(No Model.)

W. T. MANNING.

RAIL.

No. 523,222. Patented July 17, 1894.

FIG. 2.

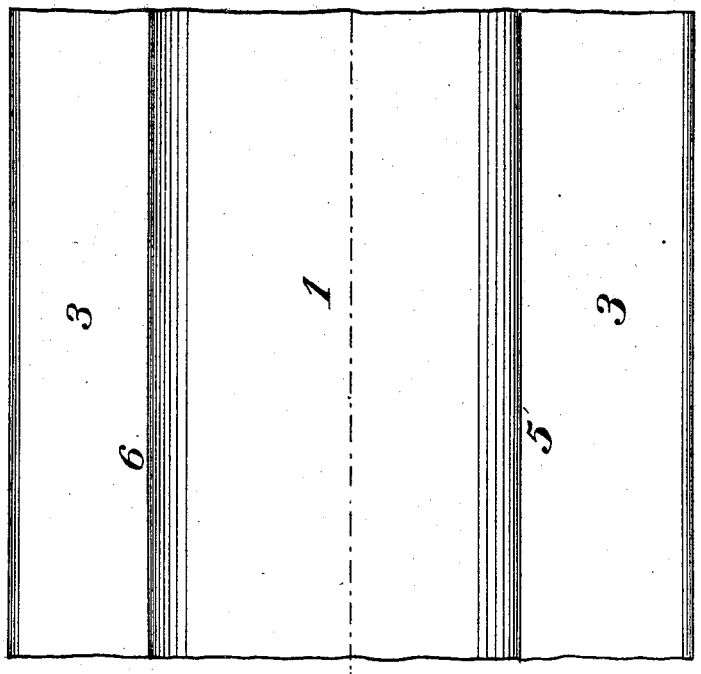
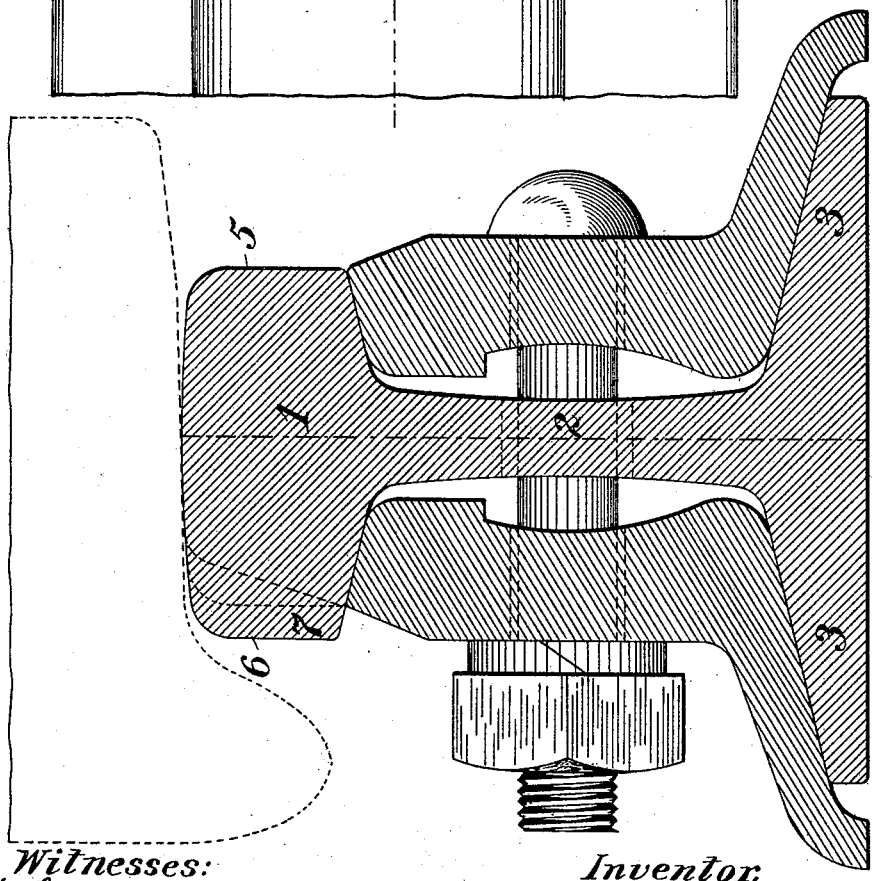


FIG. 1.



Witnesses:
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F. E. Gaither.

Inventor:
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by Howden & Bell atty.

UNITED STATES PATENT OFFICE.

WILLIAM T. MANNING, OF BALTIMORE, MARYLAND.

RAIL.

SPECIFICATION forming part of Letters Patent No. 523,222, dated July 17, 1894.

Application filed May 8, 1894. Serial No. 510,492. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM T. MANNING, of Baltimore, Maryland, have invented a certain new and useful Improvement in Rails, of which improvement the following is a specification.

The object of my invention is to provide a rail, of the standard T or "Vignoles" type, which shall be capable of safe and efficient service in the main track of a railroad, for a materially greater period than those of the ordinary construction, without involving any substantial increase of cost or dimensions, or departure from the present general form and proportions such as would affect the accessories employed in present practice.

To this end, my invention, generally stated, consists in a rail having a wheel flange bearing on each side of its head, one of said bearings being located at a greater distance than the other from the vertical center line of the rail, and forming the outer side of a surplus body of metal removable by flange wear without reduction of the section of the head below the normal degree.

The improvement claimed is hereinafter fully set forth.

It has been developed in railroad practice, that under ordinary conditions, that is to say, on portions of a railroad other than those having exceptionally heavy grades, where sand is required to be used to a considerable extent, to prevent slipping of the wheels of engines, the wearing of rails to an extent such as to render them unserviceable is due almost entirely to the friction of the wheel flanges on the side of the head of the rail, the wear of the top of the head being comparatively inconsiderable. When the inner side of the rail, or that nearest the wheel flanges, becomes so far worn as to leave a greater amount of play between the rail and flange than the maximum which is permissible, and to correspondingly reduce the bearing surface of the top of the head, the rail becomes unfit for further service in a main track over which trains pass at high speed, and is either condemned, or used, for a time, in a siding, on which trains are run only periodically and at slow speeds. When the flange side is so worn, the remainder of the head, and the web and bottom flanges of the rail are still in good condition for normal service, but cannot be made available by reason of the wear of the head, and are valuable only to the extent of the weight of their metal in re-rolling.

My invention is designed to provide a rail which, after a term of service equal to that in which rails of the present construction have been worn to the extent above indicated, may be reversed, so as to present the opposite side of its head to the wheel flanges, and which will, when reversed, possess a true and unworn flange bearing surface, and a head section of substantially the same form and dimensions as those of the present rail when new, thereby practically doubling the life or period of effective service of the rail.

In the accompanying drawings: Figure 1 is a transverse section through a rail embodying my invention, a master car builders' standard tread, and the flange being shown thereon in dotted lines, and Fig. 2, a plan or top view of a portion of the same.

In the practice of my invention, I form, by the usual process of rolling, a rail which is, generically, of the standard T or Vignoles type, that is to say, is composed of a head 1, a web or body 2, and bottom flanges 3, extending laterally from the base of the web or body. The head 1, which may be of any preferred section, has wheel flange bearings 5, 6, of ordinary depth, on its opposite sides, one of said bearings, 5, which may be termed the final bearing, being located at the usual distance from the vertical center line of the rail, and the other, 6, which may be termed the initial bearing, being located at a greater distance from said vertical center line. The specific excess of distance of the initial flange bearing from the center line, above the distance of the final flange bearing therefrom, is not an essential of my invention, and may be determined in the discretion of the constructor, but is preferably such as will provide a surplus body of metal 7, between the initial bearing 6 and an inner boundary (indicated by a dotted line in Fig. 1) symmetrical as to the center line, with the final bearing 5, such as would be about equal to that which is usually worn away from an ordinary rail during the period for which it is considered as capable of service in the main track of a railroad.

The rail is laid with its initial bearing on

the inside of the track, and when the surplus body of metal 7 has been subjected to such a degree of flange wear as to be completely removed, or approximately so, the rail may be reversed, that is to say, either turned end for end in its own line of rails or moved, without being turned, into the opposite line of rails, so as to present its final bearing 5 to the flanges of the wheels of rolling stock passing over the track, and is capable of use, when so laid, until the side of its head on which the final bearing is located is so far worn away as to render it incapable of further service in a main track, such amount of flange wear being equivalent to that which would be effected in the entire period of effective service of a rail of the ordinary construction.

A special feature of advantage is found in the fact that when laid on curves, the side of the rail on which the surplus body of metal is formed may be placed on the inside of the gage, on the high side of the curve, and on the outside on the lower side. The effect of this disposition of the rails is to curve both rails identically, so that when there has been such an amount of flange wear on the high rail as to necessitate changing it on account of being worn to or near the normal section, the lower rail is moved to the foremost position, thereby practically presenting an entirely new track.

It will be seen that my improvement involves no substantial increase of weight or cost of manufacture, and no departure from the usual form which would in any way impair the normal relation of the wheels of rolling stock to the track, or interfere with its application in connection with rail joints, frogs, switch mechanism, or other accessories such as are now in general use.

I claim as my invention and desire to secure by Letters Patent—

1. A reversible rail having a wheel flange bearing on each side of its head, one of said bearings being located at a greater distance than the other from the vertical center line of the rail, substantially as set forth.

2. A reversible rail having a surplus body of metal on one side of its head, said body of metal being provided to allow for flange wear and extending a greater distance from the vertical center line of the rail than the flange bearing on the opposite side of the rail, substantially as set forth.

WILLIAM T. MANNING.

Witnesses:
L. D. WHITAKER,
B. G. BOILLEAU.

Corrections in Letters Patent No. 523,222.

It is hereby certified that in Letters Patent No. 523,222, granted July 17, 1894, upon the application of William T. Manning, of Baltimore, Maryland, for an improvement in "Rails," errors appear in the printed specification requiring correction as follows: In line 71, page 1, the words "master car builders" should commence with capital letters, and in line 72, same page, the comma after the word "tread" and the word "the" preceding the word "flange" should be stricken out; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 2d day of October, A. D. 1894.

[SEAL.]

JNO. M. REYNOLDS,
Assistant Secretary of the Interior.

Countersigned:

S. T. FISHER,
Acting Commissioner of Patents.