

(No Model.)

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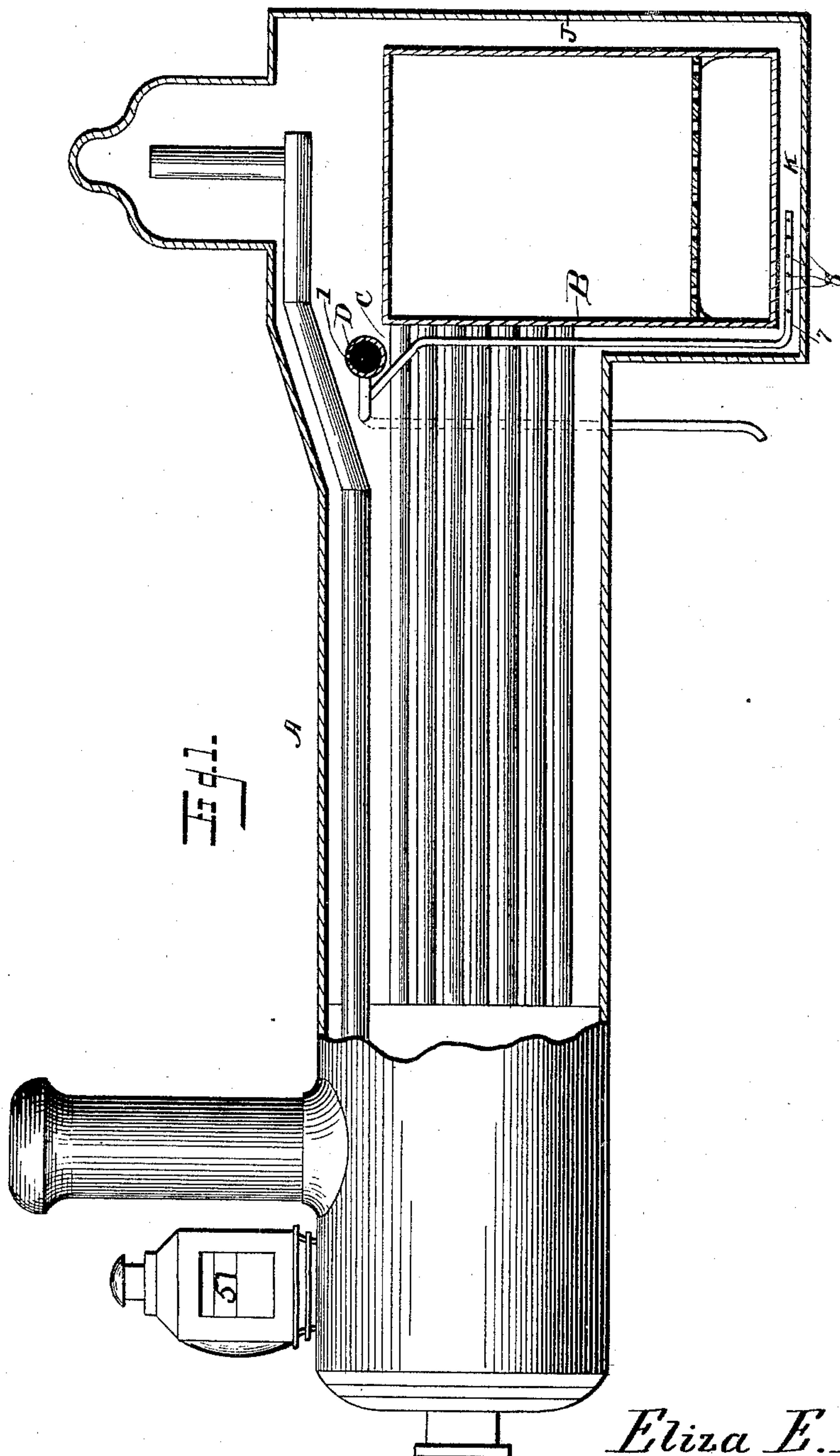
J. E. KINTZEL, Dec'd.

E. E. KINTZEL, Administratrix.

PURIFIER FOR STEAM BOILERS.

No. 458,836.

Patented Sept. 1, 1891.



Eliza E. Kintzel,

*Administratrix of the Estate of
James E. Kintzel, deceased*

*by Wm. Hunter Myers
Atty.*

Witnesses:

*J. M. Fowler Jr.
R. H. Elliott*

(No Model.)

2 Sheets—Sheet 2.

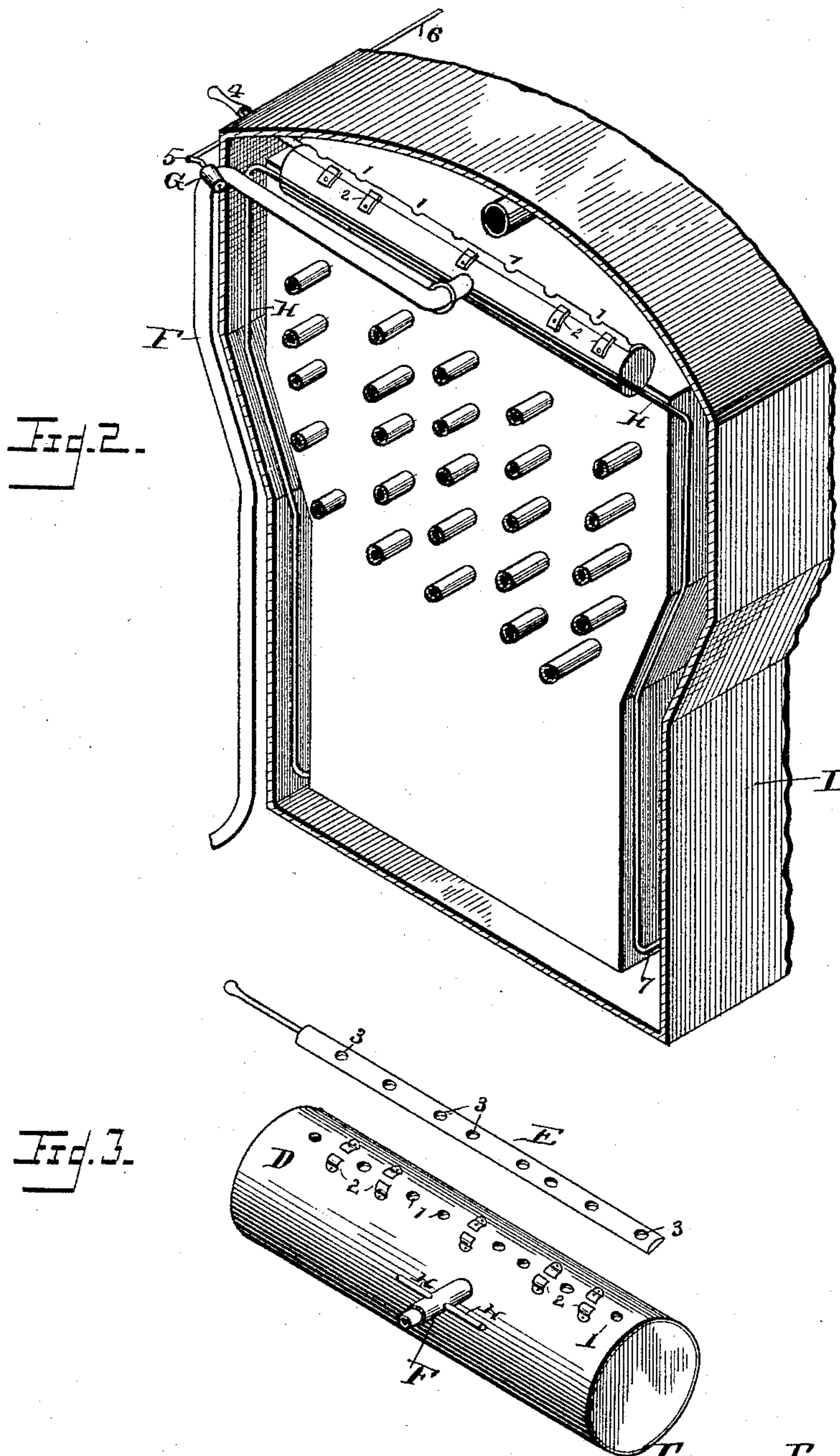
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Witnesses:

M. Fowler Jr.
W. H. Beech

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James E. Kintzel, deceased.

by Wm. Hunter Myers
att'y.

UNITED STATES PATENT OFFICE.

ELIZA E. KINTZEL, OF LA JUNTA, COLORADO, ADMINISTRATRIX OF JAMES E. KINTZEL, DECEASED, ASSIGNOR OF ONE-HALF TO WILLIAM L. VAN HARLINGEN, JR., OF SAME PLACE, AND WILLIAM L. VAN HARLINGEN, SR., OF OAKLAND, CALIFORNIA.

PURIFIER FOR STEAM-BOILERS.

SPECIFICATION forming part of Letters Patent No. 458,836, dated September 1, 1891.

Application filed April 28, 1891. Serial No. 390,741. (No model.)

To all whom it may concern:

Be it known that JAMES E. KINTZEL, deceased, late a citizen of the United States, and a resident of La Junta, in the county of Otero and State of Colorado, did in his life-time invent certain new and useful Improvements in Purifiers for Steam-Boilers; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to purifiers for steam-boilers; and it has for its object to remove the scum from the boiling water, so as to prevent the impurities therein from settling upon the back flue-sheet and the flue-pipes, whereby all tendency to incrustation or scaling will be effectually prevented.

A further object is to provide means for automatically removing all mineral or earthy deposits which may accumulate in the mud-ring.

The invention will first be described in connection with the accompanying drawings, and then pointed out in the claim.

In the drawings, Figure 1 is an elevation of a locomotive-boiler, partly in section, showing the position occupied by the improved purifier. Fig. 2 is a perspective view in section, the section-line being taken immediately back of the back flue-sheet, showing the purifier and also the mechanism for removing the mud from the mud-ring. Fig. 3 is a detached view of the purifier removed from the boiler.

Referring to the drawings, A designates the boiler, and B the back flue-sheet. Arranged within the boiler at a point adjacent to the back flue-sheet and resting upon the flue-pipes C is the purifier or skimmer-tube, which consists of a closed-end tube or cylinder D, the upper surface of which is provided with a number of perforations 1. Along each side of these perforations are secured a series of knees 2, which serve as guides for a slide E, which is also provided with a series of per-

forations 3, adapted when the slide is moved to the proper position to register with the perforations in the cylinder. The outer end of the slide extends through the boiler-shell and is provided with a handle 4.

F designates a discharge-pipe, which connects with the cylinder at or near the center of one side thereof. This pipe is curved outward and then downward and extends to within a short distance of the ground.

G designates a valve carried by the discharge-pipe. To the handle 5 of the valve is attached a rod 6, which extends within the cab, so as to enable the engineer to open or close the valve at will.

H designates two siphon-pipes, which are tapped into the discharge-pipe and extend to the sides of the fire-box I and pass down between the said box and the boiler-shell J. The lower ends of the pipes are bent backward, so as to lie in the mud-ring K, and these horizontal portions 7 are perforated, as at 8.

In carrying the invention into effect the cylinder is so arranged in the boiler that its upper surface will be slightly below the surface of the water, and being located near the flue-sheet, at which point there is the greatest accumulation of scum, owing to the intense heat, it follows that as soon as the slide is moved to bring its perforations in register with those in the cylinder the scum will escape through the escape-pipe to the ground. As long as the purifier is in operation the siphon-pipes H will remain inoperative; but as soon as the slide E is moved so as to close the openings in the cylinder the steam-pressure in the boiler will cause these pipes to siphon or suck the mud or other accumulation from the mud-ring and discharge it through the pipe F to the ground. When it is not necessary to use either the purifier or the siphon-pipes, the valve G is closed, thus rendering the device inoperative.

I am aware that heretofore devices for removing scum have been used in boilers; but I am not aware that previous to this invention a skimmer-tube has been placed transversely of the boiler and adjacent to the back flue-

sheet. By arranging the skimmer-tube as just
stated a very superior result is achieved as
compared with the arrangement of a skimming
device longitudinally of the boiler or trans-
5 versely at a point remote from the back flue-
sheet. It is well known that the greatest in-
tensity of heat is at the back flue-sheet, and
that consequently the greatest amount of scum
is generated there. Now should the skim-
10 mer-tube be arranged longitudinally of the
boiler it would serve to gather the scum in its
immediate vicinity only, and consequently its
operation to that extent would be defective.
Again, should a skimming device be placed
15 transversely of the boiler, but at a point re-
mote from the back flue-sheet, the scum back
of the skimmer would find its way to the
steam-dome and there clog the throttle. These
faults are effectually remedied by this inven-
20 tion, for as the skimmer-tube is arranged
transversely of the boiler at its rear end no
scum can reach the dome and dry-pipe with-
out passing over the skimmer, and in doing
so it will be drawn off.
25 What is claimed as the invention of the
said JAMES E. KINTZEL is—

In a steam-boiler, the combination, with the
back flue-sheet and the mud-ring, of a closed-
end cylinder arranged adjacent to and par-
allel with the flue-sheet and having a series 30
of perforations extending along its upper side,
a slide arranged on top of the cylinder and
having perforations adapted to be moved into
and out of register with the perforations in
the cylinder, a valved discharge-pipe connect- 35
ing with the cylinder and extending through
the boiler-shell, and two siphon-pipes con-
necting with the escape-pipe near its point
of attachment with the said cylinder, said
pipes extending around the fire-box and into 40
the mud-ring, the lower end of each of the
pipes being bent so as to extend within the
mud-ring and perforated in the bent portions.

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

ELIZA E. KINTZEL,
Administratrix of the Estate of James E.
Kintzel, deceased.

Witnesses:

URIEL SEBNER,
M. D. HILL.