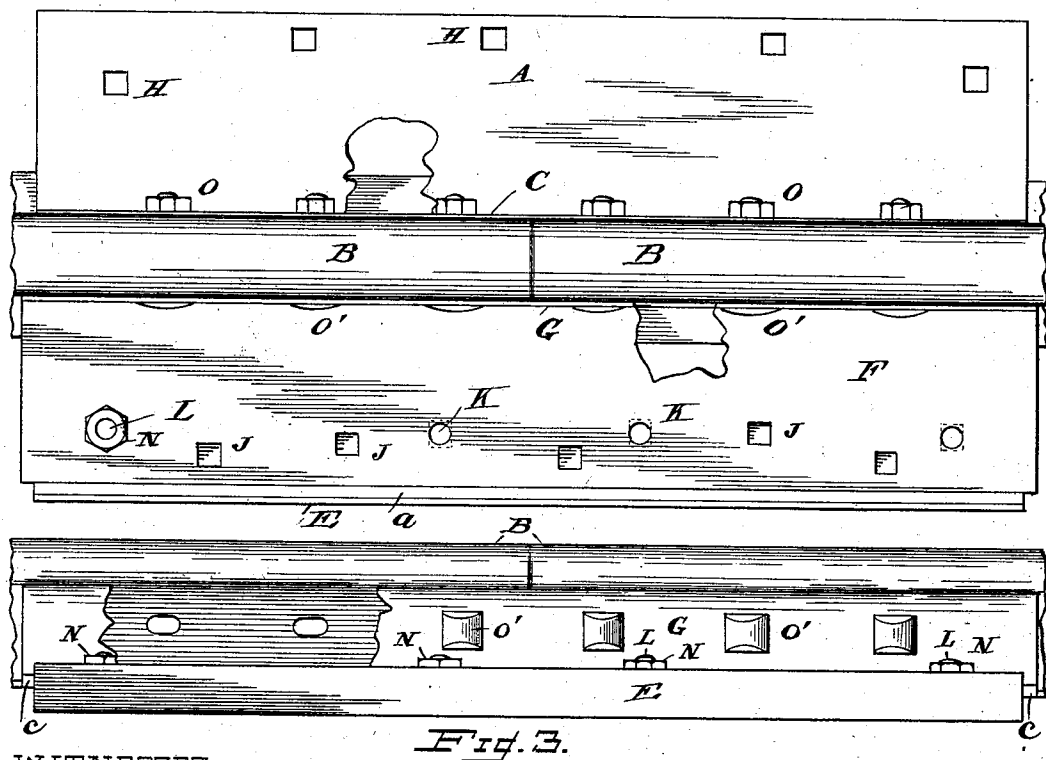
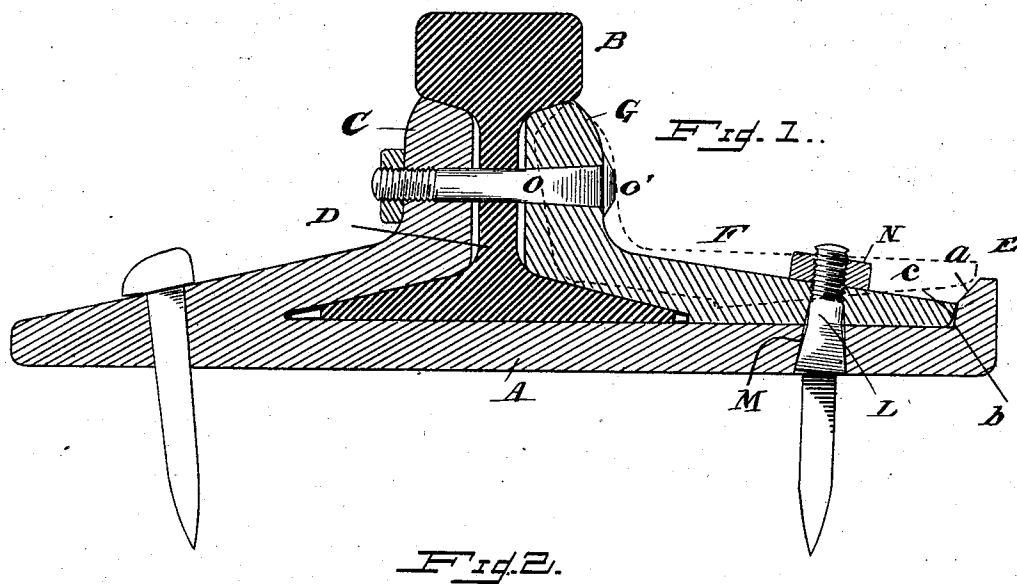


No. 724,902.

PATENTED APR. 7, 1903.

J. MABUS.
LOCKING RAILWAY SPLICE.
APPLICATION FILED JUNE 30, 1902.

NO MODEL.



WITNESSES

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LOCKING RAILWAY-SPLICE.

SPECIFICATION forming part of Letters Patent No. 724,902, dated April 7, 1903.

Application filed June 30, 1902. Serial No. 113,753. (No model.)

To all whom it may concern:

Be it known that I, JOHN MABUS, a citizen of the United States, residing at Lilly, in the county of Tazewell and State of Illinois, have
5 invented certain new and useful Improvements in Locking Railway-Splices; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to
10 which it appertains to make and use the same.

This invention relates to improvements in rail-splices.

The invention has for its object to provide a firm support for the rail ends and secure a
15 firm joint between the abutting ends of the adjacent rail-sections.

A further object is to obviate the use of the ordinary fish-plates and simplify construction to such an extent that but few parts are
20 used or needed in providing a perfect rail-splice.

A further and important object of my invention is to furnish a rail-splice that will make a secure joint and support even though
25 the ties beneath it may be removed, as by burning, as is often the case.

Furthermore, an object of the invention is to provide a rail-splice that will perform the work expected of it even without the bolts for
30 holding its parts, all of which will be clearly pointed out in the following specification.

In the drawings appended herewith, Figure 1 is an elevation of a rail in cross-section, showing my improved splice for holding the
35 same, said splice being also in cross-section. Fig. 2 is a plan view of the rail and the splice. Fig. 3 is a side elevation of the same.

My improved splice consists of a base A, which is a broad plate, having the rail B resting upon it at about its middle, as shown.
40 This plate may be of any width and thickness, and its length may be sufficient to extend over two, three, or more of the ties, as desired. At one side of the said plate A is an
45 angling chair portion C, which forms a very acute angle with the base, the space between the two forming the angle corresponding to and into which the lower flange of the said rail B rests, as shown. The portion C arises
50 beneath the head of the rail and partially sustains the weight of said rail and the load car-

ried thereby. Said portion C does not reach the central web D of the rail, but leaves a space which will permit the portions being drawn closer together in case of wear. The
55 opposite side of the plate or base A carries a vertical flange E, whose inner surface has an angling face *a* of about forty-five degrees, and between said face and the bottom of the flange at the top of the base a second face *b*
60 is formed, the same being at a much sharper angle—say eighty or eighty-five degrees. I now provide as a lock between the rail and the said flange E a clamping-plate F. The
65 portion G thereof is identical in form and function with the portion C of the base A. Said plate F is flat on its under side and rests upon the plate A between the rail and the flange E, as shown in Fig. 1. It will be
70 especially noted that the edge of the clamping-plate is beveled at an angle of about seventy-five or eighty degrees, as at *c*, and the lower corner is rounded off.

I have stated above that the bottom of the clamping-plate is flat. It will be observed
75 that this is true except where angled to conform to the slant of the rail. Between this angled surface and the flat bottom surface is a shoulder which is carried away from the rail and allows the plate to be drawn up upon
80 being worn from any cause.

In Fig. 2 I show at H H the holes in the base-plate A for spiking the splice to the ties. At the opposite side of the figure I show similar holes J J and also holes K K for entrance
85 of bolts L, one of which is shown in Fig. 1 and one at Fig. 2. These bolts have a tapering head and are adapted to be drawn into a tapering hole M in the base-plate and a continued taper in a hole in the clamping-plate,
90 as shown in Fig. 1. The taper of the bolt and hole is intended to be such that when the bolt is tightened by means of its nut N the head thereof will be pulled up into the hole, so as not to interfere with the placing of the
95 splice upon the ties, all of which will be readily understood. Now an important feature of my invention is the beveled edge of the clamping-plate and the bevels of the flange E. In dotted lines I show the manner in which
100 the said clamping-plate is inserted between the rail and the flange E, just mentioned.

When the outer portion of the plate is lowered upon the flange E, its edge contacts with the bevel *a*, and by forcing said plate downward the bevel *c* thereof is made to travel
 5 down said bevel *a* to bevel *b* and when reaching this latter position may be forced into place and held by said bevel *b* in a firm manner. When passing down the latter, the plate must of necessity be forced against and under
 10 the rail-head. It will now be seen that no amount of jarring can possibly work the clamping-plate out of its seat. By this means the work of construction and repairs can go along while the trains are passing over the
 15 tracks, for since the clamping-plate is locked in position, as above described, trains can pass over, and the plate by reason of its position under the rail-head and clamping the rail against the portion C fulfils its entire mission.
 20 After being so placed the bolts L may be all inserted and tightened. The plate F may preferably be slightly wider than the distance between the rail and the flange E, whereby the bolts will be called upon to draw said
 25 plate down into its seat. The result of this is that the plate will be forced with great pressure against the rail, and thus serve to clamp the rail ends, as in a vise. A series of bolts
 30 O are now inserted in holes through the parts F and C and in the vertical web of the rail. As shown in Fig. 3, the holes in the rail are elongated horizontally and actually amount to slots. The purpose of these, as will be understood, is to permit the rails to expand and
 35 contract, although I do not claim this portion of the device as my own, since others have used it. The holes in the clamping-plate F are tapered from within outward, so as to take the tapered heads of the bolts, which are
 40 surmounted by a projecting head O'. The said bolts O thus serve to add additional clamping means for the rail.

I desire to make it clearly seen that I attach much importance to the peculiar form
 45 of the clamping-plate above described and the manner in which it is held in place, as herein lies the greater part of my invention. If by any chance the bolts L and O were to become loosened and should leave their
 50 places, the clamping-plate F would remain in a firm and fixed position regardless of how much weight would be imposed on the rail which it holds by reason of its being beneath the rail-head and against the bevel *b*, which
 55 together would hold it in place. Evidently after the edge of the plate has been pushed into position behind the bevel *b* of the flange E it cannot work loose, even with the bolts O removed. In building a road the splices
 60 can be laid upon the ties and the rails be placed within them and the clamping-plates inserted, as has been described, and in this manner trains can pass over without fear, and at leisure the various bolts may be inserted
 65 and tightened.

In Fig. 2 the plate F is shown projecting at each end of the base-plate A. The pur-

pose of this is that when it is desired to remove the said plate F the bolts L and O are withdrawn, then by placing a crowbar or
 70 pry beneath one of the said projecting ends said plate may be forced from its position, after which repairs may be proceeded with. By the device constructed as it is double strength is provided for supporting purposes,
 75 since the clamping-plate is locked and locks the rail in place, and in view of this advantage the device could be termed a "locking railway-splice."

It has been found that more steel can be
 80 laid in a given time by my improved splice than other devices of like nature, because of its simplicity and ease of assembling, and when laid the joints are equal to a solid track by reason of the stiffness and rigidity im-
 85 parted thereto by the splice. The device may be either placed upon the ties or suspended between them, and the result will be the same in either case. If placed upon the ties and said ties are burned away by acci-
 90 dent, as is often the case, or a washout occurs, so as to undermine the ties, the splice is of such strength and rigidity that the train will pass over without trouble.

The heads of the bolts O, though shown
 95 against the clamping-plate F, are preferably kept away from that portion by making the tapered heads larger than the holes for receiving them, so that in case of wear said bolts can always be drawn tighter. Further-
 100 more, when so arranged the bolts are thus wedged into place by the nuts, and the latter will be prevented from working loose by the jarring of the passing trains. Should the
 105 rails spread, as often occurs, and the heads of the bolts or the nuts are sheared off by the wheels, no danger will arise for the reasons before stated—i. e., the ability of the parts to retain their positions. In so far as I
 110 am aware no splice has yet been introduced where this advantage has been present, and I desire to make it my own and to cover the construction for accomplishing it.

I claim—

1. A rail-splice comprising a base for sup-
 115 porting the rail-sections at the junctures of their ends, a vertical extension formed with the base and arising beneath both the heads of the rail-sections, an upright flange on the
 120 base at the opposite side of the rail from that under whose head the said extension is placed, the inner side of said flange being beveled upward and outward substantially as shown, and a locking-plate having its outer edge beveled
 125 downward and inward toward the rail for engaging the bevel of the flange of said base, said plate also having a vertical portion to enter beneath the rail-head, said plate adapted to remain in place between the rail and the beveled flange when forced therein
 130 even when the train is passing over.

2. A rail-splice comprising a base for supporting the rail-sections at the juncture of their ends, a vertical extension formed with

the base and arising beneath the heads of both the sections, an upright flange on the base at the opposite side of the rail from that under whose head the said extension is placed, the inner side of said flange being beveled upward and outward substantially as shown and a locking-plate adapted to lie upon the base, between the flange and the rail and extending beyond the base at each end as described and shown and for the purposes set forth, said plate being beveled downward and inward toward the rail at its edge for engaging the bevels of the flange and also having a vertical portion to enter beneath the rail-head, said plate adapted to remain in place between the rail and the beveled flange when forced therein even when the train is passing over.

3. A rail-splice comprising a base for supporting the rail-sections at the juncture of their ends, a vertical extension formed with the base and arising beneath both the heads of the two rail-sections, an upright flange on the base at the opposite side of the rail from that under whose head the said extension is placed, the inner side of said flange being beveled upward and outward substantially as shown, a locking-plate having its outer edge beveled downward and inward toward the rail for engaging the bevel of the flange of said base, said plate also having a vertical portion to enter beneath the rail-head, said plate adapted to remain in place between the rail and the beveled flange and bolts passing through the base and the said locking-plate for the purposes explained.

4. A rail-splice comprising a base for supporting the rail-sections at the juncture of their ends, a vertical extension formed with the base and arising beneath the heads of both the sections, an upright flange on the base at the opposite side of the rail from that under whose head the said extension is placed, the inner side of said flange being beveled upward and outward substantially as shown, a locking-plate adapted to lie upon the base between the flange and the rail and extending beyond the base at each end as described and shown and for the purposes set forth, said plate being beveled downward and in-

ward toward the rail at its edge for engaging the bevels of the flange and also having a vertical portion to enter beneath the rail-head, said plate adapted to remain in place between the rail and the beveled flange when forced therein, and bolts passing through the base and the said locking-plate, and bolts passing through the vertical extension of the base, the rail, and the said vertical portion of the plate all for the purposes explained.

5. A locking railway-splice comprising the base A, the upwardly-extending side portion C for forming a part clamp for the rail and resting beneath the head of the latter, the flange E on the opposite edge of the plate A, the bevel *a* thereof on the inside of said flange, the bevel *b* beneath bevel *a* and of a lesser angle, the clamping-plate F arranged to be placed between the rail and the said flange, the bevel *c* on the outer edge of said plate and arranged to be forced down behind the said bevel *b* for the purposes described, the bolts L for securing the plate F and base A together and the bolts O passing through the said plate F, the rail and the portion C as described.

6. A locking railway-splice comprising the base A, the upwardly-extending side portion C for forming a part clamp for the rail and resting beneath the head of the latter, the flange E on the opposite edge of the plate A, the bevel *a* thereof on the inside of said flange, the bevel *b* beneath the bevel *a* and of lesser angle than *a*, the clamping-plate F arranged to be placed between the rail and the said flange and extending at both ends beyond the base whereby it may be pried from its seat when required, the bevel *c* on the outer edge of said plate, the latter adapted to be forced down behind the said bevel *b* for the purposes set forth, the bolts L for securing the plate F and base A together, and the bolts O passing through the said plate F, the rail, and the portion C as described.

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

JOHN MABUS.

Witnesses:

DAN R. SHEEN,
L. M. THURLOW.