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E. HAMILTON.

RAIL JOINT.

APPLICATION FILED JAN. 25, 1906.

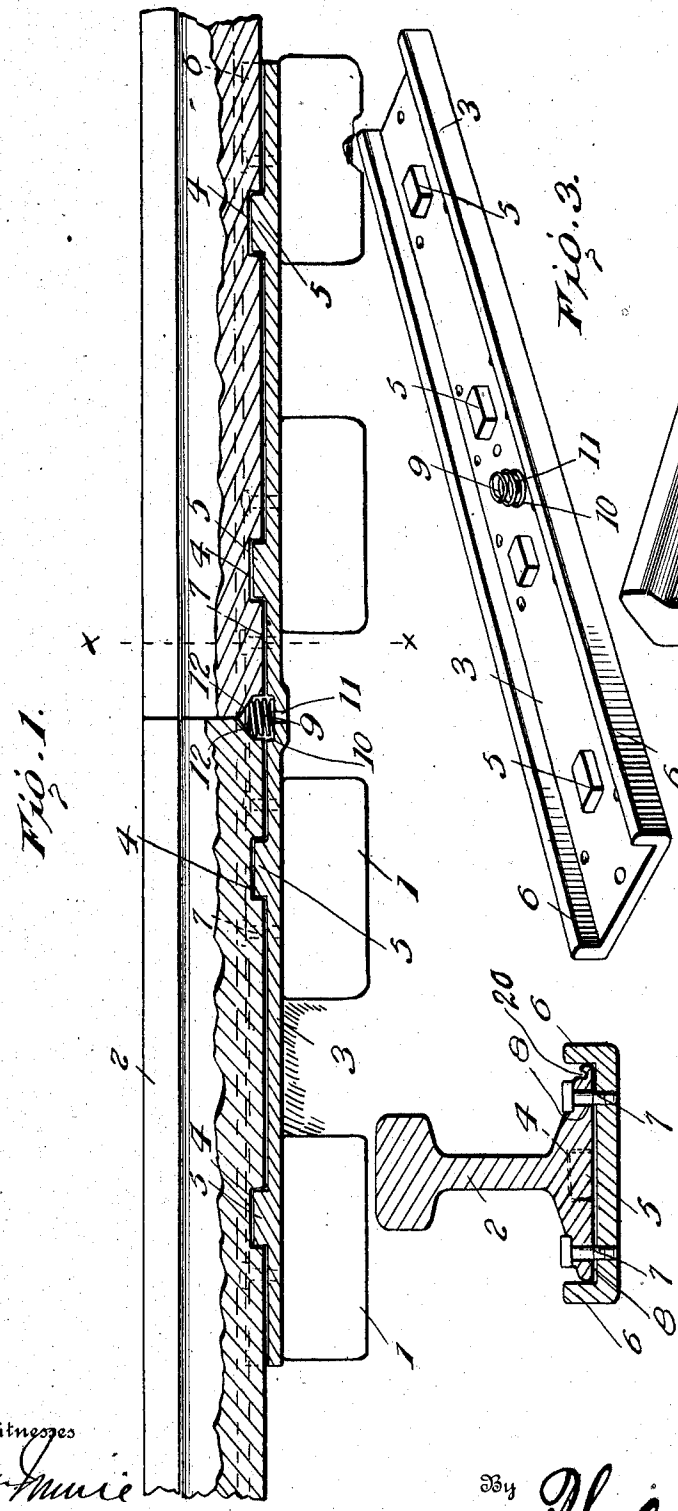


Fig. 1.

Fig. 3.

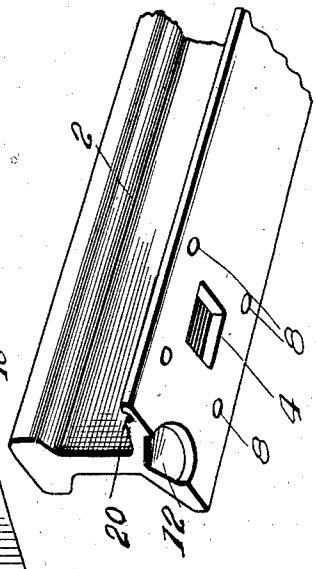


Fig. 4.

Fig. 2.

Witnesses

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RAIL-JOINT.

No. 832,667. Specification of Letters Patent. Patented Oct. 9, 1906.

Application filed January 25, 1906. Serial No. 297,854.

To all whom it may concern:

Be it known that I, ERASTUS HAMILTON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification.

This invention embodies improvements in means for joining the meeting ends of rails; and the particular object in view in carrying out the invention is to subserve the rigidity of the joint, yet provide a resilient bearing for the rails at the end, whereby to reduce vibration to a minimum.

A further object of the invention is to simplify the joint structure as much as possible to obtain advantages of obvious import.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a vertical longitudinal sectional view through the end portions of meeting-rails, showing the mounting thereof and the joint means comprising this invention. Fig. 2 is a transverse section on the line X X of Fig. 1. Fig. 3 is a perspective view of the chair-plate. Fig. 4 is a perspective view of the end portion of one of the rails looking toward the under side thereof.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Specifically describing the construction of the invention as illustrated in the drawings, the numeral 1 indicates suitable cross-ties, the numeral 2 the rails, and the numeral 3 a chair-plate upon which the end portions of the rails are mounted. In general construction the rails are of the T form most commonly in use, though they may be varied with reference to this detail of structure if deemed necessary. The end portion of each rail which rests upon the chair-plate 3 is provided in its under side with one or more elongated recesses 4, which are adapted to receive lugs 5, which project upwardly from the bottom of the chair-plate 3. The lugs 5 are somewhat shorter than the recesses 4, so that when said lugs engage in the recesses to lock the rails from longitudinal displacement a certain amount of longitudinal play, however, sufficient to admit of the customary degree of expansion and contraction, will be permitted. The chair-plate 3 is composed of a suitable base having the vertical flanges 6 longitudinally of its side edge portions and integral therewith, preferably, said flanges 6 being spaced apart sufficiently to permit the base of the rail ends to rest snugly within the chair-plate when the parts are in proper working positions. To secure the rails to the chair-plates 3, it is designed to provide lag-bolts 7, which pass through vertical openings 8 in the base portions of the rail ends and screw into threaded openings in the chair-plate 3. The unthreaded shank portion of each of the bolts 7 is greater in length than the vertical thickness of the basal portion of the rail through which the bolt passes, so as to permit of a certain amount of vertical movement of the rail ends in securing the resilient action thereof, as will be now described.

The resilient bearing for the rail ends is secured by the provision of a spring 9, which is mounted between the adjacent extremities of the rails 2 and which has its lower end received in a recess 10 intermediate of the ends of the base of the chair-plate 3. The recess 10 may have its bottom portion apertured, as at 11, in order that water may drain therefrom and not collect so as to injure the spring 9. Each extremity of the rails 2 is formed with a half-conical recess 12, adapted to register or match that of the end of the adjacent rail, so as to form a conical seat virtually in which the upper portion of the spring 9 may operate. The spring 9 is of the coil type and by reason of the peculiar formation of the half-conical recesses 12 is adapted to have a certain amount of vertical and lateral tension in accomplishing its function as a bearing for the rail ends. The form of the lag-bolts 7, as before described, is such as to permit of vertical play or movement of the rail ends as the same receive the weight of the rolling-stock passing thereover, the vertical movement of play being taken up by the resilient bearing or spring 9 in an evident manner.

It will be obvious that any suitable number of bolts 7 may be provided to secure the rails in the chairs, and only two of the lugs 5 are shown in the construction in the drawings, though it will be clear that the number of fastening members provided for joint means of the class above set forth will be greatly dependent upon the particular class of work for which the rails will be designed.

The rails 2 are formed near one of the basal edges thereof and throughout the length of the same with longitudinal grooves 20, adapted to receive electric, telephone, or telegraph wires which are suitably secured therein.

It will of course be understood that the lag-bolts 7 may screw into the ties 1, if desired, within the contemplation of the invention, though the chair-plate is preferably spiked to the ties in any suitable and substantial way.

Having thus described the invention, what is claimed as new is—

1. In a rail-joint, the combination of a chair-plate, lugs projecting upwardly from said chair-plate, rail ends mounted on the chair-plate and provided with recesses in the bottom portions thereof to receive the lugs aforesaid, a resilient bearing for the rail ends arranged between the same, and means securing the rails to the chair-plate and admitting of vertical play thereof upon the resilient bearing.

2. In a rail-joint, the combination of a chair-plate, rail ends seated upon said chair-plate, a resilient bearing for each rail end comprising a spring disposed on the chair-plate and bearing against the under side of the rail end, and means for securing the rails to the chair but permitting vertical play thereof on the resilient bearing aforesaid.

3. In a rail-joint, the combination of a chair-plate provided with a recess in its bottom, rail ends mounted on said chair-plate and provided with recesses in their bottom portions, a resilient bearing for the rail ends embodying a spring disposed in the recess in the bottom of the chair-plate and having its upper end received in the recesses in the bottom portions of the rail ends, and means securing the rail ends to the chair but permitting vertical play of said rail ends on the spring aforesaid.

4. In a rail-joint, the combination of a chair-plate, lugs projecting upwardly from said chair-plate, rail ends mounted on the chair-plate and provided with recesses in the bottom portions thereof to receive the lugs aforesaid, a resilient bearing for the rail ends comprising a coil-spring seated on the chair-plate intermediate of its ends and having its upper end bearing against the adjacent extremities of the rails, and fastenings securing the rails to the chair-plate and admitting of a certain amount of vertical play of the ends thereof.

5. A rail-joint comprising a chair-plate, a plurality of lugs projecting from the bottom of the chair-plate, rails having the ends thereof seated in the chair-plate and provided with recesses to receive the lugs and establishing an interlocking connection between the rails and the chair-plate, the bottom or base of the chair-plate being provided with a recess intermediate of its ends, a coil-spring having its lower end portion received in the recess of the base-plate, the adjacent extremities of the rails being formed with half-conical recesses adapted to match and forming virtually a conical seat receiving the upper end of the coil-spring, and lag-bolts passing through the basal portions of the rails and threaded into openings in the chair-plate to secure the rails thereto but admit of a certain amount of vertical play to said rails.

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

ERASTUS HAMILTON. [L. S.]

Witnesses:

JAMES C. GAVIN,

BELLE HOWARD.