

No. 851,883.

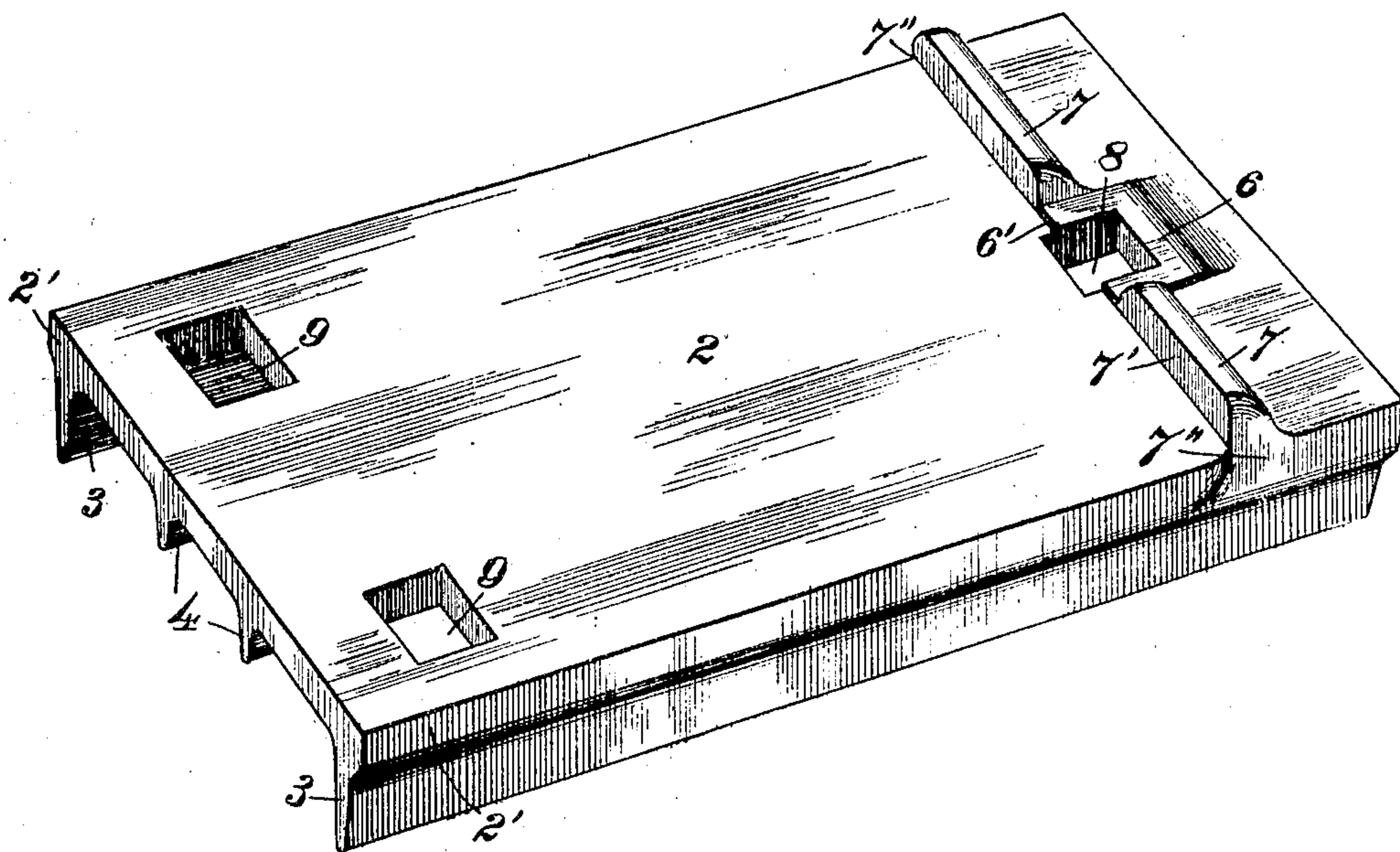
PATENTED APR. 30, 1907.

H. H. HART.  
TIE PLATE.

APPLICATION FILED AUG. 27, 1906.

3 SHEETS—SHEET 1.

*Fig. 1.*



Witnesses:  
*A. H. Nelson*  
*F. G. Knight*

Inventor:  
*Herbert H. Hart*  
by  
*Charles W. Hawley*  
Att'y.

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3 SHEETS—SHEET 2.

Fig. 2.

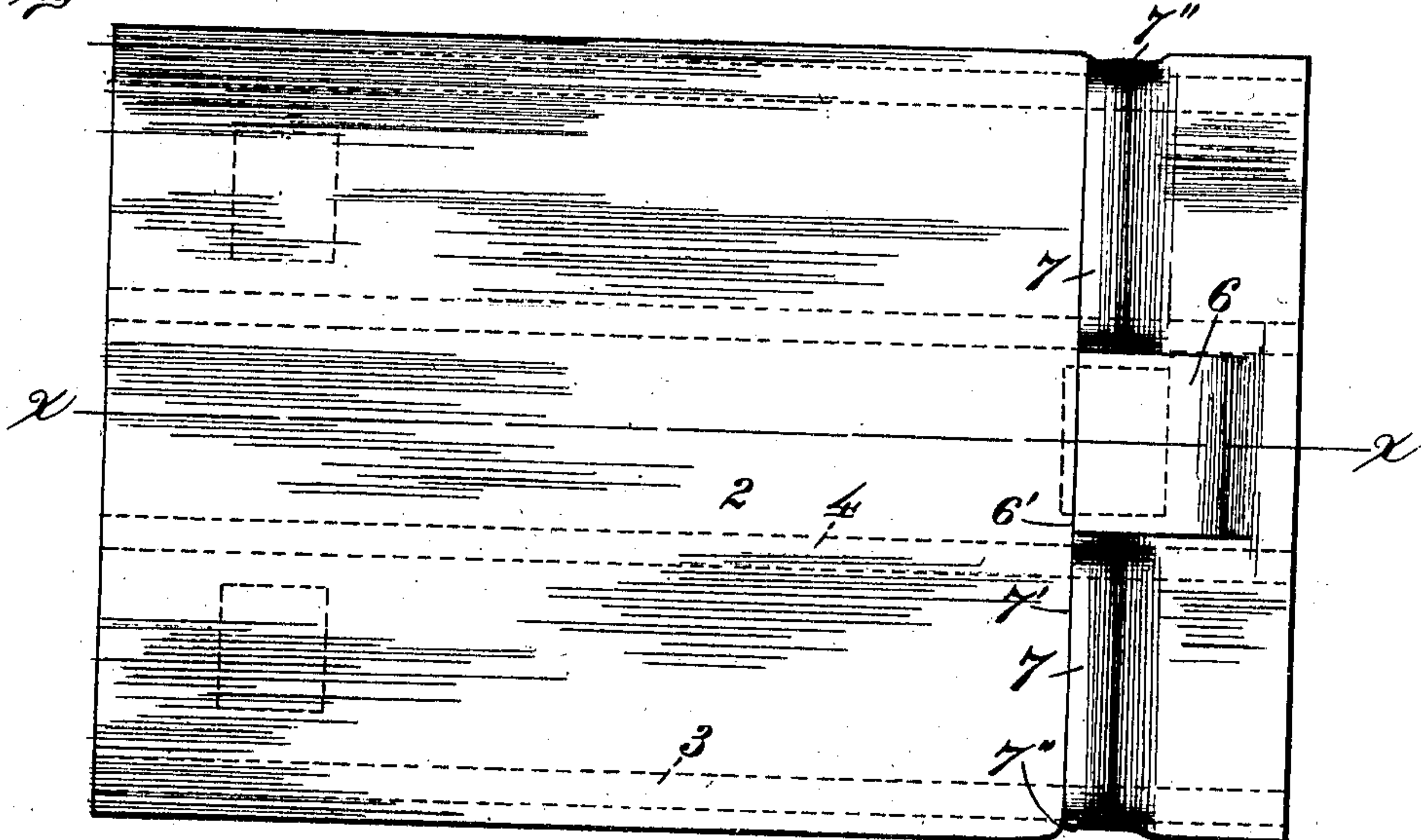


Fig. 3.

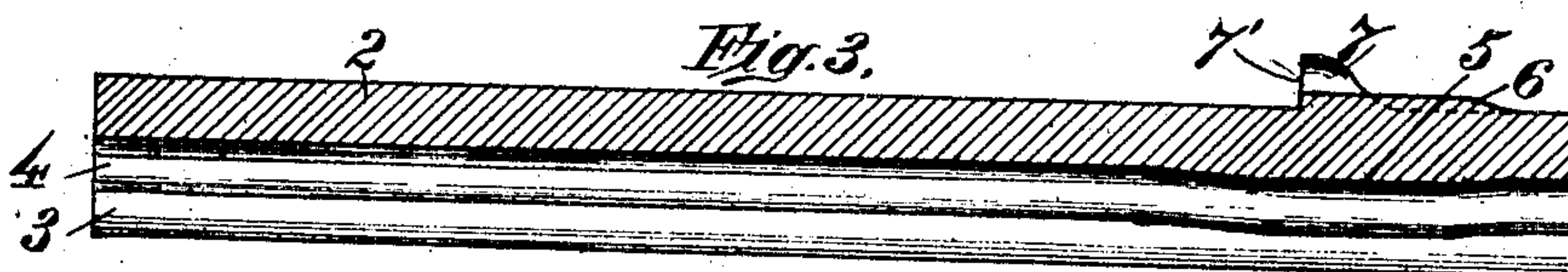


Fig. 4.

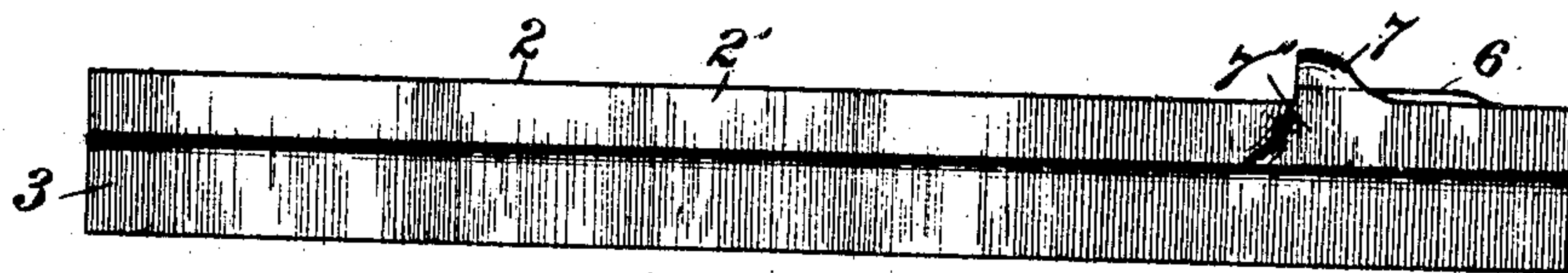
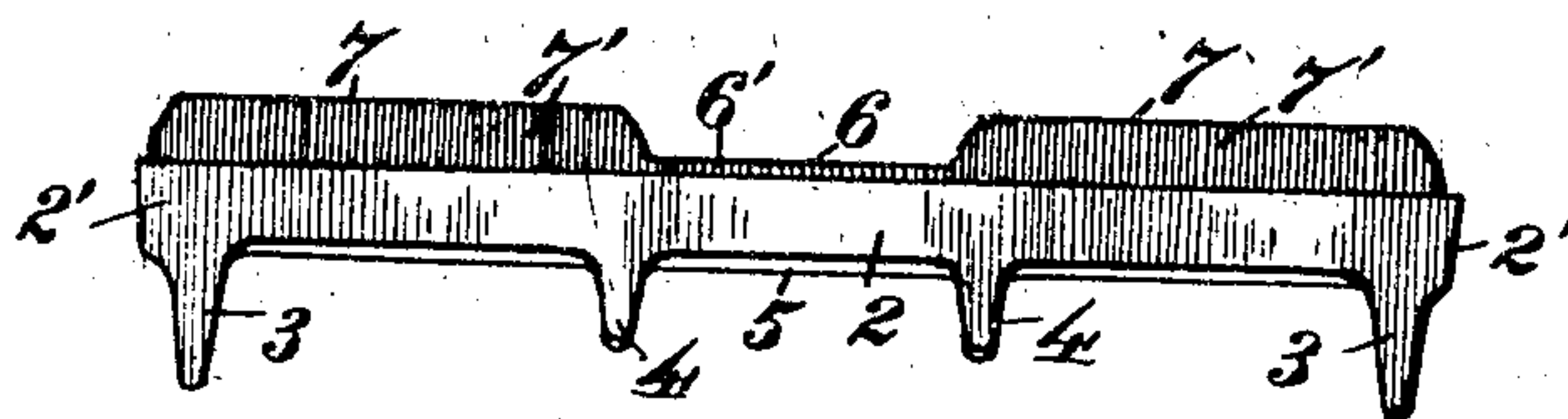


Fig. 5.



Witnesses:  
A. H. Nelson  
J. G. Knight

Inventor:  
Herbert H. Hart.  
by  
Charles H. Hawley  
ATTY.

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3 SHEETS—SHEET 3.

Fig. 6.

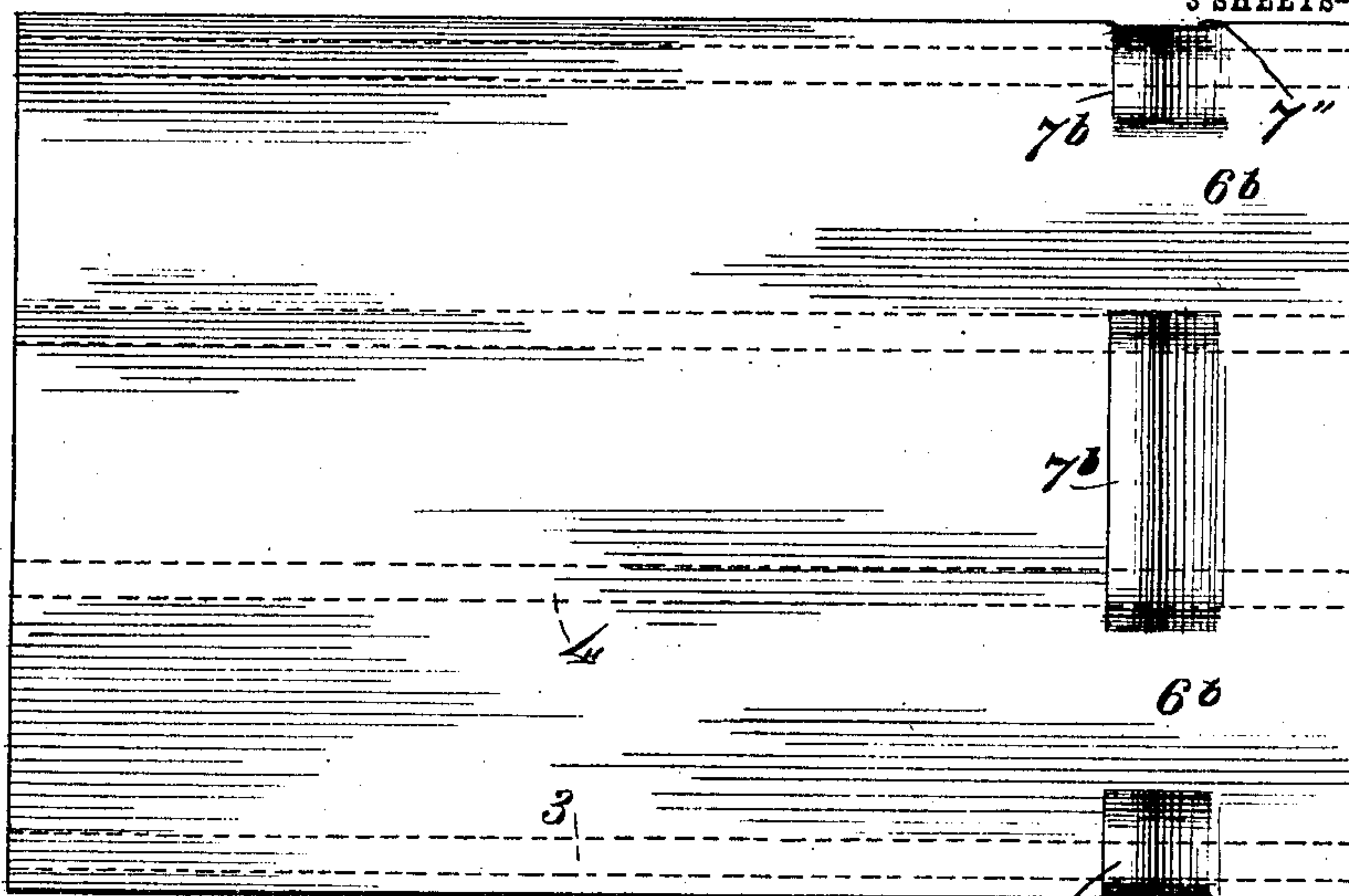


Fig. 7.

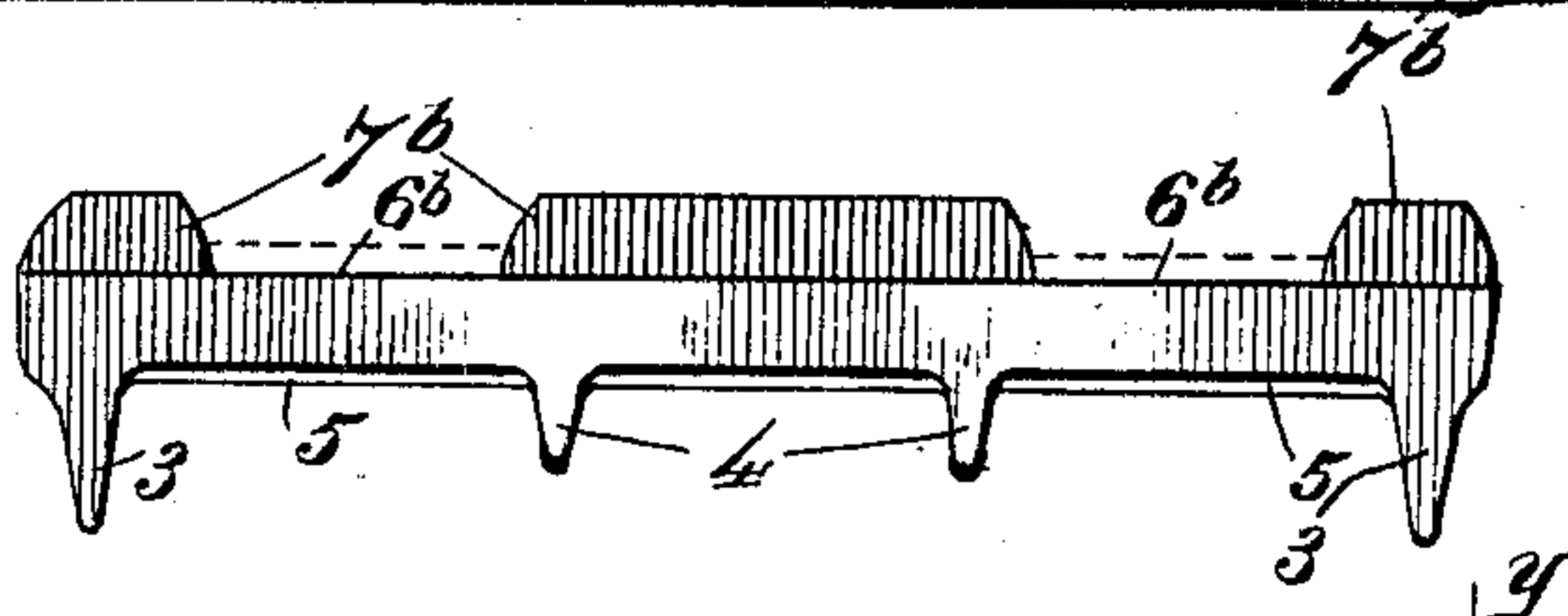


Fig. 8.

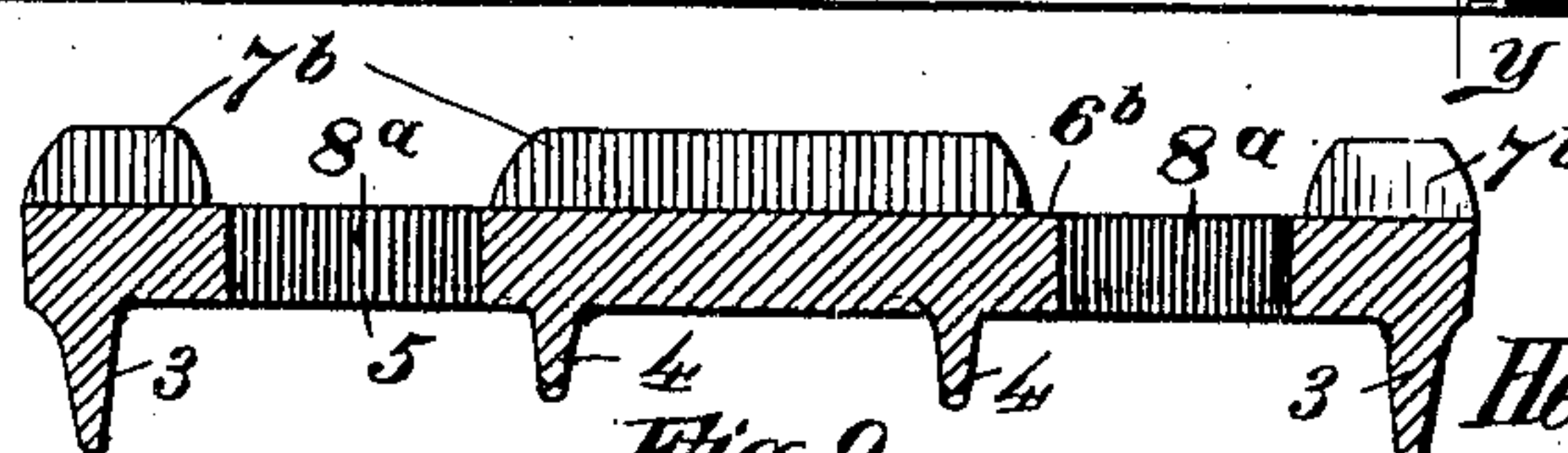
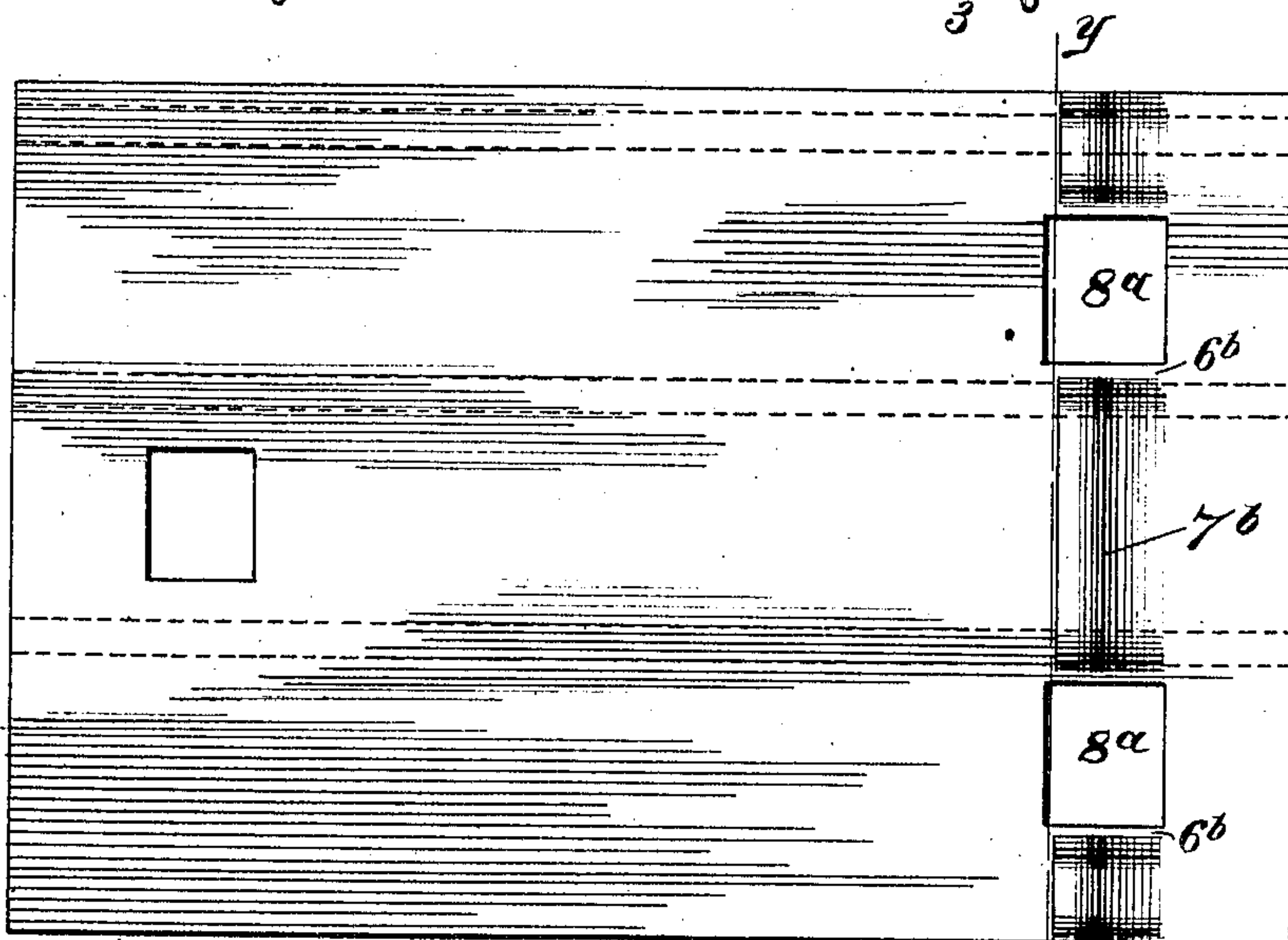


Fig. 9.

Witnesses;  
A. H. Nelson  
J. G. Knight

Inventor;

Herbert H. Hart,

by

Charles W. Waudley  
Att'y.



# UNITED STATES PATENT OFFICE.

HERBERT H. HART, OF CHICAGO, ILLINOIS.

## TIE-PLATE.

No. 851,883.

Specification of Letters Patent.

Patented April 30, 1907.

Application filed August 27, 1906. Serial No. 332,171.

*To all whom it may concern:*

Be it known that I, HERBERT H. HART, a citizen of the United States, and a resident of Chicago, Illinois, have invented a certain new, useful, and Improved Tie-Plate, of which the following is a full, clear, and exact description thereof, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in railroad tie plates and has special reference to improvements in rolled steel tie plates.

The object of my invention is to provide a tie plate of superior rail holding qualities and intrinsic merit.

My invention consists in a novel article of manufacture, to-wit, a railroad steel tie plate of the form and distinguished by the novel features hereinafter described and particularly pointed out in the claims.

The invention will be more readily understood by reference to the accompanying drawings forming a part of this specification and in which;

Figure 1, is a perspective view of a rolled steel tie plate embodying my invention; Fig. 2, is a top view of the tie plate, showing its form before the spike holes are punched therein; Fig. 3, is a sectional view on the line X—X of Fig. 2; Fig. 4, is an edge view or elevation of the tie plate; Fig. 5, is an end view thereof; Fig. 6, is a top view of a tie plate blank of modified form; Fig. 7, is an end view thereof; Fig. 8, is a top view of the plate shown in Fig. 6, as it appears after the holes are punched; Fig. 9, is a sectional view on the line Y—Y of Fig. 8.

The novel article of manufacture herein presented is a tie plate and comprises a single piece of rolled steel, rectangular in form. Its several portions may be distinguished and named as follows: the rectangular plate portion, 2;—the parallel depending flanges, 3—3 and 4—4, the latter being usually of less depth than the former;—the bottom swell or reinforcing portion, 5, near the end of the plate; the top reinforcing portion, 6, and the rail-base-holding shoulders, ribs or lugs, 7. The plate contains spike holes, 8 and 9, the former being in alinement with the transverse rib or shoulder, and the latter, (9), situated in the opposite end of the plate. The thin depending flanges, 3—3 and 4—4, are adapted to sink into the top of a wooden tie, the same extending parallel with the grain or

fiber of the tie. I prefer that the flanges, 3—3, shall be slightly inset with respect to the edges of the plate, 2, whereby the longitudinal shoulders, 2', are formed, and for the further purpose of preventing the distortion of said flanges at the ends of the rib or shoulder, 7. The inner face, 7', of the transverse rib or shoulder presents a flat vertical surface to the edge of a rail base resting on the plate, while the ends and outer side of the rib are tapered or inclined as shown. The office of the rib is to take the thrust of the rail and to relieve the outer spike from said thrust and the wear due to the creeping of the rail. The vertical recesses, 7'', in the edges of the plate, at the ends of the shoulder, 7, are peculiar to my tie plate and serve to distinguish it from others.

A principal distinguishing feature of the plate resides in the reinforcing portion or swell, 5, on the bottom of the plate. This corresponds to the transverse shoulder, but is of less depth and of greater width. The effect of this reinforcement is to strengthen the plate at the point where it receives the greatest thrust or pressure of the rail which it carries, also the additional thickness of the plate at its end possesses the advantage of deepening the spike hole, whereby a greater surface or backing is provided for the spike hole, 8. The depth of the spike bearing or backing surface is further increased by the top reinforcement, 6, which latter I term the spike hole flat. This flat divides the transverse shoulder and its width substantially corresponds to the distance between the depending flanges, 4—4, so that the spike hole may be located therebetween as required. In other words, I allow considerable latitude in the positioning in the spike hole between the parts of the rib or shoulder, 7. It will be noted that the edge, 6' of the flat, 6, is in alinement with the inner face of the cross rib, 7.

It will be obvious that the shoulder, 7, may extend uninterruptedly from edge to edge of the plate. I have formed these tie plates in this manner heretofore, but prefer the form shown, for the reason that it facilitates the punching of the spike hole, 8;—lessens the waste and increases the spike bearing surface, or spike hole depth of the plate. Where it is desired to secure the tie plate and rail by means of two spikes at the outside of the rail and only a single spike at the inner side, I change the form of the plate in the



manner shown in Figs. 6 to 9. In this form of the article the bottom of the plate remains the same, but the top is modified by providing the same with three shoulder lugs, 7<sup>b</sup>—7<sup>b</sup>, separated by two spike hole flats, 6<sup>b</sup>—6<sup>b</sup>, in which latter two spike holes, 8<sup>a</sup>, are punched as shown in Figs. 8 and 9. As indicated in Fig. 7, the flats, 6<sup>b</sup>, may be flush with the top of the plate or slightly elevated to correspond with the flats, 6, of Fig. 1.

The proportions and configuration of my tie plate may be modified to a considerable extent without departing from my invention; hence I do not confine my invention to the specific articles herein shown and described.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A new article of manufacture, comprising a rolled steel tie plate composed of a plate portion containing spike holes, a plurality of depending flanges, transverse reinforcing and rib portions, 5 and 7, upon the bottom and top of said plate portion respectively, and said plate portion having vertical recesses at the ends of said rib portion, substantially as described.

2. A new article of manufacture, comprising a rolled steel tie plate having a transverse reinforcing or thickened portion, 5, on its bottom, near one end, an overlying transverse rib upon its top and also having vertical recesses at the ends of said rib, substantially as described.

3. A new article of manufacture, comprising a rolled steel tie plate having a transverse rib on its top near one end, provided with a spike hole and having vertical recesses at the ends of said rib, substantially as described.

4. A new article of manufacture, comprising a rolled steel tie plate having a transverse rib or shoulder on its top, said rib or shoulder being interrupted to form a spike hole flat, the lower portion of said plate, beneath said rib or shoulder being thickened or reinforced and said plate having vertical recesses at the ends of said rib, substantially as described.

In testimony whereof, I have hereunto set my hand, this 24th day of August, 1906, in the presence of two subscribing witnesses.

HERBERT H. HART.

Witnesses:

CHARLES GILBERT HAWLEY,  
F. G. KNIGHT.