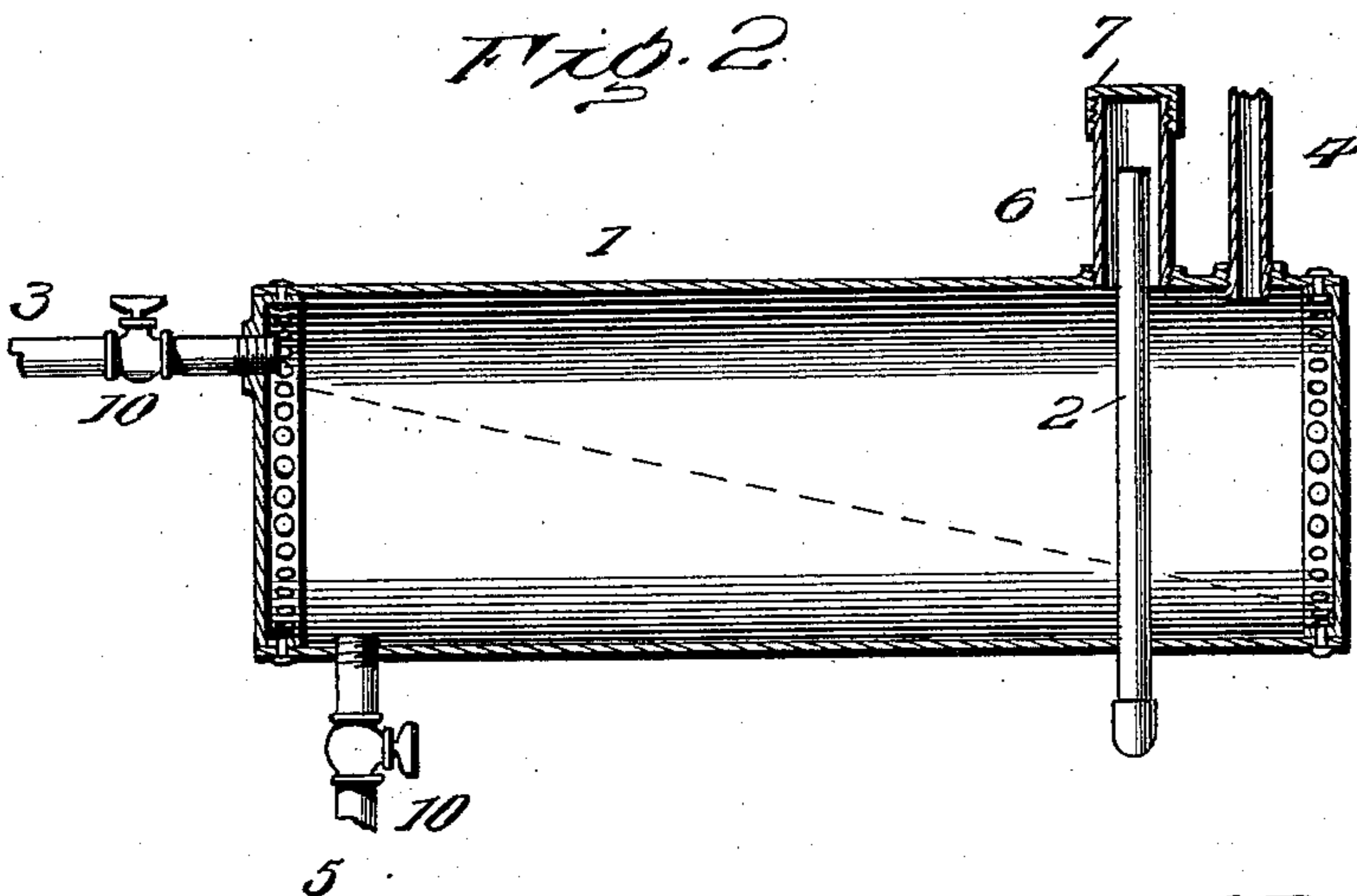
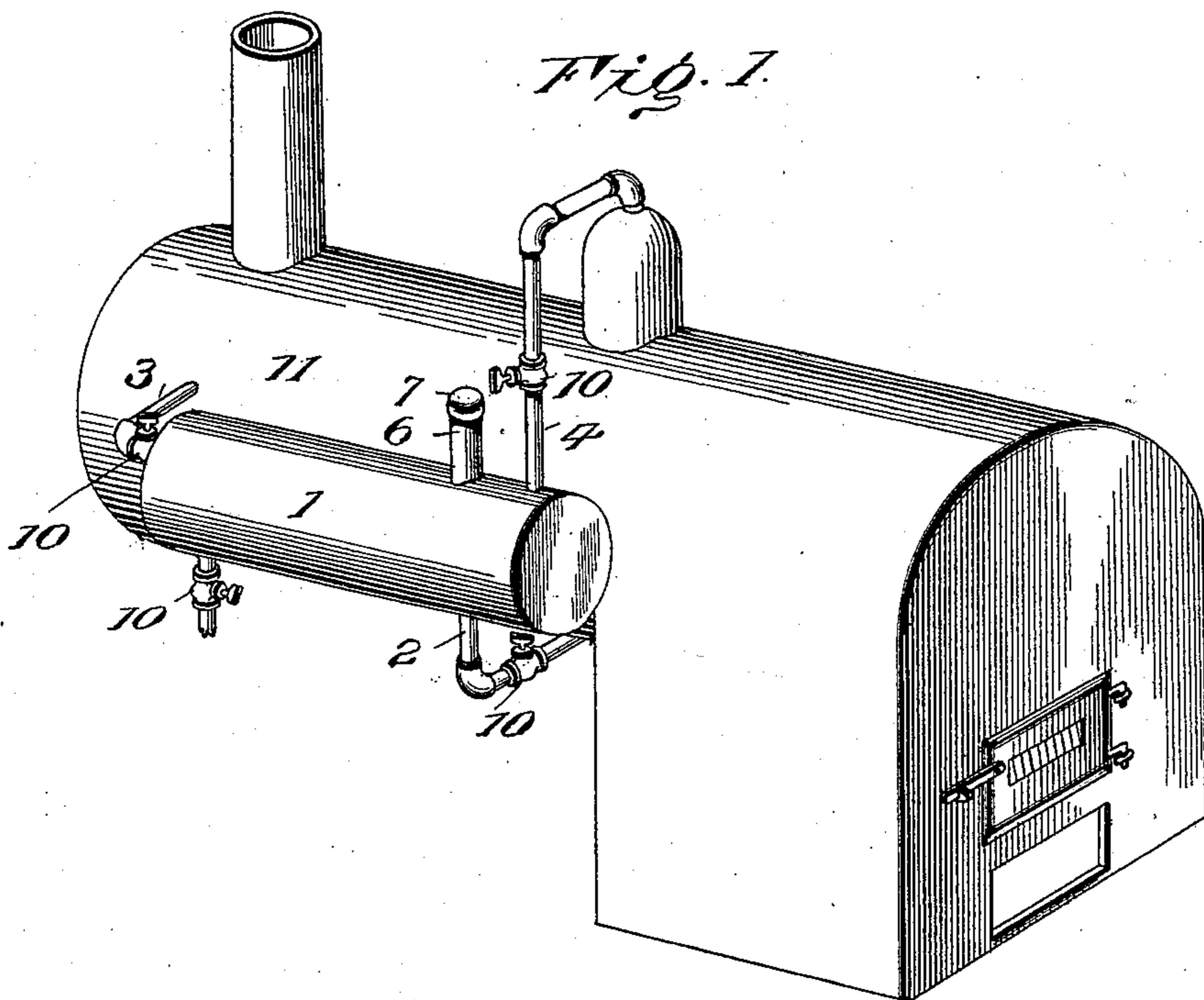
No. 692,599.

Patented Feb. 4, 1902.

D. N. BAXTER.
BOILER CLEANER.

(Application filed Sept. 4, 1901.)

(No Model.)



Inventor

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Witnesses

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UNITED STATES PATENT OFFICE.

DANIEL N. BAXTER, OF WICHITA, KANSAS, ASSIGNOR OF ONE-HALF TO
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BOILER-CLEANER.

SPECIFICATION forming part of Letters Patent No. 692,599, dated February 4, 1902.

Application filed September 4, 1901. Serial No. 74,325. (No model.)

To all whom it may concern:

Be it known that I, DANIEL N. BAXTER, a citizen of the United States, residing at Wichita, in the county of Sedgwick and State of Kansas, 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 belongs to the type of steam-boiler cleaners which remove the impurities from the water during the circulation of the latter through a case or shell by gravitative action, the heavy particles contained in the water being precipitated in the case or body of the cleaner and collecting therein as sediment, which is blown off at required intervals.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view showing the cleaner applied to a steam-boiler. Fig. 2 is a longitudinal section of the cleaner.

Corresponding and like parts are referred to in both views of the drawings by the same reference characters.

The drum, shell, or case 1 of the cleaner may be of any size and shape and is preferably of cylindrical form and arranged horizontally. A pipe 3 connects the upper portion of the shell at one end with the boiler 11 at a point about two inches above the flues, but below the level of the water therein. A pipe 4 connects the upper portion of the opposite end of the shell with the drum or steam-space of the boiler. A blow-off pipe 5 is connected to the lower portion of the shell at the end to which the pipe 3 is coupled and which is diagonally opposite the point of connec-

tion of the pipe 4 with the shell. The stand-pipe 2 passes upward through the bottom or lower portion of the shell and extends a short distance above the top or upper portion and the projecting end is incased by a pipe 6 and cap 7, the pipe 6 being larger in diameter than the pipe 2, so as to leave a space between the opposing sides of the two pipes for the circulation of water. The pipe 3 may be properly designated as the "inflow-pipe" and the pipe 2 as the "outflow-pipe," and these two pipes are located at opposite ends of the shell or case, thereby providing for a precipitation of impurities from the water during the travel of the latter from the pipe 3 to the pipe 2. The receiving end of the stand-pipe is considerably higher than the delivery end of the inflow-pipe 3. Hence the water must fill the shell 1 and rise in the pipe or incasement 6 before it can reach the entrance end of the outflow-pipe 2. The several pipes 2, 3, 4, and 5 are provided with valves 10 in order to control the circulation through the shell or drum. When the cleaner is in operation, to facilitate circulation and to allow gas to escape the steam-pipe 4 should be open as well as inflow-pipe 3 and outflow-pipe 2; but the blow-off pipe 5 should be closed. When it is required to clean the shell, the valves of the pipes 2 and 3 are closed and the valves of the pipes 4 and 5 are open, and the steam entering the shell at one end blows off the sediment through the pipe 5 at the opposite end. By having the pipes 4 and 5 located at diagonally opposite points the steam is caused to travel through the entire length of the shell or drum, thereby carrying off the sediment and thoroughly cleaning the shell.

As indicated in Fig. 2, the sediment collects more rapidly at the end of the shell to which the inflow-pipe 3 is connected and accumulates more slowly toward the opposite end to which the outflow-pipe 2 is connected. This action is due to the quick precipitation of heavy particles in quiet water as soon as the water enters the shell and to the more tardy precipitation of the lighter particles. The dimensions of the shell or drum will be governed by the capacity of the boiler and should

be of such linear extent as to insure complete precipitation of all impurities separable by heat and gravitative action.

Having thus described the invention, what
5 is claimed as new is—

The herein-described boiler-cleaner comprising an oblong shell or drum adapted to be arranged horizontally, steam and blow-off pipes connected to the shell at diagonally
10 opposite points, the steam-pipe being uppermost and the blow-off at the lowest point, an inflow-pipe connected with the upper portion of the shell at the end having the blow-off pipe, an outflow-pipe at the opposite end of

the shell and passing upward through the bottom and top thereof and projecting a short distance above the shell, and a casing secured to the shell and inclosing the projecting end portion of the outflow-pipe and spaced therefrom, substantially as and for the purpose set
20 forth.

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

DANIEL N. BAXTER. [L. S.]

Witnesses:

W. T. MATSON,
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