

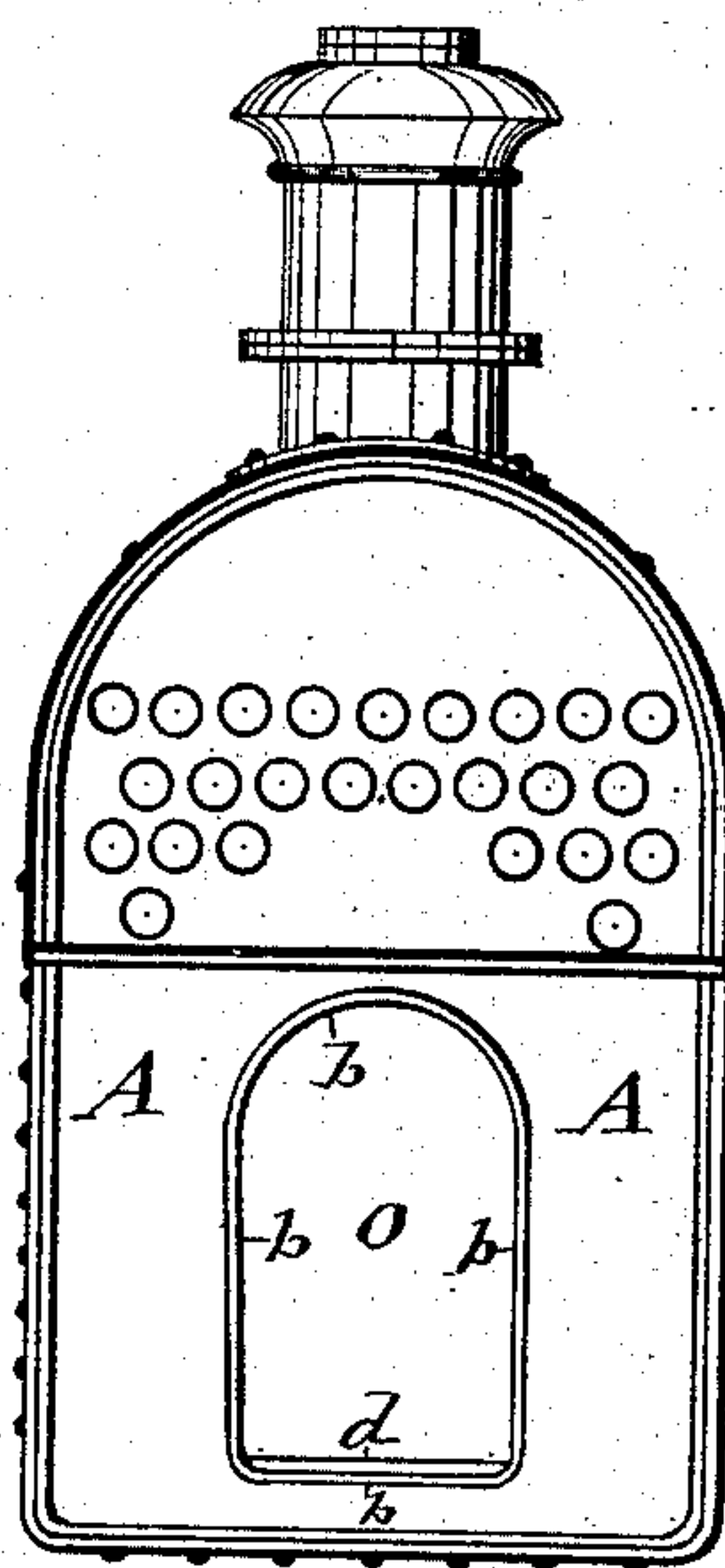
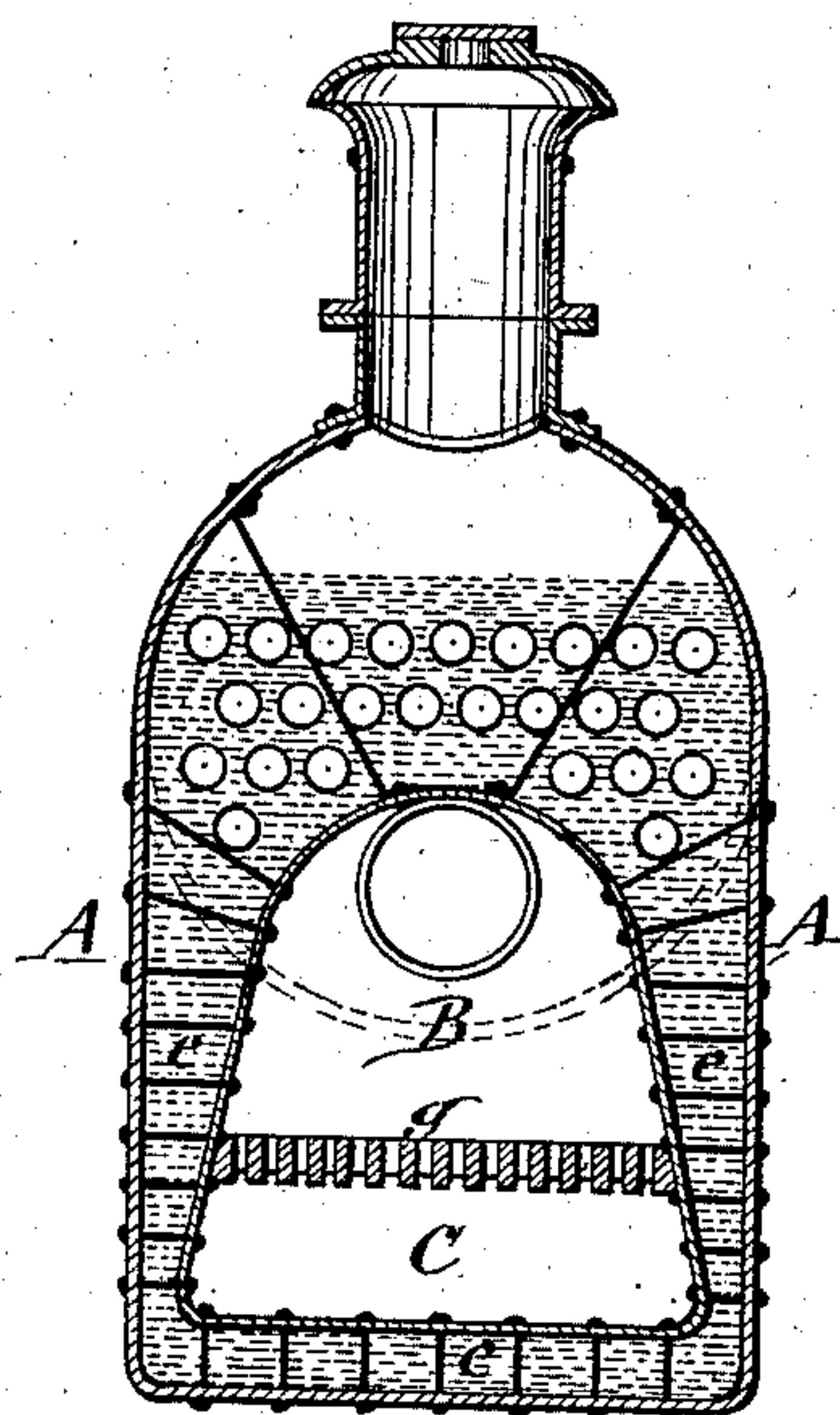
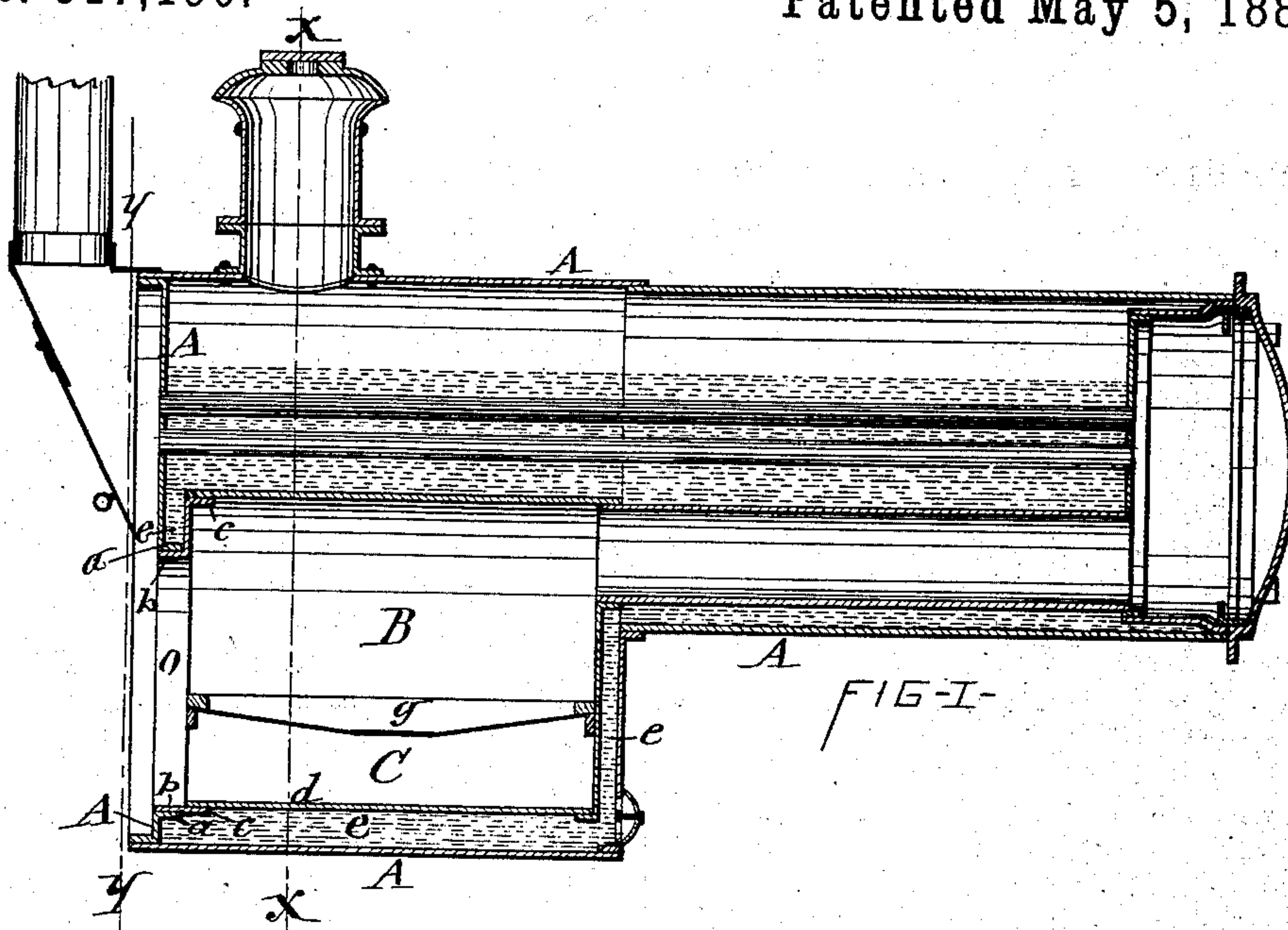
(No Model.)

G. A. PORTER.

STEAM BOILER.

No. 317,190.

Patented May 5, 1885.



WITNESSES

Chas. Bendixon

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UNITED STATES PATENT OFFICE.

GEORGE A. PORTER, OF SYRACUSE, NEW YORK.

STEAM-BOILER.

SPECIFICATION forming part of Letters Patent No. 317,190, dated May 5, 1885.

Application filed January 27, 1885. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. PORTER, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful 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-boilers which have the fire-box and ash-pit surrounded by a water-jacket; and my invention consists in an improved construction of the junction of the fire-box shell with the boiler-shell around the fire-box door and ash-pit door formed of a single opening, which improvement not only dispenses with the extra ring which is usually interposed between said shells and has the edges thereof attached to it, but also renders all the seams across the bottom of the front of the boiler horizontal, and thus easily accessible for calking and tightening.

In the annexed drawings, Figure I is a longitudinal section of a steam-boiler embodying my improvement; and Figs. II and III are vertical transverse sections, respectively, on lines *x x* and *y y* in Fig. I.

Similar letters of reference indicate corresponding parts.

A represents the boiler-shell formed at its front end with a downward extension, which surrounds the lower portion of the fire-box B and the ash-pit C and forms a water-jacket, *e*, around the same. The usual flues which conduct the products of combustion from the fire-box to the stack may be arranged in any suitable and well-known manner, and inasmuch as said features have no bearing on my invention it is unnecessary to here describe the same.

The front end of the boiler-shell I provide with a single opening, *o*, reaching from above the grate *g* to the bottom of the ash-pit, and around the said opening I form on the aforesaid shell an inwardly-projecting flange, *a*. The fire-box and ash-pit are formed of a single shell, the front sheet, which I provide also with a single opening corresponding to the opening *o* aforesaid, and said sheet I provide with an outwardly-projecting flange, *b*, around the said opening, which flange is made to lap onto the

exterior of the flange *a*, as shown in Figs. I and III of the drawings, and is riveted thereto, thus dispensing with the usual extra ring hereinbefore referred to and requiring only a single row of rivets and forming a single and easily-accessible calking-seam. Furthermore, the single door reaching to the bottom of the ash-pit permits of setting the grate higher or lower, according to the comparative capacities of the fire-box and ash-pit required for different kinds of fuel, thus allowing the boiler to be converted from a coal to a wood or straw burning boiler. The front end sheet of the fire-box and ash-pit I provide around its margin with an inwardly-projecting flange, *c*, which is riveted to the inner side of the top and sides of the fire-box and ash-pit shell. The bottom sheet of the latter, however, I lap onto the top of the bottom flange, *c*, which at this point is on a line with or in the same plane with the flange *b*, as shown in Fig. I of the drawings, to which portion of the flange *c* I rivet directly the overlapping portion of the bottom sheet, *d*, thus bringing the bottom of the ash-pit as near as possible even with the bottom of the door, and consequently allowing the ashes to be easily scraped out of the ash-pit when required.

It will be observed that by the described construction of the bottom flanges, *c b*, in one and the same horizontal plane I bridge over the bottom portion of the front water-space and connect with the bottom sheet of the ash-pit in such a manner as to obviate obstructions to the removal of the ashes and form none but horizontal seams, which are easily accessible for calking and tightening from the front of the boiler.

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

In a steam-boiler having its fire-box and ash-pit surrounded by a water-jacket, as shown, the front sheet of the boiler-shell provided with a single opening extending from above the grate to the bottom of the ash-pit and formed with inwardly-projecting flange *a* around said opening, the fire-box and ash-pit shell having the front sheet formed with a corresponding single opening and with outwardly-projecting flange *b* around said opening lap-

ping onto the exterior of the flange *a* and riveted directly thereto, said sheet being also provided with an inwardly-projecting marginal flange, *c*, the bottom portion of which is
5 in the same plane as the outer flange, *b*, and the bottom sheet, *d*, lapped onto the top of said bottom flange, *c*, and riveted directly thereto, all constructed and combined substantially in the manner specified and shown.

In testimony whereof I have hereunto signed my name and affixed my seal, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 24th day of January, 1885.

GEORGE A. PORTER. [L. s.]

Witnesses:

FREDERICK H. GIBBS,
C. BENDIXON.