G. C. MELROSE.

RAILROAD CROSSING.

APPLICATION FILED FEB. 24, 1916.

1,231,405.

Patented June 26, 1917.

3 SHEETS—SHEET 1.

Fig. 1.

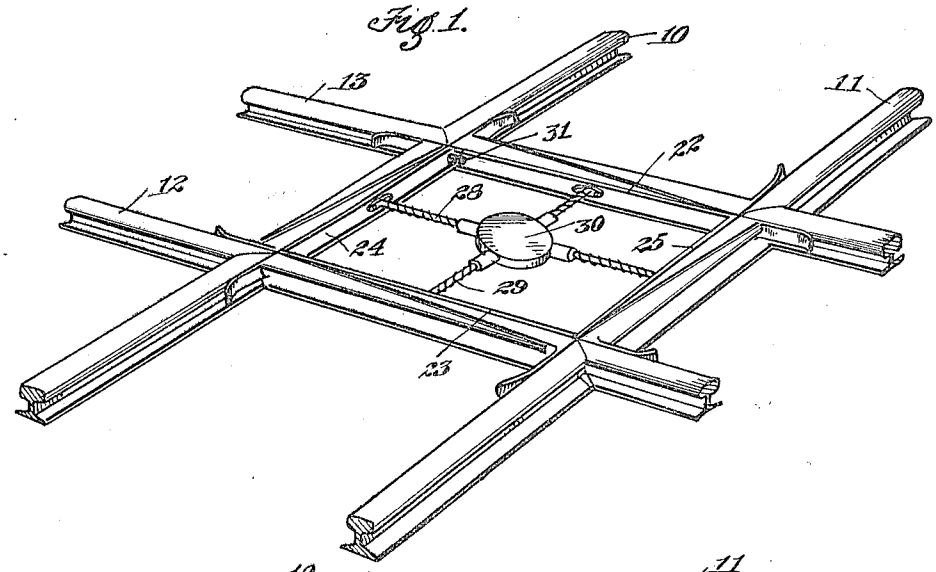
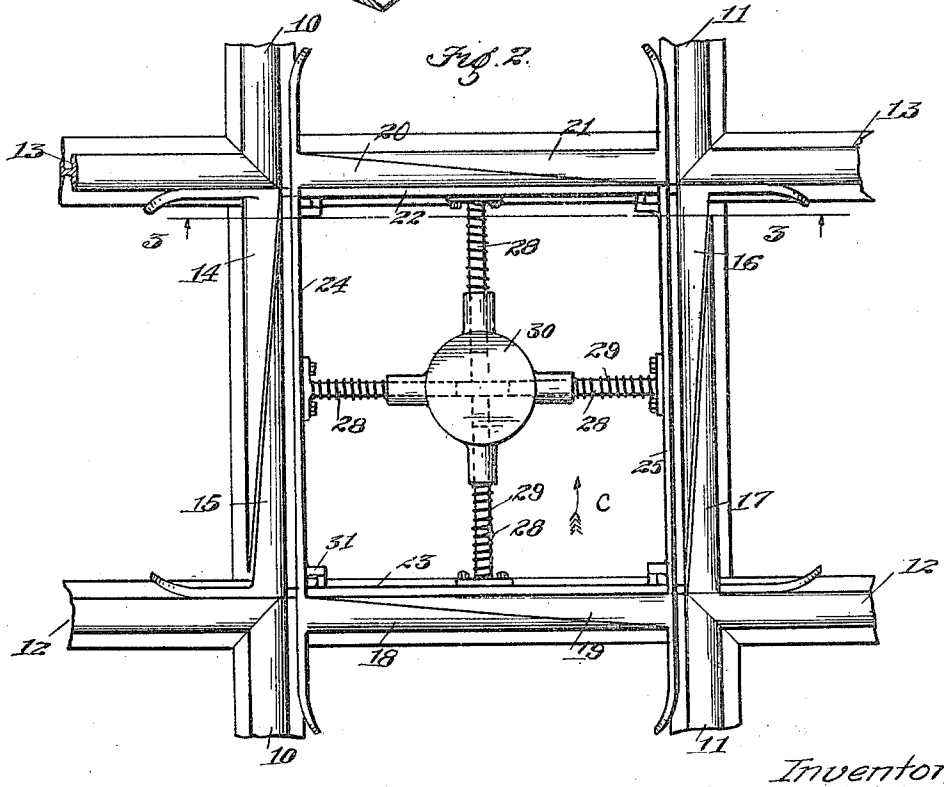



Fig. 2.

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3 SHEETS—SHEET 2.

Fig. 3.

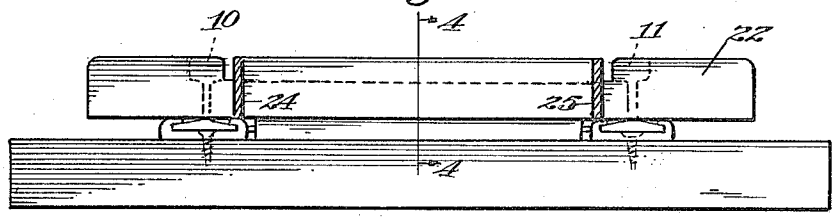



Fig. 4.

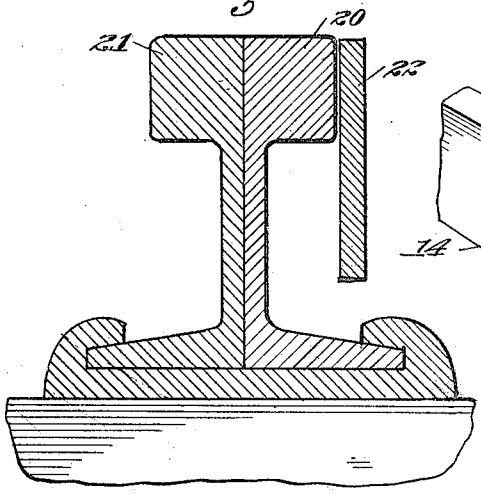



Fig. 5.

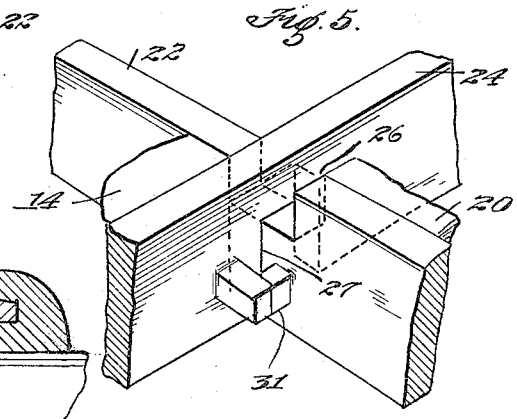



Fig. 6.

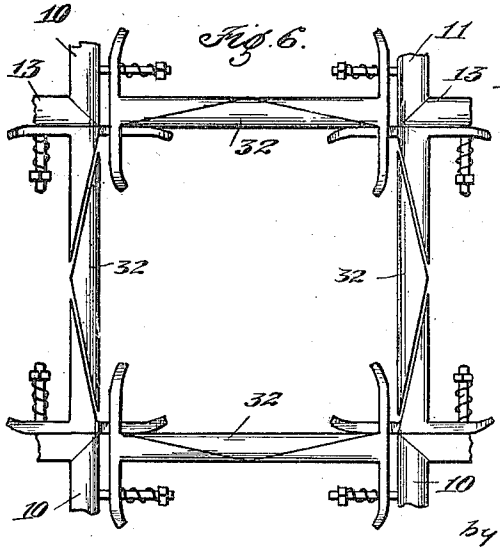
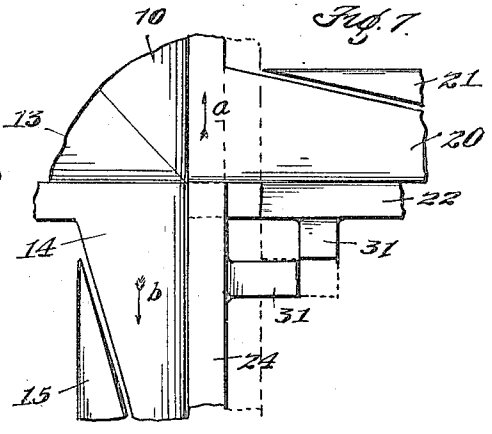



Fig. 7.

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3 SHEETS—SHEET 3.

Fig. 8.

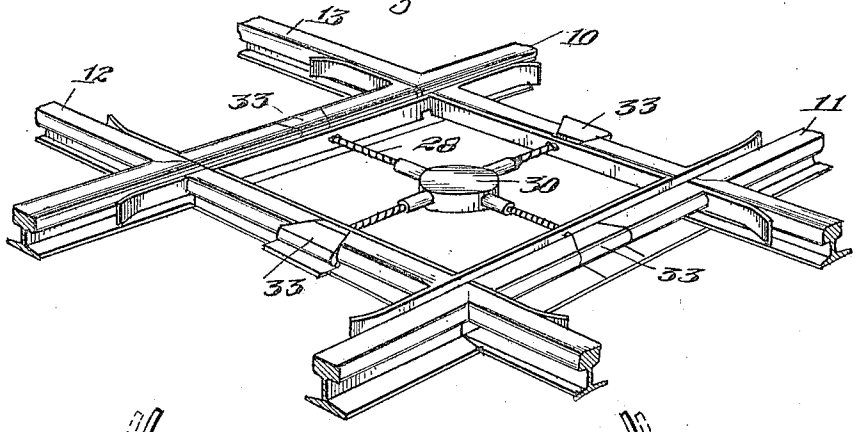
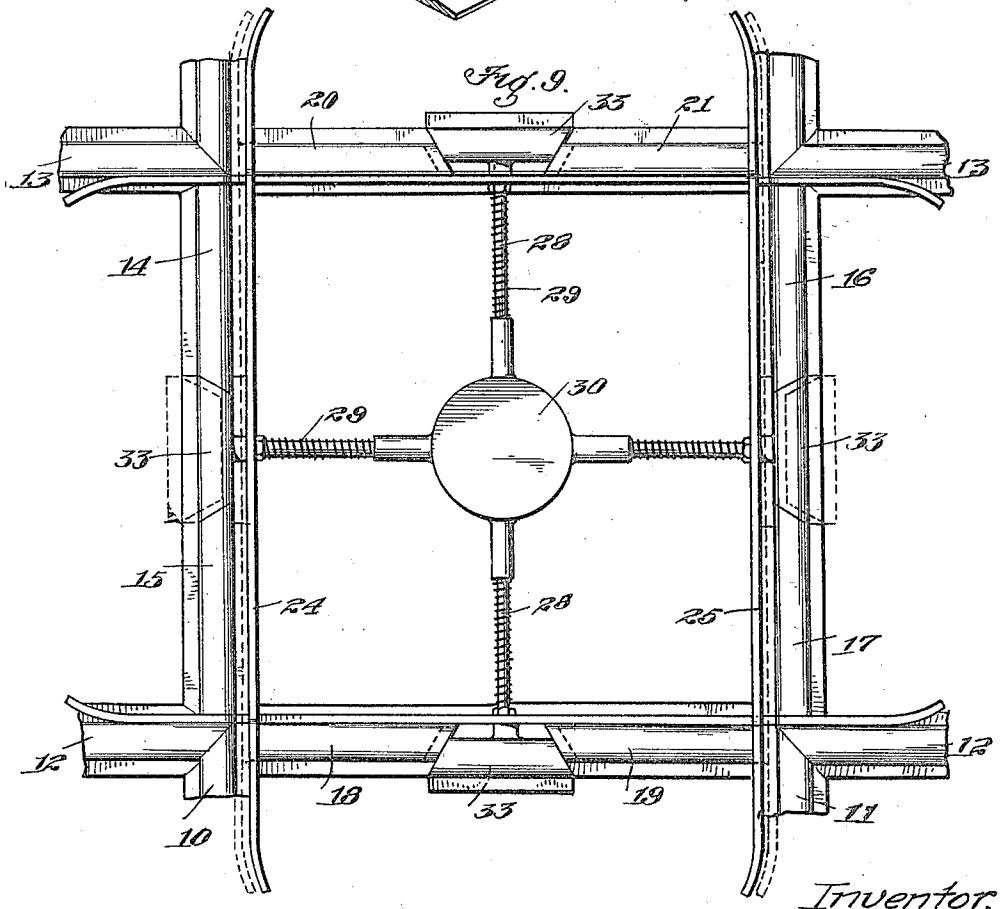



Fig. 9.

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# UNITED STATES PATENT OFFICE.

GEORGE C. MELROSE, OF LOS ANGELES, CALIFORNIA, ASSIGNOR OF TWENTY ONE-HUNDREDTHS TO EARL H. STEWART AND TEN ONE-HUNDREDTHS TO HERMAN W. MELROSE, BOTH OF LOS ANGELES, CALIFORNIA.

## RAILROAD-CROSSING.

1,231,405. Specification of Letters Patent. Patented June 26, 1917.

Application filed February 24, 1916. Serial No. 80,165.

*To all whom it may concern:*

Be it known that I, GEORGE C. MELROSE, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Railroad-Crossings, of which the following is a specification.

This invention relates to a crossing for railways.

It is the object of this invention to provide a device for closing the flange slot of railway crossings so that wheels traveling on the rails will not cross a gap at the juncture of the rails, thus obviating the noise and jar incident thereto as is common in ordinary railway crossings.

Another object is to provide means controlled by the flanges of the car wheels for closing the transverse flange slots at the intersection of cross-rails and which is incorporated in the crossing construction.

A further object is to provide a device of the above character consisting of few parts which may be readily assembled.

Other objects will appear hereinafter.

The invention primarily resides in providing the crossing with diagonally split rail sections, the parts of which are slidable horizontally in relation to each other, the ends of which sections normally abut against the adjacent cross rails, and the invention further resides in means controlled by the flanges of car wheels for shifting the split rail sections so as to form slots or passages in the transverse rails to accommodate the wheel flanges.

The invention is illustrated in the accompanying drawings in which:

Figure 1 is a perspective view showing one application of the invention.

Fig. 2 is a plan view of same showing the parts as positioned when the wheels of a car are passing the crossing.

Fig. 3 is a detail section and elevation on the line 3—3 of Fig. 2, parts being removed.

Fig. 4 is an enlarged detail section as seen on the line 4—4 of Fig. 3 in the direction indicated by the arrows.

Fig. 5 is a detail in perspective of the slidably interlocking actuating bars.

Fig. 6 is a plan view showing a modified form of the invention.

Fig. 7 is a detail in plan showing a means for inhibiting the movement of slidable parts by back-lash of the wheels passing thereover.

Figs. 8 and 9 are views in perspective and plan, respectively, illustrating a further modification of the invention.

More specifically, 10 and 11 indicate a pair of rails forming one track, which is designed to cross the rails 12 and 13 of an intersecting track. The rails 10, 11, 12 and 13 terminate at their point of juncture and the gap between their spaced ends is spanned by longitudinally slidable diagonally split rail sections; a pair of split rail members 14 and 15 forming a continuation of the rail 10, members 16 and 17 forming a continuation of the rail 11, members 18 and 19 forming a continuation of the rail 12, and members 20 and 21 forming a continuation of the rail 13, as particularly shown in Fig. 2. Rail members 14 and 16 are mounted on a bar 22 which extends along the inner face of the rail 13 and is bent outwardly at its outer ends so as to permit the introduction of the flanges of the car wheels between the bar 22 and the rail 13. Likewise, the rail members 15 and 17 are mounted on a bar 23 extending parallel with the bar 22 alongside the inner face of the rail 12. The rail members 18 and 20 are attached to a bar 24 extending alongside the inner face of the rail 10 and similarly the rail members 19 and 21 are attached to a bar 25 extending along the inner face of the rail 11. The bars 22, 23, 24 and 25 slidably cross each other at their points of intersection and are arranged with their upper edges approximately flush or slightly below the upper faces of the rails. For the purpose of permitting relative slidable movement of the crossed bars, they are formed with cut-away portions, as shown in Fig. 5; one of the bars being cut away on its upper edge, as indicated at 26, for a length approximately twice the width of the intersecting bar, the latter bar being cut away on its lower edge, as indicated at 27, for a distance slightly greater than twice the thickness of the other bar. By this arrangement either of the crossed bars may be shifted longitudinally of the other.

Means are provided for normally maintaining the bars in contact with the inner faces of the rails. This means is here shown

as consisting of springs 28 disposed to bear against the bars 22, 23, 24 and 25. The springs 28 may be arranged in any suitable manner to exert a yieldable pressure on the bars but are here shown in Fig. 2 as wound on guide-stems 29 mounted on the bars and bearing between the bars and a guide member 30 in which the stems 29 are reciprocally mounted.

As a means for inhibiting longitudinal movement of the split rail sections by reason of the frictional engagement of the car wheels therewith, the bars are formed with locking lugs 31 adjacent their intersection with each other, as particularly shown in Fig. 7. When the bars are in their normal position the lugs 31 on each bar will be out of the path of travel of the lugs on the intersecting bar. In this construction it is then possible for the lugs to alternately engage each other and positively lock the rail members from back lash. Reference being had to Fig. 7, it will be seen that when the car wheel is passing along the channel in the direction of the arrow *a*, frictional engagement of the wheel with the rail member will tend to move it in the direction indicated by the arrow *b*. This action is inhibited by means of the lug 31 upon bar 24, this bar having been forced inwardly as the car wheel wedged it away from the rail, this in turn causing the lug 31 upon said bar to overlap lug 31 upon bar 22, thus blocking bar 22 from movement caused by the back lash. When the car is traveling along the intersecting track, bar 22 moves inwardly and allows its lug to overlap the lug on bar 24 and block it against movement.

In the modified form of my invention as disclosed in Fig. 6, the movable rail sections for performing the same function as in my preferred form are doubly split and have an inner stationary section as indicated by the numeral 32. The rail sections are approximately one-half the distance between the rails and are operated independently, that is to say, the wheel flange opens the grooves in the rails over which it passes as it encounters them and not in pairs as before disclosed. The advantage in this last described arrangement is that the wheel bears upon a rigid rail as it crosses the intersection and not upon two movable ones as in my preferred device.

In the operation of my device, assuming that a car is to cross the intersection in the direction indicated by the arrow *c* in Fig. 2, the front wheels will advance into engagement with the curved ends of bars 24 and 25. The flanges of said wheels force the bars inwardly and cause members 18, 19, 20 and 21 to overlap as they are moved horizontally. This action makes a space between the bar and the rail through which the wheel flange will travel without obstruction. At the same time the bars 24 and 25 move inwardly the lugs 31 overlap each other to prevent back lash. When the car has passed the intersection, springs 28 force bars 24 and 25 outwardly into their normal position and leave the intersection in a condition to be approached and crossed by cars traveling on either track.

In the form of the invention illustrated in Figs. 8 and 9, transversely slidable filler blocks 33 are connected to the bars 22, 23, 24 and 25 and are interposed between the ends of the split rail members, each pair of which are spaced apart at their inner ends and have diagonal oppositely inclined end walls normally spaced from correspondingly inclined ends of the blocks 33, as indicated by dotted lines in Fig. 9.

In the operation of this form of the invention the inward movement of the wheel actuated bars causes the filler blocks 33 to move inwardly so that their ends will abut against the ends of the split rails and thus form an unbroken surface on which the wheels roll in traversing the crossing.

By the use of this crossing, the noise and jar ordinarily occasioned by the wheels of a car passing over a gap is done away with, and the consequent wear on the rails and running stock is obviated.

What I claim is:

1. A railway crossing comprising the combination with a pair of intersecting tracks, two pairs of split rails interposed between the intersecting tracks so as to form continuations of each track across the intersection, a bar fixed to the companion sections of each pair of said split rails, means acting upon said bars for normally maintaining said split rails in extended position so that their ends abut against the ends of the rails of which said split rails form continuations, said bars extending outwardly from said split rails in the path of the car wheel flanges so as to be engaged by the wheel flanges when traveling over the rails of one track to move the sections of the split rails together and their ends away from said track so that said car wheels may travel over the crossing without obstruction, and means for locking the said split rails in extended position when the car wheels travel over them.

2. A railway crossing comprising the combination with a pair of intersecting tracks, two pairs of split rails interposed between the intersecting tracks so as to form continuations of each track across the intersection, a bar fixed to the companion sections of each pair of said split rails, means acting upon said bars for normally maintaining said split rails in extended position so that their ends abut against the ends of the rails of which said split rails form continuations, said bars extending outwardly from

said split rails in the path of the car wheel flanges so as to be engaged by the wheel flanges when traveling over the rails of one track to move the sections of the split rails together and their ends away from said track so that said car wheels may travel over the crossing without obstruction, and means for locking the split rails in extended position with their ends against the rails of the track of which they form a continuation, while the car wheels travel over said split rails.

3. A railway crossing comprising the combination with a pair of intersecting tracks, two pairs of split rails interposed between the intersecting tracks so as to form continuations of each track across the intersection, a bar fixed to the companion sections of each pair of said split rails, means acting upon said bars for normally maintaining said split rails in extended position so that their ends abut against the ends of the rails of which said split rails form continuations, said bars extending outwardly from said split rails in the path of the car wheel flanges so as to be engaged by the wheel flanges when traveling over the rails of one track to move the sections of the split rails together and their ends away from said track so that said car wheels may travel over the crossing without obstruction, and lugs on said bars adapted to engage each other to lock the split rails in extended position with their ends against the ends of the rails of the track of which they form continuations, while the car wheels travel over the split rails.

4. A railway crossing, comprising the combination with a pair of intersecting tracks, of transversely slidable bars extending parallel with the inner faces of the rails of the track having slidably engaging notched portions at their intersections, yieldable means for maintaining said bars against the track rails, and diagonally divided rail sections carried by said bars forming continuations of the railway rails across the gaps between their points of intersection, and means for locking the said split rails in extended position when the car wheels travel over them.

5. In a railway crossing, the combination with a pair of intersecting tracks, of laterally slidable bars extending alongside the inner faces of the rails of said tracks, split rail sections carried by said bars forming continuations of the rails of the track, yieldable means for normally maintaining the bars against the rails, and means on said bars for locking the split rail sections in extended position with their ends against the ends of the rails of the track of which they form continuations, while the car wheels travel over said split rail sections.

In testimony whereof I have signed my name to this specification.

GEORGE C. MELROSE.