

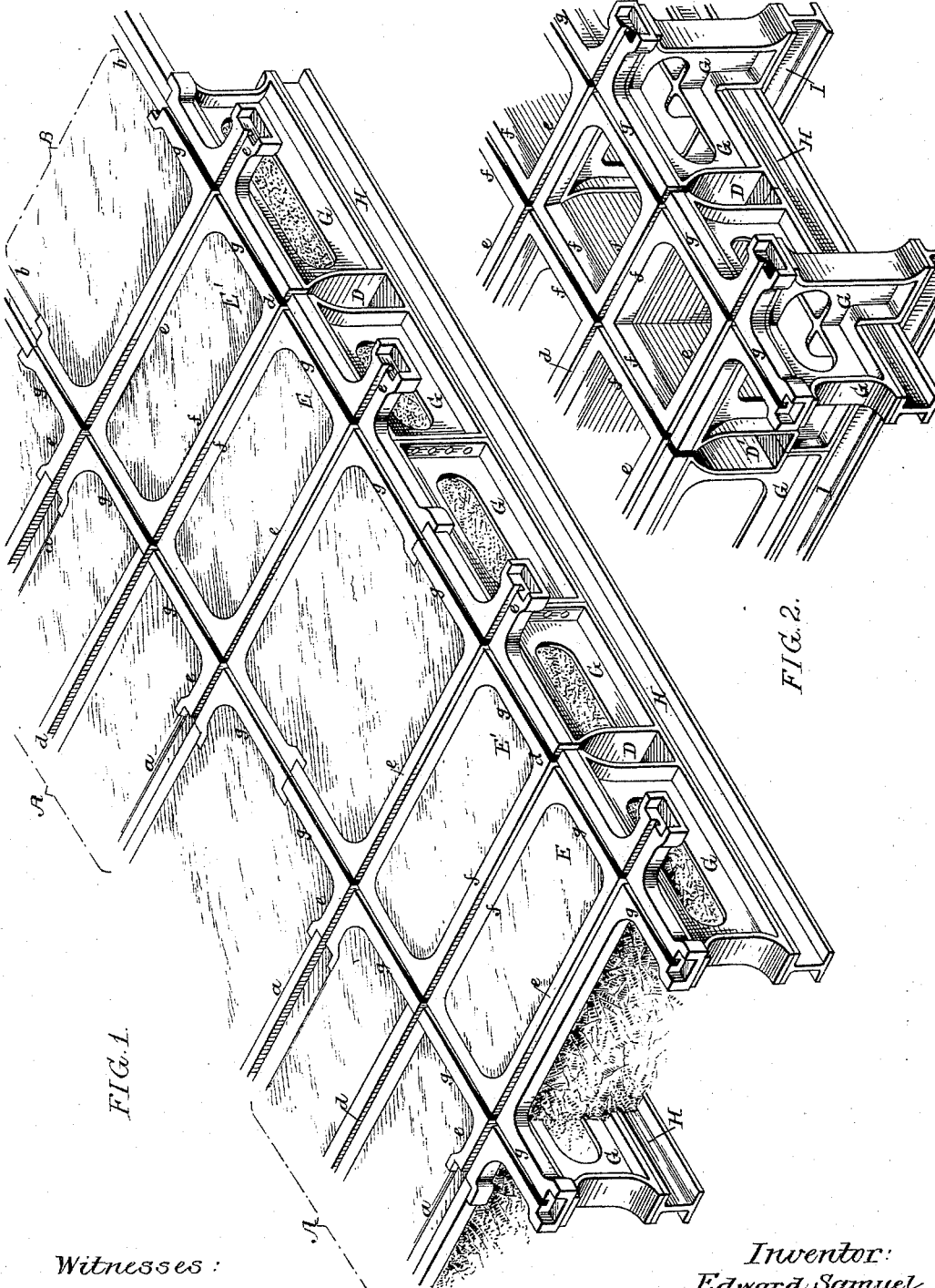
(No Model.)

2 Sheets—Sheet 1.

E. SAMUEL.  
CROSSING FOR CONDUIT RAILWAYS.

No. 456,434.

Patented July 21, 1891.



Witnesses:  
Hamilton D. Turner.  
Alex. Barkoff

Inventor:  
Edward Samuel  
by his Attorneys  
Howson & Howson

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FIG. 3.

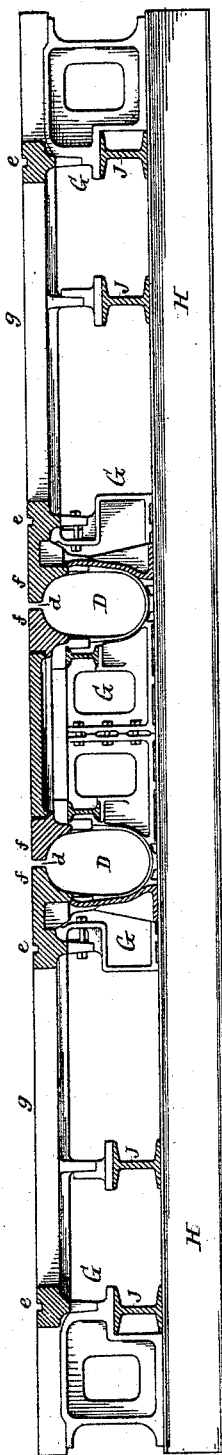
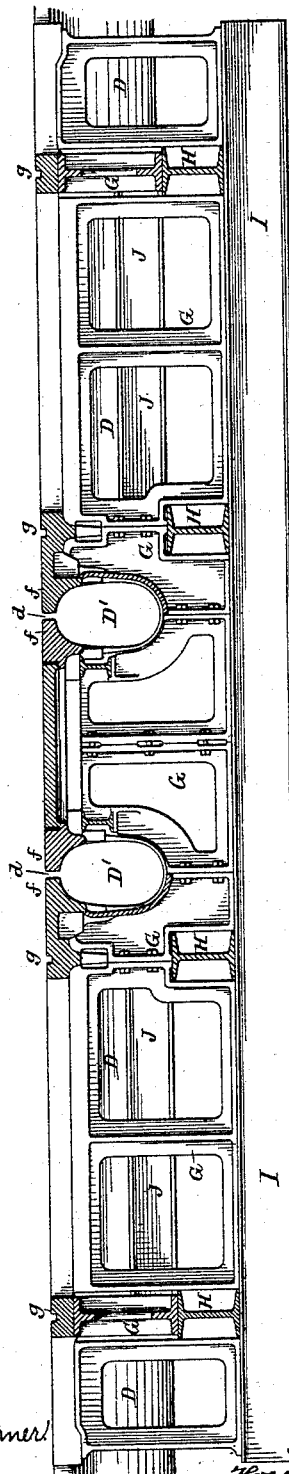


FIG. 4.



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# UNITED STATES PATENT OFFICE.

EDWARD SAMUEL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO  
WILLIAM WHARTON, JR., AND COMPANY, INCORPORATED, OF SAME  
PLACE.

## CROSSING FOR CONDUIT-RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 456,434, dated July 21, 1891.

Application filed March 9, 1889. Serial No. 302,658. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD SAMUEL, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Crossings for Conduit-Railways, of which the following is a specification.

The object of my invention is to so construct crossings for conduit-railway systems that the rails of said crossings will be rigidly supported throughout and not liable to be moved out of place, so that the slots in the conduits will not be liable to close, nor will their proper alignment be disturbed.

In the accompanying drawings, Figure 1 is a perspective view showing a single plain track crossing a double-track conduit system with the conduit between the rails. Fig. 2 is a perspective view of part of the structure as devised for use when two conduit systems cross each other. Fig. 3 is a sectional view showing my invention as applied to a crossing in which the conduits are at the sides of the tracks, and Fig. 4 is a sectional view of a like structure as devised for use when the crossing track is also that of a conduit system.

A A are the two tracks of a double-track conduit system for cable or electric railways, *a a* being the rails, and D D the two conduits, which, as shown in Fig. 1, are located between the rails in the center of the track, each conduit having the usual slot *d* for the passage of the grip or contact carrying bar.

B is a cross-track having rails *b b*, and E E' are the crossing-castings, having portions *e e*, which form continuations of the rails *a a*, and portions *f f*, which form continuations of the sides of the slot *d* of the conduit. Portions *g g*, in the present instance at right angles to the portions *e* and *f*, form continuations of the rails *b b* of the crossing track B. These portions *g g* also connect the two portions *e f* together, the whole frame being preferably cast in one piece, although other constructions may be adopted without departing from my invention.

It will be understood that the conduits may be either on the outside of the tracks, as shown in Fig. 3, or between the rails, as shown in Fig. 1.

Below and parallel with the portions *g* of

the crossing structure, which form continuations of the rails of the crossing track, is a beam or girder H, and interposed between said beam or girder and said portions *g* of the crossing structure are supporting-frames G, three of these frames being shown in the present instance, although more or less than this number may be used, if desired. The outer frames, as shown, have portions for the reception of or constitute portions of the shell or casing of the conduit, and all of the frames are preferably bolted together, so as to constitute a unitary structure. It will therefore be observed that all the portions *g* of the crossing structure are rigidly connected to the foundation beams or girders H, so that when the crossing is set these portions *g* of the structure are immovably held in place, no vertical, longitudinal, or lateral displacement of the same being likely to be effected by the shocks, jars, or strains to which they are subjected by the wheels of passing cars or vehicles, so that that portion of the slot *d* of the conduit which is formed by the portions *f* and *g* of the crossing structure is always maintained in proper alignment with the slot on either side of the crossing.

Although it is not absolutely necessary that the foundation beams or girders H, which extend transversely to the tracks A A, should be directly beneath the portions *g* of the crossing structure, this location of said foundation beams or girders is preferred as providing the most effective support, and in cases where both lines are provided with conduits it is preferable to employ another pair of foundation beams or girders I, which extend beneath the portions *e* of the crossing structure, suitable supporting-frames being interposed between said portions of the crossing structure and the foundation-beams, as illustrated in Fig. 2, so that there can be no deflection of the slot of either of the conduits by the action of the wheels of passing vehicles.

I have shown in the drawings an instance of a single track crossing a double-track conduit system, and from this the construction where the conduit system has but a single track, or where two or more tracks cross the track or tracks of the conduit system will be readily understood.

The supporting-frames illustrated in the drawings are shown in the form of castings; but it will be understood that wrought-iron frames may replace such castings, or that wooden supports may, in some cases, be used in place of the same, and wooden stringers may even replace the foundation beams or girders, if desired.

In Fig. 3 I have shown as a substitute for the supporting-frames transverse beams J, mounted upon the beams H and having shoes or chairs for supporting the rails g.

Fig. 4 illustrates a system on the same plan, but in which both sets of tracks have conduits.

I claim as my invention—

1. The combination, in a crossing for a conduit-railway system, of the crossing-castings extending from side to side of the cross-track and forming the slot of the conduit, foundation beams or girders located transversely to the line of the conduit-track, and supports or frames interposed between said foundation

beams or girders and the crossing-castings, whereby the said castings are rigidly united to the foundation beams or girders, substantially as specified.

2. The combination of a crossing for a conduit-railway system in which both tracks are provided with conduits, a set of foundation beams or girders for each track, and supports or frames whereby the portions of the crossing forming one track are rigidly united to and supported by one set of girders and the portions forming the other track are united to and supported by the other set of girders, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWD. SAMUEL.

Witnesses:

LOUIS KOPPENHOEFER,  
HARRY SMITH.