

(No Model.)

2 Sheets—Sheet 1.

J. J. TONKIN.
STEAM BOILER.

No. 448,867.

Patented Mar. 24, 1891.

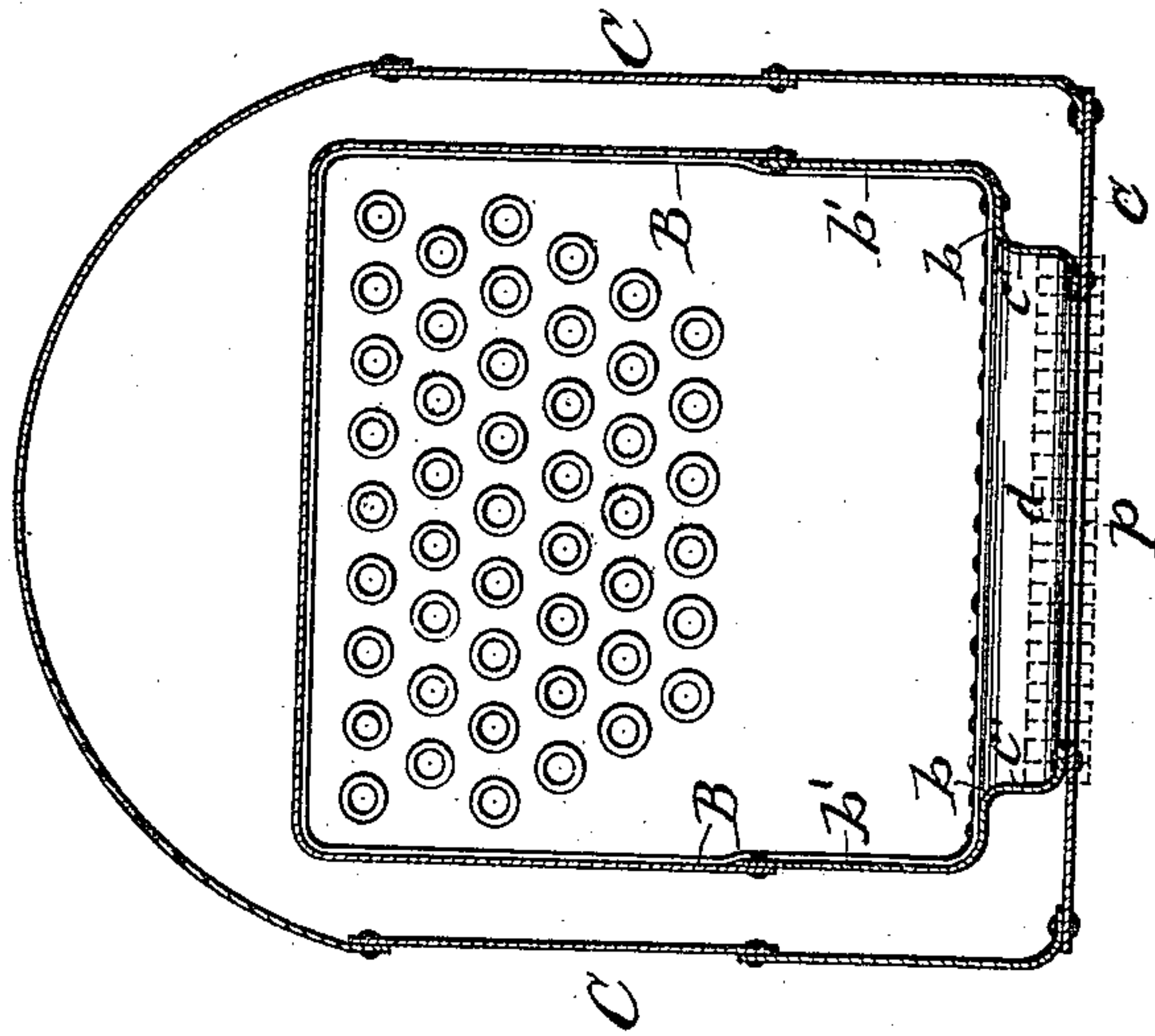


Fig. 2

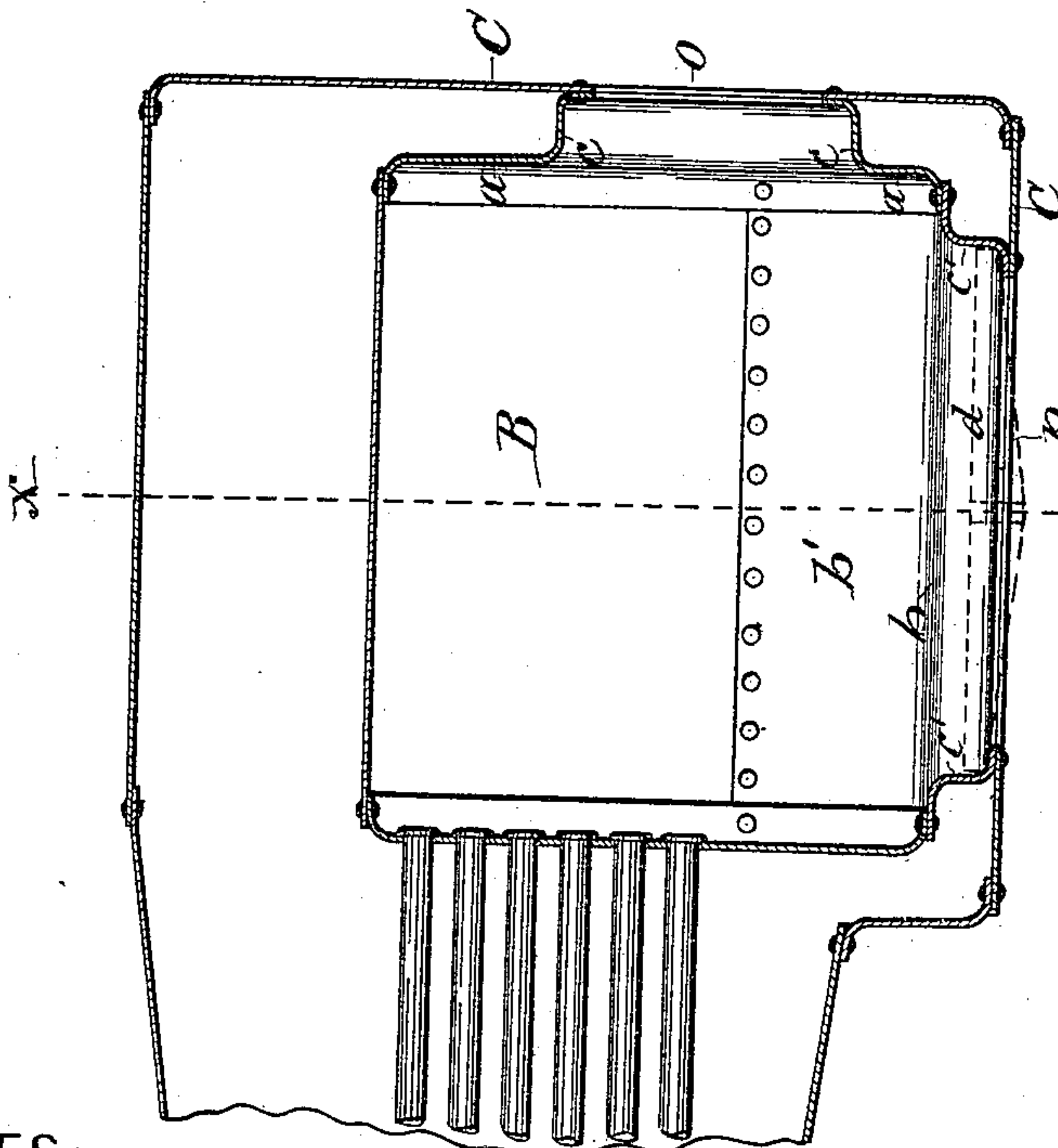


Fig. 1

WITNESSES:

H. M. Seaman
A. F. Walz

INVENTOR:

John J. Tonkin
By *Huell, Lasswell*
his ATTORNEYS.

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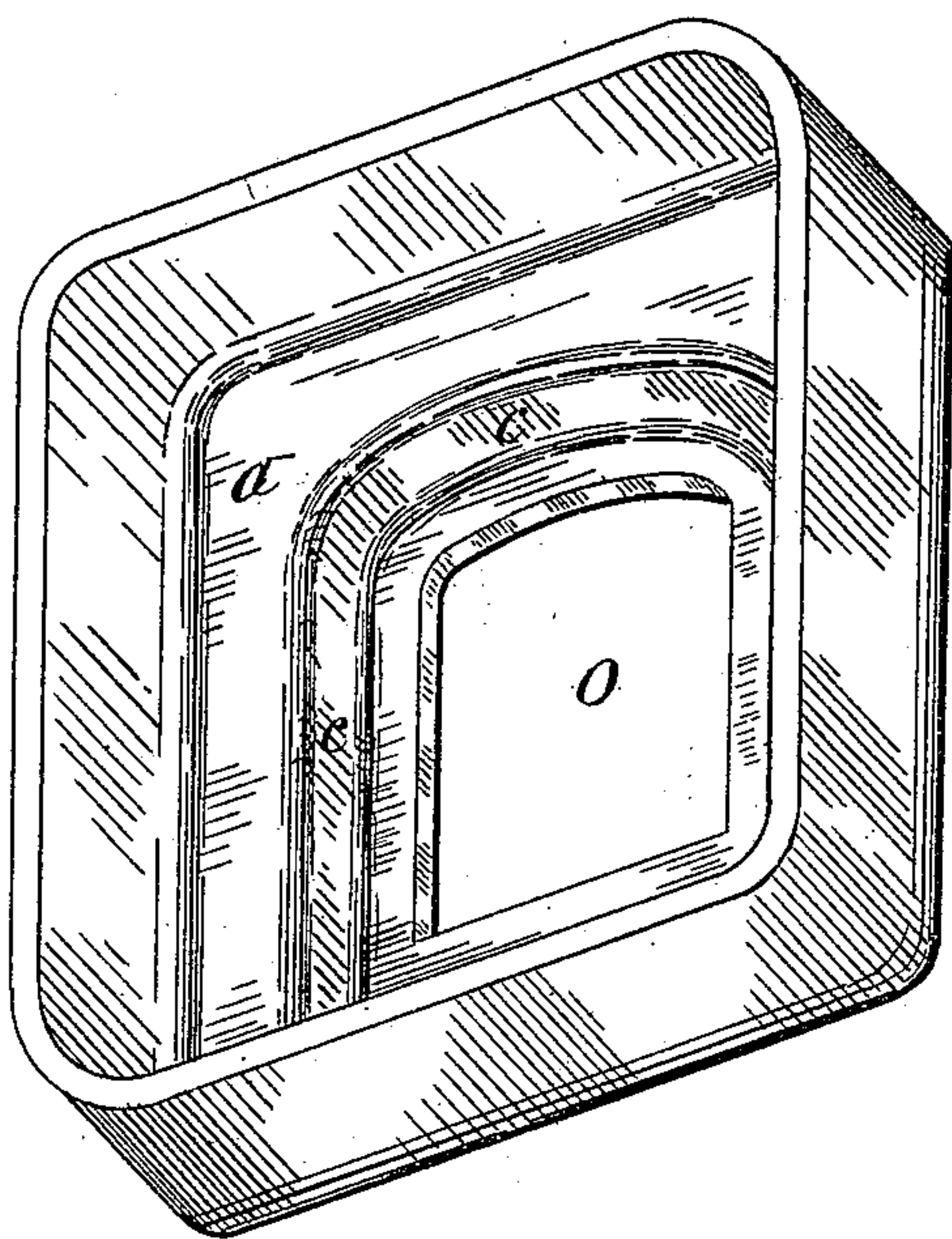


Fig. 3

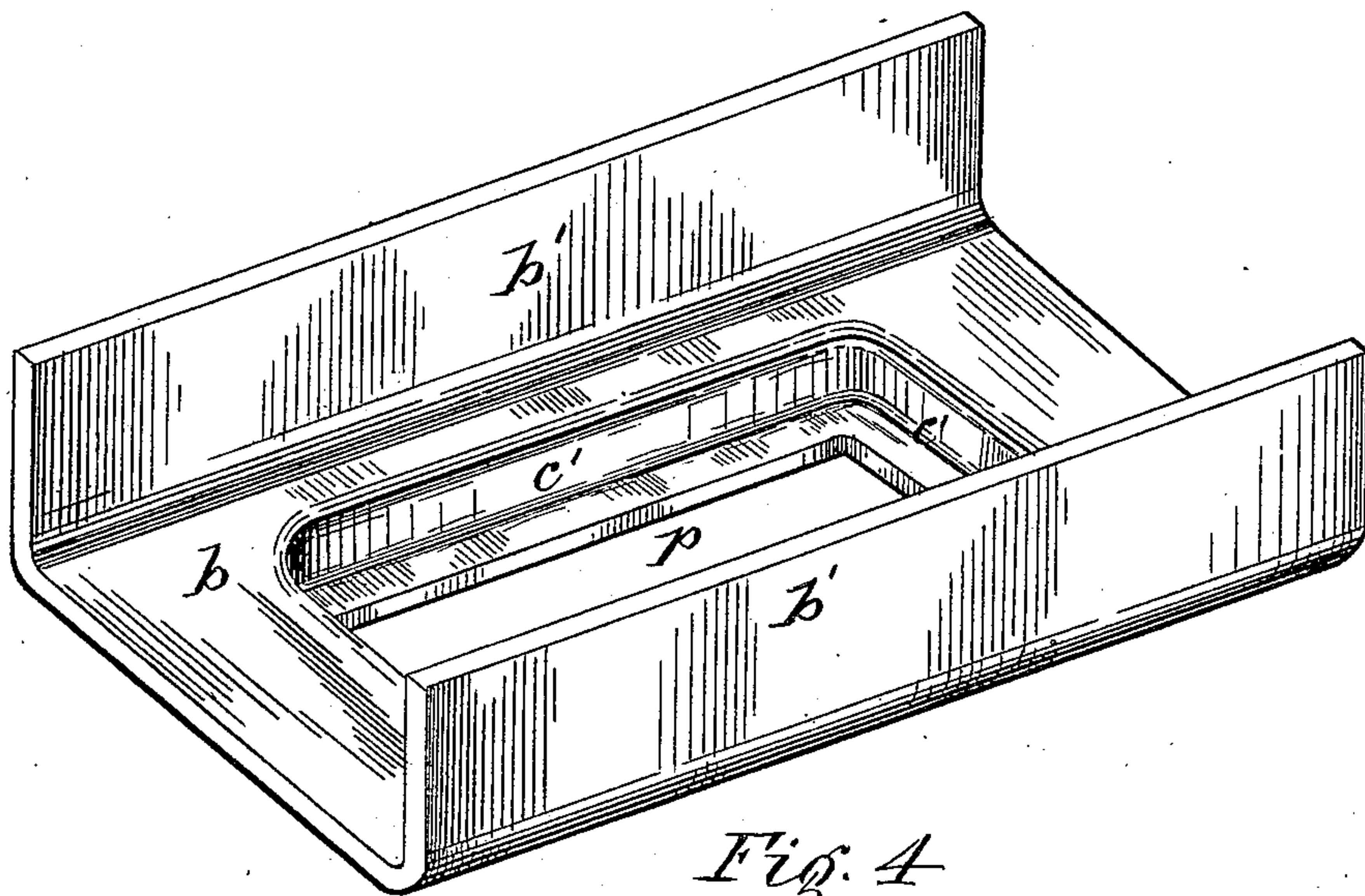


Fig. 4

WITNESSES:

A. F. Walz
H. M. Seamans

INVENTOR:

John J. Tonkin
By Hull, Lassar & Hull
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UNITED STATES PATENT OFFICE.

JOHN JAY TONKIN, OF OSWEGO, NEW YORK, ASSIGNOR TO THOMSON
KINGSFORD, OF SAME PLACE.

STEAM-BOILER.

SPECIFICATION forming part of Letters Patent No. 448,867, dated March 24, 1891.

Application filed July 25, 1890. Serial No. 359,881. (No model.)

To all whom it may concern:

Be it known that I, JOHN JAY TONKIN, of Oswego, in the county of Oswego, in the State of New York, have invented new and useful
5 Improvements in Steam-Boilers, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the class of steam-
10 boilers which are formed with a water-leg or water-jacket surrounding the fire-box, and have an opening through the bottom of the fire-box and subjacent water-jacket for the escape of ashes from the fire-box.

15 The object of my present invention is to dispense with the usual extra water rings or frames which have heretofore been interposed between the inner and outer shells around the openings thereof to form the junction be-
20 tween said shells at said openings, and also to reduce to a minimum the number of seams in the fire-box, and thus not only save time and labor in constructing the boiler, but also reduce the number of rivets required and
25 render the boiler stronger and more durable; and to that end the invention consists in the novel construction and combination of parts hereinafter fully described, and specifically set forth in the claims.

30 In the annexed drawings, Figure 1 is a vertical longitudinal section of that portion of a steam-boiler to which my improvements pertain. Fig. 2 is a vertical transverse section on line *x x*, Fig. 1; and Figs. 3 and 4 are en-
35 larged detached perspective views, respectively, of the front plate and bottom plate of the fire-box shell.

Similar letters of reference indicate corresponding parts.

40 B represents the inner or fire-box shell, and C the outer or boiler-shell, both of which are formed with coinciding openings *o* and *p*, respectively, at the front for the feed-door and at the bottom for the grate *d*, which lat-
45 ter is indicated by dotted lines in the drawings. The front and bottom plates of the outer shell or boiler-shell I preferably maintain each in a uniform plane to the edges of the openings *o* and *p*, and join thereto around
50 the said openings the fire-box shell B, with-

out the intervention of the usual extra water-rings. This I accomplish by forming the front plate *a* of the inner shell seamless and with the outwardly and reverse curved portions *c c* around the opening *o* all in one
55 piece, as more clearly shown in Fig. 3 of the drawings. These portions of the inner shell extend to the front plate of the outer shell C, and are riveted directly thereto along the edges of the openings *o* thereof, as shown in
60 Fig. 1 of the drawings.

The usual extra water-ring heretofore employed between the inner and outer shells around the bottom opening *p* I dispense with
65 by forming the inner shell B with a bottom plate *b*, which is formed in one piece with the inner side plate sections *b' b'*, and downwardly and reverse curved portions *c' c'*, as best shown
70 in Fig. 4 of the drawings. These latter portions *c' c'* of the bottom plate *b* extend to the bottom plate of the outer shell C, and are riveted directly thereto without the intervention
of the extra water-ring, as clearly shown in Fig. 2 of the drawings.

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

1. In combination with the outer shell C, having its bottom plate formed with the open-
80 ing *p*, the inner shell B, having its bottom plate *b* formed with the inner side plate sections *b' b'* and downwardly and reverse curved portions *c' c'*, all in one piece and riveted directly to the bottom plate of the outer
85 shell without the intervention of an extra water-ring, as set forth.

2. In combination with the outer shell C, having its front plate provided with the open-
90 ing *o*, the inner shell B, having its front plate *a* formed with the outwardly and reverse curved portions *c c*, all in one piece with said front plate and riveted directly to the front
plate of the outer shell along the edges of its opening, substantially as described and shown.

In testimony whereof I have hereunto
95 signed my name this 21st day of July, 1890.

JOHN JAY TONKIN. [L. s.]

Witnesses:

WILLIAM V. BURR,

BRAINARD W. BURLEIGH.