

B. C. ROWELL.  
RAIL JOINT.

APPLICATION FILED APR. 9, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

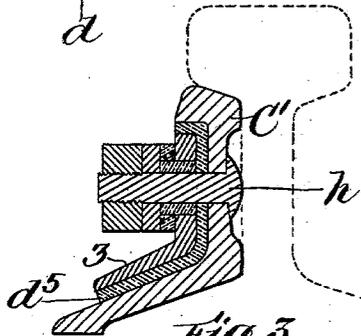
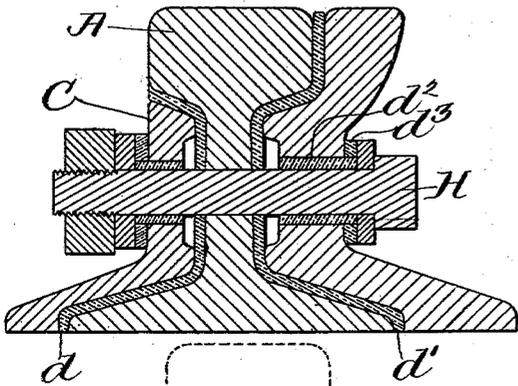


Fig. 3.

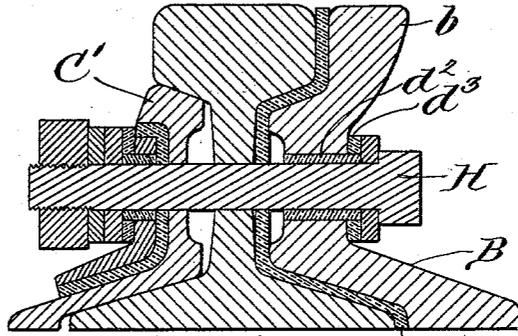


Fig. 2.

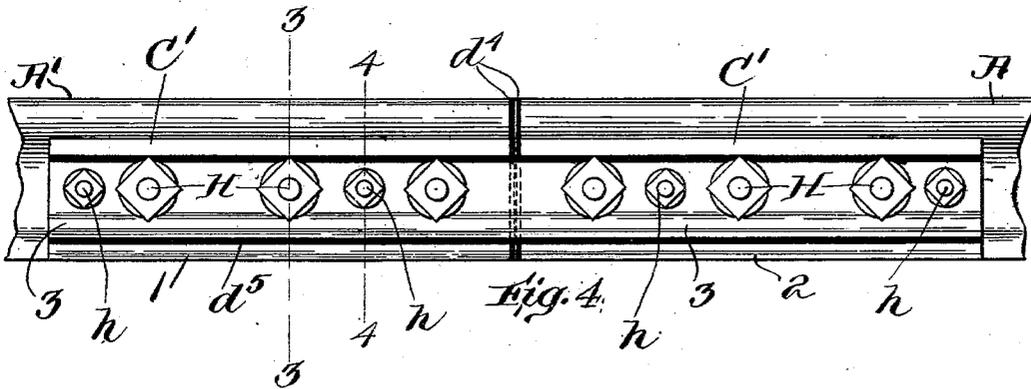


Fig. 4.

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No. 753,434.

PATENTED MAR. 1, 1904.

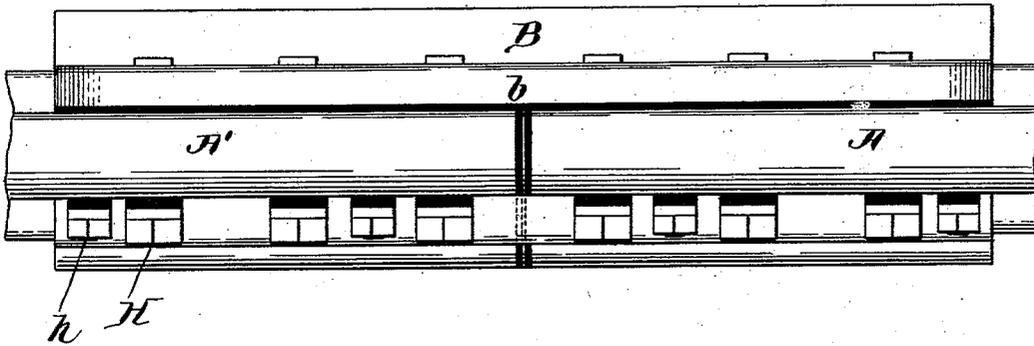
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NO MODEL.

2 SHEETS—SHEET 2.

*Fig. 5.*



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# UNITED STATES PATENT OFFICE.

BENTON C. ROWELL, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE RISTINE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

## RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 753,434, dated March 1, 1904.

Application filed April 9, 1903. Serial No. 151,698. (No model.)

*To all whom it may concern:*

Be it known that I, BENTON C. ROWELL, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Rail-Joint, of which the following is a specification.

In the laying of rails for railroads many means have been devised for the general purpose of preventing the ends of the rails deflecting unduly as a train passes from one rail to the succeeding rail, and that is the main object of my invention, which consists in an outside splice-bar, one surface of which is formed to fit between the ball and the base of the rails and which is also provided with a tread portion which supplements the balls of adjacent rails, while another feature of my invention is a compound splice-bar for use inside the rails.

In the drawings, Figure 1 is a section illustrating the simplest form of my joint insulated. Fig. 2 is a section illustrating a modified form; and Figs. 3 and 4 further illustrate this modified form, Fig. 2 being taken on line 3 3 of Fig. 4, which is an elevation of the rails and inner splice-bar, and Fig. 3 being a sectional detail taken on line 4 4 of Fig. 4. Fig. 5 is a plan of the form shown in Fig. 1.

My outside splice-bar B is formed with two shoulders on its side next the rail to fit between the ball and base of the rails and is also provided with its upper portion *b* extending upwardly, as shown, to serve as a side rail, lapping the end of rail A and the end of rail A'. This is also clearly shown in Fig. 5. This outside splice-bar B is the main feature of my invention and aids greatly in distributing the weight of the train between the ends of the two rails A and A', and thereby preventing relative vertical motion of the ends of those rails, the side rail portion *b* taking its share of the weight and transmitting it to the base of the rails, while the other portions of the splice-bars B and C act as usual, the weight of the train being transmitted through the rails to those splice-bars when held, as shown, by the bolts H.

The main purpose and function of the upwardly-projecting side rail portion of my out-

side splice-bar B is to distribute the weight of the train over the insulation, as explained below.

The splice-bars B and C are insulated from the rails A and A' by the sheets of fiber *d d'*, and the bolts H are also insulated by the fiber tubes and washers *d'' d'''*. The ends of the rails are also separated by the usual insulating end parts *d''*, of fiber, as shown in Fig. 5.

In the modification shown in Figs. 2, 3, and 4 the outer splice-bar B is the same as in the other figures, and all the other parts are the same as in Fig. 1 except the inner splice-bar C' and its connections. This inner splice-bar C' is a compound splice-bar made up of two bars 1 and 2, which are in contact one with rail A, the other with rail A', and these two bars 1 and 2 are connected by bar 3, which is insulated from bars 1 and 2 by a sheet of fiber *d''*, as shown, detached, in Fig. 3. Bar 3 and the insulating fiber are held by bolts *h* to bars 1 and 2 to complete my compound splice-bar. (Shown in Figs. 2, 3, and 4.) These outer and inner splice-bars when used together to form an insulated rail-joint greatly reduce the deleterious action of the weight of the train on the insulation, for my outside splice-bar B aids, as already described, in preventing relative vertical motion of the ends of the rails A A', and my compound splice-bar supplements the action of my outside splice-bar B, so that when the wheels of a train pass my insulated joint the insulation is subjected to much less strain than when the usual inner and outer splice-bars are used, each with a sheet of fiber between it and the rails.

The ends of the side rail portion *b* of my outside splice-bars are tapered, as shown in Fig. 5, to prevent jar as the wheels pass over the rail-joints, for while the tendency of the wheel as it approaches the joint and before reaching it is to deflect the end of the rail, yet that tendency is resisted not only by the stiffness of the rail, but also by the upper and lower shoulders of the splice-bar between the ball and base of the rail until the tread of the wheel engages the side rail portion of the

outer splice-bar B, when the weight is advantageously distributed over the joint, as already described.

What I claim as my invention is—

5 1. In an insulated rail-joint the outer splice-bar above described comprising the upper shoulder extending under the balls of the rails, the lower shoulder extending over the bases of the rails, the upwardly-projecting side rail  
10 portion extending alongside the tread portion of the rails, the two shoulders and the side rail portion being in one piece lapping the adjoining ends of the rails, and the insulating material between said outside splice-bar and  
15 the rails, substantially as set forth.

2. In an insulated rail-joint the inner splice-bar above described comprising the two splice-bars 1 and 2, and the bar 3 connecting them but insulated from them, substantially as set  
20 forth.

3. In an insulated rail-joint, the combination of an outside splice-bar having shoulders

fitting between the ball and base of the rails and an upwardly-projecting side rail portion extending alongside of the tread portions of the rails, insulating material between said splice-bar and the rails and an inside splice-bar with insulating material between the inside splice-bar and the rails, substantially as set forth. 25

4. In combination an outside splice-bar having shoulders fitting between the ball and base of the rails and an upwardly-projecting side rail portion extending alongside of the tread portions of the rails, insulating material between said outside splice-bar and the rails, and a compound inside splice-bar made of three parts each insulated from the other and insulating material around the bolts which clamp them to the rails, substantially as set forth. 30 35 40

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Witnesses:

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