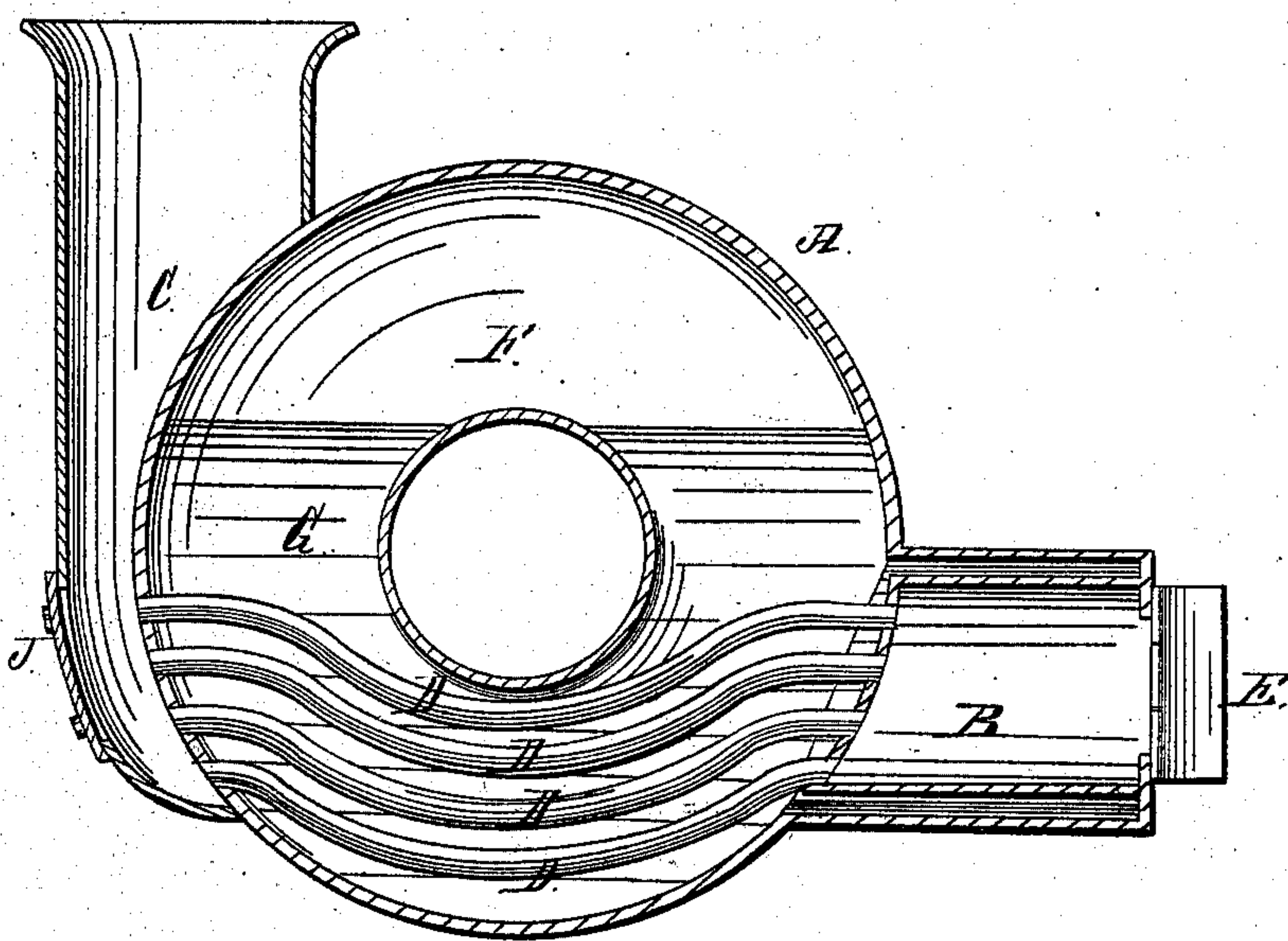


R. W. Humphreys,
Steam Boiler.
N^o 83,384. Patented Oct. 27, 1868.



Witnesses:
Chas. Enck
J. A. Fraser

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R. W. HUMPHREYS, OF CLARKSVILLE, TENNESSEE.

Letters Patent No. 83,384, dated October 27, 1868.

IMPROVEMENT IN STEAM-GENERATORS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, R. W. HUMPHREYS, of Clarksville, in the county of Montgomery, and State of Tennessee, have invented a new and useful Improvement in Steam-Boilers; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention consists in forming a steam-boiler of an annular ring or tube, in which are placed tubes or flues, for the passage of the products of combustion, and in attaching to the same a fire-box or furnace and a smoke-stack, as will be hereinafter more fully described.

The drawing represents a vertical section of the boiler, showing the general form and manner of its construction.

A is the boiler;
B is the fire-box;
C is the smoke-stack; and
D represents the tubes.

The boiler is a hollow annular ring, cylindrical in shape, and of suitable size, constructed of boiler-iron, or any other suitable material, and formed and put together in any convenient and secure manner.

The boiler is intended to be placed in the position represented in the drawing, with the fire-box B attached to one side.

The fire-box is cylindrical in shape, and is surrounded by an annular space, which is filled with water from

the boiler, it being in direct communication with the water-space of the boiler, as seen in the drawing.

E is the door of the fire-box.

The tubes D receive the products of combustion from the fire-box, and conduct them directly, through the water-space of the boiler, to the smoke-stack C. These tubes are of suitable size, and are curved downward, so as to correspond, in some measure, with the shape of the boiler.

The smoke-stack C is attached to the outside of the boiler in any suitable manner, as is also the fire-box B, and the tubes D, through which the products of combustion pass, are secured in the shell of the boiler, in the usual manner.

F indicates the steam-space, and G the water-space, of the boiler.

A safety-valve may be placed on the top of the boiler, and the steam and water-connecting pipes may be attached in the usual manner.

J is a door, which gives admittance to the lower portion of the smoke-stack, and access to the tubes, for purposes of cleaning, &c.

What I claim as new, and desire to secure by Letters Patent, is—

A steam-boiler, in the form of a hollow cylindrical annular ring, with fire-box, and fire-flues, and smoke-stack, attached, substantially in the manner herein shown and described.

Witnesses:

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