

976,860.

Patented Nov. 29, 1910.

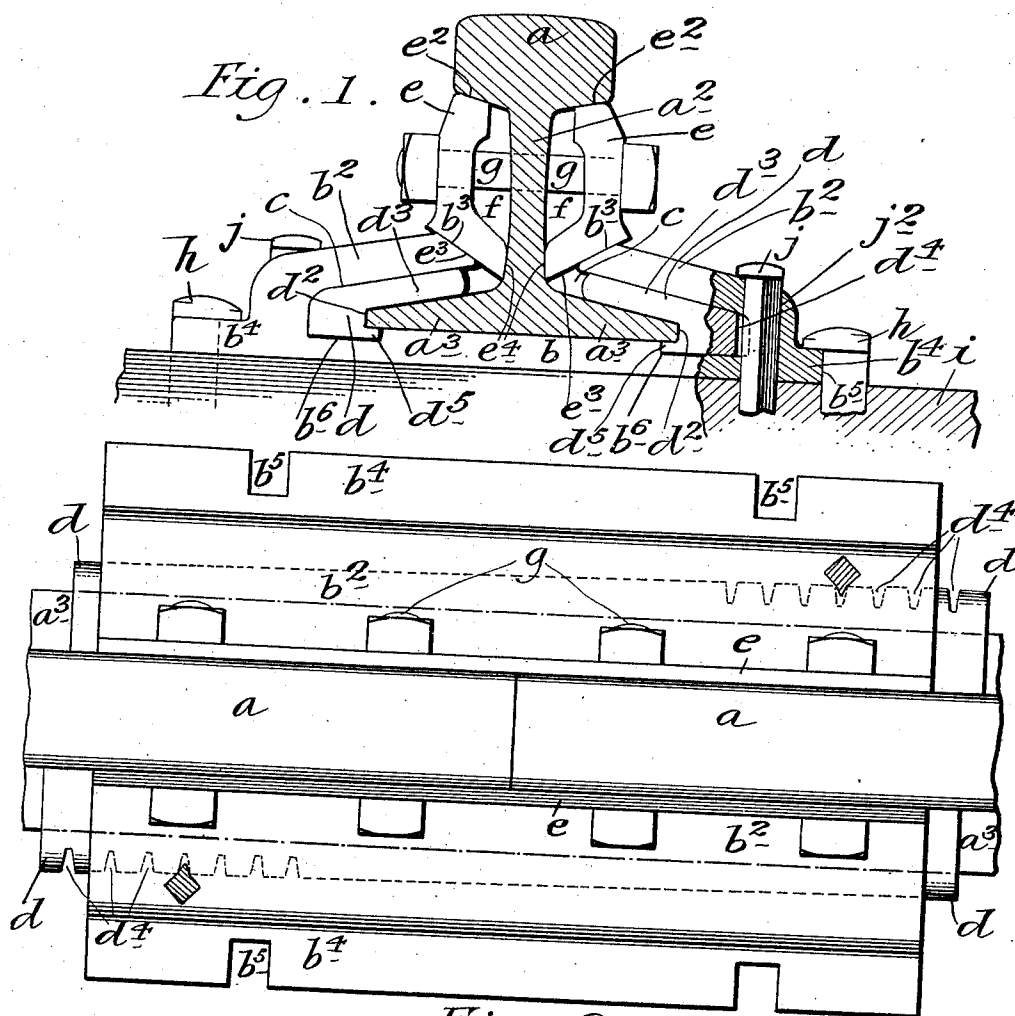


Fig. 2.

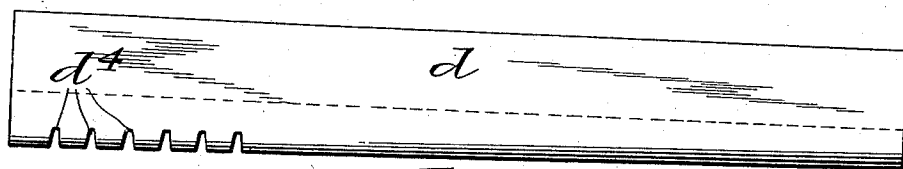


Fig. 3.

WITNESSES:

WITNESSES:
A.R. Appleman.

Joseph Glangrok.

INVENTOR.

INVENTOR.
Smith Ferris.

BY

Edgar Dale & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

SMITH FERRIS, OF NEW YORK, N. Y.

RAILWAY-RAIL JOINT.

Specification of Letters Patent.

Patented Nov. 29, 1910.

976,860.

Application filed May 11, 1910. Serial No. 560,553.

To all whom it may concern:

Be it known that I, SMITH FERRIS, a citizen of the United States, and residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Railway-Rail Joints, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to railway rail joints or couplings and is an improvement on that described and claimed in U. S. Letters Patent granted to me Feb. 27, 1900, No. 644,549, and the object of this invention is to provide a joint or coupling for railway rails which will be perfectly secure, thoroughly braced against lateral or vertical movement, and strong and durable.

The invention is fully disclosed in the following specification, of which the accompanying drawing forms a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which:—

Figure 1 is an end view of my improved rail joint or coupling with part of the construction broken away and showing a railway rail in transverse section; Fig. 2 a plan view, and;—Fig. 3 a plan view of a wedge, two of which I employ.

In the accompanying drawing I have shown in Fig. 1 a railway rail, comprising a head or bearing portion a and a web a^2 provided with the usual base flanges a^3 , and the said drawing represents a standard rail; and in Fig. 2 I have shown two of the said rails.

In the practice of my invention I provide a coupling shoe comprising a base portion b , provided on its upper surface and at a predetermined distance inwardly of its opposite side edges with upwardly and inwardly curved and longitudinally ranging side wings or flanges b^2 which overlap the base flanges a^3 of the rail, and which extend inwardly over said flanges to a predetermined distance from the base of the web a^2 of the rail, such distance, in the form of construction shown, being about three-quarters of the width of said flanges, and between said side wings or flanges b^2 and the base b of the coupling shoe are longitudinal spaces c , into which are driven wedges d , one of which is shown in Fig. 3.

The wedges d are wider at one end than

at the other and the spaces c into which said wedges are driven are similarly formed, and in practice one of the wedges d is driven into position from one end of the shoe while the other is driven into position from the opposite end of the shoe as clearly shown in Fig. 2.

The wedges d are so shaped on their under side as to abut against the outer side edges of the flanges a^3 of the rails as clearly shown at d^2 and to overlap said flanges as clearly shown at d^3 , and that part of said wedges which overlaps the flanges a^3 of the rails is approximately three-quarters of the width of said flanges.

The side wings or flanges b^2 of the shoe b are provided adjacent to the web a^2 of the rails with downwardly and inwardly inclined surfaces b^3 , and I also provide plates e which take the place of ordinary fish plates and which fit between the side wings or flanges b^2 and the head or bearing portion a of the rails. The plates e are hollowed out longitudinally of their inner sides so as to form longitudinal spaces f , between said plates and the webs of the rails, and the upper surfaces of said plates are beveled downwardly and inwardly as shown at e^2 to correspond with the bevel on the under side portions of the head or bearing part a of the rails, and the bottom surfaces of said plates are beveled downwardly and inwardly as shown at e^3 to correspond with the bevel at b^3 of the side wings or flanges b^2 of the shoe and the beveled surface e^3 at the bottom of the plates e is wider in transverse section than the beveled surfaces b^3 of the side wings or flanges b^2 of the shoe b , and the bottom inner edge portions of the plates e bear on the bottom of the web a^2 of the rails as shown at e^4 while the top surfaces of said plates e bear only on the bottom side surfaces of the bearing head or part a of the rails as clearly shown in Fig. 1.

The plates e are secured to the rails by bolts g in the usual manner, and when all the parts are placed in position and connected as shown and described, there is a wedge action between the plates e and the side wings or flanges b^2 of the shoe b , and the top web and base portion of the rails, and this makes a perfectly secure coupling which is thoroughly braced laterally, which will not work loose, or the separate parts thereof become disconnected, it being understood that any suitable device may be em-

played for holding the nuts of the bolts *g* in position.

The base *b* of the coupling shoe is provided outside of the side wings or flanges *b*² with longitudinal flanges *b*⁴ of the usual form and having recesses *b*⁵ through which spikes *h* are driven to secure the shoe to the ties *i* in the usual manner, and it will be understood that the shoe may be of any desired length as may also the other parts of the device, and in practice the wedges *d* are preferably made longer than the shoe so that when said wedges are fully driven into position both ends thereof will project from the end portions of the shoe as clearly shown in Fig. 2, and with this construction the wedges may be easily removed from the shoe when desired by striking the smaller ends thereof with a hammer. I also provide means for securely locking the wedges *d* in the shoe and these means consist, in the form of construction shown, of recesses *d*⁴ formed in the outer edge and larger end portions of said wedges, and spikes *j* which are driven down through the shoe as shown at *j*², said shoe being provided with suitable apertures for this purpose, and the spikes *j* are angular in cross section and said apertures are so formed that when said spikes are driven in, one corner thereof will fit in one of the recesses *d*⁴ in the wedges *d* and prevent the removal of said wedges and also prevent said wedges from working loose.

In practice I prefer to provide the base *b* of the shoe or that part thereof on which the wedges *d* rest with longitudinal recesses *b*⁶, and that part of said wedges which abuts against the outer side edges of the flanges *a*³ of the rails is provided with an inwardly directed lip *d*⁵ which fits under said flanges and serves to strengthen and reinforce the connection of the said parts.

In the accompanying drawing I have shown specially formed spikes *j* and specially formed apertures *j*² in the shoe, but the said spikes and said apertures may be of any desired form in cross section, and said spikes will also serve to secure the shoe to the ties *i* or aid in such operation.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent is;—

1. A railway rail coupling device, comprising a shoe composed of a base member on which the base flanges of the rails rest, said shoe being provided on its upper surface and inwardly of the opposite edges thereof with upwardly and inwardly curved side wings or flanges which range longitudinally of the shoe and which are adapted to overlap the base flanges of the rails and between which and said flanges of the rails are longitudinal spaces, wedges adapted to be driven into said spaces and which when in position abut against the opposite side

edges of the flanges of the rails and overlap said flanges, and side plates adapted to be secured to the opposite sides of the web portions of the rails and between which and said web portions of the rail when said plates are in position are longitudinal spaces, the bottom surfaces of said plates and the inner edge portions of said wings or flanges being provided with downwardly and inwardly inclined surfaces, and the top surfaces of said plates being adapted to fit under the bottom side surfaces of the head or bearing portion of the rails.

2. A railway rail coupling comprising a shoe, on which the base flanges of the rails rest, said shoe being provided on the top surface thereof and inwardly of its opposite side edges with upwardly and inwardly curved and longitudinally ranging wings or flanges between which and the flanges of the rails are longitudinal spaces, wedges which are driven into said spaces and which bear on the opposite side edges of the flanges of the rails and on the top surface of said flanges, side plates bolted to the webs of the rails between said wings or flanges and the head or bearing portions of said rail, said plates being hollowed out longitudinally of their inner side to form longitudinal spaces, the top surfaces of said plates bearing on the bottom side surfaces of the head or bearing portions of the rails, and the bottom surfaces of said plates and the corresponding surfaces of said wings or flanges being inclined downwardly and inwardly.

3. A railway rail coupling comprising a shoe, on which the base flanges of the rails rest, said shoe being provided on the top surface thereof and inwardly of its opposite side edges with upwardly and inwardly curved and longitudinally ranging wings or flanges between which and the flanges of the rails are longitudinal spaces, wedges which are driven into said spaces and which bear on the opposite side edges of the flanges of the rails and on the top surface of said flanges, side plates bolted to the webs of the rails between said wings or flanges and the head or bearing portions of said rail, said plates being hollowed out longitudinally of their inner side to form longitudinal spaces, the top surfaces of said plates bearing on the bottom side surfaces of the head or bearing portions of the rails, and the bottom surfaces of said plates and the corresponding surfaces of said wings or flanges being inclined inwardly and downwardly, said wedges being wider at one end than the other and being driven into the shoe from the opposite ends thereof.

4. A railway rail coupling device, comprising a shoe composed of a base member provided on its upper surface and inwardly of the opposite side edges thereof with upwardly and inwardly curved side wings or

flanges which range longitudinally of the shoe and which are adapted to overlap the base flanges of the rails and between which and said flanges of the rails are longitudinal spaces, wedges adapted to be driven into said spaces from the opposite end portions of the shoe and which when in position abut against the opposite side edges of the flanges of the rails and overlap said flanges and side plates adapted to be secured to the opposite sides of the web portions of the rails, the bottom surfaces of said side plates bearing on the top inner surface of said wings or flanges and the top surfaces of said side plates bearing on and fitting under the bottom side surfaces of the head or bearing portion of the rails. 15

In testimony that I claim the foregoing as my invention I have signed my name in presence of the subscribing witnesses this 20 9th day of May 1910.

SMITH FERRIS.

Witnesses:

C. E. MULREANY,
B. M. RYERSON.