

No. 755,730.

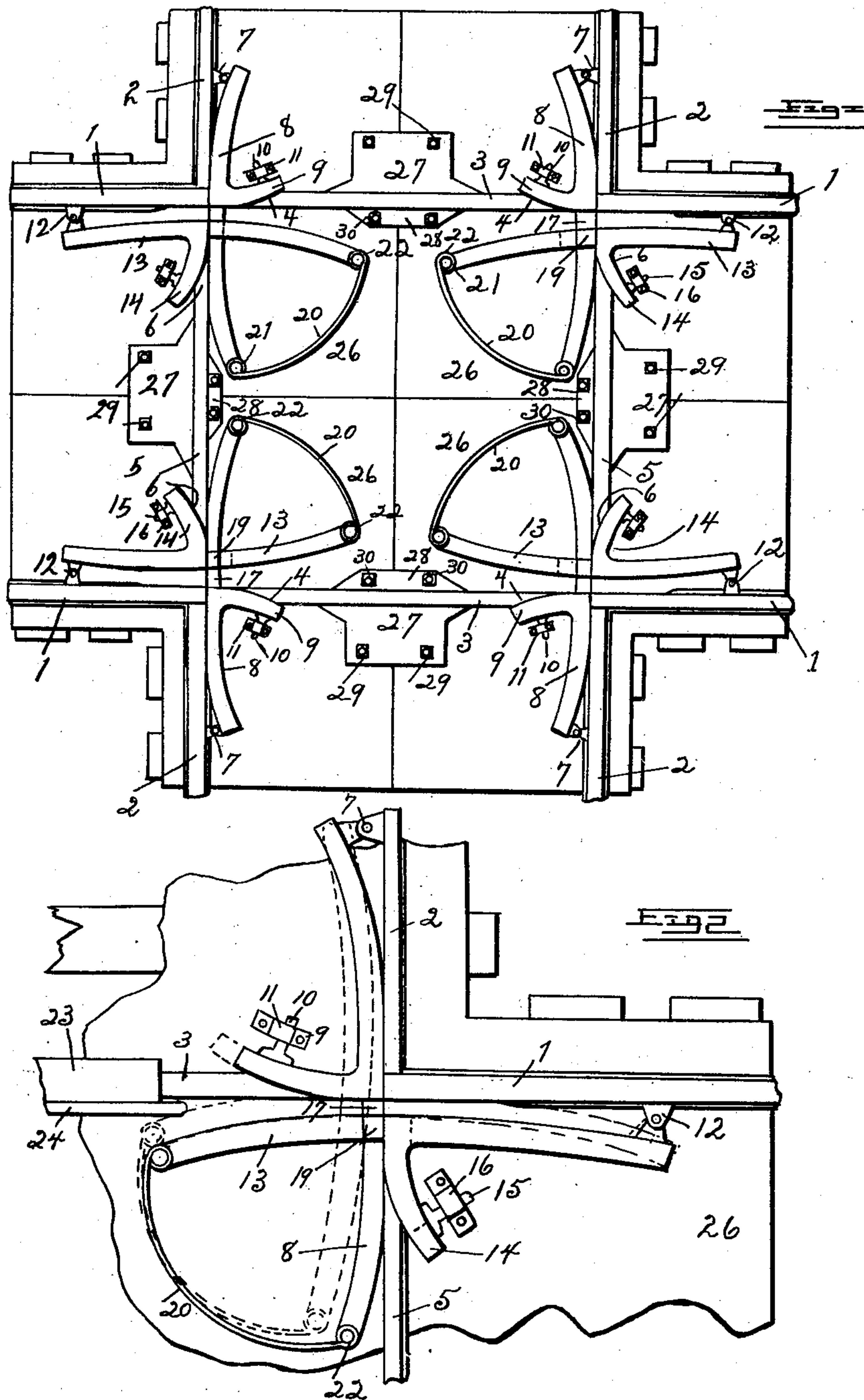
PATENTED MAR. 29, 1904.

G. W. WILLEBRANDS.  
RAILROAD CROSSING.

APPLICATION FILED NOV. 29, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



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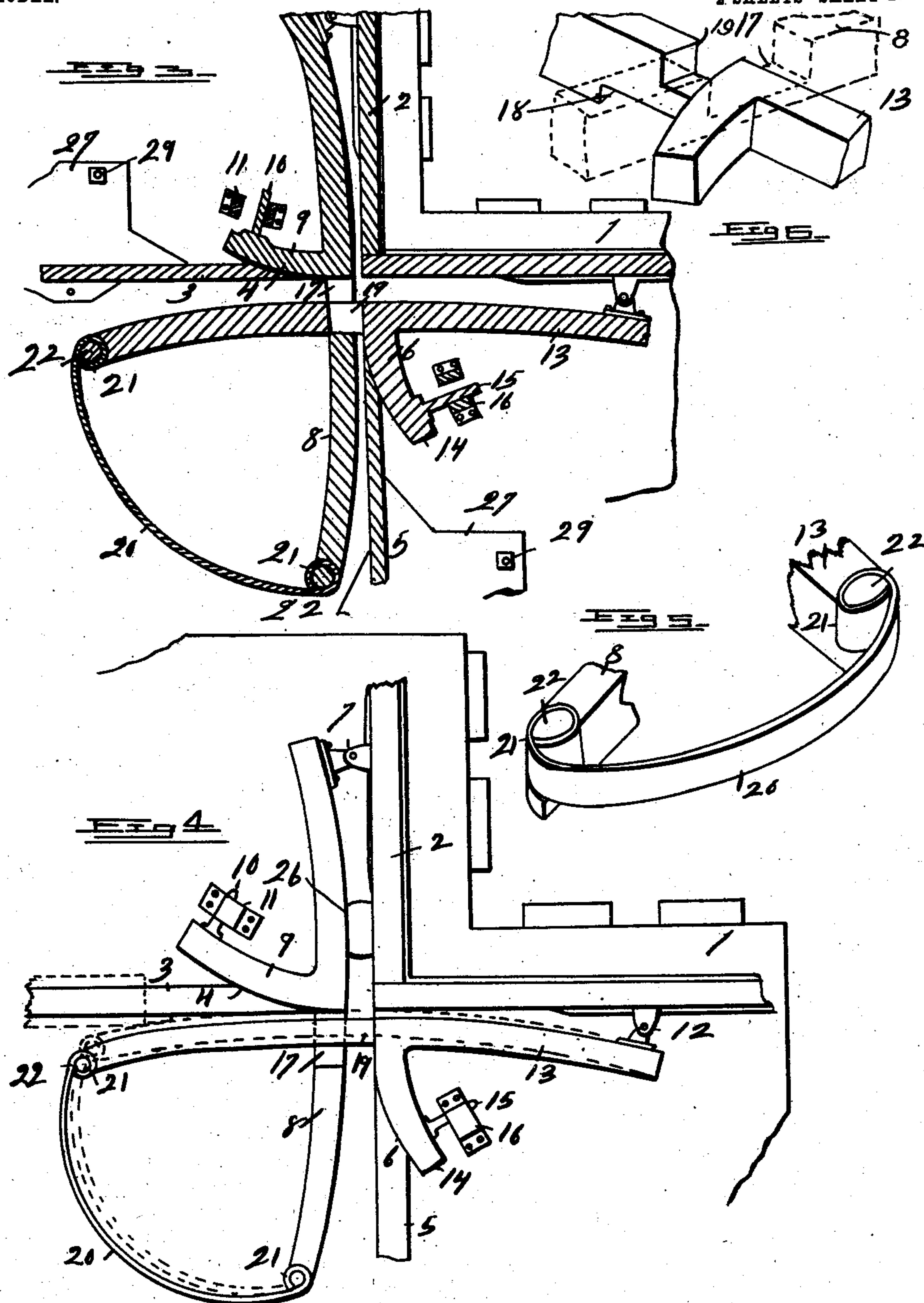
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# UNITED STATES PATENT OFFICE.

GEORGE W. WILLEBRANDS, OF DETROIT, MICHIGAN.

## RAILROAD-CROSSING.

SPECIFICATION forming part of Letters Patent No. 755,730, dated March 29, 1904.

Application filed November 29, 1902. Serial No. 133,301. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE W. WILLEBRANDS, a citizen of the United States, residing at Detroit, in the county of Wayne, State of Michigan, have invented certain new and useful Improvements in Railroad-Crossings; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to railway-crossings; and it consists in the construction and arrangement of parts, hereinafter fully set forth, and pointed out particularly in the claims.

The primary object of this invention is to provide in a simple and efficient manner for obviating the jumping of the wheels between the intersecting rails by affording a continuity of the rails at the intersecting point over which the train is passing.

A further object is to provide for automatically establishing the continuity of the rails should there be an opening in said rails when the crossing is reached.

A further object is to provide against a possible derailing of a train by blocking the movable members or rail-sections, which are automatically actuated to establish a continuity of the track.

The above objects are attained by the structure illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a railway-crossing involving my invention. Fig. 2 is a similar view of four intersecting rails, showing by dotted lines the movement of the parts through contact of the wheel therewith for establishing a continuity of the rail over which the wheel is passing. Fig. 3 is a horizontal section through the rails and movable sections in the position shown by solid lines in Fig. 2. Fig. 4 is a plan view of Fig. 3, showing by stipple lines the normal position and by solid lines the movement of the spring connection between the movable members, which will yield sufficiently when one of the sections is blocked to allow of the passage of the

wheels of the cars. Fig. 5 is a fragmentary view in perspective of the spring connecting-rod which unites the ends of the movable sections of the intersecting rails. Fig. 6 is a perspective view in detail, showing the movable sections at their point of crossing, other parts being broken away.

Referring to the characters of reference, 1 designates the rails of a railroad-track, and 2 the rails of an intersecting track whose meeting ends abut. Interposed between the ends of the rails 1 at the crossing are the short rail-sections 3, whose terminals are beveled, as at 4, and interposed between the rails 2 are the short rail-sections 5, whose terminals are beveled, as at 6. To the rail-sections 2 are hinged at 7 the movable rail-sections 8, which extend across the opening between the ends of the rails 1 and the short rail-sections 3 and are provided with a curved member 9, adapted to lie within the bevel at the terminals of the short rail-sections 3 and effect a continuity of the rails 1 and 3 by closing the opening between their opposed ends, as shown in Fig. 1.

Projecting from the curved member 9 of the movable sections 8 is an arm 10, which is made to slide under a guideway 11, whereby the movable section 8 is steadied in its movement.

Hinged at 12 to the rails 1 are the movable sections 13, which extend across the opening between the rails 2 and the interposed rail-sections 5 and have curved members 14, which lie within the beveled terminals of the interposed sections 5 and serve when the sections 13 are moved to the proper position to establish a continuity of the track between the interposed sections 5 and the rails 2. Each of the curved members 14 of the sections 13 is provided with a projecting arm 15, which engages under a guideway 16, thereby guiding the sections 13 in their movement and holding them more securely in place.

On referring to Fig. 6 it will be seen that each of the movable sections 13 extends across and lies upon its companion section 8, which in said view is indicated by stipple-lines and is provided in its upper face with a notch or recess 17, in which the section 13 may move, while said section 13 is provided in its under



face with a recess 18 to accommodate the movement of the section 8. In the upper face of the section 13 is a recess 19 for the passage of the flange of the wheel when the parts are in position to establish a continuity of the track between the rails 2 and the interposed sections 5.

Extending between the inner ends of each pair of the movable companion sections 8 and 13 is a spring connecting-rod 20, having an eye 21 at each end thereof, adapted to pivotally receive a pintle 22 on the end of each of the sections 8 and 13. By means of this connecting-rod the movable sections joined thereby are caused to move in unison, so as to alternately establish a continuity of the track between the rails 1 and the interposed sections 3 and the rails 2 and the sections 5.

It will be observed that the outer ends of the movable sections 8 and 13 are curved away from the rails of the track, so as to allow of the entrance of the flange of the wheels between the rails and said movable sections without regard to the direction in which the train is moving. It will also be seen that the major portion of the movable sections between the curved ends thereof is adapted to lie contiguous to the track-rails.

In illustrating the operation of this automatic crossing reference will be made more particularly to Fig. 2, wherein 23 illustrates the wheel upon the track-section 3, with its flange 24 entering between the rail and the curved end of the section 13, whose original position and the position of the movable section 8 is shown by stipple-lines. As the flange of the wheel enters between the rail and the curved face of the movable section 13 said section is moved over to the position shown by solid lines, thereby moving the section 8, so as to cause its curved member 9 to move into the opening between the opposed ends of the rails 3 and 1, thereby filling said opening to effect a continuity of the track between said rails and obviate the jumping of the wheels from the end of one rail to the other, as is common in ordinary crossings. While the parts remain in the position shown in Fig. 2 the passage of a train over the rails 1 in either direction will have no further action upon the movable sections, but said sections will remain in the position shown to maintain the continuity of the rails of track. Should a train pass along the rails 2 of the intersecting track, the flanges of the wheels will engage the curved ends of the movable sections 8 and swing them inwardly, as shown by dotted lines in Fig. 2, thereby moving the sections 13 through the connecting-rods 20 to carry their curved members 14 across the opening between the beveled ends of the rail-sections 5 and the main rails of the track, thereby establishing a continuity of the track-rails 2 at the crossing over which the wheels may pass, as shown by the dotted position in Fig. 2. It will be seen that the inner curved

ends of the movable sections are longer than the curved members 9 and 13 carried thereby, so that said curved members are moved into position to close the opening between the ends of the track-rails before the weight of the train is borne thereon. It will be observed that the operation of the movable sections to establish a continuity of the rails of the track is purely automatic and that a continuous bearing for the wheels is provided for trains crossing upon the intersecting tracks in either direction.

To provide against a possible derailing of the train through a blocking of either of the movable sections by the wedging of some obstruction between them and the rails of the track, as shown at 25 in Fig. 4, the connecting-rod 20 between the movable sections is made in the form of a bow-spring sufficiently rigid to normally impart movement from one section to the other, yet capable of yielding should one of the sections become blocked to allow the section engaged by the flange of the wheels to move away sufficiently from the rails of the track to allow the passage of the flanges without danger of derailing the train, which movement is illustrated by dotted lines in Fig. 4.

To insure stability of the parts at the crossing, four iron plates 26 are laid upon the ties and the parts of the crossing are mounted thereon. It will be seen that the interposed rail-sections 3 and 5 are comparatively short, and in order to enable them to be securely retained in place they are provided with the lateral flanges 27 and 28, extending from the base thereof, which are bolted at 29 and 30 to the plates 26, whereby said short sections are prevented from being crowded out of place by the passage of the wheels of the train.

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

1. In a railroad-crossing, the combination with the main rails of the tracks, of the short rails interposed between the main rails, the movable sections adapted to move into position to fill the opening between the main rails and the interposed short rails by contact of the wheel, said movable sections being directly connected so as to operate in unison.

2. In a railroad-crossing, the combination of the main track-rails having openings therein at the junction of said rails, a pair of movable members at each of said junctions adapted to move into said openings to establish a continuity of the rails, and to move out of said openings to allow of the passage of the flange of the wheels, means connecting each pair of said movable members together to cause them to move in unison.

3. In a railroad-crossing, the combination of the main track-rails, short rails interposed between the main rails and spaced at their ends therefrom, movable sections carrying members adapted to fill the space between the main rails and the short interposed rails, said



movable sections being connected so that by a movement of one section the other is actuated to cause its closing member to fill the space between the ends of the short rails and the main rails of the track.

4. In a railroad-crossing, the combination of the main rails, the short rails interposed between the main rails and spaced therefrom, movable sections lying between the ends of the short rails and the main rails, having extending members adapted to fill the space between said rails, the ends of said movable sections lying contiguous to the rails of the track in one position, and a cross-bar connecting the ends of said movable sections to impart the movement of one section to the other.

5. In a railroad-crossing, the combination of the main rails having openings therein at the point of crossing, movable sections carrying members adapted to fill said openings to effect a continuity of the track, each of said sections being adapted to receive movement from engagement with the flange of the wheel, and a connection between said movable sections whereby the movement imparted to one of said sections by the passage of the wheel actuates the other of said sections to carry the member thereon into the opening between the rails.

6. In a railroad-crossing, the combination of the main rails of the track, short rails interposed between the main rails having beveled ends which are spaced from the main rails, movable sections having curved members which coincide with the bevel of the ends of the short rails, and are adapted to fill the

space between them and the main rails to establish a continuity of the rails of the track, a connecting-rod pivoted to the ends of said movable sections whereby the movement of either section by the passage of the wheel of the car will impart movement to the other section and carry its curved member into position to effect a continuity of the rail over which said wheel is passing.

7. In a railroad-crossing, the combination with the main rails, the short rails interposed between the main rails and spaced therefrom, movable sections carrying members adapted to fill the space between the short rails and the main rails, a connecting-rod between said movable sections to impart movement from one to the other, said connecting-rod being in the nature of a spring which will allow a movement of one section without movement of the other should the section to which movement is imparted by said rod become locked.

8. In a railroad-crossing, the combination of the main rails, the short rails interposed between the main rails, movable sections adapted to establish a continuity of the track between the main rails and the short rails, base-plates upon which said parts are mounted, flanges upon said short rails, and bolts passing through said flanges and through said plates.

In testimony whereof I sign this specification in the presence of two witnesses.

GEORGE W. WILLEBRANDS.

Witnesses:

E. S. WHEELER,  
M. C. POOLE.