

(No Model.)

C. D. WILCOX.

BOILER CLEANER.

No. 363,443.

Patented May 24, 1887.

Fig. 1.

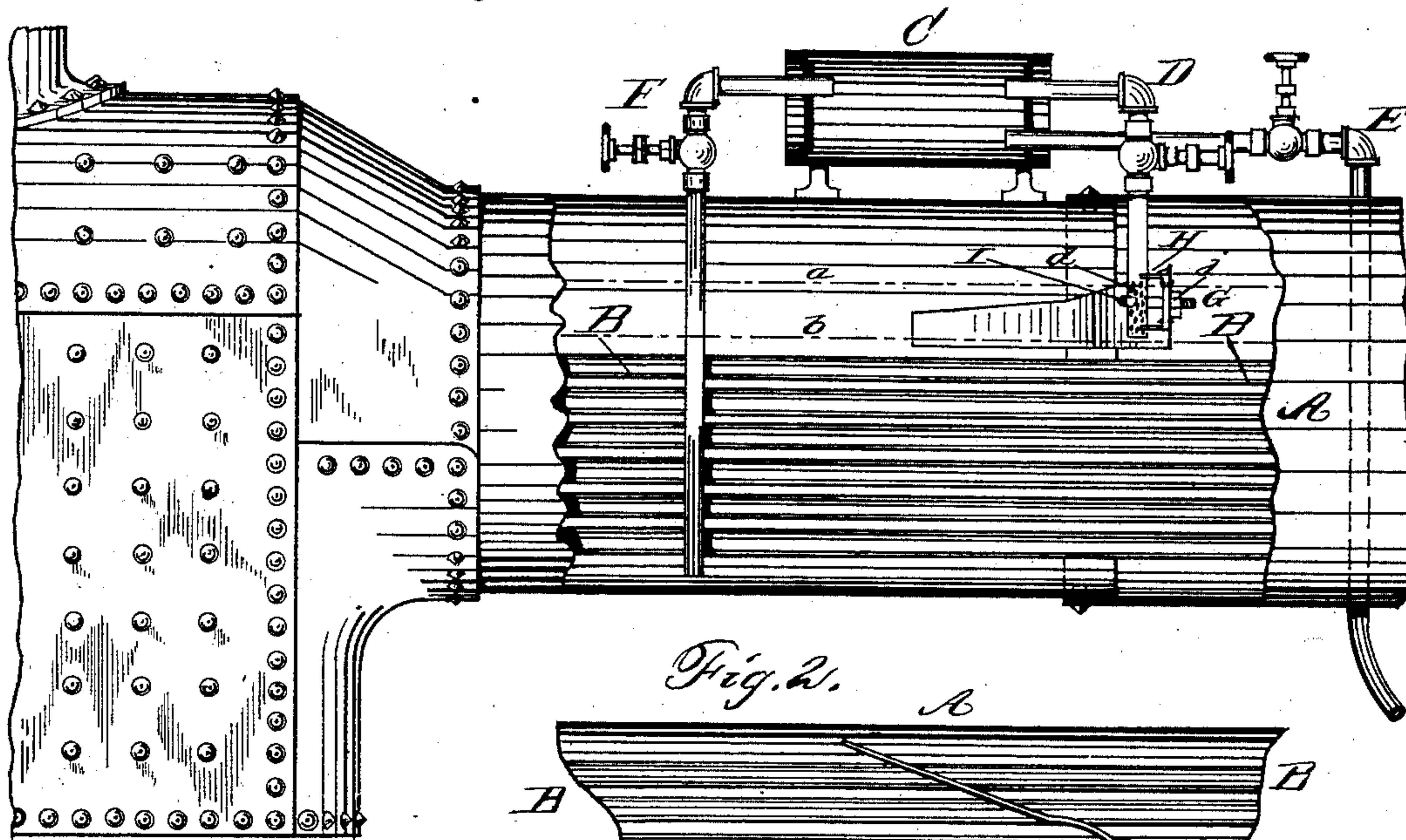


Fig. 2.

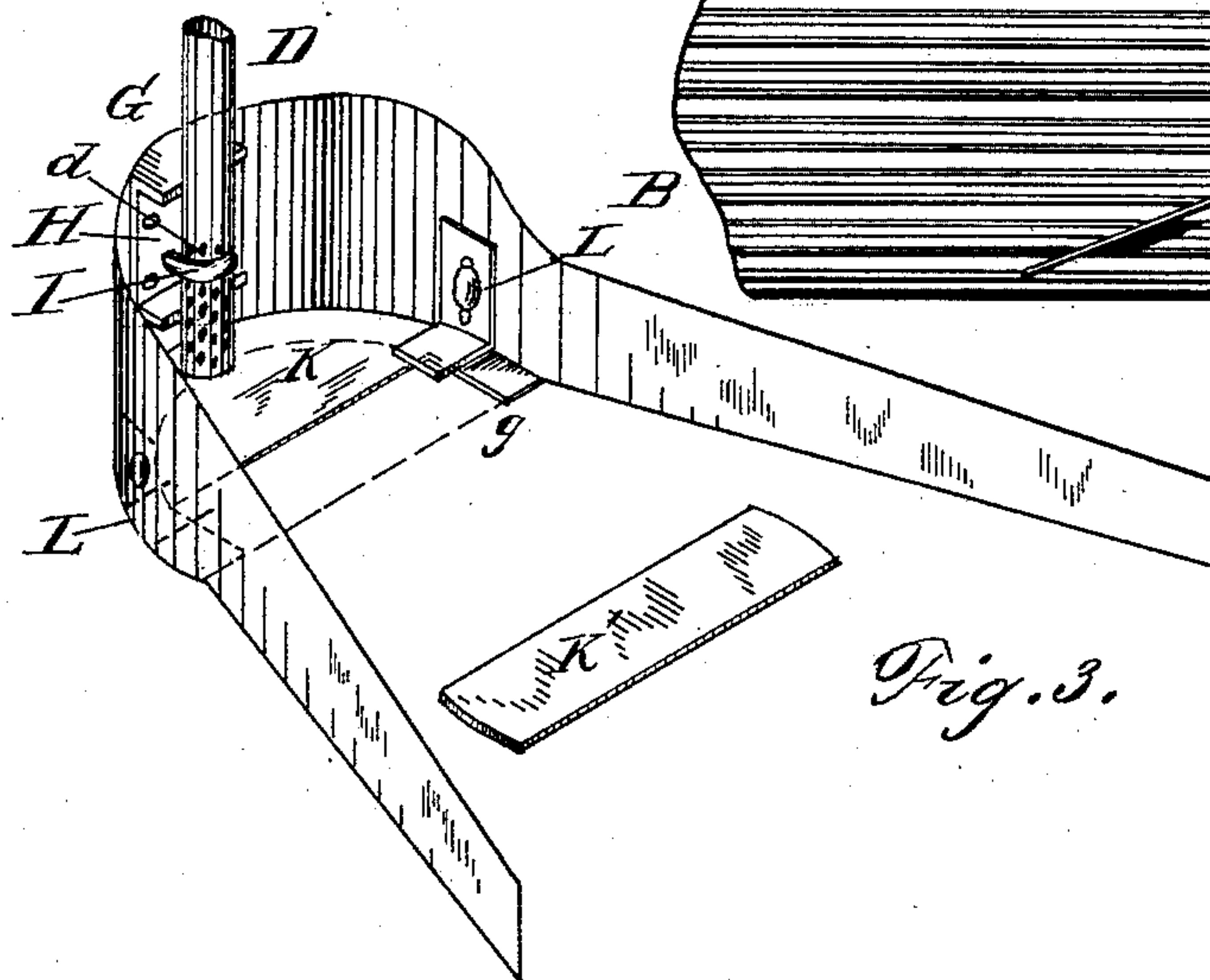
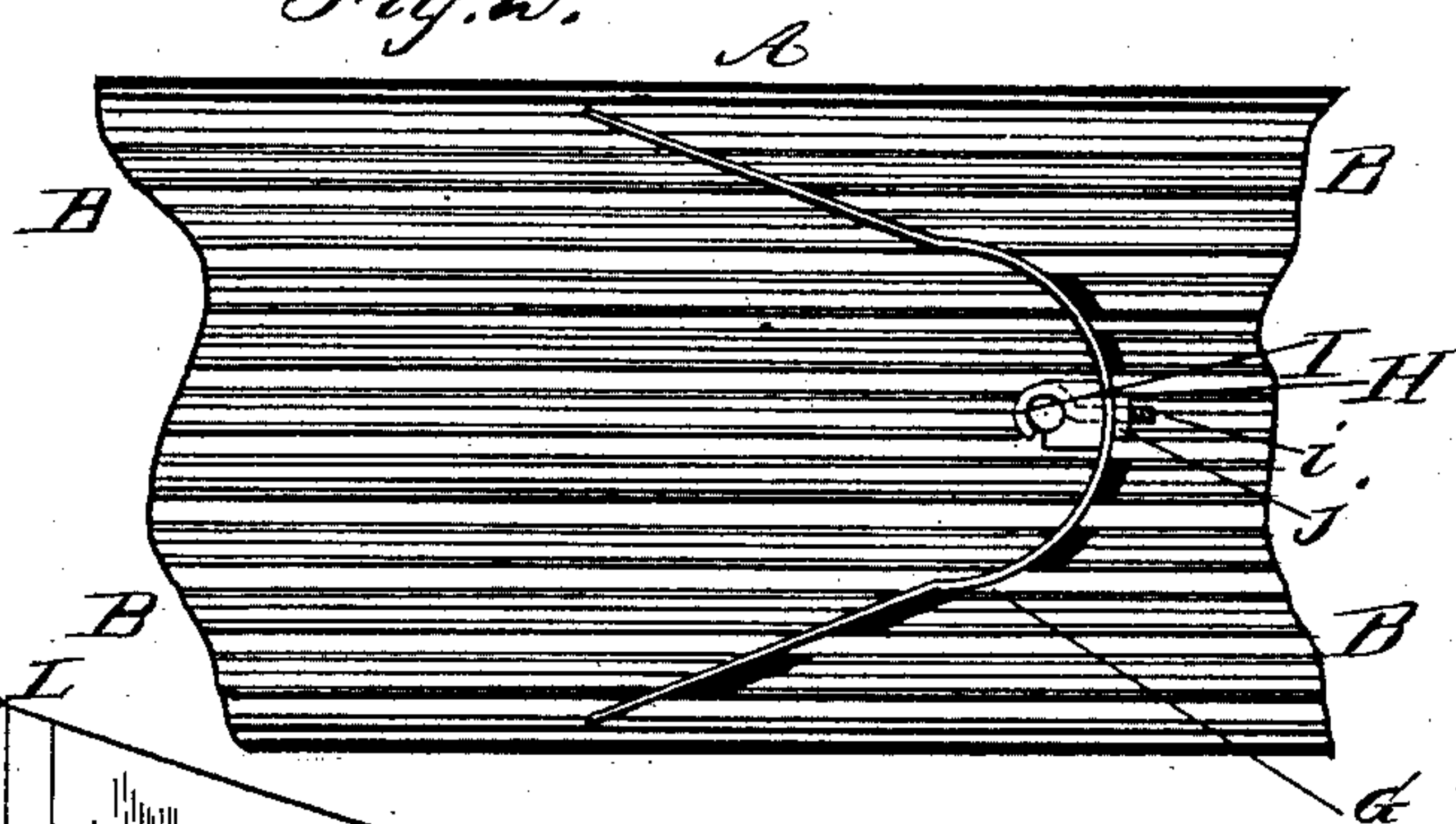


Fig. 3.

Witnesses

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CHARLES D. WILCOX, OF INDIANAPOLIS, INDIANA.

BOILER-CLEANER.

SPECIFICATION forming part of Letters Patent No. 363,443, dated May 24, 1887.

Application filed December 23, 1886. Serial No. 222,247. (No model.)

To all whom it may concern:

Be it known that I, CHARLES D. WILCOX, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Boiler-Cleaners, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, in which—

10 Figure 1 is a side elevation of a boiler, partly broken away to show in longitudinal section the settling-drum and my improved skimming device. Fig. 2 is a horizontal section of a boiler, showing a plan view of my skimmer in
15 position. Fig. 3 is a perspective view of a modified construction of my skimmer.

The same reference-letters apply to corresponding parts in all the views.

The boiler A, with its tubes B, may be of
20 any desired construction, the drawings showing one of the common locomotive type. The settling-drum C may be conveniently attached to the boiler, as shown. The uptake-pipe D enters the drum near the top, while the blow-
25 off pipe E connects with said drum near the bottom. A pipe, F, for returning the cleaned water to the boiler runs from the upper part of the drum C to a point near the bottom of the boiler, as shown. All these pipes are pro-
30 vided with suitable stop-valves for the purpose of regulating the flow of steam and water through them. These parts are all old and well known. Their function is to carry the
35 the surface of the boiling water in the boiler up into the drum, where the impurities settle to the bottom and may be blown out through the pipe E, while the clear water rises to the
40 upper part of the drum and is returned through the pipe F to the boiler.

My invention lies in the scum-collector or
skimmer and the uptake-pipe, which collect
the scum and conduct it to the drum. Here-
45 tofore these skimmers have been in the form of perforated pipes or scoops, or flaring bell-mouthed contrivances, or the like. In practice many of them have been found faulty and
unreliable, mainly because they do not provide for more than a slight variation in the
50 level of the water. Moreover, the skimmer has usually been secured to the uptake-pipe in such a way as to render their separation

difficult or even impossible, entailing the expenditure of much time and labor when it was found necessary or desirable to remove 55 the skimmer from the boiler.

My improved skimmer is designed to obviate these and other objections, and it is constructed as follows: In the first place, I perforate the lower part of the uptake-pipe D with 60 a large number of small holes, *d*, distributed over a length of several inches from above high-water line to below low-water line, as shown in Fig. 1, where the water-lines are indicated by dotted lines *a b*. I then partially 65 surround the pipe D with a curved metallic strip or plate, G, the lower edge of which comes close to or rests upon the tubes B. The strip G tapers from its center to the ends, the latter being spread apart until they touch the 70 inside of the boiler-shell, as shown in Fig. 2, thus giving the strip a parabolic shape, the pipe D being at about the focus. To the inside of this strip G, and at or near the center of the same, is secured a piece of metal, H, 75 the upper and lower portions of which are bent inwardly at about right angles to the strip G, as shown. The ends of this piece H are brought against the pipe D, and are held there by a hook, I, which partially encircles 80 the pipe, and is removably secured to the strip G, preferably by means of a screw-threaded shank, *i*, extended through the piece H and strip G, and provided with a nut, *j*, on the outside. This retains the strip in position 85 with reference to the pipe, but permits them to be readily separated whenever it is desired to take the skimmer out of the boiler, or to remove the pipe D for cleaning.

The strip G is deeper than the perforated 90 portion of the pipe D, so that part of the strip is always above the water-level. It stands vertically in the water and presents no obstruction to the free circulation of the water around the pipe D, there being no danger of 95 forming eddies, where scum and dirt may collect. The flaring ends catch all the surface impurities and guide them to the focus where the uptake-pipe is located.

The great range of perforations in the pipe 100 insures that more or less live steam will enter it at all times through the upper holes, creating an upward current when the valve in the blow-off pipe E is opened, while the water

which may be taken in through the lower holes serves to more thoroughly carry off the scum and keeps the pipe from fouling.

5 In the modification shown in Fig. 3 the central portion of the strip G is provided with a narrow inwardly-projecting flange, *g*, to support a plate or plates, K K'. Adjustable slides L L, attached to the inside of strip G, hold the plates K K' from displacement by the
10 ebullition of the water. One or both of these plates may be used in case it is found that the currents in the water carry the scum down under the edge of the strip G before it can be caught up by the pipe D.

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

20 1. The combination, with a settling-drum, of an uptake-pipe, D, having perforations extending over a considerable portion of its lower end, and a skimmer, G, consisting of a curved

strip of metal surrounding the uptake-pipe and secured thereto, substantially as and for the purpose set forth.

2. The combination, with uptake-pipe D, 25 having perforations extending over a considerable portion of its lower end, of the curved strip G, having flaring ends, the piece H, having inwardly-bent ends resting against the pipe D, and the hook I, encircling the pipe and
30 removably secured to the strip G, substantially as and for the purpose set forth.

3. The combination, with the curved strip G, having an inwardly-projecting flange, *g*, and provided with adjustable slides L L, of
35 plates K K', perforated uptake-pipe D, piece H, and hook I, substantially as and for the purpose set forth.

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Witnesses:

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