

(No Model.)

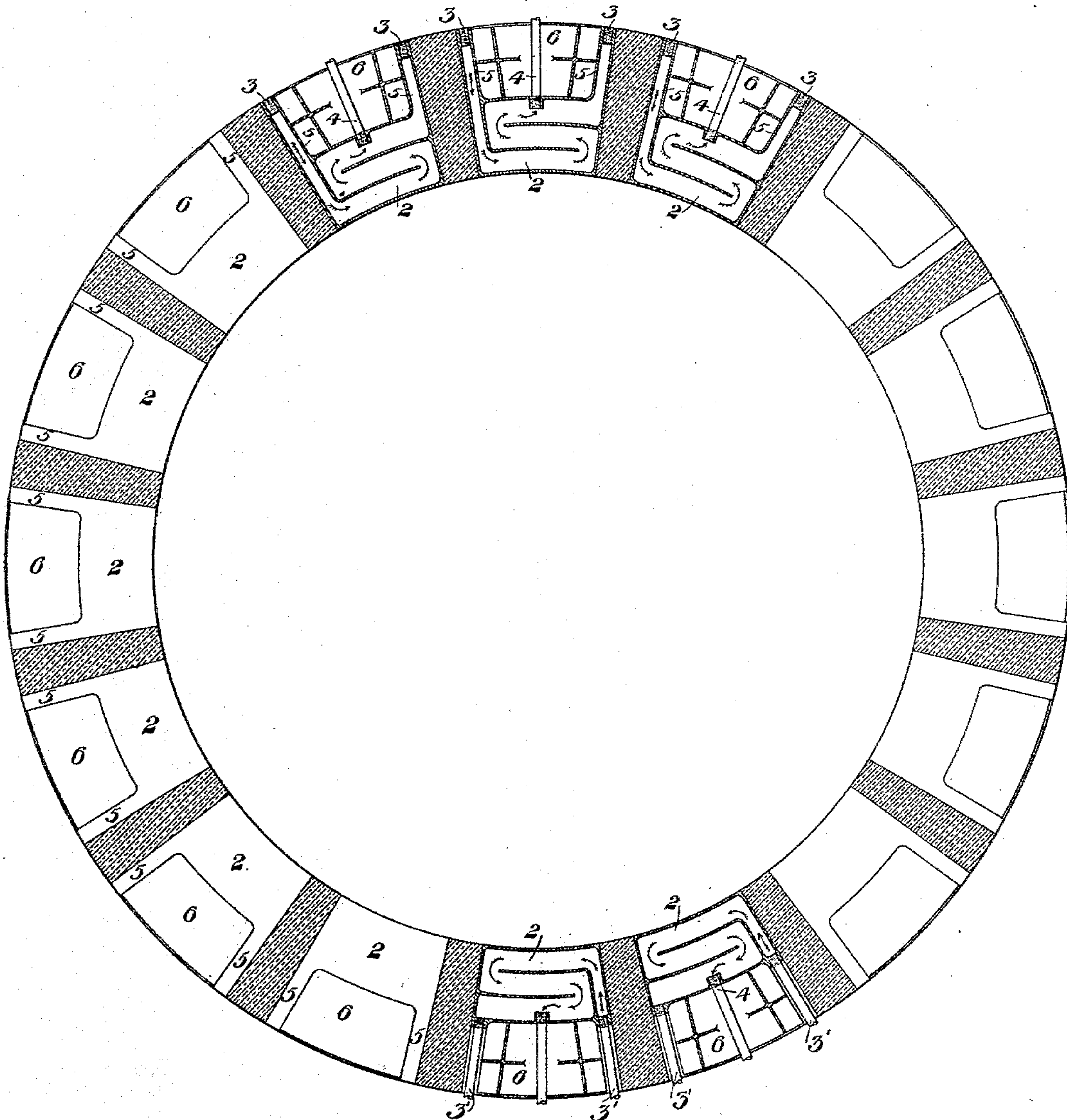
2 Sheets—Sheet 1.

W. ROTHOFF.  
COMBINATION BOSH PLATE.

No. 515,694.

Patented Feb. 27, 1894.

*Fig. 1.*



WITNESSES

W. W. Swartz  
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INVENTOR

William Rothoff  
by his Attorneys  
W. Bassett & Sons

(No Model.)

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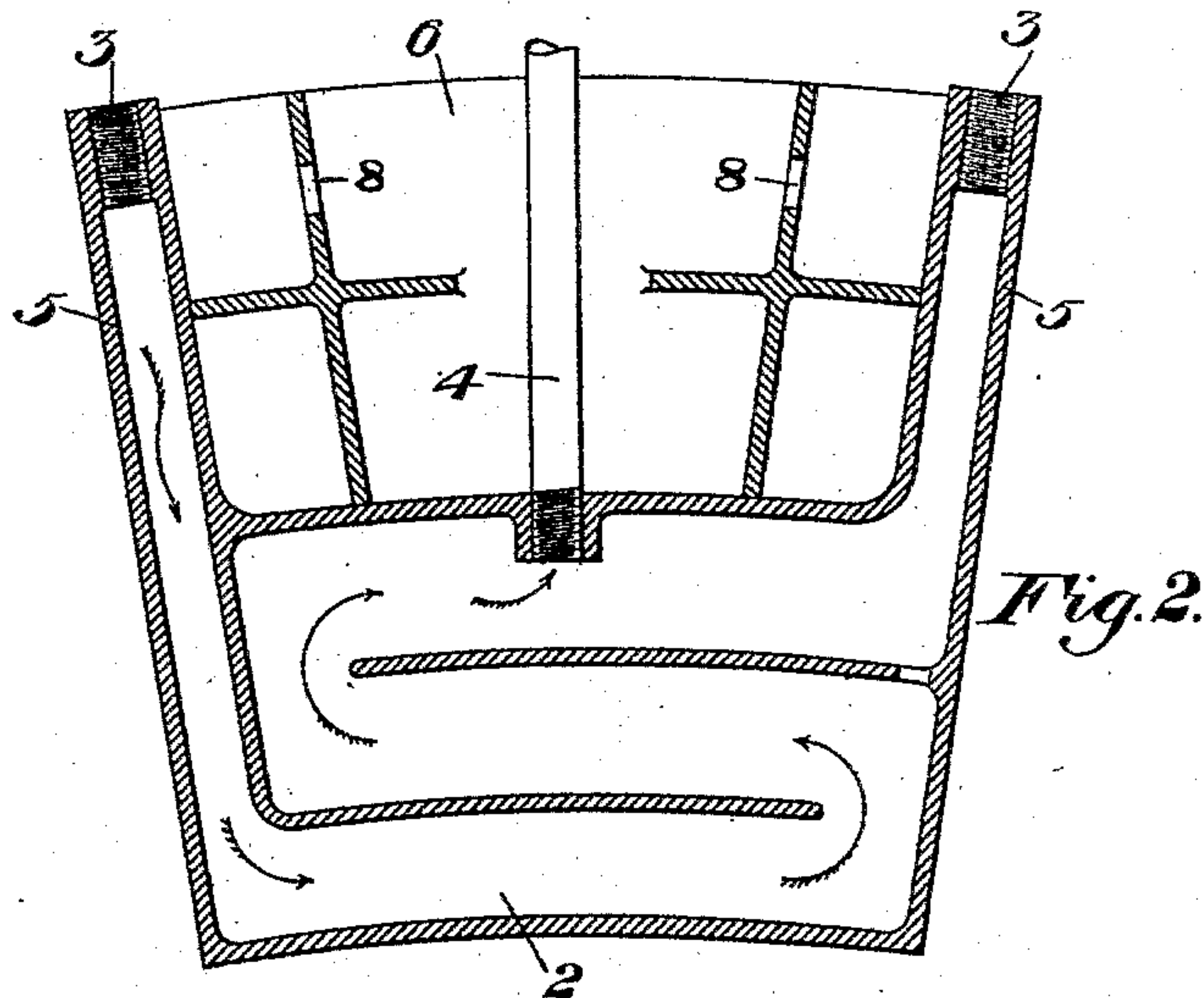


Fig. 3.

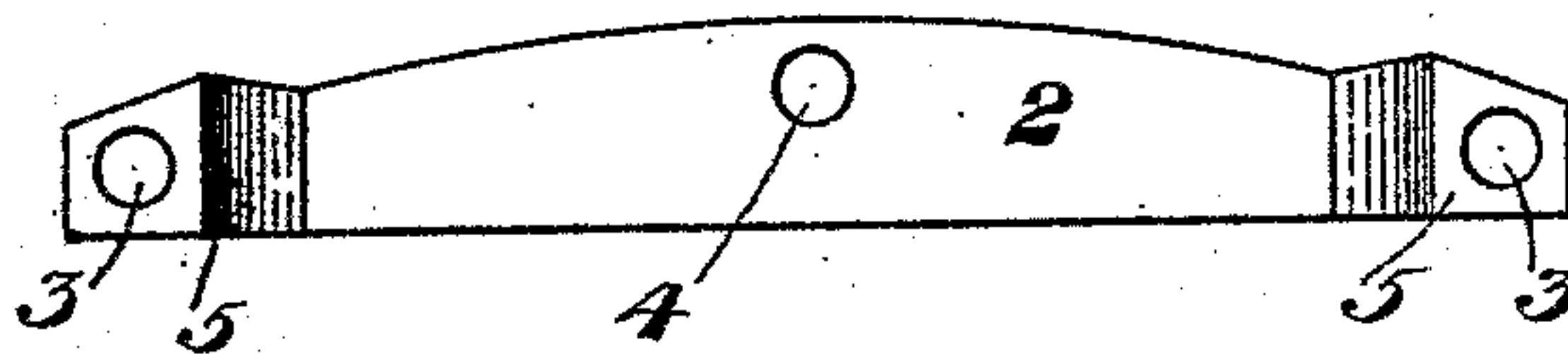
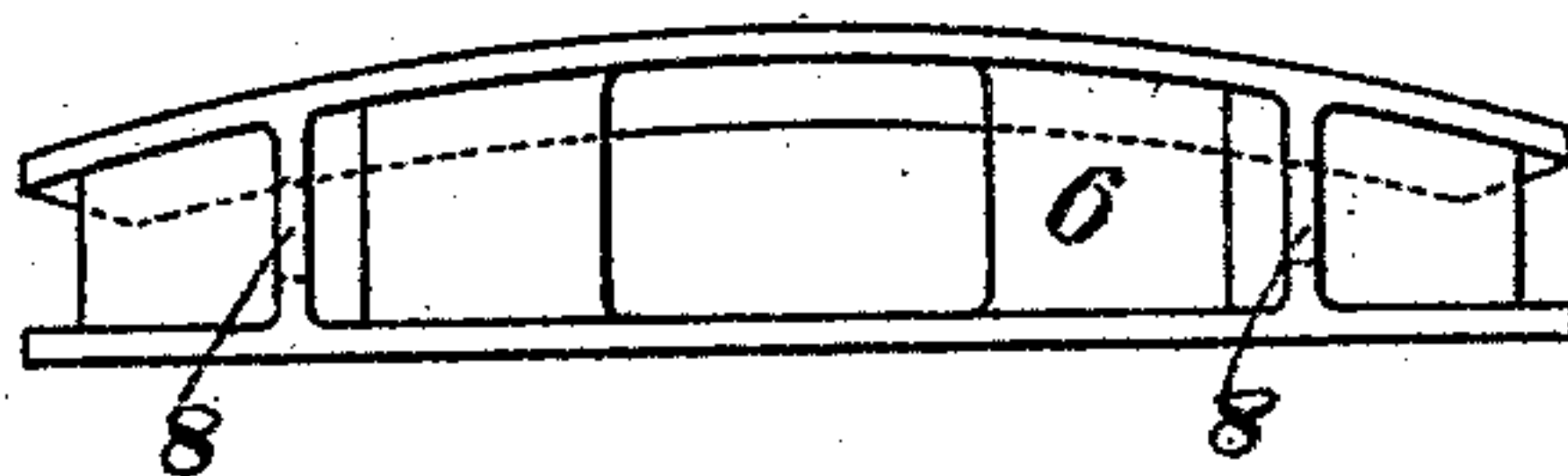


Fig. 4.



WITNESSES

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# UNITED STATES PATENT OFFICE.

WILLIAM ROTHHOFF, OF RANKIN STATION, PENNSYLVANIA.

## COMBINATION BOSH-PLATE.

SPECIFICATION forming part of Letters Patent No. 515,694, dated February 27, 1894.

Application filed October 19, 1893. Serial No. 488,632. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM ROTHHOFF, of Rankin Station, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Combination Bosh-Plates, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a horizontal section through the bosh of a blast-furnace, showing the bosh-plates and wall-supporting plates therein. In this figure, five of the bosh-plates and wall-supporting plates are shown in horizontal section, and the remainder are shown in plan view. Fig. 2 shows a horizontal section of a bosh plate, and one of the supporting plates in the relative positions which they occupy when set in the furnace wall. Fig. 3 is an end view of one of the bosh plates; and Fig. 4 an end view of one of the supporting plates.

My invention consists in combining with a bosh plate which is embedded in the masonry of the furnace, a separate wall-supporting plate, set at the outer end of the bosh-plate. This wall-supporting plate serves to sustain the weight of the furnace at the outer part of the wall, and thus strengthens the structure, and being separate from the bosh plate, it results that the work of removing or setting a bosh plate is greatly facilitated, for the supporting plate can be taken out and the gap in the furnace-wall exposed before the water pipes are disconnected and before the blast is shut off from the furnace; and conversely in setting a bosh plate as soon as it has been put in position, the furnace blast may be renewed without interfering with the subsequent operation of setting the supporting plate. Furthermore, the supporting plate may be made of cast iron or other cheap material, and a much cheaper construction is thus afforded than if the bronze bosh plate itself were extended outwardly to support the outer part of the furnace shell.

In the drawings, 2, 2, represent the bosh-plates of a furnace, each consisting of a hollow casting with water-inlet 3 and water-out-

let 4, and set in the masonry of the furnace wall. The legs 5, 5, shown in the drawings as projecting from and being integral with the body of the plate, may be omitted if desired, and the arrangement of water passages of the bosh-plate and its form may be altered. Two of the bosh-plates shown in Fig. 1 have pipes 3', 3', secured directly to the body of the bosh-plate proper, while in the other bosh plates shown in that figure, and in the bosh plates shown in Fig. 2, I illustrate the use of projecting legs 5, 5, having at their ends threaded sockets 3, 3, for the reception of such pipes. Of these pipes, one is used as a water-supply, and the other may be plugged or closed and used as means for enabling the plate to be withdrawn readily from the furnace wall. At the outer end of each bosh-plate is a supporting-plate 6, which fits the cavity in the furnace-wall for insertion of the bosh-plate. It is preferably made of cast iron, flanged and arched as shown, so as to have proper strength and to fit the bosh-plate cavity, being for this purpose made of about the same height and sectional shape as the bosh-plate as shown in Fig. 4, the wall-supporting plate is preferably made hollow with vertical webs, so that its weight may be lessened without materially sacrificing its strength, and in these webs I prefer to form holes 8, into which hooks may be inserted to enable the ready withdrawal of the plate from the furnace wall. The supporting plate is tapered and when in place forms a continuation of the bosh-plate. The outlet pipe 4 is substantially horizontal and enters its socket just below the inner end of the supporting-plate.

Although I make specific claim to the specific construction shown, the broader claims of the application are not limited thereto, for other materials and other shapes may be employed.

I claim—

1. In combination with a bosh-plate, a separate wall-supporting plate set at the outer end of the bosh-plate in the bosh-plate cavity of the furnace wall; substantially as described.

2. In combination with a bosh-plate, a separate arched wall-supporting plate set at the outer end of the bosh-plate in the bosh-plate cavity of the furnace wall; substantially as described.

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3. In combination with a bosh-plate, a separate wall-supporting plate set at the outer end of the bosh-plate in the bosh-plate cavity of the furnace-wall, said wall-supporting

plate being of about the same height as the bosh-plate; substantially as described.

In testimony whereof I have hereunto set my hand.

WILLIAM ROTHOFF.

Witnesses:

W. B. CORWIN,  
H. M. CORWIN.