

(No Model.)

A. J. MOXHAM.  
RAILROAD CROSSING.

No. 477,685.

Patented June 28, 1892.

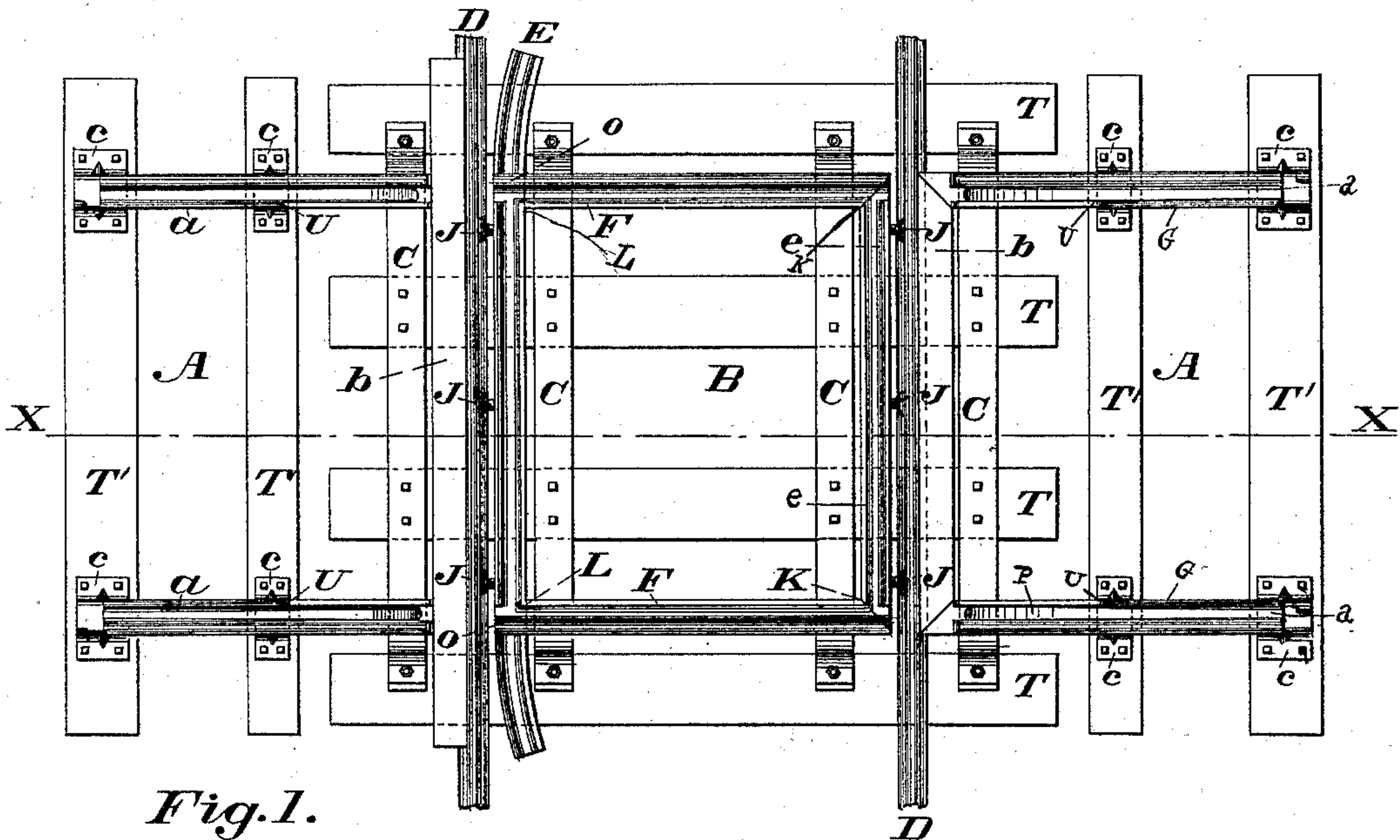


Fig. 1.

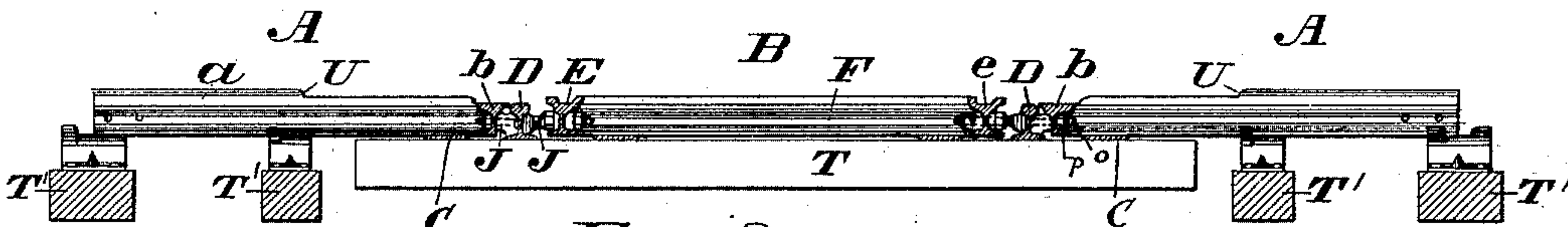


Fig. 2.

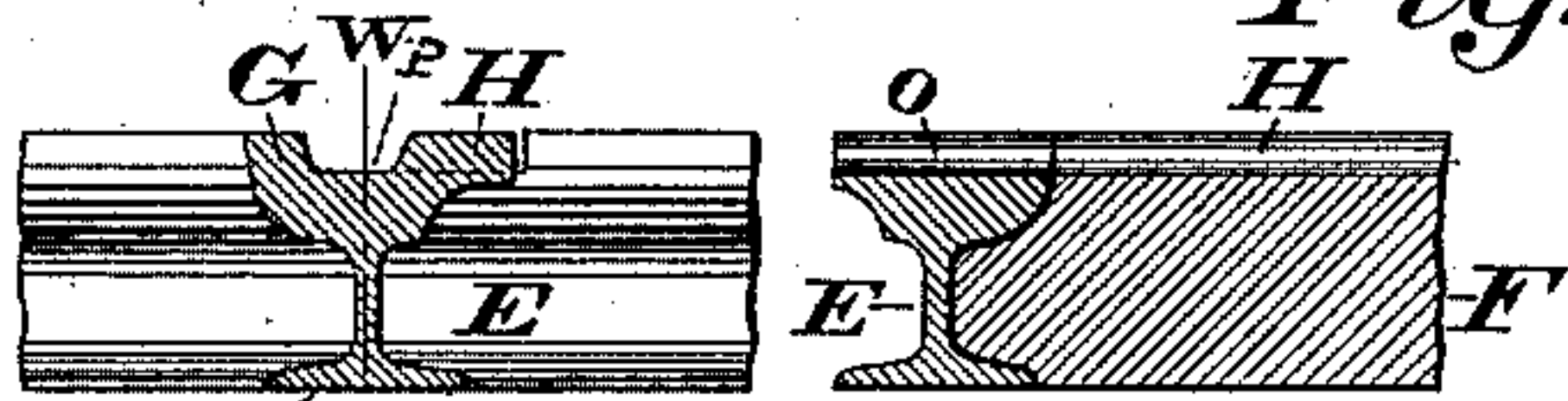


Fig. 3.

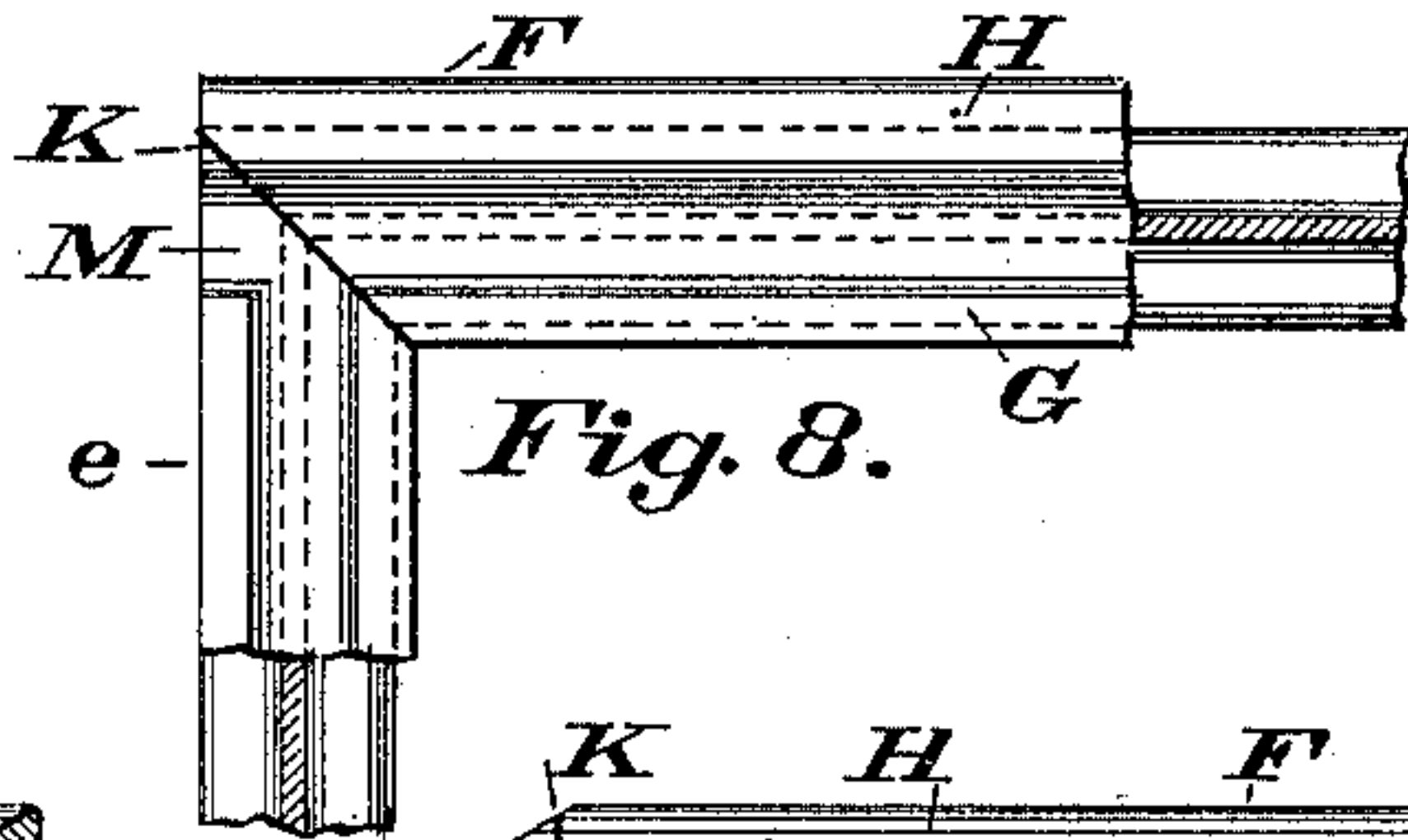


Fig. 4.

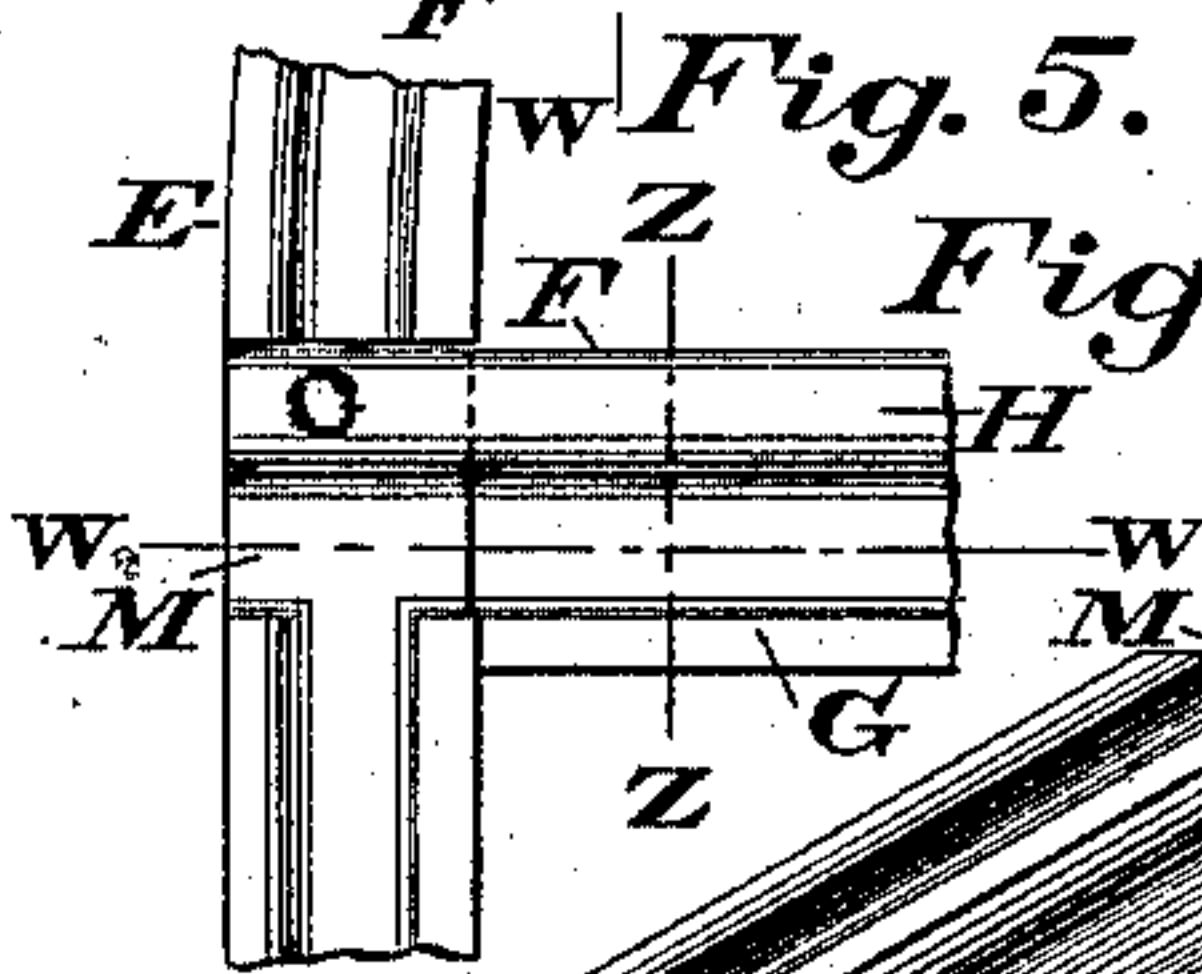


Fig. 5.

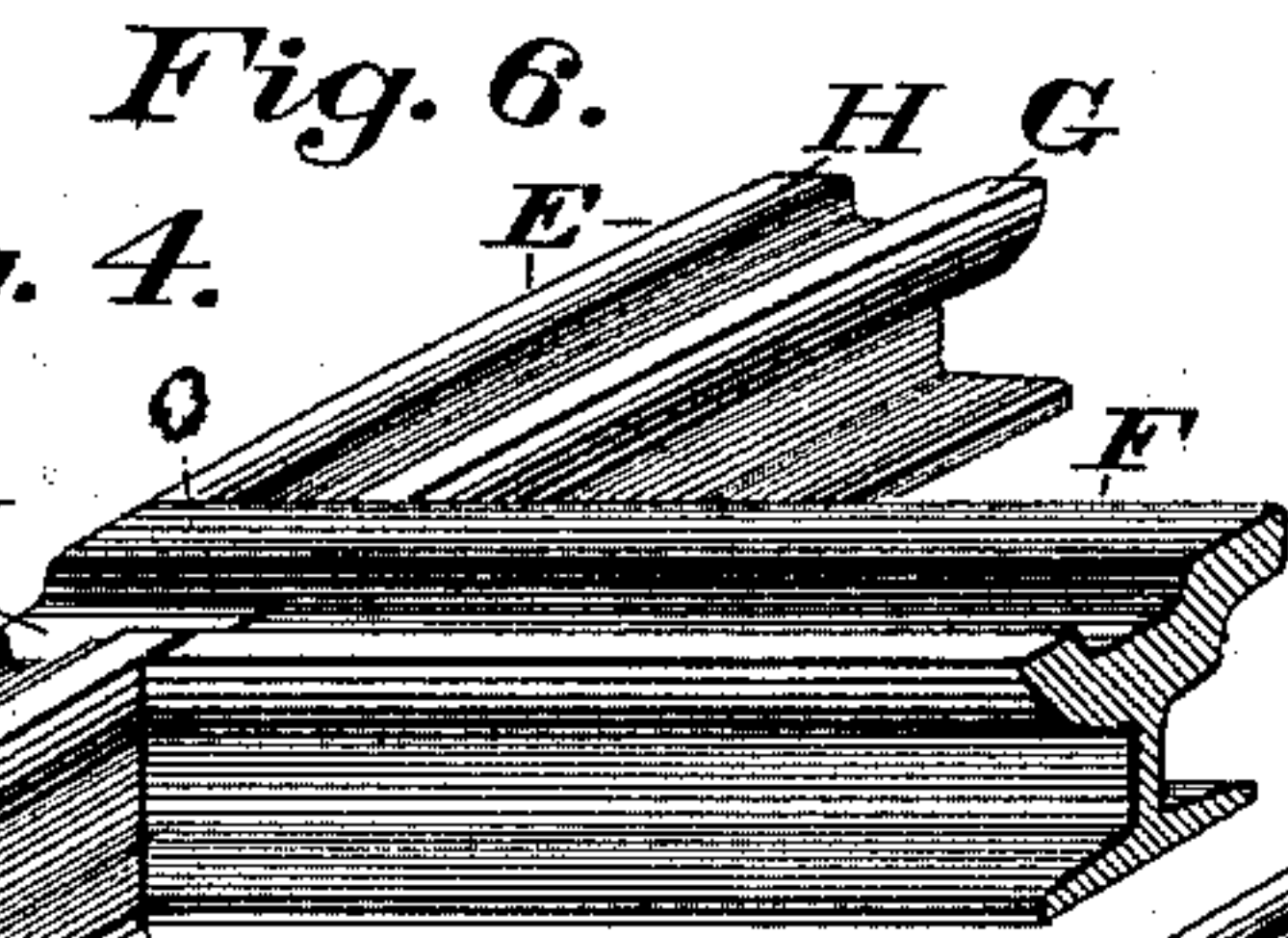


Fig. 6.

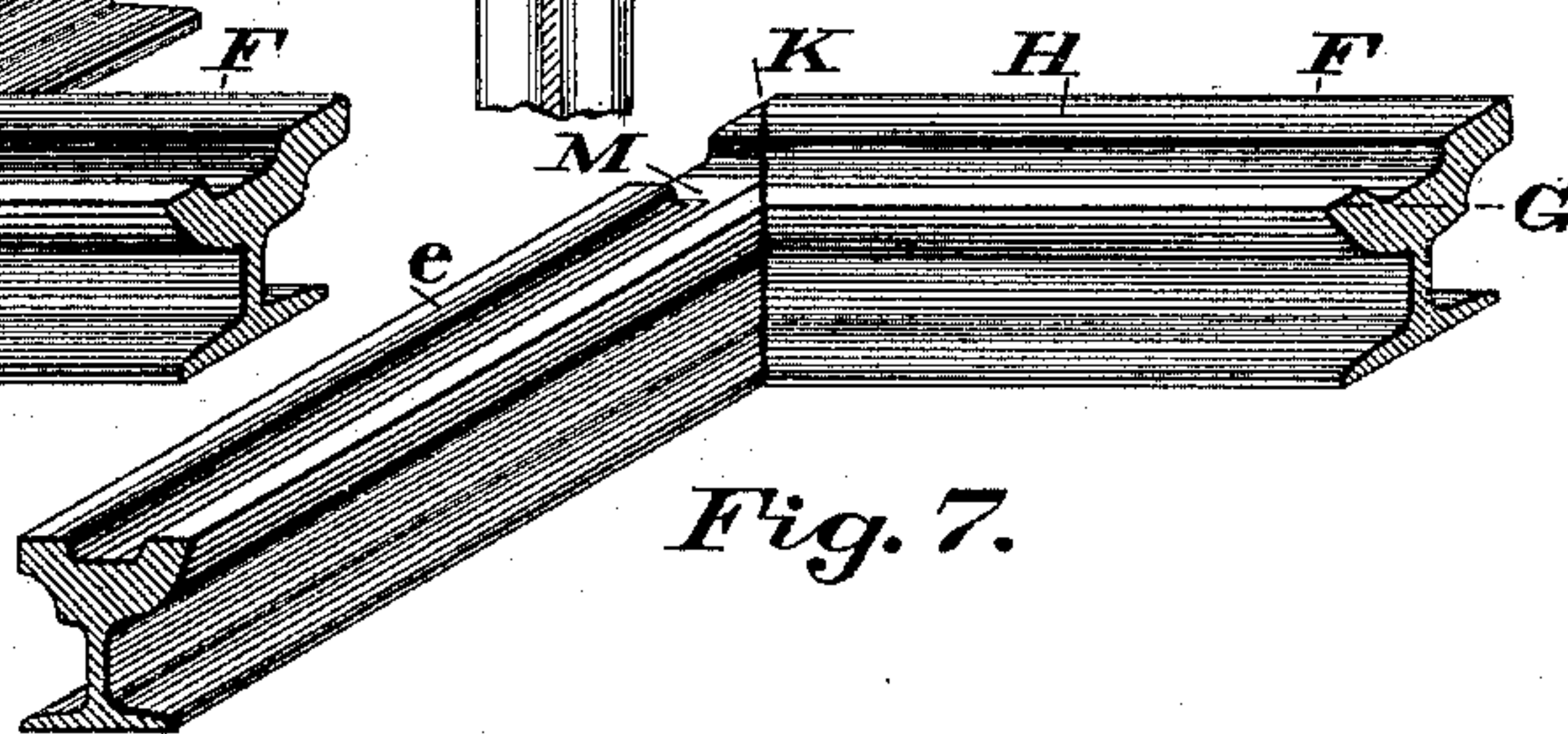


Fig. 7.

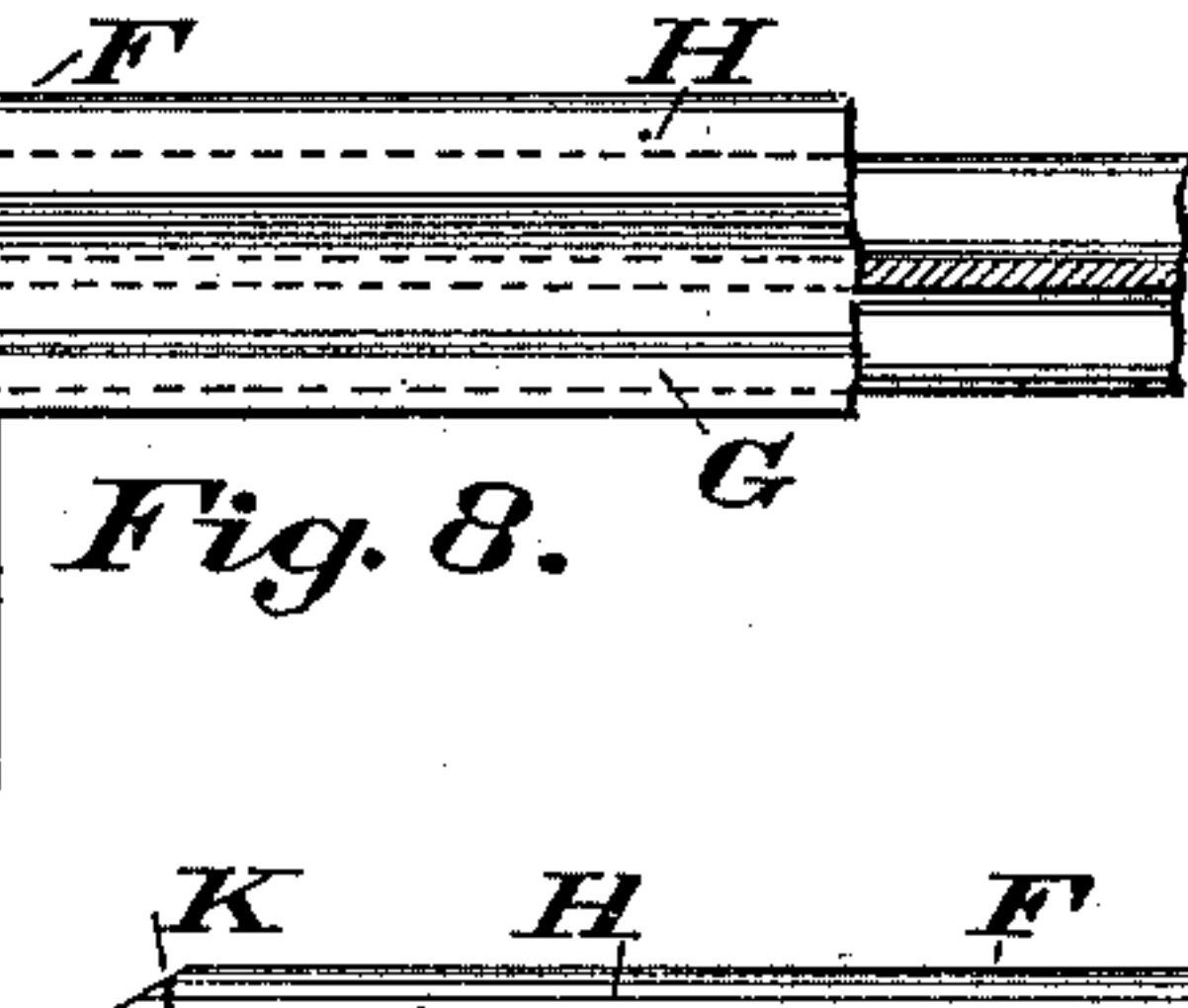


Fig. 8.

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ARTHUR J. MOXHAM, OF JOHNSTOWN, PENNSYLVANIA.

## RAILROAD-CROSSING.

SPECIFICATION forming part of Letters Patent No. 477,685, dated June 28, 1892.

Application filed December 5, 1890. Renewed April 16, 1892. Serial No. 429,483. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR J. MOXHAM, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Railroad-Crossing, which invention is fully set forth and illustrated in the following specification and accompanying drawings.

The object of this invention is to provide a strong, safe, and durable crossing for street-cars over or across steam-railroad tracks, which shall at the same time require no disturbance of the steam-railroad track.

The invention will first be described in detail, and then particularly set forth in the claims.

In the accompanying drawings, Figure 1 shows the crossing in plan. Fig. 2 is a section taken through the line X X of Fig. 1. Fig. 3 is a view in perspective, enlarged, of one of the corners marked L in Fig. 1, showing the manner in which the rails are joined at such points, as hereinafter described. Fig. 4 is a view in plan of Fig. 3. Fig. 5 is a section taken through Fig. 4 at the line Z Z. Fig. 6 is a section taken through Fig. 4 at the line W W and through Fig. 5 at the line W W, looking to the right. Fig. 7 is a view in perspective, enlarged, of one of the corners, marked K in Fig. 1, showing the manner in which the rails are joined at such points, as hereinafter described. Fig. 8 is a view in plan of Fig. 7.

In said figures the several parts are respectively indicated by reference-letters, as follows:

It will be observed that the street-railroad crossing consists of three separate parts, the two similar parts A A, Figs. 1 and 2, outside of the through steam-railroad rails D D and the central part B, of nearly-rectangular shape, between said rails.

Referring now to the portions of the crossing marked A A, each of said portions consists of three pieces of girder guard-rail *a a b*, cut and welded together, as hereinafter described. The guard portions G of the rails *a*, which are in line with the crossing-rails, are planed or otherwise cut away level with the head H to the points U U, the reason for such cutting away being that said guards are super-elevated, and it is desirable that no part of the structure should be above the head of the through-rails D at this point or

there would be danger of snow-plows, which are sometimes attached to locomotives and overhang the track on either side, catching in such elevated portion. The guard-rails *b*, which are parallel with and closely abut against the T-rails D on the outside, have their head portions H and guard portions G planed or otherwise cut away to a level with the floor portions P, and so present a level top surface. The object of so cutting away the rails *b* is that they may offer no obstruction to the wheels of steam-railroad cars, the treads of which wheels are wider than the heads of the rails D D and overlap the same.

Abutting against the T-rails D and guard-rails *b* are the chocks J, Fig. 2, which so lock said rails that the street-railroad crossing must be raised or depressed when the T-rails are raised or depressed, and in this manner the level of the crossing is preserved. Said chocks are removable and are attached to the guard-rail by means of a stud or other bolt *o*, passing through the web of the rail and secured by a nut *p*.

Referring now to the portion of the crossing marked B, said portion is composed of four pieces of guard-rail *E e F F*, properly cut and welded together, as hereinafter described, the rails *E e* being parallel with the through-rails and the rails *F F* in line with the crossing-rails. Said portion B is attached to the rails D in the same manner as that just described for the portions A A by means of the chocks J J, the only difference being that said chocks are made longer, in order that the guard-rails *E e* may be so located as to leave a groove between them and the rails D to allow for the passage of the flanges of locomotive-wheels. (See Fig. 2.) It will also be observed that the super-elevated guards G of the rails composing said portion B are cut away level to the heads H of said rails, more cutting away being unnecessary at this point.

The method of cutting and welding the rails is as follows: It will be observed that in Fig. 1 each side of the crossing illustrates a different method of connecting the rails. In the left-hand side is shown a guide and guard rail *E*, having its ends bent to provide a good entering guard for the flanges of the wheels of locomotive and steam-railroad cars pass-



ing over the adjacent through-rail D. Said rail E is connected to the crossing-rails F F at the corners marked L L by a butt-weld, as clearly shown in Figs. 3, 4, 5, and 6. The crossing-rails F F are trimmed at their ends to permit them to abut the guard-rail E, a pocket being cut out of said guard-rail to permit the entry and seating of the head portions O of said crossing-rails F F, (see Figs. 3, 4, and 6,) though, if desired, the heads of said crossing-rails can be made to abut and not overlap the guard-rail E, in which case the latter must be grooved through to permit the passage of wheel-flanges. Said rails E F are then welded together at these points. The crossing-rails *a a* at the left-hand side of Fig. 1 are shown welded to the parallel rail *b* in the same manner as that just described for the rails E F, forming angles or corners outside of and adjacent to the through-rail D.

In the right-hand side of Fig. 1 the crossing-rails F F are shown abutting the guard-rail *e* by means of a bevel cut on the adjoining ends of both rails, as clearly shown in detail in Figs. 7 and 8. In this method of welding the head portion of the guard-rail *e* is grooved through at M to permit the passage of the street-car wheels. The rails having been so cut are welded together to form the corners K K. The crossing-rails *a a* at the right-hand side of Fig. 1 are also shown welded to the parallel rail *b* in the same manner as that just described for the rails *e* F, forming angles or corners outside of and adjacent to the through-rail D.

It is obvious that both methods of cutting and welding the rails together may be employed in the crossing, as shown in Fig. 1; or, if desired, either one of said methods may be employed throughout to the exclusion of the other. The method shown in Figs. 7 and 8 is simpler and cheaper in construction than that shown in Figs. 3, 4, and 6; but it is obvious that by its use the advantage of the bent guiding ends of the guard-rails E *e* is sacrificed.

Whichever method of cutting and welding the rails is employed, the crossing when completed presents the following-named features: first, a continuous and through web at the point of the weld, and, second, a continuous and through surface for the street-car wheels to take on the outside portions A A.

The letters T T' indicate, respectively, the cross-ties of the steam and street railroad tracks; *c*, chairs for seating the street-car rails, and C plates laid on the ties T under the latter rails. It is preferable that the rails composing the street-car track should be of less height than the T-rails of the steam-railroad track, because the latter rails vary in height in different places. By making the former rails of less height the adjustment of the surface-level can be effected by inserting the plates C of a thickness to suit each case under the street-car rails. If the latter were made deeper than the T-rails, the ties under

the steam-railroad track would have to be cut or leveled down. The movable chocks J J also assist in maintaining the crossing at its proper height in relation to the steam-railroad rails, as hereinbefore described.

This crossing can be put in a T-rail or steam-railroad track without disturbing the latter in any way, which is a great desideratum.

The rails shown in the crossing of the street-railroad track are what is well-known to the trade as "girder guard-rails," and are preferably provided with lower flanges, as shown in the drawings, although said flanges are not necessary. If desired, however, any other suitable form of rail may be used instead of girder guard-rails.

Having thus fully described my said invention, I claim—

1. In a railroad-crossing, a crossing-rail abutted and welded to a rail parallel with one of the through-rails, so as to form a continuous whole at the angle or corner adjacent to the through-rail.

2. A railroad-crossing constructed of crossing-rails abutted and welded to rails parallel with the through-rails, so as to form a continuous whole at the angles or corners adjacent to the through-rails.

3. A railroad-crossing constructed of girder guard-rails parallel with the through-rails abutted and welded to girder guard-rails in line with the crossing-rails.

4. A railroad-crossing constructed of girder guard-rails parallel with the through-rails abutted and welded to girder guard-rails in line with the crossing-rails, the through-rails and crossing-rails being connected together, substantially as described.

5. In combination with the through-rails of a railroad-track, a street-railroad crossing consisting of three parts, each of said parts constructed of crossing-rails abutted and welded to rails parallel to the through-rails.

6. In combination with the through-rails of a railroad-track, a street-railroad crossing consisting of three parts, each of said parts constructed of girder guard-rails parallel to the through-rails abutted and welded to girder guard-rails in line with the crossing-rails.

7. A street-railroad crossing consisting of three parts, each of said parts constructed of girder guard-rails parallel to the through-rails abutted and welded to girder guard-rails in line with the crossing-rails, the through-rails and crossing-rails being connected together, substantially as described.

8. In a railroad-crossing, in combination with the through-rails, girder guard-rails, as *a*, having portions of their guards cut away, and girder guard-rails, as *b*, having their heads and guards cut away, said girder-rails being abutted and welded to each other.

9. In a railroad-crossing, in combination with the through-rails, interior crossing-rails, as F, abutted and welded to a rail or rails, as *e*, adjacent to one of the through-rails.



10. In a railroad-crossing, in combination with the through-rails, interior crossing-rails, as F, abutted and welded to a rail or rails having their ends bent so as to form guides  
5 for the flanges of wheels passing on said through-rails.

11. In combination with the through-rails of a railroad-track, a street railroad-crossing consisting of three parts, as A A B, each of  
10 said parts composed of girder guard-rails welded together and having their upper surfaces cut away, as described.

12. In combination with the through-rails of a railroad-crossing, girder-rails laid parallel to the through-rails, having their ends beveled and welded to similarly-beveled ends of  
15 girder-rails in line with the crossing-rails, so as to form angles or corners adjacent to the through-rails, substantially as set forth.

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Witnesses:

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