

J. H. SIMPKINS.  
BOILER SETTING.  
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925,519.

Patented June 22, 1909.

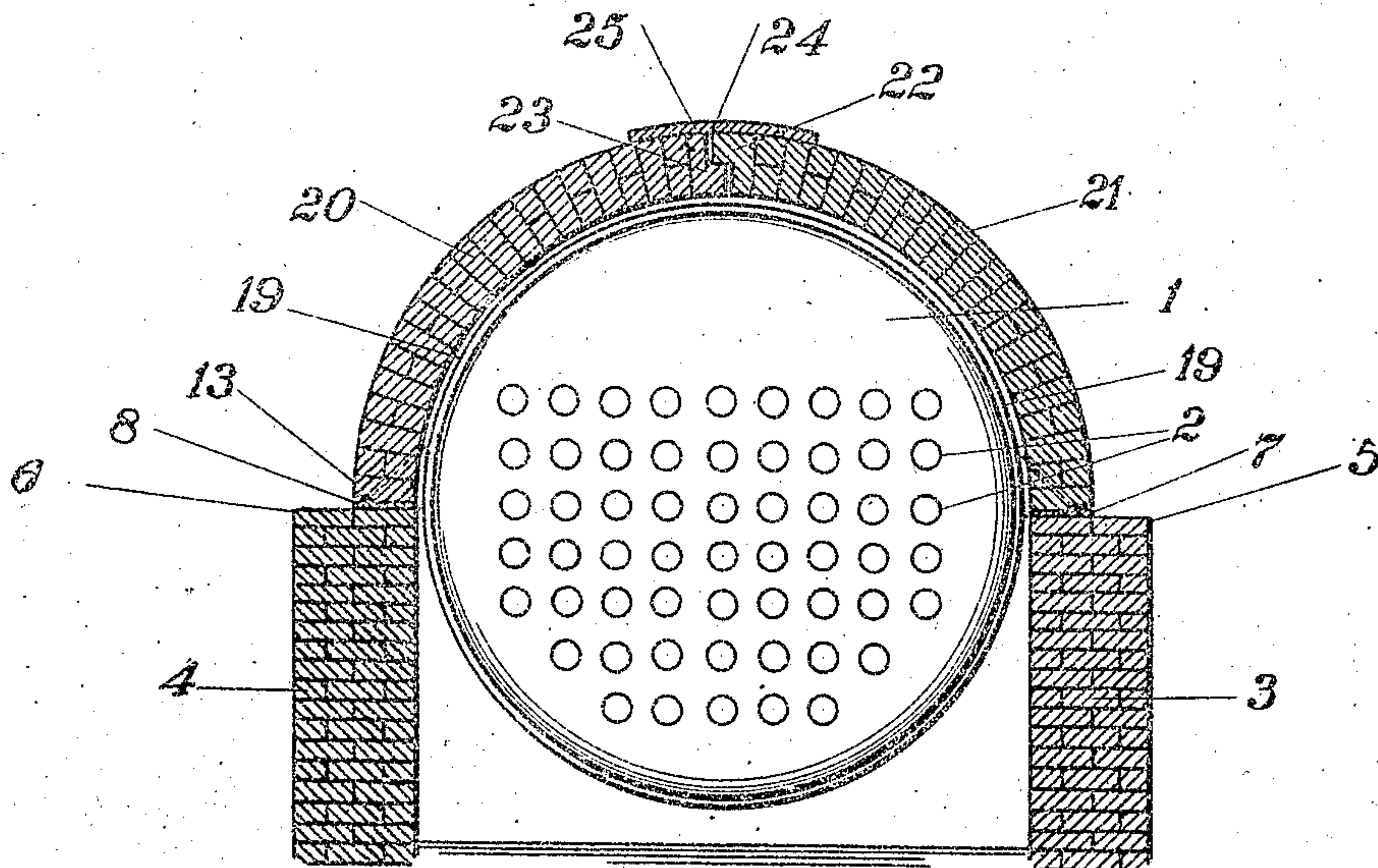


Fig. 1.

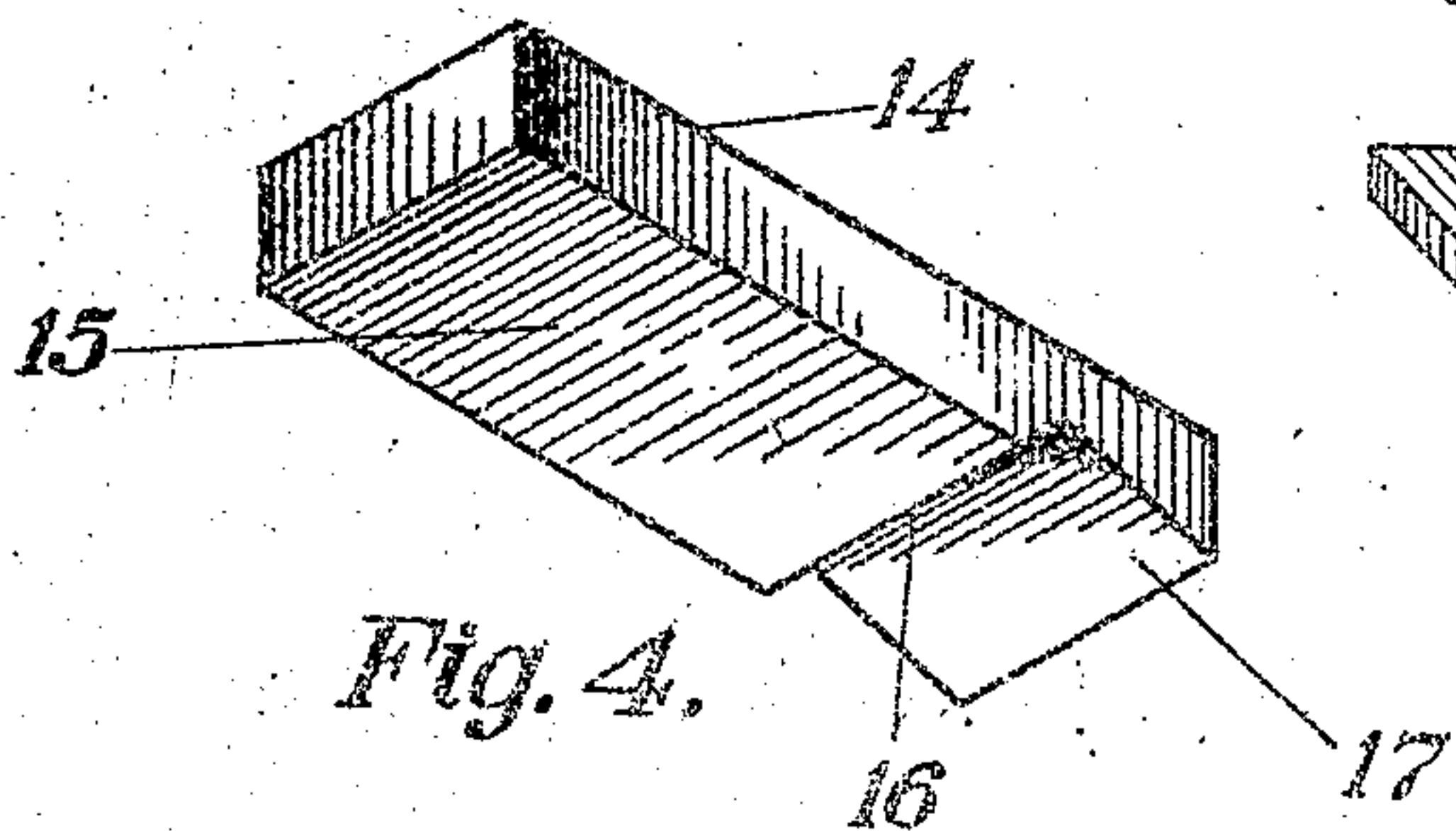


Fig. 4.

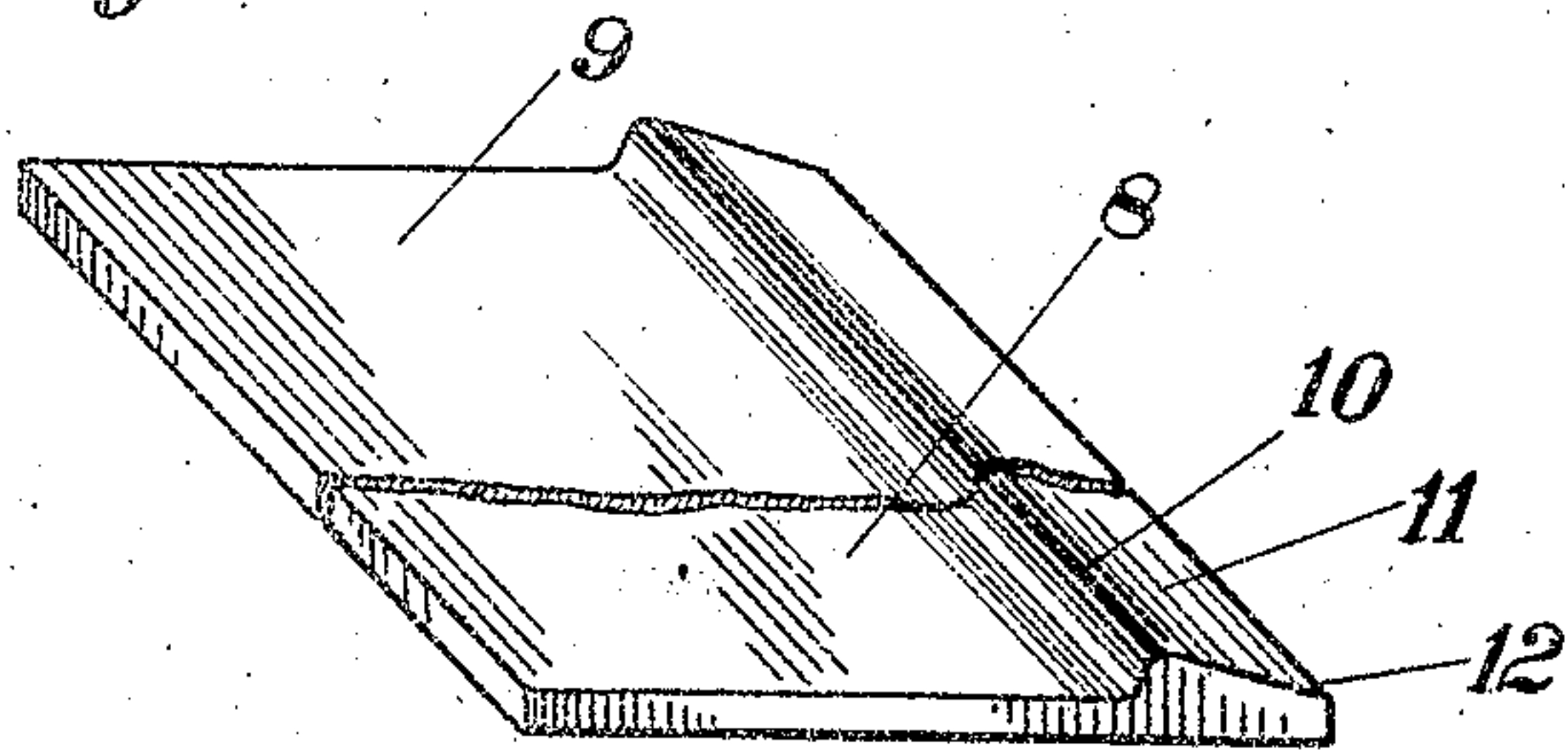


Fig. 3.

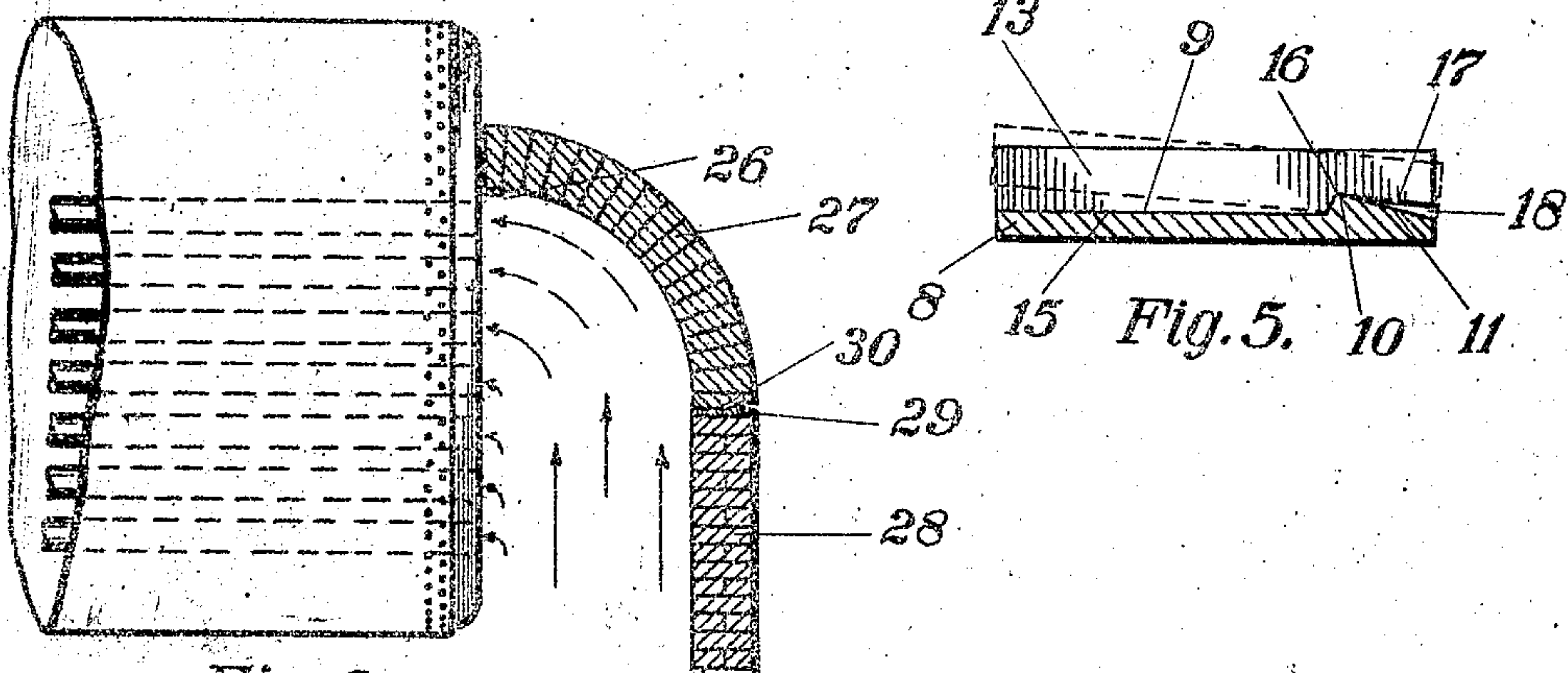


Fig. 2.

WITNESSES:

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# UNITED STATES PATENT OFFICE.

JOHN H. SIMPKINS, OF UHRICHSVILLE, OHIO.

## BOILER-SETTING.

No. 925,519.

Specification of Letters Patent.

Patented June 22, 1909.

Application filed June 15, 1908. Serial No. 433,512.

*To all whom it may concern:*

Be it known that I, JOHN H. SIMPKINS, a citizen of the United States, residing at Uhrichsville, in the county of Tuscarawas and State of Ohio, have invented certain new and useful Improvements in Boiler-Settings, of which the following is a specification.

My invention relates to improvements in boiler setting and comprises especially novel means for permitting the side and rear arches to rock under the expansion of the boiler and to resume their proper positions upon the contraction of the same, without injury to the brick work of the arches or the side walls.

It further comprises a construction whereby the arches are built out of engagement with the rivets of the boiler, so that as the boiler expands the arch will slip thereover and will not be held by contact with the rivets, as is the case in the usual construction of boiler arch.

In the drawings which are hereto attached and hereby made a part of this specification, Figure 1 is an end view of the boiler showing the side walls and the arch construction; Fig. 2 is a side view of the rear portion of a boiler showing the rear arch; Fig. 3 is a perspective of the plate upon which the arch rests; Fig. 4 is a perspective of the brick or plate adapted to be superposed upon the plate shown in Fig. 3; Fig. 5 is a section through the plate of Fig. 3 and the plate or brick of Fig. 4, showing the same in their normal position and in dotted lines showing the position assumed when the arch is rocked.

Referring to the drawings in which the same numeral indicates the same part throughout, 1 represents the boiler having the flues 2 therein, formed in the usual way; the boiler being supported upon a foundation in the usual manner; the side walls are shown at 3 and 4, and, as noted, they reach approximately to the middle of the boiler, although they may be extended, as desired, and on their top sides 5 and 6 are provided with the plates 7 and 8, which may be secured to the side walls in any preferred manner; the plates are constructed with a plane surface shown at 9, and a raised side portion shown at 10 from which the face 11 slopes gently to the outer edge 12, forming the shoulder shown at 10 and the inclined face 11 having functions to be presently described; the lower brick or plate 13 is pro-

vided with a plain upper face 14 and a lower face 15 practically parallel with the upper face 14 for a portion of its length, and the remainder of said lower face contains the depression 16 and the inclined face 17. In building the arch the lower brick 13 is so laid as to engage the face 15 with the face 9 of the plate, the depression 16 receiving the shoulder 10, and the inclined face 17 being opposite to the inclined face 11 on the plate, as appears clearly in Fig. 5, and not in contact therewith normally, as also appears clearly in Fig. 5 where the opening 18 is seen.

Lagging of any preferred kind is shown at 19, interposed between the boiler and the arch sections 20 and 21 and, as the arch is built, the lower faces of the bricks engage the lagging, and therefore are kept out of contact with the circumferential rows of rivets which appear at intervals upon the exterior of the boiler. At the top the surfaces are provided with the brick members 22 and 23 adapted, the one to overlap the other, and thereby form a lap joint, thus affording closure of the space between the arch sections and at the same time permitting some separation thereof due to the expansion of the boiler. The opening 24 between the brick members 22 and 23 may be covered by the superposed plate 25 laid longitudinally of the arch; the plate 25 will be positioned of its own weight or may be secured to one of the arch sections, so that it will always remain in place and prevent the deposit of dust or other materials between the arch sections, which might, in time, prevent the proper operation thereof.

At the rear end of the boiler is secured preferably an angle iron 26, upon which rests an upper end of the rear arch section 27 positioned upon the rear wall 28 in a manner similar to the positioning of the side arch upon the side walls, as above described; the plate for the end wall is shown at 29 and the bottom brick 30 of the arch is positioned thereon in the same manner as was described for plate 8 and brick or plate member 13.

The circumferential expansion of the boiler due to heat will operate to tilt the arch sections 20 and 21 laterally; and this lateral tilting or rocking motion will be accommodated by the plate and bottom brick construction shown in Fig. 5; before the expansion occurs the parts will have the relative position shown in heavy lines, and



after the expansion occurs the arch section will be rocked into approximately the position shown in the dotted lines. Upon contraction of the boiler the arch will rock back into its normal position. The end expansion of the boiler due to heat will operate to rock the rear arch 27 in a similar manner upon the plate 29, and upon contraction of the boiler the arch will rock back into its normal position as shown in Fig. 2.

Variations in the construction may be made to accomplish the same result but I desire to claim all such variations and modifications as fall within the spirit of my invention.

What I claim is:

1. A boiler setting comprising inclosing walls, a plate on the upper edge of said walls having a plane face and shoulder and an inclined face formed thereon, an arch section constructed on its lower edge to engage said plane face and said shoulder, and provided with an inclined face disposed opposite to

said inclined face on said plate and normally out of contact therewith, whereby said arch section may be rocked away from and toward said boiler.

2. A boiler setting comprising inclosing walls, a plate on the upper edge of each of said walls formed with a shoulder and an inclined face thereon, a boiler, lagging positioned thereon, arch sections arranged upon said boiler and being constructed on their lower edges to rest upon said plate and to rock thereon against said shoulder toward said inclined face, and their upper edges being provided with a lap joint, whereby said arch sections may rock under the influence of the expansion of the boiler.

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

JOHN H. SIMPKINS.

Witnesses:

WILLIAM McCONNELL,  
ELIZABETH RIPLEY.