(No Model.)

A. J. HARTFORD.

RAILROAD TIE.

No. 478,058. Patented June 28, 1892.

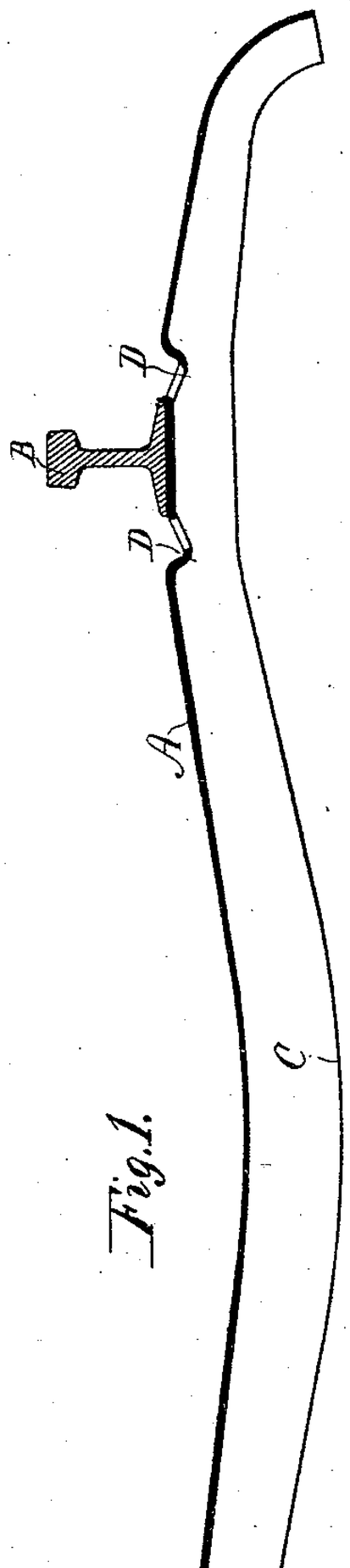

Fig. 1.

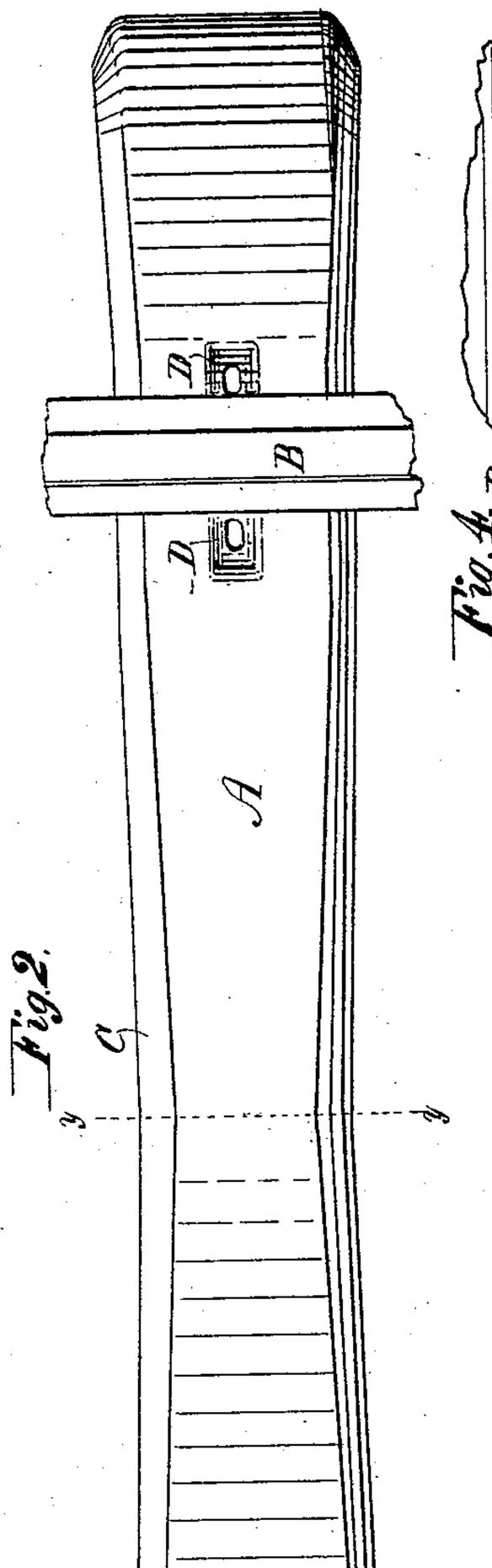

Fig. 2.

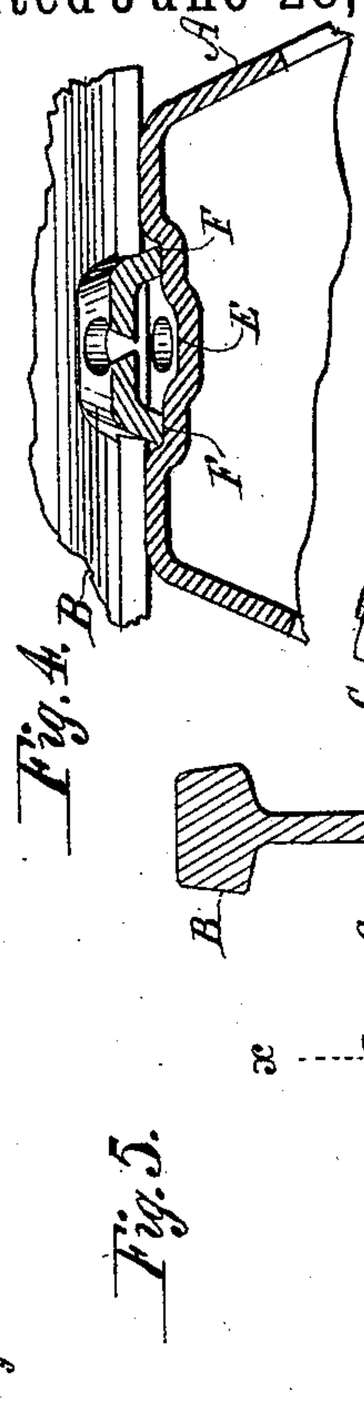

Fig. 4.

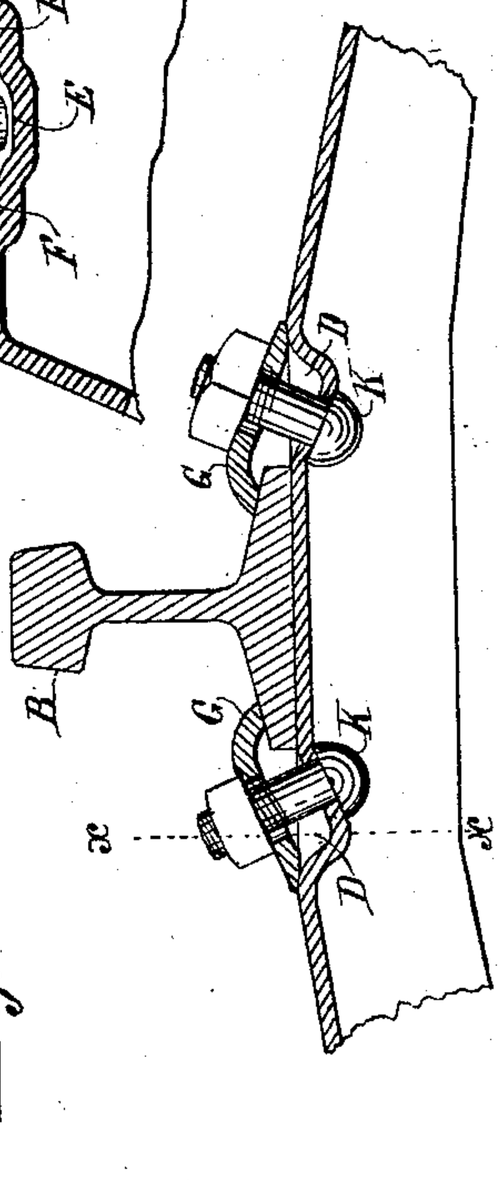

Fig. 5.

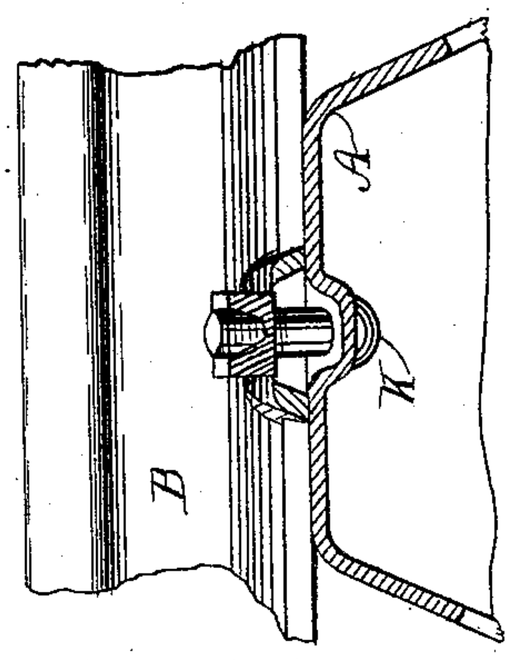

Fig. 3.

WITNESSES:
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ARTHUR J. HARTFORD, OF NEW YORK, N. Y., ASSIGNOR TO THE RAILWAY IMPROVEMENT COMPANY, OF ILLINOIS.

RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 478,058, dated June 28, 1892.

Application filed March 25, 1891. Serial No. 386,292. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR J. HARTFORD, of the city, county, and State of New York, have invented a new and useful Improvement in Railroad-Ties, of which the following is a full, true, and exact description, reference being had to the accompanying drawings.

The form of tie which is the subject of the present specification has certain points of advantage over the ties heretofore patented to me. The fastening of the rail upon the tie is done by a straight bolt. The tie itself is of sufficient strength, with a less weight of metal, and is better adapted to prevent creeping or movement both longitudinally and transversely than those heretofore patented to me.

The structure of my tie will be readily understood from the accompanying drawings, in which—

Figure 1 represents a vertical section through the tie and rail; Fig. 2, a plan of the tie and rail; Fig. 3, a section through Fig. 5 on the line *x x;* Fig. 4, an enlarged view of some of the parts shown in Fig. 3 with the bolt removed, showing the rail-holding clip and rail, and also a modification of the tie; and Fig. 5 a cross-section through the rail and rail-holding clips on an enlarged scale.

The tie A is preferably made by pressing or stamping. It has the general shape clearly shown in Figs. 1 and 2. The top of the tie is contracted, as shown on the line *y y*, thereby enabling a wider flange C to be pressed at that point. This gives a greater hold in the ground when the tie is in the ballast and prevents transverse movement of the tie. The tie itself is preferably bent down at the ends and also sunk in the middle, as shown, the purpose of this being to prevent as far as possible longitudinal motion of the tie, and likewise to enable the ballast to cover the tie at a central part, if desired. This is an advantage in preventing displacement of the track by freezing. Within the tie are pressed four pockets D D. The metal of the pocket operates by its flange shape to strengthen the tie at the pocket points. The pocket may be of the shape shown in Fig. 5, or, if desired, of the shape shown in Fig. 4, in which the central part E is somewhat more depressed than the sides F of the pocket. The clips G are simply pieces of bent metal, the shape of which will be readily seen from the drawings. They are held against the rail by straight bolts K, and by the adjustment of these bolts the rail can be laterally adjusted upon the tie, the oblong shape of the holes in the pockets D enabling this adjustment to be readily made. I prefer to make the neck of the bolt somewhat oval in shape, so that it will be held from turning by the slots in the bottom of the pockets. It will be observed that this structure of clip and rail enables the rail to be shimed up, if desired. In the form shown in Fig. 4 the edges of the clip are held by the depressions F from turning around the bolt, which in some cases is an advantage, although in ordinary cases the combination of the clip and rail prevents any turning of the clip.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A metal tie for railroads, having pockets D, the bottom of said pockets being at an angle to the base of the rail and below the surface of the tie, thereby enabling a lateral adjustment of the rail by straight bolts, substantially as described.

2. In a metallic tie, a pocket D, having depressions E F, in combination with the clip G, substantially as and for the purposes described.

3. The combination of the tie A, having pockets D therein, the bottom of said pockets being at an angle to the base of the rail and below the surface of the tie, and clips G, fitting said pockets, substantially as described.

4. The combination of the tie A, having pockets D, and rail B, the clips G G, and straight bolts K, the whole enabling both a lateral and vertical adjustment of the rail B, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ARTHUR J. HARTFORD.

Witnesses:

S. O. EDMONDS,

WM. A. POLLOCK.