No. 898,412. PATENTED SEPT. 8, 1908

H. MARKUSSEN.

RAIL JOINT.

APPLICATION FILED AUG. 27, 1907.

Fig. 1.

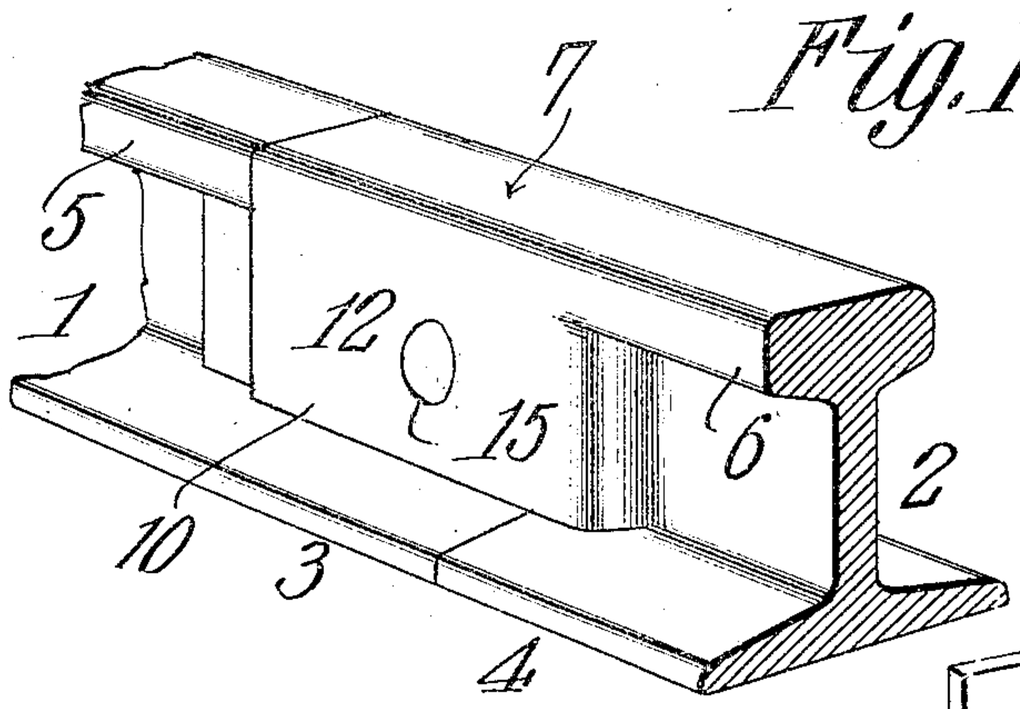


Fig. 4.

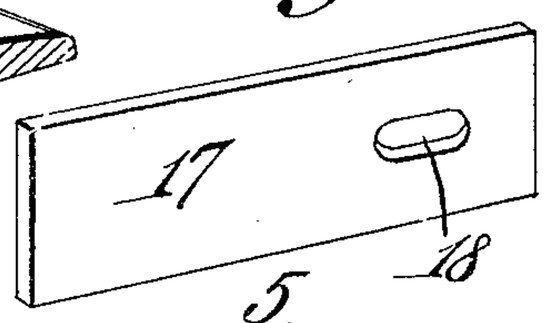
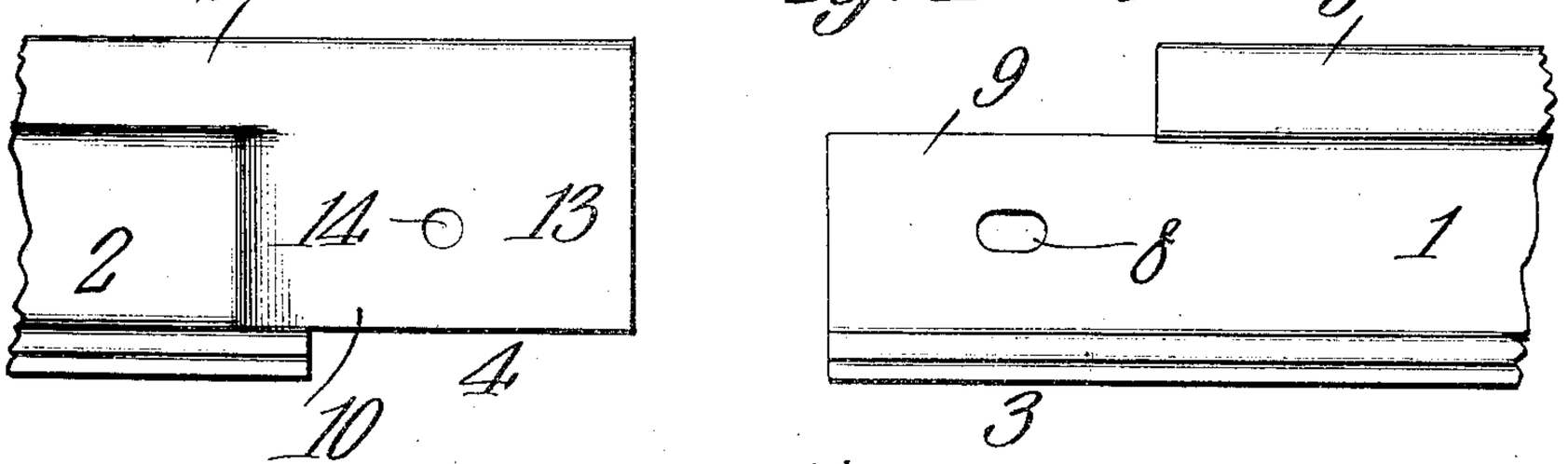


Fig. 2.



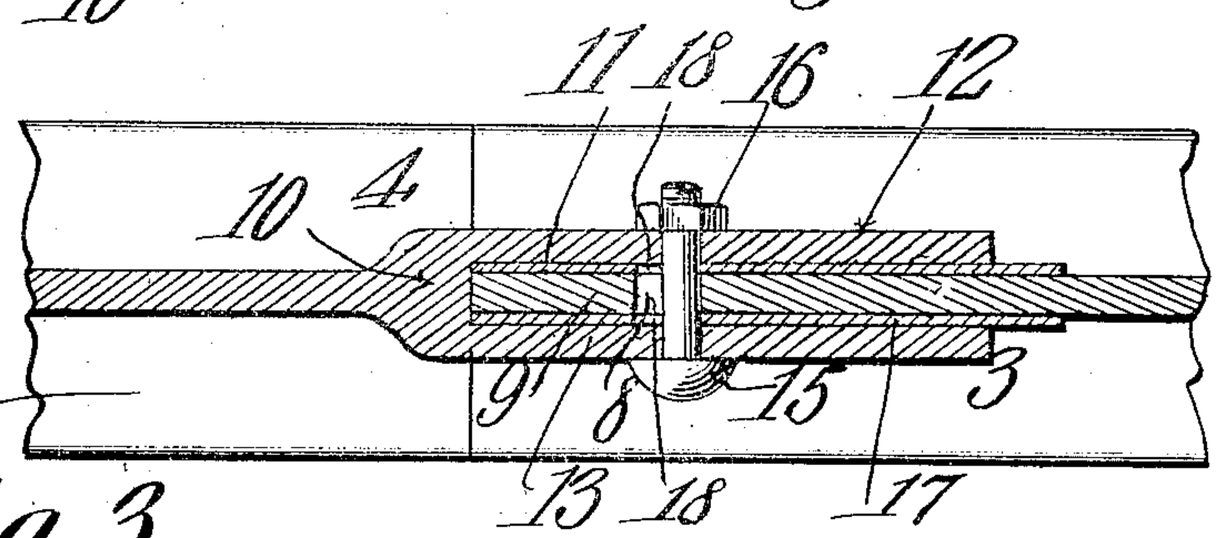


Fig. 3.

Witnesses

E. G. Hollingsworth

E. G. Hollingsworth

Inventor

Henry Markussen,

By Church & Co

Attorneys

UNITED STATES PATENT OFFICE.

HENRY MARKUSSEN, OF FLEMINGTON, NEW JERSEY, ASSIGNOR OF ONE-HALF TO PETER RATTI, OF FLEMINGTON, NEW JERSEY.

RAIL-JOINT.

No. 898,412. Specification of Letters Patent. Patented Sept. 8, 1908.

Application filed August 27, 1907. Serial No. 390,324.

To all whom it may concern:

Be it known that I, HENRY MARKUSSEN, a citizen of the United States, residing at Flemington, in the county of Hunterdon and State of New Jersey, have invented a new and useful Rail-Joint, of which the following is a specification.

This invention relates to a rail joint for uniting the ends of two rails, and, with this object in view, of producing a comparatively inexpensive and simple connection or rail joint for the meeting ends of railroad rails, and one which will firmly unite the two rail ends without the use of fish plates and with a minimum number of bolts.

With these and other objects in view, the invention consists of the novel construction, combination and arrangement of parts hereinafter described and definitely claimed.

In the accompanying drawing:—Figure 1 is a perspective view of the improved rail joint as viewed from one side. Fig. 2 is a view in side elevation of the rail ends separated, and seen from the side opposite that illustrated in Fig. 1. Fig. 3 is a horizontal section through the center of the rail joint on a line with its fastening bolt. Fig. 4 is a perspective view of one of the filling plates.

Corresponding parts in the several figures are indicated throughout by similar characters of reference.

The rails 1 and 2 are similar in all respects, each having an end 3 of one shape and a differently formed interlocking opposite end 4. The heads 5 and 6 of the rails, when the latter are united, produce a substantially continuous tread surface 7. The end 3 is in all respects similar to the end of an ordinary rail, except that a suitable length of the head 5 has been removed, and that a single horizontally disposed elongated hole 8 is made through the web 9 about midway its height and between its end and the end of the head 5. The end of the head 5 is cut at a right angle to the rail, but it may be diagonally disposed, if desired. The end 4 has its web 10 thickened about the width of the rail head to permit a slot 11, as long as, but wider than the end of the web 9, to be formed therein, within which slot the web 9 of the adjoining rail loosely fits. The thickened end 4 is reduced in size just back of the slot 11, joining the web 10. The bottom flange of the end 4 is cut away as far back as the rear wall of the slot 11 (see Fig. 3). The width of the slot 11 is a little greater than the thickened end of the webs of the rails, so that a filling plate 17 of suitable thickness may be placed on each side of the web 9 to fill the slot 11. The sides 12 and 13 of the thickened web have a round hole 14 bored through each of them which holes aline with the elongated opening 8 in the web 9 of the other rail and similar openings 18 in the plates 17 when the two rails are assembled. The end of the rail 2 is cut at the same angle as the head of the rail 1, so that a close joint will result. In laying rails of this type, they are placed so that the end 3 of one rail will be adjacent the end 4 of the next rail, and so on. The web 9 of one rail is then pushed into the slot 11 of the other rail until the end 3 is seated against the end 4 and their heads are in contact. A filling plate 17 is then placed in the slot 11 on each side of the web 9 and a single bolt 15 put through the holes 14 and slots 8 and 18 and secured by a nut 16, thus completing the connection.

By means of the filling plates 17 the inner faces of the rail heads at the joints or meeting ends can be made as smooth as the top of the rail, whether a new rail is placed in connection with an old worn rail, or a new one with wider head. This is accomplished by placing a filling plate (or omitting it, if necessary) on the inner face of the web 5 and of such thickness that when the rails are brought together the inner faces of the heads are in line. A plate, or plates, of sufficient thickness is then slipped in the slot 11 on the outside of the web 5 to make a firm fit, after which the bolt 15 is inserted and fastened.

It is to be observed that by removing a length of the head from one rail and an equivalent length of the bottom flange from the other, it follows that when the two ends are brought together, the head and double webs 12 and 13 of one rail will be supported on the web and bottom flange, respectively, of the other rail. Each rail end thus assists in supporting the other rail end and together they prevent the weight of traffic from depressing the rails at their joints. It is also to be noted that but one bolt is necessary for fastening the ends as the joint is practically self sustaining. The opening 8 is elongated to permit expansion and contraction of the rails as usual.

Attention is here called to the fact that rails having the joint described can, with lit-

tle difficulty, be joined to ordinary rails. All that is necessary is to cut off squarely as much of either end of the rail as is included in the joint and then drill through the web as many holes as are necessary for the fastening bolts of the fish plates.

What is claimed is:—

1. In a rail joint, the combination of two rails one of which has its head cut away from the web for a suitable distance back from the rail end leaving the web intact and with approximately parallel sides, the removed portions being substantially quadrangular in longitudinal section, the other rail having its base flange removed for a like distance its web thickened and a central slot cut therein to slip over the web of the first mentioned rail in either an endwise direction or from above, and a bolt extending through the interlocking webs to join the rails.

2. In a rail joint, the combination of two rails one of which has its head cut away from the web for a suitable distance back from the rail end leaving the web intact and with an elongated bolt opening therethrough and approximately parallel sides, the removed portions being substantially quadrangular in longitudinal section, the other rail having its base flange removed from its web for a distance equal to the length of head cut away from the first mentioned rail, said latter web thickened to the width of the rail head and slotted longitudinally to slip over the web of the first mentioned rail in either an endwise direction or from above and a fastening bolt extending transversely through openings in the widened slotted web and through said elongated opening in the other web.

3. In a rail joint, the combination of two rails, one of which has its web and base flange extended beyond the end of the rail, the other rail having its head and thickened web projecting an equal distance in advance of the end of the base flange, said thickened web having a longitudinal central slot made therein and open at the bottom to fit over the web of the other rail said slot being wider than the inserted rails, means adapted to be placed within said slot for alining the rails, and a fastening bolt extending through openings in the two webs and said alining means.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

HENRY MARKUSSEN.

Witnesses:

JAMES A. KLINE,

JOHN L. CONNET.