

J. J. DUFFY.
AUXILIARY RAIL SUPPORT FOR TEMPORARY USE.
APPLICATION FILED NOV. 1, 1919.

1,353,572.

Patented Sept. 21, 1920.

2 SHEETS—SHEET 1.

Fig. 1.

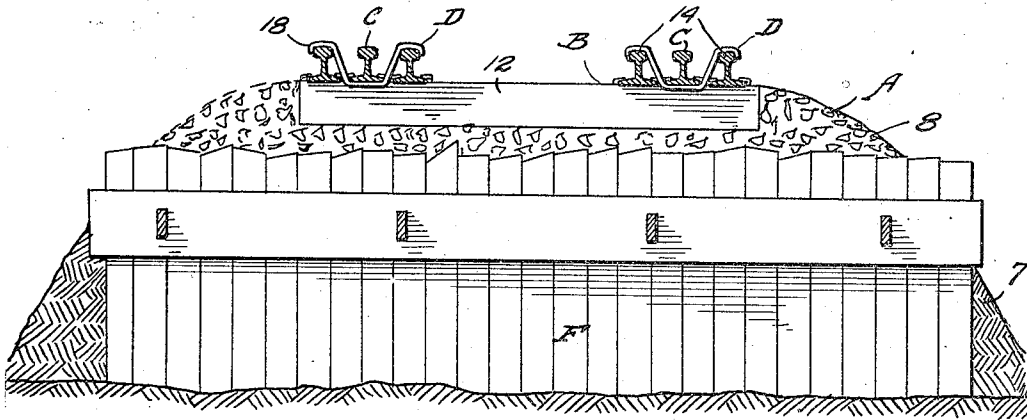
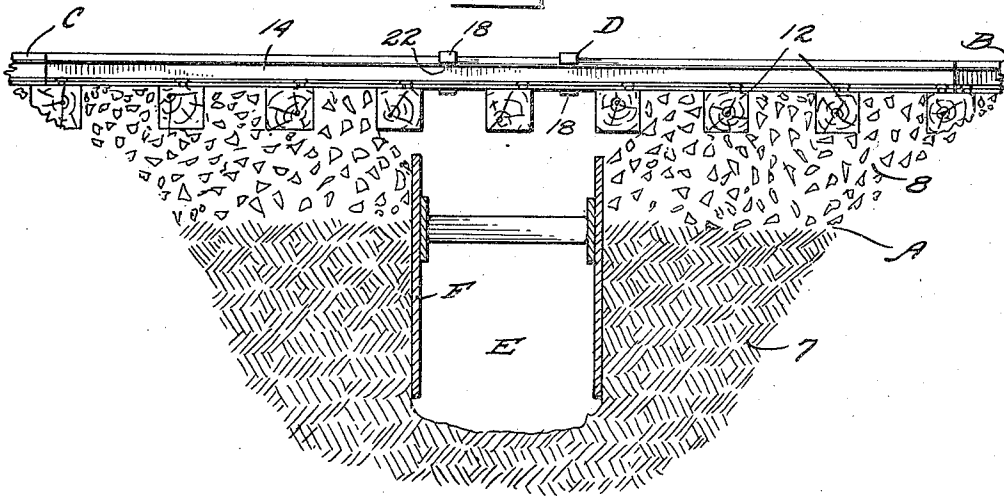


Fig. 2.



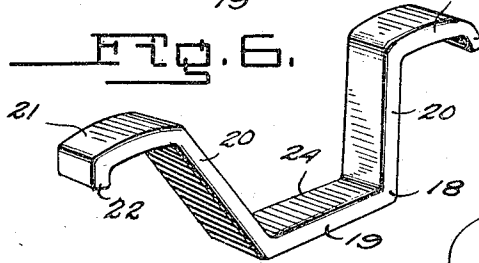
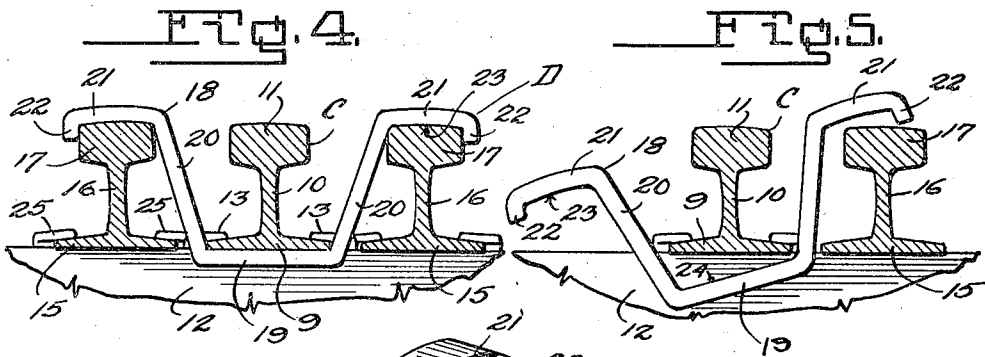
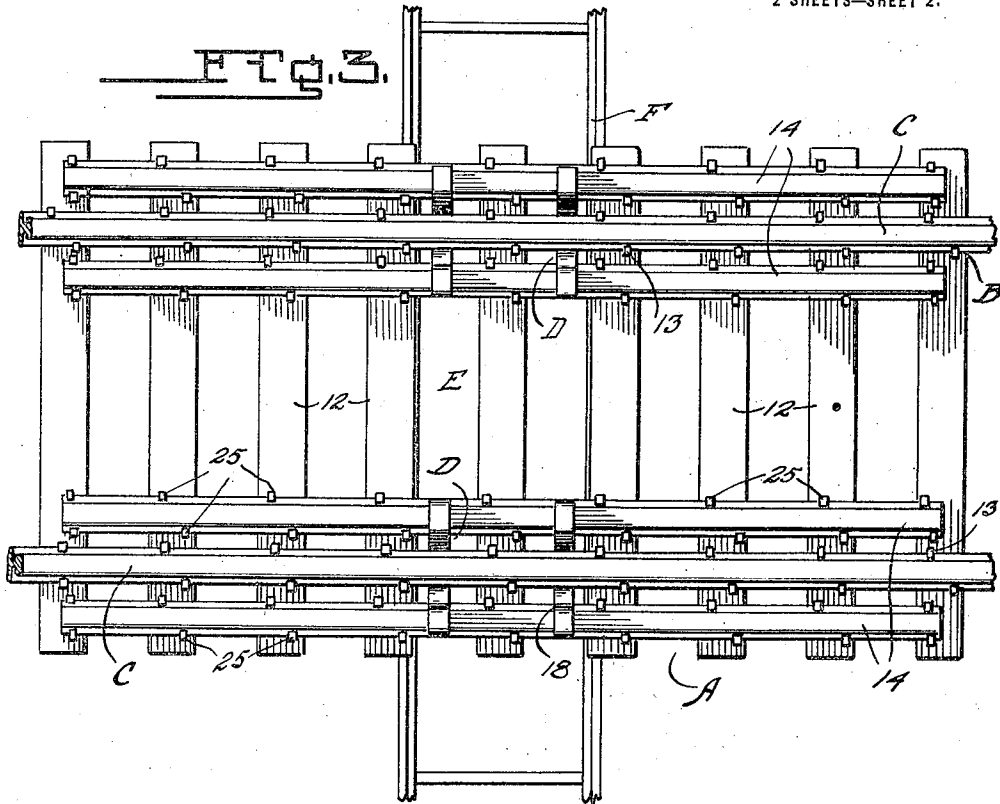
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UNITED STATES PATENT OFFICE.

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AUXILIARY RAIL-SUPPORT FOR TEMPORARY USE.

1,353,572.

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To all whom it may concern:

Be it known that I, JAMES J. DUFFY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Auxiliary Rail-Supports for Temporary Use, of which the following is a specification.

My present invention relates to supports for the rails of tracks, and more particularly to auxiliary supports intended for temporary use, as while excavating is being carried on beneath the track and until a permanent support is placed therebeneath.

The principal objects of my invention are, to provide supports which may be placed to aid a rail or rails of a track to safely sustain the load and withstand the forces coming thereupon, incident to trains moving thereover, while the usual road bed or other support of the track has been temporarily removed from beneath a portion of the rail or rails; to provide supports which may be quickly and conveniently placed into and removed from operative relation to the rail or rails rendering the support particularly well adapted for use in connection with track sections which are frequently used and where it is highly desirable not to impede traffic for any great length of time; and, to provide supports which are portable, simple in construction and assemblage, and relatively low in cost of manufacture, with little if any cost in upkeep, compared with the device or apparatus now in common use for the purpose set forth. This invention provides supports which may be readily transported to the sections where use is temporarily desired and without liability of shortage of some of the parts because of the relatively few parts required, and enables the rails to be temporarily supported at a relatively low cost in labor and equipment.

Another object of my invention is to provide a rail support which is of an auxiliary character in that it aids in supporting the rails which are mainly supported by firmly resting upon the cross ties at each side of the section where additional support is required because of the removal of a portion of the road bed.

A further object of the invention is to provide, as an article of manufacture, a device which may be used in conjunction with pieces of ordinary railroad rails disposed laterally and at each side of the rail to be

supported, and adapted to prevent lateral movement of said first mentioned rails with respect to the track rail, or vice versa.

Other objects and advantages of the invention will appear in the following detailed description, taken in connection with the accompanying drawings, forming a part of the specification, and in which drawings:

Figure 1 is a transverse sectional view through the super-structure of a railway, showing an excavation there beneath.

Fig. 2 is a view partly in side elevation and partly in section longitudinally of the railway.

Fig. 3 is a plan view of the same.

Fig. 4 is an enlarged detailed view partly in vertical transverse section and partly in elevation showing the support in place in operative relation to an ordinary track rail.

Fig. 5 is a similar view to Fig. 4 but showing one of the elements of the support being disposed in operative relation to another element thereof.

Fig. 6 is a perspective view of one of the elements of the support.

In the drawings, where similar characters refer to similar parts throughout the views, A designates generally the road bed supporting the track B, including rails C over which the trains pass; D an auxiliary support for the rails C; E an excavation in the road bed A; and F sheet piling which may be used to form walls for the excavation.

In the example shown, the road bed A is of that nature in which 7 designates ordinary earth and 8 ballast of rock, culm or the like, but it is to be understood that the invention is applicable to use in connection with foundations other than that indicated and that the work beneath the track or railway may be of a nature other than that requiring excavating, the principal object of the invention being to provide a temporary support wherever a portion of the road bed is removed.

The rails C are of the ordinary construction, that is, comprising a base 9, web 10 and head 11, and in the example shown are secured to cross ties 12 as by spikes 13, it being understood that the bases 9 of the rails rest upon or are in surface contact with the upper faces of the ties 12.

The auxiliary support for each rail comprises a pair of rails 14 preferably of the ordinary railway rail cross section, that is,

each rail comprising a base 15, web 16 and head 17; and one or more yokes designated generally by 18, the preferred formation of which will be hereinafter more fully set forth. The rails 14 are of such a length as to engage upon a number of the ties 12, as shown in Fig. 3 of the drawing, or in other words to have considerable surface contact with the ordinary supporting means of the track rails C, and when brought into use are disposed one at each side of the track rails to be supported, and longitudinally thereof.

In the example shown the yoke 18 is formed of a single piece of metal, such as a bar, of angular cross section and shaped to provide an intermediate portion 19 to engage, in surface contact, the underside of the base 9 of the track rail; and arms 20 extending upwardly from the intermediate portion 19, the end portion of each arm being shaped as indicated at 21 to embrace the head 17 of the rail 14. This is a formation by which the yoke may bear upon the rail 14, and by embracing the head thereof retain the rail at a fixed distance with respect to the rail C. It is preferred to dispose the arm 20 extending diagonally and upwardly from the intermediate portion 19, so that the rail 14 will be spaced a sufficient distance from the rail C to provide for wheel flange clearance, and yet form the yoke from a single bar of metal. It is also preferred to provide downwardly extending projections 22 on the end portions of the arm 20 of sufficient length and cross section to facilitate the assemblage of the support into operative relation to the rail and removal therefrom, as hereinafter described.

In the formation of these yokes 18 they are made so that the distance between the plane common to the underside 23 of portions 21 is at a distance from the plane of the upper face 24 of intermediate portion 19, equal to the height of the rail 14, and the face 24 is of a length equal to substantially the width of the base of rail C, as clearly shown in Fig. 4 of the drawing. Thus when the yoke is in assembled relation to the rail C and rails 14, all three rails may rest firmly upon the cross ties 12.

The best mode of assemblage I have found in practice to be as follows:

One or more of the yokes having been passed so as to dispose the intermediate portion 19 beneath the track rail, the yoke may be canted as shown in Fig. 5 of the drawing so that one of the rails 14 may be moved laterally into place longitudinally of the track rail beneath which excavation is to take place. The yoke is then moved so that its end portion 21 engages firmly the head 17 of the adjacent rail. This disposes the intermediate portion 19 into firm engagement with the underside of the base 9 of track rail C. A pinch-bar, or other

device, not shown in the drawing, may then be used, engaging the projections 22 at the side of the yoke opposite to the rail 14 which has already been assembled into place, and the rail C elevated sufficiently to permit the other rail 14 to be slipped into place longitudinally of the rail C, beneath the portion 21, after which the rail C, and yoke is permitted to return to a normal position. This may necessitate first releasing the spikes 13 for approximately an eighth of an inch in length, before the rail C is elevated. After the yokes are assembled into place, engaging the rails 14, spikes 25 may be used for the purpose of further securing the rails 14 into place, although they are primarily spaced, and held in spaced relation to the rail C by the preferred configuration of the yokes, as hereinbefore set forth.

Track supports of the character herein disclosed as the preferred embodiment, have been subjected to test and have been found to effectively aid in supporting the track rail when the ordinary road bed has been removed from beneath a portion of the track, and it is to be observed that in assembling the support in operative relation to the track rail it is not necessary to first excavate a considerable amount of the ballast from between the ties in order to place the yokes in operative relation to the track rail and that, with these yokes primarily disposed in operative relation to the rail, no great length of time is consumed in arranging the rails 14 in operative relation to the yokes. Likewise, when removing the auxiliary support, it is possible to tamp the ballast securely about the ties before removing the auxiliary support, or otherwise replace the road bed, for with the auxiliary support in place, the track rail C rests firmly upon the ties throughout its length.

While I have herein described the rails 14 as being of the ordinary cross section of railway rails, it is to be understood that this is with the view of convenience inasmuch as such rails are available and capable of functioning as described, and the yokes 18 may be made of a standard size to fit such rails, as well as the track rail, however, rails of other cross section, functioning as beams, may be used, and other changes in details made, without departing from the spirit of my invention; but,

I claim:

1. In an auxiliary rail support, the combination with a track rail, of a pair of rails disposed longitudinally, one at each side of said track rail, the bottom of the bases of all of said rails being in substantially the same plane, and a one piece yoke having bearing upon said pair of rails and the under surface of the base of said track rail.

2. In an auxiliary rail support, the com-

5 bination with a track rail, of a pair of rails disposed longitudinally, one at each side of said track rail, and a yoke provided with an intermediate portion engaging the base of the track rail and arms extending upwardly and diagonally from each side of said intermediate portion, the end portions of said arms bearing upon said pair of rails, the inclination of said arms being such as to space said pair of rails from said track rail sufficient to provide for wheel flange clearance.

15 3. In an auxiliary rail support for use over excavations, the combination with cross ties over the excavation and a track rail resting thereupon, of a pair of rails disposed longitudinally one at each side of said track rail, said pair of rails resting on the ties, and one or more one piece yokes having bearing on the heads of said pair of rails and the bottom face of the base of said track rail.

25 4. As an article of manufacture, a rail supporting yoke formed of a single piece of metal providing an intermediate portion to embrace the base of an ordinary track rail, and arms extending upwardly from each side of said intermediate portion, the ends of each arm shaped to embrace the head of an ordinary railway rail.

35 5. As an article of manufacture a rail supporting yoke formed of a single piece of metal providing an intermediate portion to fit the base of an ordinary track rail so as to prevent lateral movement of one with respect to the other, and arms extending upwardly from said intermediate portion, the end portion of each arm shaped to fit the head of an ordinary railway rail.

40 6. As an article of manufacture, a rail supporting yoke formed of a single piece of

metal providing an intermediate portion to embrace the base of an ordinary track rail, and arms extending upwardly and diagonally from each side of said intermediate portion, the end portion of each arm shaped to embrace the head of an ordinary railway rail.

50 7. As an article of manufacture, a rail supporting yoke formed of a single piece of metal providing an intermediate portion shaped for surface contact with the under surface of the base of an ordinary track rail, and arms leading upwardly from each side of said intermediate portion, the end portions of said arms shaped at their underside to conform to and for surface contact with the head of an ordinary railway rail.

60 8. As an article of manufacture, a rail supporting yoke formed of a single piece of metal providing an intermediate portion shaped for surface contact with the under surface of the base of an ordinary track rail, and arms leading upwardly from each side of said intermediate portion, the end portions of said arms shaped at their underside to conform to and for surface contact with the head of an ordinary railway rail, said end portions terminating in a downwardly extending projection as and for the purpose set forth.

75 9. In an auxiliary rail support, the combination with a track rail, of a pair of rails disposed longitudinally, one at each side of said track rail, the bottom of the bases of all of said rails being in substantially the same plane, and a yoke having permanently connected ends bearing upon said pair of rails and a permanently connected intermediate part bearing against the under surface of the base of said track rail.

JAMES J. DUFFY.