

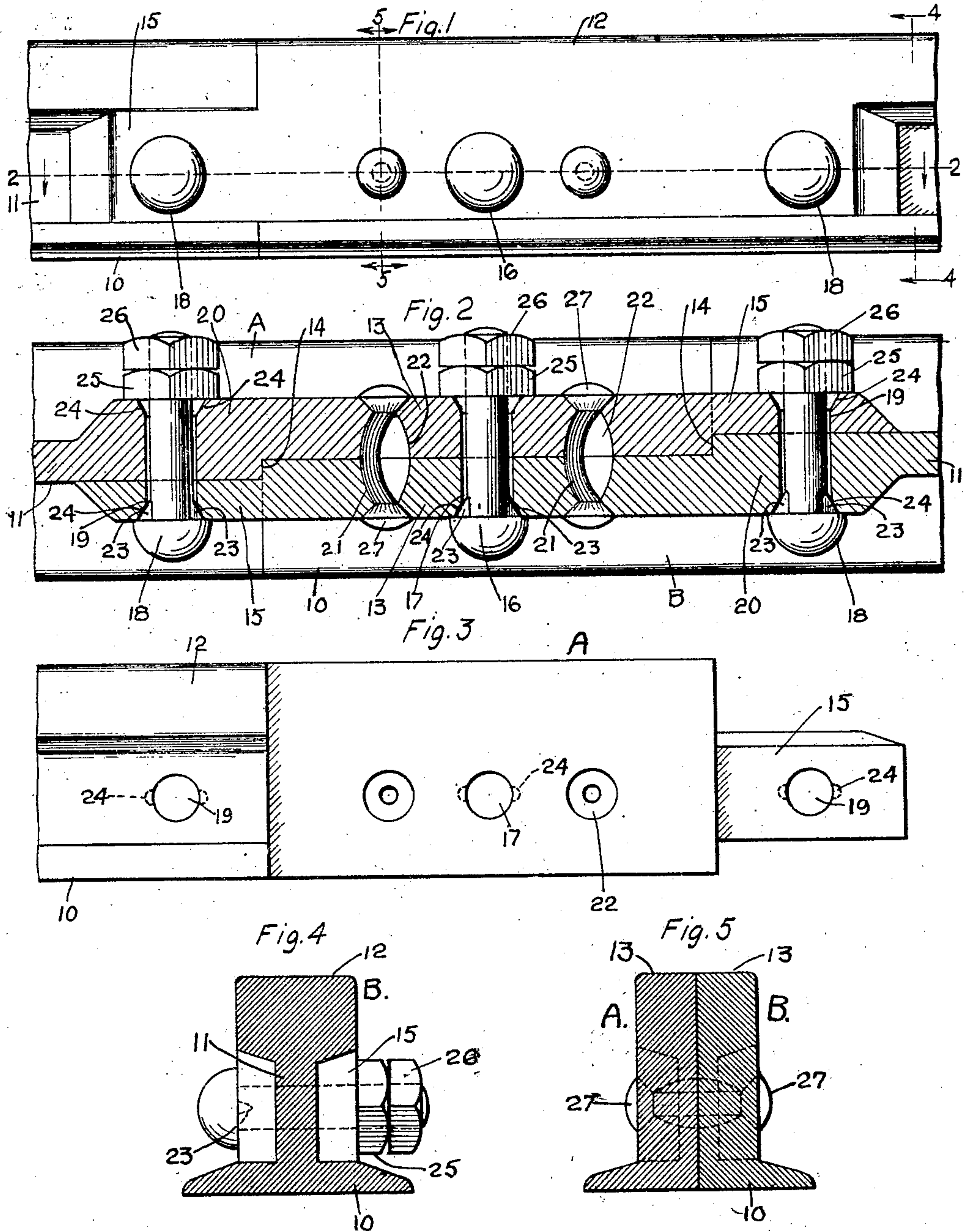
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RAIL JOINT.

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997,993.

Patented July 18, 1911.



WITNESSES:

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GEORGE C. HAGER, OF DANBURY, CONNECTICUT.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE C. HAGER, a citizen of the United States, residing at Danbury, county of Fairfield, State of Connecticut, have invented an Improvement in Rail-Joints, of which the following is a specification.

This invention has for its object to provide a rail joint adapted for use in joining light or heavy rails upon railways generally, and especially upon electric railways, which shall avoid the use of fish plates and provide a firm and rigid joint fully as strong as the rails themselves, will provide a continuous tread at the joints and will prevent depression of the ends of the rails thereby greatly prolonging the life of the rails themselves and greatly reducing the expense of maintenance of rolling-stock, as the constant succession of shocks and blows caused by the wheels jumping from one rail to another, which is greatly increased by depression of the ends of the rails, is practically eliminated.

With these and other objects in view I have devised the novel rail joint of which the following description in connection with the accompanying drawing is a specification, reference characters being used to indicate the several parts.

Figure 1 is a side elevation of my novel rail joint as in use; Fig. 2 a horizontal longitudinal section on the line 2—2 in Fig. 1 looking in the direction of the arrows; Fig. 3 a side elevation of the left rail head complete; Fig. 4 a vertical transverse section on the line 4—4 in Fig. 1, looking in the direction of the arrows; and Fig. 5 is a vertical transverse section on the line 5—5 in Fig. 1 looking in the direction of the arrows.

Each end of each rail is provided with a head which matches and interlocks with the head of the contiguous rail. These heads are identical with the exception that they are rights and lefts. For convenience in description I will designate the left head by A and the right head by B.

10 denotes the base, 11 the web and 12 the tread of an ordinary T-rail. Each rail head is cut away on a central, vertical, longitudinal line leaving a vertical half-rail, indicated by 13 on one side and a recess 14 on the other side which is adapted to receive the corresponding half-rail of the contiguous head. Beyond each half-rail is a supporting plate 15 which lies against the web

and fills the space between the tread and the base. The web at the heads is thickened so that the outer faces of the half-rails and supporting plates are flush with the tread so that the combined transverse thickness of the two heads at and past the joint is the full thickness of the tread, thus giving a maximum of strength and rigidity at just the points where it is required. In practice I use three bolts only at each joint, although more may be used if preferred.

16 denotes a central bolt which passes through transverse holes 17 in the half-rails at their mid-length, and 18 denotes end bolts which pass through transverse holes 19 in the supporting plates and in the thickened portions of the web, specifically indicated by 20, which extend back from the half-rails as clearly shown in Fig. 2. The bolts are shown as provided with wings 23 which engage lateral recesses 24 in the edges of the bolt holes, the purpose of which is to lock the bolts against rotation when the nuts 25 are tightened up. Set nuts 26 are provided to lock the nuts.

As a convenient and relatively inexpensive means of bonding the rails when used upon electric railways, I provide in the half-rails, on opposite sides of the holes for the central bolt, conductors 21 consisting of a plurality of strands of copper wire which pass loosely through centrally enlarged chambers formed by suitably flared coinciding openings 22 in the half-rails said conductors being headed on their ends as at 27. The heads lie closely in contact with the half-rails and effectively bond them. By this arrangement the bond wire is completely concealed between the members of the rail joint and yet sufficient space is allowed to permit relative movement of the rail members due to expansion or contraction, without shearing the rail bond or otherwise injuring the same. The rail bond is also protected from injury and surreptitious disarrangement as it would be necessary to first unbolt the rails and pry the same apart before the rail bond could be reached.

The operation will be readily understood from the drawing. The left and right heads of contiguous rails match each other perfectly and fit together in such a manner as to make practically a continuous rail, as it will be obvious that owing to the fact that the half-rails lie side by side the wheels in

passing will be well on the second rail before passing off from the first. I furthermore insure that there shall be no depression of the ends of the rails by providing
5 the supporting plates, which extend forward from the half-rails and fill the spaces between the treads and the bases at the ends of the joint. These supporting plates, in fact,
10 and impart to the joints the full strength of the rails themselves.

Having thus described my invention, I claim:

1. A rail joint comprising interlocking
15 rail heads each formed of a vertical half rail and each provided with an opening, said openings coinciding to form a chamber, a flexible electric rail bond inclosed within
20 said chamber, said bond being of a length greater than the combined thickness of the rail heads, whereby said bond is concealed and expansion and contraction of the rails is permitted without injury to the rail bond,

and means for uniting said rail heads and permitting expansion and contraction of the rails. 25

2. A rail joint comprising interlocking rail heads each formed of a vertical half rail, said heads being provided with oppositely flaring openings coinciding to form
30 a chamber, a flexible electric rail bond rigidly secured at its outer ends in said openings, said bond extending through said chamber and being of a length greater than the combined thickness of the rail heads,
35 whereby said bond is concealed and expansion and contraction of the rail is permitted without injury to the rail bond, and means for uniting said rail heads and permitting
40 expansion and contraction of the rails.

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

GEORGE C. HAGER.

Witnesses:

A. M. WOOSTER,
S. W. ATHERTON.