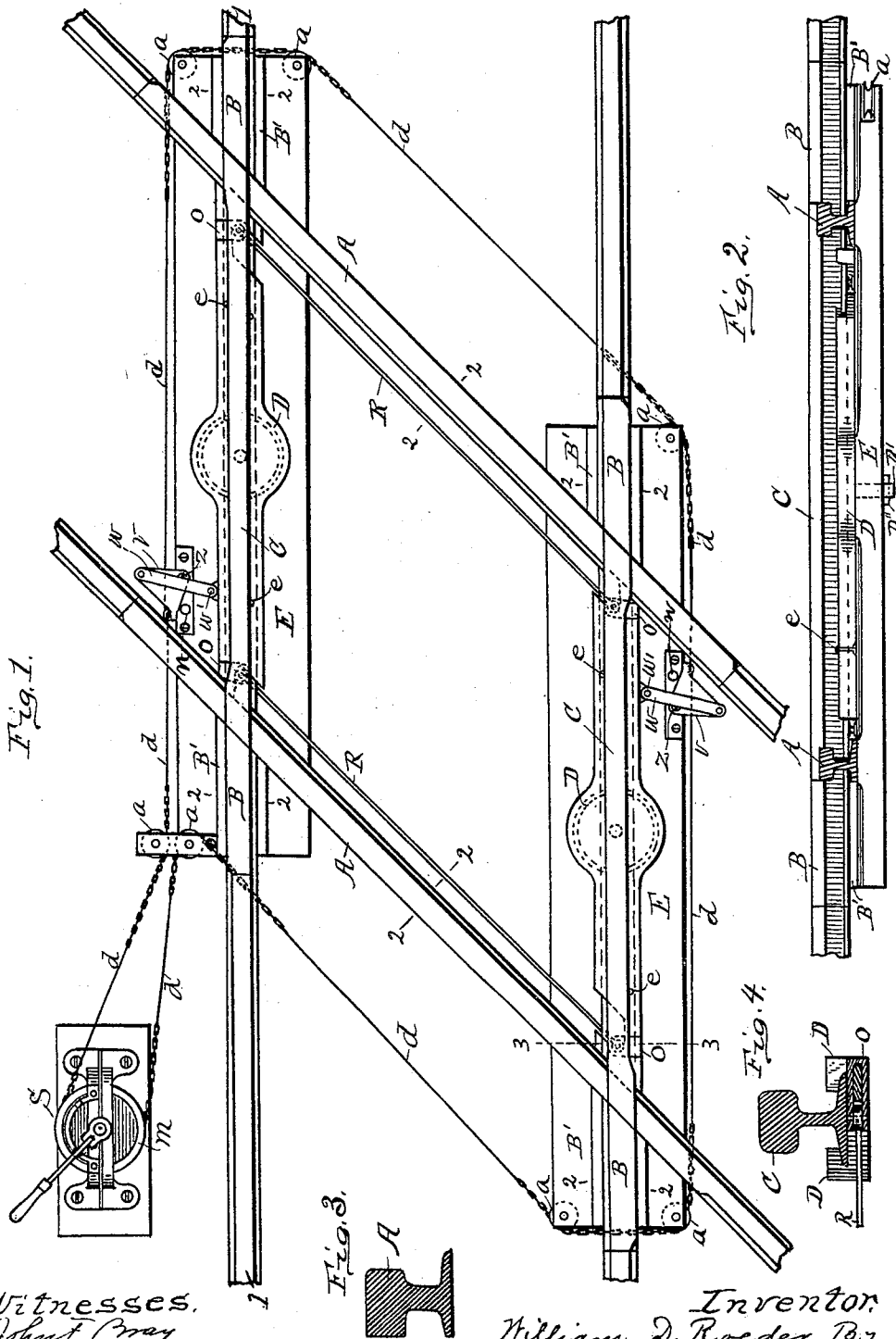


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RAILROAD CROSSING.

No. 582,879.

Patented May 18, 1897.



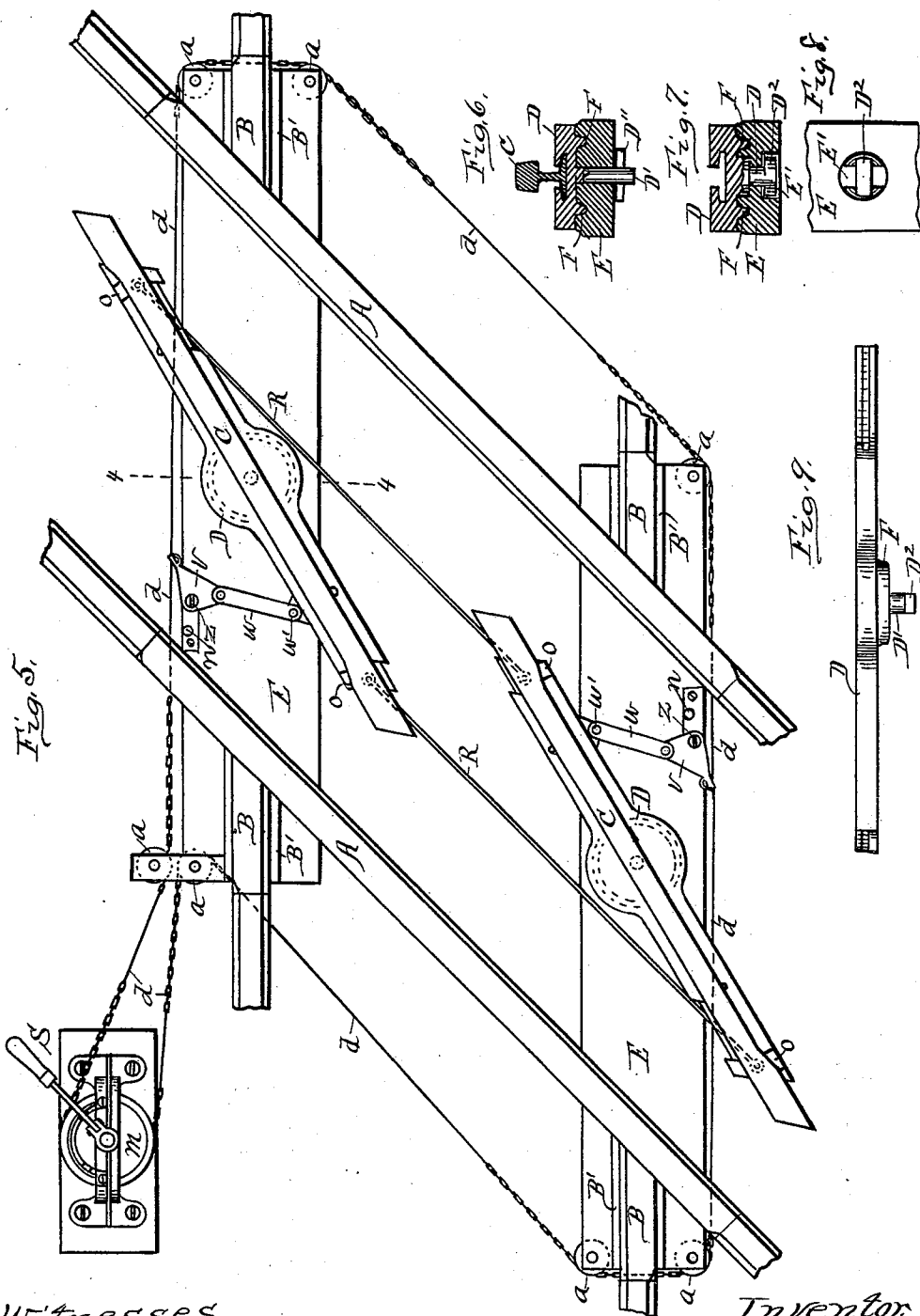
Witnesses.
John F. May
Geo. W. Bush.

Inventor.
William D. Roeder By
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UNITED STATES PATENT OFFICE.

WILLIAM D. ROEDER, OF DWIGHT, ILLINOIS.

RAILROAD-CROSSING.

SPECIFICATION forming part of Letters Patent No. 582,879, dated May 18, 1897.

Application filed February 4, 1897. Serial No. 622,581. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM D. ROEDER, a citizen of the United States of America, residing at Dwight, in the county of Livingston and State of Illinois, have invented certain new and useful Improvements in Railroad-Crossings, of which the following is a specification, reference being had therein to the accompanying drawings, and the letters of reference thereon, forming a part of this specification, in which—

Figure 1 is a plan view of the crossing as it would appear when the swing-rails are turned over the main rails, leaving the cross-rails open for traffic. Fig. 2 is a side elevation of one of the swing-rails and of its bolster and bed-sill, upon which the bolster rests, and a cross-section of the two main rails, taken on line 1 of Fig. 1, looking toward the top of the figure. Fig. 3 is a cross-section of the main rails, taken on line 2 of Fig. 1. Fig. 4 is a cross-section of one of the swing-rails and its bolster and a side view of a portion of one of the tie-rods connected with said bolster, taken on line 3, looking toward the right of the figure. Fig. 5 is a plan view of the crossing as it would appear when the swing-rails are turned to leave the main rails open to traffic. Figs. 6, 7, and 8 are detail views showing the devices for detachably connecting the swing-rails with the bolster, and Fig. 9 is a side view of one of the bolsters for supporting the swing-rails.

This invention relates to certain improvements in railroad-crossings of the class wherein the main rails are unbroken and in which swing-rails are used between the main rails and adapted to swing so their ends will extend over the main rails and form continuous cross-rails over the main rails, and in this instance is shown as a diagonal crossing, which improvements are fully set forth and described in the following specification and claims.

Referring to the drawings, C C represent a pair of rails forming sections of the cross-rails B B and arranged between the main unbroken rails A A and adapted to swing from the position shown in Fig. 1 to that shown in Fig. 5. The said cross-rails rest upon and are attached to a bolster D, which is pivotally connected at its center to the bed-beam E. The said bolster is formed with inwardly-pro-

jecting flanges, as shown in Figs. 4, 6, and 7, extending its entire length, for receiving between them the foot of the rail, as shown in Figs. 2, 4, and 6, and the rail is held from end movement in the said bolster by means of a bolt *e*. (Shown in Fig. 2.) This means of attachment permits the rail to be easily removed from the bolster in case the rail becomes worn or broken and a new one substituted without disturbing the bolster, and such attachment prevents the rail from being turned over or moved laterally on its bolster, the bolster being much wider than the rail and has more bearing on the bed or ties than an ordinary rail. The said bolsters are pivotally connected at their center with the bed-sill *E*, as shown in Figs. 6, 7, and 8.

In the present device the bolster is provided with a king-bolt *D'*, as shown in Fig. 6, which extends down through the bed-sill so a key *D''* may pass through it below the bed-sill, and thus attach the bolster to the sill. Said king-bolt may be integral with the bolster, as shown in said figure, or it may be a separate bolt having a head fitting a recess in the bolster, if desired. This mode of connecting the rail and bolster is deemed preferable when the crossing is a diagonal one, as shown. In a case where the bolster is used in a square crossing, where the rails C may swing to a greater extent than in a diagonal crossing, the bolster may have a king-bolt, as shown at D in Fig. 8, provided on its lower end with an integral button *D*², adapted to pass down through an eye *E'* of sill *E* when the swing-rail is turned parallel with the main rails, and after being thus passed through said eye locks the bolster to said bed-beam, as shown in said figure, when the swing-rail is turned at an angle with the main rails. By means of such connection of the said bolsters with the bed-sills the bolsters may be easily detached from the bed-sills for repairs or for substituting new ones. In order to further prevent lateral movement of the bolster on its bed-sill more than is afforded by the king-bolts, the bed-sill is provided with an annular groove surrounding the king-bolt and the bolster is provided with an annular flange *F*, fitting said groove, as is shown in Figs. 6 and 7 and in broken lines in Fig. 1. By means of supporting the swing-rails on the bolsters they are elevated

so their top surface is elevated above the top of the main rails, as shown particularly in Figs. 1 and 2, and they are formed on their ends so as to fit the sides of the main rails and in such manner as to extend over the main rails to meet the rails of the cross-track, as shown in said figures, so that the cross-rails pass over the main rails which are unbroken. The swing-rails C C are connected near their outer ends by means of the tie-rods R R, pivotally connected thereto in such manner as to permit said rails to swing from the position shown in Fig. 1 to that shown in Fig. 5. Said tie-rods prevent the swing-rails from being spread apart when trains pass over them and also cause the said swing-rails to turn together with more certainty. The means for turning said swing-rails is shown in Figs. 1 and 5. A bell-crank V is pivotally connected at Z with the bed-sill E. One arm of said bell-crank is pivotally connected to the side of the bolster near its outer end at W' by means of the link W, so that when the bell-crank turns it will, through the medium of said link, swing the rails C from the position shown in Fig. 1 to that shown in Fig. 5, to set the crossing for traffic on the main rails A, and back to the position shown in Fig. 1 to set the crossing for traffic on the cross-rails B, and when the bell-crank V and link W are in the position shown in Fig. 1 they form a lock for preventing the swing-rails from turning backward to the position shown in Fig. 5, and thus derail a train when crossing the main rails. In order to cause said bell-crank and link to form such lock, it is intended to have the end of the swing-rails engage the sides of the main rails immediately before the bell-crank has turned quite to its full throw, as shown in Fig. 1, and before link W has passed the point Z.

The greatest tension on the link W is when its pivot-points are in line with the pivot-point Z of the bell-crank. When the link is carried forward beyond said line, its tension on the swing-rail will cause it to stand locked in the position shown in Fig. 1, the bell-crank resting against a stop N to hold it in such locked position. The said bell-cranks are connected with each other and with a switch-stand S by means of the chains and rods d. The two ends of the chain d attach to the drum of the switch-stand and the chain passes around the crossing over sheave-wheels a, attached to the bed-sills E, as shown, and attaches to each of the bell-cranks V in such manner that movement of said chain in either direction will operate said bell-cranks to turn the swing-rails C from one position to the other, as shown in Figs. 1 and 5. Any other means for operating said bell-cranks may be used, if desired. The main rails A are formed to have a wider tread than ordinary rails, and such wider rail is intended to extend to some little distance each way from the crossing rails B. Fig. 3 represents a cross-sectional view of such main rail in its widened

portion. Such construction of the rail is intended to prevent old worn wheels, that are worn so as to be hollow on their periphery so their outer side will project down over the outside of the rail, from striking the cross-rails B as they pass along on the main rails A. The cross-rails C C are made wider at their ends over the main rails for the purpose of preventing such worn wheels from striking the main rails as they pass along on said crossing rails, and such widened ends that swing over the main rails are thus furnished with more metal, so they will not be so easily mashed and bent downward by the car-wheels. The ends of the swing-rails C C are prevented from having vertical movement, when car-wheels are passing over them, by means of their ends being formed to fit the contour of the side of the main rails, as shown in Fig. 2.

In operation it is intended that normally the crossing shall be set so as to leave the main rails A open to traffic, as shown in Fig. 5. When it is necessary for a train to cross the main track, the swing-rails C C are turned from a switch-stand, as at S, through the medium of said bell-crank and chain mechanism to the position shown in Fig. 1, thus forming a cross-track over the main rails. A diagonal crossing is shown in this case, but the rails may be arranged to form a square crossing, if desired.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows:

1. In a railroad-crossing the combination of the main unbroken rails A, swing-rails C having their ends formed to project over said main rails and fitting the contour of the side of the main rails to prevent vertical movement of the swing-rails, bolsters D centrally pivoted to a bed-sill, and having a longitudinal dovetail groove for receiving the swing-rail and means for securing said swing-rail in said groove, the tie-rods for pivotally connecting the outer ends respectively of said bolsters, the bell-cranks V pivotally connected to said bed-sill, the links W for connecting said bell-cranks and bolsters, and the means for operating said bell-cranks and links to turn said swing-rails, and lock them against the main rails substantially as and for the purpose set forth.

2. In a railroad-crossing, the combination of the swinging bolsters D pivotally attached to their center to the bed-sill E and having a longitudinal dovetail groove in its upper side, a rail-section C secured in the groove of said bolster and the bell-crank V and link W for connecting said bolster and bed-sill, and the means for turning said bolster and rail-section substantially as and for the purpose set forth.

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Witnesses:

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