

J. S. Borden,
Sectional Steam Boiler.
N^o 62,307. Patented Feb. 26, 1867.

Fig: 1.

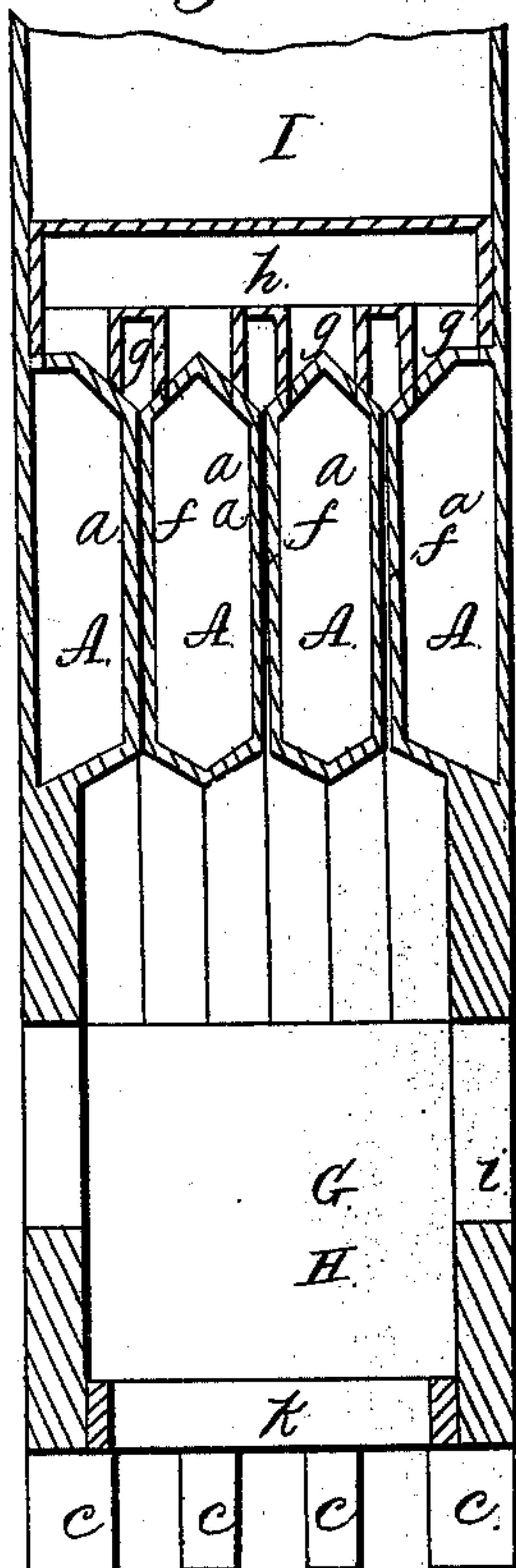


Fig: 2.

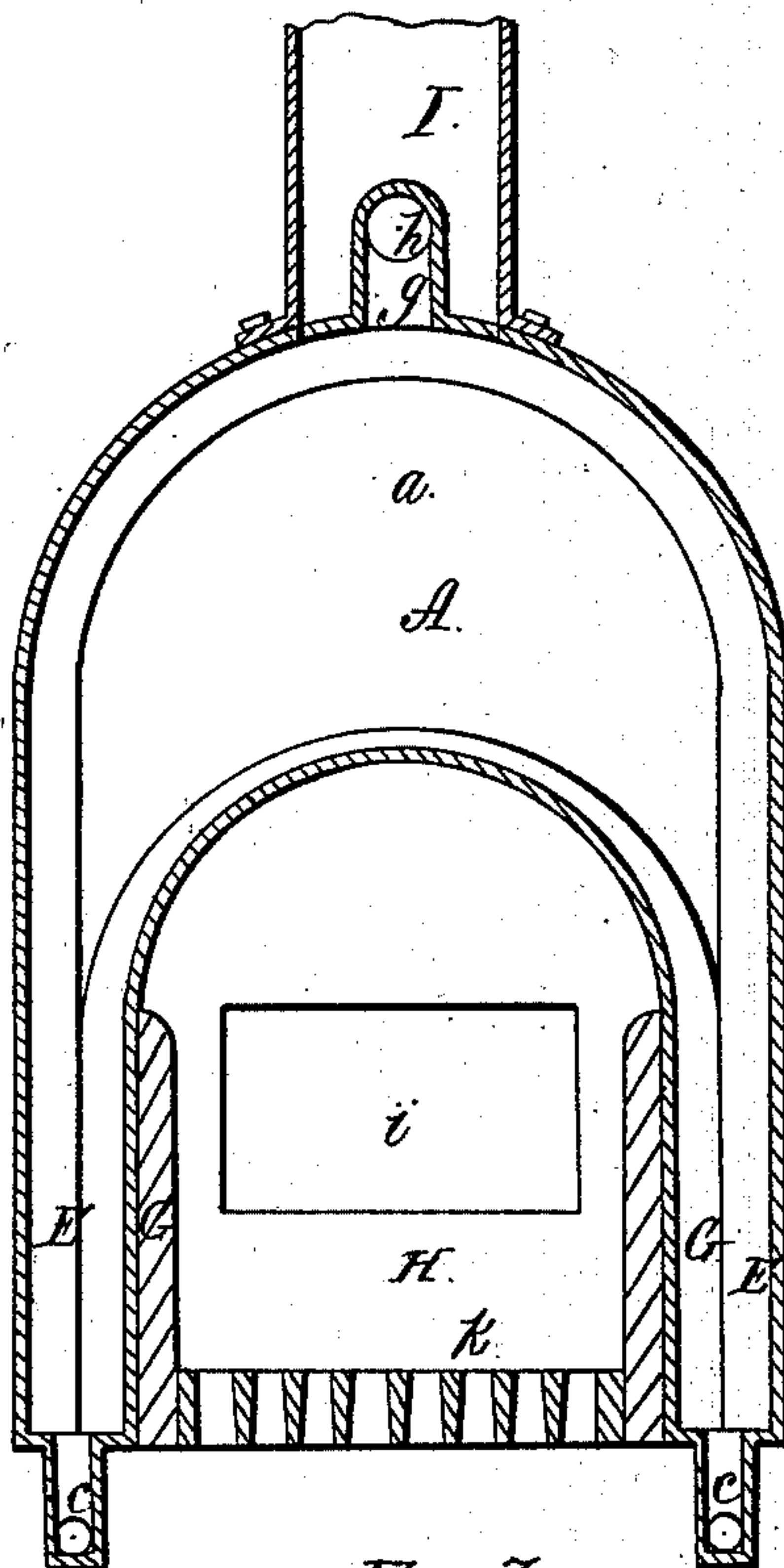


Fig: 4.

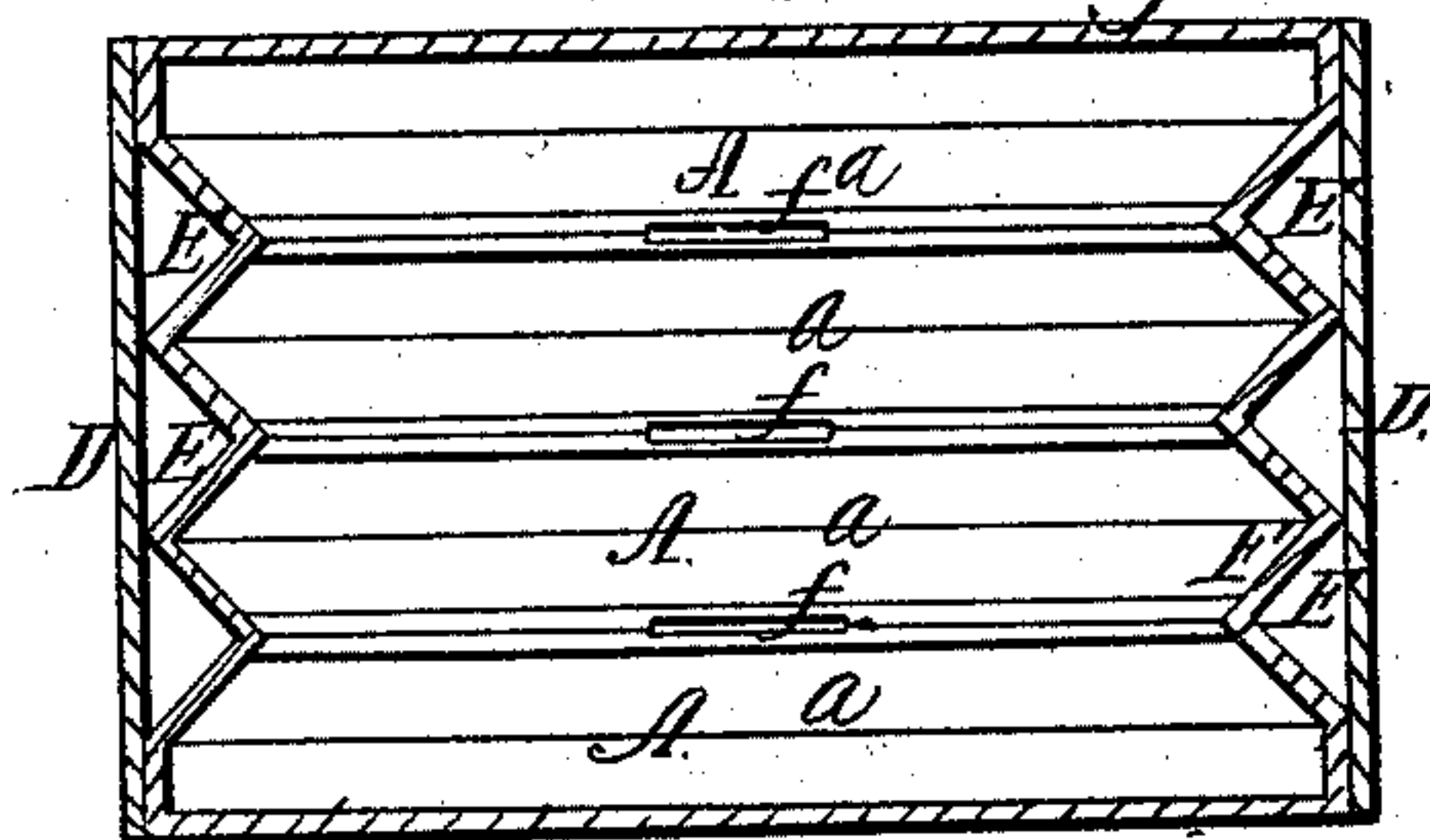
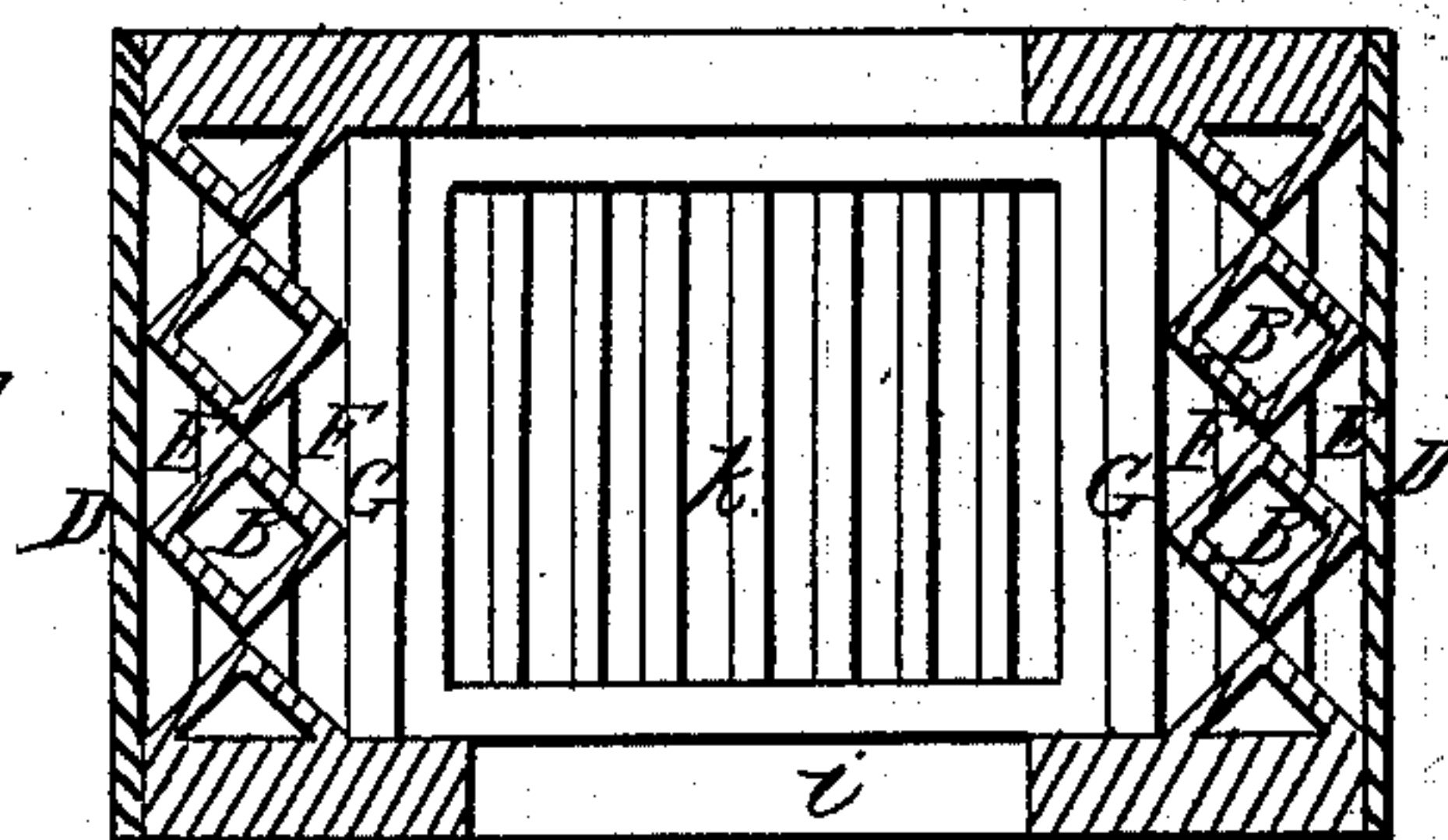


Fig: 3.



Witnesses:
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JOHN S. BARDEN, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO A. J. PERRY & COMPANY, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 62,307, dated February 26, 1867.

IMPROVEMENT IN STEAM GENERATOR.

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

TO ALL PERSONS TO WHOM THESE PRESENTS SHALL COME:

Be it known that I, JOHN S. BARDEN, of the city and county of Providence, and State of Rhode Island, have invented an Improved Steam Boiler; and I do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawings, of which—

Figures 1 and 2 are longitudinal sections; and

Figures 3 and 4 are transverse sections of it.

This boiler is mainly composed of a series of separate generators, A A A, which are arranged side by side, and connected both at top and bottom of each, so as there to open into one another, and are so formed as when together to make a fire-chamber or furnace and flues leading therefrom, in manner as hereinafter specified. Each of such generators is composed of a chamber or vessel, *a*, crowned or convex at top and arched or concave at bottom, and provided with two hollow legs, B B', extending downward from and opening out of it. Each of such legs has a square or lozenge-shaped section, and it terminates at bottom in a hollow projection, *c*, which is square in section, is open at top, and closed at its bottom. The legs of each generator are to be arranged with respect to the body of such generator in manner as represented in the drawings. The ends, crown, and arch of such generator are continuations of the sides of the legs, the same being so as to give to the generator the shape shown in the drawings and form, with two end casings or walls, D D, and the side walls G G of the fire-place H, vertical flues E E, F F, each of which is triangular in transverse section. The inner flues F F are diving flues leading out of the fire-place. Each two flues E F, formed between the legs of any of the next adjacent generators, are to be made to communicate with each other at their lower ends, in order that the smoke of the fire-place, after descending the flue F, may pass into the flue E, and thence up the same into an escape flue, I, arranged over the series of generators, and common to all of them. There is a recess, *f*, formed in the middle of the external side or surface of each generator, and continued upward from the arch to the crown thereof, such recesses being to form flues for the escape of smoke into the chimney. Dampers may be applied to these flues so as to close them when it may be desirable to have the smoke pass into the flues F. A pipe, *g*, is led out of the top of each generator, and is to open into a cross-pipe, *h*, the same being in order to connect the several steam spaces of the generators and take steam from all of them when they may be in use. The fire-place H has a mouth, *i*, and a grate, *k*. The front and rear ends of the said fire-place are formed by plates or walls suitably applied to the external generators of the series. It is intended that each section or generator shall be made of cast iron and be founded in one piece. When several of them are arranged side by side, in manner as exhibited in the drawings, they constitute a boiler which presents a great amount of heating surface, and has its flues formed mainly by the series, in manner as hereinbefore explained.

I am aware that it is not new to construct a boiler of several hollow vessels, arranged side by side, and having pipes of communication leading from the water and steam spaces of one into those of the other of them; therefore I do not claim such. My invention is an improvement on such a boiler.

I therefore claim the improved construction, substantially as described, of each of the sections or generators A A, so as to cause them to form, with the internal and casings G D, the triangular sectional diving flues F and ascending flues E, arranged in manner and so as to open into each other as explained.

I also claim the combination as well as the arrangement of the casings D D and G G with the generators, made as described, the same being so as to form triangular sectional diving and ascending flues E F, as specified.

I also claim the arrangement, as described, of the smoke recess *f* in the external side or surface of each generator, the same being as and for the purpose specified.

JOHN S. BARDEN.

Witnesses:

R. H. EDDY,

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