No. 840,501. PATENTED JAN. 8, 1907.

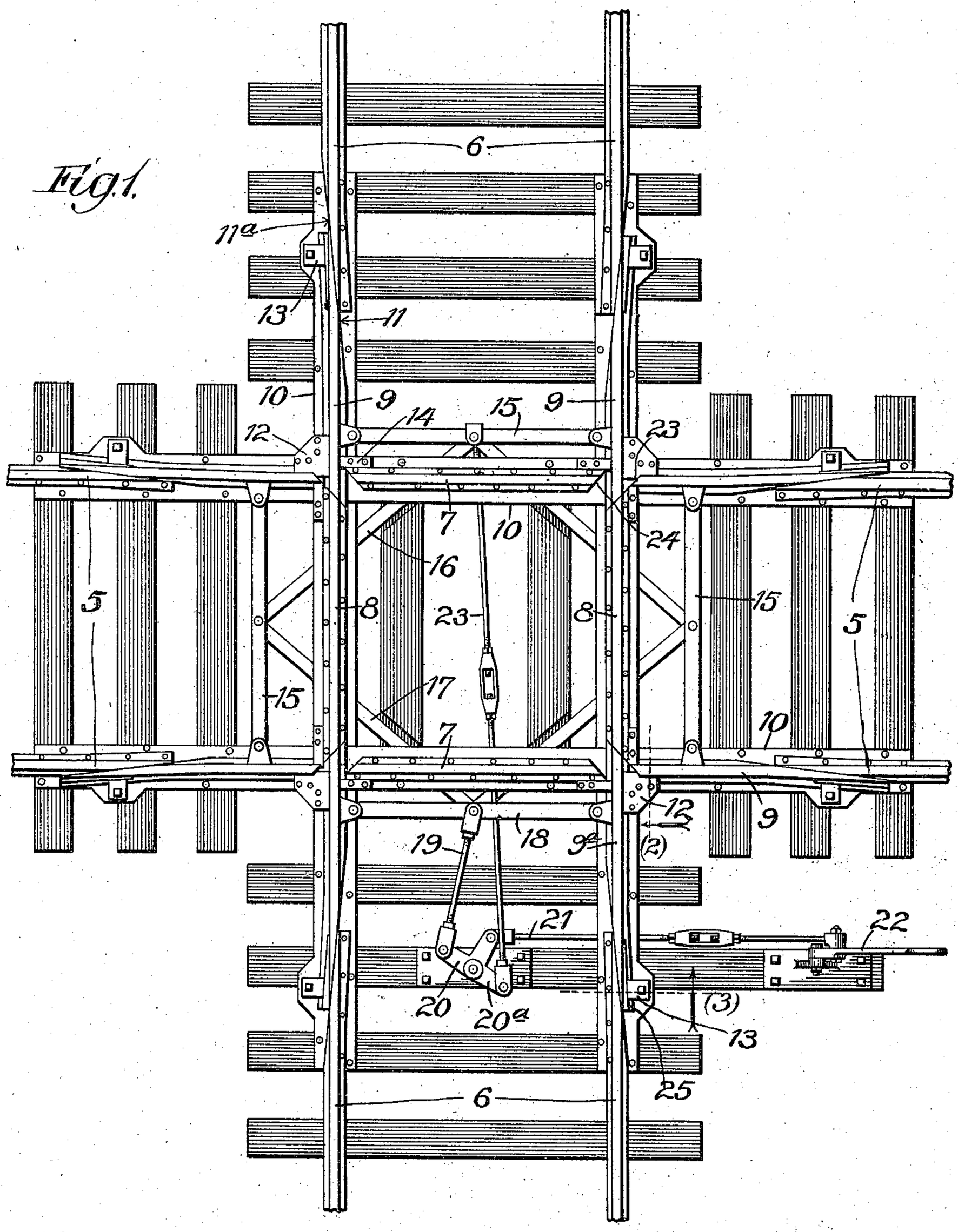
T. LENNOX.

RAILWAY CROSSING.

APPLICATION FILED SEPT. 13, 1904.

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 2.

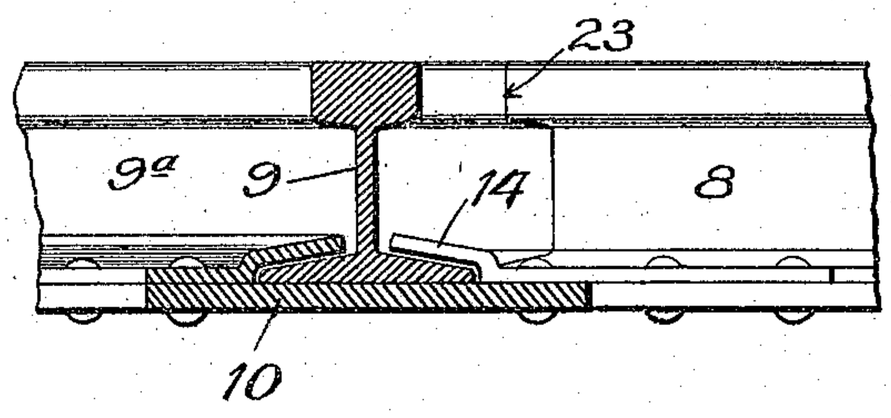


Fig. 3.

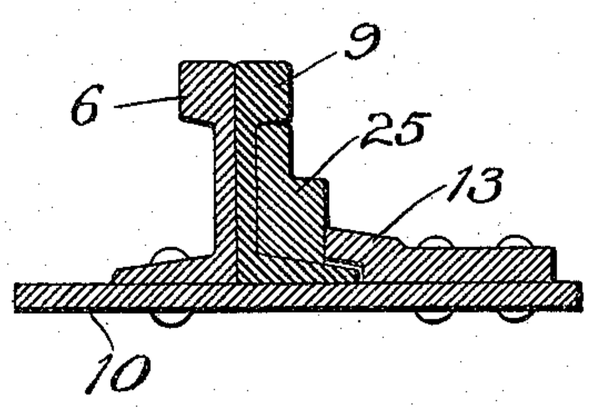
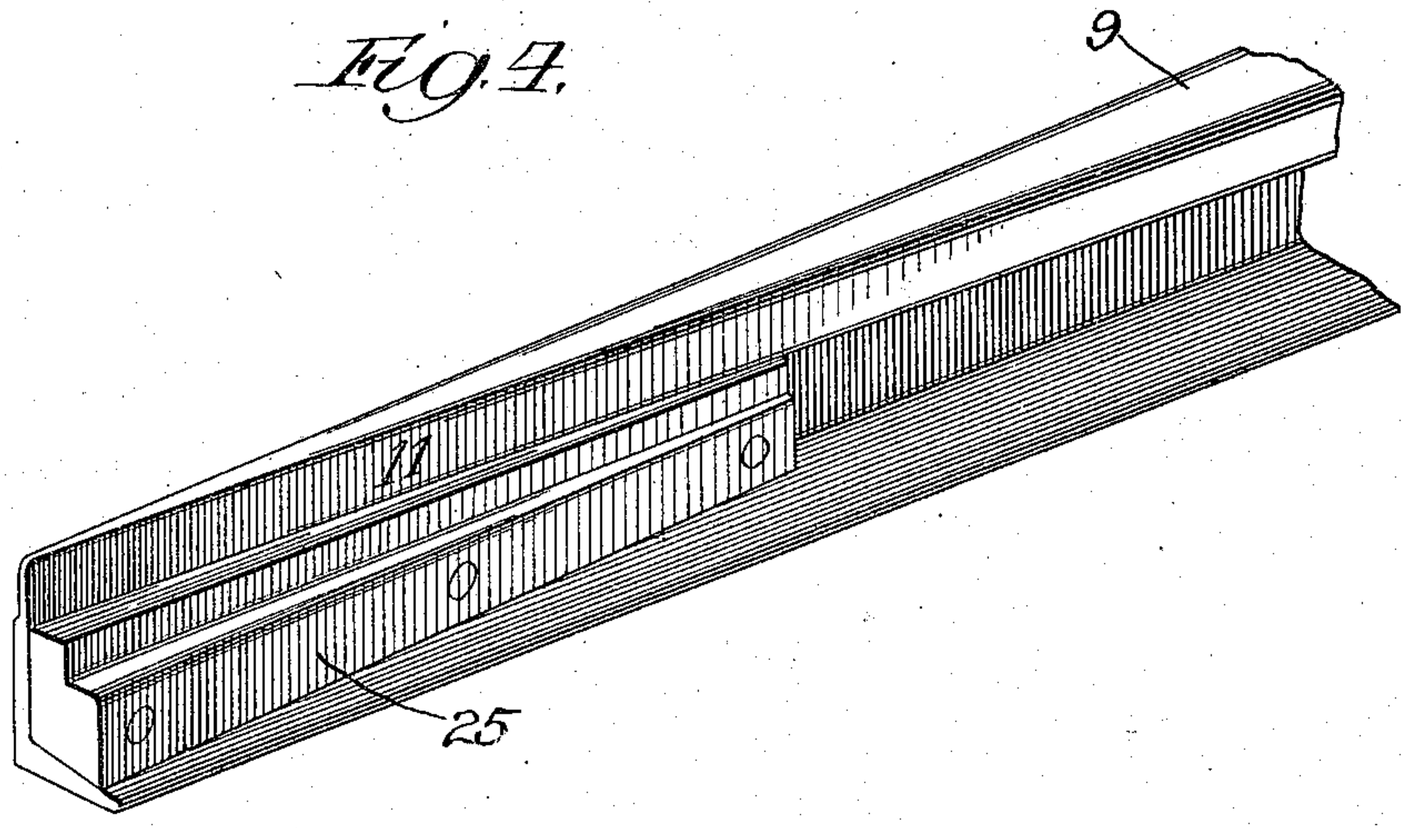


Fig. 4.



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UNITED STATES PATENT OFFICE.

TALBOT LENNOX, OF CHICAGO, ILLINOIS, ASSIGNOR TO McGUIRE-CUMMINGS MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

RAILWAY-CROSSING.

No. 840,501. Specification of Letters Patent. Patented Jan. 8, 1907.

Application filed September 13, 1904. Serial No. 224,278.

To all whom it may concern:

Be it known that I, TALBOT LENNOX, a citizen of the United States, residing at Chicago, in the State of Illinois, have invented certain new and useful Improvements in Railway-Crossings, of which the following is a specification.

My invention relates to the cross-over mechanism of intersecting tracks of railways. Its primary objects are, to provide a continuous rail surface on the track in use and avoid employing frogs at the corners of the crossing; to maintain the movable portions of the rails in line with the fixed portions and avoid the use of springs, movable abutments, etc.; to provide greater stability and certainty of action, and mechanism whereby the removal of one set of rail sections to allow the wheel flange to pass will necessarily place the other track in condition for use, and to generally improve and simplify the mechanism of railway crossings. These objects, and other advantages which will hereinafter appear, I attain by means of the construction illustrated in preferred form in the accompanying drawings, in which—

Figure 1 is a plan view of the whole crossing, showing the rails of one track in condition for use and the movable rail sections of the other track withdrawn;

Figure 2 is a vertical section taken on the line (2) of Figure 1, showing the mode of supporting the shifting section of the rail at its inner end;

Figure 3 is a vertical section taken on the line (3) of Figure 1, showing the lateral guide and support for the taper end of the shifting section of the rail, and

Figure 4 is a perspective view of the taper end of the movable section, showing the guide block attached thereto, for a purpose hereinafter noted.

The sides of the square formed by the intersection of the two tracks 5 and 6, consist mainly of the stationary rail sections 7 and 8, of the beveled form shown, mounted fixedly upon the supporting plates 10 which rest on the ties. The four pairs of movable sections of rail are alike and the corresponding parts thereto attached are duplicates in like positions. In the upper part of Figure 1 it will be seen that between the stationary end of the rail 6 and the fixed portion 8 in the crossing, I have provided a slidable section of rail, 9, which moves upon the plate 10 and at its outer end is cut with a long bevel-jointed side 11 which fits neatly upon the sloping face 11^a of the stationary portion of the rail, 6. The movable section 9 is closely retained by the guide irons 12 and 14 at the inner end, and at the outer end is held between the face 11^a of the fixed rail and the guide plate 13 covering the flange and abutting against the block 25 on the rail, as shown in section at Figure 3. This movable section 9 at its inner end engages the fixed section 8 along a miter joint 23 as shown.

The pair of shiftable rail sections, 9, are solidly joined together by the strut bar 15 which is pivoted to them, and which, at its center, is also pivoted to two toggle links 16 of a set of "lazy-tongs," which links at their other ends are pivoted in like manner to similar bars 15 on the intersecting track. The complementary pair of toggle links 17 on the opposite side are pivoted together, and also pivoted to a cross bar 18 and rod 19, which, by means of the bell crank lever 20, the thrust rod 21 and the handle 22, is operated to move the lazy-tong links, 16 and 17, to close up or withdraw the movable sections 9 on the four sides of the crossing. While the series of toggle links, 16, 17, may operate the several bars 15 by the single thrust rod 19, I prefer to provide the bell crank lever 20 with another arm 20^a and by this operate a supplementary rod 23, which is attached directly to the bar 15 on the opposite side of the crossing, as will be understood.

From Figures 2, 3, and 4, especially, it will be seen that upon the web of the tapered end 11 of the movable rail section 9 there is fixed a guide block 25 which is made of wedge shape in such form that its outer surface, which bears against the guide plate 13, as shown in Figure 3, shall be parallel with the inclined surface of the section along its joint with the fixed rail. This provides the movable section with a positive, close-fitting guide along both of its sides, so that as it slides backward it does not at any time have any free lateral play between its supports, or break contact with the main part of the rail.

From the above description it will be evi-

dent that the four pairs of movable sections of the rail are alike and that each section is supported solidly upon the bearing plate 10 and is confined at both sides of both ends by neatly fitting guides; and that when the section is in operative position as shown at the top of Figure 1, the rail presents a continuous surface to the wheel and is positively held upon all of its sides. This rail section reciprocates in practically the fixed line of the rail, and is never laterally displaced from position, so as to endanger spreading or derailment of the wheels. It will also be seen that by the arrangement of the lazy-tong toggle links the withdrawal of one section of track necessarily immediately interposes the other into operative position; while no part of the track is ever out of alinement. The operating rods and the links 16 and 17 are entirely underneath the track out of the way and the parts for holding the movable rail sections are outside of the track out of danger of being dislodged and in position to render derailments by spreading impossible. Other advantages of the mechanism will readily occur to those familiar with the art.

Having thus described my invention and illustrated its use, what I claim as new, and desire to secure by Letters Patent, is the following:

1. In a railway crossing a shiftable rail section joined to the fixed portions of the rail upon bevel joints and movable in practically the straight rail line to open and close the joints.

2. In a railway crossing a sliding rail section having bevel joints with the fixed rail portions and provided with a wedge-shaped guide block whereby direct contact is constantly made with the guiding means for the movable section.

3. In a railway crossing a pair of shiftable rail sections jointed to the fixed rail portions by bevel joints, movable in approximate alinement with the rail and laterally tied together by a strut bar, substantially as described.

4. The combination with two pairs of fixed rail sections, 7, 8, and four pairs of longitudinally shiftable rail sections 9 and a connected set of lazy-tong links, whereby the retraction of one pair of movable sections places the other pair of movable sections in contact with the fixed portions of the rail, substantially as described.

5. In a rail crossing, a fixed rail, a movable rail section engaging the fixed rail by a bevel joint, and having a guide bearing parallel with the said bevel joint.

6. In a railway crossing the combination of the four links 16, 17, and the tie bars 15, and means for operating the links from two ends, substantially as described.

7. The combination of the bearing-plate 10, shiftable rail sections 9, tie bars 15, toggle links 16, 17, and means for operating the toggle links to reciprocate the rail sections, substantially as described.

8. In combination in a railroad crossing, four pairs of outer fixed rails having inner beveled ends, two pairs of inner fixed rails in alinement with the outer rails, and intermediate rails movably guided in substantial alinement with the outer rails and each having one end beveled to fit the bevel on the outer rail and having its inner end adapted to abut a stationary inner rail.

9. In combination in a railroad crossing, four pairs of outer fixed rails having inner beveled ends, two pairs of inner fixed rails in alinement with the outer rails, intermediate rails movable in substantial alinement with the outer rails and each having one end beveled to fit the bevel on the outer rail and having its inner end adapted to abut a stationary inner rail, and guiding means for the beveled ends of the rails whereby such ends are held constantly in engagement with the bevel on the stationary rail.

10. In combination in a railway crossing, two pairs of fixed inner rail sections, four pairs of longitudinally shiftable rail sections, struts or bars tying together the members of each of the latter pairs, four levers pivoted at the centers of the struts and constituting a lazy tongs, and means for operating such lazy tongs.

11. In combination in a railway crossing, two pairs of fixed inner rail sections, four pairs of longitudinally shiftable rail sections, struts or bars tying together the members of each of the latter pairs, four levers pivoted at the centers of the struts and constituting a lazy tongs, and lever mechanism connected with opposite struts whereby such struts may be made to approach or recede from each other.

In testimony whereof I have hereunder signed my name in the presence of the two subscribed witnesses.

TALBOT LENNOX.

Witnesses:

PAUL CARPENTER,

ALBERT G. MILLER.