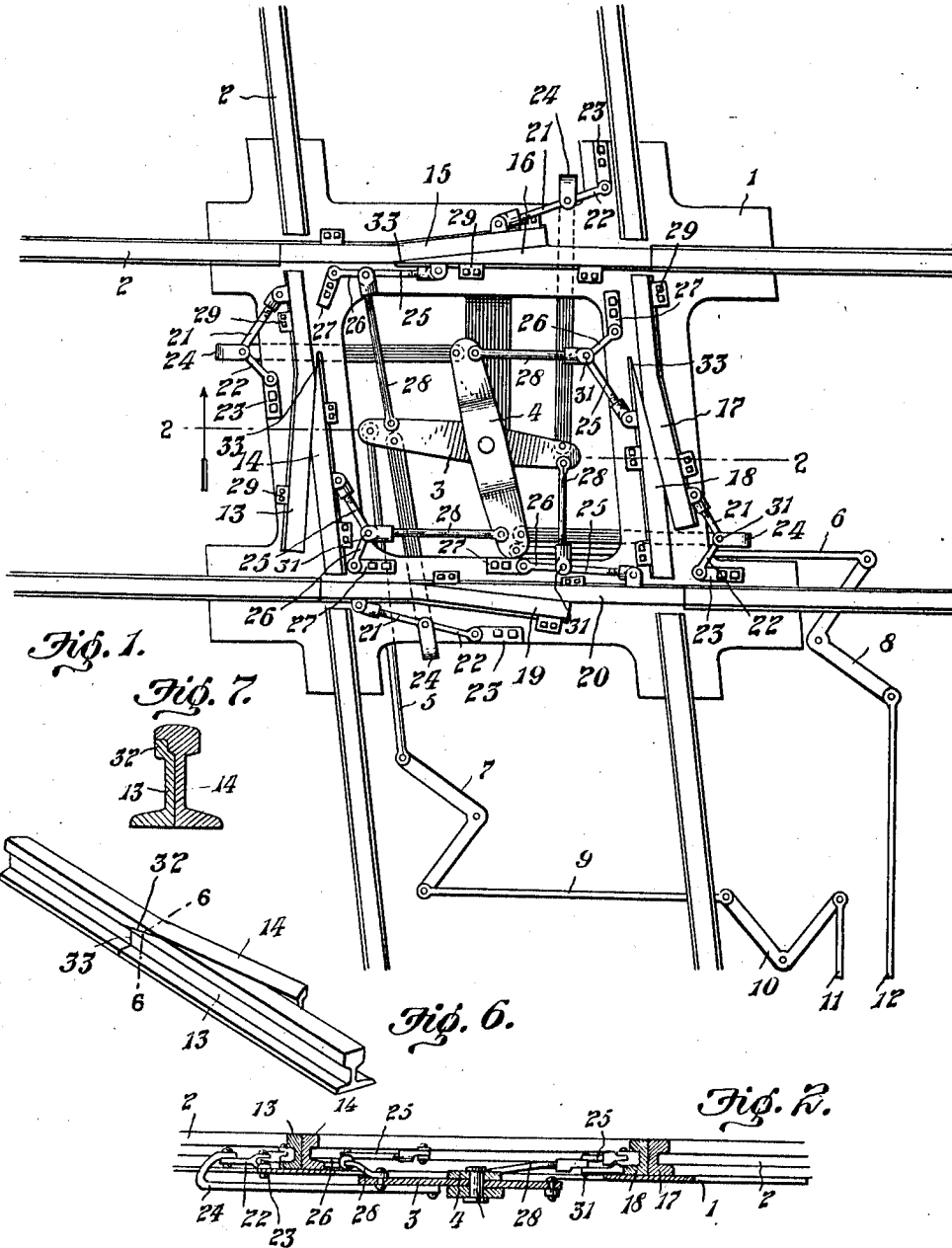


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RAILWAY CROSSING.
APPLICATION FILED FEB. 17, 1910.

1,004,261.

Patented Sept. 26, 1911.

2 SHEETS-SHEET 1.



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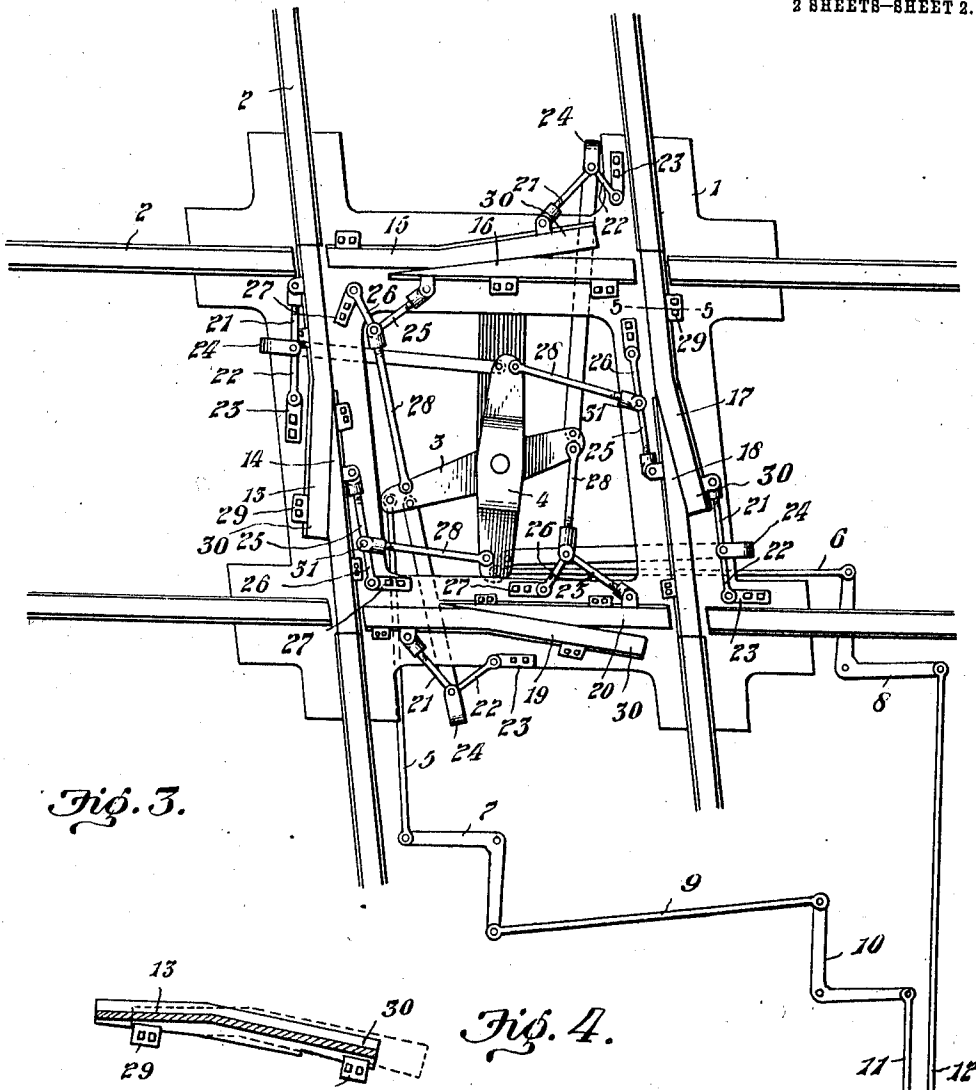


Fig. 3.

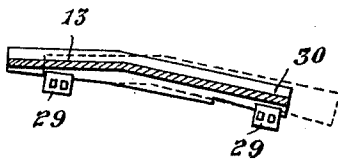


Fig. 4.

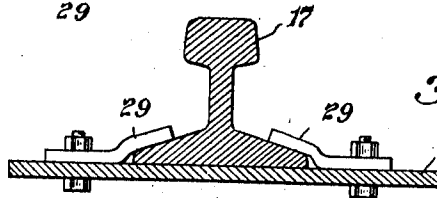


Fig. 5.

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ANDREW HOLLINGER, OF CANTON, OHIO.

RAILWAY-CROSSING.

1,004,261.

Specification of Letters Patent. Patented Sept. 26, 1911.

Application filed February 17, 1910. Serial No. 544,510.

To all whom it may concern:

Be it known that I, ANDREW HOLLINGER, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Railway-Crossings; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, and to the numerals and figures of reference marked thereon, in which—

Figure 1 is a top plan view showing the different parts or members of the crossing set for the passage of trains from right to left. Fig. 2 is a section on line 2—2, Fig. 1. Fig. 3 is a top plan view showing the different parts or members of the crossing set for the passage of trains from top to bottom of the figure. Fig. 4 is a longitudinal section of one of the outer reciprocating or sliding rails. Fig. 5 is a transverse section on line 5—5, of Fig. 3. Fig. 6 is a detached view of one pair of the reciprocating railway crossing members. Fig. 7 is a transverse section on line 6—6, Fig. 6.

The present invention has relation to railway crossings and it consists in the novel arrangement hereinafter described and particularly pointed out in the claims.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

In the accompanying drawings, 1 represents the bed plate which is formed of sufficient size to constitute the proper foundation for the various movable parts designed to be connected to said bed plate. To the bed plate 1 are also attached the adjacent ends of the main track rails 2, which rails are connected in any convenient and well known manner.

To the bed plate 1 are independently pivoted the rock bars or levers 3 and 4, to which rock bars or levers are pivotally connected the actuating bars 5 and 6; the opposite ends of said bars being pivotally connected to the bell cranks or levers 7 and 8. To the bell crank 7 is pivotally attached the link bar 9, said link bar being also pivotally attached to the bell crank or lever 10. The bell cranks 7, 8 and 10 are held in fixed relationship with reference to each other and to the bed plate 1 by means of suitable foundation work which may be of any construction

common in railroad structures pertaining to railway tracks. To the bell cranks 8 and 10 are connected the tower operating rods 11 and 12, which rods may be of any desired length, and are extended to the tower and are operated by suitable levers such as are employed in the operation of switches and railroad crossings. The tower operating levers and mechanism connected therewith is not illustrated as such parts do not pertain to or form any specific part of the present invention. The crossing rails or members are made up of eight distinct and separate parts and constitute four separate and distinct pairs, which are numbered 13 and 14, 15 and 16, 17 and 18, 19 and 20. The members 13, 15, 17 and 19 are the outer members and the members 14, 16, 18 and 20 are the inner members, said inner and outer members are arranged in pairs or sets and are slidable endwise with reference to each other so that the crossing rails proper can be lengthened and shortened by means of which a continuous rail connection or tread is provided for the passing of trains regardless of the direction of travel.

For the purpose of providing means for imparting reciprocating or sliding movement to each of the outer crossing rails they are each provided with the pivotally connected links 21, four in all and to these links are pivotally connected the links 22, which last mentioned links are pivoted at their outer ends to the fixed plates 23 or their equivalents. For the purpose of operating the links 21 and 22 they are connected at their inner ends to the bars 24, which bars are also connected to the rock bars or levers 3 and 4 respectively.

To the inner cross rail members are pivotally connected the links 25, which are all of substantially the same construction and are connected to the heel and point ends of the inner rails respectively and substantially as shown in the drawings. To the links 25 are pivotally connected or joined the links 26, which links are pivoted to the fixed plates 27 or their equivalents. The various links 26 and 27 are pivotally attached to the rock bars 3 and 4, respectively, by the bars 28.

It will be understood that the various links 21 and 22 and 25 and 26 constitute what might be termed toggle joint connections, owing to the fact that one link of each of the eight sets of links or toggle joint connections

is pivoted at a fixed point and the eight sets have their inner ends pivotally connected together and operated by the various link and bar connections.

5 It will be understood that when the tower operating rod 12 is actuated two parallel sets of railroad crossing rails or members will be lengthened or shortened, reference being had to the direction of motion of the tower actuating rod 12, and when the tower actuating rod 11 is actuated the opposite angled sets or members of the crossing rails or members will be actuated and lengthened or shortened, reference being had to the direction of motion of the tower actuating rod 11. This lengthening and shortening of the various sets of crossing members or rails is brought about by the rocking movement of the rock bars or levers 3 and 4 together with the intermediate connecting links.

20 It will be understood that the rocking movement of the rock bars or levers 3 and 4 should be independent and must be independent of each other in order that a predetermined adjustment of the railway crossing rails or members can be made. In order that a clear understanding may be had let it be assumed that at the crossing the various tracks run east and west and north and south, and when it is desired to set the crossing for an east or west bound train the crossing track members running east and west are lengthened and the north and south crossing members are shortened, thereby bringing the east and west track members into such a position, which is the lengthening one to produce a continuous rail, thereby removing the jar of the train or in other words providing room for the flanges of the wheels upon a passing train between the ends of the shortened crossing track members and the lengthened crossing track members.

40 It will be understood that provision must be made for properly holding the various track crossing members in proper relative position with reference to each other and with reference to the main track rails 2, and in order to provide for thus holding the various track rail members or crossing the retaining clips 29 are provided, which clips are of the usual construction and are secured to the bed plate 1 in any convenient and well known manner. It will be understood that these clips should be so arranged that they will permit endwise movement of the various track rail members of the crossing.

60 It is well understood that the crossing rails or members should be maintained in proper alinement with the main track rails when trains pass or move over and upon the crossing rails or members, and in order to properly maintain the necessary alinement the inner track crossing members move in a true endwise or reciprocating movement, but the outer rails or track crossing members come

and go or move in a lateral direction at what might be termed their heel ends 30, but this movement is only slight and must necessarily be slight in order to maintain the proper alinement when said outer members are brought into position to carry the wheels of a passing train. It therefore follows that the clips 29 should be so adjusted with reference to the outer track crossing rails or members to permit their slight lateral movement.

70 It will be understood that suitable connecting bolts or rivets 31 must be provided to properly connect the various links 21—22 and 25—26 together at their inner ends and also the various links or bars which are connected to the aforesaid links.

80 It will be understood that by my peculiar arrangement the manner of operating the various members of the crossing proper a continuous track is provided for each railway track or in other words a continuous east and west track is provided or a continuous north and south track is provided or any other directions. It, of course, being understood that various angles may be provided for, rather than a right angled crossing.

85 It is well understood that railway crossings of the character to which this invention pertains are generally at the intersection of two or more distinct and separate companies or systems, and it is of importance that each company's track be substantially independent, or in other words that there be no direct connection made as between the rails of the different companies so that whatever wear there is upon the rails by the passing of trains will be entirely upon the company's rails operating the trains.

100 It will be observed as for instance in Figs. 1 and 3 the respective tracks of the respective companies are entirely independent and that there is no connection as between the rails of the two companies by providing the four pairs of sliding or adjustable rails two pairs are located in one company's tracks or track and the remaining two pairs in the other company's tracks or track and that the entire wear of trains is confined to the company's tracks used.

110 It will be understood that owing to a slight lateral movement of the outer crossing members 13, 15, 17 and 19 at their heel ends 30 said outer members should be slightly angled or in other words the heel portions located at an angle to the main track rails so that the clips 29 will at all times hold the heel ends of said members in proper position, or in other words that there will be no looseness as between said clips and the track rails, regardless of the position of said crossing members. It will be understood that by forming the heel ends of the outer crossing members at a slight angle to the remaining portions of said crossing members, that the

clips at all times will properly hold the heel ends of the outer crossing members regardless of their positions.

Each of the outer members of the railway crossing members 13, 15, 17 and 19 are provided with the beveled flange 32 upon their inner sides, the beveled surfaces of which are located on the underside of the flange as best illustrated in Fig. 6. The beveled flanges 32 are for the purpose of shielding the extreme pointed ends 33 of the inner railway crossing members 14, 16, 18 and 20. The flanges 32 are so located that when the crossing members are expanded or set for the passage of trains the flanges 32 will come over the points 33 as best illustrated in Fig. 7. This bringing over of the flanges is brought about by the slight lateral movement of the outer railway members. It will also be understood that the pointed portion of the inner railway members constitutes a support for the outer railway crossing members, owing to the fact that the pointed ends are brought under the flanges 32 as illustrated in Fig. 6.

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

1. In a railway crossing, a bed plate, slidable railway crossing members constituting pairs and each pair located parallel with reference to each other, independent rock bars or levers located within the boundary of the slidable railway crossing members, a series of links pivoted to the rock bars, a second series of links pivoted to the sliding crossing members and to fixed points, tower operating rods and intermediate rods and bell cranks, said intermediate rods adapted to actuate the rock bars and the rocking of the bars adapted to impart reciprocating movement to the railway crossing members, substantially as and for the purpose specified.

2. In a railway crossing, the combination of a fixed bed plate, slidable crossing members, said slidable crossing members having connected thereto two series of links, one series connected to the outer railway crossing members and the other series connected to the inner crossing members, rock bars independently pivoted to the bed plate and a series of links adapted to connect the two series of links in operative relationship with the slidable crossing members and means intermediate the tower and the independent rock bars or members adapted to independently actuate said rock bars or members, substantially as and for the purpose specified.

3. In a railway crossing the combination of a bed plate, slidable members formed in

pairs and each pair adapted to constitute a continuous railway rail and adapted for longitudinal adjustment, a series of toggle joints operatively connected to the slidable railway crossing members, rock bars independently pivoted to the bed plates, links connected to the toggle joints and to the rock bar and means for independently actuating the rock bars, substantially as and for the purpose specified.

4. In a railway crossing of the class described, a bed plate, main railway crossing tracks located at an angle to each other, railway crossing members formed in pairs and each pair adapted for reciprocating movement, portions of each outer member adapted for lateral movement to the path of its longitudinal movement, said outer members provided with flanges, the inner members of the railway crossing members provided with pointed ends and the pointed ends adapted to be located under the flange of the outer members, substantially as and for the purpose specified.

5. In a railway crossing of the class described, a bed plate, main railway crossing tracks located at an angle to each other, railway crossing members formed in pairs and each pair adapted for longitudinal adjustment with reference to each member of each pair, the outer members of the pairs provided with a flange and the inner member provided with pointed ends and the flanges of the outer members adapted to move over and cover the pointed ends of the inner members when the crossing members are extended, substantially as and for the purpose specified.

6. In a railway crossing of the class described, a bed plate, main railway crossing tracks located at an angle to each other, railway crossing members formed in pairs and each pair adapted for longitudinal adjustment with reference to each member of each pair, the outer members of the pairs provided with a flange and the inner member provided with pointed ends and the flanges of the outer members adapted to move over and cover the pointed ends of the inner members when the crossing members are extended, and means for imparting independent sliding movement to each member of each pair of the crossing members, substantially as and for the purpose specified.

In testimony that I claim the above, I have hereunto subscribed my name in the presence of two witnesses.

ANDREW HOLLINGER.

Witnesses:

SYLVIA BORON,
F. W. BOND.