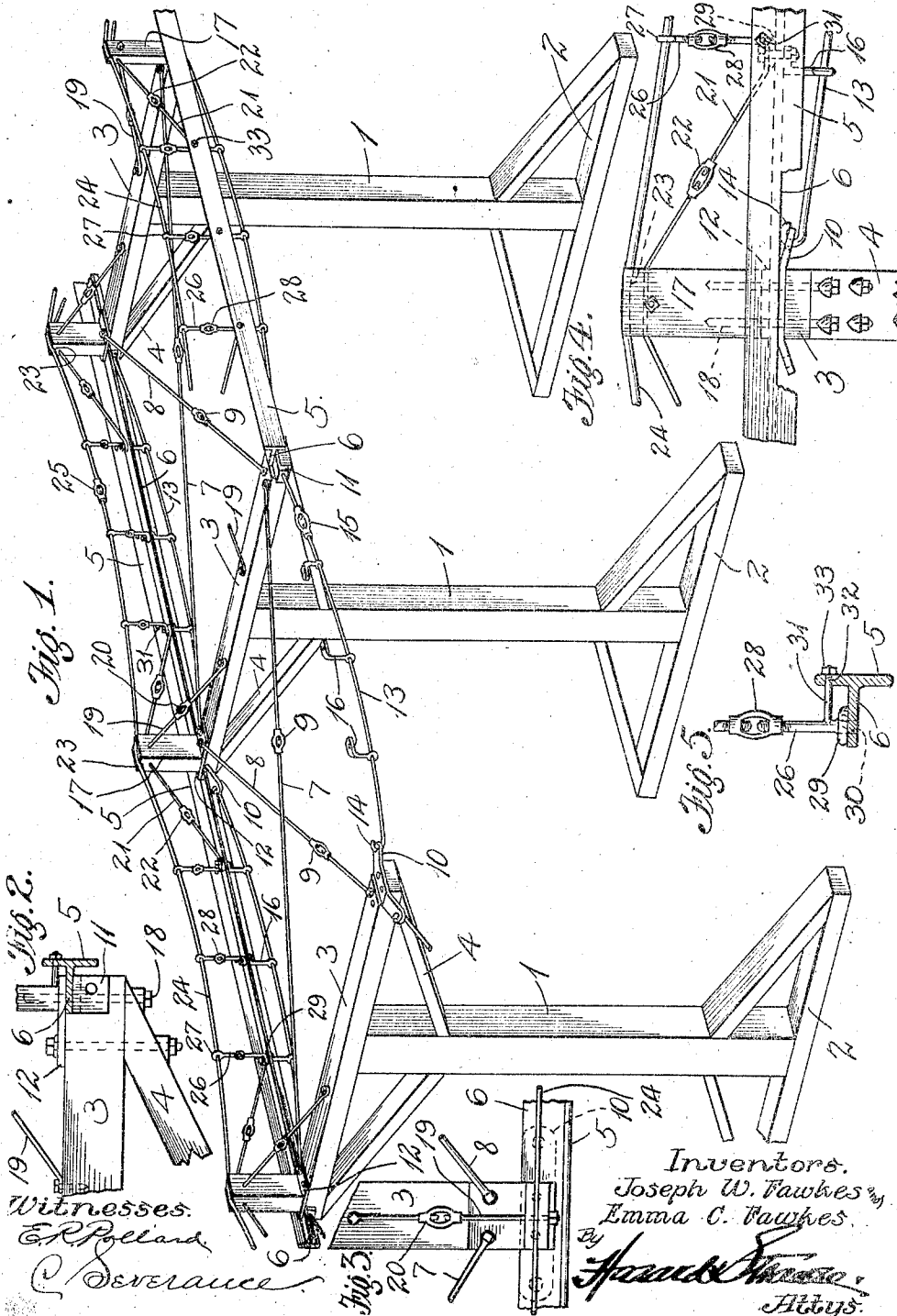


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TROLLEY LINE CONSTRUCTION.
APPLICATION FILED MAY 11, 1911.

1,019,621.

Patented Mar. 5, 1912.



UNITED STATES PATENT OFFICE.

JOSEPH W. FAWKES AND EMMA C. FAWKES, OF BURBANK, CALIFORNIA.

TROLLEY-LINE CONSTRUCTION.

1,019,621.

Specification of Letters Patent.

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Application filed May 11, 1911. Serial No. 626,509.

To all whom it may concern:

Be it known that we, JOSEPH W. FAWKES and EMMA C. FAWKES, both citizens of the United States, residing at Burbank, in the county of Los Angeles and State of California, have invented new and useful Improvements in Trolley-Line Constructions, of which the following is a specification.

This invention relates to improvements in railroad construction, and has particular reference to railroads or guideways for aerial vehicles or the like.

The present invention is particularly designed to an improvement upon the mechanism disclosed in our previous application S. N. 613,242 filed, March 9, 1911.

It is an object of the invention, among other things to increase the rigidity and lateral strength of the mechanism shown in said previous application, and thus improve the aerial guideway.

In the drawing forming a part of this specification, Figure 1 is a perspective view of a portion of an aerial railroad line constructed in accordance with the present invention. Fig. 2 is a detail view showing one of the rails of the line in cross section, the adjacent portions of the supporting and strengthening means therefor being shown in side elevation. Fig. 3 is a top plan view of one of the supporting arms of the structure, the connection of the bracing means therefor being illustrated. Fig. 4 is a side elevation of a portion of the line structure opposite one of the posts showing the end of one of the supporting arms and the bracing means adjacent thereto. Fig. 5 is an enlarged detail sectional view through one of the guide rails and showing in side elevation the portion of a truss standard applied thereto.

Referring to the drawing 1 indicates supporting posts or pillars which are provided with broad braces for the portions 2 and having transverse supporting beams 3 fixed to their upper ends. Inclined braces 4 brace the outer ends of said transverse beams. The ends of the said transverse beams are adapted to carry guide rails 5 which are preferably formed of T irons having their web portions 6 turned inwardly and arranged in horizontal position upon the ends

of the transverse beams 3 while their flanges are extended in vertical planes.

The rails 5 extend from post to post and are preferably made long enough to extend opposite more than one post 1, so that their meeting ends may be arranged to break joints with respect to each other by means of diagonal brace rods 7 and 8 which extend between the opposite ends of adjacent transverse bars as clearly shown in Fig. 1 and have turn-buckles or other tightening means 9 interposed in their length for making them taut.

The web portions 6 of the rails 5 are preferably rested upon the end portions of the transverse bars 3 which have been reduced to form recesses for receiving the same, and brace holding plates 10 and 11 are usually arranged beneath the said web portions while top plates 12 are applied upon the upper surface of the said webs 6 and the adjacent upper surface of the transverse bars 3 is clearly shown in Fig. 1. The bolts which secure the braces 7 and 8 usually also pass through the inner ends of the plates 12 and the adjacent portions of the transverse beams 3 as shown in Figs. 1 and 2.

The rails 5 are preferably strongly trussed at intermediate portions and for this purpose depending trusses are formed comprising truss rods 13 which have hooks 14 at their ends for engaging eyes in the plates 10 and which are connected by turn-buckles 15 at suitable points. Some of the said truss rods pass through apertures formed in the plates 11 where the rails break joint. Struts 16 are interposed between the truss rods 13 and the webs 6 of the rails so as to offer support at intermediate points along the length of the rail, the structure being similar to that described in our previous application above referred to.

It is also desirable in some instances to further strengthen the railroad construction and for this reason we contemplate in the present invention the provision of additional rail supporting and stiffening means. As shown in the drawing short standards 17 are mounted upon the ends of the transverse beams 3 and are usually placed directly upon the plates 12. As indicated in Figs. 2 and 4 long lag screws or bolts 18 may be passed

upwardly through the ends of the beams 3 and through the webs 6 of the beams and through the plates 12 and into the lower ends of the said standards 17, thus firmly holding the said standards in position upon the said plates 12.

The upper ends of the standards 17 are braced with respect to the transverse beams 3 by means of brace rods 19 which are secured at their ends to the said beam and the said standard and may be provided with an intermediate turn-buckle 20 for tightening them. The said standards are also further braced by means of inclined brace rods 21 which extend from points near the upper ends of the standards 17 to the webs 6 of the rails. These brace rods are also provided with tightening means such as turn buckles 22 so that the parts may be tightly adjusted in position.

The upper ends of the standards 17 are provided with notches or grooves 23 which are designed to receive suspension rods 24. These rods extend from standard to standard and rest in the said grooves 23. Adjacent ends of the rods are usually secured together by suitable couplings as for instance turnbuckles shown at 25. At intermediate points the suspension rods 24 are connected with the rails by means of hangers 26 which have eyes 27 at their upper ends adapted to be slipped upon the said rods 24 and are bolted or otherwise secured at their lower ends to the webs of the said rails 5 as clearly shown in the drawing. The said hangers are preferably formed in two parts connected by an intermediate coupling such as a turn-buckle shown at 28 and the lower member of each hanger is provided with a foot 29 adapted to rest upon the web 6 of the rails 5, a projection extending below the said foot being adapted to engage a perforation or aperture formed in the web 6 as indicated in dotted lines at 30. The lower member of each of said hangers is also usually provided with a laterally projecting bolt portion 31 which passes through an aperture 32 formed in the upper flange of the T iron forming the rail and a nut 33 is applied to the outer end thereof. This structure which is clearly shown in Fig. 5 operates to greatly stiffen the parts and to prevent any likelihood of the flange of the rail turning over. It will be understood that one or more of such hangers may be interposed between adjacent standards 17 but we preferably employ a plurality of standards so as to thoroughly stiffen and strengthen the intermediate portions of the rails 5 in connection with the truss applied to the under side of the rails.

A guiding rail structure for a vehicle of any kind such as is provided by the flanges of the rails 5 described is adapted to afford

a strong and unyielding elevated rail, and the peculiar mounting of the same contributes to its stiffness in lateral directions as well as in vertical directions.

What we claim is:

1. A railroad line construction, comprising vehicle supporting and guiding rails, posts for the same, transverse beams on said posts, and suspension means carried by the ends of said beams, and extending longitudinally above said rails for supporting and stiffening the same at intermediate points.

2. A railroad line construction comprising vehicle guiding rails, posts supporting the same at intervals, and having transverse arms carried thereby, standards projecting from the ends of said arms, and suspension means held by the said standards and connected with the guide rails at intermediate points.

3. A railroad line construction, comprising posts, beams mounted thereon, angle rails mounted upon the ends of said beams, standards also carried by the said beams, rods suspended upon said standards and hangers connecting the rods with the flanges of the said angle irons for supporting them at intermediate points.

4. An aerial line construction, comprising posts having transverse heads, angle beams mounted thereon, angle rails secured to the heads, standards also carried by the said heads and braced with respect to the heads and the angle bars, suspension rods extending from standard to standard, hangers carried by the said extension rods and having foot portions secured to the flanges of the angle bars, and laterally extending braces carried by the foot portions and connected with other flanges of said angle bars.

5. A railway line construction comprising posts having supporting cross beams, standards mounted upon the ends thereof, T irons secured to the ends of said beams, suspension rods extending from the top of one standard to the top of the next standard and so on, hangers slipped upon the said suspension rods, and having foot portions being provided with bases adapted to be fastened to the webs of the said T irons, lateral arms being provided on the said lower portions and extending through apertures in the vertical flanges of the said T irons for bracing the T irons laterally as well as vertically and turn-buckles connecting the hangers with said foot portions.

6. A railroad line construction for aerial vehicles, comprising supporting posts having transverse beams mounted thereon, T irons, guide rails secured upon the ends of the said beams having their webs arranged longitudinally and secured to the ends of said beams and their flanges arranged verti-

ally, trusses applied to the under sides of
said webs for stiffening the intermediate
portions, of the T irons, standards extending
upwardly from the beams and having
notches in their upper ends, suspension rods
resting in said notches and hanger bars con-
necting the said suspension rods with the
webs of the T irons at intermediate points
for further stiffening the structure.

In witness that we claim the foregoing we 10
have hereunto subscribed our names this 1st
day of May, 1911.

J. W. FAWKES.
E. C. FAWKES.

Witnesses:

EDMUND A. STRAUSE;
EARLE R. POLLARD.