

No. 707,002.

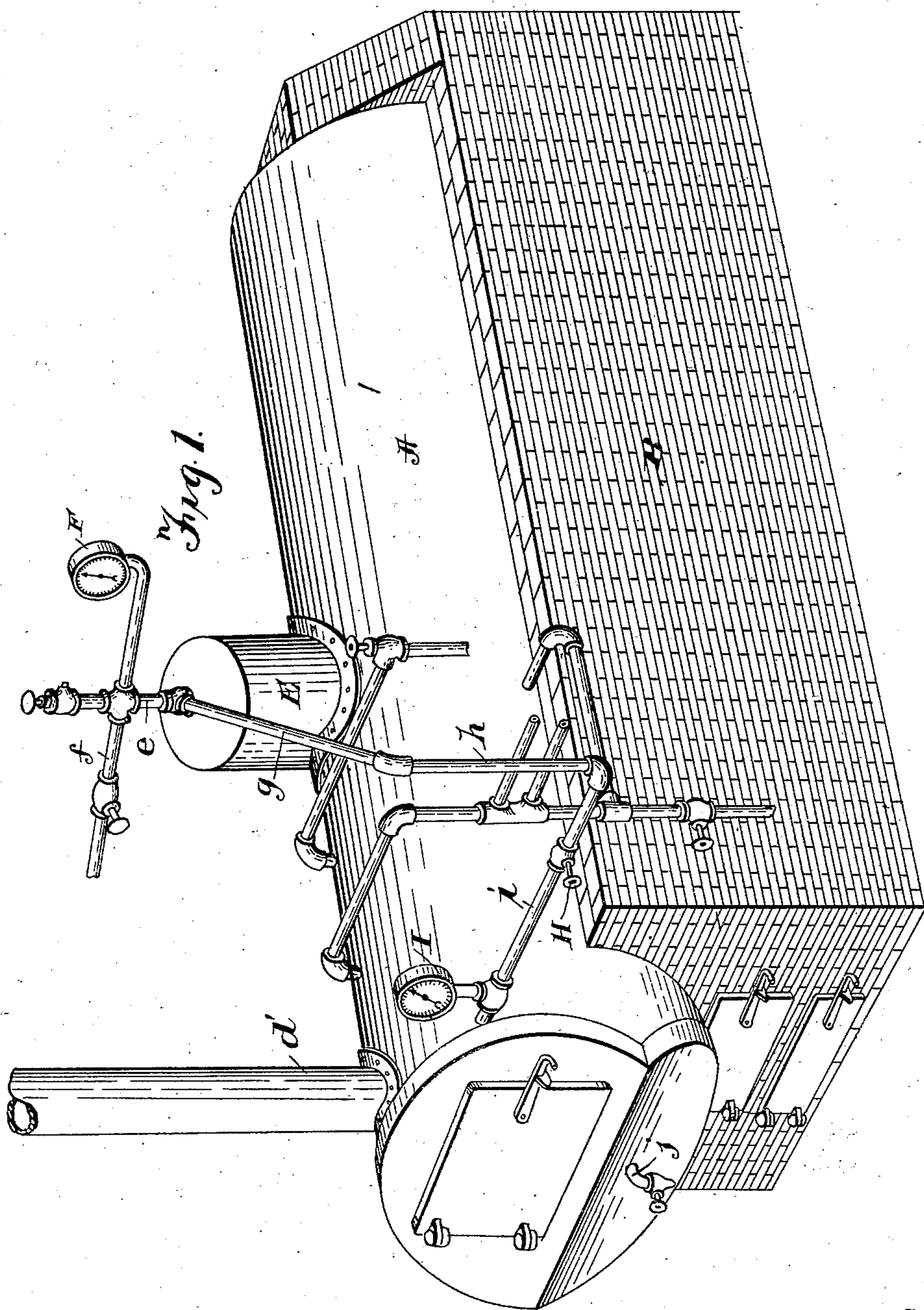
Patented Aug. 12, 1902.

J. PLATKO.
STEAM BOILER.

(Application filed Jan. 27, 1902.)

(No Model.)

2 Sheets—Sheet 1.



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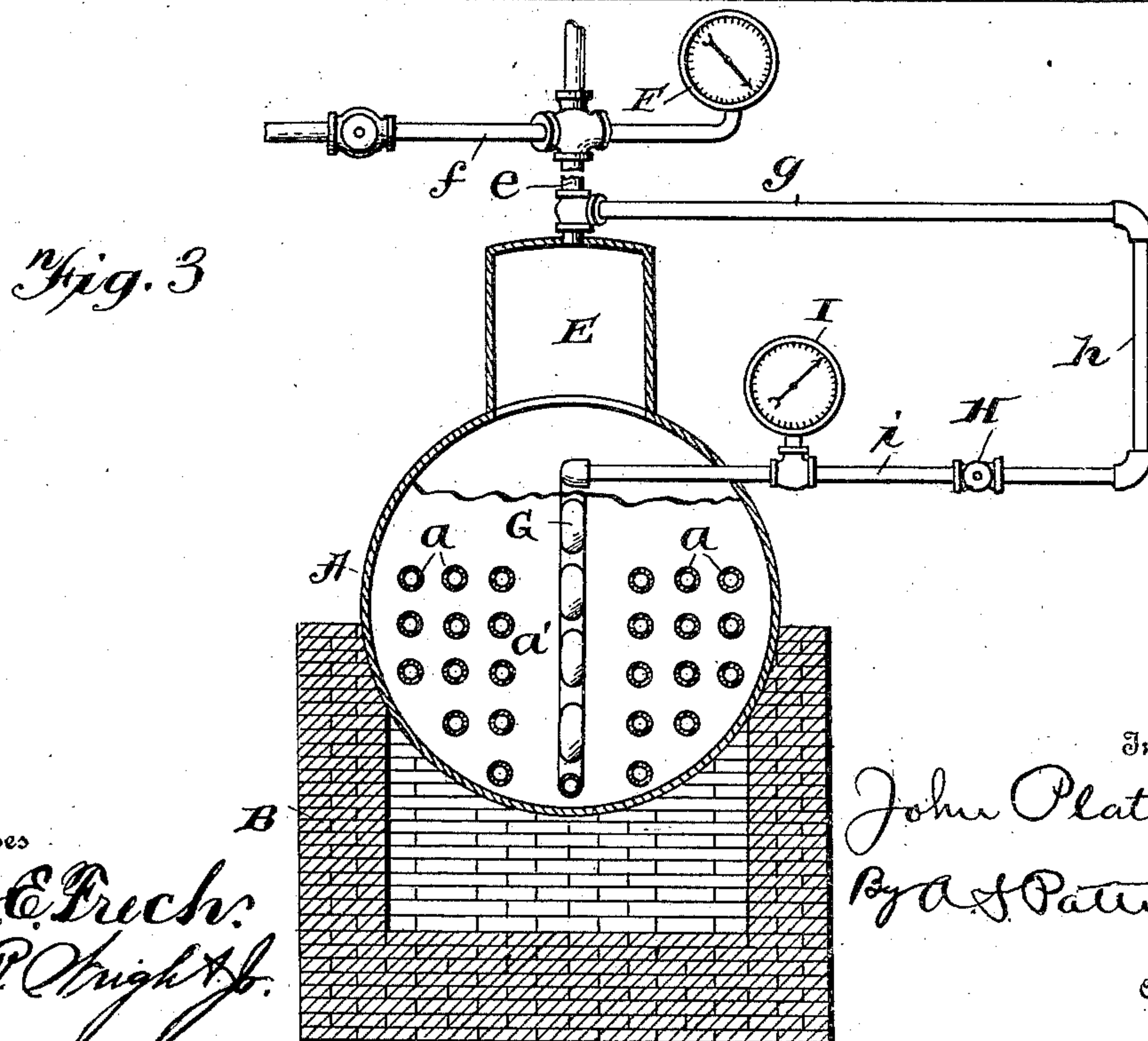
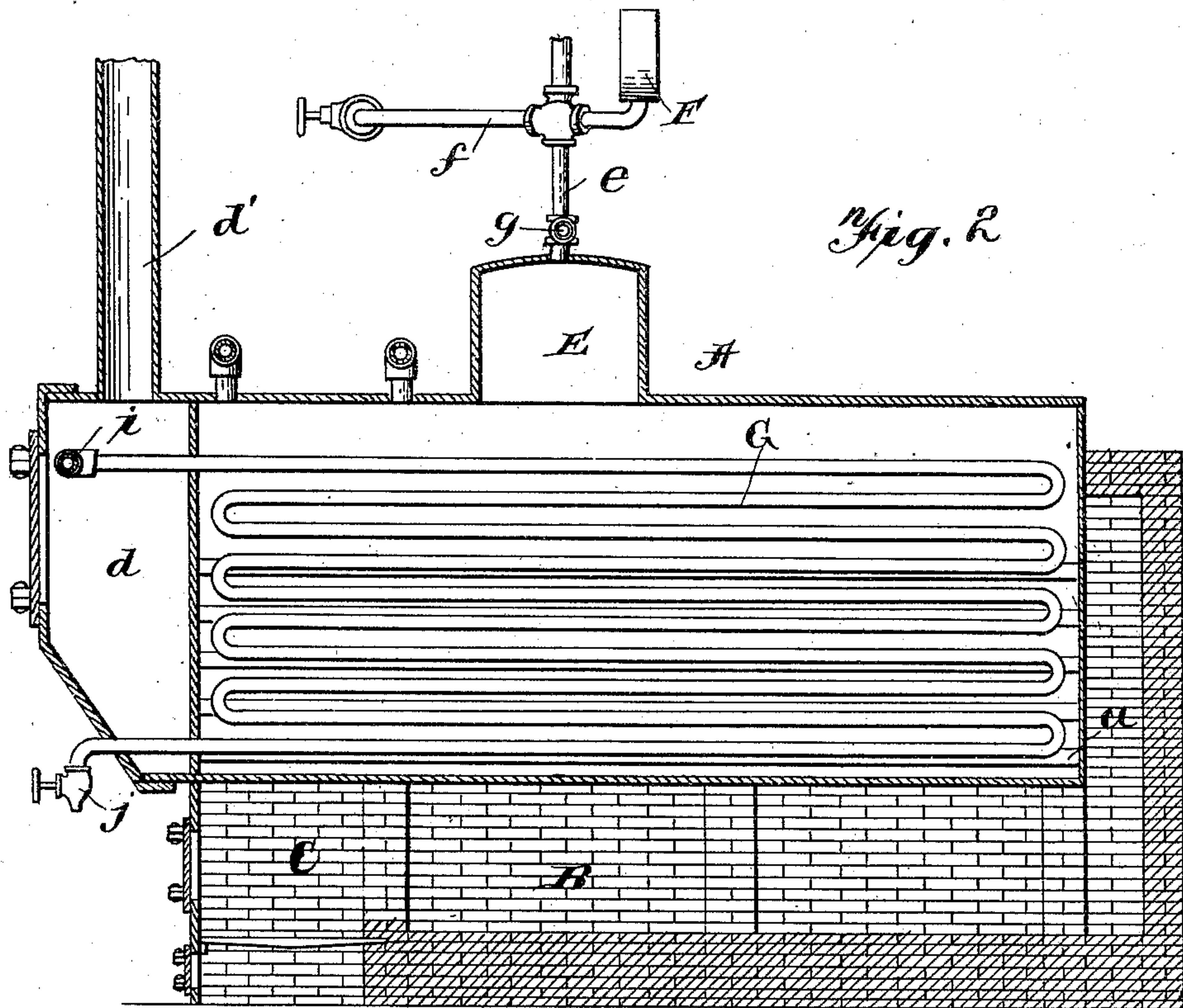
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UNITED STATES PATENT OFFICE.

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TO ERTZ & JOSEPH, OF BRADFORD, PENNSYLVANIA, A FIRM.

STEAM-BOILER.

SPECIFICATION forming part of Letters Patent No. 707,002, dated August 12, 1902.

Application filed January 27, 1902. Serial No. 91,504. (No model.)

To all whom it may concern:

Be it known that I, JOHN PLATKO, a citizen of the United States, residing at Newton, in the county of McKean and State of Pennsylvania, have invented new and useful Improvements in Steam-Boilers, of which the following is a specification.

My invention relates to improvements in steam-boilers, and more particularly pertains to that class known as "tubular" boilers.

The object of my invention is to provide a boiler in which a portion of the steam is re-introduced into the boiler for the purpose of aiding in the heating of the water therein.

Another object of my invention is to provide a boiler which after once thoroughly fired will require a smaller amount of fuel to keep the required amount of pressure therein.

A still further object of my invention is to provide a simple, cheap, and more effective boiler to accomplish the above results.

In the accompanying drawings, Figure 1 is perspective view of my steam-boiler. Fig. 2 is a vertical longitudinal sectional view. Fig. 3 is a vertical transverse sectional view.

Referring now to the drawings, A represents the ordinary boiler, which is preferably cylindrical in shape and provided with the ordinary longitudinally-extending fire-tubes *a*; but, as shown in the drawings, the said tubes are arranged on each side of the center, leaving a longitudinally-extending vertical space *a'* in the center of the boiler for a purpose hereinafter more fully described. The said boiler is shown mounted on an ordinary brick base B, although any desired base may be used, as this forms no part of my invention. The forward end of said base is provided with a fire-box C, which may also be of any desired form, and extending from the rear end of said box is a flue *c*, which conveys the smoke and heated air along the under side of the boiler to the rear end *b*, and from there it passes back through the tubes *a* to the forward end of the boiler. The said end of the boiler is provided with a space *d*, which is adapted to receive the smoke from the flues and convey it upward to a smoke-stack *d'*, through which the smoke is discharged from the furnace.

The boiler A is provided on its upper por-

tion intermediate the ends with a steam-dome E, which is adapted to receive the steam as it is generated in the boiler. In communication with the upper portion of said dome E is a vertically-disposed pipe *e*, which carries a gage F to indicate the pressure in the boiler, and connected to said pipe *e* is a horizontally-arranged pipe *f*, which is the supply-pipe to the apparatus or device for which the steam is to be used. Connected to the vertically-arranged pipe *e* below the horizontally-arranged pipe *f* is a second pipe *g*, which extends out beyond the side of the boiler and down, as shown at *h*, and then backward toward the center of the forward end of the boiler, as shown at *i*. The end of said pipe extends throughout the space formed at the forward end of the boiler and thence through the end of the boiler. Connected to said pipe, within the boiler, is a vertically-arranged coil G, which extends back and forth within the space *a'* left between the air-flues on either side. The end of said coil extends out through the forward end of the boiler at its lower end and carries a stop-cock *j* for the purpose of draining it should there be any condensation therein. The horizontal portion *i* of the pipe is provided with a stop-cock H, which is adapted to allow the steam to pass within the coil in the boiler or not, as desired. The said pipe *i* is also provided with a gage I, which is located between the stop-cock H and the connection with the end of the boiler, whereby the pressure within the coil can be readily seen and regulated by the stop-cock H regardless of the pressure within the boiler.

The boiler is provided with the ordinary safety-valve, water-supply pipes, and drain-pipes, all for the purpose known to those skilled in the art, and it is not necessary to show or describe them.

By the above-described construction it will be readily seen that after the boiler has been fired and the desired amount of steam is generated, as indicated on the gage F, by turning the cock H steam is admitted to the coil G, which is arranged within the portion of the boiler holding the water, and the water will be kept at a higher temperature by a smaller amount of fuel, as the surplus steam is used in the above-described manner.

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

1. In a steam-boiler, the combination with
5 a casing, of air-flues passing therethrough, a horizontally-extending vertically-arranged coil between the air-flues and the upper end thereof having direct communication with the casing and the lower end with the outside
10 atmosphere, substantially as described.

2. In a steam-boiler, the combination with a casing, of air-flues arranged therein and having a central open space, a horizontally-extending vertically-arranged coil with said
15 open space and the upper end of said coil having direct communication with the casing and the lower end with the outside atmosphere, substantially as described.

3. In a steam-boiler, the combination with
20 a casing, of air-flues extending therethrough on each side, and a coil within the casing between the flues and having one end in communication with the casing and the opposite end with the outside atmosphere, substantially as described.
25

4. In a steam-boiler, the combination with a casing, of a steam-dome carried by the upper portion thereof, a pipe in communication therewith and having a steam-gage, said pipe
30 having its opposite end entering the end of the casing, and a coil with the casing having one end connected to said pipe and the opposite end in communication with the outside atmosphere, substantially as described.

35 5. In a steam-boiler, the combination with a casing, of a steam-dome carried by the upper portion of said casing, fire-tubes carried by each side of said casing, a coil within the casing between the fire-tubes, and having its

lower end in communication with the outside
40 atmosphere, a cock for closing said end, a pipe in communication with said dome, and connected to the upper end of said coil, a cock intermediate the coil and the dome, and a
45 gage on each side of said cock, whereby the pressure in the boiler and the pressure in the coil is readily determined, substantially as described.

6. In a steam-boiler, the combination with a casing, of fire-tubes carried by said casing,
50 a coil within the casing and having its lower end in communication with the outside atmosphere, a pipe in communication with the casing and the upper end of the coil, a cock intermediate the coil and the casing, and a
55 gage on each side of said cock, whereby the pressure in the casing and the coil is readily determined, substantially as described.

7. In a steam-boiler, the combination with a casing, fire-tubes carried by each side of
60 said tube, a horizontally-extending vertically-arranged coil within the casing between the fire-tube and having its lower end in communication with the outside atmosphere, a pipe in communication with the casing and the up-
65 per end of the coil, a cock intermediate the coil and the casing and a gage on each side of said cock, whereby the pressure in the boiler and the coil is readily determined, substantially as described.
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In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN PLATKO.

Witnesses:

N. B. PARKER,
HERMAN H. NORTH.