

No. 873,821.

PATENTED DEC. 17, 1907.

B. WOLHAUPTER.  
INSULATED RAIL JOINT.  
APPLICATION FILED AUG. 7, 1906.

Fig. 1.

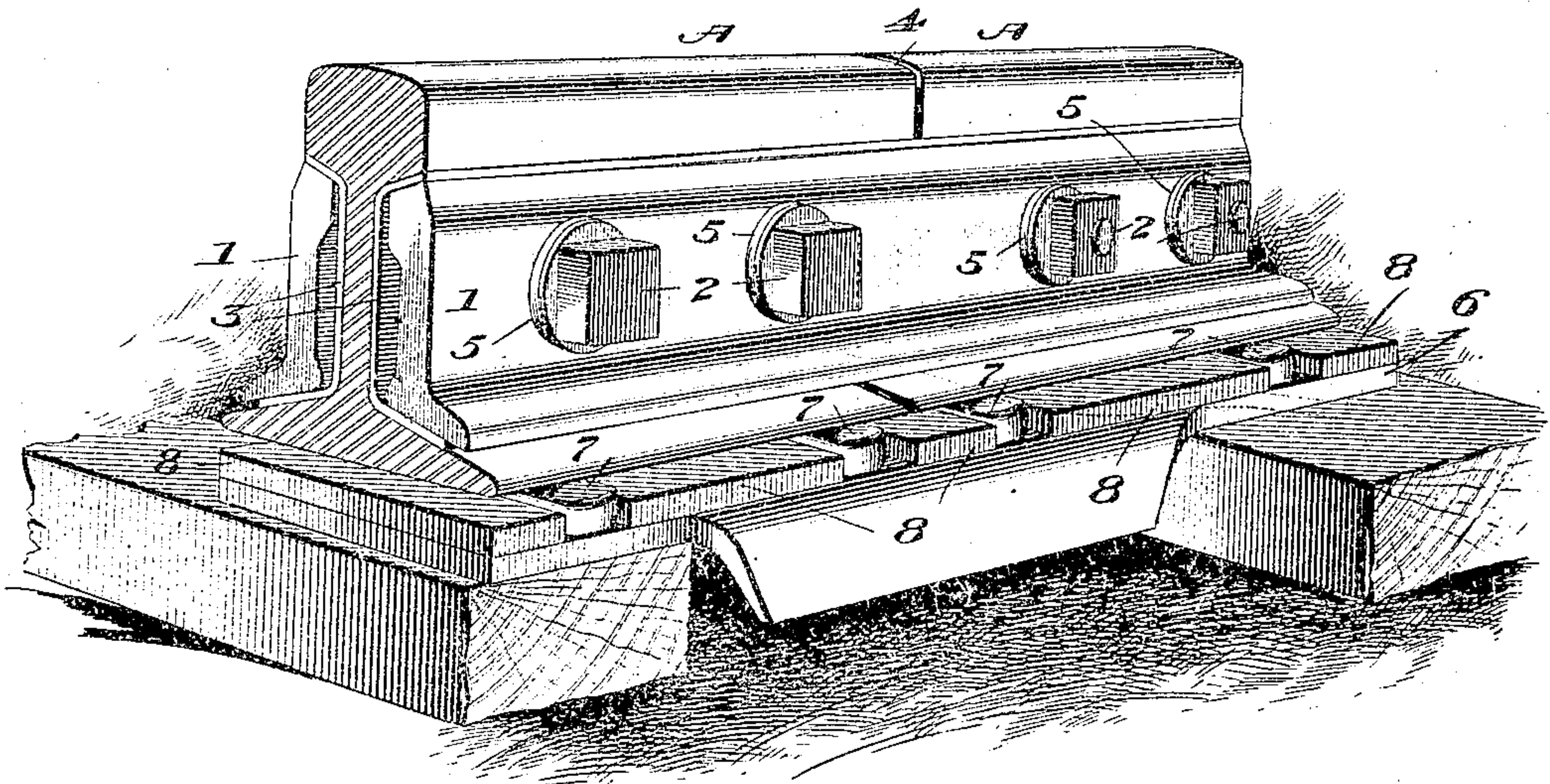
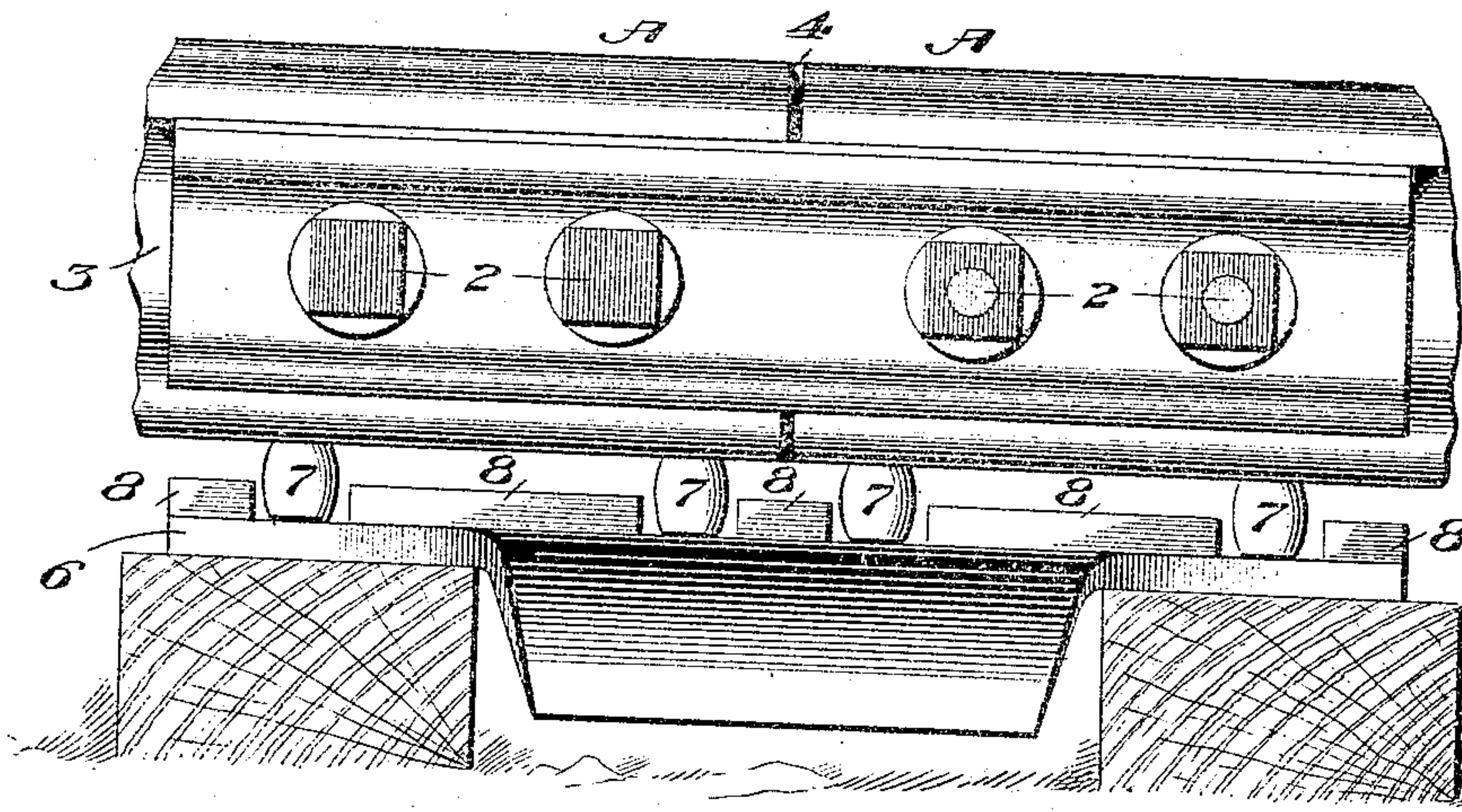


Fig. 2.



Witnesses

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# UNITED STATES PATENT OFFICE.

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## INSULATED RAIL-JOINT.

No. 873,821.

Specification of Letters Patent.

Patented Dec. 17, 1907.

Application filed August 7, 1906. Serial No. 329,616.

*To all whom it may concern:*

Be it known that I, BENJAMIN WOLHAUPTER, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Insulated Rail-Joints, of which the following is a specification.

This invention relates to rail joints and particularly to those of the insulated type.

The main and primary object is to provide a new and useful base construction embodying means for effectively insulating the rail base of any type of insulated rail joint, while at the same time entirely dispensing with the base insulation.

In those types of insulated rail joints wherein base insulation is interposed between the rail base and the joint support or bridge, and no provision is made for relieving such insulation from the load, the lifetime thereof is greatly impaired through the combined influences of the traffic and weather conditions. It is exceedingly difficult to secure an insulating material or composition that will withstand those conditions when employed as a base insulation between the rail base and the joint support or bridge, inasmuch as it is well known to railway engineers that the vertical movement of the rail ends of any rail joint, and particularly of the receiving rail in such joint, will have a tendency to shear or cut out the insulating base piece of the said joint, and will also have a tendency, under the pressure of the load, to cause the said insulation to "flow" and disintegrate especially where the insulation has become wet or damp. It is, therefore, the purpose of the present invention to obviate these objectionable results in insulated rail joints, by entirely dispensing with base insulation, while at the same time maintaining a thorough and effective insulation of the base portion of the joint.

With these and many other objects in view which will be familiar to those skilled in the art, the invention consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

The essential feature of the invention involved in maintaining a normal separation of the rails and joint proper from the joint

support or base, is necessarily susceptible to embodiment in a multiplicity of structures on account of the great variety of joints with which the invention may be associated also, on account of the variety of expedients that may be resorted to for the purpose of maintaining the separation referred to and at the same time permitting the rails and joint proper to seek and rest upon a rigid supporting base when the load is passing thereover. However, for purposes of illustration, there is shown in the drawings an embodiment for carrying the invention into effect, and in these drawings,

Figure 1 is a sectional perspective view of an insulated rail joint equipped with an improved base construction in accordance with this invention. Fig. 2 is a side elevation thereof.

Like references designate corresponding parts in the several figures of the drawings.

In carrying the invention into effect, any type of splice or joint may be utilized to connect the rail ends, as the distinctive feature sought to be covered herein resides in that of normally and yieldingly maintaining a rail joint proper and the rail ends held therein, elevated above or separated from the base joint support or bridge and at the same time insulating the rail ends from said support or bridge and permitting the rails to seek and find a rigid bearing on said joint support or bridge when the load is imposed thereon. For the purpose of exemplifying this novel form of base construction for insulated rail joints, reference is made to the suggested embodiment thereof illustrated in Figs. 1 and 2 of the drawings. In these figures of the drawings A A designate the adjacent rail ends which are united or coupled together through the employment of the side joint plates 1 1 which are secured in place through the medium of the usual joint belts 2. To provide for the necessary insulation of a common form of rail joint of this kind, the side insulation sheets 3 are interposed between the opposing faces of the rails and the side joint plates 1, and also the usual insulating end post 4 is interposed and held between the rail ends A A in a manner common to many of the ordinary types of insulated rail joints. The bolts 2 are also equipped at their ends with the insulating bushings 5 thereby com-



pleting the general scheme of insulation for the rail joint proper.

The feature of providing suitable base insulation for the rail ends is provided for by the present invention, and in connection with the form of construction being described, it will be observed that there is associated with the rail joint proper (above described), a joint supporting base 6. This may be in the form of a metal base plate of the reinforced or girder type. It is intended that there shall be proper insulation between the said supporting base 6 and the rails while at the same time a separation is maintained between these elements. To effect this, various forms of construction may be resorted to, but in the one now referred to, a plurality of insulating springs 7 may be interposed between the metal supporting base 6 and the base of the rails A A, said springs being of sufficient normal projection and strength to provide for maintaining the rail ends in an elevated position above and out of contact with the said metal supporting base. The said insulating springs 7 may be of rubber, composition, or of equivalent material possessing the necessary elastic and insulating qualities, or said springs may be of metal with a sheet of insulating material between the springs and the rail, or between the springs and their supporting base. The same may be held in proper operative position upon the supporting base through the medium of bearing projections or plates 8 surmounting the base 6 and serving the dual function of holding the springs 7 in position and also providing a bearing surface or surfaces upon which the rails bear and rest when the load of the train is imposed thereon.

It will be obvious that the foregoing construction provides for securing the results contemplated by the present invention inasmuch as the elements 7 provide the necessary insulation under normal signaling conditions, by keeping the rails off the base support, and at the same time permits the joint proper and the rails to seek and find a rigid base support when the weight of the train is imposed thereon.

I claim:

1. In a rail joint, the combination with the rails and the joint proper, of a joint supporting base adapted to be engaged by the rails, and means for yieldingly maintaining a separation of the rails from said base. 50
2. In a rail joint, the combination with the rails, and the joint proper, of a joint supporting base adapted to be engaged by the rails, and means for normally maintaining a separation of the rails from the said base. 55
3. In a rail joint, the combination with the rails and the joint proper, of a joint supporting base adapted to be engaged by the rails, and means for normally and yieldingly maintaining a separation of the rails from the joint support. 60
4. In a rail joint, the combination with the rails and the insulated joint proper, of a joint supporting base adapted to be engaged by the rails, and means for insulating the rails from the base and for maintaining a normal separation of these parts. 70
5. In an insulated rail joint, the combination with the rails and the insulated joint proper, of a joint supporting base adapted to be engaged by the rails, means for insulating the rails from the base, and means for normally and yieldingly maintaining a separation of the rails from the base. 75
6. In an insulated rail joint, the combination with the rails and the insulated joint proper, of a metal joint supporting base adapted to be engaged by the rails, insulating means between the rails and said base, and means for normally and yieldingly maintaining a separation of the rails from said base. 80
7. In a rail joint, the combination with the rails, of a supporting base, and means for holding the rails out of contact with the base when there is no load on the rails, and also permitting the latter to come in contact with the base upon application of the load. 90

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

BENJAMIN WOLHAUPTER.

Witnesses:

C. B. PITTENGER,  
M. SOWERS.