

No. 672,464.

Patented Apr. 23, 1901.

J. J. TONKIN.
STEAM BOILER.

(Application filed Aug. 13, 1900.)

(No Model.)

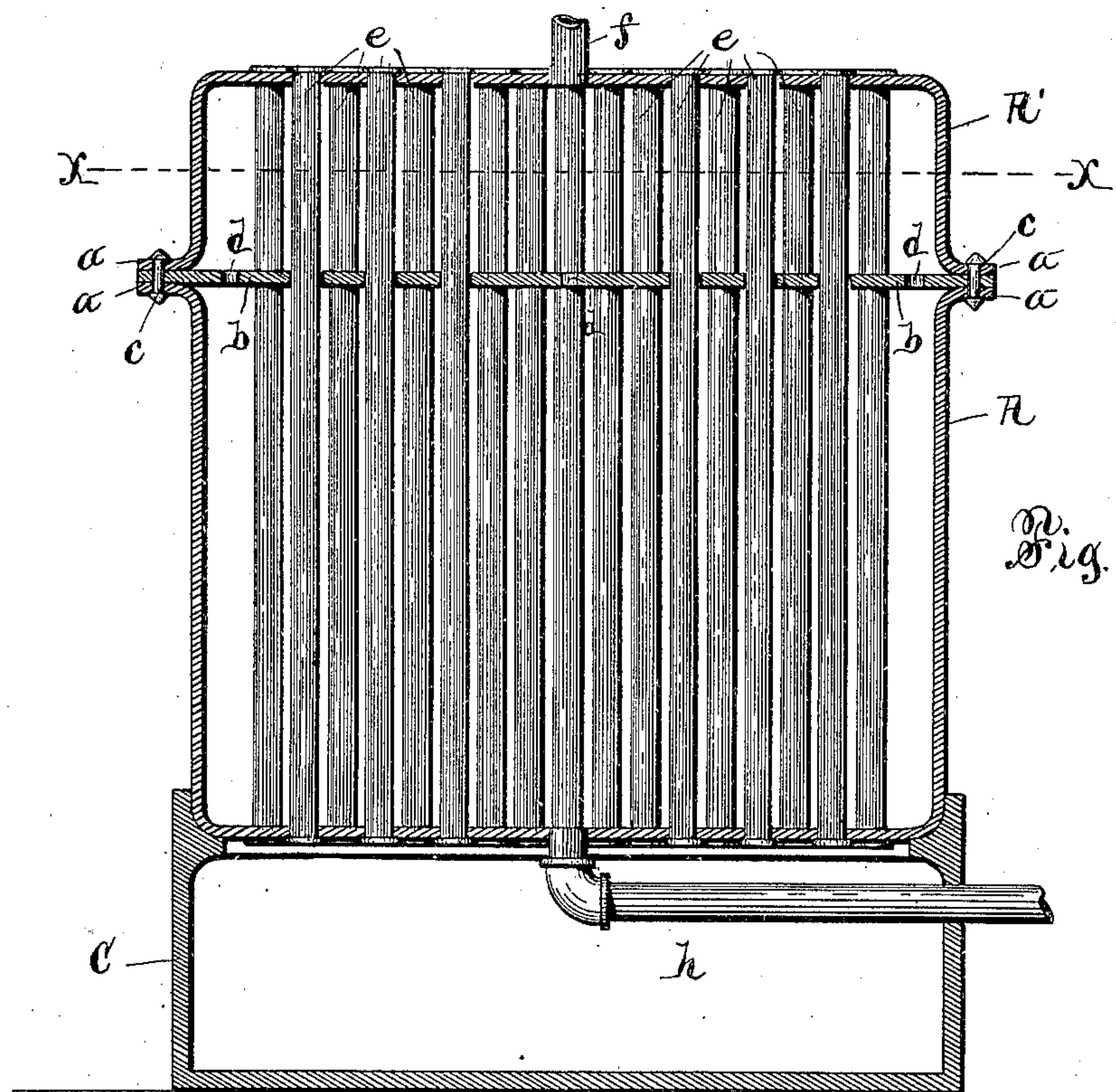


Fig. 1

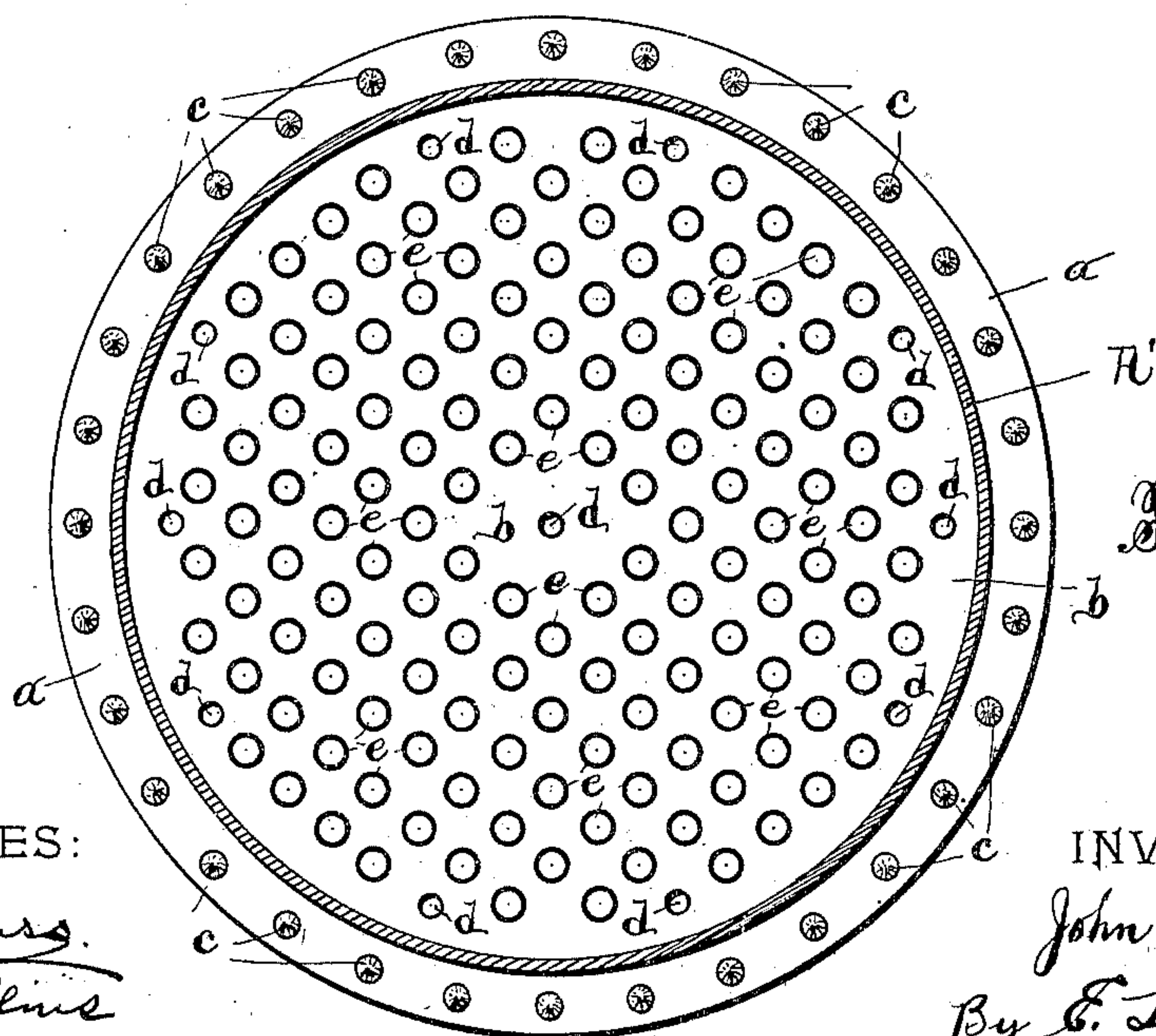


Fig. 2

WITNESSES:

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JOHN J. TONKIN, OF OSWEGO, NEW YORK.

STEAM-BOILER.

SPECIFICATION forming part of Letters Patent No. 672,464, dated April 23, 1901.

Application filed August 13, 1900. Serial No. 26,701. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. TONKIN, a citizen of the United States, and a resident of Oswego, in the county of Oswego, 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.

10 This invention relates to the class of steam-boilers which are more particularly designed for furnishing the propelling power for locomobiles.

15 The advantages accruing from this invention are simplicity of construction, strength, and efficiency in operation, and especially its guarding against the saturation of the steam incident to the foaming of the boiler.

20 The invention is fully illustrated in the annexed drawings, in which—

Figure 1 is a vertical transverse section of a steam-boiler embodying my invention, and Fig. 2 is a horizontal transverse section on line X X in Fig. 1.

25 The shell of the boiler is formed of two separate cases A and A', constituting, respectively, the water and steam compartments of the boiler. The lower case A extends to the water-line of the boiler, and the case A' is placed in an inverted position upon the top of the case A. Both of said cases are formed with outwardly-projecting perforated flanges *a a* at their junction. Between these flanges is seated the margin of a diaphragm *b*, consisting of a sheet of steel or other suitable metal, preferably copper, which sheet extends horizontally across the interior of the boiler and is firmly secured in its position by means of rivets *c c*, passing through the flanges *a a* and intervening margins of the diaphragm. These outwardly-projecting flanges serve several important purposes—viz., they stiffen the vertical walls of the boiler-shell, permit calking of the joint from the exterior of the boiler, facilitate the riveting together of the two cases A and A' with the interposed diaphragm *b*, and also form

ledges by which the boiler can be seated on the frame of the locomobile, and, furthermore, said flanges with the riveting of them near the edges thereof allows them to bend and yield sufficiently to compensate for unequal expansion of the boiler-shell and the tubes *e e*.

The chief purpose of the diaphragm *b* is to guard against foaming of the boiler or prevent the water from entering into the steam-space of the boiler. Said diaphragm is perforated, as shown at *d*, merely sufficiently to allow the steam to enter into the upper compartment A'. In addition to the aforesaid important function of the diaphragm it also serves to brace the boiler.

e e denote tubes which extend vertically through the diaphragm *b* and through the bottom and top plates of the boiler and have their ends firmly secured to said plates.

f represents the steam-pipe, and *h* the blow-off pipe.

The boiler is set upon a suitable case C, in which is placed a gasolene-burner or other suitable burner. (Not shown in the drawings.) The products of combustion from said burner pass through the tubes *e e* and effectually heat the water in the boiler, so as to rapidly generate steam.

What I claim as my invention is—

A steam-boiler composed of a bottom case extending to the water-line of the boiler, an inverted top case both flanged outward at their junction, a horizontal diaphragm seated with its margin between the flanges of said cases and perforated for communication between the upper and lower compartments of the boiler, rivets uniting the said parts at the said flanges, and tubes extending loosely through the diaphragm and through the bottom and top plates of the boiler and fastened to said plates as set forth and shown.

JOHN J. TONKIN. [L. s.]

Witnesses:

J. J. LAASS,
FRANK H. COLLINS.