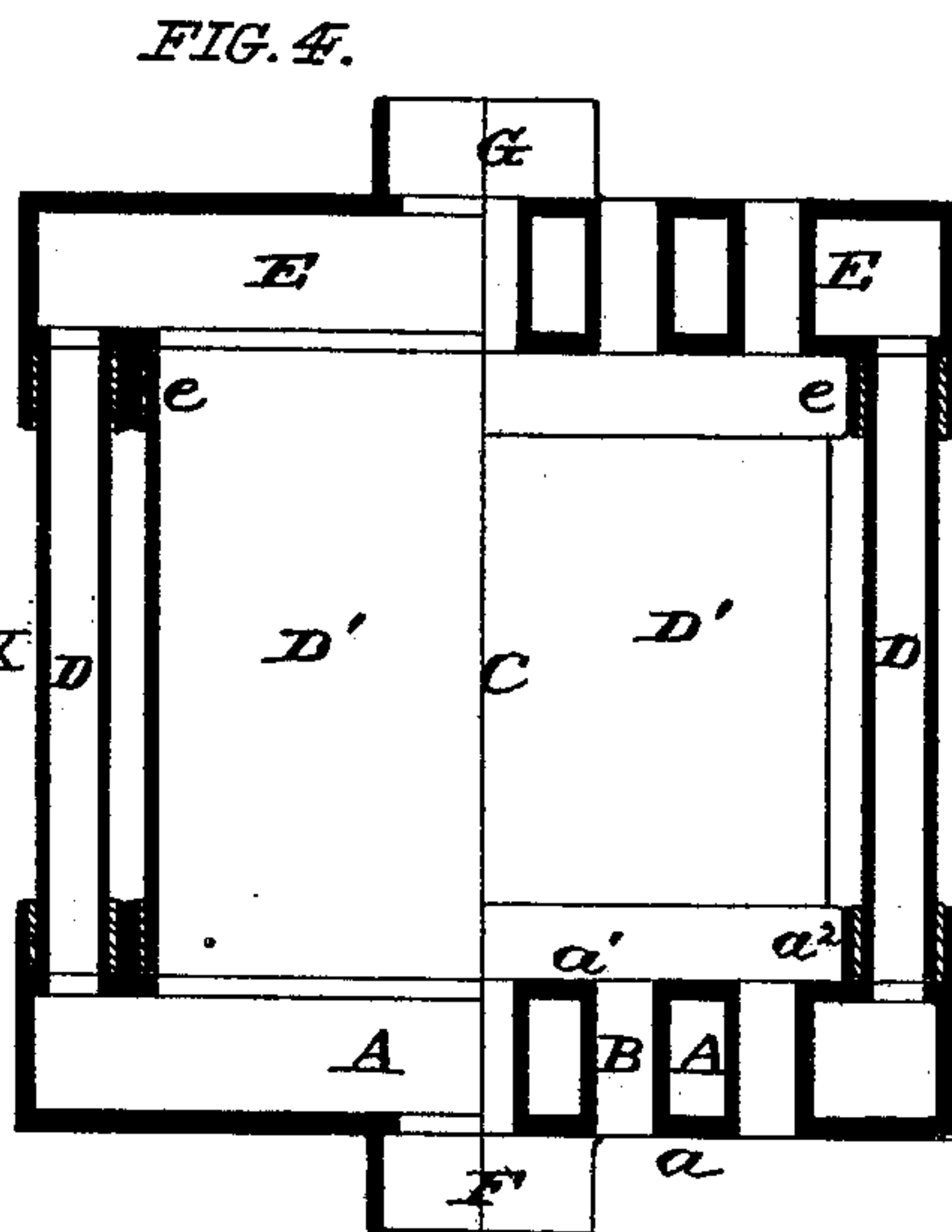
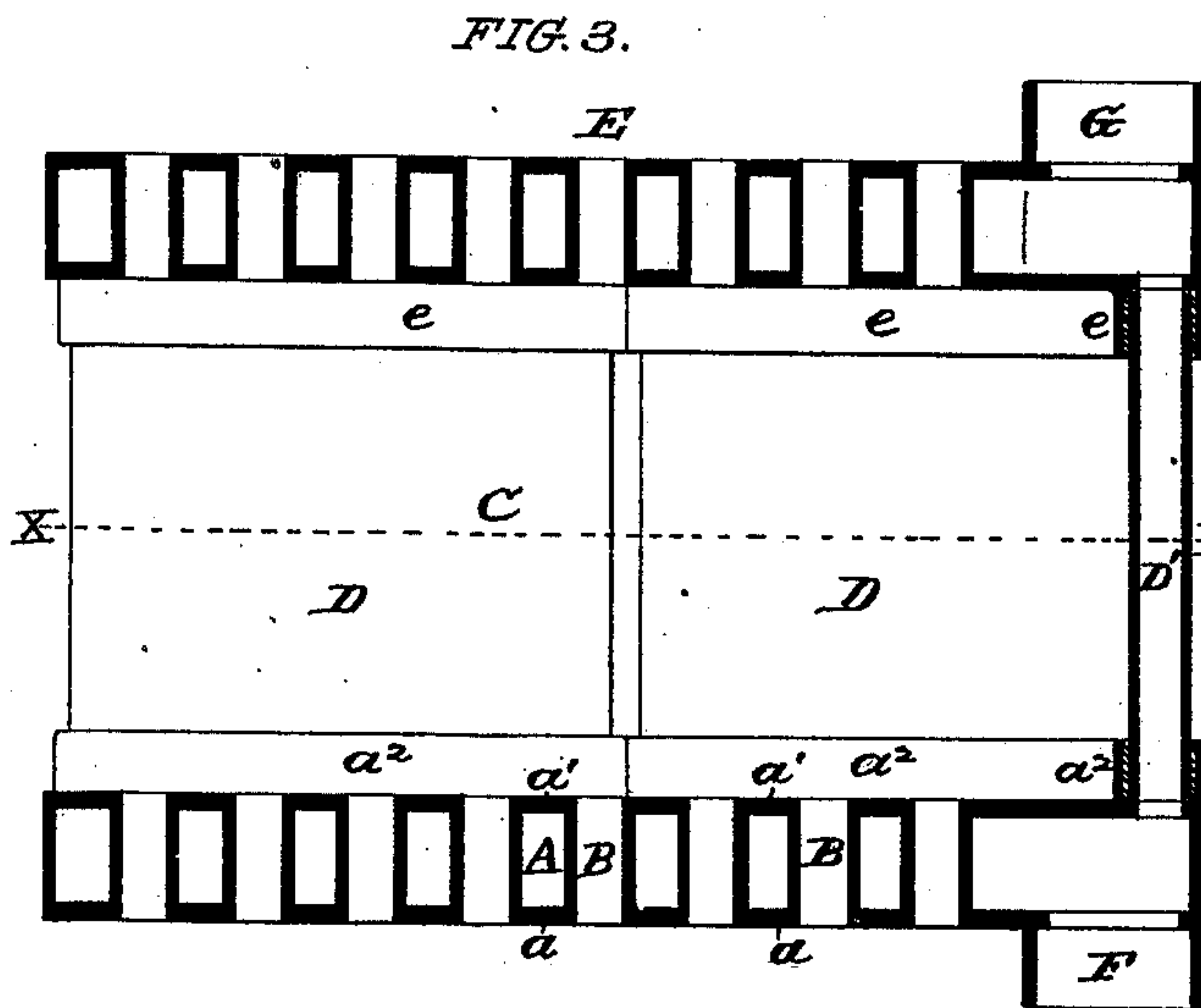
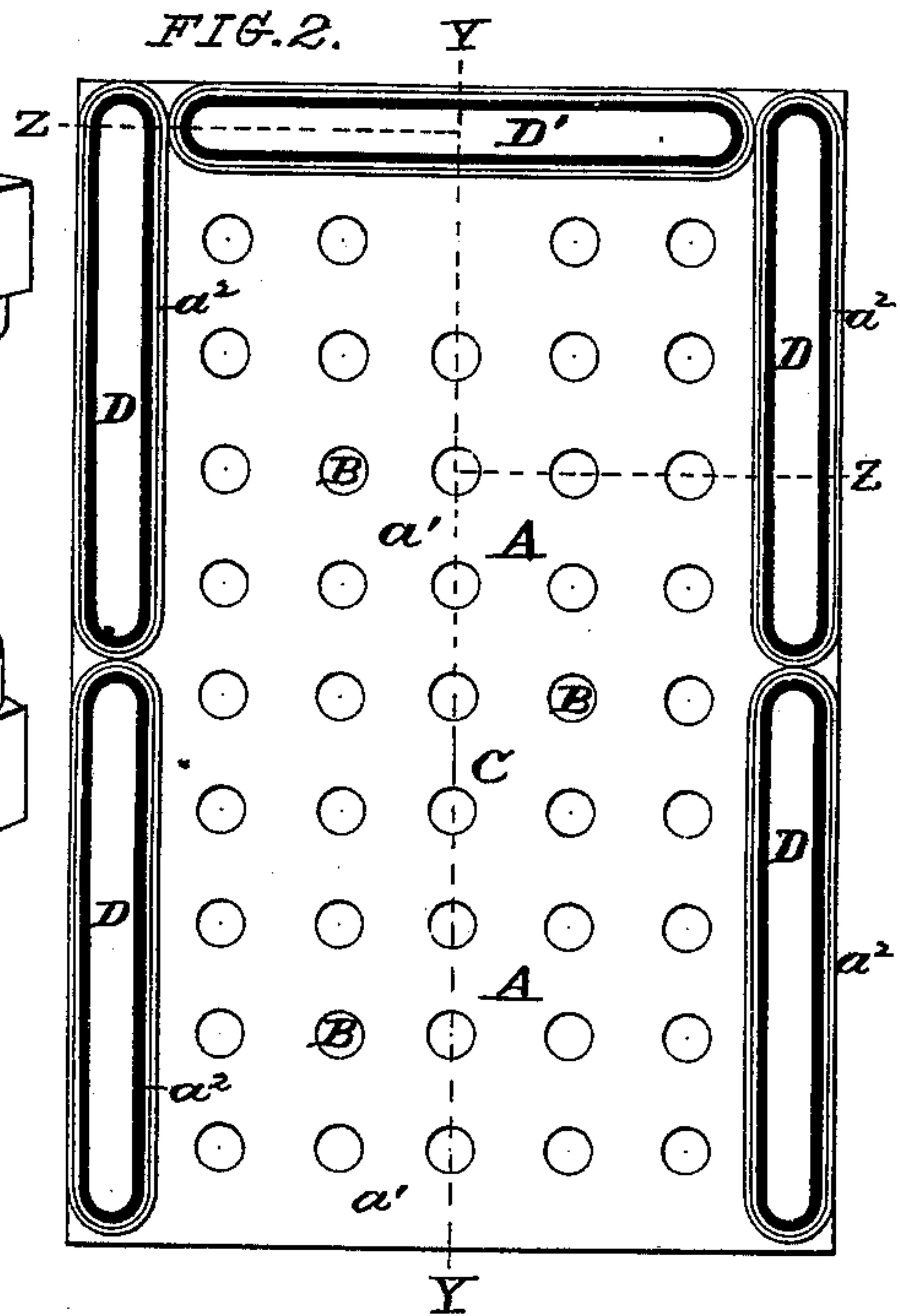
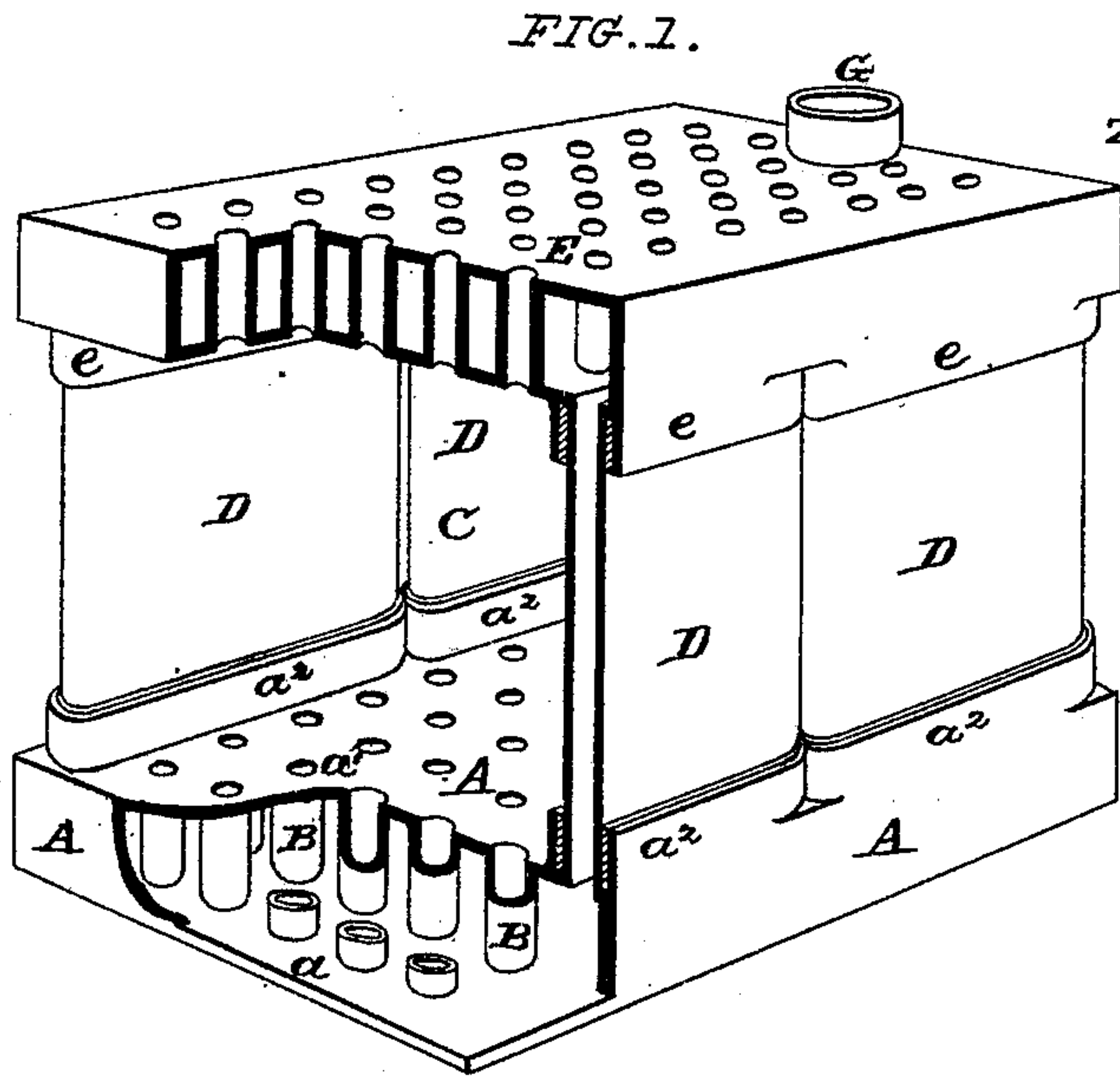


R. H. ELLIOTT.  
Water-Heater and Steam-Generator.

No. 213,982.

Patented April 8, 1879.



ATTEST:

*Reginald H. Elliott.*  
*Walter Allen*

INVENTOR:

*Reginald H. Elliott.*  
*By Knight Bros.*  
*Atty.*

# UNITED STATES PATENT OFFICE.

REGINALD H. ELLIOTT, OF KIRKWOOD, MISSOURI.

## IMPROVEMENT IN WATER-HEATER AND STEAM-GENERATOR.

Specification forming part of Letters Patent No. **213,982**, dated April 8, 1879; application filed December 28, 1878.

*To all whom it may concern:*

Be it known that I, REGINALD H. ELLIOTT, of Kirkwood, in the county of St. Louis and State of Missouri, have invented a certain new and useful Improvement in Water-Heater and Steam-Generator, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My improvement consists in the combination, in a water-heater, of a bottom box having vertical perforations therein connecting with vertical tubes, a vertically-perforated crown-box, and flat side and end sections, secured as shown, and connecting the bottom and crown boxes, and constituting the fire-chamber.

In the drawings, Figure 1 is a perspective view with part broken away. Fig. 2 is a horizontal section at line X X, Fig. 3. Fig. 3 is a longitudinal section at line Y Y, Fig. 2. Fig. 4 is a jogged transverse section at Z Z, Fig. 2.

I shall describe my improvement as having the form of a parallelopiped and as made of cast-iron; but I do not confine myself to this form or material, as it is obvious that the form may be varied without any essential change, and that the material may be also varied.

A is the vertically-perforated box, forming the bottom of the fire-chamber. This box consists of the bottom plate,  $a$ , and top plate,  $a^1$ , connected together at the sides and ends so as to form a chamber to contain water.

At B are shown flues or tubes passing vertically through the box A. These tubes are for the upward passage of the air to the fire, and for the discharge of ashes from the same. The fire-chamber is marked C.

The upper plate,  $a^1$ , of the box A has a number of upwardly-extending sockets,  $a^2$ , to receive the lower ends of the flat hollow sections D D'. The flat hollow sections D D' form the communication between the box A and a similar box, E, forming the crown of the fire-chamber C. The flat sections D form the sides of said chamber, and the sections D' its ends.

The box E has sockets  $e$ , (similar to those  $a^2$ ), to receive the upper ends of the flat sections D D'. The ends of the sections are secured in the sockets  $a^2 e$  by a water-tight joint, such as iron-cement.

F is the induction water-pipe, and when the apparatus is used as a water-heater the pipe G would be the steam-pipe.

The heater may be inclosed in any suitable case, such as brick-work or metal, with fire-front and chimney.

The upper box, E, would assist in the heating of the water, with which it would be wholly filled when the apparatus is used as a water-heater.

I claim—

The combination of the vertically-perforated box A, having sockets  $a^2$ , vertically-perforated crown-box E, having sockets  $e$ , and flat hollow sections D D', secured in said sockets  $a^2 e$ , and forming the sides and ends of the fire-chamber and connecting the bottom and crown boxes, substantially as set forth.

REGINALD H. ELLIOTT.

Witnesses:

SAML. KNIGHT,  
GEO. H. KNIGHT.