

(No Model.)

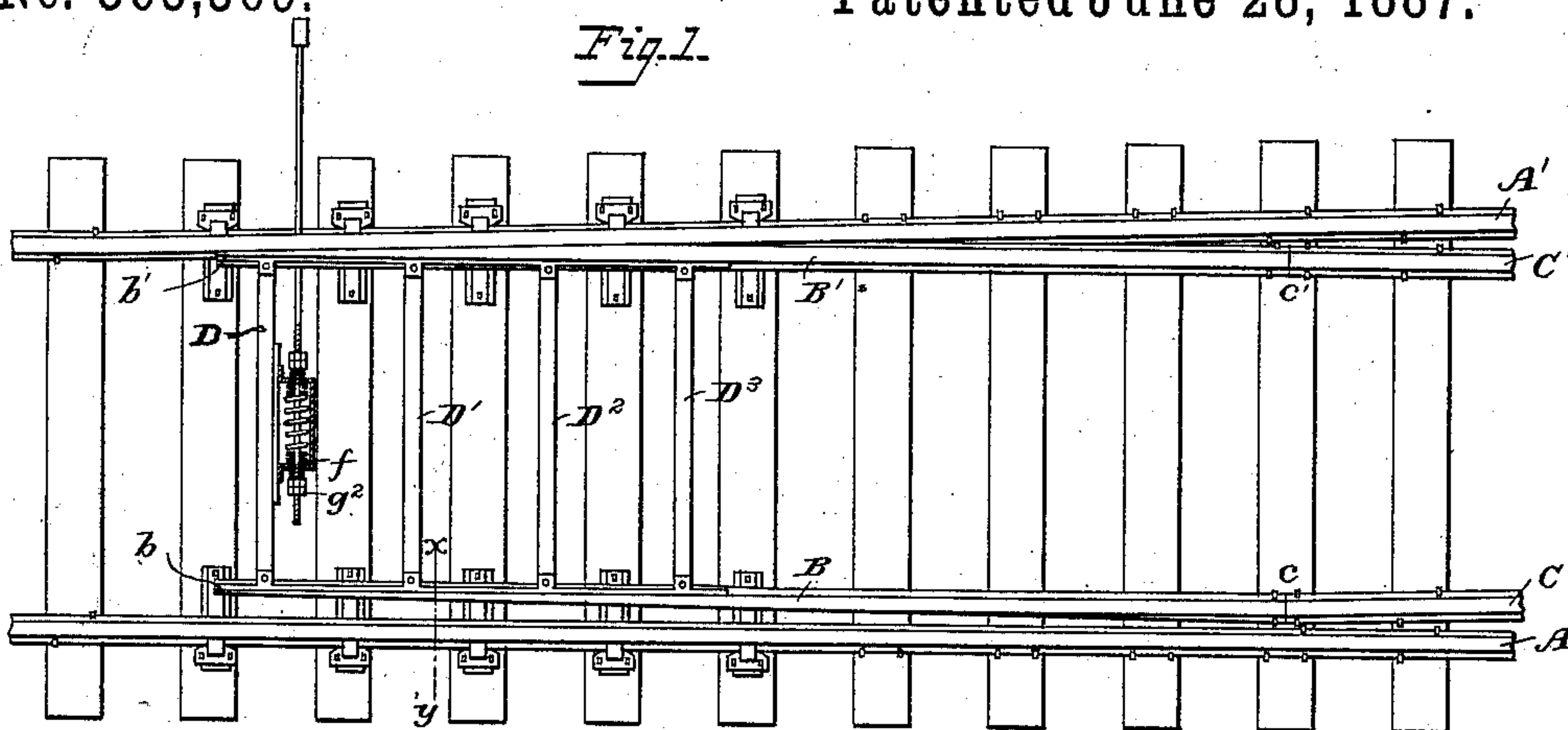
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CONNECTING ROD FOR RAILWAY SWITCHES.

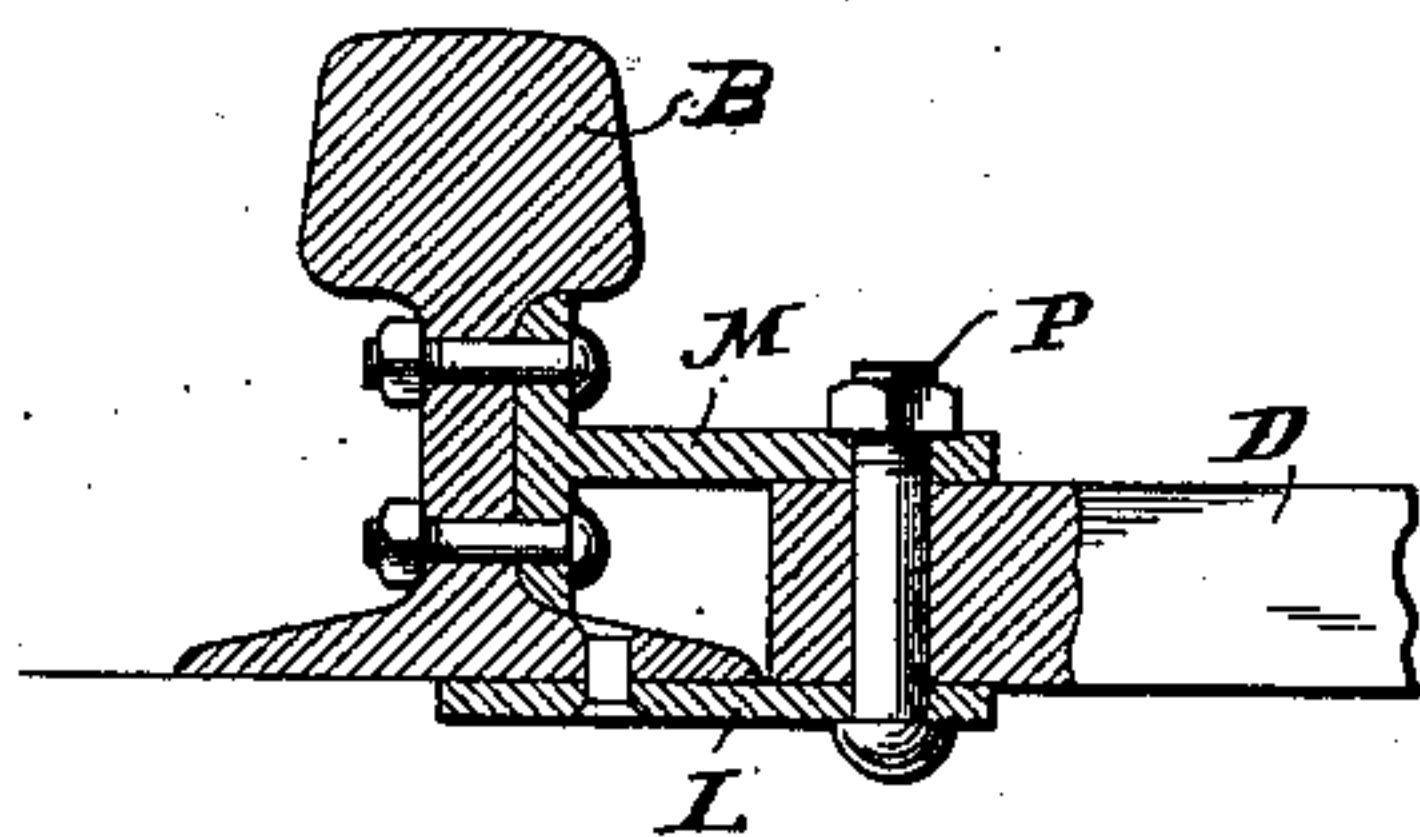
No. 365,369.

Patented June 28, 1887.

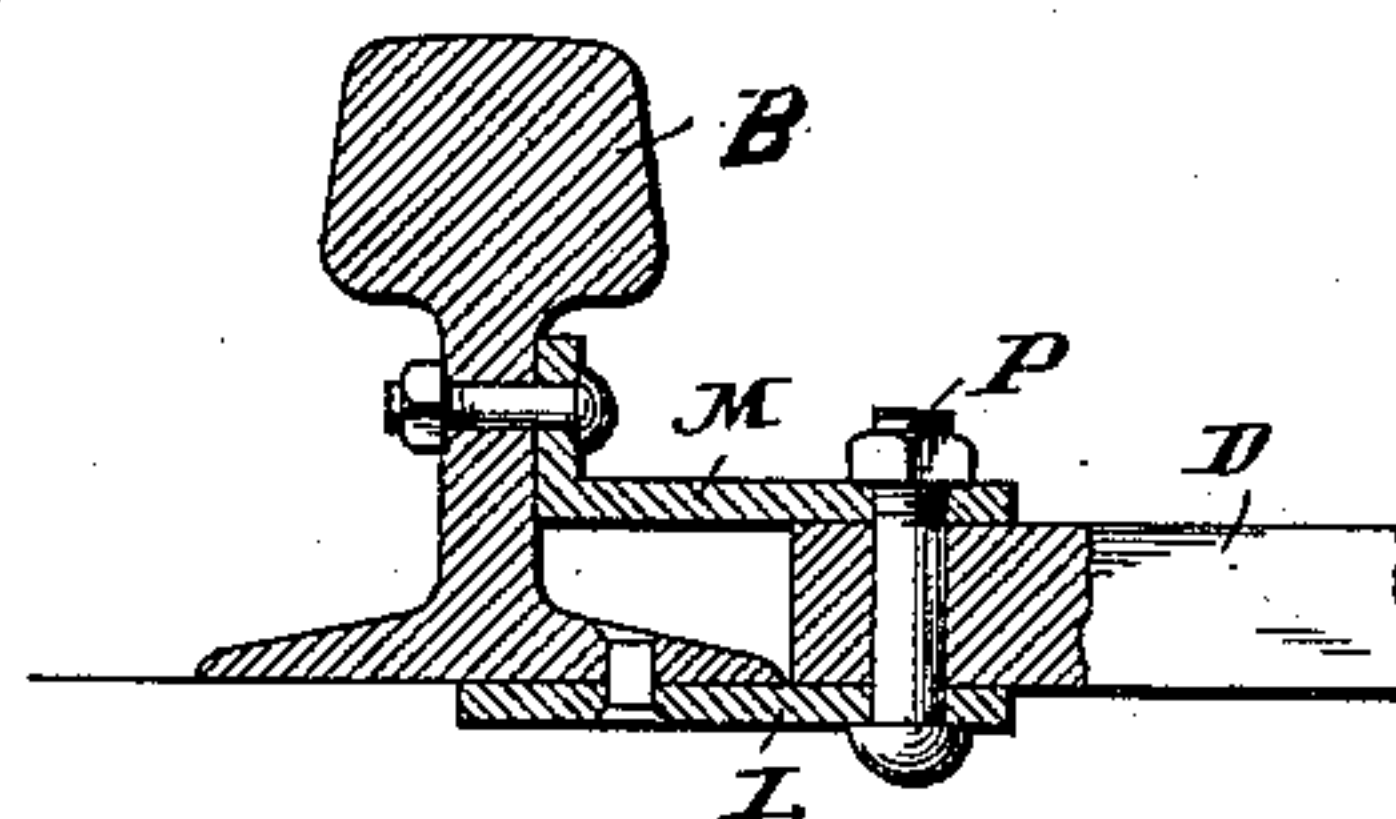
*Fig. 1.*



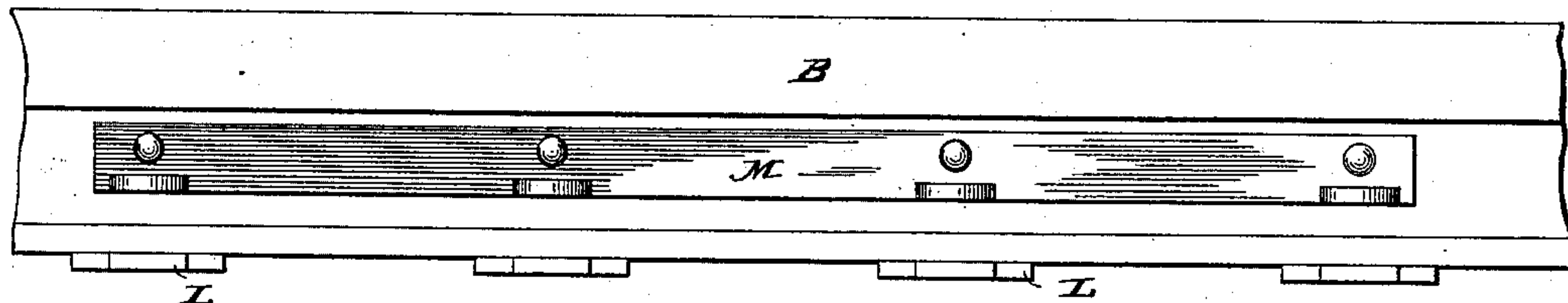
*Fig. 2.*



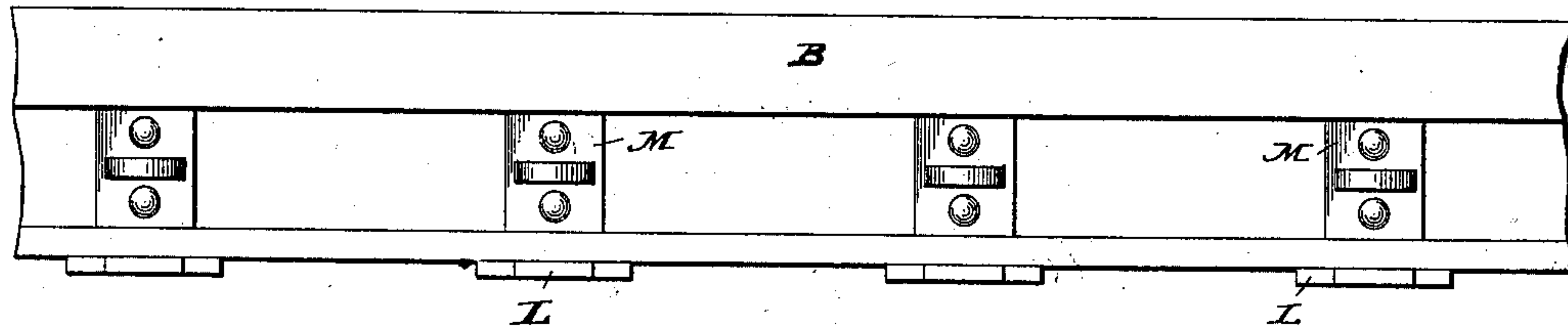
*Fig. 3.*



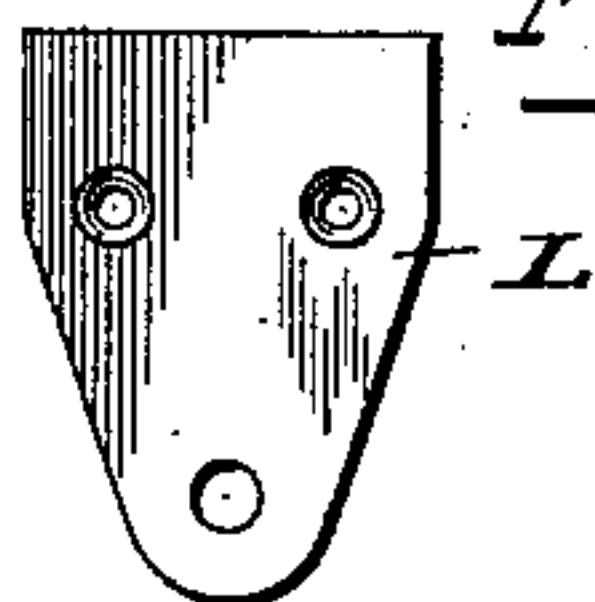
*Fig. 4.*



*Fig. 5.*



*Fig. 6.*



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# UNITED STATES PATENT OFFICE.

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## CONNECTING-ROD FOR RAILWAY-SWITCHES.

SPECIFICATION forming part of Letters Patent No. 365,369, dated June 28, 1887.

Application filed August 3, 1886. Serial No. 209,901. (No model.)

*To all whom it may concern:*

Be it known that I, WILSON P. DODSON, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Connecting-Bars for Railroad-Switches; and I do hereby declare that the following is a full, clear, and exact description of the invention, which 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 railroad-switches, and has for its object to provide the movable pointed rails of switches with such bearings for the swivel tie or connecting bars as shall secure increased strength, flexibility of lateral movement, sameness of length of tie-bars, and simplicity and cheapness of structure, as well as a minimum liability of fault in operation.

In the drawings, Figure 1 is a plan view of a portion of the main track and siding, showing my improvement with the switch set to the main line. Fig. 2 is a transverse vertical section through line *x y* of Fig. 1. Fig. 3 is a modification showing the upper bearing of the swivel-pin to be an angle-bar. Fig. 4 is a modification in which one limb only of the angle-bar is continuous, the other limb being a series of projections or lugs. Fig. 5 is a modification showing a series of sectional angle or T bars corresponding to the number of tie-bars. Fig. 6 is a plan view of the lug or lower perforated bearing of the swivel-pin detached.

Similar reference-letters indicate like parts in all the drawings.

Referring to the drawings, A A' are the fixed rails of the main track and siding, respectively.

B B' are the pointed and laterally-movable rails of the switch.

D D' D<sup>2</sup> D<sup>3</sup> are the connecting or tie bars used to unite the switch-rails and keep them in their respective relative positions.

The switch-rails B B', sections of the main track and siding, respectively, being pointed at the ends *b b'*, as shown, are adapted to fit snugly against the fixed rail A of the main line when the switch is set for the siding or against the fixed rail A' of the siding when set for the main line. The switch-rails B B' are fished at

the ends *c c'* to the permanent rails C C', their prolongations of the siding and main line, respectively.

D D' D<sup>2</sup> D<sup>3</sup> are the connecting-bars by which the pointed switch-rails B B' are actuated laterally in the same horizontal plane when the switch is operated for shunting. In order, however, that said pointed rails may move freely in cases of short leads that attend short radii of curvature, it has been found necessary in practice to provide the connecting-bars with some means of flexible adjustment that will readily admit of said lateral movement without distortion, and yet at the same time afford absolute rigidity under vertical pressure. To attain this end said bars have heretofore been jointed at points more or less removed from the longitudinal centers of the same, thus dividing the bars into arms or sections of greater or less lengths, to whose free ends are welded transverse pieces, which in turn are fastened to the point-rails by means of bolts passing through the webs of the latter. By this means of adjustment, in addition to the increased cost entailed, the disadvantage of a welding is encountered that is most liable to fault and disruption, even under the most favorable circumstances. In my device, however, I am able to secure the required flexibility by the use of a continuous bar of the required dimensions, and at the same time attain the greatest mechanical advantage possible by bringing the point of articulation in close proximity to the point of greatest resistance, and thus utilizing the maximum percentage of power. To this end, therefore, I fasten the transverse beam M of a continuous T or angle bar into the inner longitudinal depression of the pointed switch-rails B B' by means of bolts or rivets passing through said transverse beam and the webs of said pointed rails. In this case the other or free limb of the angle-bar, occupying a horizontal plane and extending inwardly to a sufficient distance beyond the lateral limits of the inner flanges of the pointed rails, affords a bearing for the vertical perforation of the same sufficiently strong for the reception of a swivel-pin, P, and extending inwardly to the distance required to admit of the ready passage of the said swivel-pin through the said perforated limb at such a point as will clear the said in-



ner flange of the point-rails, as shown in Fig. 2. As a further bearing for the reception of said swivel-pin P when in position for the performance of its function, I rivet fast to the under side of said inner flange a lug or plate, L, also perforated, and so located that said perforation may be in vertical alignment with the aforesaid perforation of the free limb of the angle-bar M.

The advantage gained by the use of this combination of perforated lower plate or lug and perforated free limb of angle-bar, as considered in relation to their extension inwardly beyond the inner lateral limits of the inner flanges of the pointed rails, is, first, the attainment of a most conveniently located and ample intermediate seat or slot between the lower bearing-surface of the projecting limb of the bar M and the upper bearing-surface of the lug L for the free horizontal reception of the similarly-perforated and engaging ends of the unwelded plain tie-bars  $D D' D^2 D^3$ ; secondly, said ample breadth of bearing admits of such a location of the perforations as will allow of the use of tie-bars of a common or identical length. This latter consideration is very valuable from the fact that observation has shown that many accidents that happen to switches are confined to the breakage of one or more bars, and the necessity for their ready replacement by bars that may be used interchangeably, that is not possible if the bars are of different lengths, as is the case when the perforations are identical in position. To attain this desired variation in the location of the perforations for the swivel-pins in connection with the requisite strength, in addition to increased breadth of projecting limb of the angle-bar M, as aforesaid, I increase by means of my device the breadth of the point-rail flanges by riveting to the underside thereof the lugs L.

I am aware that a T or angle bar has been used to strengthen the point-rails of a switch un-

der the conditions of safety in shunting. I am also aware that a T or angle bar has been used for the same general purpose in connection with having its horizontal projecting limb perforated, in combination with the perforated inner flange of the pointed rails, for other specific purposes in addition, and therefore I do not claim, broadly, either of these combinations.

What I do claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a rail, of a bearing-plate secured to the web of the rail, having a perforated projection or lug, a perforated plate or lug pivoted or bolted to the flange of said rail and extending beyond the lateral limits of said flange, and bolts or pins passing through the perforations of both upper and lower plates and adapted to secure the connecting-rods, as set forth substantially.

2. The combination, with the rail and bearing-plate secured to the web, of perforated plates, secured to the flange of the rail and projecting therefrom, connecting-bars entering between said plates, and bolts passing through the plates and the bars, substantially as described.

3. The combination, with the two moving rails of a switch, of projecting plates and continuous angular-shaped strengthening-bearings, secured, the bearings to the webs and the plates to the flanges of the rails, and a series of plain tie-bars of the same length, each pivoted at the ends between said plates and bearings, substantially as described.

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

WILSON P. DODSON.

Witnesses:

SAML. M. CLEMENT,  
E. H. ELDRIDGE.