

No. 607,696.

Patented July 19, 1898.

A. MORRISON.  
TIE PLATE.

(Application filed Jan. 17, 1898.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

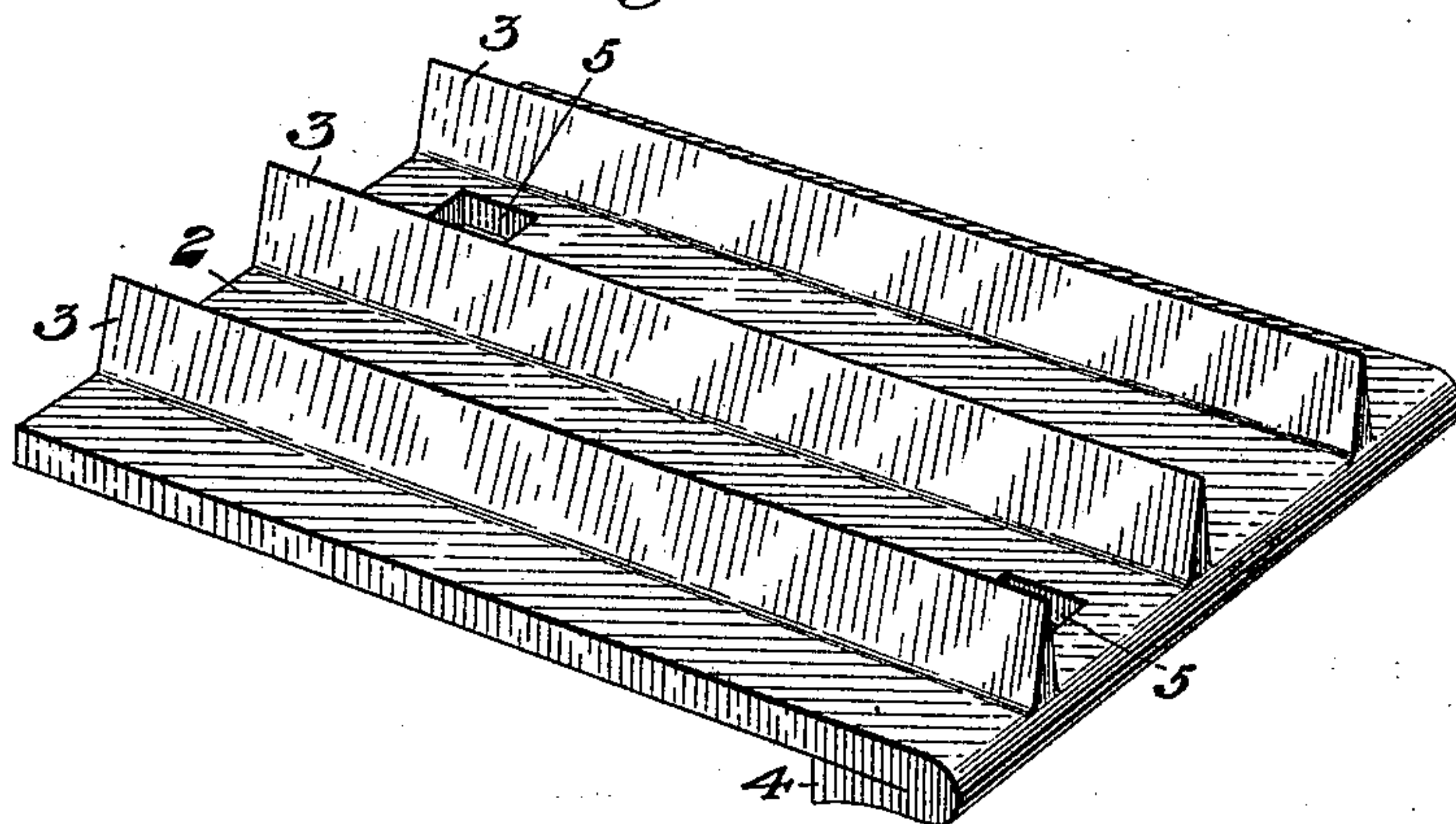


Fig. 2.

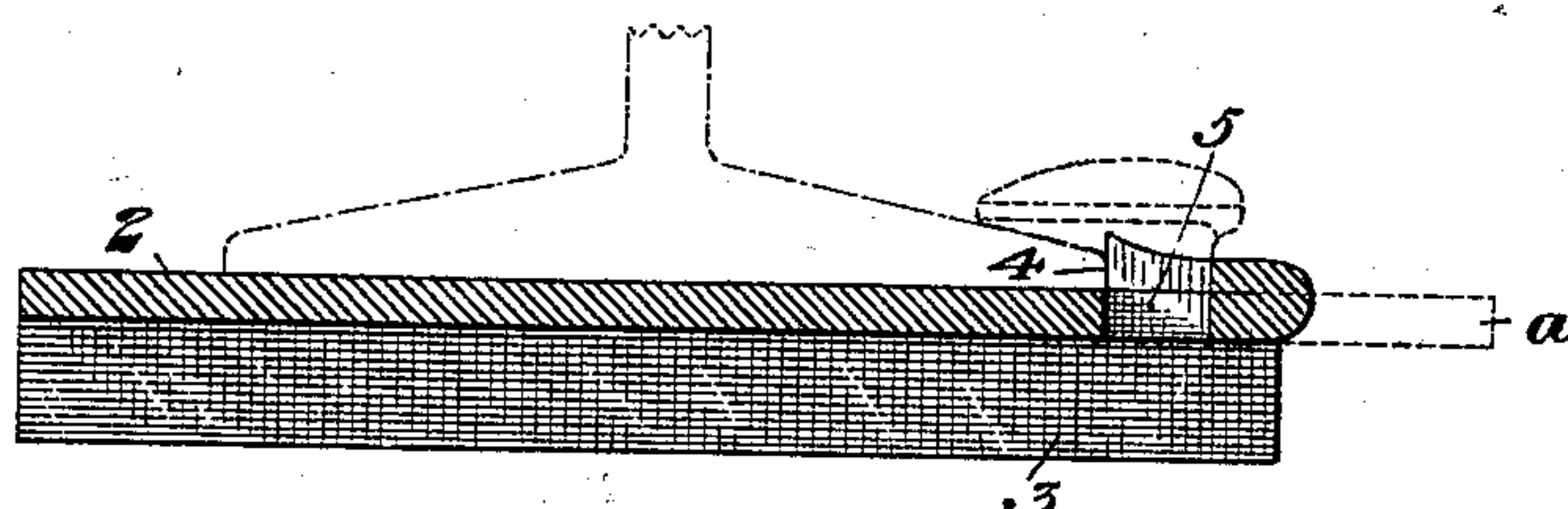


Fig. 3.

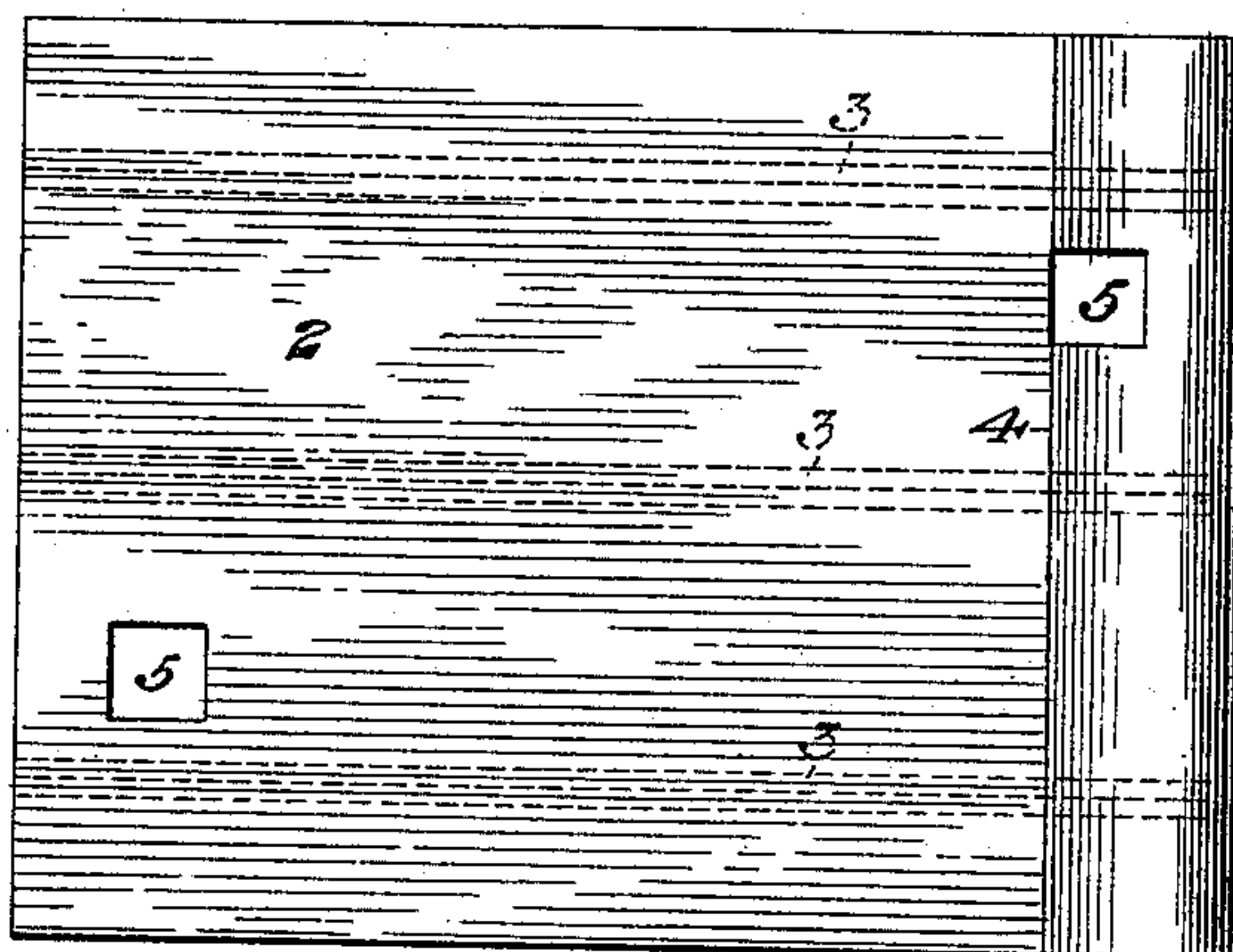


Fig. 4.

WITNESSES

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Fig. 5.

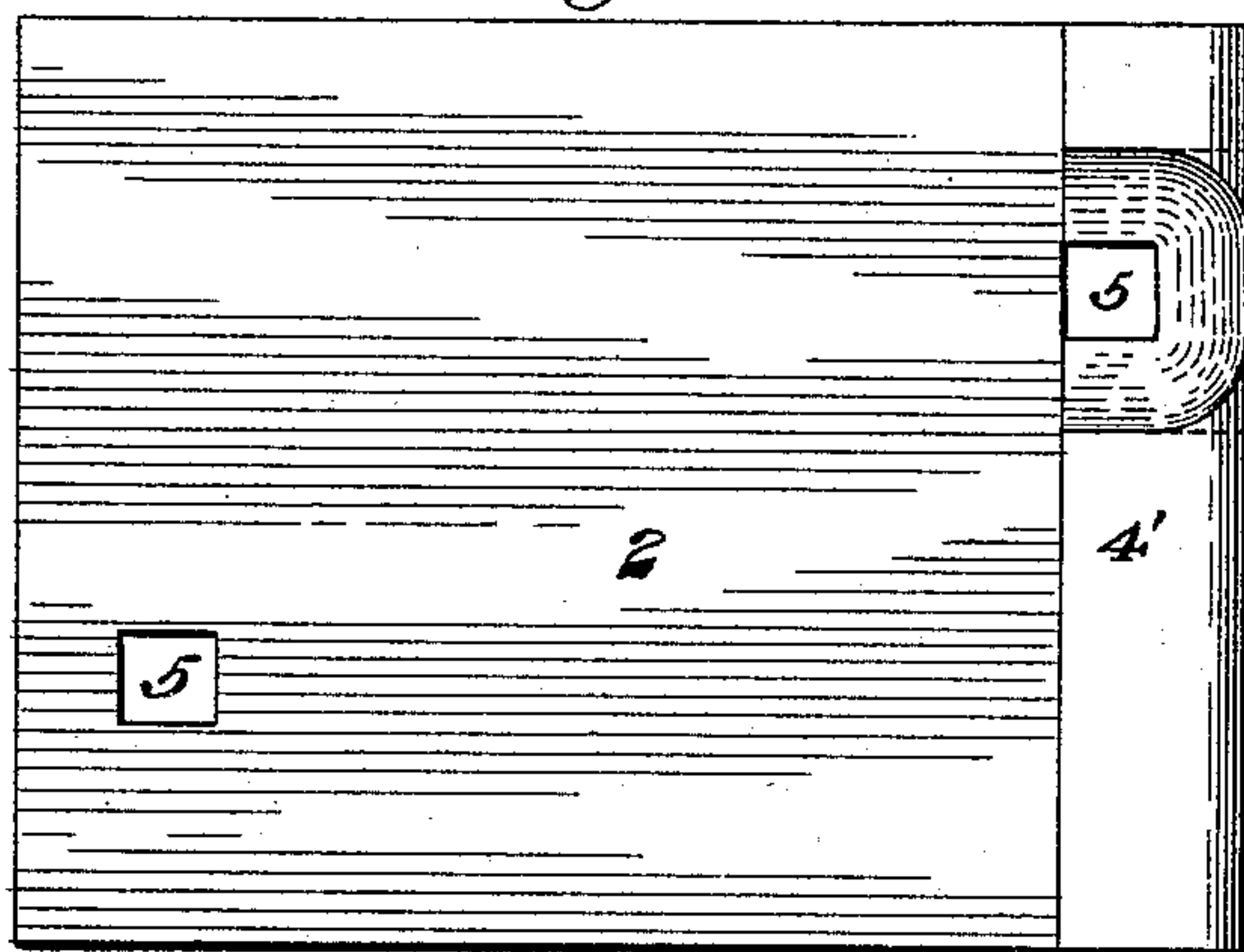


Fig. 6.

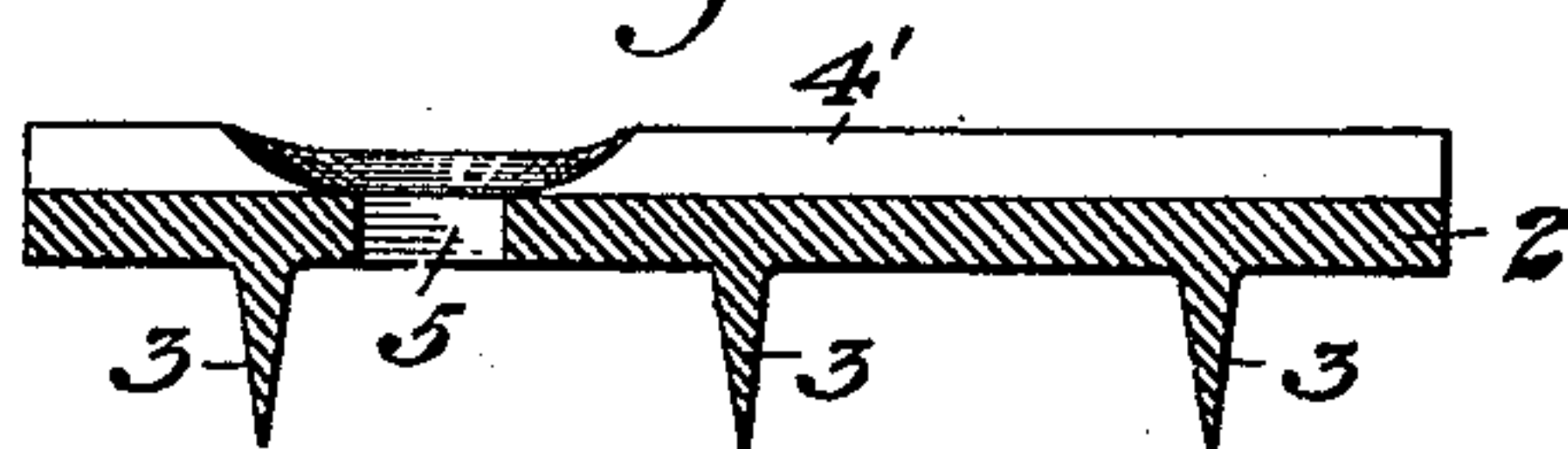


Fig. 7.

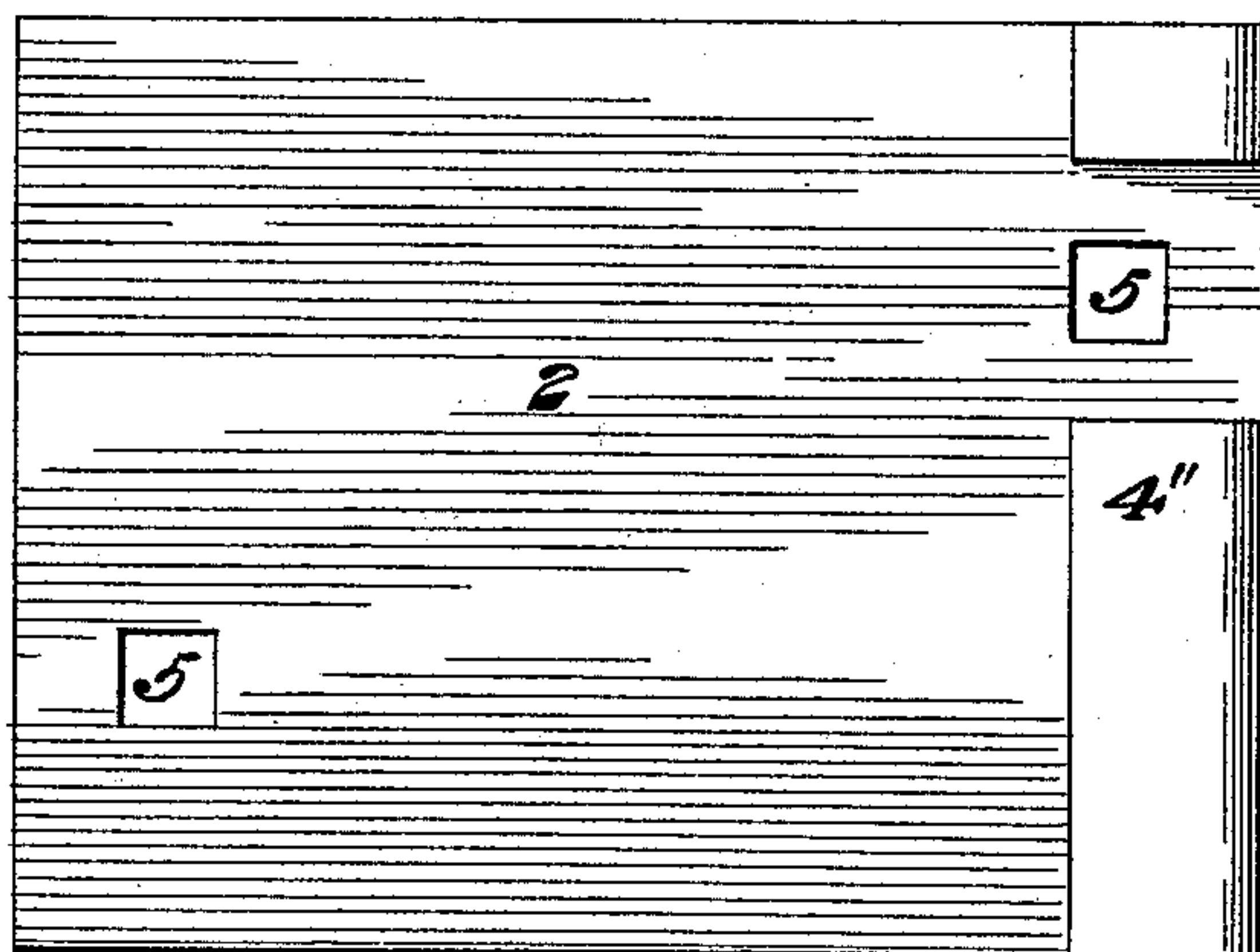
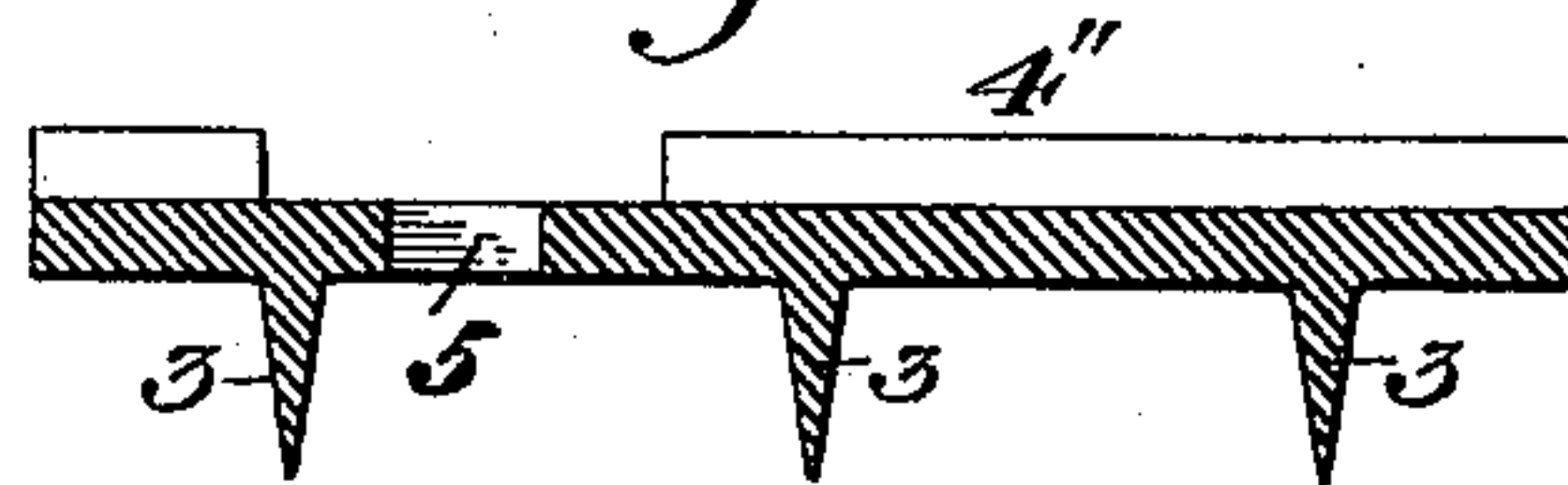


Fig. 8.



WITNESSES

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# UNITED STATES PATENT OFFICE.

ANDREW MORRISON, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO  
DILWORTH, PORTER & CO., LIMITED, OF SAME PLACE.

## TIE-PLATE.

SPECIFICATION forming part of Letters Patent No. 607,696, dated July 19, 1898.

Application filed January 17, 1898. Serial No. 666,842. (No model.)

*To all whom it may concern:*

Be it known that I, ANDREW MORRISON, of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Tie-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 perspective view of my improved tie-plate turned bottom side up. Fig. 2 is a longitudinal section of the same, illustrating the mode of making the fold. Fig. 3 is a top plan view, and Fig. 4 a transverse section. Fig. 5 is a top plan view, and Fig. 6 is a cross-section, showing a modified form of the plate; and Figs. 7 and 8 are similar views showing a further modification.

My invention relates to that class of tie-plates which are provided with a shoulder or abutment upon their upper surface to contact with the edge of the rail-base, and more especially to those wherein such plate is provided with truss-ribs upon its bottom.

The invention is designed to provide a plate of this class which may be made by cutting a rolled plate or bar into lengths and the shoulder cheaply and quickly formed by folding at least a portion of the end of the plate-section over upon itself.

In the drawings, referring to the forms of Figs. 1 to 4, inclusive, 2 represents the tie-plate, which is provided upon its lower surface with a series of longitudinal ribs 3, arranged to lie lengthwise of the grain of the tie and to enter it. 4 is the shoulder or abutment for the rail-base, which consists of an end fold of the plate bent down upon itself.

In forming this plate I roll a long plate or bar of the same width as the plate, the downwardly-projecting ribs being formed along the entire lower face of this bar during rolling. The bar is then cut into lengths, each of which is longer than the finished plate by the width of the folded end portion, and the ribs are cut away beneath this extended fold portion, giving the blank indicated in dotted lines in Fig. 2. This blank is then placed in a suitable press, wherein the extended end portion *a* is bent over and folded down upon the upper face of the plate, as shown. In

forming this fold the metal thereof is forged so as to give a bevel or incline to the upper face of the fold. The fold is therefore thicker at its abutting end than in its intermediate portion, giving a shoulder of sufficient height to prevent any danger of the rail riding up over it, while at the same time the beveling or thinning away of the part back of the shoulder allows the spike-head to engage the rail-base, as indicated in Fig. 2. This manner of forming the fold also allows a space for the claw-bar to engage the spike-head, so that the same may be withdrawn when desired. The fold may be formed or thinned away in other ways to allow the spike to engage the rail-base. Thus in Figs. 5 and 6 I show the fold 4' as of substantially the same thickness throughout except in the parts adjacent to the spike-hole, around which hole the metal is beveled or dished by shearing or forging, so as to allow the spike to engage the rail. The shearing may extend to the edge of the plate, as shown in dotted lines in Fig. 5. In Figs. 6 and 7 I show still another form, wherein the fold 4'' is entirely cut away around the spike-hole, so as to give free entrance of the claw-bar at this point and allow the spike to be driven to its proper place. The spike-hole may be formed in other ways for this purpose—as, for instance, by making it in the form of an oblong slot through the fold. It will be noticed that in all the forms shown one of the two spike-holes extends through this fold or shoulder, and I prefer to so place it, though it may be made inside the shoulder.

The advantages of my invention result from the cheapness and ease with which the plates may be made, since a plate or bar may be rolled of the same width as the finished tie-plates and the plates formed by merely cutting this into lengths and bending up their ends after cutting away the truss-ribs, if such are employed. As the base of the rail abuts against the front end of the fold, a strong shoulder is thus provided, and the whole construction is simple and effective.

The lower ribs may be cut away in portions, if desired, or formed in different shapes, or done away with entirely. The fold may be cut away in various parts thereof, so as to



form separate abutments, and the arranging of the fold to allow the spike to engage the rail and permit the action of the claw-bar may be changed in many ways without departing from my invention, since I consider myself the first to form the abutment by folding at least a part of the end portion of the plate over upon itself, so that the rail-base will contact with the front end or edge of this fold.

I claim—

1. A tie-plate having at least a part of its end portion folded over in close contact with the upper face of the plate to form a shoulder the front edge of which abuts against the edge of the rail-base.

2. A tie-plate having lower ribs, and an end portion folded over in close contact with the upper face of the plate to form a shoulder against the front edge of which the edge of the rail-base abuts.

3. A rolled tie-plate having integral lower longitudinal truss-ribs, and an end fold extending at right angles to these ribs and in close contact with the upper face of the plate, the edge of the fold being arranged to contact with the edge of the rail-base.

4. A rolled tie-plate having an end portion folded over in close contact with the upper face of the plate to form a shoulder which

abuts against the edge of the rail-base, said shoulder being shaped to allow the spike to engage the rail-base.

5. A tie-plate having a portion thereof folded over in close contact with the upper face of the plate and arranged to contact with the rail along its front edge, and a spike-hole extending through the fold.

6. A tie-plate of rolled metal having lower longitudinal truss-ribs, said ribs being cut away at the end portion of the plate, and this portion folded over in close contact with the upper face to form a shoulder against which the rail-base abuts.

7. A tie-plate of rolled metal having an end fold forming a shoulder or shoulders for the rail-base, the fold being thinned away around the spike-hole so as to allow the claw-bar to engage the spike.

8. A rolled tie-plate having an end fold forming a shoulder for the rail-base, said fold having a beveled or inclined upper face to allow the spike-head to engage the rail.

In testimony whereof I have hereunto set my hand.

ANDREW MORRISON.

Witnesses:

H. M. CORWIN,  
C. E. MACKOWN.