

(No Model.)

E. M. TURNER, G. L. VAN BEEK & L. A. BROWN.

TRUSS FOR ELEVATED STRUCTURES.

No. 456,102.

Patented July 14, 1891.

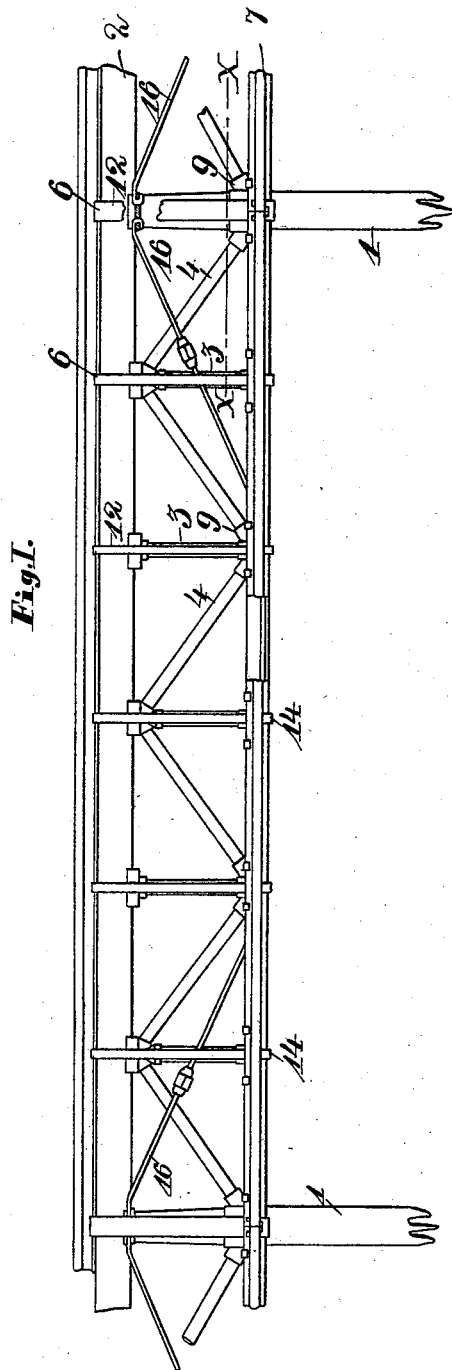


Fig. 1.

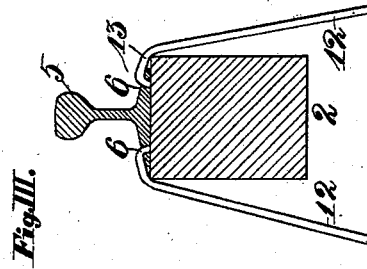


Fig. III.

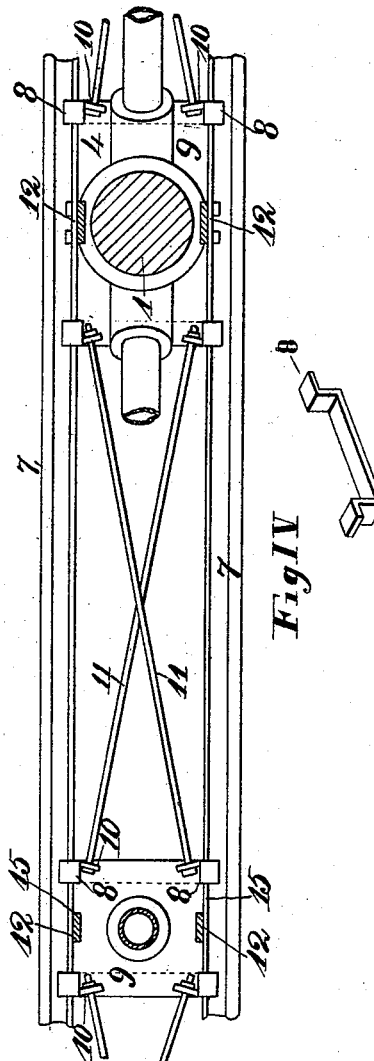


Fig. II.

Fig IV

Attest:

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E. Longan.

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UNITED STATES PATENT OFFICE.

EPHRAIM M. TURNER, GEORGE L. VAN BEEK, AND LEWIS A. BROWN, OF ST. LOUIS, MISSOURI, ASSIGNORS TO THE NATIONAL UNICYCLE ELEVATED RAILWAY CONSTRUCTION COMPANY, OF EAST ST. LOUIS, ILLINOIS.

TRUSS FOR ELEVATED STRUCTURES.

SPECIFICATION forming part of Letters Patent No. 456,102, dated July 14, 1891.

Application filed October 2, 1890. Serial No. 366,873. (No model.)

To all whom it may concern:

Be it known that we, EPHRAIM M. TURNER, GEORGE L. VAN BEEK, and LEWIS A. BROWN, of St. Louis, Missouri, have invented certain new and useful Improvements in Trusses for Elevated Structures, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to an improvement in the truss set out and described in our application of even date herewith; and it consists in the devices and combination and arrangement of devices hereinafter specified, and pointed out in the claims.

In the drawings, Figure I is a side elevation of the improved truss with parts broken away. Fig. II is a plan view, partly in section, of the lower chord, showing the crossed brace-rods, the section being taken on line *x* *x*, Fig. I; and Fig. III is a detail transverse section through the main rail of the structure and the stringer upon which this rail is supported. Fig. IV is a detail perspective view of one of the stirrups 8.

1 represents the supporting posts, columns, or pillars upon which the different sections of the truss are supported, and which, together with the stringer 2, the tension and screw posts 3, and the inclined braces 4, are identical with those described in our application above noted, and hence need not be further described herein.

In the present case the stringers are supported upon the upper ends of the posts and the main rail 5 is of the usual contour, except that a series of apertures 6 are formed in the base thereof at intervals throughout its length, preferably at locations directly above the several tension-posts and on both sides of the vertical web of the rail, and the holes in one side of said base directly opposite corresponding holes formed in the side of the base, which is on the opposite side of the said web.

No such rail-plate is made use of, as is shown in the application referred to, and the two guide-rails 7 are gaged at proper distance apart by a series of U-shaped stirrups 8, the bodies of which are bent in U shape and the opposite ends of which are then bent out-

wardly in different directions, so as to catch over and upon the upper edges of the bases of the rails 7 and act as supports for the base-blocks 9, which are also of similar construction to those base-blocks described in the above-mentioned application, except that they have perforated ears cast or otherwise formed upon their upper surfaces, through which the crossed horizontal brace-rods 11 pass and have their respective ends secured thereto by means of heads or nuts, the said base-blocks being set upon said stirrups and down betwixt the two guide-rails before referred to.

The side hangers or strap-hangers 12 have a hook or claw 13 formed upon their upper ends by bending; also another hook 14 on their lower ends, formed by bending in an opposite direction to that in which the upper end is bent, forming the said strap-hangers into substantially S shape, and the said hangers are located by placing the hooks of their upper ends into corresponding holes 6 in the main-rail base, and their lower ends are hooked beneath the lower flanges of the guide-rails 7.

By the above construction the guide-rails are supported and gaged without the use of a web of any form, there being only a skeleton frame-work support, of which the said rails form the outer edges, and are braced against relative movement by the cross-rod braces 11, the straps 8, and the base-blocks 9, producing a very economical, simple, and durable truss.

Opposite recesses 15 are formed in the blocks 9 next adjacent the guide-rails, through which recesses the strap-hangers 12 pass downward and are bent upward to engage the said guide-rails.

In operation, the parts being assembled as shown and described, suitable tension may be applied to them by means of an ordinary pipe-wrench employed to elongate the tension and screw posts and force sideward all of the caps, as fully explained in our application above referred to.

16 represents hog-chains applied to the top and bottom chords of the truss and one on each side of the supporting-posts, (see Fig. 1,) the construction of which need not be detailed.

What we claim is—

1. In a truss, the combination of the upper

chord, a lower chord comprising the parallel headed and based rails, supports therefor, U-shaped straps 8, applied to the bases of said rails at intervals of their length, base-blocks, such as 9, supported by said straps or stirrups 5 8, braces 11, applied to connect said blocks, and tension-posts and straining devices, substantially as specified.

2. In a truss having a main upper rail and 10 side rails, a series of holes formed in the base of said rail, and strap-hangers hooked in said holes and depending to the side rails, substantially as specified.

3. The truss described, comprising an upper 15 per stringer 2 and lower side rails 7, stirrups

resting on the said side rails, base-blocks having ears thereon carried by the said side rails at intervals, braces 11, connected to the diagonally-opposite ears of the said adjoining blocks, and a hog-chain applied to a span of 20 the truss, as described.

In testimony whereof we affix our signatures in presence of two witnesses.

EPHRAIM M. TURNER.
GEORGE L. VAN BEEK.
LEWIS A. BROWN.

Witnesses:

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GEO. F. BUGFELD.