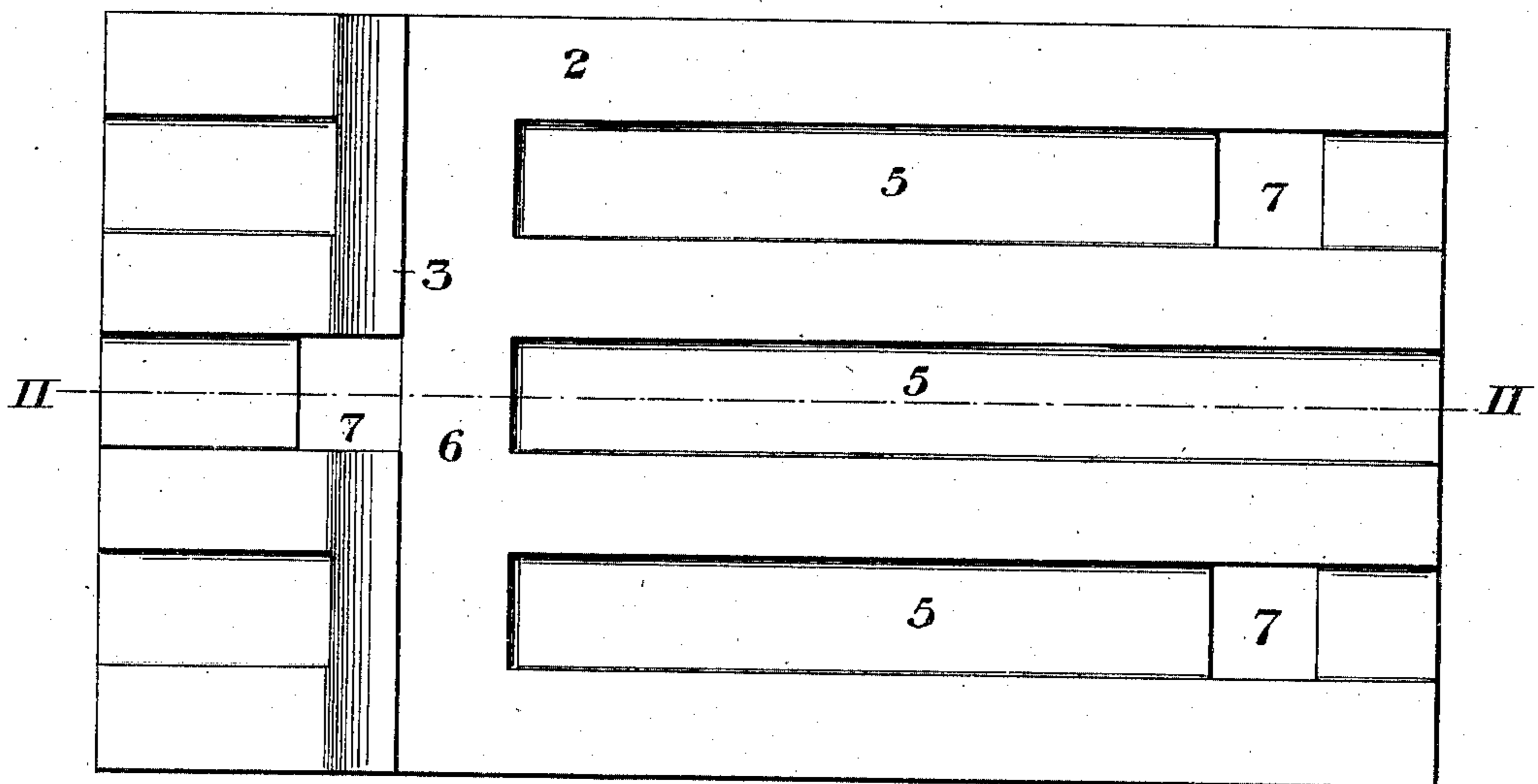


L. DILWORTH.  
RAILWAY TIE PLATE.  
APPLICATION FILED AUG. 6, 1908.

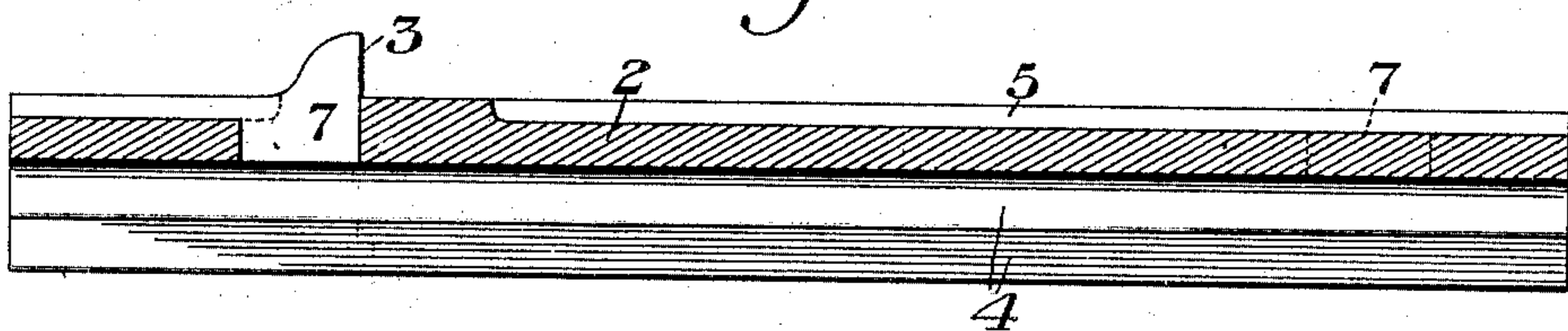
928,429.

Patented July 20, 1909.

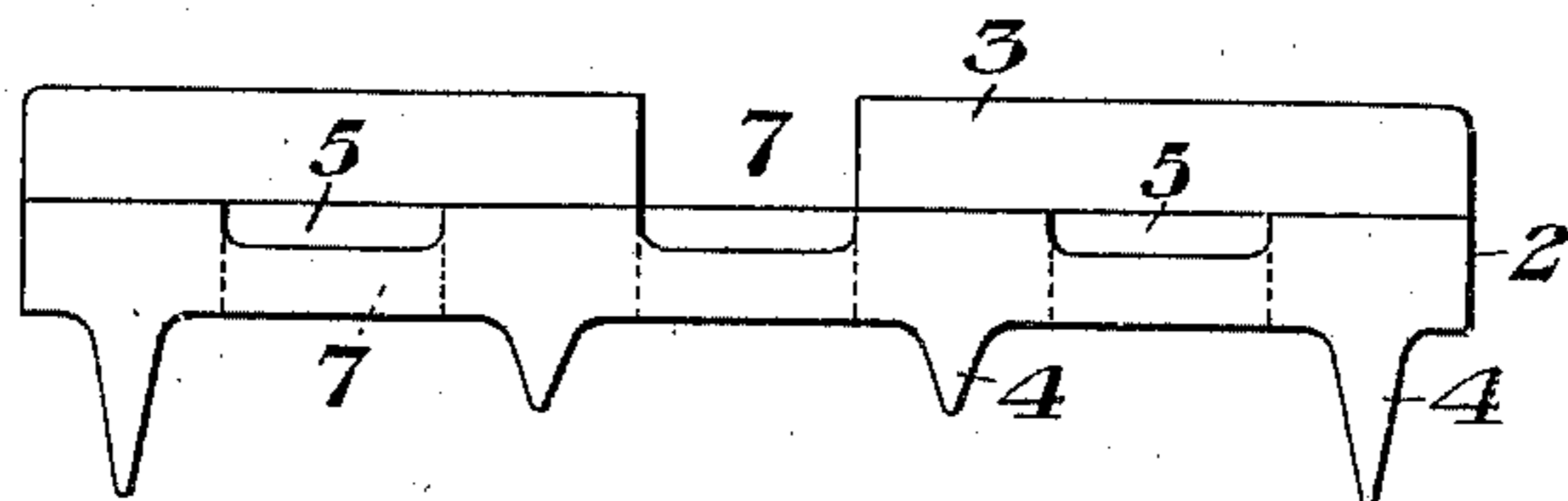
*Fig. 1.*



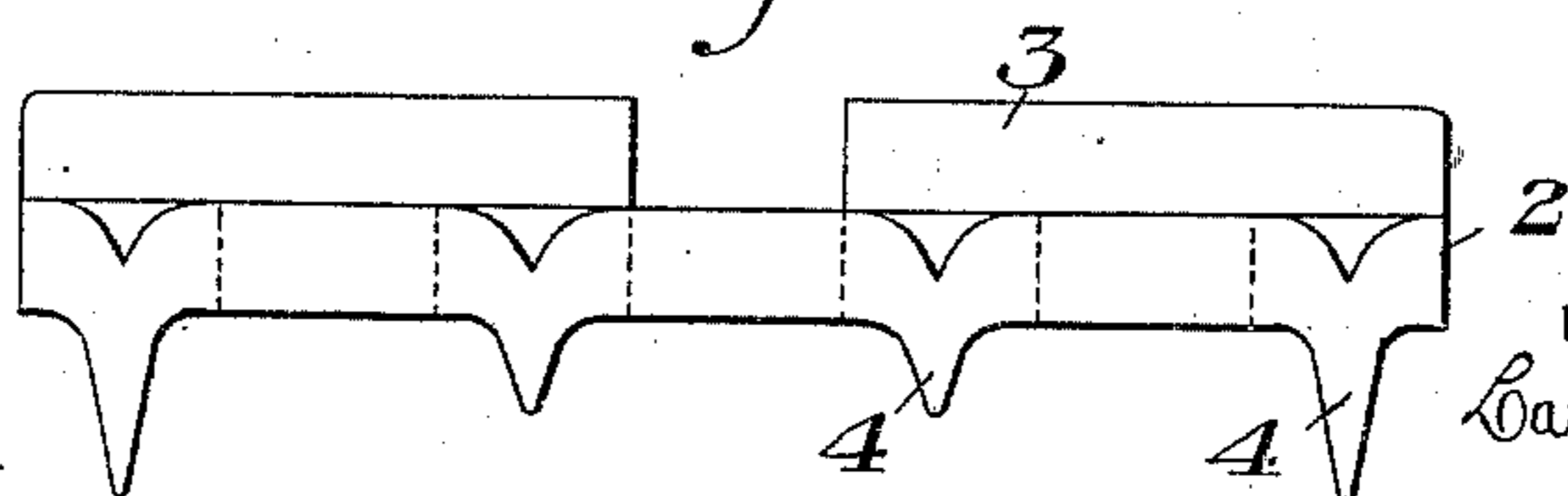
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



WITNESSES

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# UNITED STATES PATENT OFFICE.

LAWRENCE DILWORTH, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO DILWORTH, PORTER & COMPANY, LIMITED, OF PITTSBURG, PENNSYLVANIA, A LIMITED PARTNERSHIP.

## RAILWAY-TIE PLATE.

No. 928,429.

Specification of Letters Patent.

Patented July 20, 1909.

Application filed August 6, 1908. Serial No. 447,311.

*To all whom it may concern:*

Be it known that I, LAWRENCE DILWORTH, a resident of Pittsburg, Allegheny county, Pennsylvania, have invented a new and useful Improvement in Railway-Tie Plates, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view of one form of tie plate embodying my invention; Fig. 2 is a longitudinal section on the line II—II of Fig. 1; Fig. 3 is an end view; and Fig. 4 is an end view showing a modified form of the plate.

My invention has relation to railway tie plates of that form in which the plate is provided on its upper side, near one end, with a transverse rail bearing shoulder or projection, the under side of the plate being provided with a plurality of longitudinally extending adhesion flanges, and the top of the plate also having longitudinally extending grooves or depressions. These grooves or depressions are formed in the plate either for the purpose of materially reducing the weight and the amount of metal required, or are formed by the metal at those portions of the plate being drawn down into the longitudinally extending adhesion flanges in the rolling operation. In either case, these grooves or depressions are a feature of considerable importance, but they have heretofore been a source of weakness to the plate, since they have been extended throughout the length of the plate, interrupted only by the transverse rail-bearing shoulder or projection. The depth of the grooves or depressions has, therefore, been limited by the depth to which they could be safely made adjacent to the rail-bearing shoulder or projection, which is the point where the plate receives its greatest load.

In accordance with my invention, the tie plate is provided on its upper surface with a plurality of longitudinal grooves or depressions, which are similar to those heretofore used, except that instead of extending to the base of the shoulder or projection, they terminate at the rail seating side of such shoulder or projection at a distance from its base, thereby providing, adjacent to such base, a plain surface portion of the plate of the full thickness of the plate. In this manner, the plate is given its maximum thickness at the

point where it receives the greatest load and the grooves or depressions can therefore be correspondingly increased in depth.

Referring to the accompanying drawing, the numeral 2 designates a tie plate having the transverse rail-bearing shoulder or projection 3 at its upper side near one end, and having on its under side the longitudinally extending adhesion flanges 4, the intermediate flanges being usually of less depth than the outer flanges.

5 designates the longitudinally extending grooves or depressions, which, as above stated, terminate short of the base of the shoulder or projection to provide the plain-surfaced portion 6 of the full thickness of the plate. These grooves or depressions 5 are preferably continued at the opposite side of the shoulder or projection, and extend to the end of the plate, as shown.

7 designates the usual spike holes, by which the plate is secured to the tie.

In the form of my invention shown in Figs. 1, 2 and 3, the grooves or depressions are intermediate of the adhesion flanges 4. In the form shown in Fig. 4, however, these grooves or depressions are immediately over the adhesion flanges, the metal therefrom being drawn or worked downwardly into the flanges, my invention being equally applicable to both forms of grooved plates.

The advantages of my invention will be readily appreciated from the foregoing, since it provides a tie plate having a maximum amount of strength with a minimum of metal, the metal being disposed so as to give the greatest strength to the plate at the point of greatest load. The plain portion 6 of the plate adjacent to the base of the shoulder or projection, also forms an increased bearing area for the rail base at that portion of the plate which receives the greatest load, thereby providing for a more uniform wear of the plate.

I claim:—

1. A railway tie plate having a transverse rail-bearing shoulder or projection on its upper surface, near one end, and also having a plurality of longitudinal grooves on its upper surface, each of said grooves extending from the extreme opposite end of the plate to and terminating at a point beyond the center of the plate, but at a distance from the base of the shoulder or projection, whereby there is provided adjacent to the shoulder or

projection a plain ungrooved portion of the full thickness of the plate, substantially as described.

2. A railway tie plate having a transverse  
5 rail-bearing shoulder or projection on its upper surface near one end, and also having longitudinally extending grooves or depressions in its upper surface which terminate at a distance from the base of said shoulder or pro-  
10 jection to provide a portion adjacent to such base of the full thickness of the plate, said grooves being again continued at the opposite side of the shoulder or projection; substantially as described.

15 3. A railway tie plate having a transverse rail-bearing shoulder or projection on its up-

per surface near one end, and also having a plurality of grooves or depressions in its upper surface which terminate at a distance from the base of said shoulder or projection 20 to provide a portion adjacent to such base of the full thickness of the plate, said grooves being again continued at the opposite side of the shoulder or projection, substantially as described. 25

In testimony whereof, I have hereunto set my hand.

LAWRENCE DILWORTH.

Witnesses:

M. V. KIEHL,

H. M. CORWIN.