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3,494,553

RAIL JOINT SPLICE

Filed April 25, 1968

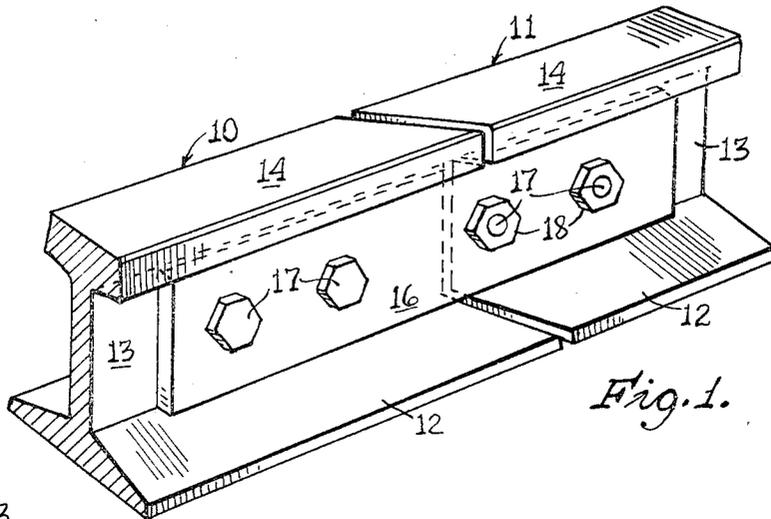


Fig. 1.

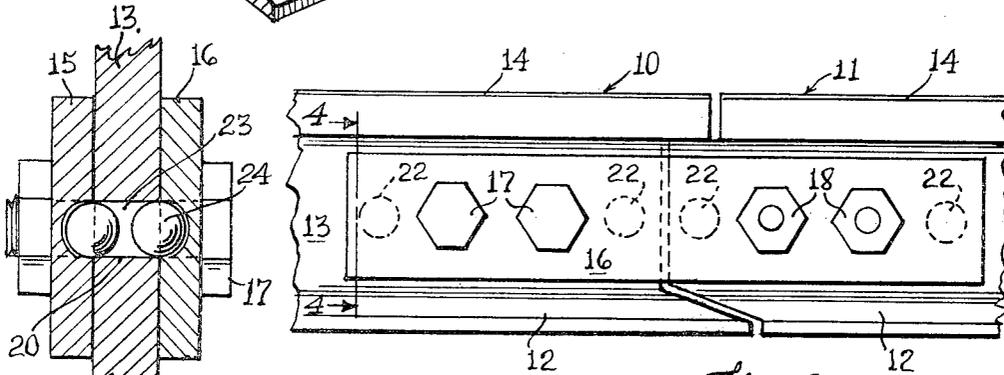


Fig. 2.

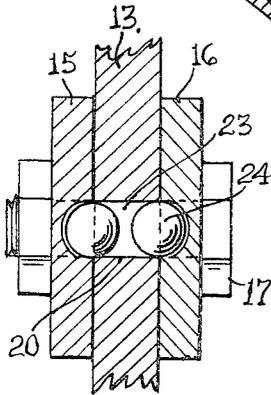


Fig. 4.

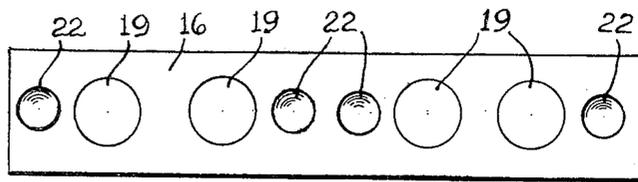


Fig. 3.

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## RAIL JOINT SPLICE

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1 Claim

### ABSTRACT OF THE DISCLOSURE

A splice connector for railway track joints, having a rectangularly shaped body of a size to be positioned upon the center vertical web portions of the rail between its base flange and rail head, with the body providing in one wall surface pockets for receiving a ball bearing with the pockets disposed in horizontal alignment with sockets formed in the web of the rail whereby the ball bearings will be retained and cooperate with the usual nut and bolt connections which mount the splice connector on the track joint to secure the rail sections together and prevent separation due to vibrational movement therebetween.

An elongated generally rectangularly shaped plate having formed therein throughout its longitudinal length a series of openings through which may be projected connecting bolts. One side wall surface of the plate having formed therein pockets which are in alignment with and positioned to either side of a plurality of sockets formed in the vertical web portion of the rail to receive therein ball bearing connectors for securing the rail ends together in an end-to-end relationship.

This invention will be best understood by reference to the accompanying drawings in which:

FIG. 1 is a perspective view of the invention as mounted on abutting rail sections;

FIG. 2 is a side elevational view of the rail joint and splice;

FIG. 3 is a reverse side elevational view of the rail joint splice, and

FIG. 4 is a fragmentary detailed sectional view taken on line 4—4 of FIG. 2.

As shown in FIG. 1, rail sections 10 and 11 provide abutting end walls that present corresponding base flanges 12, vertically extending web portions 13 and rail heads 14. The web portions of each of the rail sections 10 and 11 are connected together through the employment of splice plates 15 and 16 disposed on either side of the web portions 13, and which are of such a length that they overlap the abutting ends of the rail sections 10 and 11.

The splice plates 15 and 16 are normally connected to the web portions 13 of the rail sections by a series of nuts and bolts 17 and 18. The bolts 17 are freely projected through aligned openings 19 and 20 formed in the splice plates 15 and 16 and web portions 13 of the rails, respectively. In order to facilitate the ease of connecting the splice plates 15 and 16 to the web portions 13, the openings 20 formed in the web 13 are normally of a diameter greater than the diameter of the bolts 17, thus there is a slight degree of free play therebetween. Due to this play the nuts and bolts are normally subject to an excess amount of vibrational forces as a vehicle passes over the joint between the rail sections.

The improved rail joint splice has formed in its inner wall surface 21 a series of horizontally aligned pockets 22. As shown in FIG. 3 these pockets 22 are normally disposed to either side of a pair of bolt receiving openings 19, and are so positioned with respect to the longi-

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tudinal length of the plate that at least two of the pockets 22 will lie in confronting relation to the web portion of a rail section immediately adjacent to its end.

The web portion 13 of each of the rail sections 10 and 11 provide sockets 23 which are formed by having an opening formed through the web portion 13 as seen in FIG. 4. These sockets 23 are so formed in the web 13 that they will mate with the pockets 22 formed in the one wall surface 20 of the splice plate when the same is mounted on the rail section.

Adapted to be seated between the pockets 22 of the splice plate and the sockets 23 formed in the web portion are ball bearing connectors 24.

In mounting the splice plate on to the web portion of the rails, a suitable packing may be placed in the sockets 23, which will retain the ball bearing connectors 24 therein while the splice plate is placed thereover and connected thereto. Thus notwithstanding the loose connection between the splice plates and the web portion of the rail sections through the nuts and bolts connection, the ball bearing connectors 24 will form a positive and secured connection between the splice plates 15 and 16 and the web portion 13 of the rail sections 10 and 11 so as to maintain the same together in a true aligned relation without distortion by reason of any weight or vibration transmitted on to the rail sections.

While I have illustrated and described the preferred form of construction for carrying our invention into effect, this is capable of variation and modification without departing from the spirit of the invention.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent is:

1. A connector for the abutting ends of rails having base flanges, vertical web portions and rail heads, all of which are positioned in end-to-end relationship by the connector which comprises:

- (a) an elongated substantially rectangularly shaped body of a size to be positioned in facial abutment with the web portion of the rail between its base flange and rail head and across the abutting ends thereof,
- (b) means connecting said body to the web portions of the abutting rails to prevent separation of said body from said web portions through a plane transversal of their longitudinal length,
- (c) a plurality of holes formed in the web portion of each of the rails adjacent their abutting ends adapted to be aligned with a like plurality of sockets formed in one wall surface of said body when said body is connected to the web portions of the abutting rails,
- (d) ball-bearing members positioned in said openings and said sockets and having structural contact with the connector body and the rails so as to fixedly secure the same together and against separation in a vertical direction and horizontally through their longitudinal plane with said ball-bearing members being captured in said opening and said sockets when said body is connected to the web portions of the abutting rails.

### References Cited

#### UNITED STATES PATENTS

1,194,574	8/1916	Tanime	238—243
1,394,598	10/1921	Wolhaupter	238—244
2,643,064	6/1953	Standfast	238—230

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