

(No Model.)

L. HAAS.  
RAILROAD TIE.

No. 389,464.

Patented Sept. 11, 1888.

Fig 1

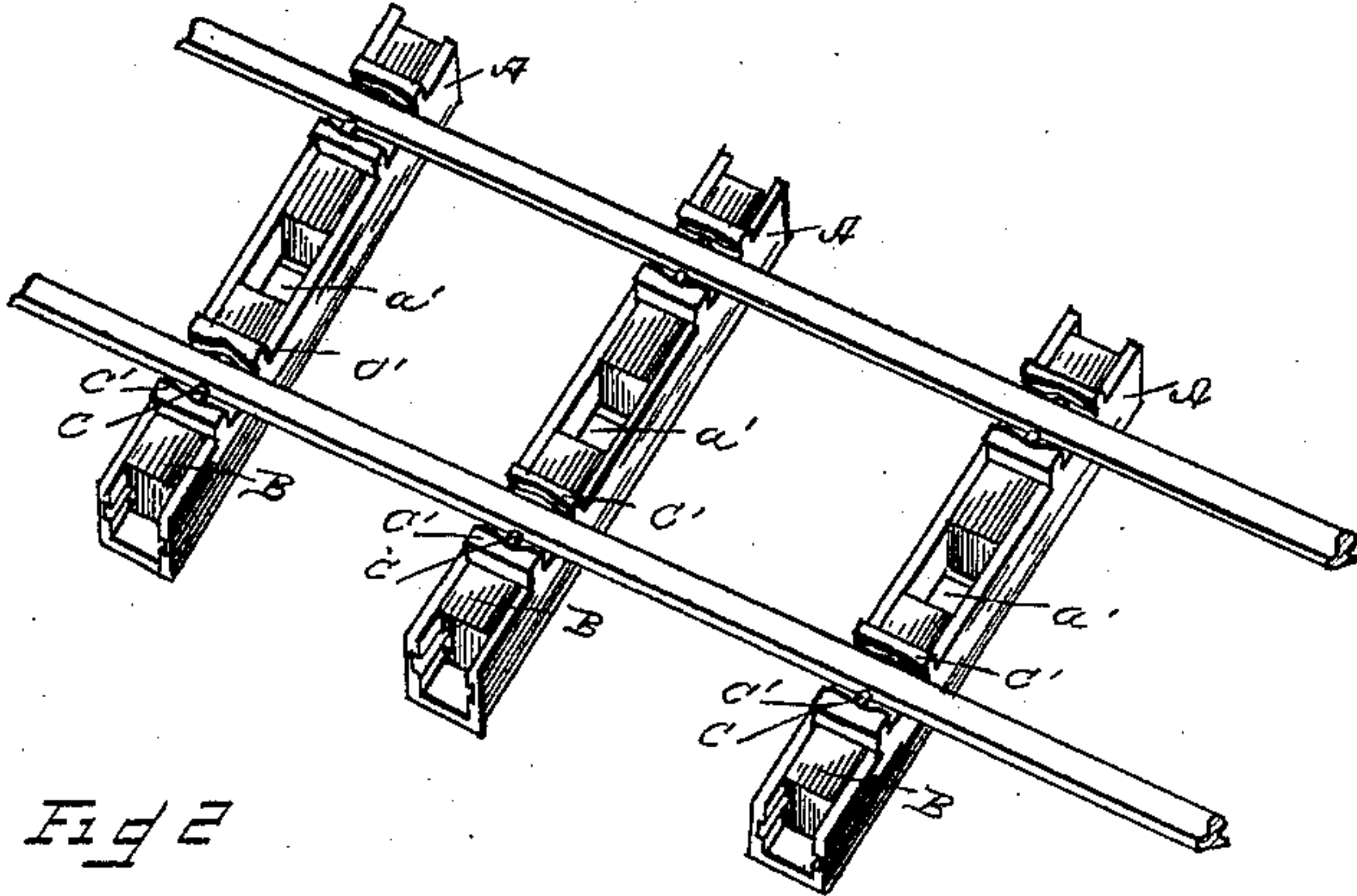


Fig 2

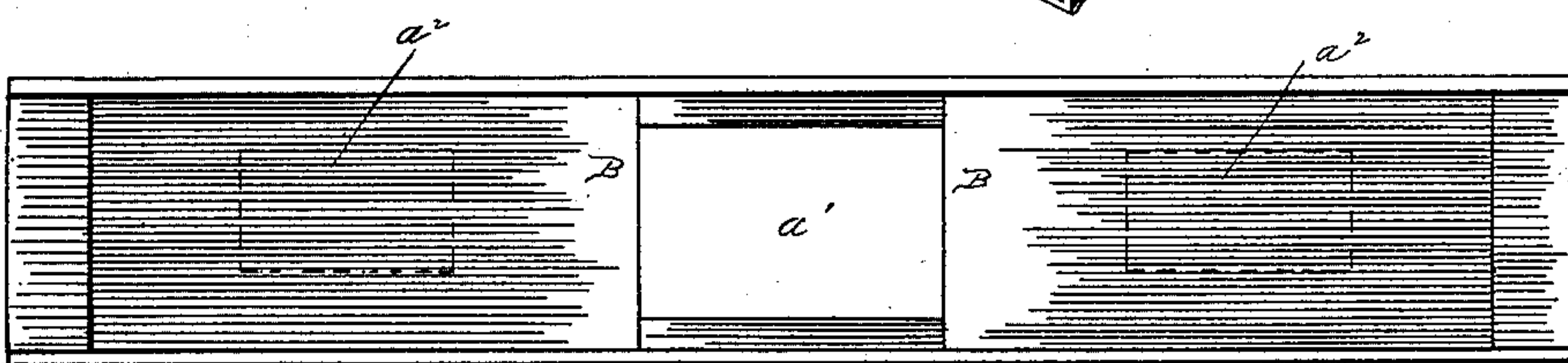


Fig 3

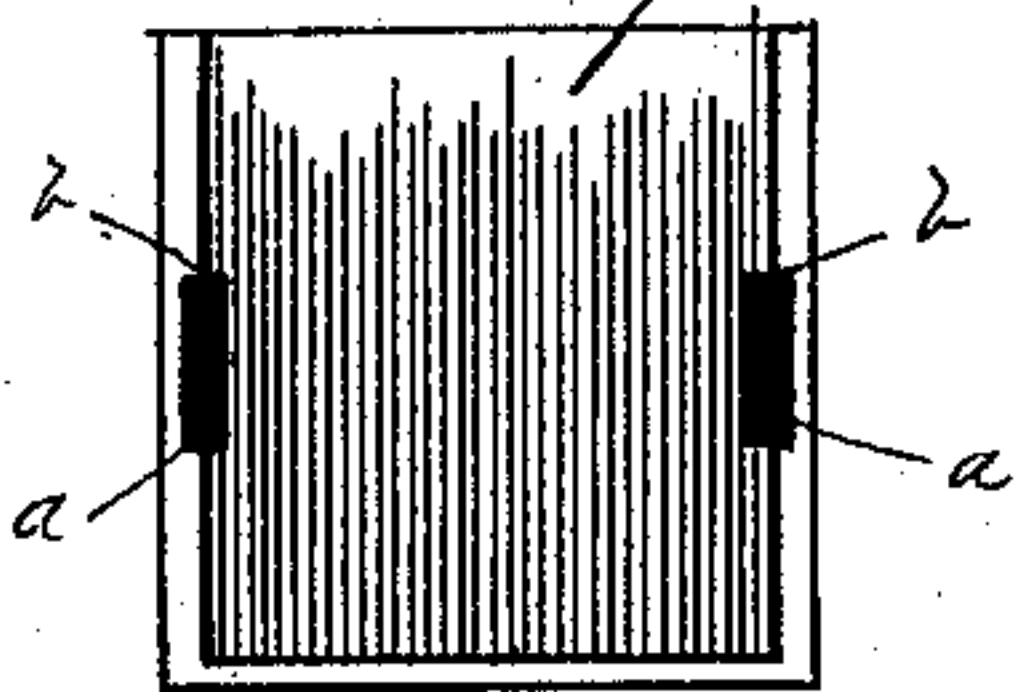


Fig 4

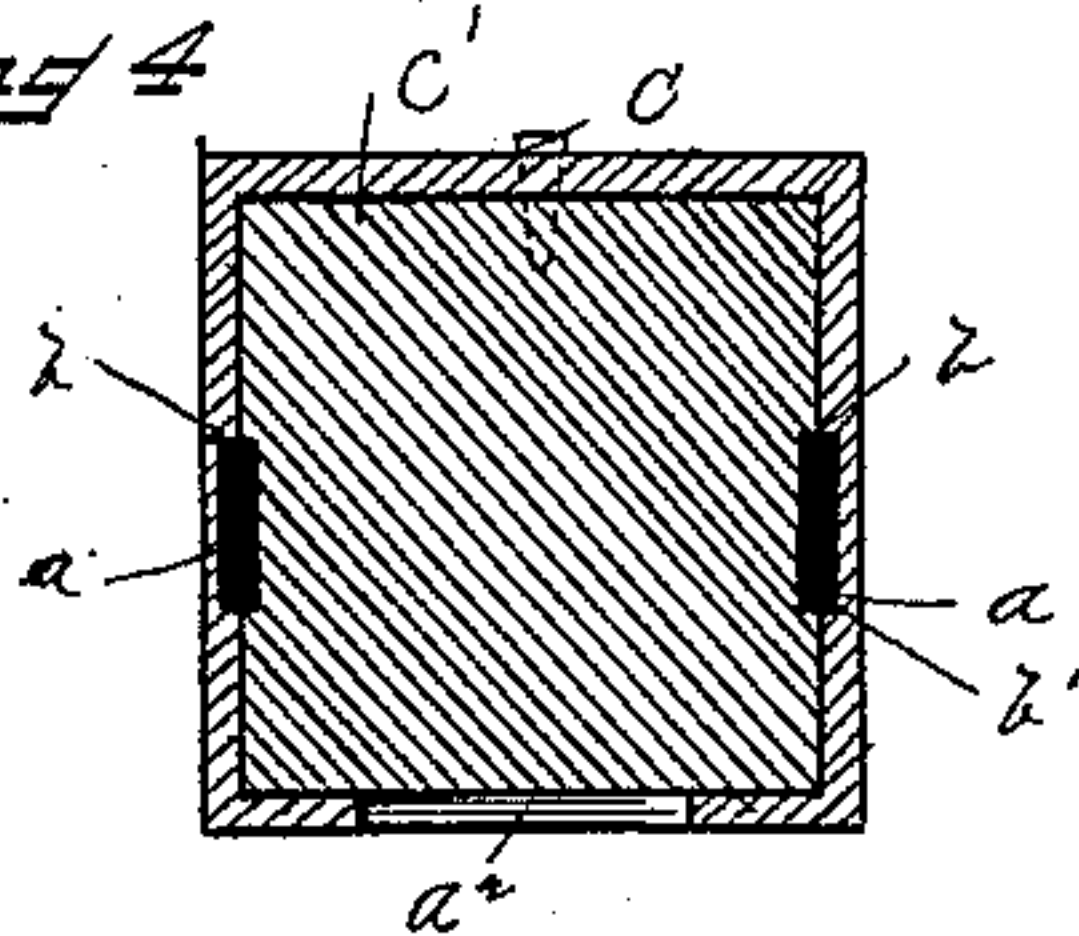


Fig 5

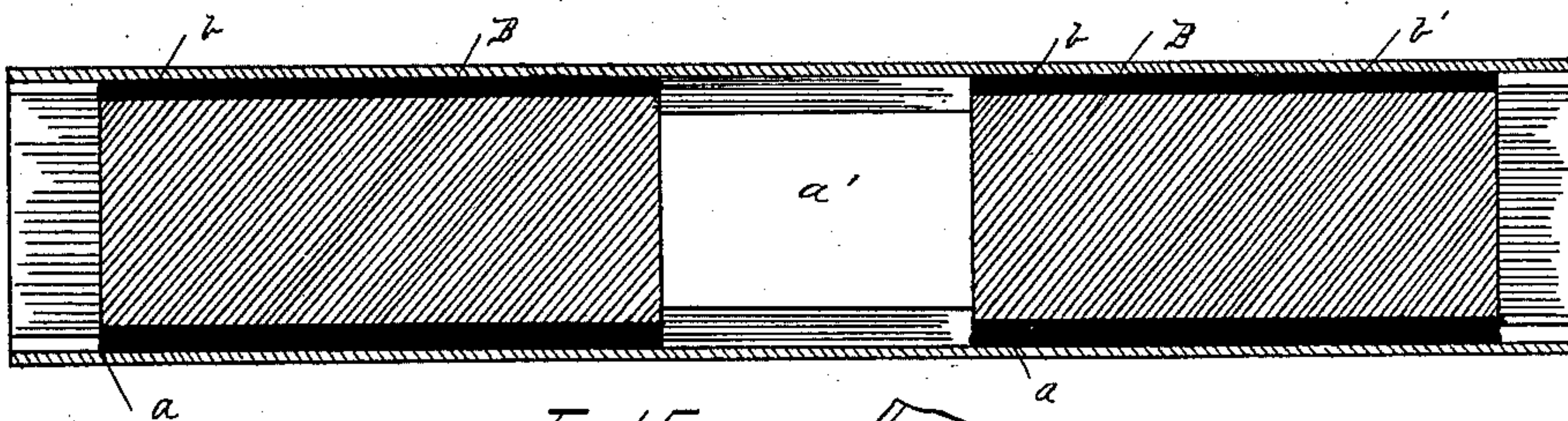
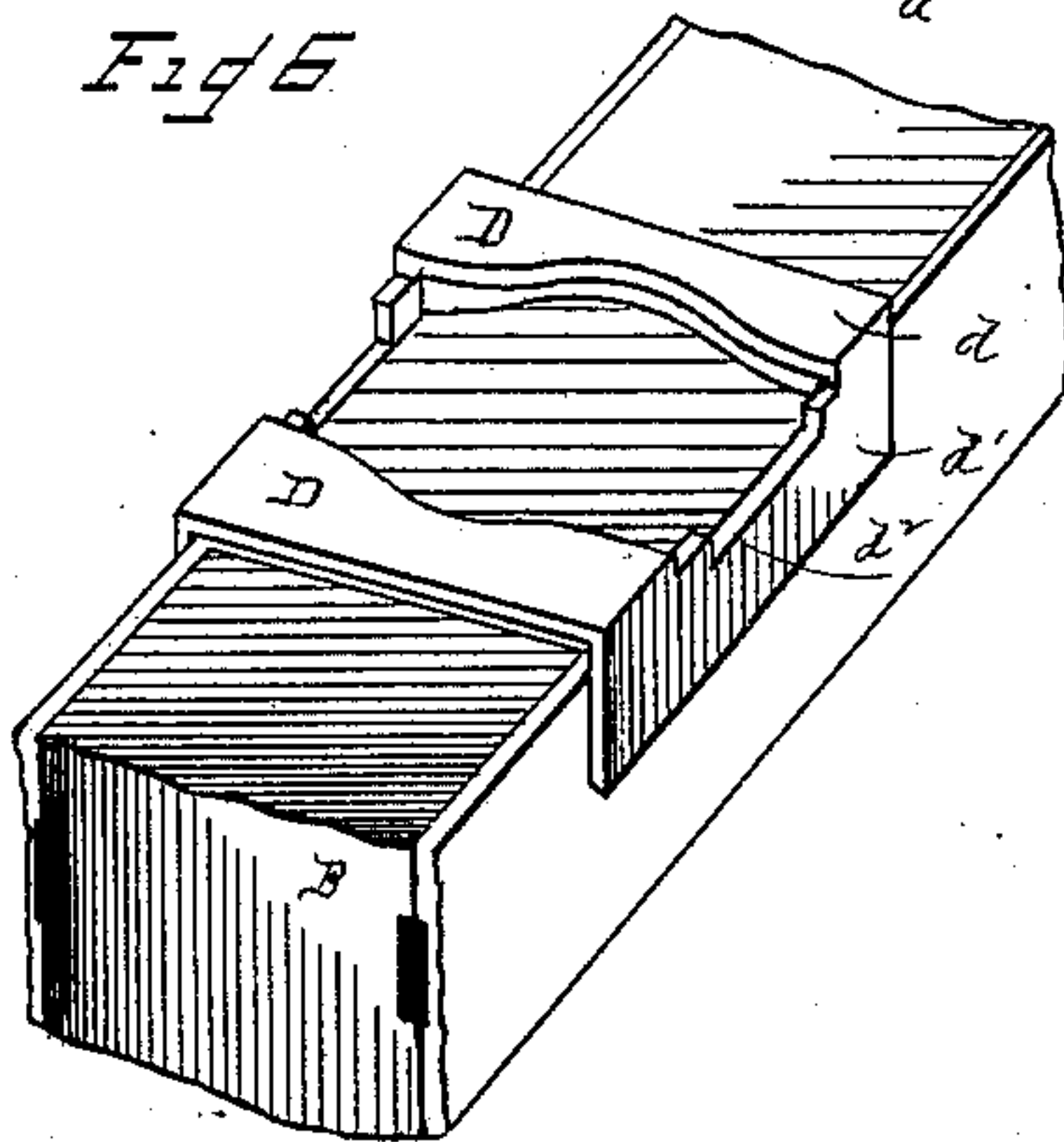


Fig 6



WITNESSES

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# UNITED STATES PATENT OFFICE.

LEVI HAAS, OF CHESTER, PENNSYLVANIA.

## RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 389,464, dated September 11, 1888.

Application filed January 3, 1888. Serial No. 259,6-5. (No model.)

*To all whom it may concern:*

Be it known that I, LEVI HAAS, a citizen of the United States of America, residing at Chester, in the county of Delaware and State of Pennsylvania, have invented certain new and useful Improvements in Railroad-Ties, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention pertains to certain new and useful improvements in railroad-ties, having reference more particularly to the class of metallic stringers and ties.

15 The object of the invention is to provide end blocks suitably packed in the ends of the ties, which latter for this purpose, as well as the blocks, are provided with corresponding straight or tapering grooves or recesses, wherein is inserted suitable packing composed, preferably, of oakum, tarred rope, or other suitable waste.

20 A further object of the invention consists in subjecting the end blocks to suitable treatment prior to being used, so as to prevent the decay thereof; or, in lieu of such treatment, blocks composed of an improved composition may be employed.

25 To these ends my invention is carried into effect in the manner substantially as herein-after fully set forth, and particularly pointed out in the claims.

30 In the accompanying drawings, Figure 1 is a view in perspective of a series of ties embodying my invention. Fig. 2 is an enlarged plan view of a tie with my improved end blocks. Fig. 3 is an end view thereof. Fig. 4 is a transverse sectional view. Fig. 5 is a horizontal longitudinal sectional view on the line  $x\ x$ , Fig. 3; and Fig. 6 is an enlarged perspective view of one end of a tie with parts broken away, showing a modification of my invention.

35 My invention is alike applicable to metallic ties of almost any form of construction, whether composed of rolled or cast metal.

40 In constructing the ties A the same is to be provided on the inner surface of one or both of its lateral sides with grooves or recesses  $a$ , which may be tapered or straight, and extend upon the outer ends of the ties to a point about or near the center thereof, as shown.

The tie A is preferably opened in its cen-

ter, as shown at  $a'$ , and is provided at about the center of each end portion with openings  $a^2\ a^2$ . The object of these openings  $a'\ a^2$  is to 55 secure a firm and solid ballast in embedding the ties.

B B designate my improved blocks, which are of the same general outline as the interior of the tie A, said blocks being designed to fit 60 within the ends of said tie, as shown. These blocks B are also provided in their sides with longitudinal grooves or recesses  $b$ , which extend from end to end thereof, and are also tapered or straight, according as the slot or recess  $a$  of the tie A may be tapered or straight. 65

70 Within the coincident slots or recesses of the tie A and block B, I purpose to firmly pack or place therein suitable packing,  $b'$ , composed, preferably, of oakum and tarred rope; but I do not limit myself in this particular, as any other suitable material may be employed for this purpose, the object being to secure or firmly hold the blocks on the tie. It is well known that ties are liable to be deranged from 75 their proper sitting or ballast, and if the blocks B are not packed in this manner they will shrink and fall out by handling, or may be broken out and carried away; but by means of my improved form of packing (which is always done at the manufactory) this objection is obviated, and the blocks in this manner will 80 last a great length of time, and particularly is this so when the blocks are either a suitable composition, hereinafter to be described, to prevent it from decay and rot, or when composed of a composition which is to be used in lieu of the wooden blocks. 85

90 In practice the rails are secured in position on top of the ties and blocks by means of short spikes C driven through the upper portion of said blocks, and said rails and spikes are located between two cross-pieces,  $C'$ , which are preferably curved on their inner opposite faces, so as to be applicable for the reception of 95 curved rails, and at the same time are as equally adaptable for straight tracks.

100 When by reason of the vibration consequent upon constant use the spikes C become loose in their holes or apertures in the blocks B, the objection caused thereby is removed by removing said spikes, and slightly striking or hitting the outer ends of said block, forcing the same inwardly a short distance, when the spikes can



be replaced. This can be repeated as often as necessary until the entire upper portion of the block is utilized, when said block can be removed and its lower or bottom portion placed upwardly; or, in other words, said block can be reversed and the spikes driven in position as formerly.

When the blocks B are to be of wood, I preferably subject the same to suitable treatment by thoroughly steaming them in vats and machinery for the purpose, wherein is a mixture or compound composed of asphalt, gas, coal-tar, pitch, resin, and crude oil in suitable proportions heated to a degree sufficient to blend and impregnate the fibers, and thereby render the blocks impervious to both water and weather. By this treatment of the blocks the same will not decay or rot, but become harder and more durable consequent upon constant usage. In lieu of thus treating the blocks the same can be composed entirely of a new compound for this purpose, consisting of asphalt, gas, coal-tar, crude oil, and pitch in proper quantities mixed with wood and other fibrous materials throughout, which are blended and then compressed into blocks of the desired shape after the manner that asphalt paving-blocks are now manufactured. If desired, these blocks may be in two pieces. The blocks composed of these ingredients will stand long and constant wear, and when finally they become unfit for further use the material thereof can be used in the construction or remolding of others. The spikes driven into these blocks secure a better grip or have a more firm embedding than in wood; and a further advantage is that said blocks will not split or be in any wise effected by shrinkage.

In Fig. 6 I have shown an improved bracing or strengthening saddle, D, which is designed to be employed when the metallic ties are open throughout their entire length. This saddle consists of two connecting-pieces or cross-bars,  $d$   $d$ , and two side bars,  $d'$ , as shown, said cross-bars being of the same formation as the cross-pieces C', before described. The side bars are provided with upper central recesses, at the ends of which shoulders  $d^2$   $d^2$  are formed, whereon the rails are designed to rest, thus re-

lieving some of the weight thereof from the top of the tie and block. By means of this saddle the tie and block are more firmly held or united together, and the bearing of the rail is relieved from the top of the tie and block.

I claim as my invention—

1. As an improvement in metallic railroad-ties, the blocks disposed in the ends thereof, and having suitable packing against its sides, substantially as and for the purpose stated.

2. As an improvement in metallic railroad-ties, the tie having side grooves or recesses, and the end blocks having corresponding grooves or recesses, and the packing placed therein, substantially as shown and described.

3. As an improvement in metallic railroad-ties, the tie having the grooves or recesses, the blocks having corresponding grooves or recesses in either side, and the packing composed of oakum, tarred rope, or its equivalent, as and for the purpose stated.

4. As an improvement in metallic railroad-ties, the tie having the central opening, and the openings or recesses in the center of each end portion, said openings being formed in the bottom connecting pieces of said tie, substantially as shown and described.

5. As an improvement in metallic railroad-ties, the end blocks composed of wood or other fibrous material, asphalt, gas, coal-tar, pitch, resin, and crude oil, substantially as hereinbefore fully set forth.

6. The combination, with the tie, the end blocks, and the connecting-pieces, of the bracing or strengthening saddle having the connecting-pieces, and the end bars having recesses and shoulders in their upper edges, substantially as shown and described.

7. The combination, with the tie having the connecting-pieces and the end blocks, of the bracing or strengthening saddle herein described, composed of connecting-pieces and end bars, substantially as shown and described.

In testimony whereof I have affixed my signature in presence of two witnesses.

LEVI HAAS.

Witnesses:

P. M. WASHABAUGH,  
GARNETT PENDLETON.