T. E. DURBAN.

FURNACE CASING.

APPLICATION FILED JAN. 3, 1910.

997,977.

Patented July 18, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

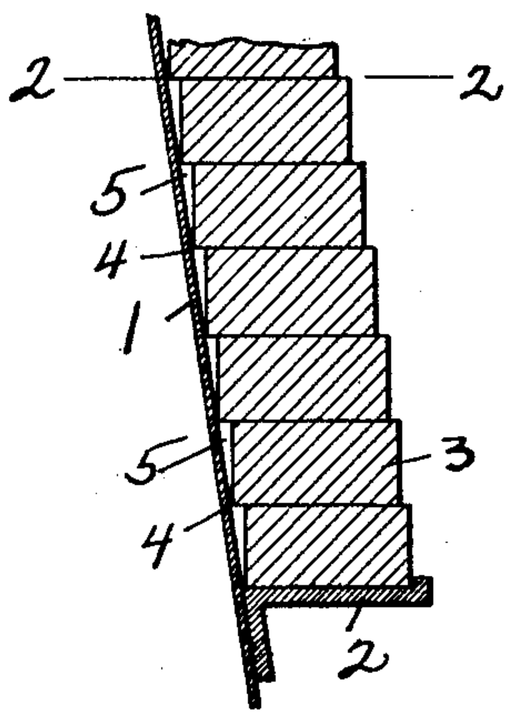
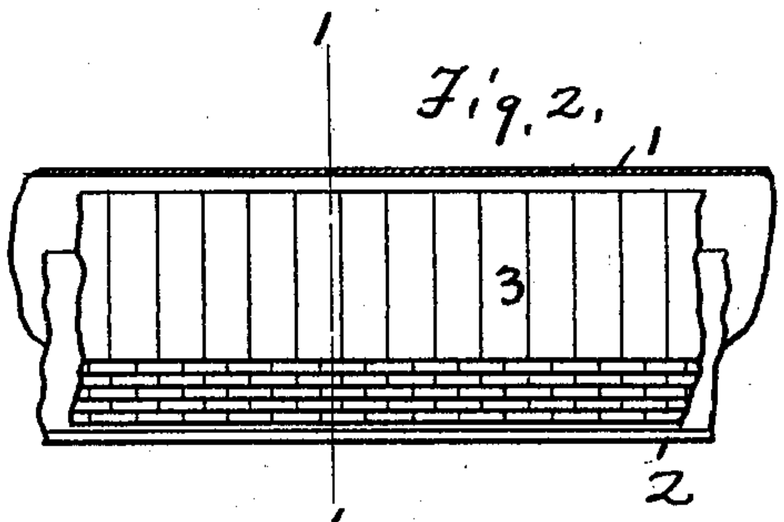


Fig. 2.



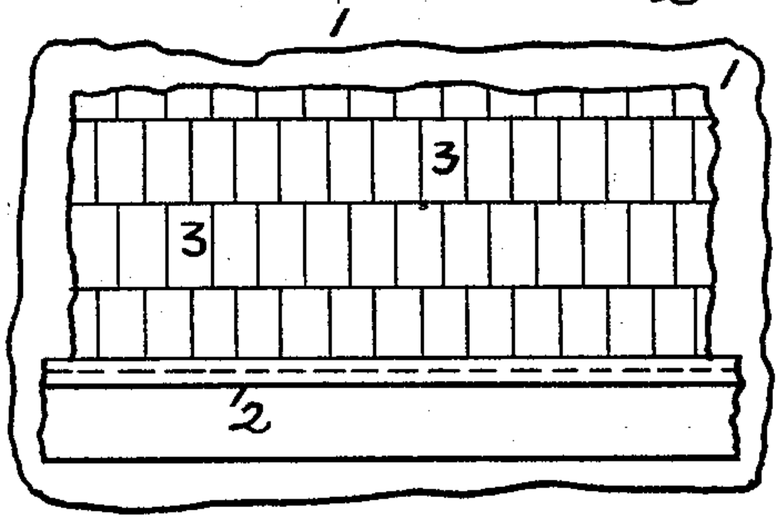


Fig. 3.

Fig. 4.

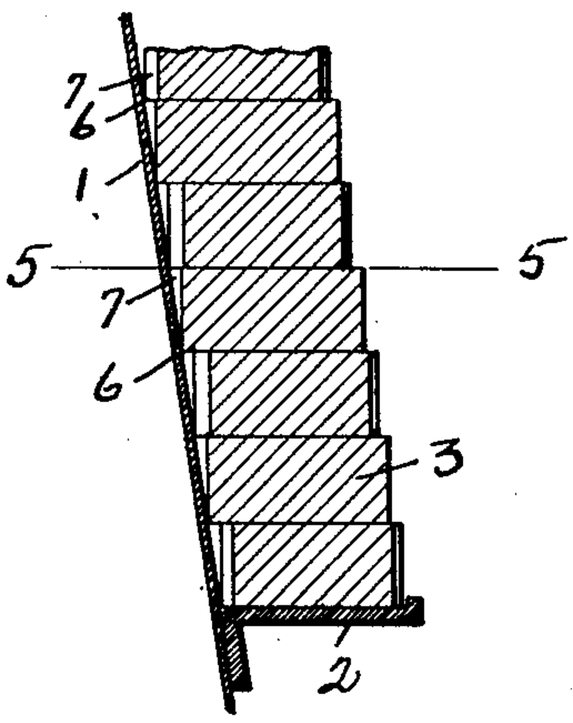


Fig. 5

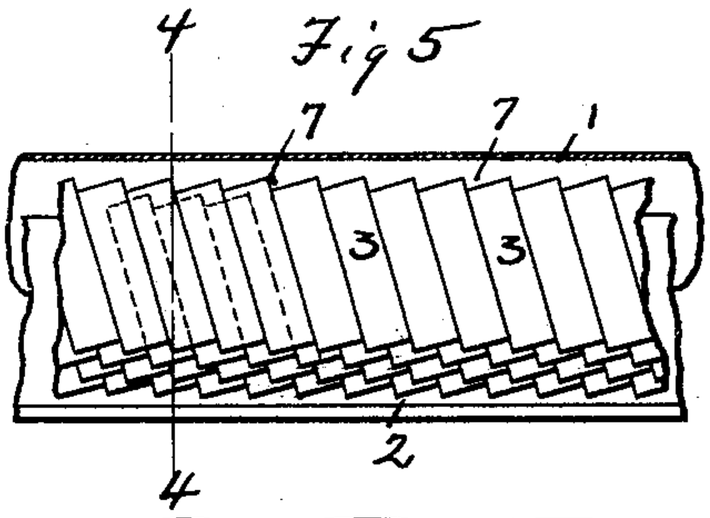
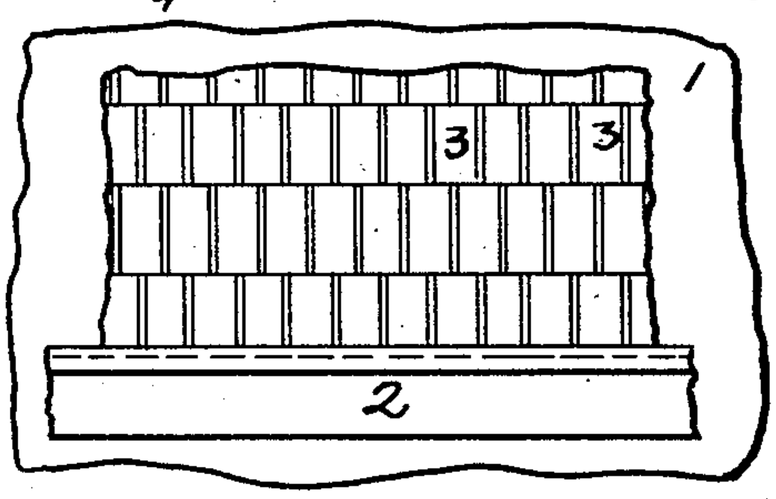


Fig 6



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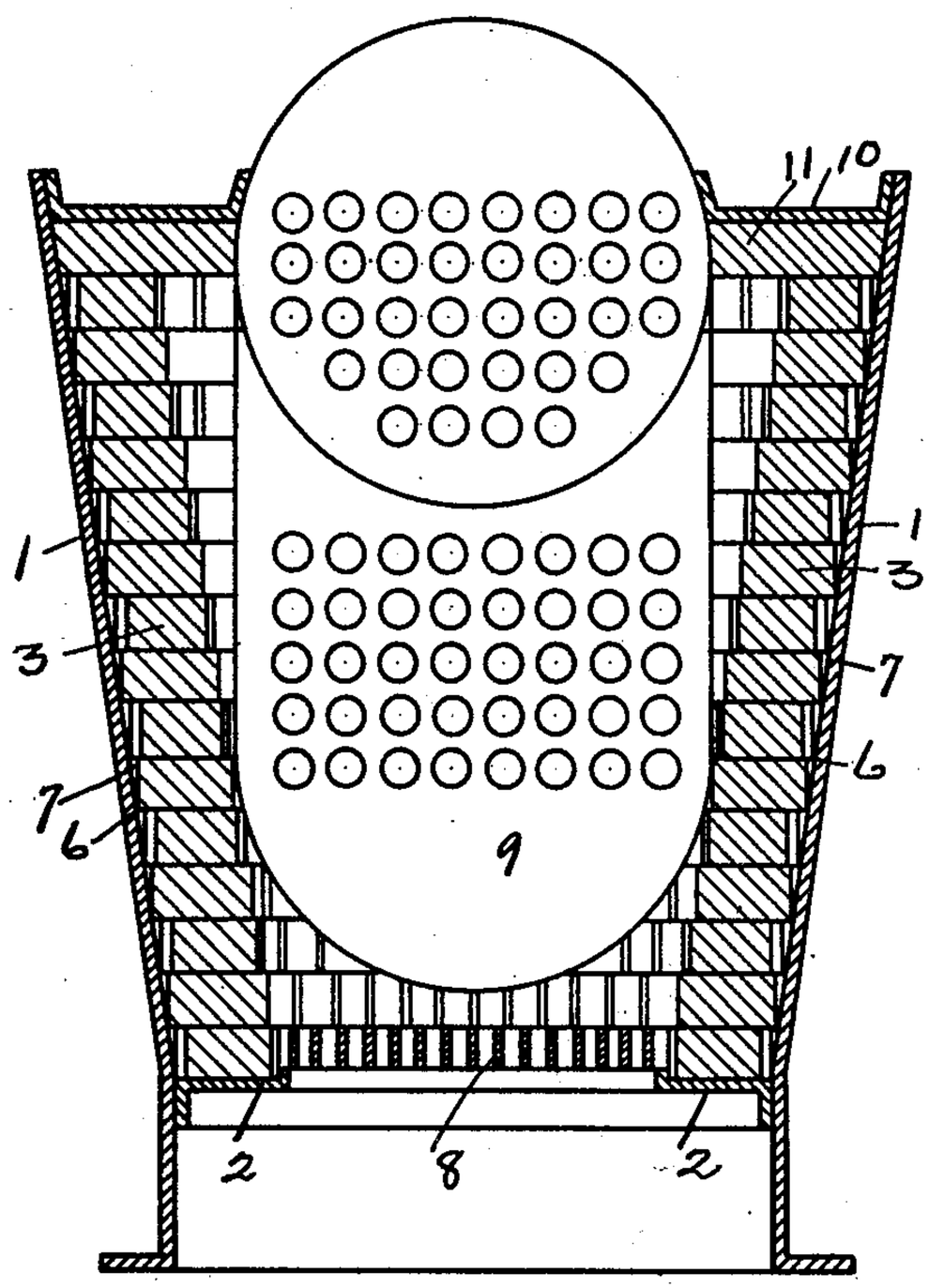
2 SHEETS—SHEET 2.

Fig. 1.



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UNITED STATES PATENT OFFICE.

THOMAS E. DURBAN, OF ERIE, PENNSYLVANIA, ASSIGNOR TO ERIE CITY IRON WORKS, OF ERIE, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

FURNACE-CASING.

997,977. Specification of Letters Patent. **Patented July 18, 1911.**

Application filed January 3, 1910. Serial No. 536,027.

To all whom it may concern:

Be it known that I, THOMAS E. DURBAN, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Furnace-Casings, of which the following is a specification.

This invention relates to furnace casings, and consists in certain improvements in the construction thereof, as will be hereinafter fully described and pointed out in the claims.

More particularly the invention relates to that type of furnace casing which is provided with a metal jacket and a brick lining. With casings of this type, it is desirable to insulate the metal jacket as much as possible, not only by interposing the brick, but also by providing air spaces between the brick and the jacket, for this purpose. It is also desirable to have the brick so arranged that they can be readily replaced, and will, under ordinary conditions, remain in position without artificial fastenings.

The invention is illustrated in the accompanying drawings as follows:

Figure 1 shows a section of a fragment of the casing wall on the line 1—1 in Fig. 2; Fig. 2 a section on the line 2—2 in Fig. 1; Fig. 3 an elevation of a fragment of the wall viewed from within the furnace; Fig. 4 a section on the line 4—4 in Fig. 5 of the preferred construction; Fig. 5 a section on the line 5—5 in Fig. 4; Fig. 6, an elevation of a fragment of the casing viewed from within the furnace. Fig. 7 is a vertical transverse section through the furnace showing the application of my invention.

1 marks the jacket. This is inclined as clearly shown in Figs. 1 and 4.

2 marks a bracket preferably secured to the jacket, and forming a support for the brick lining, and 3 the brick. In the form shown in Figs. 1, 2 and 3, these brick are arranged horizontally with the corner 4 formed by the bottom and end face next the jacket in contact with the jacket wall. As the bricks are horizontal, and the jacket at an incline, it is evident that air spaces will be formed between the face of the bricks next the jacket and the jacket. I prefer to arrange the bricks edgewise as clearly shown, thus increasing the size of the air spaces, and in this way increasing the efficiency of the lining.

The inclined jacket with the bricks in contact therewith makes a wall which inclines so that it naturally is forced against the wall both by its own weight and by any pressure there may be from material within the furnace. At the same time, the bricks may be readily laid in place, and being horizontal readily fit at the bottom and top casings. At the same time, the air spaces between the brick and the jacket are provided.

In the preferred construction shown in Figs. 4 5 and 6, the jacket has the incline, so that there is an air space formed between the brick and the jacket, but the brick are also slanting sidewise relatively to the jacket. In this way when the corner of the brick contacts the jacket, the air space is increased over that shown in Figs. 1, 2 and 3. In this construction also, I prefer to have the bricks set edgewise as this increases the size of the air spaces over a construction where they are laid flat as ordinarily.

In the furnace shown in Fig. 7, 8 marks the grate, 9 the outlines of a boiler, and 10 and 11 the cap plate and lining at the top of the furnace. These parts are shown simply to indicate the application of my invention.

I do not claim in this application broadly a furnace casing having a lining of bricks having the faces next to the jacket inclined relatively to the jacket as the invention thus broadly expressed is contained in a former application Serial Number 498,943, filed May 28, 1910.

What I claim as new is:

1. In a furnace casing, the combination of a metal jacket and a lining of brick, said brick being set with the edge faces as bases and having both their edge faces and side faces inclined to the jacket.

2. In a furnace casing the combination of an inclined metal jacket; a lining of bricks set more nearly in a horizontal position than at right angles to the plane of the jacket whereby the face of the brick next the jacket is at angle thereto, forming an air space between the faces of the brick next the jacket and the jacket.

3. In a furnace casing, the combination

of an inclined metal jacket; and a brick lining having its brick slanting sidewise relatively to the jacket, said brick being more nearly horizontal than a right angle to the jacket, thus forming air spaces between the face of the brick next the jacket and the jacket.

4. In a furnace casing, the combination of an inclined metal jacket; a brick lining with the brick therein set edgewise, and slanting sidewise relatively to the jacket and in a position more nearly horizontal than a right angle to the jacket thus forming air spaces between the jacket and the face of the brick next to the jacket.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

THOMAS E. DURBAN.

Witnesses:
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MARGARET BERGLE.