J. M. HANNAHS.

Elevated Railway.

No. 163,189. Patented May 11, 1875.

Fig 1.

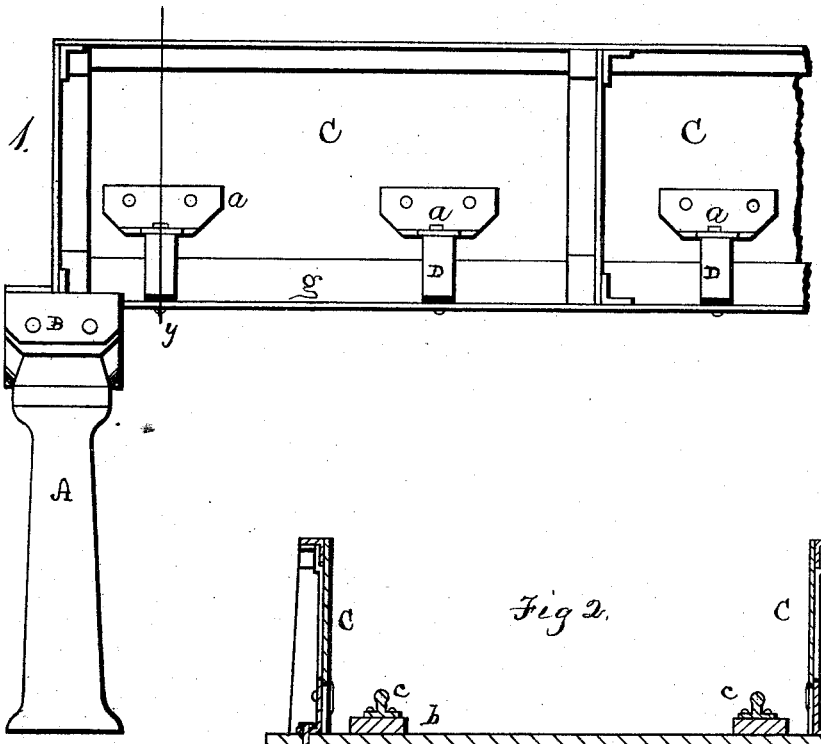

Fig 2.

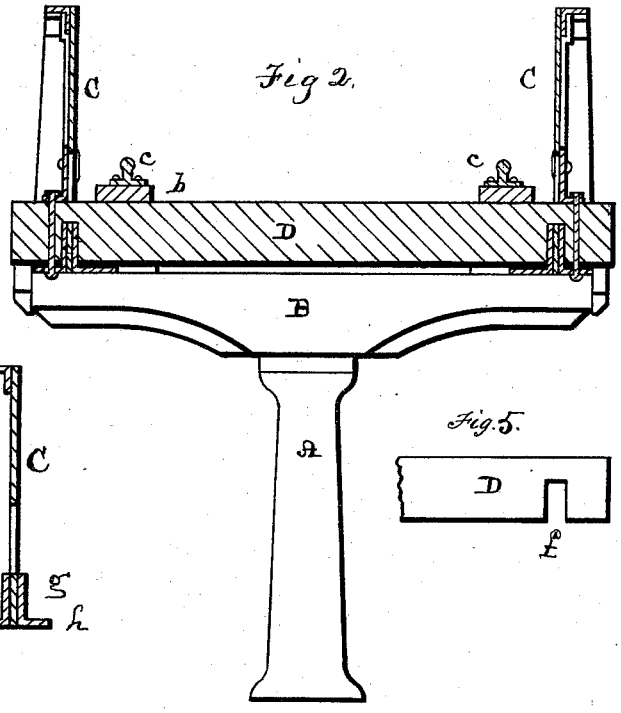

Fig. 3.

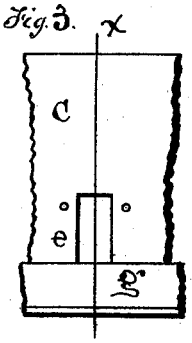

Fig. 4.

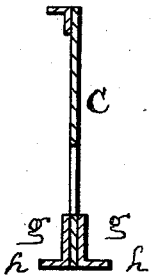

Fig. 5.

Witnesses.

E. A. West

C. V. Bond.

Inventor.

James M. Hannahs

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

JAMES M. HANNAHS, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF HIS RIGHT TO LOUIS WAHL AND CHRISTIAN WAHL, OF SAME PLACE.

IMPROVEMENT IN ELEVATED RAILWAYS.

Specification forming part of Letters Patent No. **163,189**, dated May 11, 1875; application filed December 28, 1874.

CASE B.

To all whom it may concern:

Be it known that I, JAMES M. HANNAHS, of the city of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Elevated Railways, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation; Fig. 2, a vertical section on line *y* of Fig. 1; Figs. 3, 4, and 5, details, Fig. 4 being a section on line *x* of Fig. 3.

Elevated railways having girders upon their sides for the purpose of supporting the track, and serving, also, as guards to prevent accidents, have been used, and bars or ties, on which the rails are supported beneath the girders.

This invention consists in so constructing the railway that the cross-bars or ties pass through openings in the web of the girders, and rest on the flanges of the lower angle-irons or chords, instead of being placed below them, or rest on flanges within the girders.

In the drawings, A represents one of the posts; B, a cross-bar upon the posts, upon which the railway is supported. C C are girders, placed along the sides of the track. D are cross bars or ties, on which are placed longitudinal bars *b*, to which the rails *c* are secured. These cross-bars D pass through openings or holes *e* in the web of the girders C. They have, near each end, a recess, *f*, on their under sides, to pass over the strengthening parts *g*. The ties rest upon the flanges *h* of the lower angle-irons.

By this construction I am enabled to use wooden ties instead of ties made of iron, though iron ties might be used.

After the ties have been placed in position I rivet a piece of metal, *a*, upon the girder C, just above each tie, so as to hold them in place, and also bolt each end of each tie to the flange *h* of the angle-irons.

It is evident that, in place of making openings in the web of the girders to receive the ties, they may be made of such length as to fit between the girders, and rest on the inner flange *h*, which, if necessary, can be strengthened.

What I claim as new is as follows:

1. The girder C, having openings *e* to receive the ties D, substantially as and for the purposes specified.

2. In an elevated railway, the girders C, in combination with the ties D, said ties being supported upon, and placed above, the lower angle-irons or chords, substantially as specified.

JAMES M. HANNAHS.

Witnesses:
E. A. WEST,
O. W. BOND.