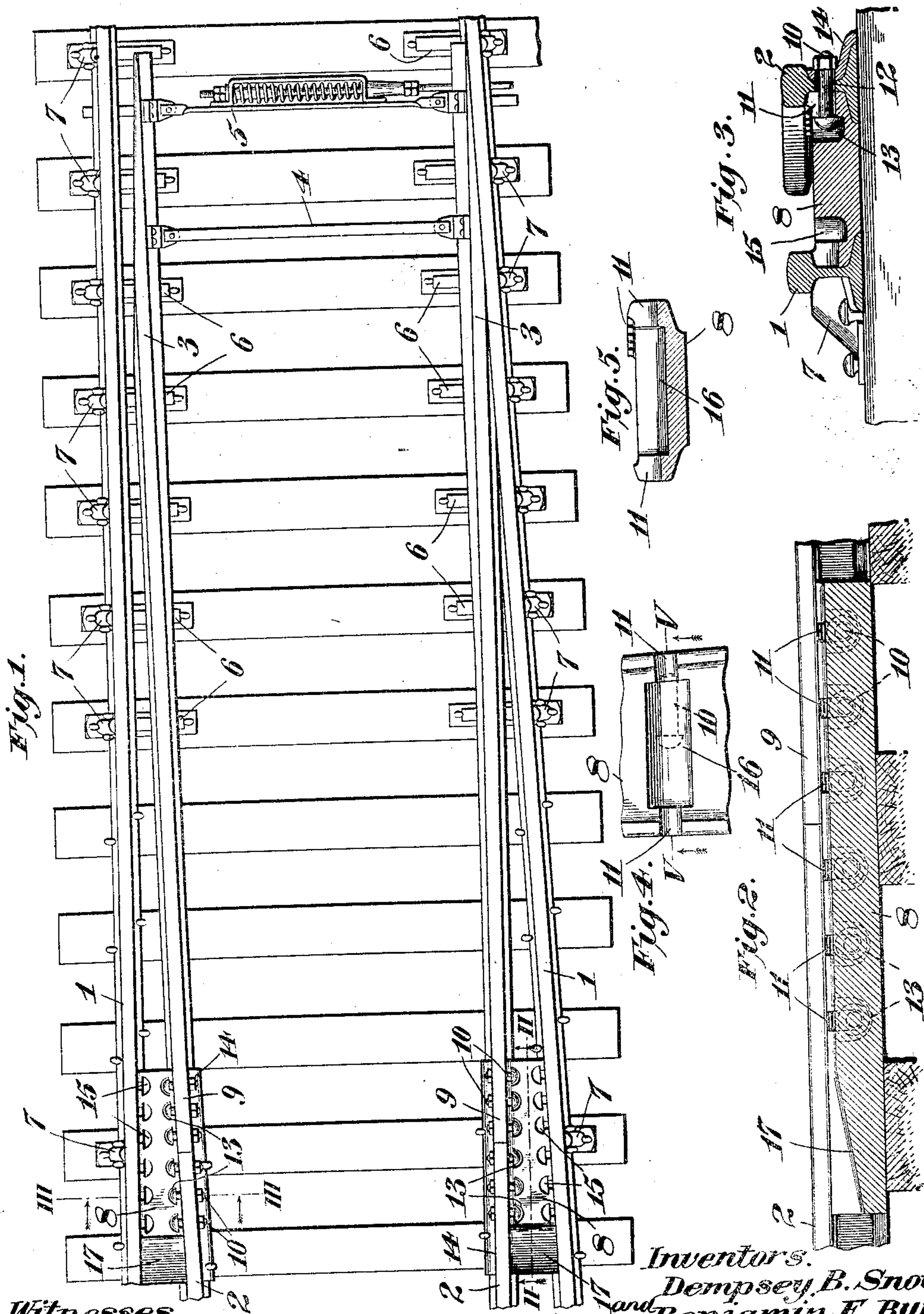


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SUPPORT AND SPLICE FOR SWITCH RAILS.
APPLICATION FILED MAY 3, 1905.



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SUPPORT AND SPLICE FOR SWITCH-RAILS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, DEMPSEY B. SNOW and BENJAMIN F. BUNN, citizens of the United States, residing at Johnstown, in the county of Cambria and State of Pennsylvania, have invented certain new and useful Improvements in Supports and Splices for Switch-Rails; and we do hereby 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.

Our invention relates to railways, and more especially to switches thereof, and has for its object to provide a support and splice for switch-rails which is of such proportions that it fits neatly between the head and flange of the rails and is adapted to be secured to the switch-rail and other adjoining rails by means of the usual track-bolts. The construction is such that the necessity of using special bolts for this purpose and of providing holes in the main rails is avoided.

An embodiment of the invention is shown in the accompanying drawings, in which like characters of reference designate like parts.

Referring to the drawings, Figure 1 is a plan view of a portion of track, showing part of a switch and the application of our invention. Fig. 2 is a longitudinal sectional elevation taken on a plane indicated by the line II II of Fig. 1 when viewed in the direction of the arrows, showing the construction of the preferred form of our support and splice. Fig. 3 is a transverse sectional elevation taken on a plane indicated by the line III III of Fig. 1 when viewed in the direction of the arrows, showing the preferred form of our support and splice for the switch-rails and the manner of securing the same in position. Fig. 4 is a fragmentary plan view of a modified form of our support and splice. Fig. 5 is a transverse sectional elevation taken on a plane indicated by the line V V of Fig. 4.

Referring more especially to Fig. 1, the main rails are designated by 1, the lead-rails by 2, and the switch-rails by 3. The switch-rails are connected at their free ends, as usual, by one or more tie-bars 4 and a head tie-bar 5, to which the throw-rod is connected. A spring may be interposed between the head tie-bar and the throw-rod, as herein shown, to permit the switch to be run through "heel on" when it is closed without injury thereto.

The usual slide-plates 6 for the switch-points and the braces 7 for the main rails are provided. The parts thus far referred to may be of the usual or any desired construction and their function remain unchanged. Hence they will need no further description here.

Since switch-rails of necessity are not secured to the ties except at their heels, it is essential for the safety of trains passing over them that they be firmly secured to the lead-rails to prevent longitudinal movement or displacement and that their heels be rigidly secured to the ties, and the lead-rails should also be firmly secured to the ties. When the switch-points and lead-rails are united by the usual splice-bars or fish-plates and are secured to the ties by the ordinary spikes, their fastenings are continually loosened by the repeated throwing of the switch and the traffic over same. The loosening of the splice-bars makes a longitudinal displacement of the switch-rail possible, and the loosening of the spikes often causes the spreading of the rails, either or both of which endanger traffic. To prevent the possibility of such occurrences, we provide a combined support and splice 8, which is secured to the lead-rail and to the heel 9 of the switch-rail and which is of such a width that it extends to and is braced by the main rail. Its edges converge to the required degree and are made to conform to the outline of the rails and fit between their heads and flanges. Our combined support and splice may be secured in position by any desired means, but preferably as herein shown, whereby the ordinary track-bolts, as 10, may be used. To this end openings 11, slightly larger than the body of the bolt, are made in one side at intervals along the edge and at right angles thereto, the bottoms of which when in position register with the lower sides of the holes 12 in the rail ends. At a suitable distance from the edge cavities 13 are formed, which are adapted to receive the heads of the bolts 10 when a portion of their bodies lie in the openings 11. The bolts are placed in these cavities and the rails rigidly secured thereby between our combined support and splice and the ordinary splice-bar.

It is evident that the nut of the bolt might be placed in the cavity 13 instead of the head, if desired. This would necessitate simply a hole in the edge of the splice-bar instead of the opening 11. The cavity 13 of course

would have to be made large enough to permit the nut to be turned or else the bolt be provided with a polygonal-shaped head, by which it may be turned and screwed into the nut. In order that the same support and splice may serve for both rails—that is, to avoid making them right and left—a second series of cavities 15 and corresponding openings are provided therein along the opposite edge. These cavities and openings may be used in bolting the splice-bars to the main rails, if so desired, by providing the necessary holes in those rails. The cavities 13 and 15 may be united, respectively, so as to form elongated cavities, as 16, (shown in Figs. 4 and 5,) adapted to receive the entire bolt, as indicated in dotted lines in Fig. 4, whereby the bolts may be inserted or removed individually or collectively and the support and splice be placed in position or removed without disturbing the rails. These elongated cavities may be connected with one or both edges in the same manner and under the same conditions as cavities 13 and 15, as given above.

Our combined support and splice is provided with an inclined surface, as at 17, which forms a rerailing device which assists in replacing the wheels on the rails after derail-
ing. Either or both ends may be so made.

By means of our construction the heels of the switch-rails are held rigidly in alinement with the lead-rails and said rails kept from spreading. The main rails, against which our combined support and splice abuts or is secured, are continuous and are securely fastened to the ties and braced and, moreover, are not subjected to the tendency to be loosened by the repeated throwing of the switch, as are the lead-rails. They therefore form ample reinforcement for the switch at one of its weakest points.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A splice for railway-rails having a cavity in one side adapted to receive a bolt, and an opening of smaller size than said cavity leading therefrom to the edge of the splice.

2. A splice for railway-rails having a cavity in one side adapted to receive the head of a bolt, or the nut, and an opening of smaller size than said cavity leading therefrom to the edge of the splice.

3. A splice for railway-rails having a plurality of cavities in one side and along one edge, each adapted to receive the head of a bolt, or the nut, and an opening of smaller size leading from each cavity to the edge of the splice and adapted to receive a portion of

the body of the bolt and to register with corresponding holes in the webs of the rails.

4. A combined support and splice for railway-rails having an edge made to conform to the outline of the rail and fit between the head and flange thereof, a plurality of cavities in one side and along said edge, each adapted to receive the head of a bolt, or the nut, and an opening of smaller size leading from each cavity to said edge and adapted to receive a portion of the body of the bolt and to register with corresponding holes in the webs of the rails.

5. A combined support and splice for switch-rails having converging edges made to conform to the outlines of the rails and fit between the heads and flanges thereof, a plurality of cavities along each of said edges, each adapted to receive the head of a bolt or the nut, and an opening of smaller size leading from each cavity to the adjacent edge and adapted to receive a portion of the body of the bolt and to register with corresponding holes in the webs of the rails.

6. A combined support and splice for switch-rails having converging edges made to conform to the outlines of the rails and fitting between the heads and flanges thereof, an inclined surface at the end thereof, a plurality of cavities along each of said edges, each adapted to receive the head of a bolt or the nut, and an opening of smaller size leading from each cavity to the adjacent edge and adapted to receive a portion of the body of the bolt and to register with corresponding holes in the webs of the rails.

7. In a switch for railways, the combination with the main rail, of a lead-rail, a switch-rail, a combined support and splice having converging edges made to conform to the outlines of the rails and fitting between the heads and flanges thereof, a plurality of cavities along each of said edges, each adapted to receive the head of a bolt or the nut, and an opening of smaller size leading from each cavity to the adjacent edge and adapted to receive a portion of the body of the bolt and to register with corresponding holes in the webs of the rail, a splice-bar on the opposite side of said rail and bolts in said cavities and openings for securing said rails between said splice-bar and said combined support and splice.

In testimony whereof we hereto affix our signatures in the presence of two witnesses.

DEMPSEY B. SNOW.
BENJAMIN F. BUNN.

Witnesses:

ELMER SEAVEY,
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