

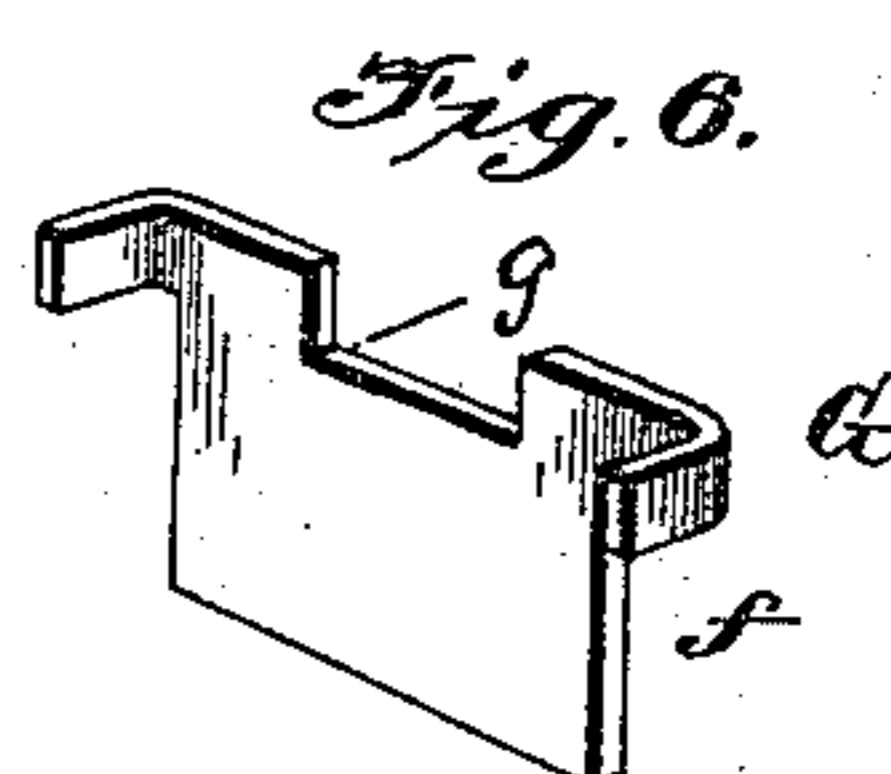
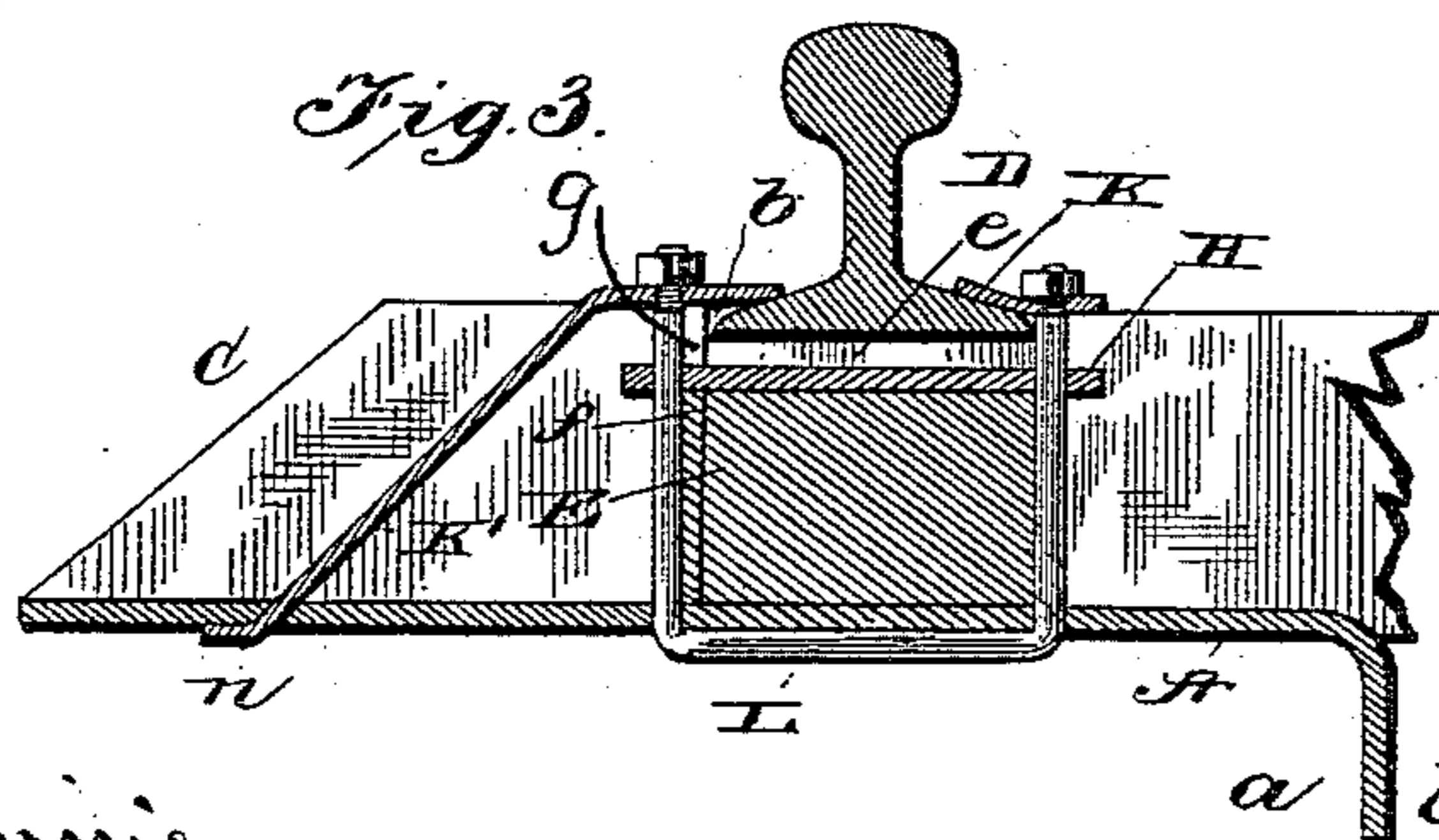
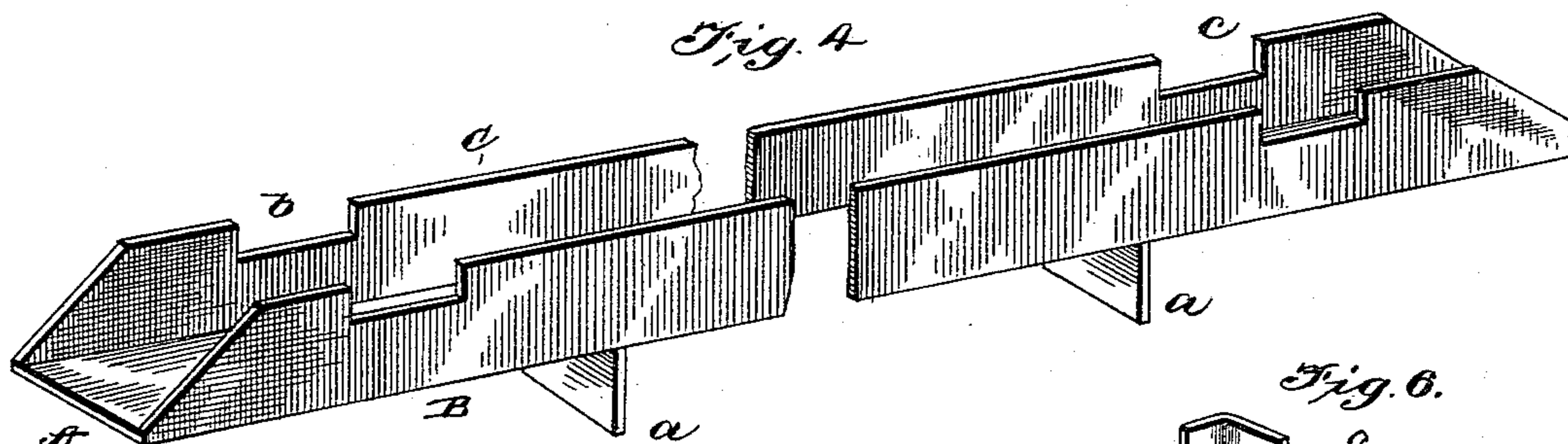
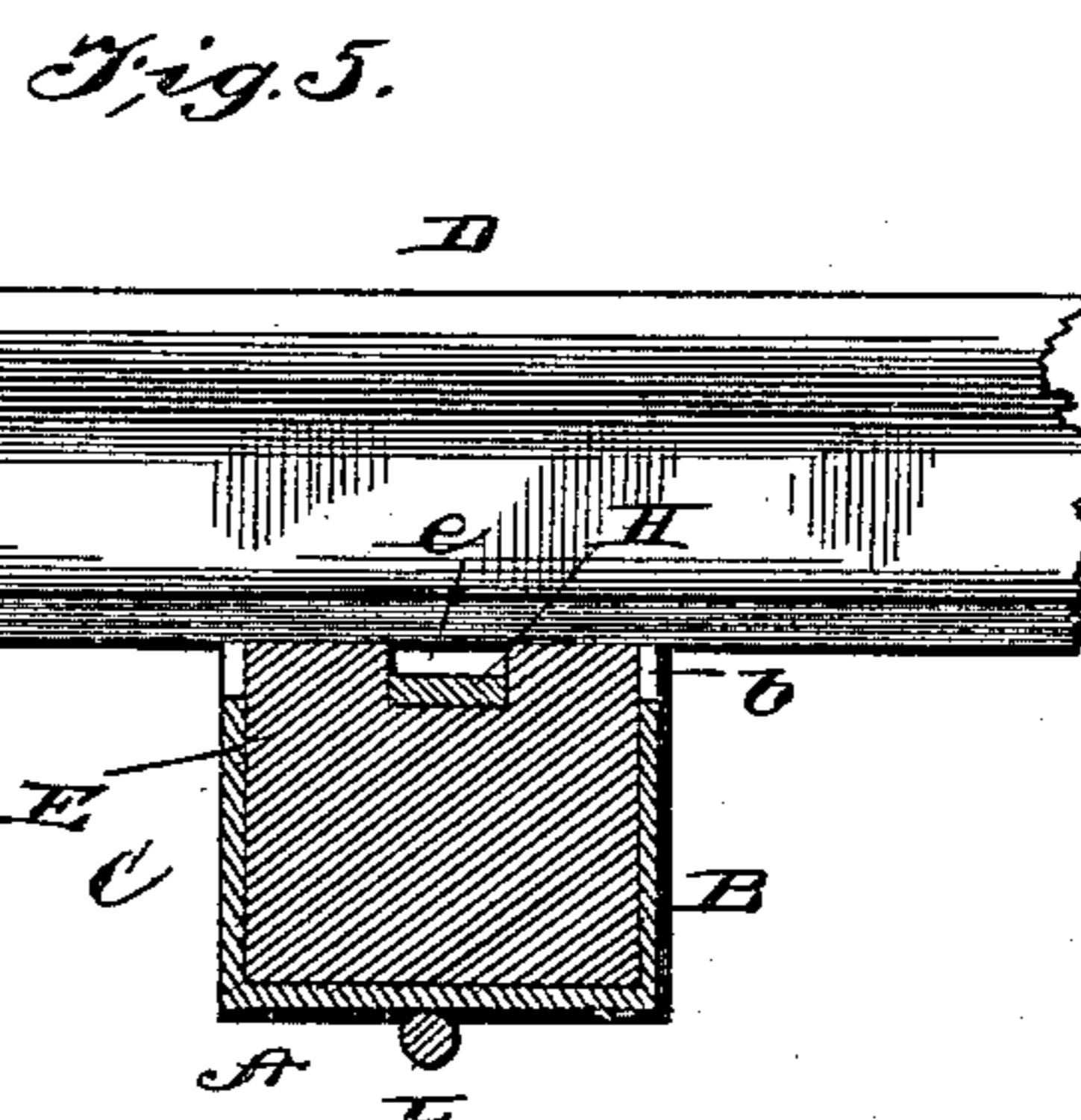
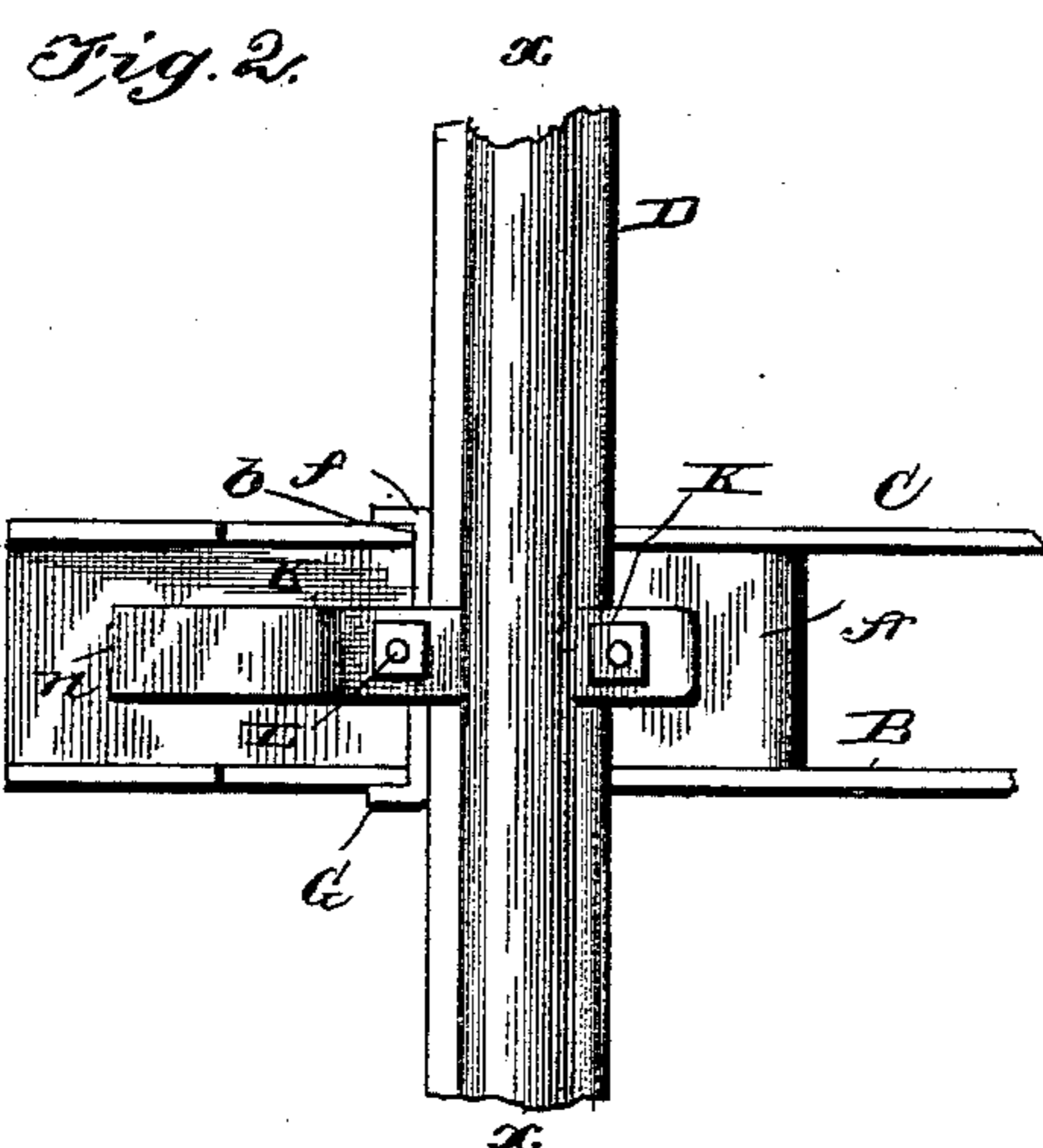
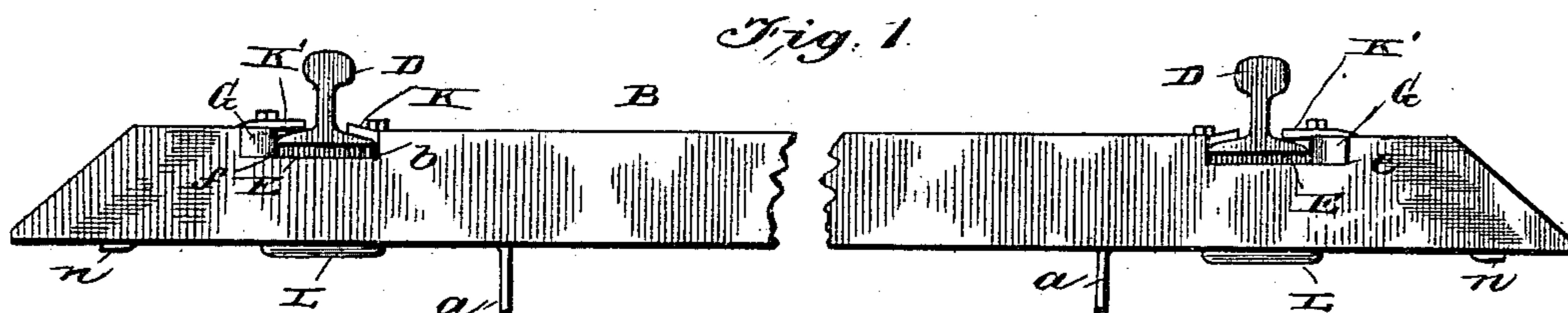
(No Model.)

R. MORRELL.

RAILWAY RAIL FASTENING FOR METALLIC TIES.

No. 457,518.

Patented Aug. 11, 1891.



Witnesses

John Imrie  
S. Brashear Jr

Inventor

a Robt Morrell

By his Attorney

Shupley Brashear

# UNITED STATES PATENT OFFICE.

ROBERT MORRELL, OF SUMMIT, NEW JERSEY, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE MORRELL METALLIC RAILWAY TIE COMPANY.

## RAILWAY-RAIL FASTENING FOR METALLIC TIES.

SPECIFICATION forming part of Letters Patent No. 457,518, dated August 11, 1891.

Application filed November 11, 1890. Serial No. 371,009. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT MORRELL, a citizen of the United States, residing at Summit, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Railway-Rail Fastenings for Metallic Ties; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to fastenings for railway-rails, and has for its object to furnish a fastening for use with metallic cross-ties which shall be simple, effective, durable, and not liable to get out of order.

With these objects in view my invention consists in the improved construction, arrangement, and combination of parts hereinafter fully described, and afterward specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation of a metallic cross-tie having rails thereon in section secured by means of my improved fastening. Fig. 2 is a top plan view of one end thereof. Fig. 3 is a longitudinal vertical section thereof. Fig. 4 is a perspective view of the cross-tie; and Fig. 5 is a transverse vertical section on the line  $x x$  of Figs. 2 and 3, the rail being shown in elevation. Fig. 6 is a detail, being a perspective view of the "shim."

Like letters of reference mark the same parts wherever they occur in the various figures of the drawings.

Referring to the drawings by letter, A is the base, and B and C are the sides, of a metallic cross-tie. I show in this instance an improved cross-tie of my own invention, for which I have applied for Letters Patent, in which the central portion of the base A is removed and the adjoining portions  $a$  turned downward to enter the earth to prevent lateral displacement of the tie; but I desire it to be understood that any other metallic tie which is provided with sides B and C may be used.

In the upper edges of the sides near each end

thereof are provided notches  $b$  and  $c$ , in which the base of the rail D rests and which are slightly longer than the width of the base of the rail. The rail D rests upon a bed-block E, made of wood, paper-pulp, or other suitable material. By the side of this bed-block, on the outside of the rail, is a shim or bearing-plate  $f$ , which has projecting ears G, resting in the notches  $c$  and bent around outside of the sides of the tie, as most clearly shown in Figs. 1 and 2. The bed-block has a groove  $e$  in its upper face, in which rests a plate H, whose ends project beyond the block, one of them passing through an elongated opening  $g$  and both of them being provided with bolt-holes. Clamp-plates K K' rest upon the flanges of the rail, and a U-shaped bolt L passes through the bottom of the tie, the plate H and the clamp-plates K K' being provided at the top with suitable nuts. When it is desired to guard against extraordinary side-thrust, as on the outside of curves in the road, the clamp-plate K' is elongated, as at N, bent downward, and has its end  $n$  passed through an opening in the base of the tie, as shown most clearly in Fig. 3.

In the structure heretofore described it will be noticed that by making the notches in the top edges of the sides of the tie and providing the plate  $f$  with its ears G in said notches a wide bearing is provided for the outer flange of the rail, which forms an additional safeguard against spreading of the rail and tends to prevent mutilation or cutting of the flange of the rail or the edge of the notch. This plate  $f$  is securely held in position against the bed-block and in the notch by the provision of the plate H, as described. The U-bolt securely holds the bed-block from displacement in the trough of the tie, secures the plate H, and rigidly clamps the cross-tie, bed-block, and rail together. The downward-inclined extension N of the clamp-plate K' forms a valuable safeguard at points where the same is most needed.

At the joints of the rails a metallic bed-block may be used to prevent the ends of the rails mashing the block and thereby springing as the wheels pass over them.

Having thus fully described my invention,

what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a railway-rail fastening, the combination, with a metallic cross-tie having rail-receiving notches in its upper edges, of a vertical bearing-plate set in said notches at the outside of the rail-flange, substantially as described.

2. In combination, the cross-tie having rail-receiving notches in its upper edges, the bed-block E, the plate *f* by the side of the bed-block, having ears G resting in the notches outside the rail-flange, and bolts for securing these parts together, as set forth.

3. In combination, the rail, the bed-block upon which it rests, the cross-tie having rail-receiving notches in its upper edges, the plate *f*, having ears G resting in said notches at the

outside of the rail-flange, the plate H, resting in a groove in the top of the bed-block and passing through plate F, the clamp-plates resting on the rail-flanges, and the bolt for securing all the parts together, as set forth.

4. In a railway-rail fastening, the combination, with the rail and the cross-tie, of clamp-plates resting on the rail-flanges, one of said clamp-plates being elongated and inclined downward and engaging a hole in the base of the cross-tie, as set forth.

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

ROBERT MORRELL.

Witnesses:

SHIPLEY BRASHEARS,  
SHIPLEY BRASHEARS, JR.