

J. D. OGLE.
Steam-Boiler.

No. 225,159.

Patented Mar. 2, 1880.

Fig. 1.

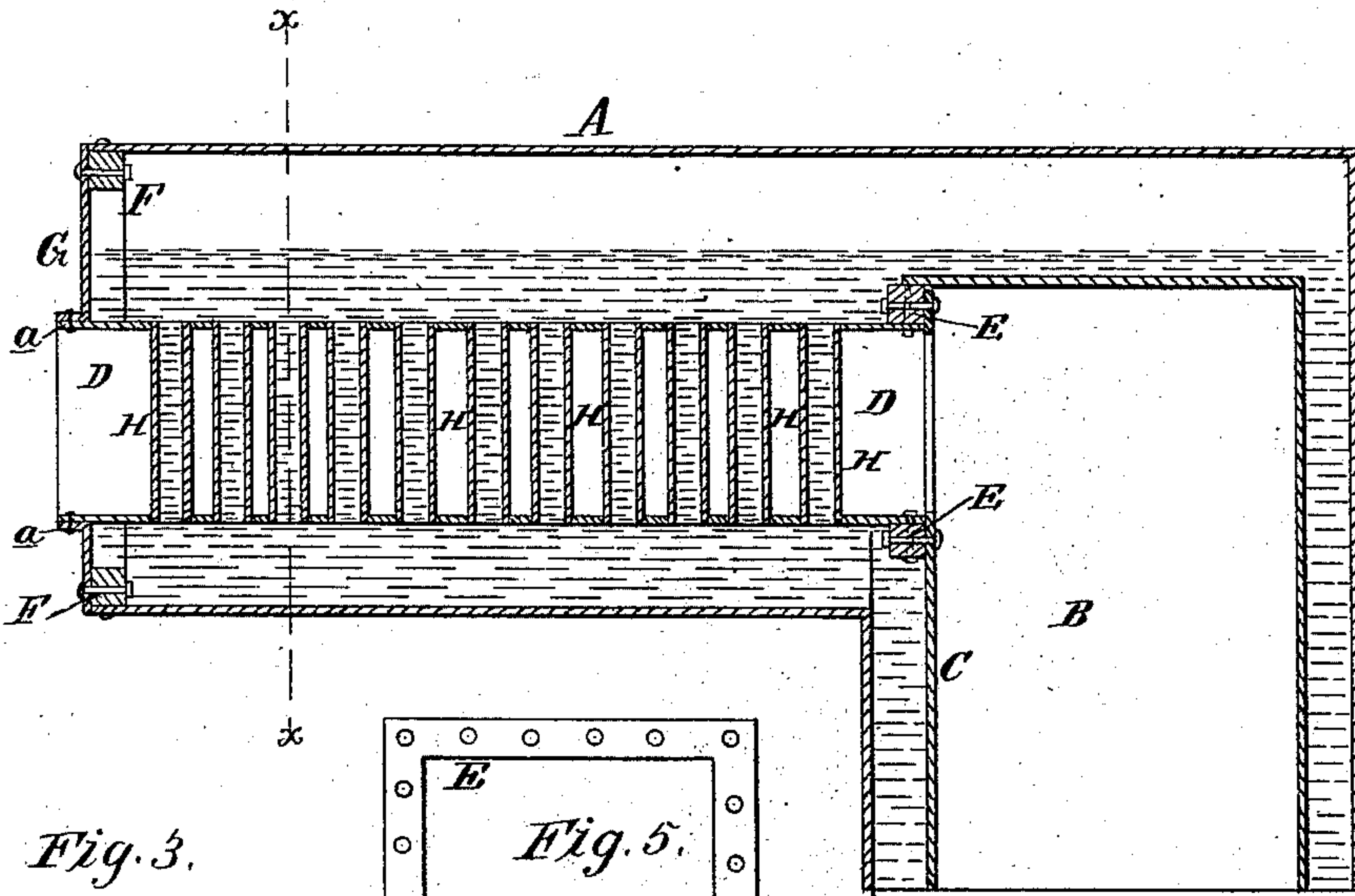


Fig. 3.

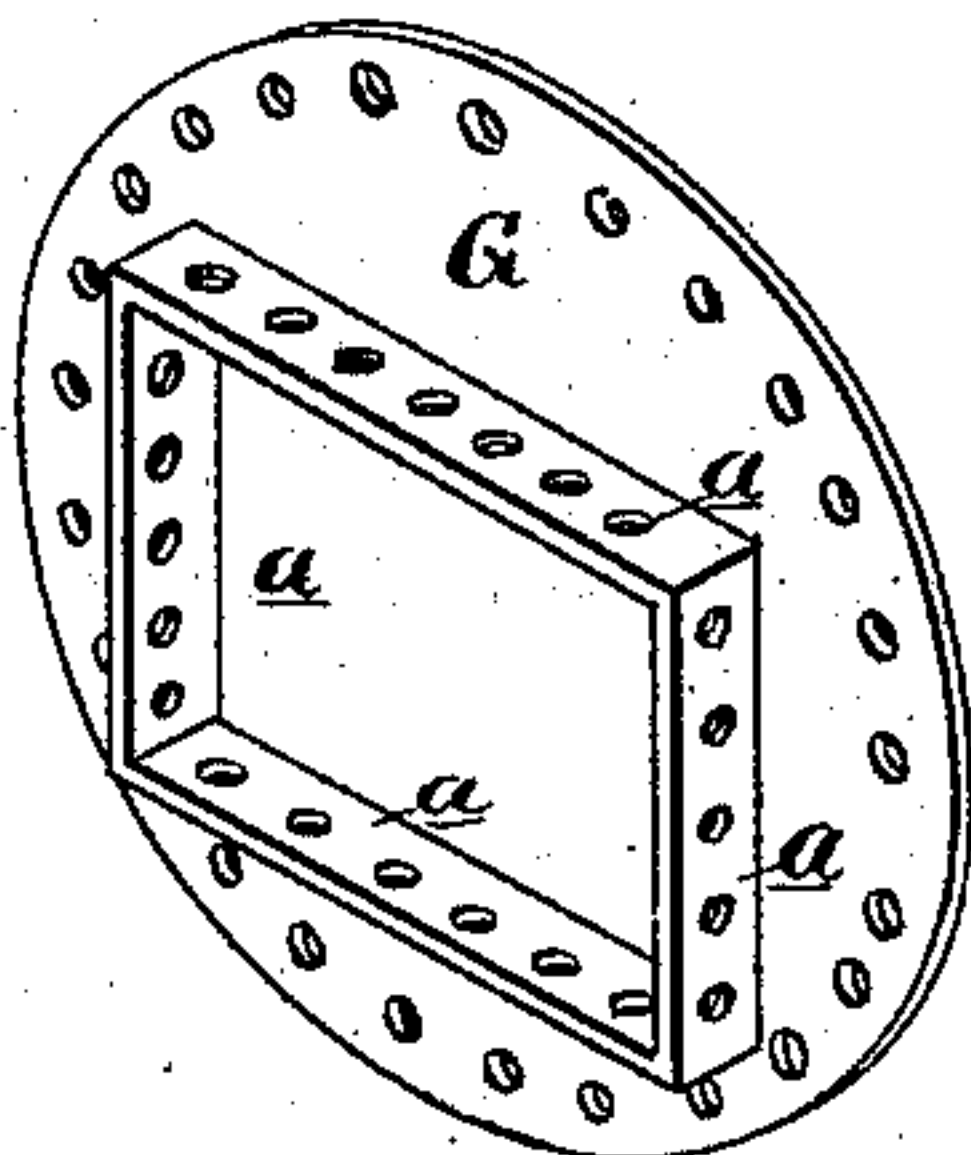


Fig. 5.

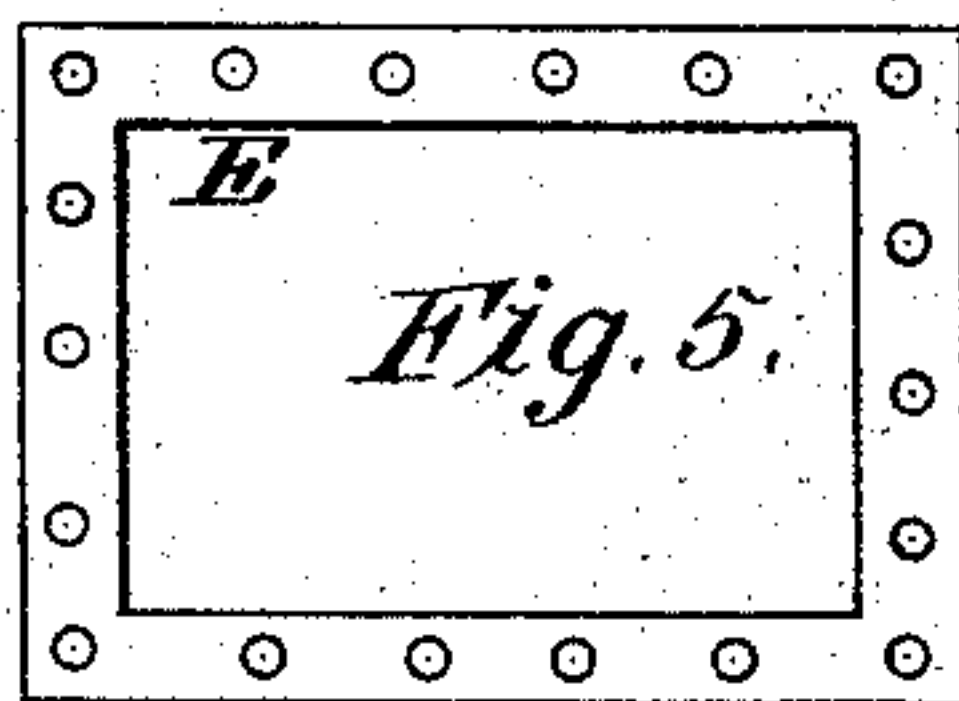


Fig. 2.

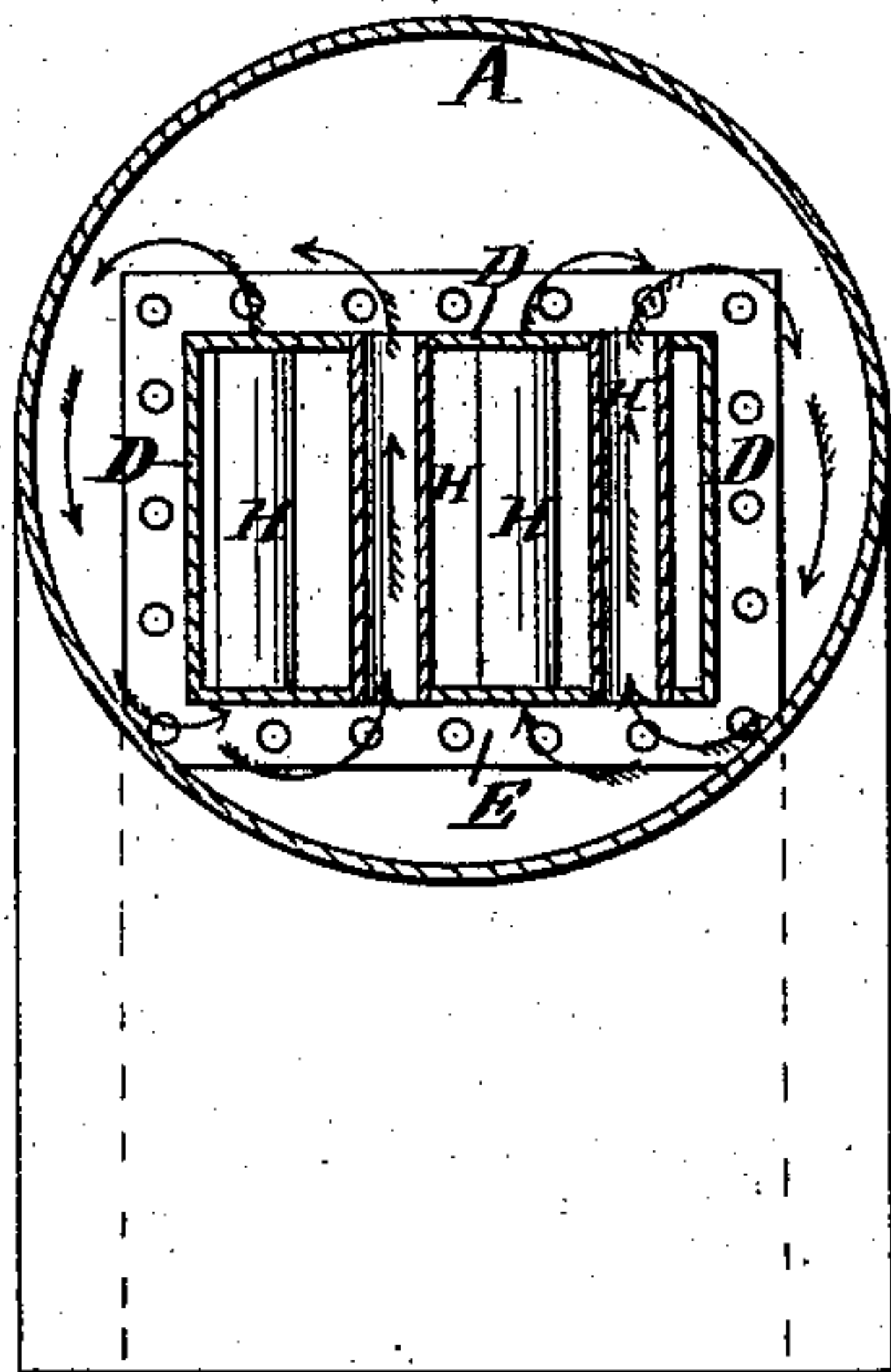


Fig. 6.

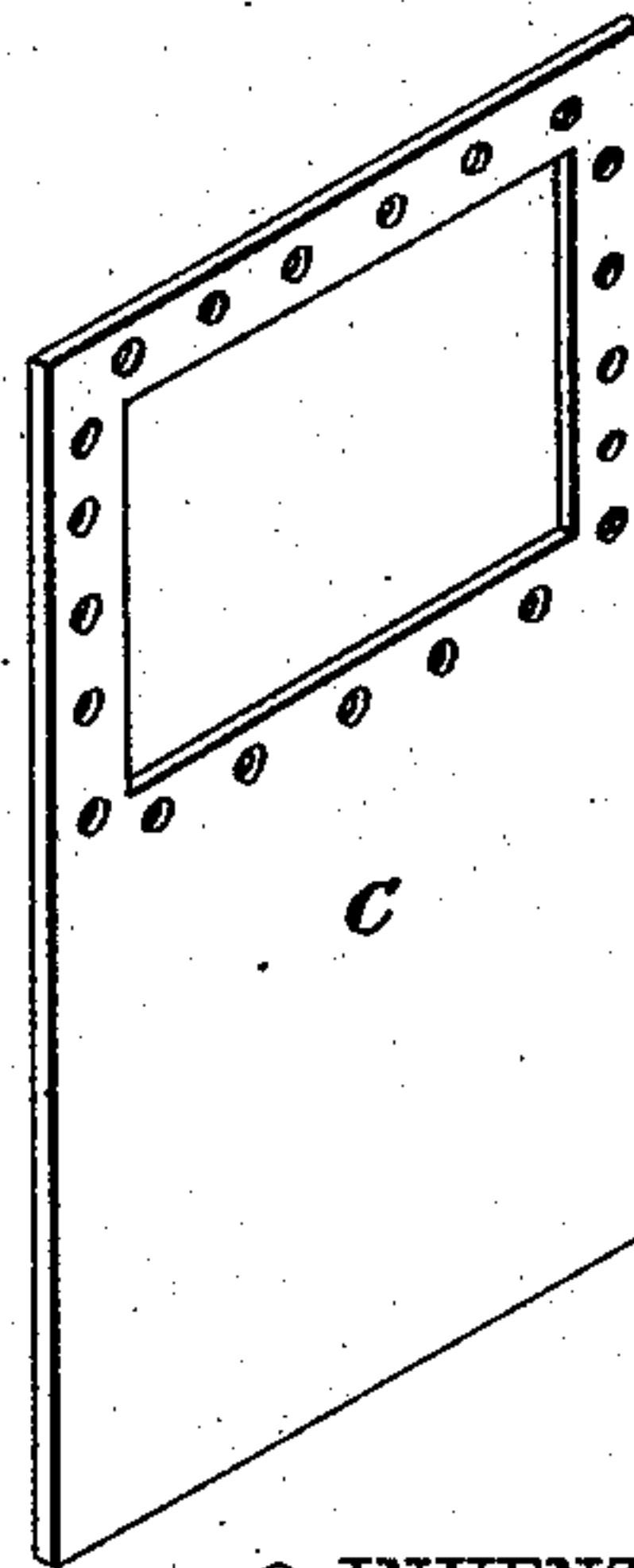
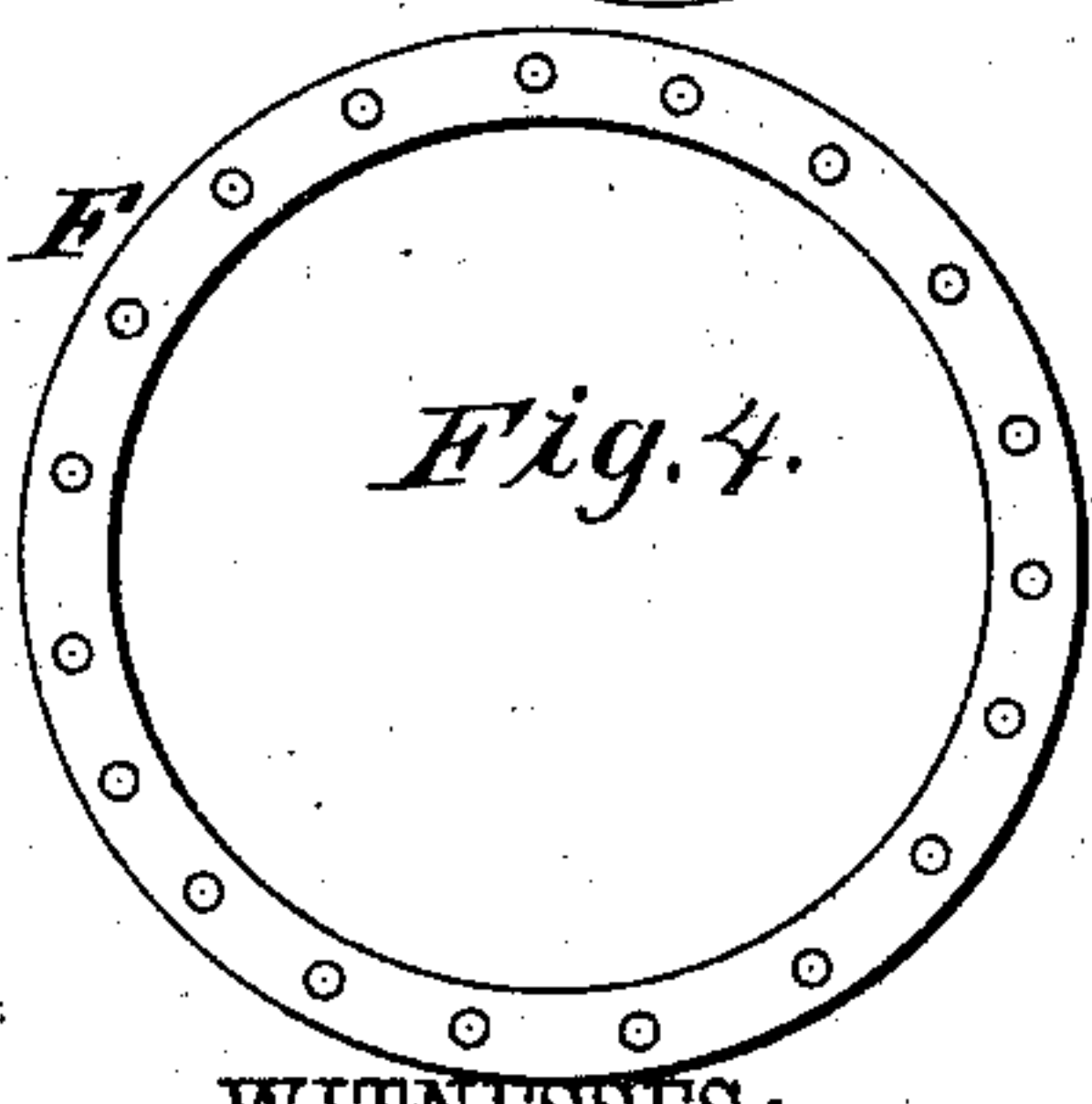


Fig. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOSEPH D. OGLE, OF WASHINGTON COURT-HOUSE, OHIO, ASSIGNOR TO
HIMSELF AND ROBERT A. BURNETT, OF SAME PLACE.

STEAM-BOILER.

SPECIFICATION forming part of Letters Patent No. 225,159, dated March 2, 1880.

Application filed December 10, 1879.

To all whom it may concern:

Be it known that I, JOSEPH D. OGLE, of Washington Court-House, in the county of Fayette and State of Ohio, have invented a new and Improved Steam-Boiler, of which the following is a specification.

Figure 1 is a longitudinal sectional elevation of the boiler. Fig. 2 is a sectional end elevation on line *x x*, Fig. 1. Fig. 3 is a perspective view of the rear end plate of boiler, indicating the manner of the attachment of the flue-box. Fig. 4 is an elevation of the ring in the rear end of the boiler. Fig. 5 is an elevation of the rectangular frame holding the front end of the flue-box. Fig. 6 is a front elevation of the back sheet of the fire-box.

Similar letters of reference indicate corresponding parts.

The object of this invention is to construct a boiler with the water-tubes so arranged that a perfect circulation of water can be maintained within it, and so that all the tubes can be readily and simultaneously removed for cleaning.

The invention consists, essentially, of a removable rectangular flue-box containing vertical water-tubes fixed in the longitudinal axis of the boiler-cylinder and extending from one end to the other thereof.

In the drawings, A represents the boiler-cylinder, of the locomotive type. B is the fire-box; C, the back sheet of the fire-box, and D the flue-box. In the fire-box or front end of the cylinder A is set an open heavy rectangular frame E, against the face of which the back sheet C of the fire-box is riveted, while the said frame E embraces the front end of the flue-box D, and is firmly bolted or riveted to it. Set

within the rear end of the boiler-cylinder A is a heavy ring, F, of square cross-section, to the periphery of which the cylinder-shell is bolted or riveted, while to the outer face of this ring F is bolted or riveted the rear head, G, of the boiler. Said head G has a flanged rectangular opening, through which the rear end of the flue-box D projects far enough to have the outward-projecting flanges *a* of the head G bolted or riveted to it. This flue-box D contains one or more rows of vertical water-tubes, H, extending through it and connecting with the water-space of the boiler.

When in operation the flame and other products of combustion pass from the fire-box B through the flue D and in contact with the tubes H, causing thereby a most rapid and complete circulation of water, as indicated by the arrows in Fig. 2, and the said tubes H, being vertical or nearly so, remain remarkably free from deposit of any kind; consequently they are more durable than horizontally-placed water tubes or flues, and conduct the heat better to the water in the boiler.

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

The combination, in the cylinder A, of the fire-box B, the frame E, ring F, boiler-head G, and flue-box D, the latter being removable and having vertical tubes H connecting with the water-space of boiler, as shown and described.

JOSEPH DUDLEY OGLE.

Witnesses:

WILLIAM BURNETT,
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