

(No Model.)

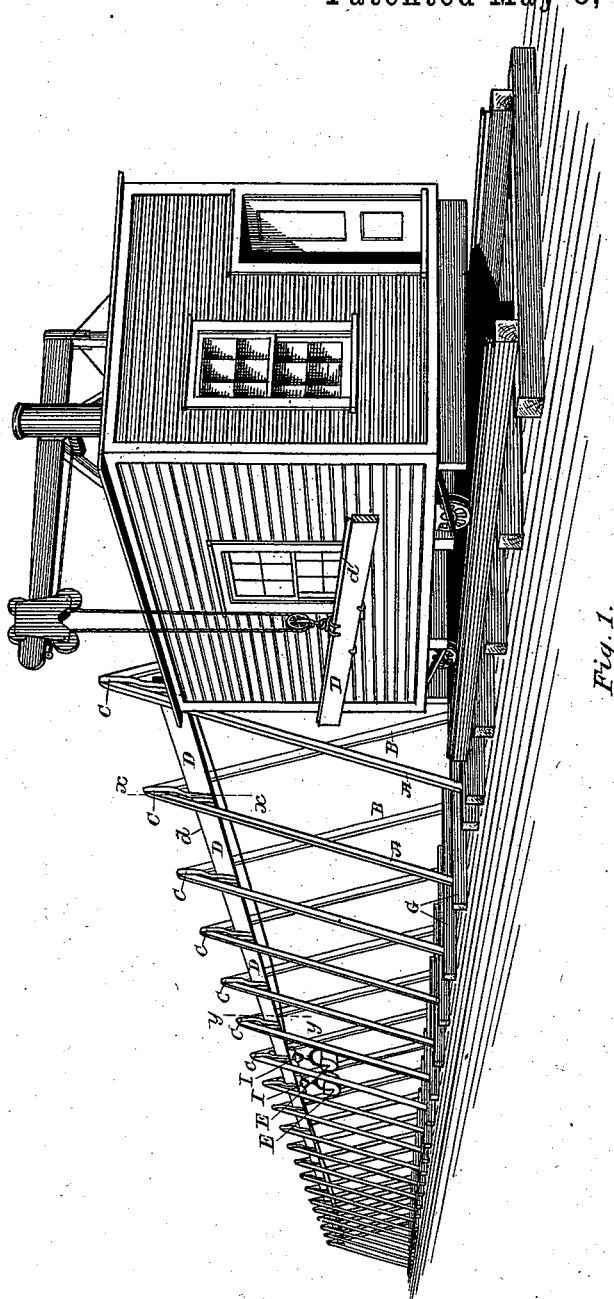
3 Sheets—Sheet 1.

A. E. BROWN.

## TRAMWAY FOR CARRYING ELEVATED LOADS.

No. 382,634.

Patented May 8, 1888.



*Fig. 1.*

*Witnesses.*

W. J. Graham.

H. Hansen.

*Inventor*

Alex. E. Brown.

By J. N. McIntire.

*Atziz.*

(No Model.)

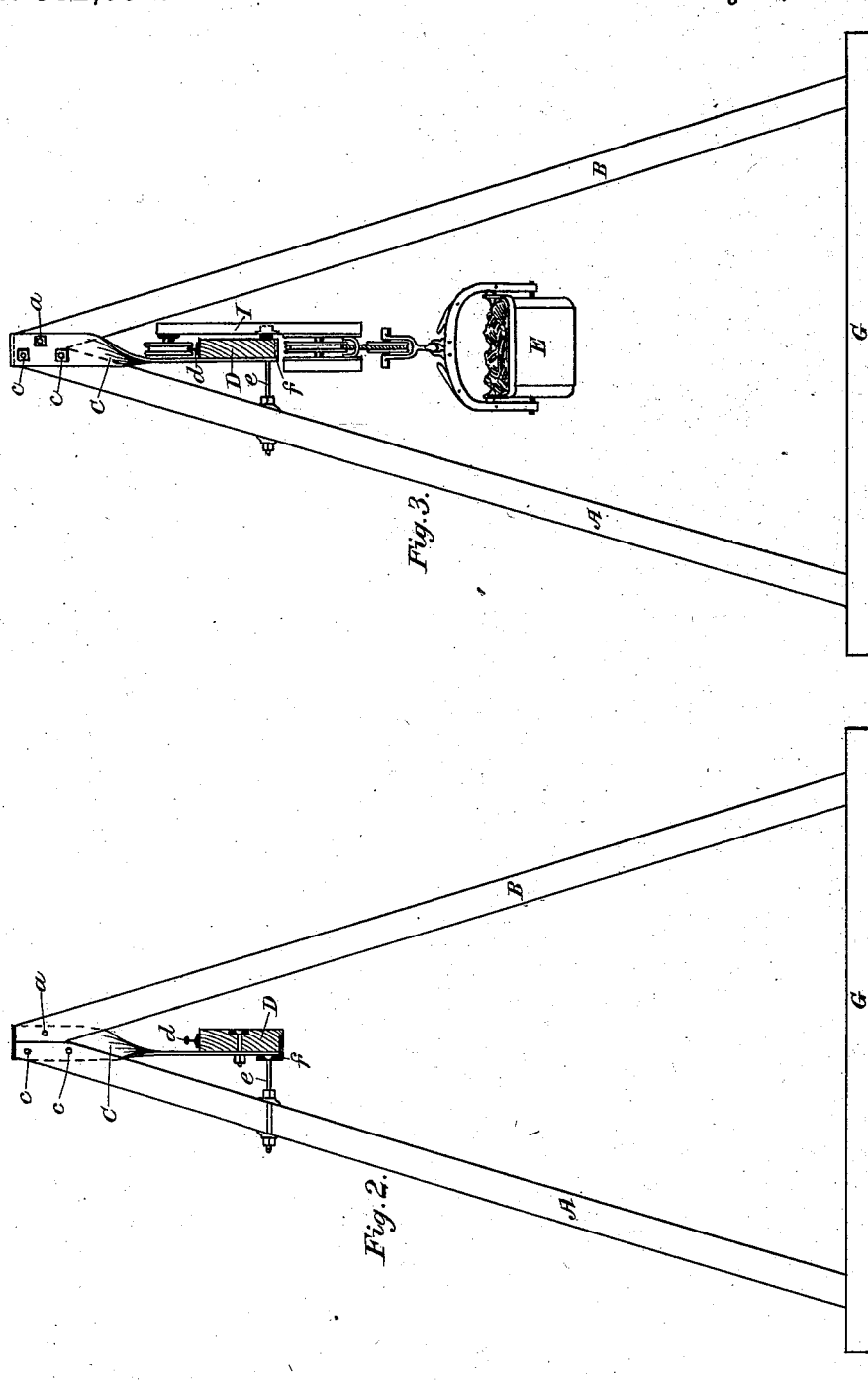
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Witnesses

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*H. Hansen.*

Inventor.

*Alex. E. Brown.*

By *J. N. McIntire.* Atty.

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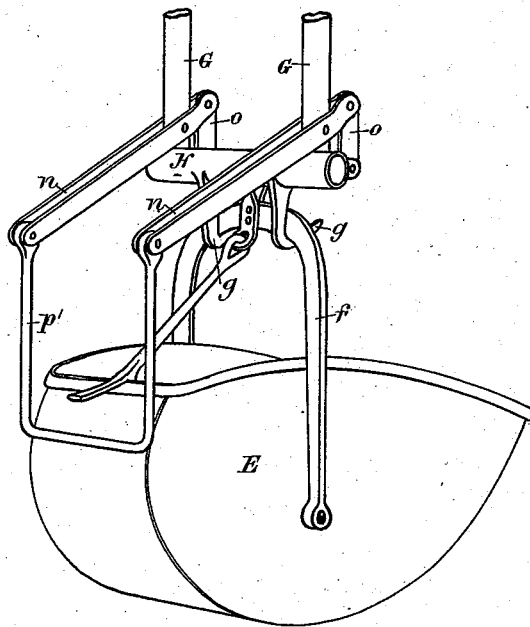


Fig. 4

Witnesses.

W. J. Graham  
H. Hansen

Inventor.

Alex. E. Brown.

By J. N. McIntire, Atty.

# UNITED STATES PATENT OFFICE.

ALEXANDER E. BROWN, OF CLEVELAND, OHIO.

## TRAMWAY FOR CARRYING ELEVATED LOADS.

SPECIFICATION forming part of Letters Patent No. 382,634, dated May 8, 1888.

Application filed March 15, 1887. Serial No. 231,022. (No model.)

### *To all whom it may concern:*

Be it known that I, ALEXANDER E. BROWN, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Tramways for Carrying Elevated Loads; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this application.

My invention relates to certain new and useful improvements in the construction of elevated tramways, and has for its main objects to provide for use a contrivance of this type which shall be exceedingly strong, simple, and durable in its structure, and which at the same time shall afford ready and efficient means for the support or travel of a conveyer-machine, and for the attachment or arrangement with the structure of the usual cable and other appliances of a hoisting and conveying machine.

The main feature of my invention may be said to consist in a tramway composed of a series of A-frames having a single track-beam or track-stringer arranged within the angular space between the legs of said A-frames, and suspended from the apices of said frames by means of a series of metallic suspender-like devices, all in the manner to be hereinafter more fully explained, and as will be more particularly pointed out and defined in the claims of this specification.

My invention further consists in certain novel features of detail construction in such tramway.

To enable those skilled in the art to which my invention relates to make and use the same, I will now proceed to more fully describe it, referring by letters of reference to the accompanying drawings, which form a part of this specification, and in which I have shown my invention carried out in that form which is about the best now known to me and in which I have so far successfully practiced it.

In the drawings, Figure 1 is a perspective view of an elevated tramway such as I have constructed and used for the purposes of sewer-building, and made according to my present invention. Fig. 2 is a partial vertical cross-section at the line  $x x$  of Fig. 1 when drawn on a somewhat larger scale, and showing more

particularly the construction and arrangement together of the apices of the A-frames, the track-beam, and the metallic suspender by which said beam is supported from the tops of the A-frames. Fig. 3 is a partial vertical cross-section at the line  $y y$ , on an enlarged scale, and showing particularly the arrangement with the track-beam of the traveling carriage.

In the several figures the same part will be found designated by the same letter of reference.

D is a single track beam or stringer, on the upper edge of which is secured a suitable rail,  $d$ , upon which travels the conveying-carriage I. This track-beam is supported by metallic suspenders C, each of which is composed, preferably, of a metallic suspender bent or twisted, as shown, so as to constitute a broad loop-like upper end, which is saddled on top of the rounded end of one of the A-frames, and a plate-like depending portion, which lies in a plane transverse to the plane of the A-frame, and which is formed or provided with a horizontal projecting flange or foot-piece,  $f$ , upon which rests the lower edge of the track-beam.

The A-frames are composed, as shown, of two convergent sticks, A and B, which are properly supported on and secured at their lower ends to sill-pieces or base-beams G, and have their upper convergent ends chamfered or slabbed off, so as to come to a plane bearing of considerable area at the locality where the loop-like portion of the suspender C passes over their united upper ends. The loop-like portion of said suspender is securely and permanently bolted at  $c c$ , and the upper portion of the stick A is also, by preference, temporarily secured by a proper bolt and nut at  $a$  to the upper portion of the stick B.

The series of A-frames may be, if deemed expedient, braced or tied together, although in practice I have found it necessary and desirable to only connect by longitudinal or cross braces those two or three of the frames which happen to be at the tail end of the tramway, against which the pull of the hoist-rope comes, (in order to give greater rigidity to the structure at this point and to relieve the track beam or stringer from any compressive strain.)

In order to support the track-beam D with

sufficient rigidity laterally, I provide bolt-rods *e*, as shown, the heads of which preferably are countersunk in the lower portions of the suspenders *C*, and which, passing through one of the sticks, *A*, of the *A*-frame, are securely fastened thereto, all as clearly illustrated in the drawings.

The machine shown at *I* is constructed so that its track-wheels bear and run upon the track *d*, so that the depending portion of the machine hangs close to that side of the track-beam which is opposite to the one secured to the suspender *C*, the lower and main portion of the machine projecting laterally beneath the lower edge of the beam *D*. In the instance shown this machine is caused to travel back and forth on the tramway by the action of a cable, to which the machine is clamped or otherwise secured, and which is driven by machinery in a well-known manner.

*E* represents the buckets which in the case shown are used for the hoisting and conveying of the material. It will be seen that in an elevated tramway constructed as shown and described great strength and rigidity are attained with a comparative lightness in the structure by the combination of a single track-beam suspended in the manner specified from the crown or apex of the series of *A*-frames, and that such a structure may be very readily put up and taken down, or rendered perfectly portable and also transposable, if desired.

The track-beam *D* is of course composed of pieces or sections, each of which is preferably equal to the allotted distance between the *A*-frames, and the said sections of track-beam have their ends abutted and are secured together, preferably by splicing metallic bars which are laid into that side of the beam over which the carriage or machine hangs, and which are securely bolted to the adjacent ends of two beams, and also to the metallic suspender, which comes under rear of the spliced joint between the parts of said stringer. Of

course modifications may be made in the forms and arrangement, as well as in the size and proportions of the parts shown and described, and the details of construction may be changed more or less, without departing from the principle of my invention, the gist of which, as to its primary feature, rests in having a single track-beam supported by depending suspender-like devices or their equivalents, which hang over and are sustained by the apices of the *A*-frames in substantially the manner I have explained.

Having now so fully shown and described my novel construction of tramway as to enable those skilled in the art to make and use my invention, either in the precise form shown or in some other form embracing the same principle, what I claim as new, and desire to secure by Letters Patent, is—

1. In an elevated tramway, the combination, with a series of *A*-frames, of a single track beam or stringer and a series of depending metallic suspender-like devices, which are secured at their upper ends to the apices of the said *A*-frames and at their lower ends carry the single track-beam, all in the manner specified, for the purpose set forth.

2. In combination with a series of *A*-frames and a track beam or stringer located in the space between the converging sticks of said frames, a metallic suspender device, *C*, composed of plate metal and having a loop like upper portion which is saddled on the apex of the *A*-frame, and having its lowermost portion twisted or bent so as to both vertically and laterally support the track-beam, all substantially as hereinbefore set forth.

In testimony whereof I have hereunto set my hand this 31st day of August, 1886.

ALEXANDER E. BROWN.

In presence of—

E. T. SCOVILL,  
CHAS. W. KELLY.