

(No Model.)

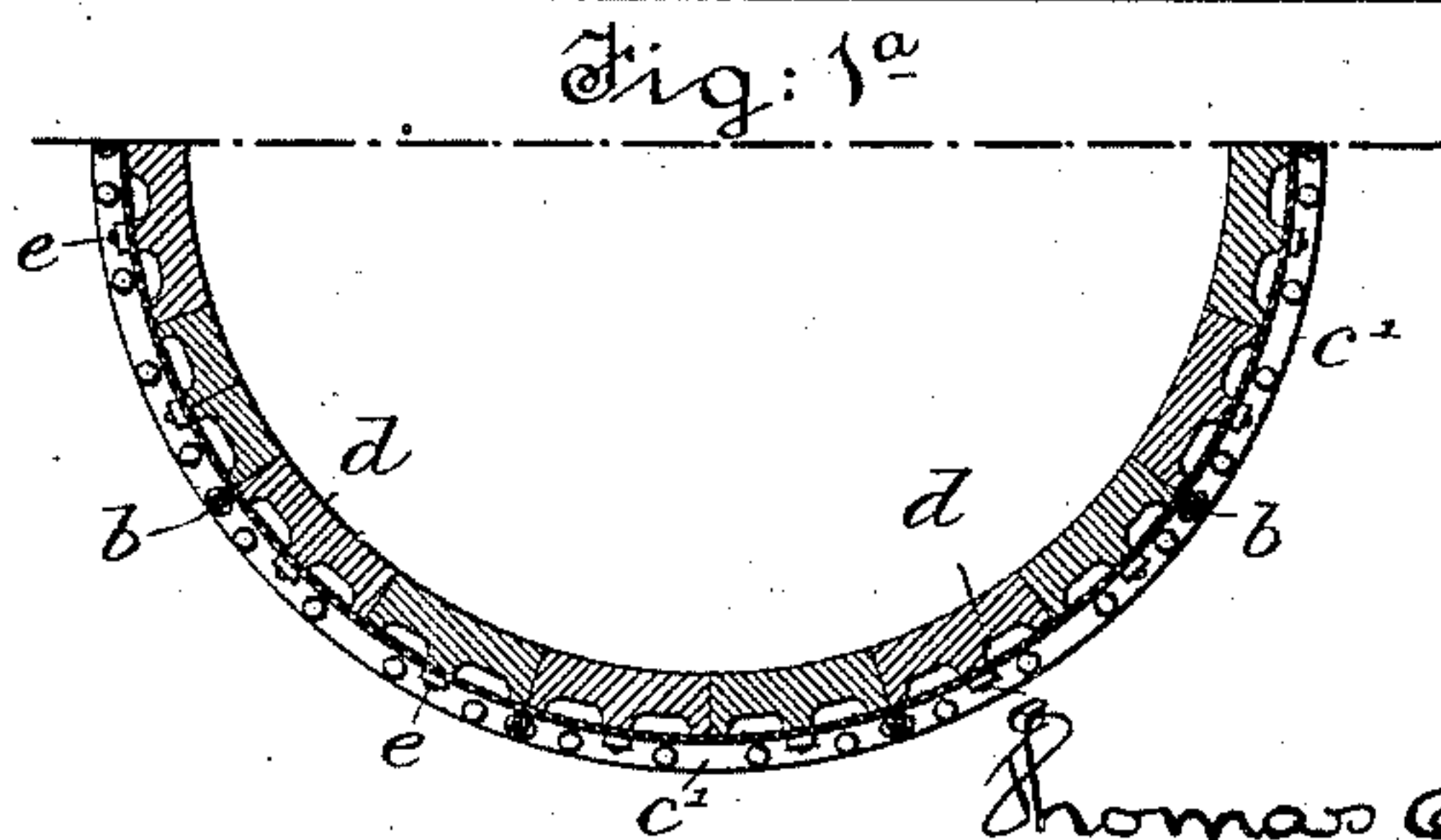
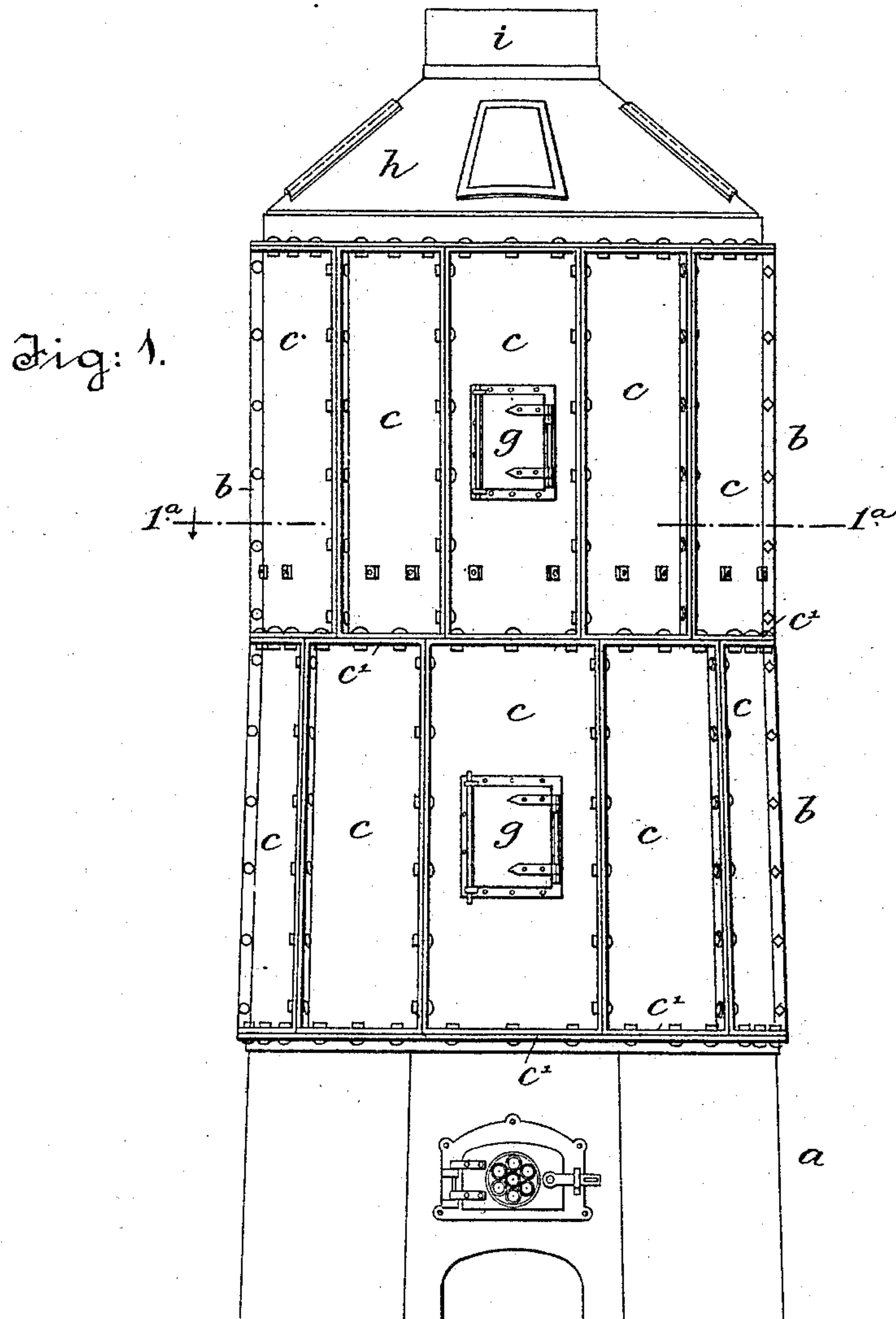
2 Sheets—Sheet 1.

T. F. MORRIN.

SECTIONAL CASING FOR STEAM GENERATORS.

No. 463,308.

Patented Nov. 17, 1891.



WITNESSES:

W. H. Hapling
Chas. J. Walsh

INVENTOR:

Thomas F. Morrin.

By

Henry Bonnett

Attorney.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

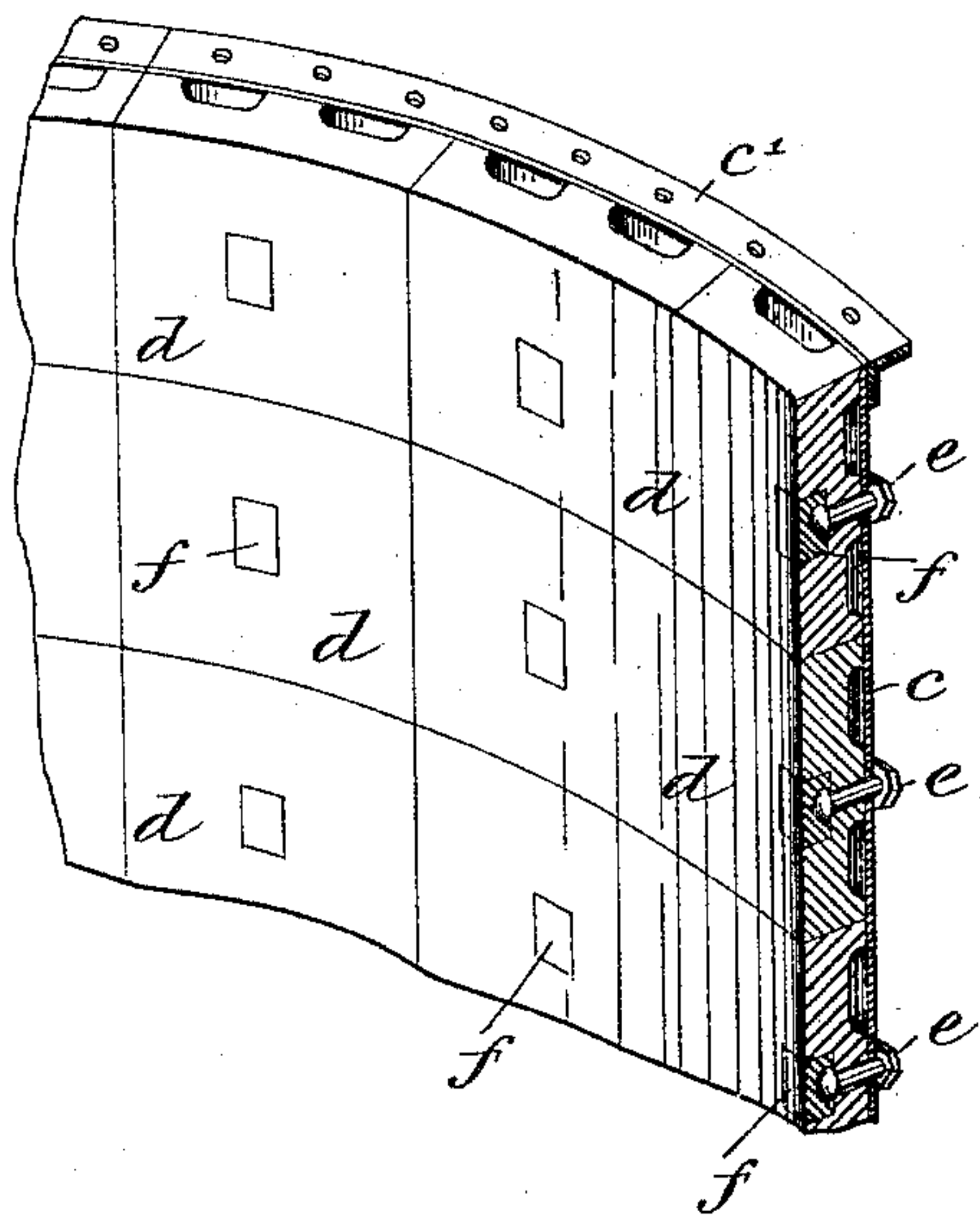


Fig. 2.

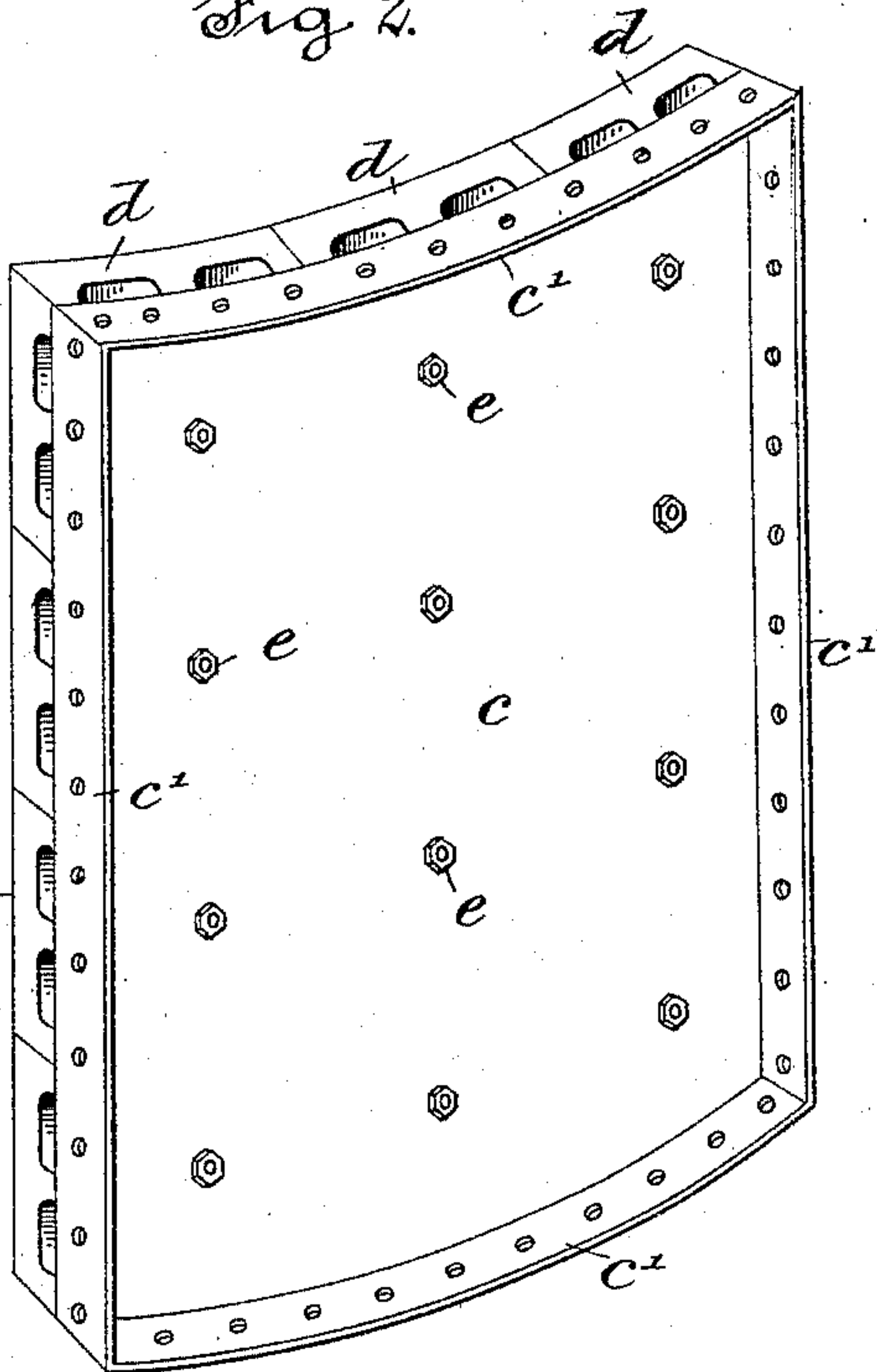


Fig. 4.

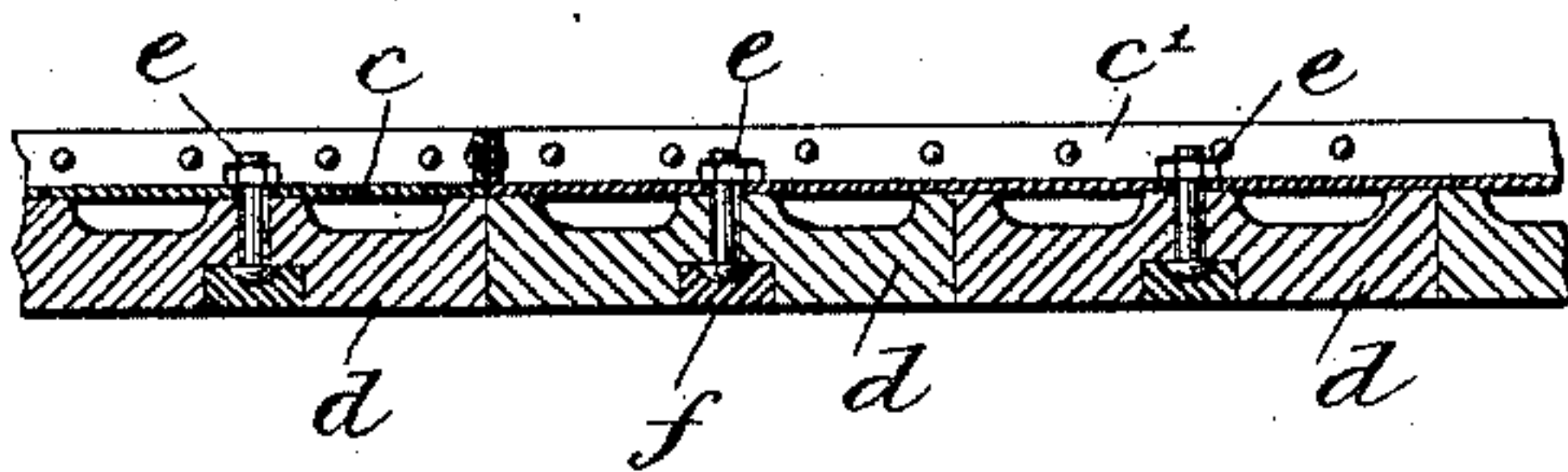
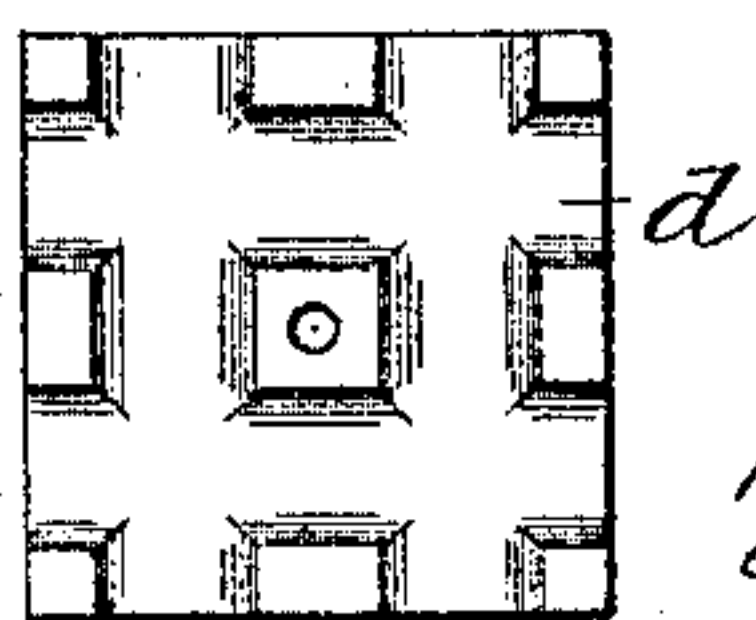


Fig. 5.



INVENTOR:

Thomas F. Morrin.

WITNESSES:

W. A. Halsey
Chas. A. Walsh

By

Henry B. Brown
Attorney.

UNITED STATES PATENT OFFICE.

THOMAS F. MORRIN, OF JERSEY CITY, NEW JERSEY.

SECTIONAL CASING FOR STEAM-GENERATORS.

SPECIFICATION forming part of Letters Patent No. 463,308, dated November 17, 1891.

Application filed February 10, 1891. Serial No. 380,904. (No model.)

To all whom it may concern:

Be it known that I, THOMAS F. MORRIN, a citizen of the United States, and a resident of Jersey City, Hudson county, New Jersey, have invented certain Improvements in Sectional Casings for Steam-Generators, of which the following is a specification.

My invention relates to casings for that class of steam-generators wherein the flames and gases pass upward among generating-tubes; and the object is in part to provide a casing that may be set up in a contracted space, and in part to provide for the ready repair of any part of the casing without the necessity of removing any but the part affected. The construction also affords a convenient means of access to the generator within the casing for purposes of inspection and repair.

In the drawings which serve to illustrate my invention, Figure 1 is a side elevation of a casing for an upright steam-generator embodying my improvements, and Fig. 1^a is a half-horizontal section thereof on line 1^a 1^a in Fig. 1. Fig. 2 is a perspective exterior view, on a larger scale, of one of the segments of the casing. Fig. 3 is a perspective interior view of a portion of one of the segments, partly in vertical section. Fig. 4 is a view illustrating the application of my invention to a casing having plane surfaces. Fig. 5 shows the back or outer face of one of the lining-tiles detached.

a is the base of the casing. The portion mounted on this base is composed of drums *b b*, of which there may be two or more, according to circumstances. These drums are each composed of segments *c*. There may be any convenient number of these segments, and they may be all of the same breadth or they may vary in breadth. As herein shown they are of the same breadth. Each segment *c* will be of sheet metal, and it will have a marginal flange *c'* about it for convenience in bolting the segments and drums together. In Fig. 2 I have shown this flange formed integrally with the plate of the segment, and in Fig. 3 I have represented it as formed of angle-iron riveted to the sheet. Either construction may be employed. The segment *c* is lined with blocks or tiles *d* of refractory material. These may be of fire-clay, terra-

cotta, or the like. Each tile will be secured to the plate independently of the others, so that it may be removed when injured and be readily replaced without disturbing the others. I prefer to secure the tile to the plate by means of a bolt *e*, and in order to prevent the head of the bolt from being burned off or injured by the heat it is let into a recess (see Figs. 3 and 4) in the tile and the recess then filled with a protecting covering *f* of fire-clay or like plastic refractory material. The recesses and bolt-holes will be formed in the tile in the process of manufacture.

In order to diminish the transmission of heat to the metal of the casing, I prefer to recess the tile at the back, as clearly shown in Fig. 5, which represents one of the tiles detached. This recessing materially reduces the surface-contact of the tile with the metal of the casing and reduces their weight also. Any form of recess may be employed. Where the tiles are applied to a cylindrical casing, as in Figs. 2 and 3, they will be molded to the curvature of the casing; but they may be as well applied to casings having flat or plane surfaces, as represented in Fig. 4. The lower portion *a* of the casing will be constructed of an outer shell of cast or wrought iron, lined with fire-bricks or tiles in the usual way. Ordinarily this shell will be made up of segments or parts for convenience in handling and placing it, especially if the generator be large.

Doors *g* will be provided in the drums *b* to afford access to the interior of the casing. There may be any convenient number of such doors. The roof *h* of the casing terminates in the uptake or outlet *i* for the smoke and gases.

One important advantage of my construction lies in the facility it affords for setting up large generators—say from five hundred horse-power upward—in contracted spaces, where the generator and casing must be introduced in parts and set up in place. Any segment or any lining-tile of a segment may be removed and replaced without in any way disturbing the others.

In Fig. 1 I have shown only a few of the bolts *e* which secure the tiles to the metal plates of the sections, in order to avoid unnecessary repetition. The tiles *d* may be of any convenient dimensions and these dimen-

sions will vary somewhat with the size of the casing. In Fig. 1 the lower drum *b* of the casing is represented as tapering somewhat, and where this is the case the tiles will be tapered accordingly. The doors *g* will be lined with tiles in the same manner as the sections or segments of the casing.

Having thus described my invention, I claim—

10 1. A casing for housing a steam boiler or generator, made up of detachable and removable sections of sheet metal, and each of said sections having a refractory lining independent of the lining of the other sections, where-
15 by any one of the sections may be removed for inspection or repair without disturbing the others.

20 2. A casing for housing a steam boiler or generator, made up of flanged sections of sheet metal secured detachably together, and each of said sections provided with a lining of tiles secured each independently to the inner face of the flanged metal section, substantially as and for the purpose set forth.

25 3. An upright casing for housing a steam

boiler or generator lined with tiles or blocks of refractory material, each of said tiles being secured removably to the inner face of the upright wall of the casing independently of the other tiles, whereby any one tile may be removed and replaced without disturbing the remainder of the lining.

4. An upright cylindrical casing for housing a steam boiler or generator, composed of drums of metal placed one upon the other and detachably secured together, each drum being composed of segments or sections detachably secured together and lined on their inner faces with tiles of refractory material secured removably and independently to the metal section of the casing, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

THOMAS F. MORRIN.

Witnesses:

HENRY CONNETT,
CHAS. A. WALSH.