

No. 120,933.

G.W.BILLINGS.

Patented Nov. 14, 1871.

Railway Crossing.

Fig. 1.

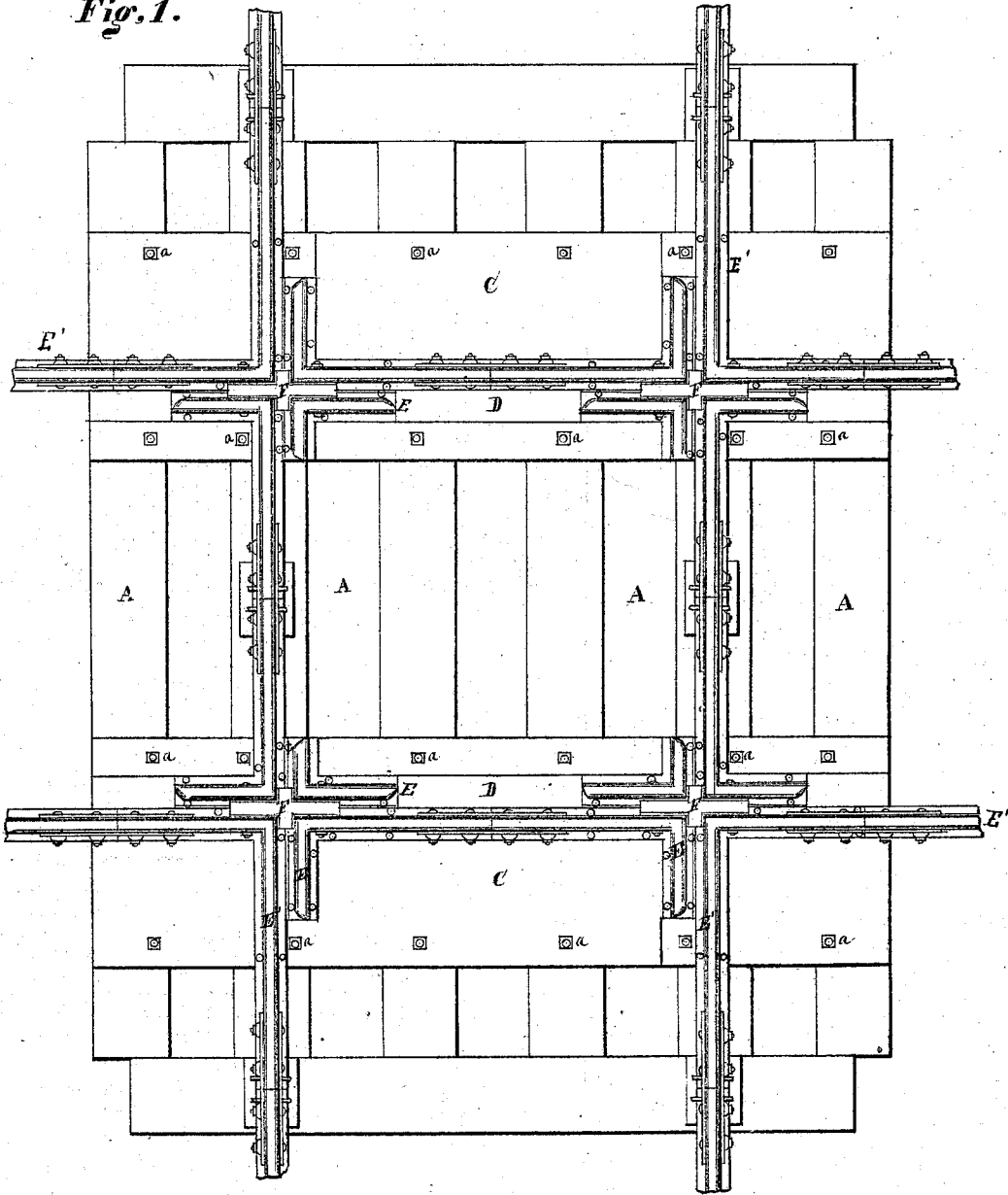


Fig. 2.

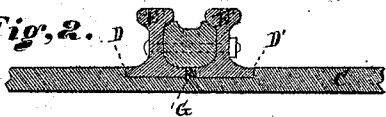
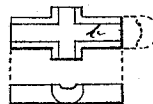


Fig. 3.



Inventor.
George W. Billings

Witnesses.
J. H. Burridge.
H. H. Colebrook

UNITED STATES PATENT OFFICE.

GEORGE W. BILLINGS, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN RAILWAY CROSSINGS.

Specification forming part of Letters Patent No. 120,933, dated November 14, 1871; antedated November 13, 1871.

To all whom it may concern:

Be it known that I, GEORGE W. BILLINGS, of Chicago, in the county of Cook and State of Illinois, have invented a certain new and Improved Railway Crossing; and I do hereby declare that the following is a full, clear, and complete description of the same, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a plan view of the crossing. Fig. 2 is a detached transverse section. Fig. 3 is a detached section.

Like letters of reference denote like parts in the different views.

The nature of this invention relates to a railway crossing; and the object thereof is to so construct said crossing that it shall be stronger and more durable than those constructed in the ordinary manner, in which the base of the main rails and the guard-rails are simply secured by bolts to the bed-plates, whereby said bolts receive all the lateral strain exerted upon the rails; whereas in the crossings constructed on my plan the rails are supported in resisting the side pressure that may be exerted upon them by having their base or foot fitted in a groove or channel, and the neck of the rails at the junction of their crossing supported by a throat-piece or angle-iron, as hereinafter more fully described.

In the drawing, Fig. 1, A A represent the ties or timbers on which the bed-plates C C are secured by the bolts *a*. Said bed-plate is made of iron, and in the upper surface thereof is formed two parallel grooves, D D', between which runs a narrow rib, *a*, Fig. 2, forming one side of each of the grooves, and in which the base of the rails E E' stand, as shown in said Fig. 2. Said rib, however, may be dispensed with and the two grooves thrown into one and made of sufficient width to admit the base of the two rails, so that they may lie close together, and thereby mutually support each other against any lateral strain that may be exerted upon them by the wheels of the passing train. At the junction of the crossing of the rails the neck or web thereof is braced by the use of a throat-plate or angle-iron, F, resting upon the base of the rails, a detached view of which is shown in Fig. 3; or a section of the base of the rails may be cut out so that the throat-piece may rest upon the plate; also, the under side of the throat-piece is formed so as to fit the

curvature of the neck of the rail in its junction with the base, as shown in Fig. 2; hence, as the throat-piece is made to fit not only the base of the rails, but also to the under side of the head, it will be obvious that the weight of the train upon the rails will be borne, in part, by the throat-piece; therefore, the neck of the rails will be less liable to crush or buckle down in consequence of the pounding upon the rails by the wheels of the train.

In the event that the throat-piece becomes worn out or disabled, it can be easily renewed by removing the guard-rail, which will allow the throat-piece to be taken out for the admission of a new one.

It will be observed that through the middle of the face of the throat-piece is cut a groove, *b*, to allow the flange of the wheels to pass without interference therewith.

The ordinary way of constructing crossings of this class is by laying the rails down upon the bed-plate and thereto securing them by means of bolts passing through the base of the rails and bed-plate. The objection to this mode of constructing the crossing is that all the lateral strain exerted upon the rails is borne by the bolts whereby said rails are fastened down to the plates. In order to make the rails as strong as possible in resisting the lateral strain, many bolts are used, which, as a consequence, weakens the strength of the rails by the many holes bored in the base for the admission of the bolts, thereby rendering the crossing insecure, and more especially in the event of a great lateral pressure, as the bolts are liable to become loose and give way or the rails to break asunder. To avoid these objections and to make a more secure and durable crossing is the purpose of forming the grooves referred to in the face of the bed-plate, in which, as aforesaid, the base of the rails are placed.

It will be obvious that by this means the bolts are relieved from the strain of the lateral pressure, as the base of the rails, or so much thereof as is used to form the crossing, is made to rest against the side of the grooves; therefore all the lateral strain spent upon the rails is resisted by the sides of the grooves, against which the bases of the rails lie; therefore but few bolts are needed in the construction of the crossing, and these few only to hold down the rails; hence, the original strength of the rails remains intact, as but

few holes are bored in the base for the admission of bolts whereby to secure them in place.

For further security and strength, as aforesaid, the throat-piece F referred to is introduced at the junction of the crossing rails, as shown in Fig. 1, which, being closely fitted between the rails and guard-rails of the two tracks, assists to keep them in their proper relative position and strengthens them at that particular point where their continuity is broken by the intersection of the rails.

The crossing above described is that of a right angle, but the principle of the construction is

equally applicable to crossings of any other angle that may be desired.

What I claim as my invention, and desire to secure by Letters Patent, is—

The bed-plate C, provided with grooves or channels, throat-plate F, and guard-rails E, constructed and arranged in relation to the rails E' substantially as and for the purpose set forth.

GEORGE W. BILLINGS.

Witnesses:

J. H. BURRIDGE,

D. L. HUMPHREY.

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