

(No Model.)

2 Sheets—Sheet 1.

E. H. THATCHER.
OVERHEAD TRACK FOR RAILWAYS.

No. 452,201.

Patented May 12, 1891.

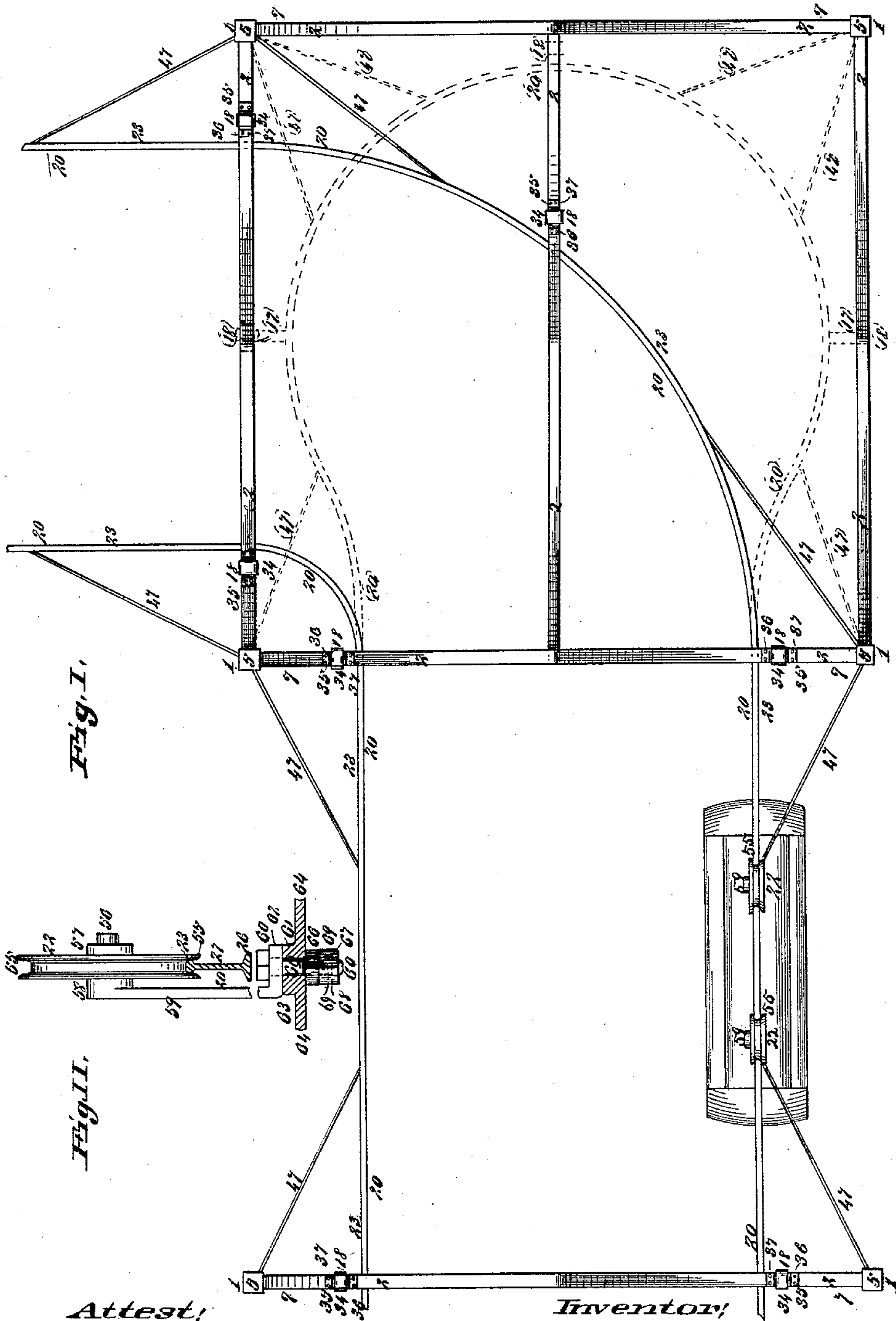


Fig. I.

Fig. II.

Attest:

S. Cotton
Harry S. Rohrer

Inventor:

Evel H. Thatcher.

By Knight Bros.

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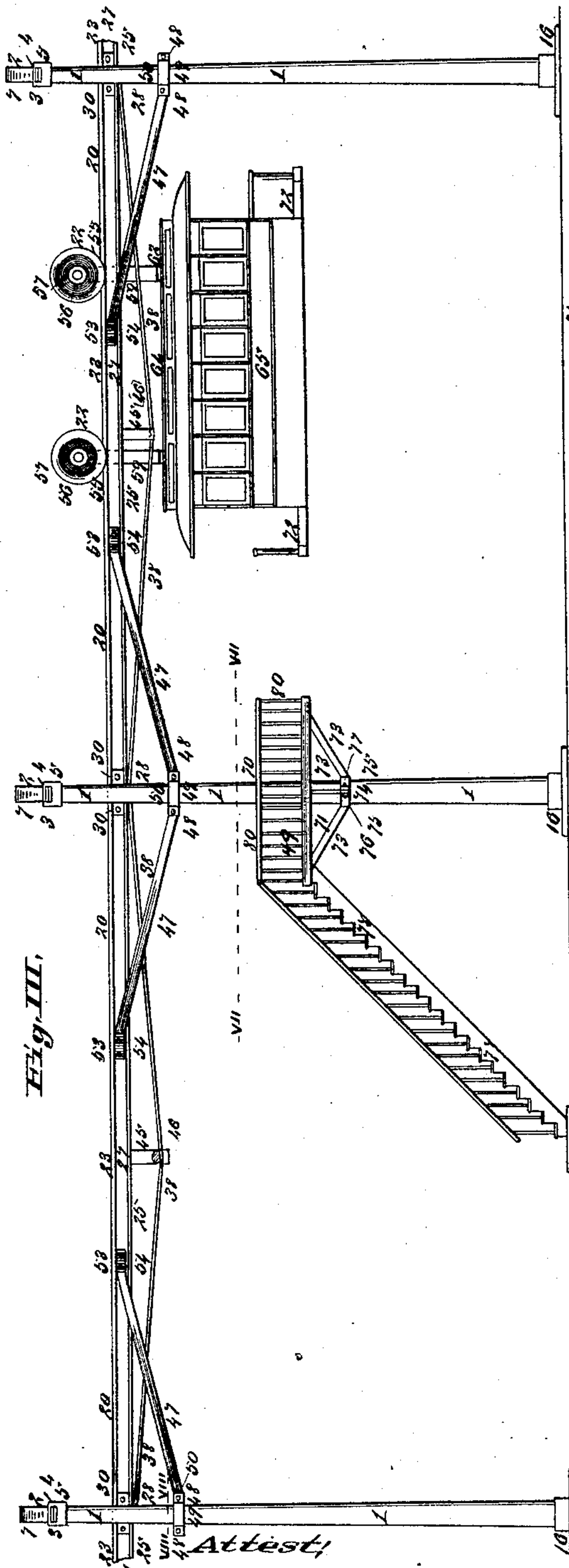


Fig. III.

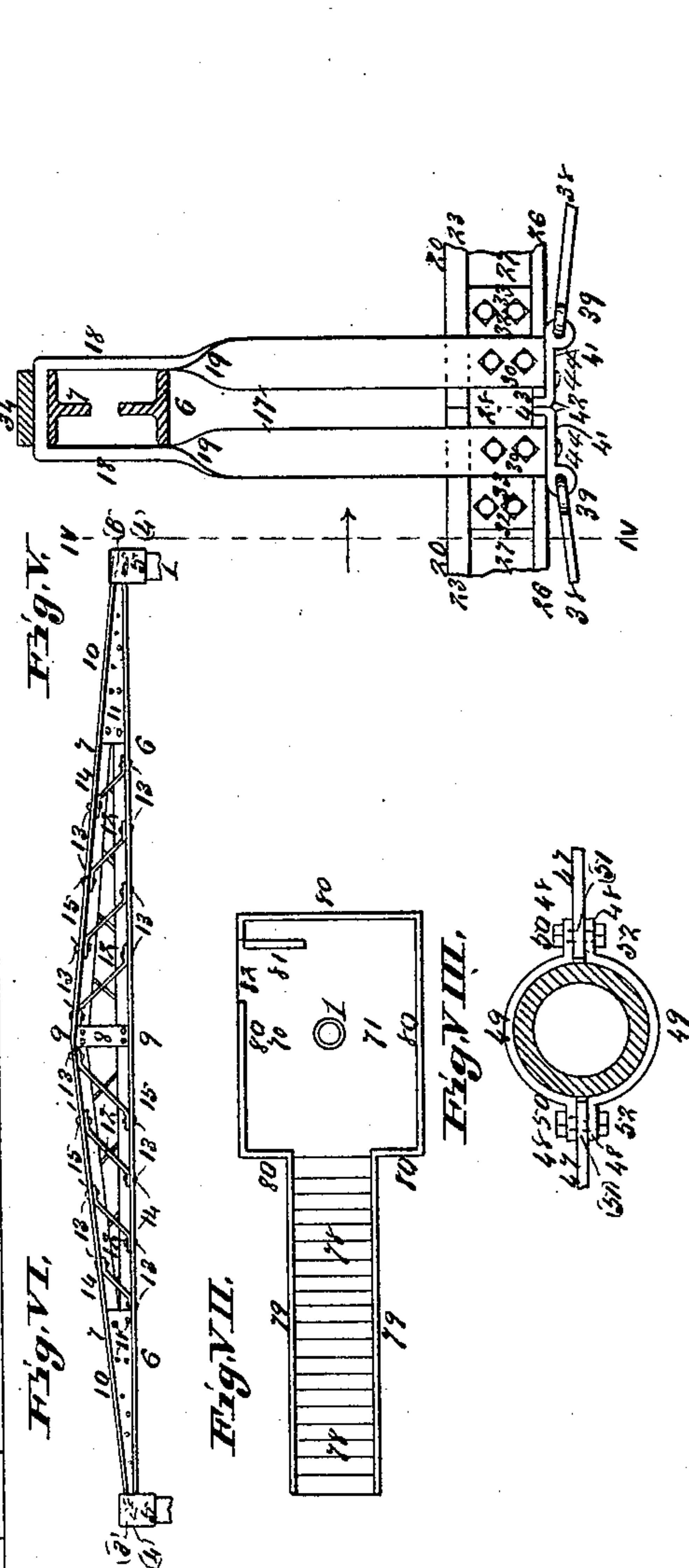


Fig. IV.

Fig. V.

Fig. VI.

Fig. VII.

Fig. VIII.

Inventor,
Evel H. Thatcher.
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UNITED STATES PATENT OFFICE.

EWEL H. THATCHER, OF ST. LOUIS, MISSOURI.

OVERHEAD TRACK FOR RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 452,201, dated May 12, 1891.

Application filed December 16, 1890. Serial No. 374,924. (No model.)

To all whom it may concern:

Be it known that I, EWEL H. THATCHER, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Overhead Tracks for Railways, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

10 This invention relates to an overhead-railway system with means for the suspension of the cars that run on their surmounting track; and the invention consists in features of novelty hereinafter fully described, and
15 pointed out in the claims.

Figure I is a top plan view of the overhead trackway, showing a curved track quarter-turn in full lines and a terminal return-track in broken lines. Fig. II is an enlarged transverse detail view of the roof of the suspended car, the hanger pivotally secured thereto, the track-wheel mounted on the journal of said hanger, and the track-rail on which said wheel runs. Fig. III is a side elevation of the track
25 on its elevating-posts, and shows the means of trussing and bracing the track, of suspending the car beneath said track, and the alighting-platform with its brace attachment to one of said posts. Fig. IV is an enlarged vertical
30 section taken on line IV IV, Fig. V, and shows a detail of one of the truss-beams with one of the track-hangers therefrom, with a transverse view of the track-rail secured thereto. Fig. V is an enlarged vertical section taken on line V
35 V, Fig. IV, and shows a like view, but longitudinal of the line of track-rail and transverse of the truss-beam. Fig. VI is a side view of one of the truss-beams, with a detail of the tops of the elevating-posts to which it is secured. Fig. VII is a horizontal section taken
40 on line VII VII, Fig. III, and shows the landing-platform and stairway; and Fig. VIII is an enlarged vertical section taken on line VIII VIII, Fig. III, and shows the collar-brace at-
45 tacher-clips around the posts, with a detail of the brace-bars screw attached between the flanges of the clips.

Referring to the drawings, 1 represents the elevating-posts that carry the overhead track,
50 which posts are preferably of hollow-metal construction.

2 are the truss-beams, which may be cast

or made of steel or other suitable metal, and are constituted of upper and lower longitudinal sections of T-bars that are beveled at the
55 corresponding inner edges of their terminal ends, at which ends they are secured to the posts, their joint ends 3 being seated and fastened by any suitable means in the slot-housings 4 in the enlarged heads 5 at the
60 top of the posts. The said truss-beams are constituted of the lower straight inverted-T-bar sections 6, the upper inclined T-bar sections 7, the center tie-straps 8, that are secured below and above, respectively, to
65 the sections 6 and 7 by the screw-bolts or rivets 9, the bevel-edge coupling-plates 10, which at the point ends of the truss-beam are secured to its sides at the terminal ends of the
70 sections 6 and 7 of said beam by the screw bolts or rivets 11 and the cross-angling truss brace-rods 12, which are secured in series on each side of said truss-beam in respectively
cross-angled positions to each other by screw bolts or rivets 13, which pass through the
75 flanges 14 of said truss brace-rods and through the T-flanges 15 of the sections 6 and 7 of the truss-beam. The said truss-beams reach across to the return-track system, so as
80 unitedly to brace the elevating-posts and the track-rails that are elevated thereby.

16 represents the foot-flanges of the posts 1, that are fast secured to them just above the ground-line, and which foot-flanges brace the posts from tilting from the vertical position
85 in which they are set.

17 represents the duplex track-hangers, whose saddles 18 are mounted on the truss-beams 2. The said hangers are preferably made of flat bar-steel or wrought-iron, and
90 immediately beneath said saddles and said truss-beams on each side of the beam the flat hanger-bars have quarter-twists 19, that bring the face of the hanger-bars in line with the track-rails 20, which said hangers carry in
95 suspension.

The hanger-bars near the point of their attachment to the rails have curved necks 21, to secure more play for the traveler-wheels 22, that travel on the track-flanges 23 of said
100 rails, and said wheels carry the cars in suspension, and beneath said curvature the perforated attachment foot-flanges 24 of the hangers again run on parallel lines with the

rails. The toes 25 of said foot-flanges of the hangers rest in contact with the foot-flange 26 of the rails 20, and the space between the parallel foot-flanges of the hangers and the pedestals 27 of the track-rails are stopped by the combined perforate filling-blocks and fish-plates 28 and in perforations 29 in said foot-flanges of the hangers, in said fish-plates, and in said pedestals of the rails the screw-bolts 30 are seated and screw-nuts 31 engage on said bolts to secure the attachment of the rails. The said rails are of equal length with that of the intervening spaces between the centers of the post and the fish-plate filling-blocks 28, as they exercise the combined functions of filling-blocks between the foot-flanges of the hangers and of fish-plates, that splice the meeting ends of the rails. Their attachment to said rails is still further re-enforced by the screw-bolts 32, which pass through and are seated in the perforations in said fish-plates and in the meeting ends of the rails, and are there secured by the nuts 33.

34 represents binder-straps that surmount the saddles 18 of the duplex track-hangers 17, and which have perforate flanges 35, in which and in registering perforations in the T-flanges of the upper T-bar sections of the truss-beams screw-bolts 36 are seated and are secured in their seats by the screw-nuts 37, and thus the said saddles and track-hangers are held from displacement.

38 represent truss-rods, whose hooks 39 engage in the eyelets 40 of the eyelet-lugs 41, which lugs are secured to the foot-flanges of the meeting ends of the rails by their integral angle-hooks 42, which are seated in the recessed spaces 43, that are provided by a slight foreshortening of the meeting end of said foot-flanges of the rails. The said lugs are further secured to said rails by the screw-bolts 44. Truss-blocks 45 are provided with recessed cross-channels 46 at their lower ends, in which cross-channels the truss-rods sit midway between post and post, the upper ends of said trussing-blocks being under-seated against the foot-flanges of the track-rails that surmount them. The rods are thus trussed midway of their length and form an under brace-support for the track-rails also midway of their supported ends.

47 represent guy-braces that diverge from the posts on each side, angling upward to the track-rails, the feet of which braces are secured between the flanges 48 of the semicircular collars 49 (that form clip attachments to the posts) by the screw-bolts 50, that are seated in the perforations 51 in the said flanges and in the feet of said braces and are there secured by screw-nuts 52. The flanges 53 at the heads of said braces are secured to the pedestals 27 of the track-rails by screw-nutted bolts 54, which are seated in perforations in said head-flanges of the braces and said pedestals of the rails, and are secured in their seats by their screw-nuts, that are attached thereto. When the track makes a sharp turn,

such as a right-angled turn, as shown in full lines in Fig. I, or makes a terminal-circuit turn, as shown in broken lines in said figure, then counter truss-beams are placed in coupling connection with the ends of the last two pairs of truss-beams at the turning-point, so as to make a truss-beam square; also, an additional cross-center truss-beam forms a span coupling-connection between the centers of said last two pairs of truss-beams, (see said Fig. I,) and guy-braces 47, as already described, and alike secured, brace the track-rail at their turns, as they are braced all along the line, as described above, and as shown in Fig. I.

In the case of a right-angle turn the hanger that supports the outer-turn track may be saddled farther from the end of the cross-center truss-beam, as shown in full lines in said figure, and in the terminal turn the track-hanger may be saddled nearer to the end of said truss-beam, and the track-hangers to the counter truss-beams may be saddled from the center of said beams, as shown in broken lines in said Fig. I. The aforesaid traveler-wheels, whose flanged peripheries 55 run on the track-rails 20, are mounted on the journals 56, which journals are seated in the journal-bearings within the hubs 57 of said wheels, and said journals project from the shoulder-collars 58, that surmount the pendent car-hangers 59. The suspensory pivot screw-bolts 60 are seated in the perforations 61 in the angle-lugs 62 of said hangers in the swell-collars 63, that surmount and are integral with the roof 64 of the car 65, and through and projecting beneath said roof. On the projecting screw ends of said pivot-bolts the screw-nuts 66 are engaged, and their screw attachment is re-enforced by the jam-screw nuts 67 through the perforations 68, in which nuts and bolts the spring-keys 69 are inserted to securely lock said jam-nuts. The car is supported from said traveler-wheels by two of said hangers, which, as they connect by pivot-bolts with the strong roof of said car, they have, respectively and relatively, pivotal adjustments that prevent the straining of the suspensory attachment while turning curves on the track.

70 represents the alighting-platform, whose floor 71 is supported around one of the elevating-posts 1, at an equal height to that of the end platforms 72 of the cars, by the angle-braces 73, the tops of which braces are securely attached to said platform that surmounts them, and the perforated foot-flanges 74 of which braces are secured to and between the projecting flanges 75 of the clip-collar 76, that clamps said post by screw-nutted bolts 77, in the same manner as are the track-braces 47 to the flanges of their clip-collar 49, as shown in Fig. VIII.

78 represents a stairway for the ascent of passengers to and descent from said platform. 79 are the banisters of said stairway, and 80 is the railing around the platform. 81 rep-

resents the hinged gate that respectively closes the gateway 82 when the car is not in, for the safety of the passengers, and opens said gateway when the car arrives, for their passage to and from said car.

The operation of the device has been pointed out through the description of the parts, so that little is left that is necessary to say to throw any further light thereon. It will be seen, as shown in Fig. I, that all the supplemental parts required either for an angle-turn of the track, as shown in full lines, or for a terminal loop, as shown in broken lines, (see said figure,) are three additional truss-beams and their attendant hangers and guy-braces. No supplemental posts are required for either said angle-turn or loop.

It will be seen that this overhead railway-track occupies but a minimum of space on the ground surface of the streets, amounting only to the space occupied by the two lines of posts and the stairway to the alighting-platforms, which platforms themselves are elevated out of all obstructive interference.

I have shown the feet of the lateral guy-braces 47 as secured by their clip attachments to the posts a short distance below the level of the track; but said clips and braces may be secured to said posts on a level with the track and will still be alike operative as lateral guys.

I claim as my invention—

1. In an overhead-track system for railways, the combination of the elevating-posts, the double T truss-beams that support the track, said truss-beams constituted of the following parts: the lower straight T-bars, the upper inclined T-bar duplex sections, the center tie-straps 8, the bevel-edge coupling-plates 10, and the truss-brace rods 12, the said truss-beams supported by said posts, and the duplex track-hangers 17, substantially as and for the purpose set forth.

2. In an overhead-track system for railways, the combination of the elevating-posts, the double T-bar truss-beams, the duplex track-hangers 17, provided with the saddles 18, that mount said truss-beams, the rail-track supported by said hangers, and the combined fish-plates and filling-blocks that splice the meeting ends of the rails and form a flush filling between said hangers and said rails, substantially as and for the purpose set forth.

3. In an overhead-track system for railways, the combination of the elevating-posts, the truss-beams that surmount said posts, the saddled duplex track-hangers mounted on said truss-beams, the binder-straps 34, that secure said saddles from displacement, the rail-track held in suspension by said hangers, and the braces 47, that guy said track, substantially as and for the purpose set forth.

4. In an overhead-track system for railways, the combination of the elevating-posts, the truss-beams that surmount said posts, the saddled duplex track-hangers, the duplex pendent bars of said hangers arranged to be

secured to and suspend the corresponding meeting ends of adjoining rails, the combined fish-plate and filling-block 28, and the screw-nut bolts that connect said hangers, fish-plate filling-blocks, and the meeting ends of the track-rails together, substantially as and for the purpose set forth.

5. In an overhead-track system for railways, the combination of the elevating-posts, the truss-beams that surmount said posts, the saddled duplex track-hangers, the track-rails held in suspension by said hangers, the pendent car-hangers 59, the traveler-wheels mounted on said hangers, and the car carried by said hangers, substantially as and for the purpose set forth.

6. In an overhead-track system for railways, the combination of the elevating-posts, the truss-beams that surmount said posts, the saddled duplex track-rail hangers, the track-rails in suspension from said hangers, the corresponding meeting ends of said track-rails being respectively sustained by the respective individual limbs of said hangers, the eyelet-lugs 41, secured to the meeting ends of the track-rails, the truss-rods 38, and the truss-blocks 45, that constitute re-enforce supports to the middle of the rails, substantially as and for the purpose set forth.

7. In an overhead-track system for railways, the combination of the elevating-posts, the crossway truss-beams that surmount said posts, the right-angle located truss-beams that couple the ends of the crossway truss-beams together at the angle-turns and terminal loops of the track, the truss-beam that connects the summits of crossway truss-beams at said angle-turn and terminal loop of the track, the curve-rails that make said angle-turns and terminal loops of the track, the hangers that hold said curve-rails in suspension, and the brace-rods that guy said curved track, substantially as and for the purpose set forth.

8. In an overhead-track system for railways, the combination of the elevated posts, the truss-beams that surmount said posts, the saddled duplex track-hangers, the track held in suspension by said hangers, the car-hangers 59, the angle-journals that project from said hangers, the traveler-wheels mounted on said journals and said wheels provided with flanged peripheries that run on said overhead track, the perforate angle-lugs 62, that project from said car-hangers, the suspensory car pivotally pendent from said hangers, the suspensory pivotal screw-bolt 60, that holds said car in suspension to said hangers, the screw-nuts 66, the jam-nuts 67, and the spring-keys 69, that re-enforce the attachment of said car to said hangers, substantially as and for the purpose set forth.

9. In an overhead-track system for railways, the combination of the elevated posts, the truss-beams that surmount said posts, the duplex saddled track-hangers, the track hung in suspension by said hangers, the car-

hangers 59, the traveler-wheels mounted on
said hangers, the cars held in suspension by
said car-hangers, the alighting railed plat-
form with its entrance-gate, the said plat-
5 form held at about an equal height to the end
platforms of the cars and secured around
certain of the elevating-posts, the clip-collar
around said post below said platform, the

braces between said clip-collar and said plat-
form, and the stairway for the ascent to and
descent from said platform, substantially as
and for the purpose set forth.

EWEL H. THATCHER.

In presence of—

BENJN. A. KNIGHT,
SAML. KNIGHT.