

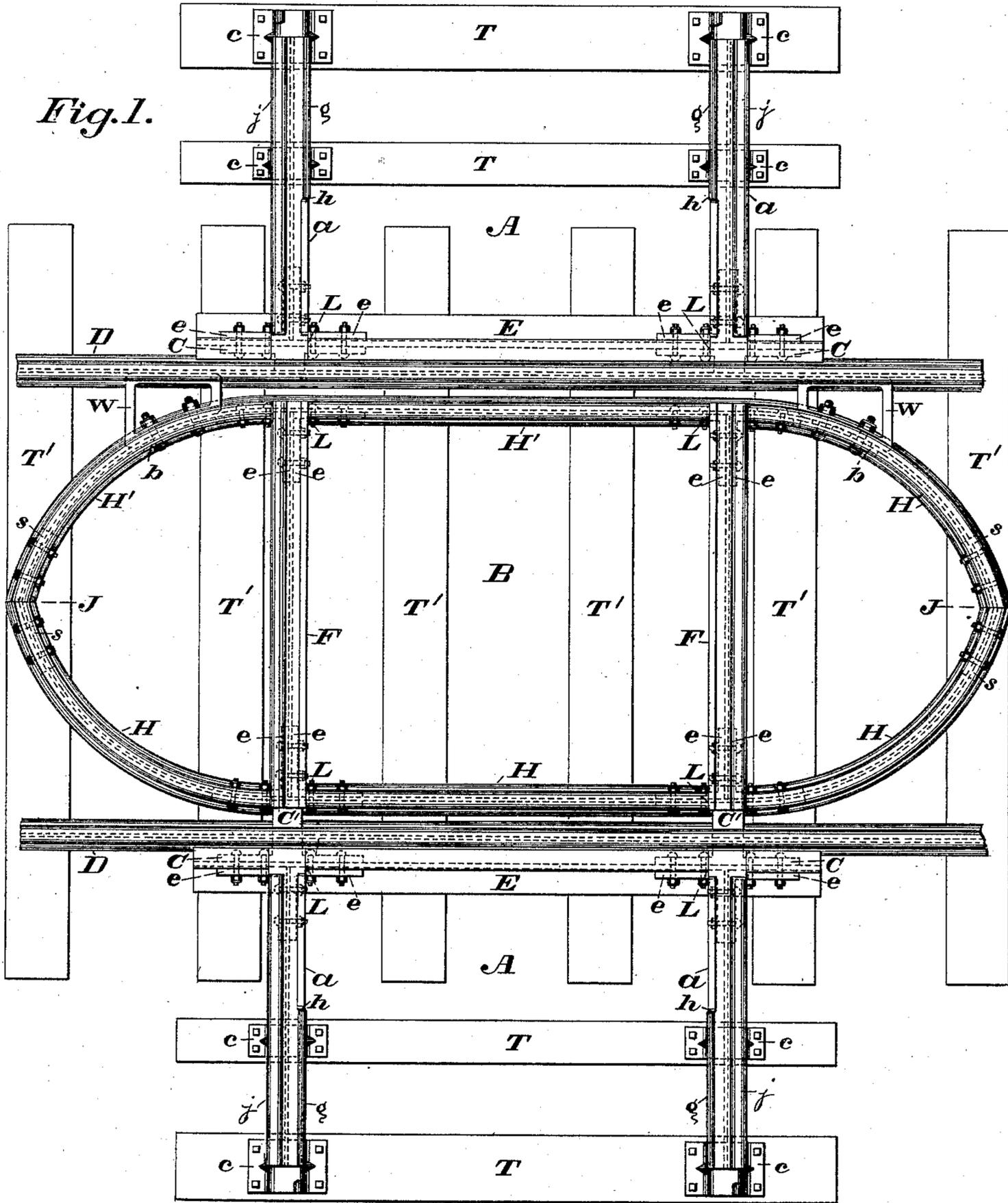
(No Model.)

2 Sheets—Sheet 1.

A. J. MOXHAM.  
RAILROAD CROSSING.

No. 477,688.

Patented June 28, 1892.



WITNESSES:

*W. F. Brückel,  
Francis P. Kelley.*

INVENTOR

*A. J. Moxham*  
BY *J. M. [Signature]*

ATTORNEY

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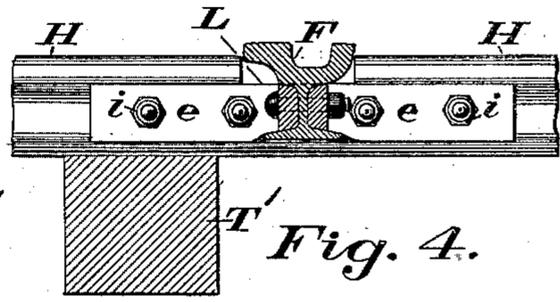
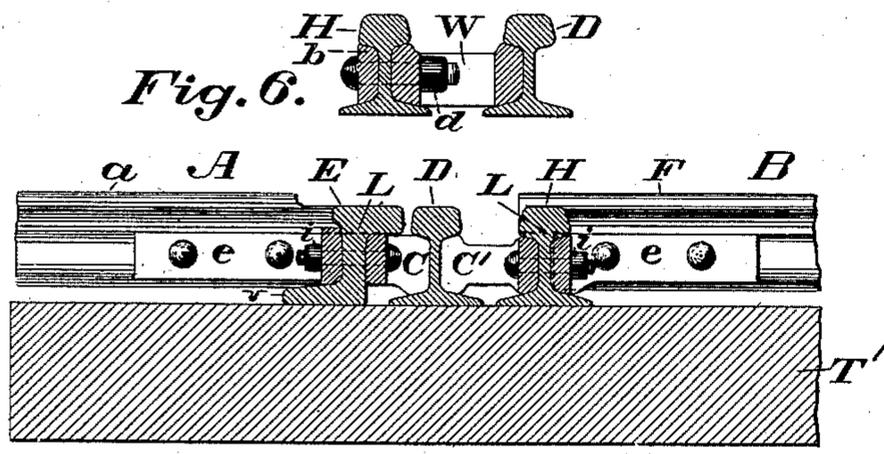
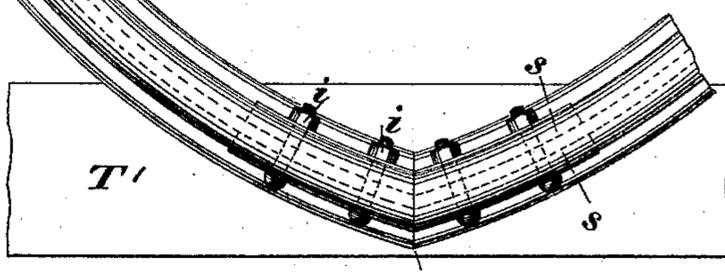
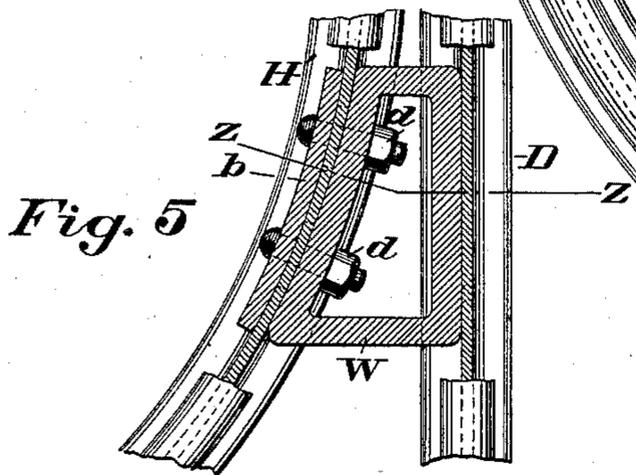
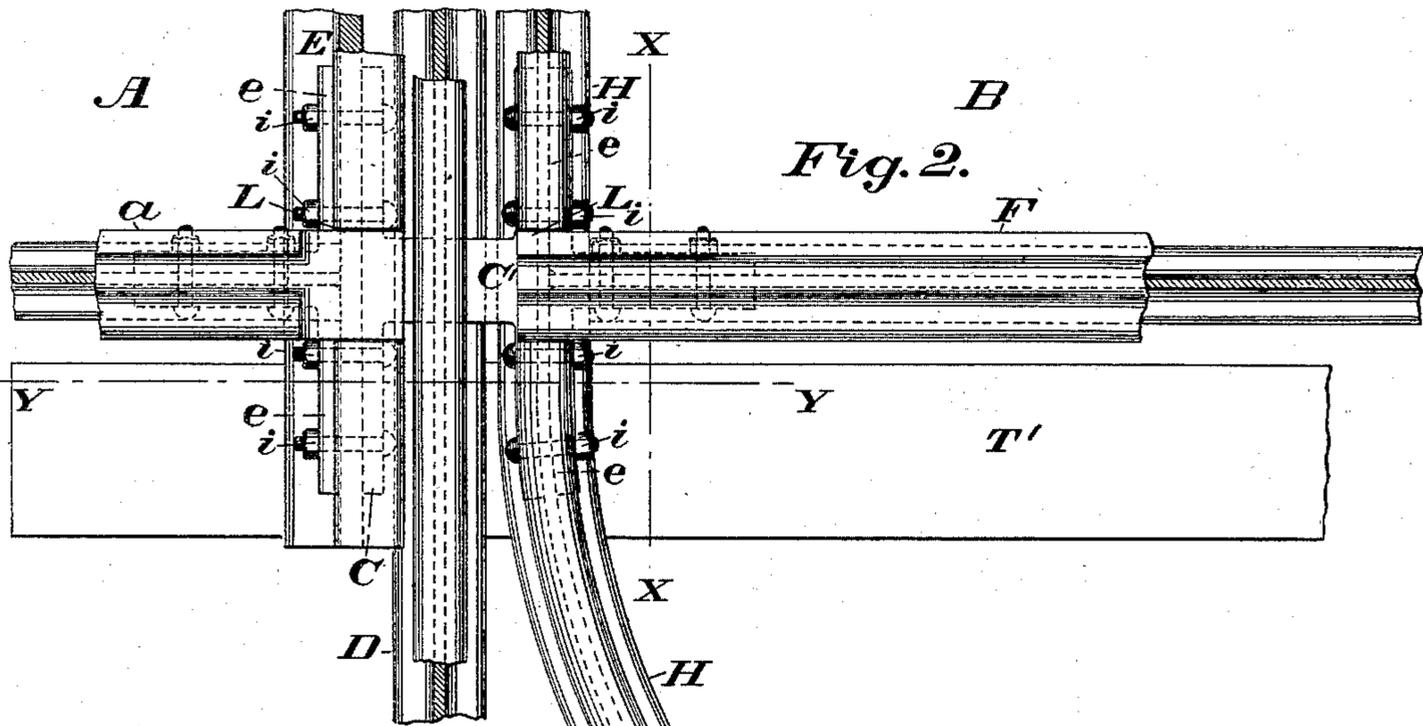


Fig. 3.

Fig. 4.

WITNESSES:

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Francis P. Reilly

INVENTOR

A. J. Moxham  
BY J. M. Doolittle

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# UNITED STATES PATENT OFFICE.

ARTHUR J. MOXHAM, OF JOHNSTOWN, PENNSYLVANIA.

## RAILROAD-CROSSING.

SPECIFICATION forming part of Letters Patent No. 477,688, dated June 28, 1892.

Application filed December 5, 1890. Serial No. 373,662. (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 objects of this invention are 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, and also to provide a strong and efficient guard for wheels passing over the last-mentioned track.

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

In the accompanying drawings, Figure 1 is a general view in plan of the crossing. Fig. 2 shows in detail, enlarged, one of the corners marked L in Fig. 1. Fig. 3 shows a vertical section taken through Fig. 2 at line Y Y. Fig. 4 shows a vertical section taken through Fig. 2 at line X X, looking to the left. Fig. 5 is a view in plan, partly in section, of certain details, hereinafter described. Fig. 6 is a vertical section taken through the line Z Z of Fig. 5.

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

The crossing consists of two outer portions A A and one center portion B. In each of said outer portions two pieces of girder guard-rail *a* are used, seated on chairs *c*, mounted on cross-ties T. Said rails abut a Z-shaped bar E and may be connected to said bar either by the splice-bars *e*, as shown, or by being directly welded thereto. In the latter case of course said splice-bars can be dispensed with. The head portions of the rails *a a* can either run through the Z-bar E and be nested therein by cutting a pocket through the head thereof, as shown at the point L in the several figures, or, if preferred, the rails *a* can be merely abutted to said bar by either cutting them off square at their ends or to fit the side of said bar which they abut. Should the rails *a* be nested through, the head and guard portions thereof should be planed off, as shown in elevation in Fig. 3, so that

the whole surface of the bar E is on one level, that level not being above the main-track rail D, but preferably a little below it, in order that the treads of locomotive-wheels passing over the rails D may not ride on the crossing, said treads being wider than the heads of said rails. The guard portions *g* of the rails *a* are planed or otherwise cut away to a level with the head portion *j* to the points *h*, in order that no obstruction may be offered to the passage of snow-plows, which are sometimes attached to locomotives passing over the rails D of the steam-railroad track and overhang said rails on either side.

The letters C C indicate attached chocks between the Z-bars E and the rails D, fitting into the concavity of the side of said rails, as shown in detail in Fig. 3. These chocks are preferably attached directly opposite the crossing-rails *a a*; but should said rails come opposite to a joint or splice-bar on the rails D said chocks should then be placed as near to this point as possible. Said chocks are attached to the bars E by the bolts *i*, which bolts can also pass through the splice-bars *e* when said splice-bars are used to connect the rails *a* to the bar E. By referring to Fig. 3 it will be seen that said bar is provided with a stout web thrown back by means of the overhanging head, which nearly approaches or may abut the rail D, the web being far enough back not to come in contact with the spikes holding the rail D in place or the lower flange of said rail. The lower portion of the bar E is provided with an outwardly-projecting flange *v*, by means of which it is supported on the ties T' of the main track and which in its turn affords vertical support to the guard-rails *a*. It will thus be evident that this Z-shaped bar possesses particular advantages.

Referring now to the portion of the crossing marked B, said portion consists of two pieces of T-rail H H', parallel with the main rails D, between the crossing guard-rails F, and curved beyond said crossing-rails to a common junction at the points J J, where they are reinforced by splice-bars *s*. At the point where the guard-rails F cross the rails

H H' are recessed to nest the heads of said guard-rails, though, if desired, the latter could simply abut the rails H H' at these points.

At the points marked C', Figs. 1, 2, and 3, between the rails H and D, are provided chocks similar in shape and purpose to the outside chocks C; but on the opposite side removable chocks W are provided between the rails D and H'. If the chocks used on both sides were of the form of the chocks C C', it would be impossible to place the center portion B in position without either removing the rails D or sliding the chocks in from the ends. It would, however, be difficult to slide such chocks into place, and if a joint existed in the rail D it would be impossible to slide the chocks past said joint. This difficulty is overcome by the use of the removable chocks W, which are entered into the curved portion of the guard-piece H H' and at the ends where easily accessible.

By referring to Fig. 5 it will be seen that the chocks W are provided with a hollow interior to permit access to the bolts and nuts *d d*, which secure them to the web of the inner guard-piece H', splice-bars *b* being provided on the other side of said web. It is obvious, however, that said chocks instead of being made hollow, as shown, could be made solid and provided with recesses to allow access to the nuts *d*. It will be observed that the chocks W are not bolted to the main rails D. By this construction the inner part B can be laid between the main rails D, pushed into place with the attached chocks C' bearing against the web of one of the main rails D, and the removable chocks W then slipped in from either end and attached to the rails of the guard-piece H H' at an accessible point.

The purpose of the guard-piece H H' is as follows: In practice there is considerable play in the trucks of steam-railroad cars passing over the rails D, and consequent oscillation of the wheels from one side to the other. The bent ends of the guard-pieces H H' offer to an approaching train something to guide its wheels into the groove between the main rails D and the rails H H' of the guard-piece. In railroad-crossings as at present constructed it is customary to use two rails having their ends bent to act as a guard; but such rails so bent depend upon spikes to hold them in place. By uniting both rails into one piece, as herein described, great constructive strength is secured and the whole interior portion B of the crossing takes the impact of an approaching train instead of a portion thereof. This is an important advantage, for it has been found extremely difficult to keep independent guard-pieces in order. By the construction herein described the whole crossing can be made out of rolled or forged steel or other metal and can be put in a steam-railroad track without the least disturbance of the latter. The rails shown in the street-rail-

road track are what are well-known to the trade as "girder guard-rails;" but, if desired, any other suitable form of rail may be substituted therefor.

Having thus fully described my said invention, I claim—

1. In a railroad-crossing, guard-rails between the through-rails curved and united at the ends into a guard-piece complete for either direction.

2. In a railroad-crossing, in combination with two crossing-rails, as F F, between the through-rails, a guard-piece composed of rails curved and united at their ends into a guard-piece complete for either direction.

3. In a railroad-crossing, in combination with through and crossing rails, as D F, a guard-piece composed of rails curved and united at their ends into a guard-piece complete for either direction.

4. In a railroad-crossing, in combination with through and crossing rails, as D F, a guard-piece composed of rails curved and united at their ends into a guard-piece complete for either direction, said guard-piece being provided with chocks between it and the through-rails.

5. In a railroad-crossing, a removable chock, as W, having one straight and one curved face shaped respectively to fit the shapes of the rails and provided with a vertical recess or recesses for inserting and tightening up the bolts securing said chock to one of said rails.

6. In a railroad-crossing, a guard-piece composed of rails curved and united at their ends to form the same, in combination with a through-rail and a removable chock, as W, having one straight and one curved face and provided with a recess or recesses, for the purposes set forth.

7. In a railroad-crossing, a guard-piece provided with attached or fixed chocks and removable chocks, as and for the purposes set forth.

8. In a railroad-crossing, a Z-shaped bar, as E, outside of the through-rail, for the purposes set forth.

9. In a railroad-crossing, in combination with two crossing-rails, as *a a*, a Z-shaped bar, as E, outside of the through-rail, for the purposes set forth.

10. In a railroad-crossing, in combination with two crossing-rails, as *a a*, a Z-shaped bar, as E, outside of the through-rail, and chocks, as C, for the purposes set forth.

11. In a railroad-crossing, in combination with the through and crossing rails, Z-shaped bars, as E, outside of the through-rails, for the purposes set forth.

12. In a railroad-crossing, the combination, with the through and crossing rails, of Z-shaped bars, as E, outside of the through-rails, and chocks, as C, for the purposes set forth.

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13. In a railroad-crossing, the combination, with the through and crossing rails, of Z-shaped bars, as E, a curved guard-piece, and chocks, as C C'.
- 5 14. In a railroad-crossing, the combination, with the through and crossing rails, of Z-shaped bars, as E, a curved guard-piece, and chocks, as C' W.
15. In a railroad-crossing, the combination, with the through and crossing rails, of Z- 10 shaped bars, as E, a curved guard-piece, and chocks, as C C' W.

ARTHUR J. MOXHAM.

Witnesses:

H. W. SMITH,  
P. FITZPATRICK.