E. H. JOHNSTON.
Railway-Crossing.

No. 198,393. Patented Dec. 18, 1877.

Fig. 1.

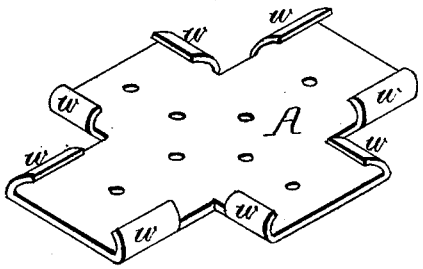


Fig 6

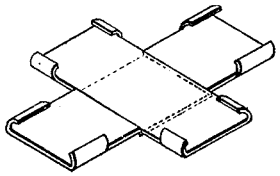


Fig 2

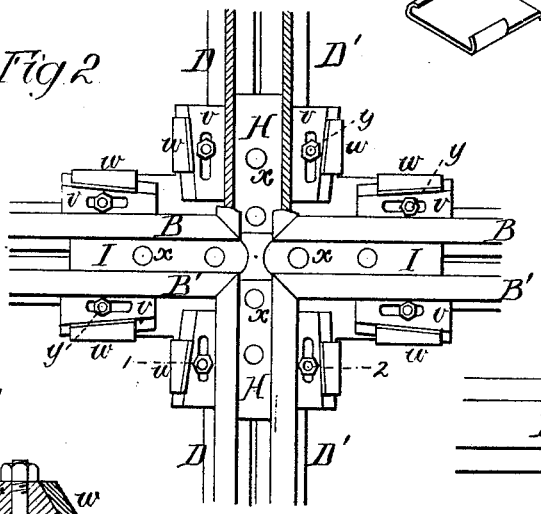


Fig 4

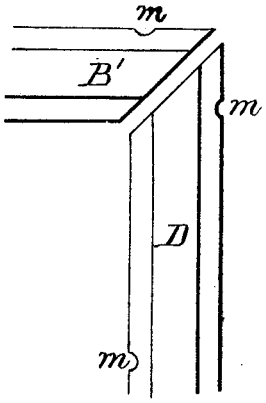
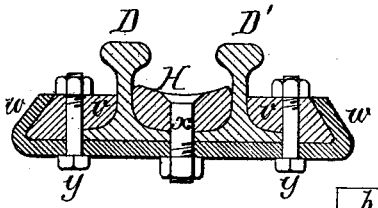


Fig 5



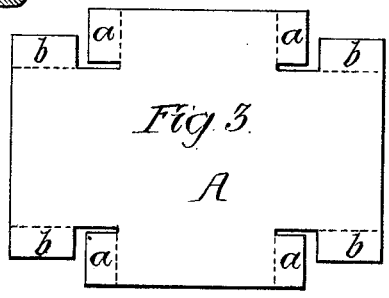


Fig 3.

A

Witnesses
Harry Smith
Henry Howson Jr

Inventor
Edward H. Johnston
by his Attorneys
Howson and Son

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDWARD H. JOHNSTON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE WHARTON RAILROAD SWITCH COMPANY, OF SAME PLACE.

IMPROVEMENT IN RAILWAY-CROSSINGS.

Specification forming part of Letters Patent No. **198,393**, dated December 18, 1877; application filed November 12, 1877.

To all whom it may concern:

Be it known that I, EDWARD H. JOHNSTON, of Philadelphia, Pennsylvania, have invented new and useful Improvements in Railroad-Crossings, of which the following is a specification:

The main object of my invention is to construct a substantial crossing for railroads, mainly by the employment of a cruciform flanged plate, serving as a medium through which the rails are rigidly secured together, as described hereinafter.

In the accompanying drawings, Figure 1 is a perspective view of the cruciform foundation-plate; Fig. 2, a plan view of the crossing, partly in section; Fig. 3, a plan view of the foundation-plate as it appears before the flanges are turned up; Fig. 4, a view drawn to an enlarged scale, and illustrating the manner of fitting the rails together on the plate; Fig. 5, a section, also drawn to an enlarged scale on the line 1 2, Fig. 2; and Fig. 6, a modification of the foundation-plate.

The main feature of my invention is the cruciform plate A, having flanges which are, in the present instance, inwardly inclined, as shown in Fig. 1, the plate being preferably made of wrought-iron or steel, of the shape shown in Fig. 3 in the first instance, and the flanges *w* being formed by turning up the projecting lips *a a* and *b b* on the dotted lines shown in the latter figure. The rails B B′ and D D′ are arranged on the plate, as shown in Fig. 2, and are beveled at the ends, as seen in Fig. 4, so that the rails may be accurately fitted together. Distance-pieces H and I, consisting of bars adapted to the sides and flanges of opposite rails, are introduced between the latter, and are secured to the plate by vertical bolts *x*, for the passage of which the flanges of the rails are notched, as shown at *m*, Fig. 4, so that the bolts fitting into the notches of the flanges of adjoining rails shall serve the purpose of preventing the longitudinal displacement of the distance-pieces, in addition to that of aiding in confining the rails to the plate. A wedge, *v*, is driven between each two flanges of the foundation-plate and the adjoining rail, each wedge having an elongated slot, through which and through the foundation-plate passes a bolt, *y*, as described in Letters Patent No. 155,378, granted to my assignees September 29, 1874.

When all the wedges have been driven into their places and the nuts of the bolts tightened, the rails will be securely fastened to the foundation, and the whole will form a substantial crossing, all parts of which are held securely together through the medium of the plate.

This plate may be constructed for use without wedges, in which case the flanges will fit directly to the rails, and the latter may be bolted to the plate without the intervention of the distance-pieces, which, however, as well as the wedges, I prefer in all cases.

The plate may be made of cast-iron; but I prefer to make it of wrought-iron or steel in one piece; or it may be made of two bars crossing each other, and secured together, as shown in Fig. 6, the under bar being recessed for the reception of the other bar, so that the plate may have a level upper surface.

In the present instance the rails are arranged for tracks which cross each other at right angles, and the wings of the cruciform plate are therefore arranged at right angles to each other. If the rails cross each other at acute angles, the plate must, of course, be constructed accordingly.

I claim as my invention—

1. The combination, substantially as described, of the cruciform foundation-plate A and its flanges with the rails of a crossing secured to the said plate.

2. The combination of the cruciform foundation-plate A and its flanges with the rails of a crossing, and with wedges and distance-pieces secured to the plate, all substantially as described.

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

EDWARD H. JOHNSTON.

Witnesses:

RICHARD L. GARDINER,

HARRY SMITH.