

J. H. YERKES.
RAILWAY CONSTRUCTION.
APPLICATION FILED OCT. 24, 1907.

Patented Dec. 29, 1908.

907,938.
Fig. 1.

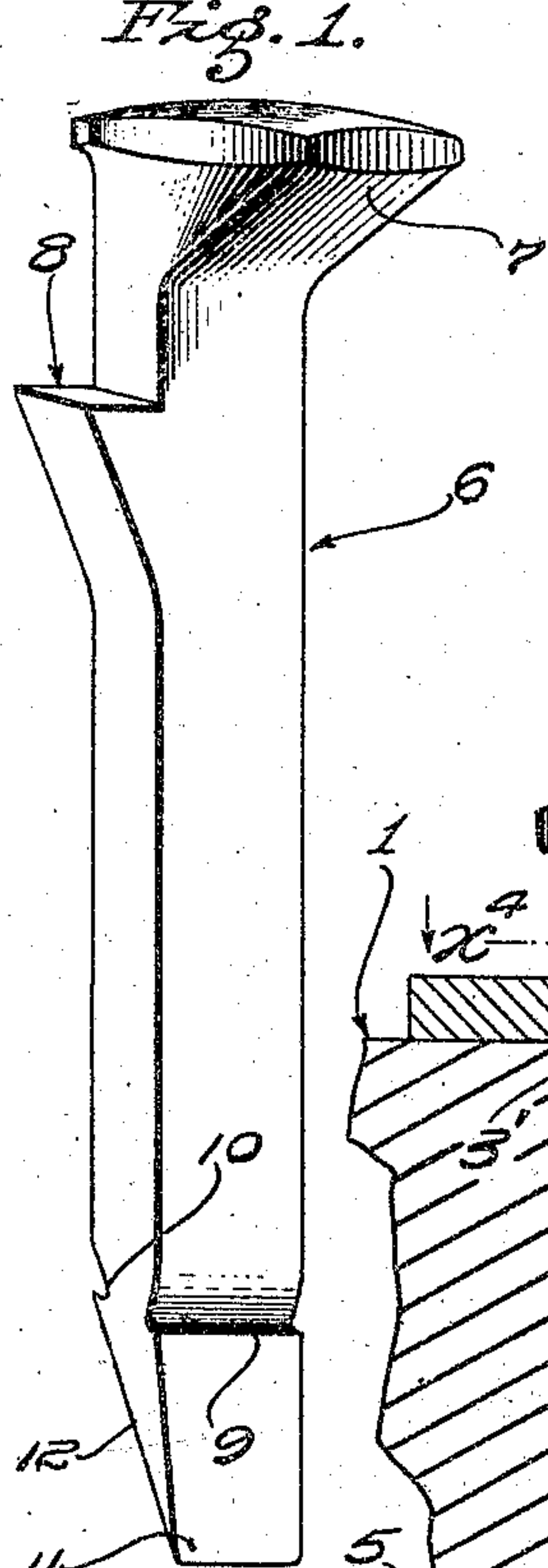


Fig. 2.

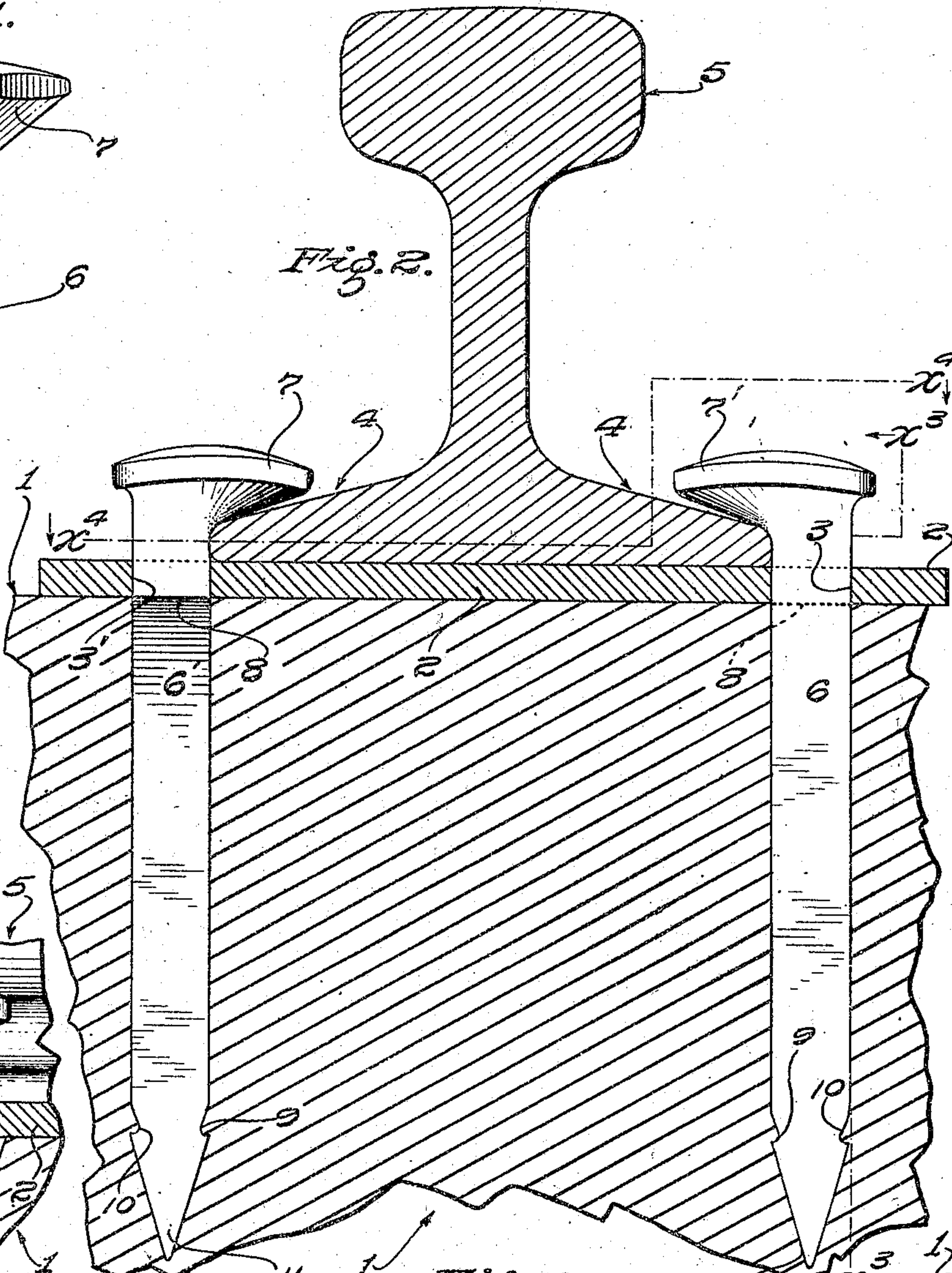


Fig. 3.

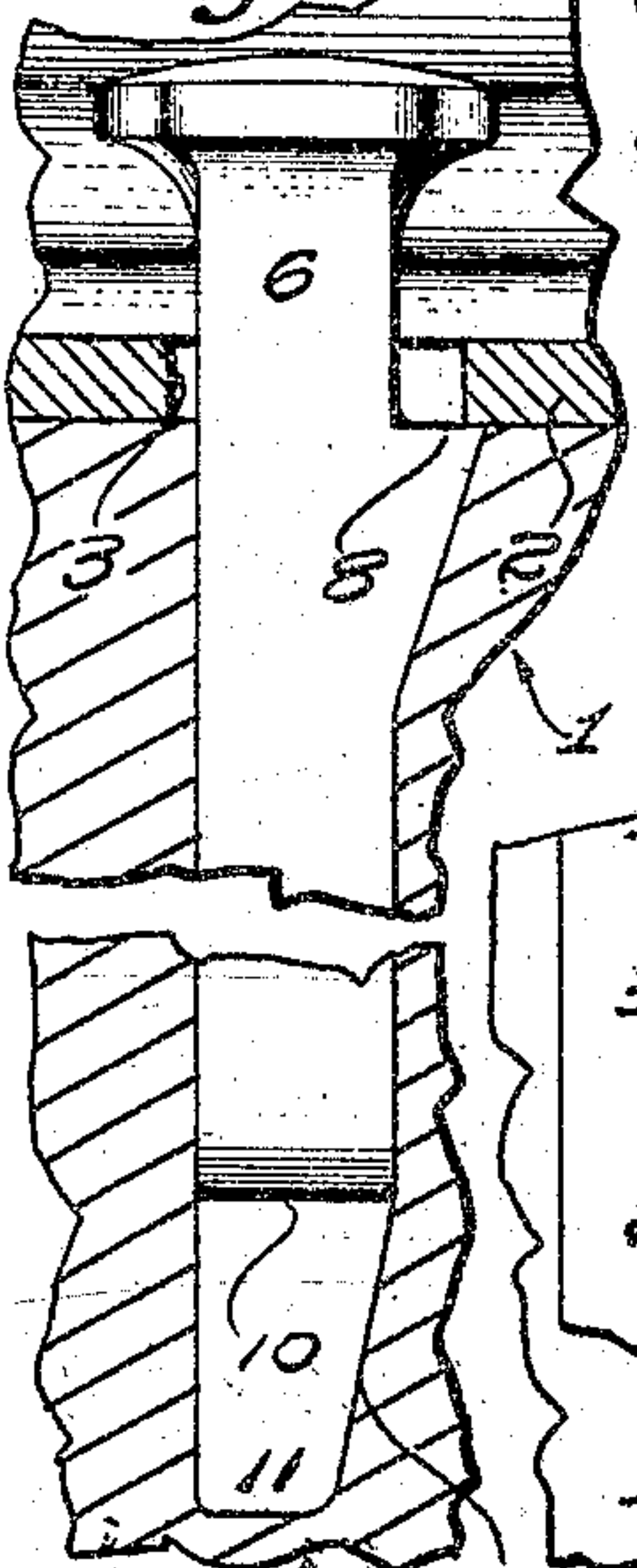
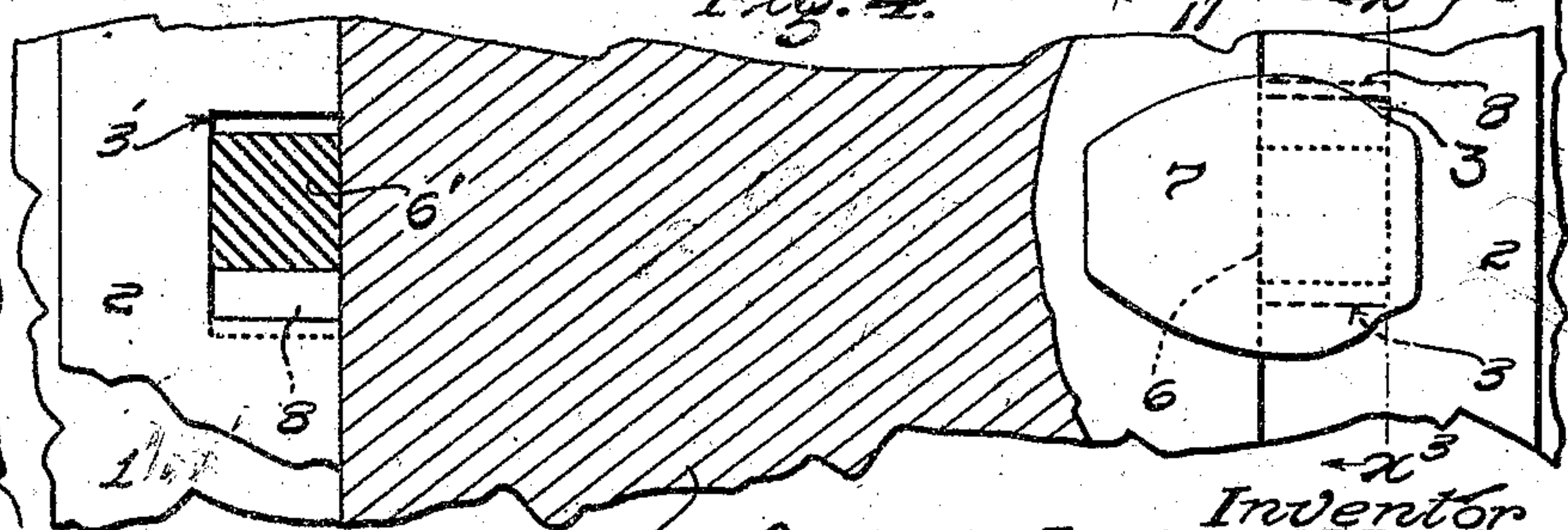


Fig. 4.



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Att'y

UNITED STATES PATENT OFFICE.

JAMES HUSTON YERKES, OF HIGHLAND, CALIFORNIA.

RAILWAY CONSTRUCTION.

No. 907,938.

Specification of Letters Patent.

Patented Dec. 29, 1908.

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To all whom it may concern:

Be it known that I, JAMES HUSTON YERKES, a citizen of the United States, residing at Highland, in the county of San Bernardino and State of California, have invented new and useful Improvements in Railway Construction, of which the following is a specification.

An object of this invention is to provide cheap, simple, convenient and practical means whereby all danger of the spikes becoming loose from the ties by the effects of heat, atmospheric changes and vibrations of the rail, will be avoided.

The invention includes a novel form of spike, and also the combination with the tie and rail, of a specially-constructed tie-plate and a specially-constructed spike.

The accompanying drawings illustrate the invention. Figure 1 is a perspective view of a novel spike that forms part of this invention. Fig. 2 is a fragmental section transverse a rail of a railway embodying this invention. Fig. 3 is a fragmental section on line x^3-x^3 , Figs. 2 and 4. Fig. 4 is a fragmental, sectional plan of the same from irregular line x^4-x^4 , Fig. 2.

1 designates a railway tie; 2 an apertured rail plate provided with parallel oblong slots 3 and 3', spaced apart a distance substantially equal to the width of the flange 4 of the rail 5, which it is to be understood may be of any usual construction of a railway rail. Said slots are duplicates of each other and are arranged parallel with each other, so that the slots will extend alongside the flanges when the rail is in place on the plate.

6, 6' designate the shanks of two spikes extending through the slots 3, 3', and provided with the usual eccentrically arranged heads 7. Each of said shanks extends from one edge of its head, so that the head projects mainly from only one side of the spike in the ordinary manner of constructing railway spikes.

8 is a shoulder flat on its upper face and located a distance below the level of the under-face of the head corresponding to the combined thickness of the plate 2 and the flange 4, where the head 7 engages the flange. The distance between the top of the shoulder and the under-face of the head 7 may be varied to accommodate various thicknesses of flange and rail plate. The shoulder 8 is in the form of a lateral lip having an abrupt or flat upper surface and tapering downwardly

from such surface to the line of the shank of the spike. Said shoulder projects from the face of the shank of the spike that is adjacent to the face of such shank from which the head mainly projects. The slots 3, 3' are each of a size and shape to accommodate the spike shank at the shouldered portion, so that the spike may be driven down into the tie 1, through the slot in the plate provided therefor, thus bringing the top of the shoulder 8 into position flush with the under-face of the plate 2.

9 and 10 designate barbs a short distance above a point 11 and on the outer and inner side of the spike to increase the frictional resistance against withdrawal. One of said barbs is on the side from which the head mainly projects and the other barb is on the opposite side of the spike shank. The barbs may be located at a greater or less distance from the point of the spike within the judgment of the constructor. Each spike is provided at the point 11 thereof and on the same side of the shank as the shoulder with a beveled face 12, so that when the spike is brought into position in the slot therefor with the flat face of the shank that is opposite the shouldered and beveled face of the shank against one end of the slot, and the projecting portion of the head is over the flange of the rail, then by driving the spike into the tie the beveled face 12 will act upon the wooden body of the tie and tend to cant the spike shank to force the shoulder thereof toward its end of the slot and as soon as the spike has been driven sufficiently to bring the top face of the shoulder flush with the under face of the plate, the resiliency of the wooden tie will shift the upper portion of the shank along the flange of the rail to bring the shoulder underneath the plate, as indicated in Fig. 3, and thereupon the spike locks the rail and plate together and they cannot be loosened from the tie, except when the spike is again forced back into position for withdrawal, or the plate is driven to bring the slot above the shoulder. The usual friction between the rail and plate and between the plate and tie is sufficient to prevent any shifting of the plate under ordinary conditions, therefore the spike will remain firmly seated in the tie for an indefinite period of time. Consequently, the full length of each of the spikes below the plate remains in the tie as finally driven, and possibility of tilting the rail is reduced to a minimum. Each of

the spikes thus becomes a lock-spike to cause the plate to lock the companion spike.

To withdraw the spike, it will be necessary to first drive the head of the spike over to the left, or the plate to the right in Fig. 3, and then draw the spike upward so as to release the shoulder 8, whereupon the spike may be withdrawn. Then the plate 2 may be driven aside to release the shoulder 8 of the other spike, whereupon such spike may also be drawn.

I claim:—

1. The combination with a tie, of a flanged rail extending across the tie, a plate having oblong slots extending alongside the opposite edges of the rail, and spikes in said slots, each of said spikes having a head extending over a flange of the rail, and a shoulder extending from the shank of the spike alongside the rail and under the margin of the slot in the plate to lock the rail to the plate.

2. The combination with a tie, and a rail of a plate having a slot therethrough and a spike in the slot having a head projecting from one side over the flange of the rail and a shoulder projecting from an adjacent side under a margin of said slot, whereby the spike locks the rail to the plate and may be withdrawn from the tie and plate by carrying the spike without shifting the plate.

3. A spike provided on one side with a projecting head to engage the flange of a rail and provided on a side adjacent to the side from which said rail engaging head projects with a shoulder beveled downwardly from

the top toward the point of the spike, said spike being also provided on the same side as the shoulder with a beveled face at the point of the spike, for the purpose of causing the upper portion of the spike to press along the rail toward the shouldered side of the spike, when the spike is fully driven home.

4. A spike having a lateral lip near the top thereof, and a beveled extremity, the lip and the bevel being on the same side of the shank of the spike, and the head of the spike projecting from an adjacent side of the spike.

5. A spike comprising a head and a shank, the shank projecting eccentrically from the head and being provided on a side adjacent that from which the major portion of the head projects with a shoulder, the under-face of which is aslant, and the upper-face of which is at the top of the spike below the level of the head, the same face of the spike from which the shoulder projects being beveled at the point of the spike.

6. A spike having a head and a shank projecting eccentrically therefrom and provided with a shoulder near the head and spaced apart therefrom on a side adjacent that from which the major portion of the head projects.

In testimony whereof, I have hereunto set my hand at Highland, California this 17th day of October, 1907.

AMES HUSTON YERKES.

In presence of

ED. BARNES,

MONTIE R. YERKES.