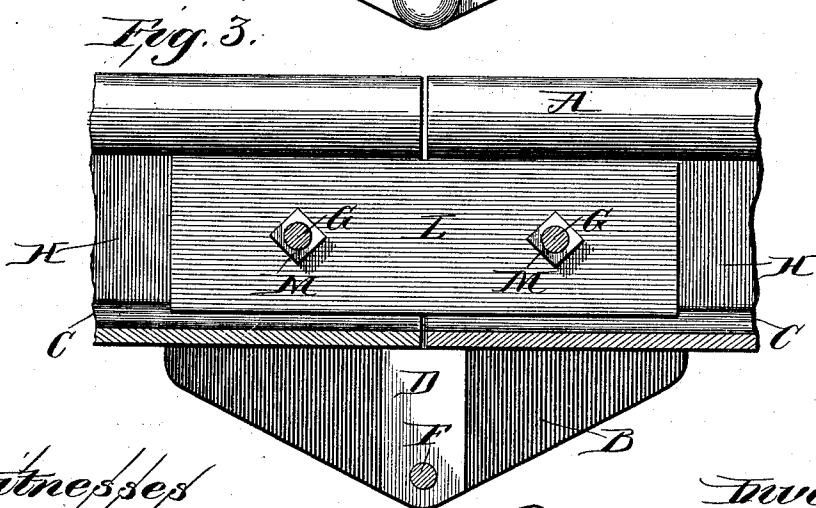
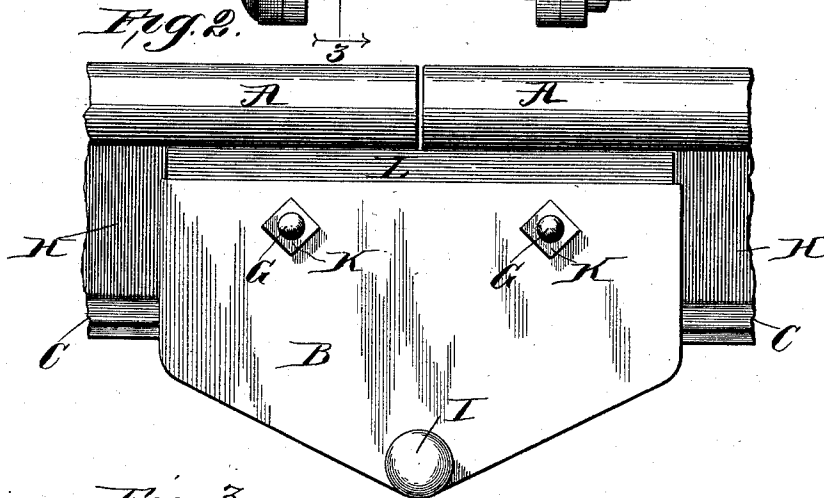
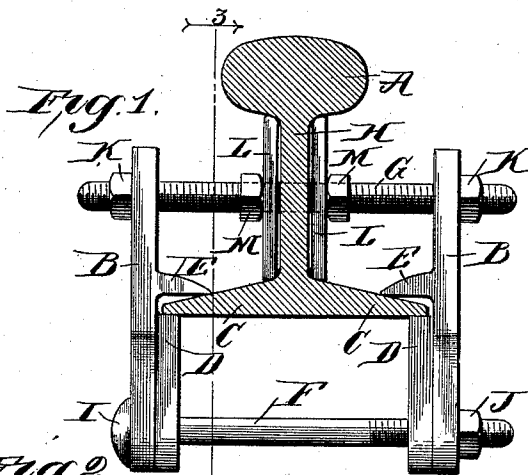


(No Model.)

M. C. NILES.
RAIL JOINT.

No. 477,694.

Patented June 28, 1892.



Witnesses
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UNITED STATES PATENT OFFICE.

MILTON C. NILES, OF OAK PARK, ILLINOIS.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 477,694, dated June 28, 1892.

Application filed July 28, 1891. Serial No. 400,956. (No model.)

To all whom it may concern:

Be it known that I, MILTON C. NILES, a citizen of the United States, and a resident of Oak Park, 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 relates to improvements in rail-joints, and has for its prime object to directly support the rails against vertical movement by applying lateral or horizontal pressure only to the parts of the joint in tightening the joint upon the rail. This object is attained by the devices illustrated in the accompanying drawings, in which—

Figure 1 represents a transverse vertical section through a rail, showing a joint applied thereto embodying my invention in end elevation; Fig. 2, a side elevation of a rail-joint embodying my invention; and Fig. 3, a vertical longitudinal section taken on the line 3 3 of Fig. 1, looking in the direction indicated by the arrows.

Similar letters of reference indicate the same parts in the several figures of the drawings.

Referring by letter to the accompanying drawings, A indicates the rails, and B a pair of vertically-disposed clamping-plates, preferably extending about an equal distance above and below the flanges C of the rails parallel therewith. About the center of height of these clamping-plates is a ledge or shoulder D, and immediately above that an overhanging lip or projection E, between which and the ledge the rail-flange is inserted, which rail-flange holds the clamping-plates asunder at their upper and lower sides or edges, and also holds them away from the webs of the rails, whereby such plates may have the requisite range of movement for tightening up. These projections and ledges are so disposed with relation to each other that when placed in position the rail-flanges will rest upon the ledges, while the projections will overhang and bear upon the top or upper surface of the rail-flanges, the projections and ledges being of such distance apart that the rail-flanges will wedge or bind therebetween when the plates are forced onto the flanges before the side edges of the rail-flanges come in contact with the vertical faces of the clamping-plates.

The clamping-plates are held in position and adjustably tied together or tightened upon the rails by means of a screw-bolt F, connecting the same about the center of length thereof below the rail, and a pair of screw-bolts G, connecting the plates near each end, but above the flanges of the rail, which bolts are preferably squared at their center where they pass through the web H of the rails. The lower bolt F is an ordinary screw-bolt with a head I upon the outer side of one clamping-plate and a nut J upon its opposite screw-threaded end at the outer side of the other clamping-plate, so that when the nut is screwed up the lower end of the plates will be drawn toward each other; but the upper bolts G have no heads on either end, but are screw-threaded throughout their length, except, if desired, the central portion thereof passing through the rail-web, and are provided on each end with nuts K, bearing against the outfaces of the clamping-plates, respectively, so that when said nuts are screwed up the upper ends of the clamping-plates will be drawn toward each other, resisting the tendency of said plates to spread under the influence of the pressure of the bolt F applied to their lower edges.

For the purpose of giving additional strength to the joint, I provide a fish-plate L at each side of the rail lying parallel with the web thereof and extending between the top and flanges of the rails, which plates are provided with perforations, through which the screw-bolts G freely pass, and are held firmly in position by means of nuts M upon each of said bolts, which subserve the further purpose of lock-nuts for said bolts to assist the nuts K in resisting the strain against each other when the parts are tightened in position upon the rails.

While I have shown the ledges D in Fig. 3 of the drawings to be of just sufficient length to support the rail ends under all conditions of contraction and expansion, obviously such ledges might extend the entire length of the clamping-plate, and so, also, might short individual tightening-bolts be employed for the upper part of each clamping-plate, extending only between the rail-flanges and the plates, instead of the double bolt now employed extending between the plates, for such changes

are mere mechanical expedients and would be no departure from the spirit of my invention.

A joint made in accordance with my invention possesses great power, for by properly
5 arranging and proportioning the ledges and projections on the clamping-plate with relation to flanges of the rail the latter may be wedged in position between the ledges and projections with a force limited only by the
10 strength of the plates and with sufficient strength to withstand all the strain to which a rail-joint is subjected, besides obviating the necessity for having a tie beneath the joint.

Having described my invention, what I
15 claim, and desire to secure by Letters Patent, is—

1. In a rail-joint, the combination, with the rails, of clamping-plates having ledges engaging the flanges of the rails and being held
20 asunder and away from the webs of the rails by the said rail-flanges, the lower ends or edges of said plates being connected together below the rail-flanges and their upper ends or edges being adjustably tied together, substantially as set forth.

2. In a rail-joint, the combination, with the rails, of upright substantially straight clamping-plates having ledges engaging the flanges

of the rails, the bolts passing through said plates above and below the rail-flanges, substantially as set forth. 30

3. In a rail-joint, the combination, with the rails, of upright clamping-plates having ledges engaging the flanges of the rails and being connected together below the said rail-flanges, 35 fish-plates arranged between the said clamping-plates and the webs of the rails, and bolts above the rail-flanges for forcing all of said plates toward the rails, substantially as set forth. 40

4. In a rail-joint, the combination, with the rails, a pair of vertical clamping-plates, and ledges and projections on said plates, between which the flanges of the rails fit and wedge, of a screw-bolt connecting said plates below 45 the rails, fish-plates fitting between the top and flanges of the rails, and screw-bolts connecting the clamping-plates passing through the rail-web and the fish-plates and nuts on said bolts binding the fish-plates against the 50 rail, substantially as described.

MILTON C. NILES.

Witnesses:

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MANTON MAVERICK.