

(No Model.)

2 Sheets—Sheet 1.

C. CARROLL.
STEAM BOILER.

No. 469,038.

Patented Feb. 16, 1892.

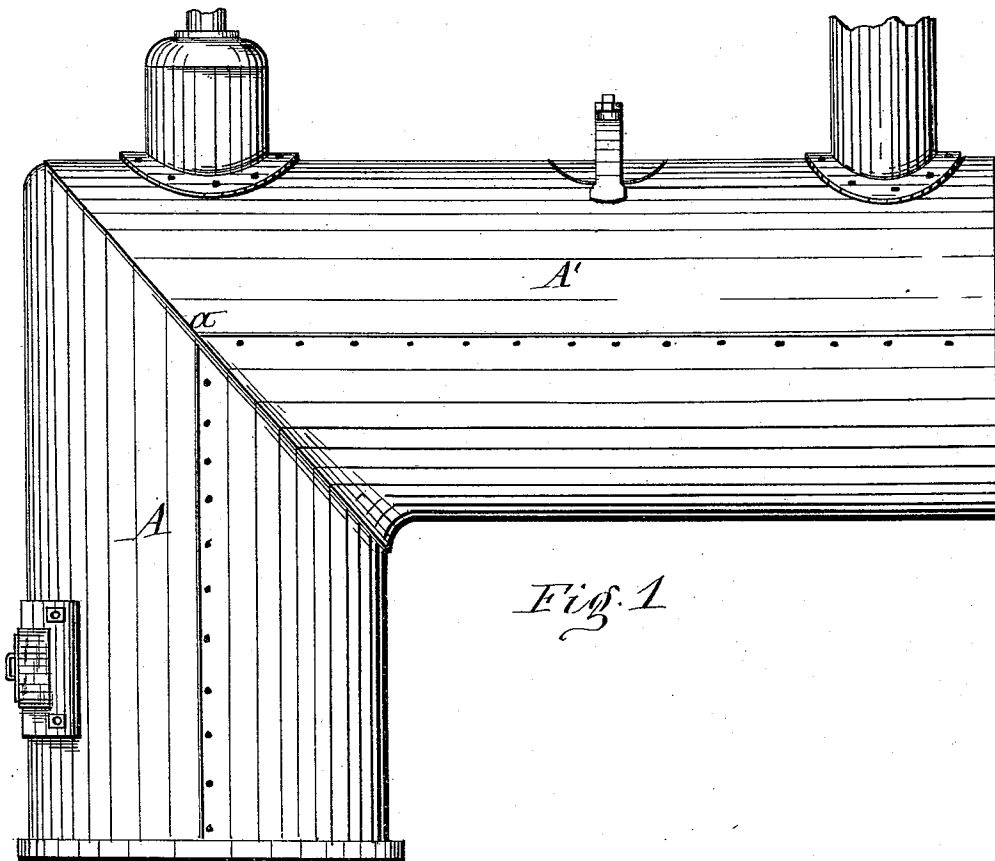


Fig. 1

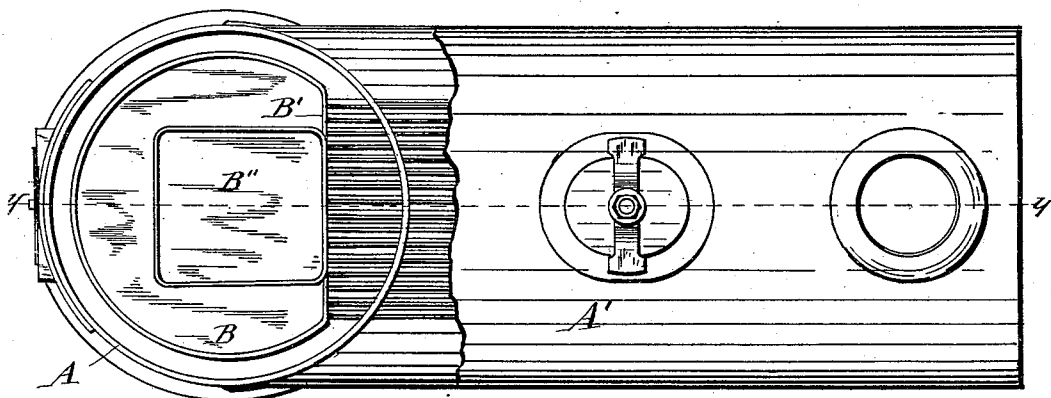


Fig. 2

WITNESSES:

H. C. Bates.

J. J. Laaszy

INVENTOR:

Charles Carroll

By Rudolph Laaszy & Co.
his ATTORNEYS.

(No Model.)

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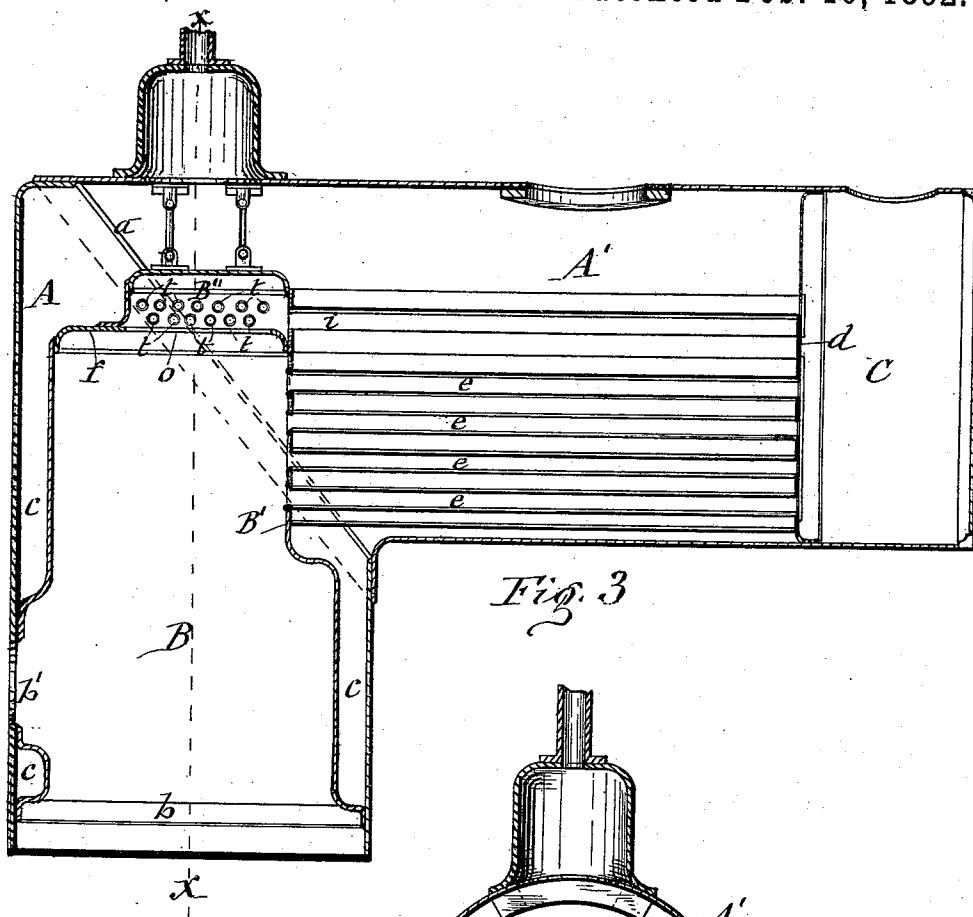
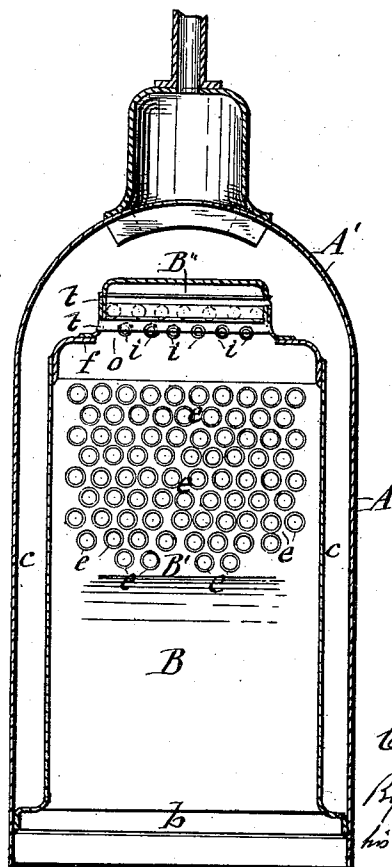


Fig. 4



WITNESSES:

H. C. Bates,

J. J. Lacey

INVENTOR:

Charles Carroll

By Knell, Leass & Knell
his ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHARLES CARROLL, OF OSWEGO, NEW YORK.

STEAM-BOILER.

SPECIFICATION forming part of Letters Patent No. 469,038, dated February 16, 1892.

Application filed November 23, 1891. Serial No. 412,736. (No model.)

To all whom it may concern:

Be it known that I, CHARLES CARROLL, 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 pertains to the class of steam-boilers usually designated "locomotive-boilers;" and it consists in an improved construction and combination of parts constituting a boiler of superior efficiency and strength and at the same time embodying simplicity of construction, all as hereinafter fully described, and specifically set forth in the claim.

In the annexed drawings, Figure 1 is a side elevation of a boiler embodying my invention. Fig. 2 is a top plan view with the front
20 portion of the top of the boiler-shell broken away. Fig. 3 is a vertical longitudinal section on line *y y*, Fig. 2; and Fig. 4 is a vertical transverse section on line *x x* in Fig. 3.

Similar letters of reference indicate corresponding parts.

My improved boiler-shell is composed of the two cylinders A and A', one of which is placed in an upright position, and the other is extended horizontally or laterally from the
30 upper end of said upright cylinder and joined thereto on a line diagonally across the angle of their juncture by overlapping each other along the said diagonal line, as shown at *a*, and riveted together thereat. Said upright
35 cylinder is stronger and more easily manufactured than the usual rectangular upright portion of said class of boiler, and by the extension of the top portion of the horizontal or laterally-extending cylinder over the top
40 of the upright cylinder the usual flat and much weaker top plate over the upright cylinder is dispensed with, and the number of

seams and rivets is materially reduced. In the upright cylinder I place a cylindrical fire-box B, with a water-span *c* between them, said inner cylindrical shell being flanged outward and riveted to the outer cylinder around the bottom opening *b* and fire-door opening
45 *b'*, as shown in Figs. 3 and 4 of the drawings. The upper portion of the rear wall of the inner cylinder B, I convert into a flue-sheet B' by bending it inward and flattening it.

In the rear end of the horizontal boiler-shell A' is formed the smoke-box C by the flue-sheet *d*, set some distance from the end of said shell, and direct fire-flues *e e* extend
55 through the horizontal shell and are secured to the flue-sheets B' and *d* in the usual manner.

The crown-sheet *f* of the fire-box shell B is provided with an opening *o*, and from the top of said crown-sheet rises a supplemental
60 chamber B'', which communicates direct with the fire-box through the opening *o*. From said chamber extend direct fire-flues *i*, and horizontally across the chamber extend
65 water-flues *t t*. By the addition of this chamber and flues connected thereto I materially increase the efficiency of the boiler.

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

The combination, with the fire-box, smoke-box, and direct flues, of a supplemental chamber rising from the top of the fire-box and communicating directly therewith, water-flues
75 extending through said chamber, and fire-flues extending from the chamber to the smoke-box, as set forth.

In testimony whereof I have hereunto signed my name this 16th day of November, 1891.

CHARLES CARROLL. [L. S.]

Witnesses:

BERNARD GALLAGHER,
GEO. NOYES BURT.