(No Model.) 2 Sheets—Sheet 1.

F. C. WEIR & N. O. GOLDSMITH.

CABLE AND RAILWAY CROSSING.

No. 428,028. Patented May 13, 1890.

Fig. 1.

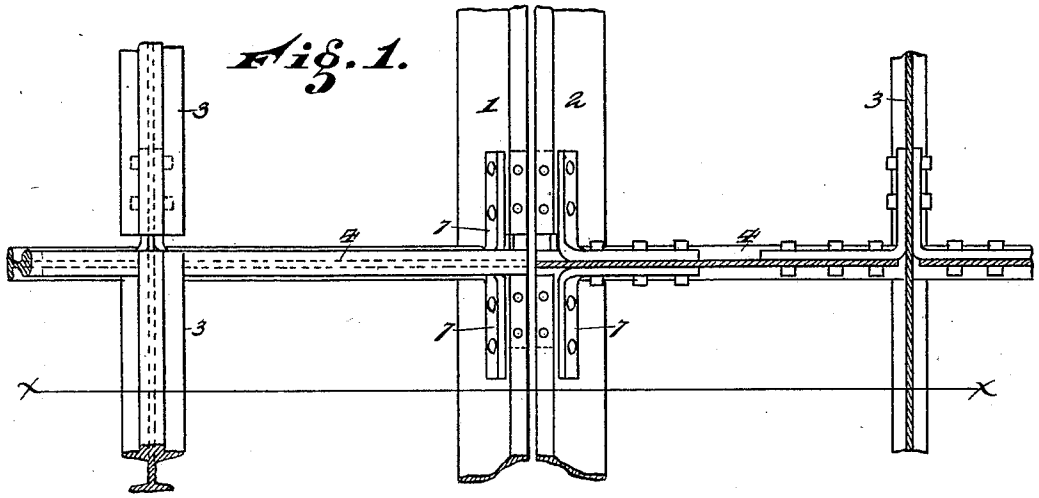


Fig. 3.

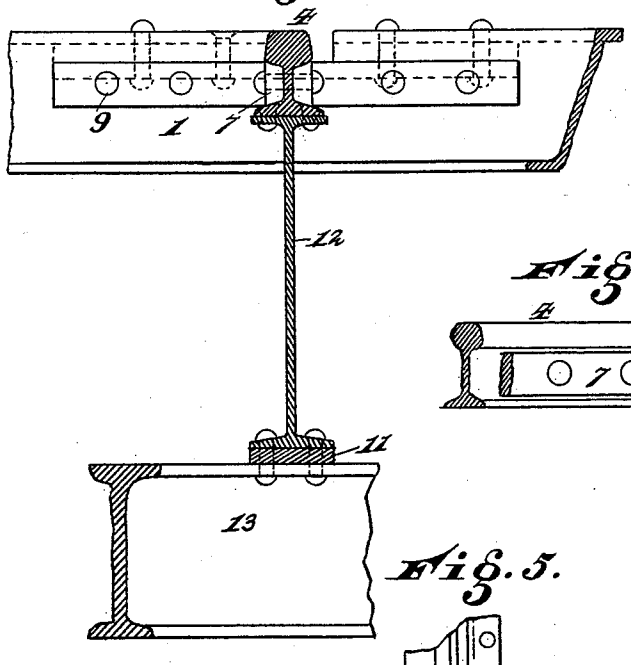


Fig. 8.

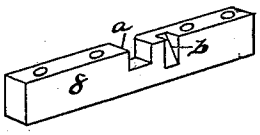
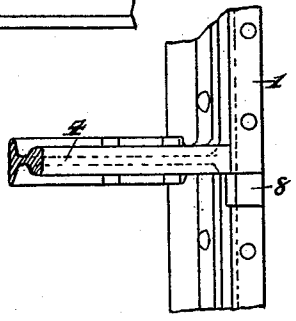


Fig. 4.

Fig. 5.



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CABLE AND RAILWAY CROSSING.

No. 428,028. Patented May 13, 1890.

Fig. 2.

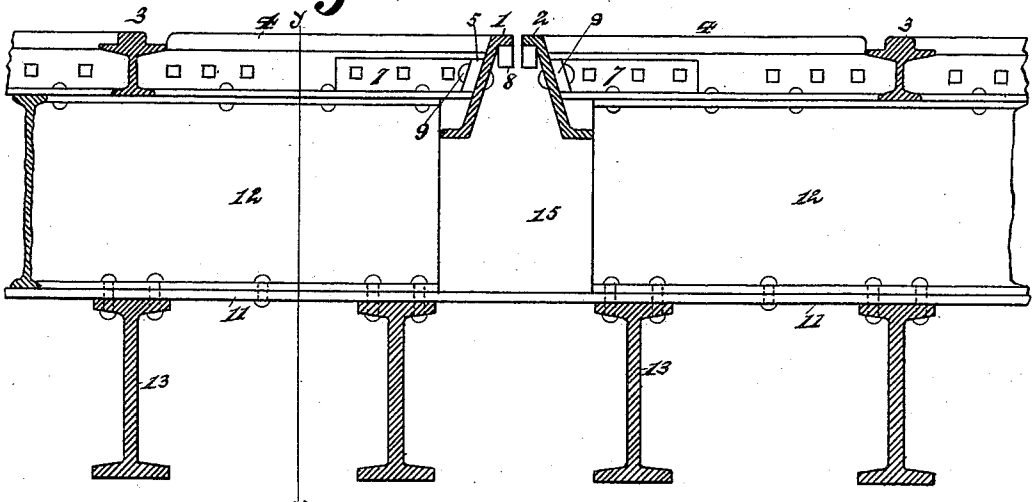


Fig. 6.

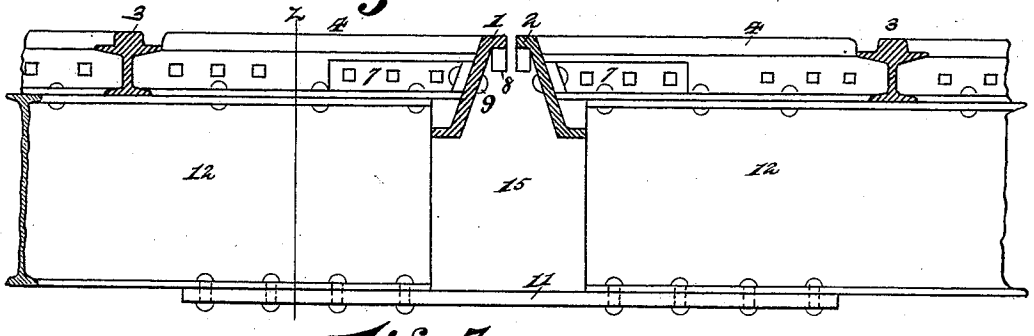
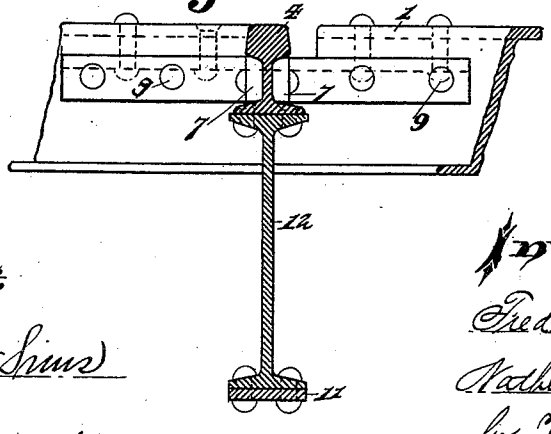


Fig. 7.



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UNITED STATES PATENT OFFICE.

FREDRIC C. WEIR AND NATHANIEL O. GOLDSMITH, OF CINCINNATI, OHIO, ASSIGNORS TO THE WEIR FROG COMPANY, OF SAME PLACE.

CABLE AND RAILWAY CROSSING.

SPECIFICATION forming part of Letters Patent No. 428,028, dated May 13, 1890.

Application filed May 24, 1888. Serial No. 274,912. (No model.)

To all whom it may concern:

Be it known that we, FREDRIC C. WEIR and NATHANIEL O. GOLDSMITH, of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Cable and Railway Crossings, of which the following is a specification.

Our invention relates to a combined cable and railway crossing.

The object of this invention is to provide a strong, durable, and effective crossing.

The features of our invention will be fully set forth in the description of the accompanying drawings, making a part of this specification, in which—

Figure 1 is a top plan view of one side of the crossing in section, with the head of the crossing removed at one end. Fig. 2 is a section on line *x x*, Fig. 1. Fig. 3 is a section on line *y y*, Fig. 2. Fig. 4 is a detached view showing the crossing-rail in elevation and one of the slot-rails in section. Fig. 5 is a sectional top plan view of a modified form of connecting the T-rails to the slot-rails. Fig. 6 is a modification of Fig. 2. Fig. 7 is a section on line *z z*, Fig. 6. Fig. 8 is a detail view of one of the guards.

1 2 represent the slot-rails.

3 represents the girder or street-railway rails.

4 represents the T-rail crossing the slot and street-railway rails. In order to fit this crossing-rail with the slot-rails 1 and 2, we notch the slot-rails and bevel off the inner ends of rails 4, as shown at 5 in Fig. 4, thus projecting the rail on each side to the inner edges of the tread of the rails forming the slot. This serves two purposes: first, it strengthens the head of the slot-rails, and, second, it relieves the slot-rails from wear from the crossing wheels.

8 represents a filling-block, which serves as a guard to prevent the grip from catching the cross-rail. It is provided with two notches, *a* forming the tramway and *b* to fit the bevel end 5 of the T-rail.

In Fig. 5 we have shown the rail 4 fitted to the outside of the web of the slot-rails.

7 represents knee-brace for joining the rail 4 to the slot-rails by means of bolts 9.

The T-rail 4 is cut into sections, as shown in Figs. 1, 2, and 6, and fitted to the girder-rails 3 at one end and to the slot-rails 1 and 2 at the other end of said section. In order to firmly hold these rails in position, we provide girders 12, which are preferably I-beams, made in section and tied together by a bar 11, riveted to the under side of the I-beams. We have shown two ways of forming girders to support said rails. In Fig. 2 we have shown the girder supported by transverse beams 13, which may be employed, if desired. The said supporting-beams are securely held together by tie-bars 11, on which the I-beams 12 are supported, and parts 11, 12, and 13 are securely riveted together. Between the sections of girder 12 is a space 15 to allow the cable and grip to pass.

In practice the steam-rails are from four to five inches in depth, and the slot-rails are about six inches deep and about half an inch thick. The notching out of the slot-rails to receive the web and head of the steam-rails is so great that the slot-rails or Z-rails practically have no vertical and supporting strength, while, on the contrary, the steam-rails, being so much thicker, are very strong and capable of sustaining the weight and strain of both rails; hence by our construction the Z-rail is relieved from all vertical support of the steam-rail, and the steam-rail is made to sustain all the weight put vertically upon the Z-rail at the crossing-point. This construction is important in that the head of the Z or slot rail being cut away it does not in any manner support the steam-rail. The whole structure is supported by a substructure underneath the steam-rails and the Z-rails securely braced to the steam-rails, so that the latter support the slot-rails.

Having described our invention, what we claim is—

1. A railway-cable crossing composed of the T-rail cut in sections and fitting the slot-rails and tram-rails and supported by the continuous girder 12, having the cable-space 15, substantially as herein specified.

2. In a combined cable and railway crossing, the slot or Z rails gained to receive the head and web of the T-rails, which are in-

serted in said notches and secured to said T-rails, substantially as specified.

3. A railway-crossing composed substantially of the rails 1, 2, and 3 and the T-rail 4, notched and connected together and supported by the continuous girder 12, bolted to the flanges of the T-rail, provided with recesses 15 and the transverse girders 13, substantially as herein specified.

4. A railway-cable crossing composed of the T-rails fitted and bolted to the slot-rails and supported by girder 12, and the notched guard-bar 8, secured to the under side of the head of the slot-rails, substantially as specified.

5. In a combined railway and cable crossing, the combination, with the crossing-rails, of slot-rails notched to receive the crossing-rails, which are beveled and inserted in said notched slot-rails, with the tops of said crossing-rails and slot-rails in the same plane, substantially as described.

6. In a combined railway and cable crossing, the combination, with the crossing-rails, of the slot-rails gained to receive the heads of the crossing-rails, the tops of which slot-rails and crossing-rails are in the same plane, the notch or gain of the slot-rails being sufficiently wider than the crossing-rails to form a flangeway within the notch on one side of the head of the crossing-rail, substantially as described.

In testimony whereof we have hereunto set our hands.

FREDRIC C. WEIR.
NATHANIEL O. GOLDSMITH.

Witnesses:
E. E. WOOD,
J. WATSON SIMS.