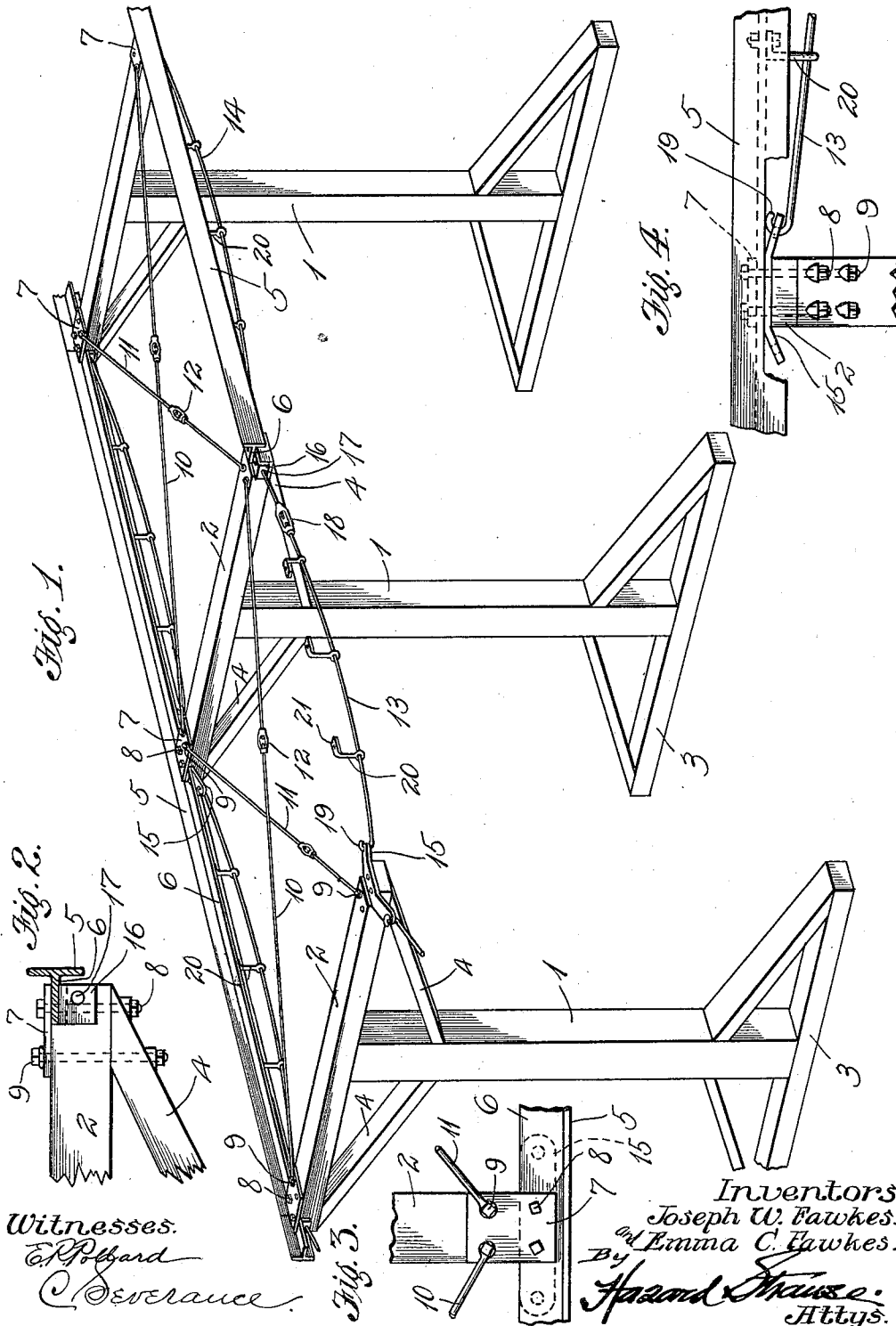


J. W. & E. C. FAWKES.
LINE CONSTRUCTION.

APPLICATION FILED MAR. 9, 1911. RENEWED APR. 23, 1912.

1,046,574.

Patented Dec. 10, 1912.



UNITED STATES PATENT OFFICE.

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

LINE CONSTRUCTION.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, JOSEPH W. FAWKES and EMMA C. FAWKES, 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 Line Constructions, of which the following is a specification.

This invention relates to improvements in railroad construction, and has particular reference to railroads or guide-ways for aerial vehicles or the like, and it is an object of the invention, among other things to provide an aerial guide or railway in which rigid rails may be employed for affording a positive track or guide for an aerial vehicle, the said guide or rail being trussed or braced for adding to its strength and guiding power.

In the accompanying 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 arm therefor being shown in side elevation. Fig. 3 is a top plan view of the end of one of said supporting arms with a portion of one of the rails shown attached thereto. Fig. 4 is a side elevation of a portion of the line opposite one of the standards showing the end of one of the supporting arms and the braces therefor, a portion of the rail being broken away to reveal the attachment of the truss or brace rods.

Referring to the drawings, 1 indicates vehicle standards or supports, 2 cross arms secured thereto, and 3 standards or foot supports. The standards 1 may be of any desired construction and are preferably vertical posts secured upon the transverse base or foot pieces 3 and braced with respect thereto as indicated in the drawing. The cross supporting arms 2 at the top preferably rest upon the upper ends of the posts 1 and are thoroughly braced with respect to the same by diagonal bars 4. The posts are set at suitable intervals along the line and the outer ends of the arms 2 carried thereby are connected by rails 5 forming the guide-way or track of the line. The said rails 5 are preferably made of T-iron, having the main web 6 thereof laid horizontally so as to rest upon the ends of the cross bars 2 while the flanges extend in vertical planes

as will be clearly apparent by reference to Figs. 1 and 2.

The ends of the arms 2 are off-set so that the webs 6 of the rails preferably lie flush with the upper surface of said arms, and securing cap plates 7 are applied over the said webs 6 and bolted to the arms 2 by means of bolts 8 and 9. The said plates 7 prevent the webs of the rails from tipping or getting out of place upon the ends of the arms 2. The plates 7 of adjacent arms 2 in the line are preferably braced and connected by means of diagonally arranged rods 10 and 11, each of said rods being provided with turn-buckles as at 12 by which they may be tightened for holding the parts of the structure in proper position. The ends of the rods 10 and 11 are preferably secured by passing the bolts 9 through eyes formed in the ends thereof as will be understood by reference to Figs. 1, 2 and 3.

The rails 5 are strengthened to prevent their sagging or yielding under the weight of a load between the supporting bars 2 by means of truss rods as 13, 14, the said truss rods being secured at suitable intervals to plates or bars 15 which are bolted to the ends of some of the arms 2. To render the construction strong the plates 15 are only applied upon every other cross bar 2 as shown in the drawing, while the intermediate arms carry guide plates 16 bolted to the ends of the intermediate arms 2 and having their ends turned downwardly and provided with apertures 17 through which the rods 14 pass. Each rod 14 is provided with a hook as 17 at one end which engages an aperture in the end of one of the plates 15, the said rod extending along beneath one of the rails 5 and thence through the apertures 17 of an intermediate cross arm 2. Beyond said arm the rod 14 is preferably connected with a rod 13 by any suitable means as the turn-buckle 18. The other end of the rod 13 is provided with a hook 19 which engages one of the apertured ends of the next securing plate 15. The truss rods 13, 14 also pass through depending struts or standards 20 having eyes at their lower ends through which the rods pass while their upper ends are formed with feet or bases 21 which may be bolted or otherwise secured to the flanges 6 of the rails. The plates 15 and 16 are preferably applied immediately beneath the flanges 6 of the rails 5, so that the said flanges rest

upon the said plates in engaging the supporting arms 2. The bolts 8 also preferably pass through said plates in securing all the parts together.

5 The rails 5 are usually arranged so as to break joints upon one side of the line and opposite to the central portion of the rails upon the other side thereof as will be seen by reference to Fig. 1. The hook engaging
10 plates 15 are generally arranged under the central portions of the said rails while the plates 16 are made to come beneath the abutting ends of the said rails 5. In this manner the continuous portion of the truss rod 14
15 extends beneath the joints of the rail while the hooked ends of the truss rods 13, 14 are fastened beneath the continuous portions of the rails. The said plates 15 have their bent
20 apertured ends so close to the upper surface of the flanges 6 that the hooked ends 17 and 19 of adjacent truss rods cannot be jarred or loosened from position. The said
25 hooks can be put in place before the rails 5 are applied to the supporting arms thus insuring the proper connection of the parts. Any slack in the truss rods can be taken up afterward by the manipulation of the
30 turn-buckles 18. The rails 5 are thus firmly and strongly sustained in position overhanging the supporting portions of the line, the vertical flanges being permitted to extend far enough beyond the ends 2 to guide
35 any aerial railroad mechanism, or the wheels thereof, or guiding and supporting trolleys used in connection therewith. The trusses can of course be applied upon either side of the webs of the rails and in any event will stiffen the rails against the downward pull of weights or the upward pull
40 of buoyant members that may be used in connection with an aerial railway.

What we claim is:—

1. A railroad line construction, comprising supporting standards having laterally
45 projecting arms, vehicle rails secured to said arms and having vehicle guiding portions overhanging and projecting beyond said arms, and a strengthening truss applied to the arm engaging portions of said rails
50 for stiffening them.

2. A railroad line construction, comprising spaced supports having transverse arms, vehicle supporting rails having inturned se-

curing webs fastened to the said supporting arms, and having overhanging guiding
55 flanges outside the arms, and truss rods connecting the supporting arms and engaging the inturned webs of said rails for stiffening the same.

3. A railroad line construction comprising
60 supporting standards having transverse arms, guiding T rails having their web portions turned inwardly and fastened to the said supporting arms whereby the flanges of the said T rails will overhang the ends of
65 the supporting structure and be free to guide vehicle wheels, truss rods extending from arm to arm, and having struts interposed between them and the inturned securing webs of the T rails. 70

4. A railroad line construction for aerial
70 railroads comprising parallel rails, spaced end to end, the joints upon one side of the line arranged to break opposite continuous portions of the rails on the other side, the
75 rails having inturned horizontal projecting securing webs fastened to the ends of the rail supports, the said rails having upwardly and downwardly extending guiding
80 flanges which entirely overhang and project beyond the supporting structure of the line so as to be free to guide the vehicle
85 wheels, and means for bracing the inturned webs of the rails for strengthening the whole structure. 90

5. A line structure for aerial railroads
95 comprising T irons arranged with their web portions turned inwardly in a horizontal plane, their flanges projecting so as to form guiding supports, standards beneath the
90 said rails at intervals, means for bolting the flanges of the rails to said standards, plates for fastening the said webs of the rails, to the standards, truss rods extending
95 beneath the webs of the rails, plates secured beneath the said webs upon the standards for holding the truss rods, and struts interposed between the said rails and the rods.

In witness that we claim the foregoing we have hereunto subscribed our names this
100 1st day of March, 1911.

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

Witnesses:

EDMUND A. STRAUSS,
EARLE R. POLLARD.