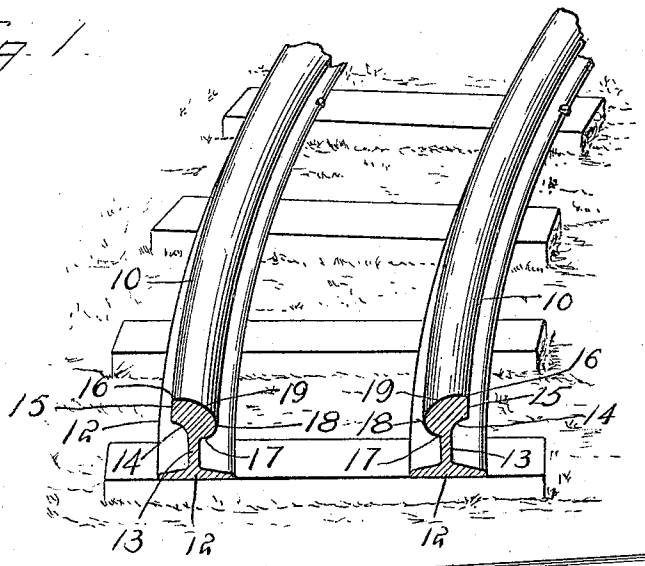
C. H. DAY.

RAILROAD RAIL.

APPLICATION FILED OCT. 9, 1908.

949,793. Patented Feb. 22, 1910.

Fig. 1.



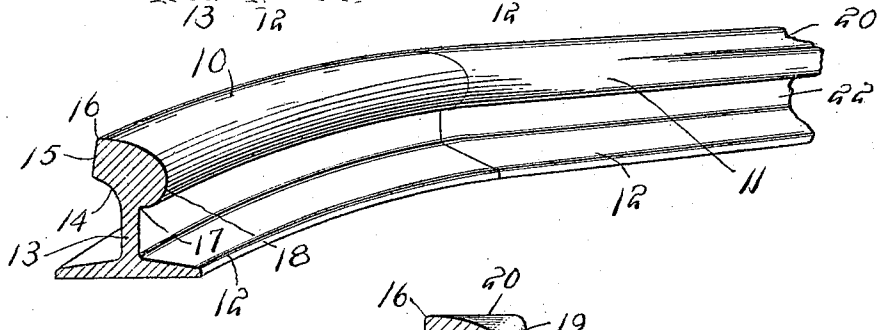


Fig. 2

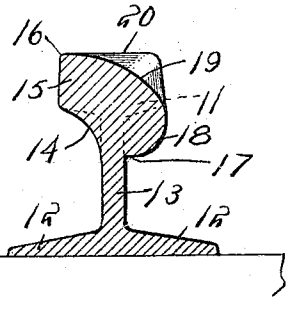


Fig. 3.

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RAILROAD-RAIL.

949,793. Specification of Letters Patent. Patented Feb. 22, 1910.

Application filed October 9, 1908. Serial No. 457,018.

To all whom it may concern:

Be it known that I, CHARLES H. DAY, a citizen of the United States, residing at Crandon, in the county of Forest, State of Wisconsin, have invented certain new and useful Improvements in Railroad-Rails; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to railroad rails and its principal object is to improve the general cross section of such rails for use on curves.

Another object of the invention is to provide an improved form of mating rails for use with a rail as above described.

With the above and other objects in view the invention consists in general of certain improvements in the cross section of rails for use on curves; in combination with an improved form of rail connecting said rails to the tangent rails of the track.

The invention further consists in certain novel features of construction hereinafter fully described, illustrated in the accompanying drawings and specifically set forth in the claims.

In the accompanying drawings, like characters of reference indicate like parts in the several views, and; Figure 1 is a perspective view of a portion of a railroad track equipped with this invention. Fig. 2 is an enlarged detail view showing both the curved rail and the end of the tangent rail arranged to mate therewith. Fig. 3 is a sectional view of the tangent rail taken close to the end where it joins the curved rail.

In the drawings, the numeral 10 indicates the curved rail and the numeral 11 the rail connecting therewith. Each of these rails is provided with a base flange 12 of the usual form.

The curved rail is provided with the usual web 13 from the lower end of which extends the usual base, the latter consisting in tapering flanges 12. The cross section of the rail is thus bounded on the bottom by a straight line from each end of which extend upward and inwardly directed curved portions which are continued by inwardly directed lines bounding the upper faces of the flanges and these last lines are inclined slightly upward from their outer to their inner ends. From the inner ends of these lines extend curves of small radius which are continued by parallel lines which bound the web on its sides. The head of the rail is bounded on its outside under portion by a curve 14 of constant radius, the lower end portion of which is tangent to the line bounding the outside of the web and this curve forms an arc of somewhat less than a quarter circle. From the outer end of this line extends a small reverse curve from the end of which extends upwardly a line 15 forming the outside of the rail head and this last mentioned line 15 is also inclined inwardly to a slight degree. From the end of this line 15 extends a short radius curve 16, the curve running inwardly for a quarter circle.

From the line bounding the inside of the web extends a line 17 which is at right angles to the line bounding the web. From the end of this line 17 extends a curve 18 of constant radius and of a length somewhat less than a semi-circle. Joining the ends of the curves 16 and 18 is a curve of constant radius 19 which is tangent to each of the curves 16 and 18. The cross section thus formed is of such shape that when butted against the end of a straight rail of the ordinary type and the same height, the lines bounding the base and the straight line 15 will register with the corresponding portions of the straight rail.

The end of the straight rail next adjacent the curve is formed with a section mating with the section just described and from there merges gradually into a rail of the ordinary section provided with a trapezoidal head 20 connected to its base flange 12 by means of a web 22.

By reason of this construction it will be observed that when trains are running around curves the wheel flanges will be permitted to have a greater freedom of lateral movement than where the ordinary rail is employed in such situation. The result of this is that there will be less friction and binding of the wheels during motion around such curves with the result that less power will be consumed in pulling a train thereabout. The great advantage of lessening this resistance will be apparent when it is considered that the resistance in pounds per ton is substantially equal to two pounds for each degree of curvature.

Having thus described the invention, what is claimed as new, is:—

1. A railroad rail provided with a base, a

short web, and a head having a cross section the outer side of which is formed by an arc tangent at its lower end to the outside of the web, said arc being of less than a quarter circle, an upward and inwardly extending line to form the outer face of the head, an inwardly extending line to form the inside under portion of the head, a short radius arc forming the outer top portion of the head, and an arc of two centers connecting the inside under portion with the outside upper arc.

2. A railroad rail provided with a base, a short web, and a head having a cross section the outer side of which is formed by an arc tangent at its lower end to the outside of the web, said arc being of less than a quarter circle, an upward and inwardly extending line to form the outer face of the head, an inwardly extending line to form the inside under portion of the head, a short radius arc forming the outer top portion of the head, and an arc of two centers connecting the inside under portion with the outside upper arc; in combination with a second rail having a similar base, a relatively long web, and a trapezoidal head merging at the end into a section identical with that of the first rail.

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

CHARLES H. DAY.

Witnesses:
J. A. WALSH,
MARY BEILFUSS.