

J. WHITAKER.
DOOR FOR COKE OVENS OR FURNACES.
APPLICATION FILED JUNE 15, 1908.

912,218.

Patented Feb. 9, 1909.

Fig. 1.

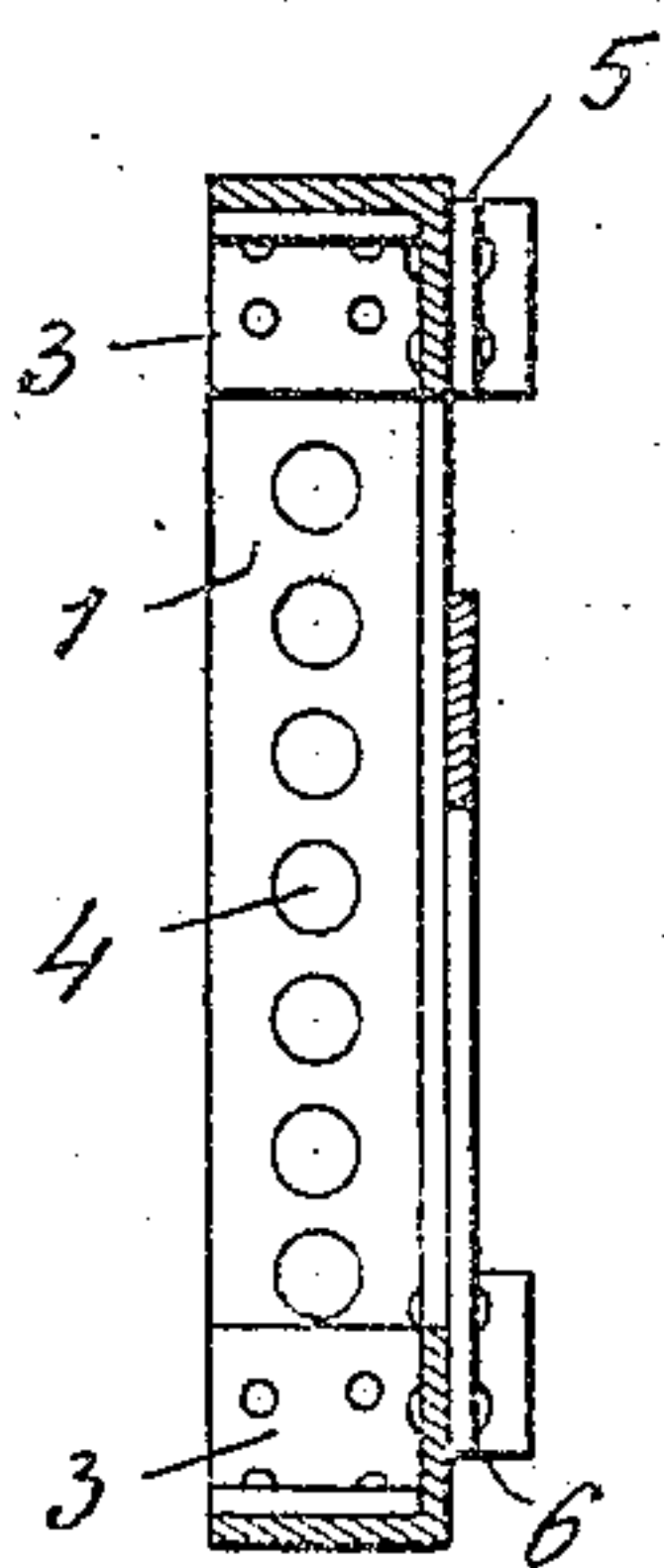


Fig. 2.

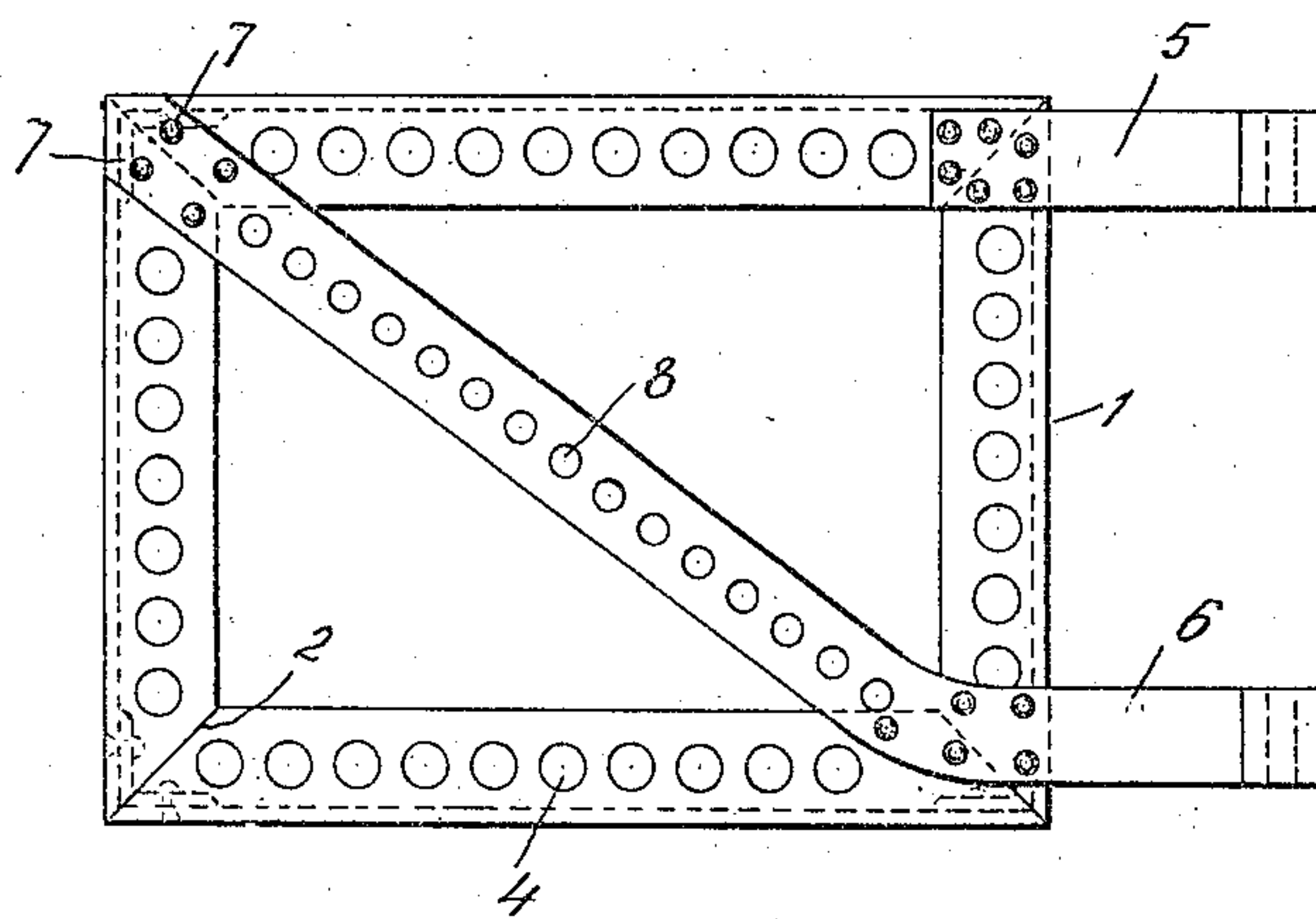


Fig. 3.

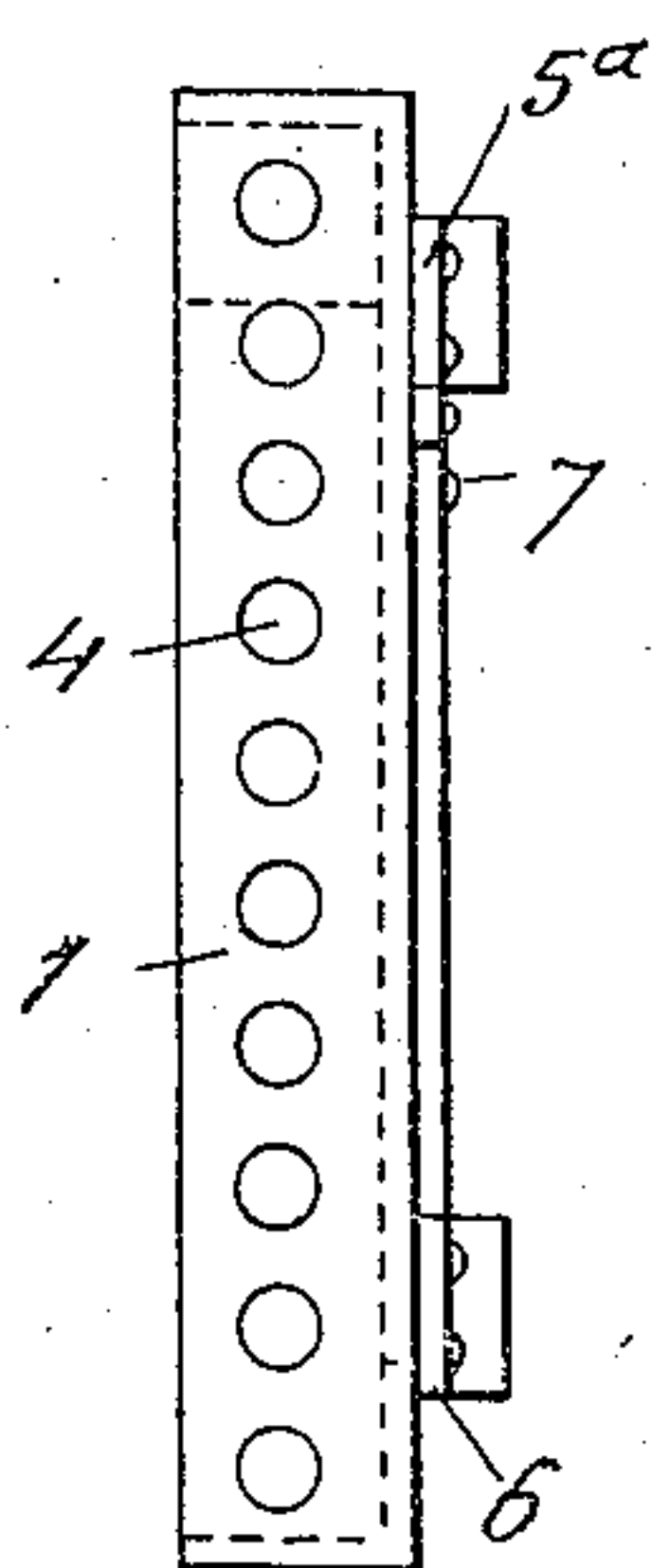
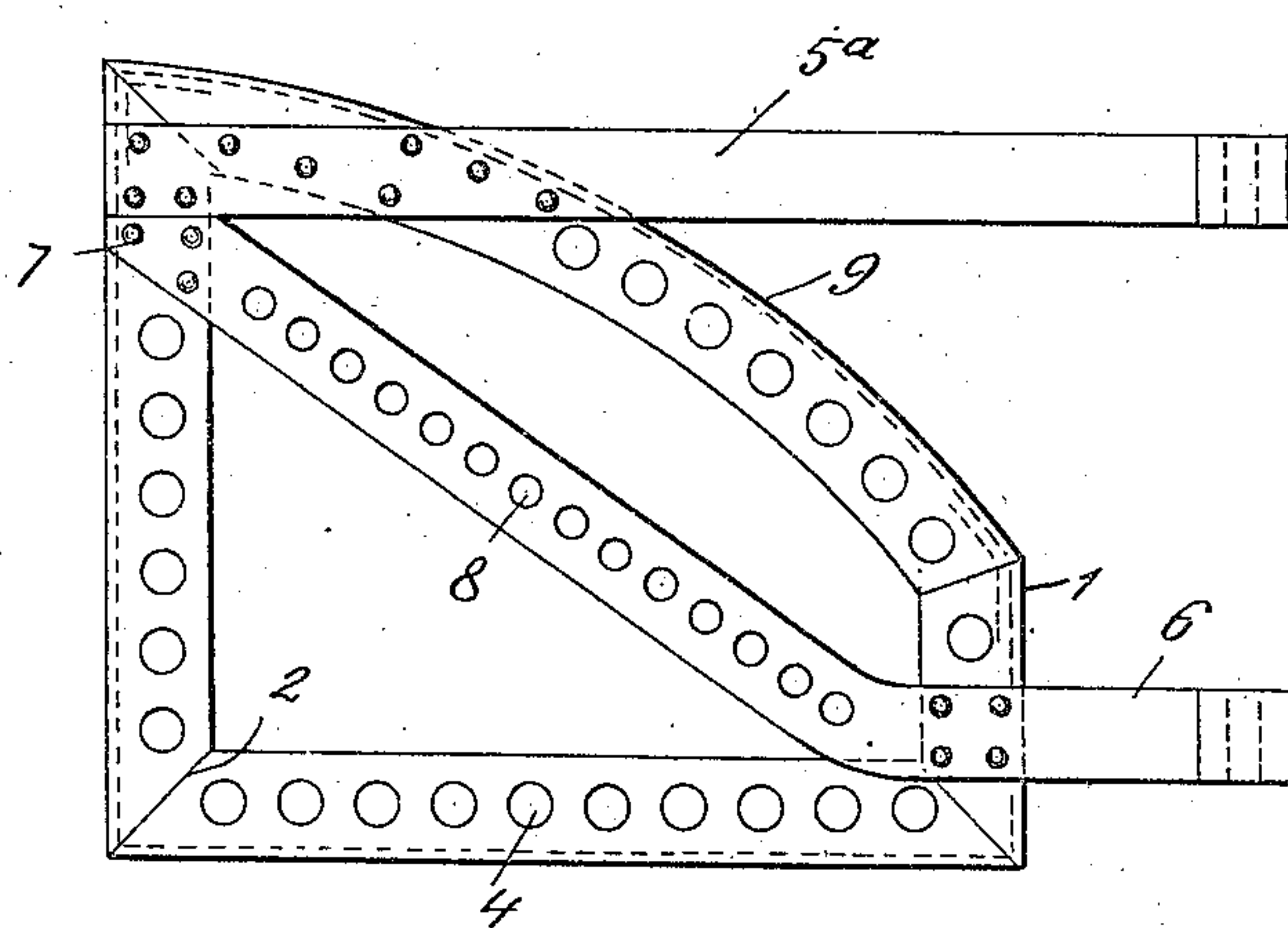


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN WHITAKER, OF NEWHAVEN, PENNSYLVANIA.

DOOR FOR COKE OVENS OR FURNACES.

No. 912,218.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN WHITAKER, a citizen of the United States of America, residing at Newhaven, in the county of Fayette and State of Pennsylvania, have invented certain new and useful Improvements in Doors for Coke Ovens or Furnaces, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to doors for coke ovens and furnaces, and the primary object of my invention is to provide a strong and durable door that will stand considerable heat before warping or becoming distorted.

Another object of my invention is to provide a door of the above type having a novel metallic skeleton frame that can be backed or filled with a non-fusible material as fire-brick, fire-clay, and concrete suitably reinforced.

My invention aims to provide a metallic skeleton door frame that will equalize the temperature to which the same is subjected, the design of the frame being such as to prevent warping and fractures of the material forming the body of the door, also compensating for the expansion due to the high heat to which doors of this type are subjected.

The detail construction entering into my invention will be presently described and then specifically pointed out in the appended claims.

In the drawings, Figure 1 is a vertical sectional view of the frame of my door, Fig. 2 is a front elevation of the same, Fig. 3 is an end view of the door, and Fig. 4 is a front elevation of a modified form or different shaped door.

My door frame is constructed of metallic angle bars, angle plates and straps, all secured together by rivets to form a rigid structure. The angle bars 1 are assembled to provide a rectangular structure with the beveled ends 2 of said angle bars connected upon their inner edges by angle plates 3; said angle plates bracing the corners of the door. The flanges of the angle bars 1 are apertured, as at 4 to provide a foraminous structure for preventing the angle bars from warping and for compensating for the expansion of said angle bars due to the intense heat to which said bars are subjected. Secured to the upper right hand corner of the

door is a hinge strap 5, and secured to the lower right hand corner of the door is a hinge strap 6, said strap being of a greater length than the strap 5 and extending diagonally across the door to the upper left hand corner, where the end of said strap is secured by rivets 7 or similar fastening means. The diagonally disposed portion of the strap 6 is apertured, as at 8 for the same purpose as the apertures 4 of the angle bars 1.

In the fabricated frame is placed fire brick, fire clay, cement, or a similar non-fusible material, (not shown), and this material is prevented from fracturing by the perforated angle bars 1.

In Fig. 4 of the drawings I have illustrated a door frame designed for closing an arched door way, the frame having a curved angle bar 9 to which is secured an elongated hinge strap 5^a, said strap being also secured to the vertical angle bar at the upper edge of the frame.

It is impossible for a door constructed in accordance with my invention to buckle or become distorted by an intense heat, therefore its adaptability to ovens, furnaces and fire boxes.

While in the drawings forming a part of this application there is illustrated the preferred embodiments of my invention, I would have it understood that the elements therein can be varied or changed without departing from the spirit of the invention.

Having now described my invention what I claim as new, is;—

1. A frame for doors comprising angle bars having beveled ends, angle plates for securing the beveled ends of said bars together, hinge straps secured to said frame, one of said straps being of a greater length than the other of said straps and extending diagonally across said frame, said strap and said angle bars having apertures formed therein, substantially as, and for the purpose described.

2. A frame for doors comprising a foraminous metallic structure with the following combination of elements,—angle bars, angle plates connecting said bars, and hinge straps secured to said bars.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN WHITAKER.

Witnesses:

ALBERT HOOPER,
E. W. BENTEL.