

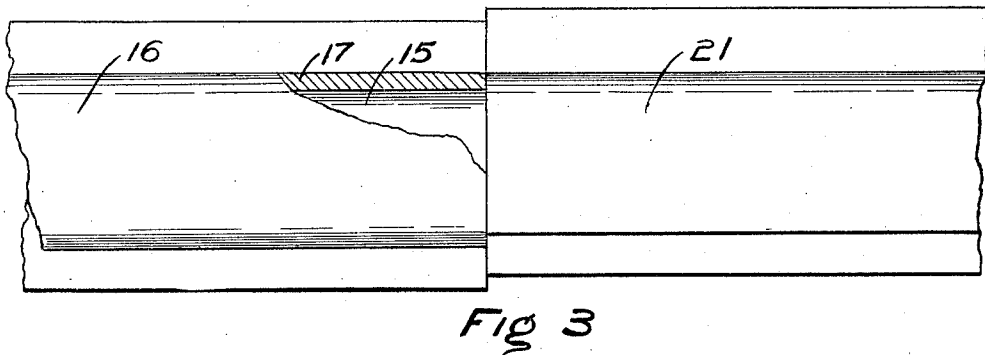
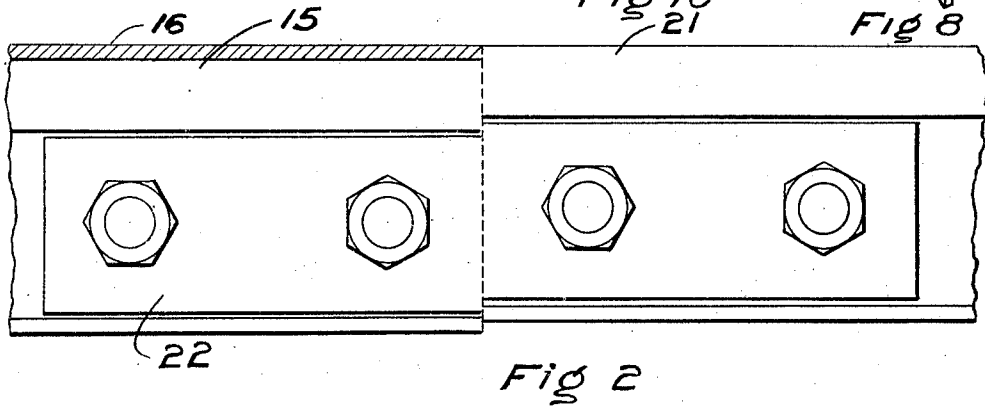
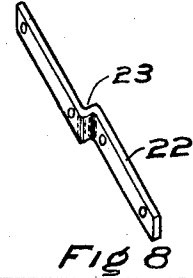
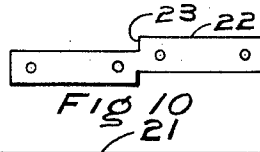
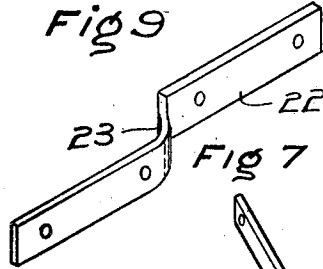
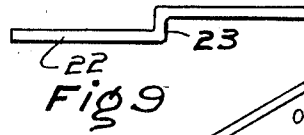
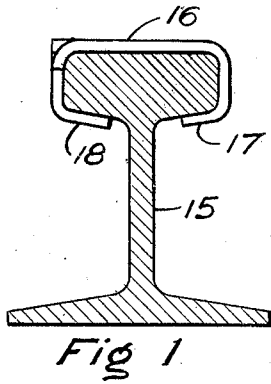
A. M. CARLSON.  
RAIL SHOE.

APPLICATION FILED NOV. 22, 1910.

Patented Sept. 5, 1911.

2 SHEETS—SHEET 1.

1,002,498.



WITNESSES  
C. F. Maschauer  
at Kitchin

INVENTOR  
Andrew M. Carlson  
BY Mason, Demick Lawrence  
by C. F. Fenwick his ATTORNEYS

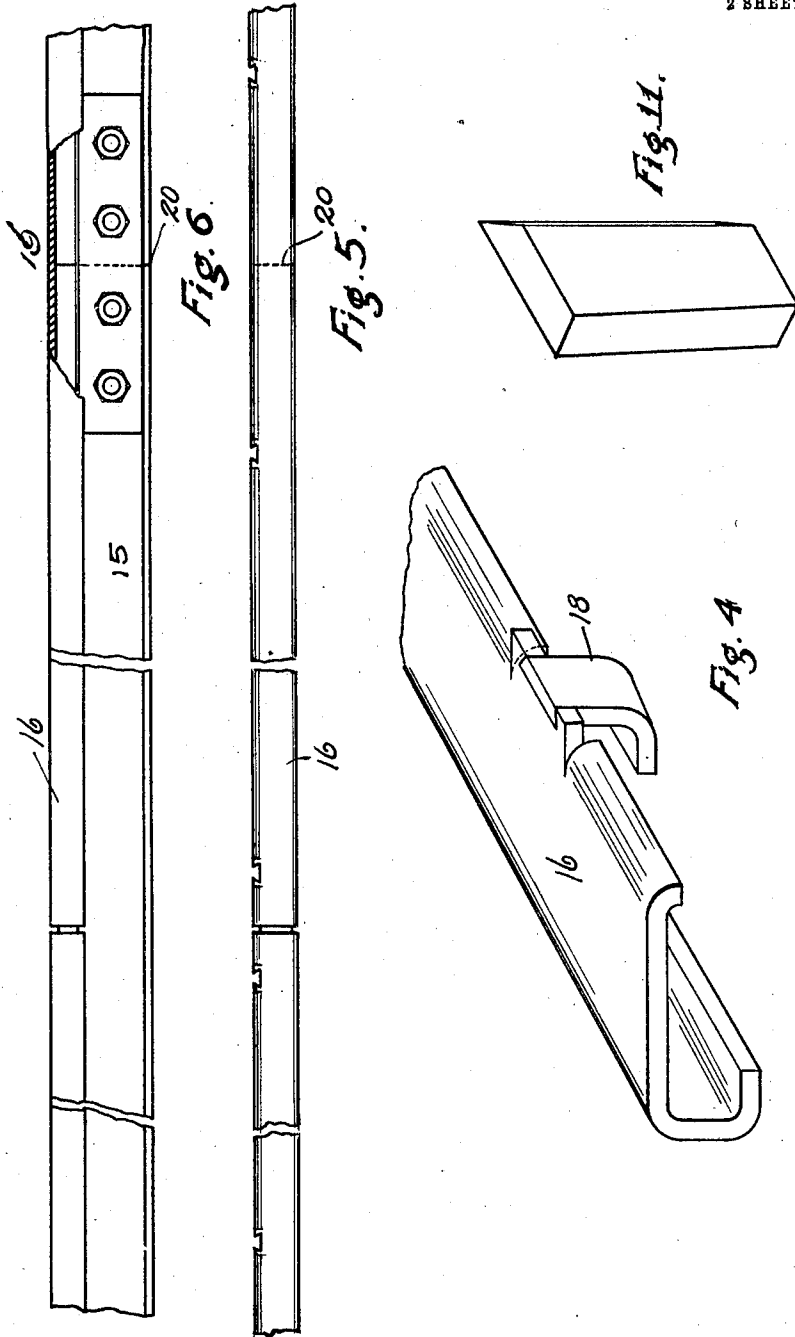
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INVENTOR  
BY *Andrew M. Carlson*  
*Mason Fenwick Lawrence*  
his ATTORNEYS  
*C. T. Fenwick*

# UNITED STATES PATENT OFFICE.

ANDREW M. CARLSON, OF HAYDEN LAKE, IDAHO.

## RAIL-SHOE.

1,002,498.

Specification of Letters Patent.

Patented Sept. 5, 1911.

Application filed November 22, 1910. Serial No. 593,730.

To all whom it may concern:

Be it known that I, ANDREW M. CARLSON, a citizen of the United States, residing at Hayden Lake, in the county of Kootenai and State of Idaho, have invented certain new and useful Improvements in Rail-Shoes; 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 rail shoes and connecting means, and has for an object to provide a shoe adapted to be employed upon a rail of the ordinary type to compensate for wear or to present a wearing surface originally upon a rail.

A further object of the invention is to provide a connecting means or fish plate whereby a rail carrying a shoe may be connected with a rail not having a shoe and to present a straight tread and inner edge.

With these and other objects in view the invention comprises certain novel constructions, combinations, and arrangement of parts as will be hereinafter more fully described and claimed.

In the accompanying drawings: Figure 1 is a view in transverse section of a conventional rail with the shoe applied thereto. Fig. 2 is a view in side elevation of a conventional rail having the shoe applied thereto and shown in longitudinal section, and connected with a rail not provided with a shoe, and also showing in side elevation the connecting means or fish plate. Fig. 3 is a view in top plan of a conventional rail and shoe with a corner of the shoe broken away and shown in connection with a rail not having a shoe applied thereto. Fig. 4 is a perspective view of one end of the shoe removed showing the engaging lip in full lines in position to be applied and the turned down edge of the plate in dotted lines after being applied. Fig. 5 is a view in top plan of adjacent ends of two shoes. Fig. 6 is a view in side elevation of adjacent or connecting ends of rails provided with a shoe showing another shoe abutting the first mentioned shoe intermediate the rail joints. Fig. 7 is a perspective view of one of the fish plates on a reduced scale. Fig. 8 is a perspective view of one of the fish plates seen substantially from the end opposite the view at Fig. 7 on a reduced scale. Fig. 9 is a top plan or edge view of

the fish plate on a reduced scale. Fig. 10 is a side elevation of the fish plate on a reduced scale. Fig. 11 is an enlarged detail perspective view of a tongue embodying certain features of the invention.

Like characters of reference designate corresponding parts throughout the several views.

It is well known that where rails are in constant use they become worn and useless and it is therefore the object of the present invention to provide a detachable shoe which may be applied to the rail when it has become worn and to present a new wearing surface which may give equally good results being applied to the rail when new and removed when it has become worn and a new shoe applied thereto. A shoe so applied will of course change the height and width of the tread of the rail, and to permit a rail provided with such shoe to be connected with a rail not provided with a shoe a specific form of fish plate is required, as shown in the drawings.

As shown a conventional rail is provided at 15 with a shoe consisting of a strip of metal 16 forming the top or tread of the shoe and with one edge bent down and provided with a hooked edge 17 adapted to hook under the head of the rail and with the opposite side provided with inserted spaced tongues 18 which after being positioned upon the head of the rail with the hooked edge 17 hooked under the head may be bent inward to the position shown in Figs. 1 and 4, whereby that side is also rigidly hooked under the head of the rail. The hooked edge 17 will of course be positioned upon the inner side of the rail and with the tongues 18 upon the outer side of the rail and bent down under the head to position the shoe upon the head of the rail. It is designed that the shoe shall extend over or span the rail joint indicated at 19 in Fig. 6 with the joint or abutting ends of the shoe intermediate the ends of the rail as indicated at 20 at Figs. 5 and 6. By so breaking joints the usual and ordinary pounding of the wheels over the rail ends is wholly eliminated.

As shown at Figs. 2 and 3 the rail ends provided with a shoe are connected with the rail 21 not having a shoe and to so position the abutting ends of the rails that the top and inner surfaces of the shoe shall register with the similar surfaces of the

abutting rail end, a fish plate shown as a whole at 22 is provided being offset in two directions as indicated at 23 in Figs. 7 to 10 inclusive. By employing a fish plate of the kind shown a rail not provided with a shoe is lifted upwardly and positioned inwardly so that the upper and inner surface of such rail register and form a continuation of the upper and inner surface of the shoe upon an adjacent rail.

In applying the shoes to the rail allowance is made for the expansion and contraction of the shoes, so that the same may always fit properly on the rails. In applying the shoes the rails of course are moved more or less as occasion requires for maintaining the correct space between the inner edges of the shoes on opposite rails. The distance of movement of the rails of course will equal the distance of the thickness of the shoes on the inside of the flanges. In connection with applying shoes to curves the ordinary shoe may be used or a special shoe provided which will have an improved lip or securing means for holding the rail in place. In forming the member 18 the same may be made as an integral part of the shoe, but preferably as shown in the drawings. In constructing member 18 a short portion of the shoe is left unbent and formed with an opening or mortise for receiving the clamping member 18 which is slightly beveled and formed so as to fit in the mortise opening. The edge of the clamping means 18 is sufficiently large to fit tightly in the mortise opening, but to prevent the clamping means from being forced therethrough. In applying the clamping means the same is driven in the

dove-tail or mortise opening flush with the top of the rail, and is then bent to clasp the shoe firmly to the rail. The size of the upper end of the clamping member 18 is such as to make it impossible to drive the clamping member through the dove-tail opening, and consequently the clamping member is always maintained in position after having once been bent, so that the action of the train passing over the rails will not effect detrimentally the clamping means.

What I claim is:

1. In a device of the class described, a rail shoe having one edge flanged downwardly and hooked inwardly and the opposite edge provided with outstanding tongues adapted to be bent downwardly and inwardly.

2. In a device of the character described, the combination with a rail shoe having one edge flanged downwardly and hooked inwardly and the opposite edge provided with outstanding tongues adapted to be bent inwardly, of a fish plate having one portion offset from the other in two directions.

3. In a device of the character described, the combination with a rail shoe adapted to change the line of the upper and inner edge of the rail, of a fish plate having substantially one half thereof offset from the other half both upwardly and inwardly.

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

ANDREW M. CARLSON.

Witnesses:

ERICK CARLSON,  
AXEL HAGLUND.