

Almeron McKenney's R. R. Rail

116975

Fig. 1

PATENTED JUL 11 1871

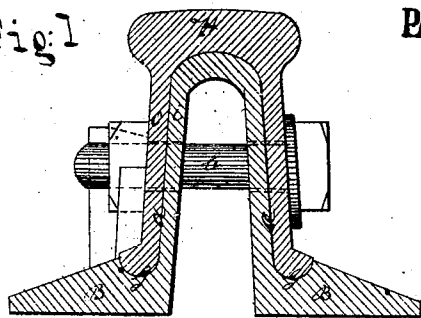
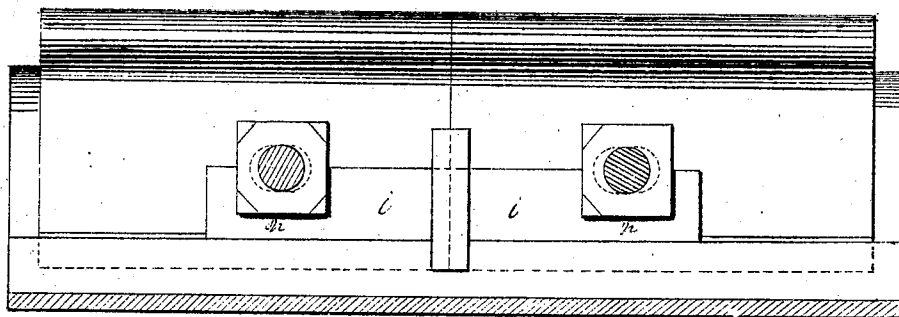


Fig. 2



Witnesses.

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UNITED STATES PATENT OFFICE.

ALMERON McKENNEY, OF MAUMEE CITY, OHIO.

IMPROVEMENT IN RAILROAD RAILS.

Specification forming part of Letters Patent No. 116,975, dated July 11, 1871.

To all whom it may concern:

Be it known that I, ALMERON McKENNEY, of Maumee City, in the county of Lucas and in the State of Ohio, have invented certain new and useful Improvements in Railroad Rails; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

The nature of my improvement consists in the construction of a railroad rail in two parts—a lower or foot-rail in the form of an arch, or the bridge variety, having a single-flanged base, to be made of iron; and an upper part, made also in the form of an arch, having a head something like the T-rail, which forms the tread or wearing-surface, to be made of steel, each part being in the form of an arch, and fitting together like a tongue and groove, and being so arranged in putting the same together that each part shall overlap the joints of the other alternately above and below in the middle of each piece, thus effectually breaking the joints and forming a continuous rail. The several objects to be gained are: 1st, to make a continuous rail of sufficient strength in all parts. 2d, to secure a permanent base, to remain for a long time, and an upper or wearing part of steel, to be removed from time to time as it may be required; and 3d, to secure a sufficient diameter and breadth of base without a material increase in weight.

In Figure 1 it may be seen that the sides of the arch *a a*, formed by the outer and inner arches *o* and *i*, are not parallel, or do not stand plumb with the base *B B*, but stand a little bracing, thereby giving the greatest strength, and not being liable either to collapse or to press outwardly with the great weight upon the head-rail *H*, and the same being secured also by the screw-bolts passing through at *b*, affording altogether ample strength for the sides for a heavy rail. In Fig. 1, also, it will be seen that the single-flanged base *B B*, being made heavy and broad, and resting perfectly level upon the ties, must afford a firm foundation, on which all may remain permanently, and with ample security against rocking or lateral sway. This base has curved longitudinal grooves *g g* near the foot of the inner arch, which extend the entire length of the rail, into which the corresponding rounded

foot or base of the side pieces of the outer arch sits, and forming a perfect fit, and enabling the foot to be forced to its proper central bearing, when the weight is upon the rail, and thus distributing and equalizing the pressure upon the top of the inner arch and upon the foot-pieces of the outer arch and their bearings upon the base, and, altogether, thus affording a structure of greater strength when the weight is upon it. It will be observed that the upper part of the inner arch is made heavier than the sides of the same, which is to give greater strength where the ends of the head-rail meet, thus distributing the weight of metal to points where it is most needed.

The head of the rail may be made to project more or less beyond the sides of the arch, according to the curves of the road. If a road has many short curves the projection forms a wearing-surface for the flanges of the wheel, to save the rapid destruction of the rail; on a road of but few or of easy curves the rail might be made near the form of an inverted *U*, or straight on the sides; but, all things being considered, it is deemed indispensable to construct a rail as herein shown. Fig. 2, showing a side view, represents the joint in the upper part and in the middle of the base-rail, in which the latter forms the support to the joint. If the rail was lengthened out to twice its present length the upper part would then extend over and cover the joint of the part at *H*, and thus form a strong and continuous rail, being of sufficient strength at any point for all practical use. These rails are designed to be made eighteen feet long, having two bolts at each joint, say nine feet apart, and having single intermediate bolts, say four and a half feet apart, which is deemed sufficient for a very heavy road.

In securing the nuts from turning back, it may be seen in Fig. 2 that a small flat piece or strip of iron, *i i*, having two notches, *n n*, cut in its upper edge, may fit under the edges and a part way upon the sides of the nuts of the screw-bolts which hold the parts together, and the piece or strip secured in its place by a spike driven down through the rail and into the wood tie. If it is to secure only one single nut in one place, in that case only one-half the length of strip is required with only one notch in it, and the spike driven nearer to the nut to hold it in

its place. This strip also serves another important part, viz., its beveled lower edge, as seen in Fig. 1, sits down upon the beveled upper surface of the foot of the side pieces of the outer arch, and thus serves as an additional brace to support and keep the parts in their proper places, and holding the foot-piece of the outer arch down to the base. These strips are to be placed on each and opposite sides of the rail wherever bolted together.

Above I have described a nut-locking device for securing the base and cap-rails together, but I do not wish to be understood as making any claim to such device in this application, nor to a compound rail when a cap-rail rests on a solid base, or when it rests only on the head of the base-rail; nor do I wish to be understood as con-

fining myself to any particular construction of bolting or securing device; but

What I do claim is—

A compound rail for railroads, consisting of the hollow arched base-rail B, provided with an outward flange on each side, grooved the entire length of each flange at the lower sides of the arch walls *a a*, in combination with the exterior cap-rail H, overlapping the top and entire sides of the base-rail, with its extremities fitting into the grooves in the same, and secured by lateral bolts, all substantially as and for the purpose set forth.

ALMERON McKENNEY.

Witnesses:

C. M. ALEXANDER,
J. M. MASON.