

MATTHEWS & MOORE.

Gas-Retort Cover.

No. 85,463.

Patented Dec. 29, 1868.

Fig. 1.

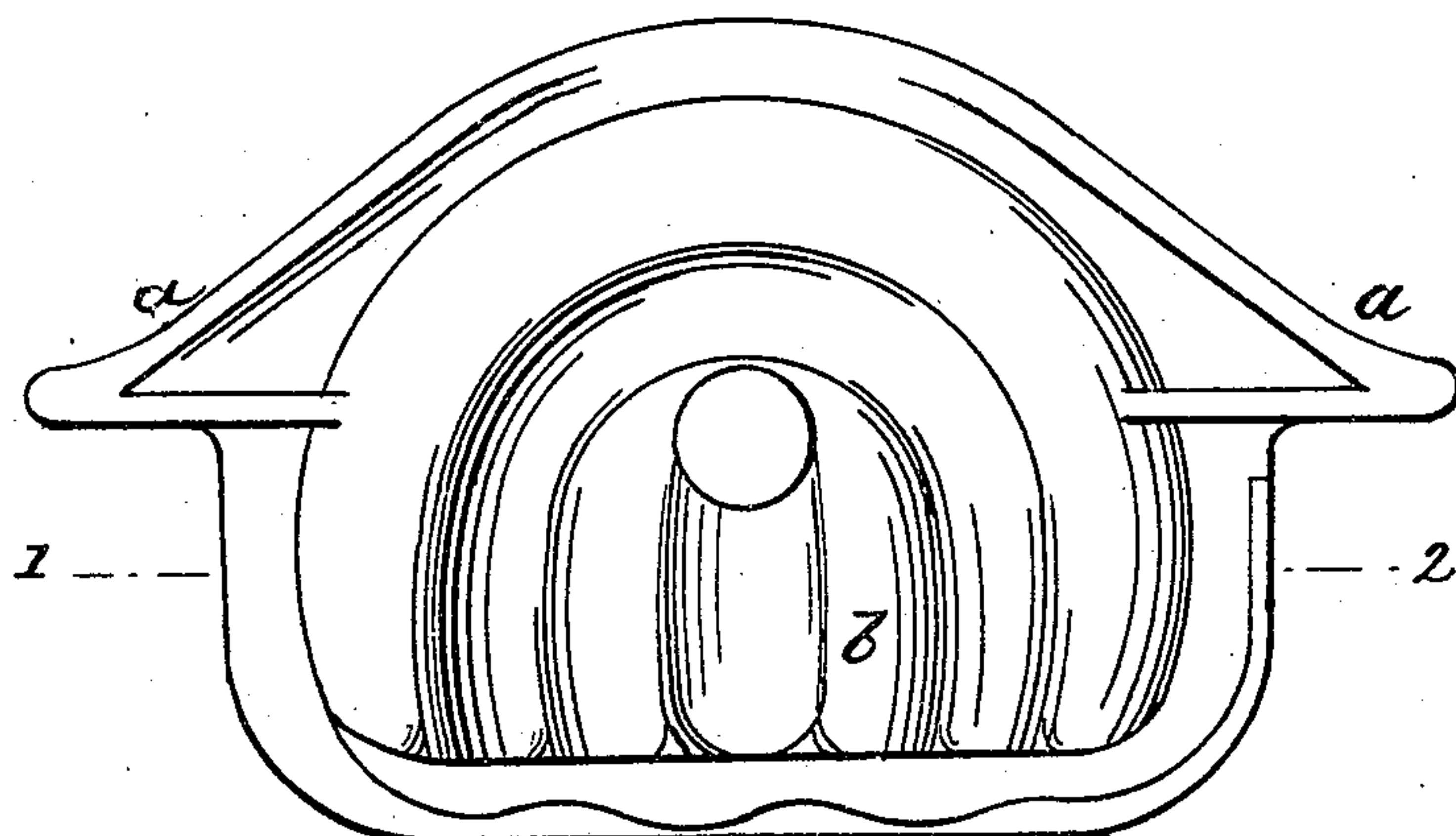
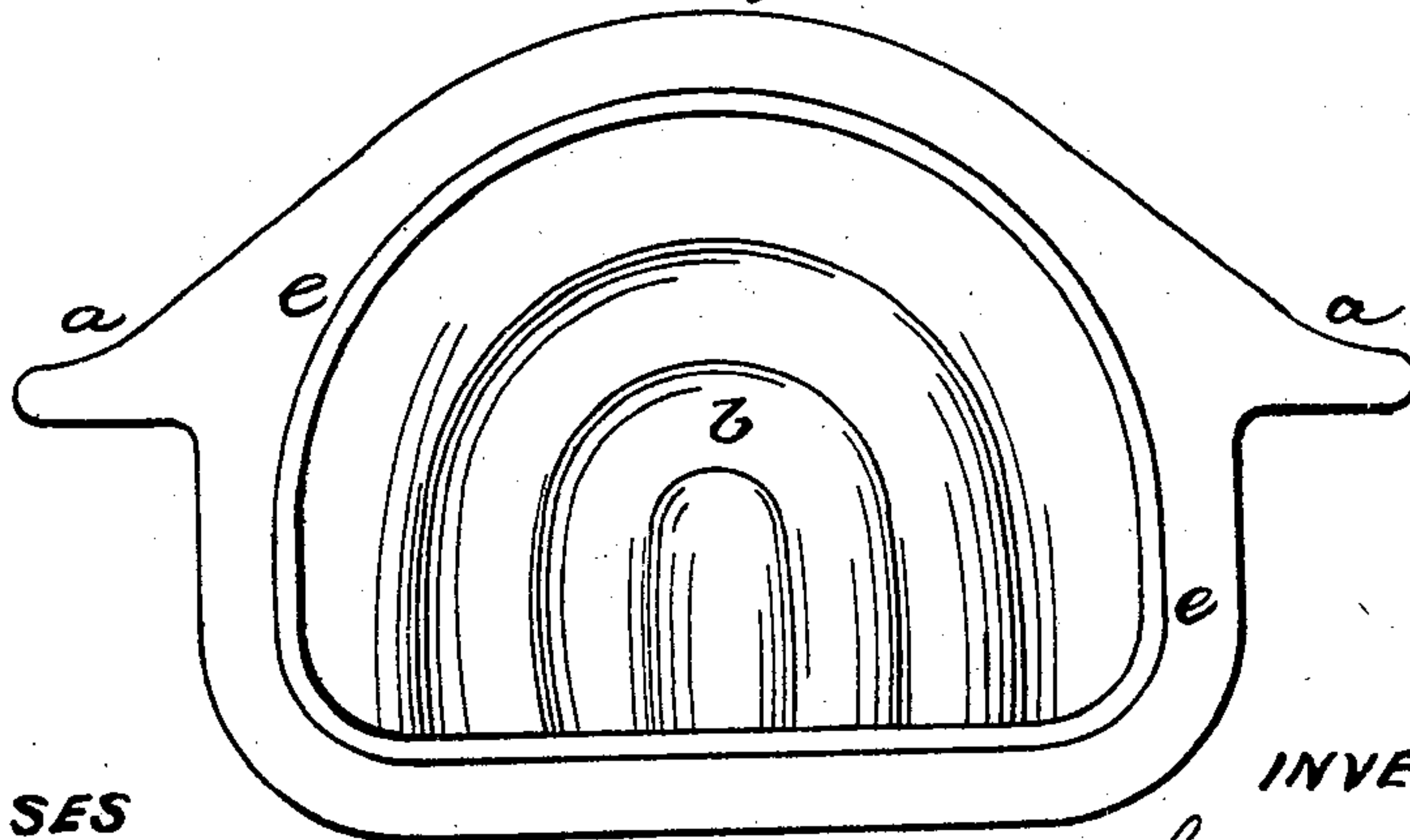


Fig. 2.



Fig. 3.



WITNESSES

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WILLIAM MATTHEWS AND JAMES MOORE, OF PHILADELPHIA,
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Letters Patent No. 85,463, dated December 29, 1868.

IMPROVED COVER OR DOOR FOR GAS-RETORTS, FURNACES, &c.

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

To all whom it may concern:

Be it known that we, WILLIAM MATTHEWS and JAMES MOORE, of Philadelphia, Pennsylvania, have invented an Improved Cover or Door for Retorts, Furnaces, &c.; and we do hereby declare the following to be a full, clear, and exact description of the same.

The covers of retorts and doors of furnaces are, of necessity, subjected to sudden changes of temperature, and to different degrees of heat in different parts, so that rapid and unequal expansion and contraction take place, which result in frequent fractures.

In order to obviate this evil, we make the main body of the door or cover, or that portion which is most exposed to the direct heat of the fire, of a concavo-convex form, and wave or corrugate this portion, so that it may be at liberty to expand and contract, and accommodate itself to sudden changes of temperature without breaking.

Figure 1, of the accompanying drawing, which forms a part of this specification, represents a retort-cover, made according to our improvement;

Figure 2, a sectional plan, on the line 1-2, fig. 1; and Figure 3, a rear view.

As far as general outline is concerned, the cover is similar to those in common use, and is provided with the usual projections, *a a*, for attachment to the front of the retort, and with a rib, *e*, on the back for fitting in the retort.

The body of the cover, or that portion immediately

exposed to the fire, is made to project outwards, and is of the concavo-convex form indicated by the dotted lines *xx*, and is waved or corrugated, as clearly indicated in the drawing.

When expansion by heat occurs, this corrugated portion of the cover will have a tendency to bulge outwards, and the waves or corrugations will accommodate themselves to this tendency; hence the liability to fracture is diminished.

It will be readily understood, without illustrations, how the invention may be applied, with advantage, to the doors of fire-places and furnaces, the corrugations being arranged in a manner which the size and shape of the door may suggest as the most appropriate.

We claim as our invention, and desire to secure by Letters Patent—

A retort-cover or furnace-door, having the portion, exposed to the fire, of a concavo-convex form, and this portion waved or corrugated, all substantially as and for the purpose herein set forth.

In testimony whereof, we have signed our names to this specification, in the presence of two subscribing witnesses.

WM. MATTHEWS.
JAMES MOORE.

Witnesses:

JACOB R. MASSEY,
DAVID WONDERLY.