

C. H. VOGEL & G. R. TAITT.
SUSPENDED CABLE TRAMWAY.
APPLICATION FILED JAN. 22, 1912.

1,076,337.

Patented Oct. 21, 1913.

3 SHEETS—SHEET 1.

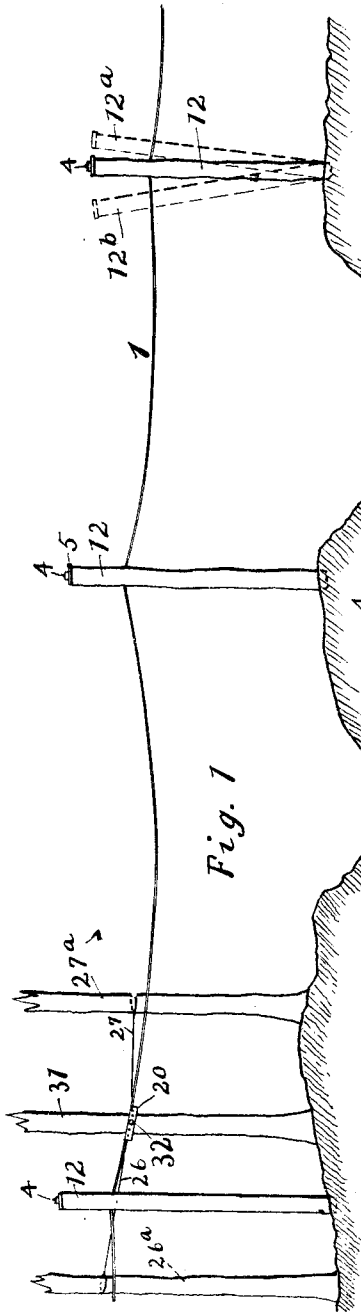


Fig. 1

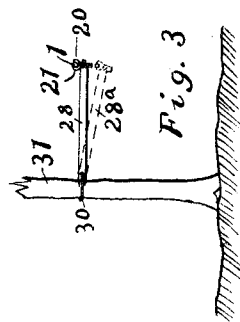


Fig. 3

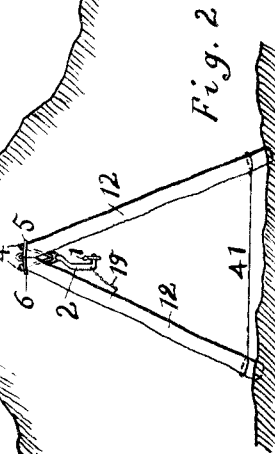


Fig. 2

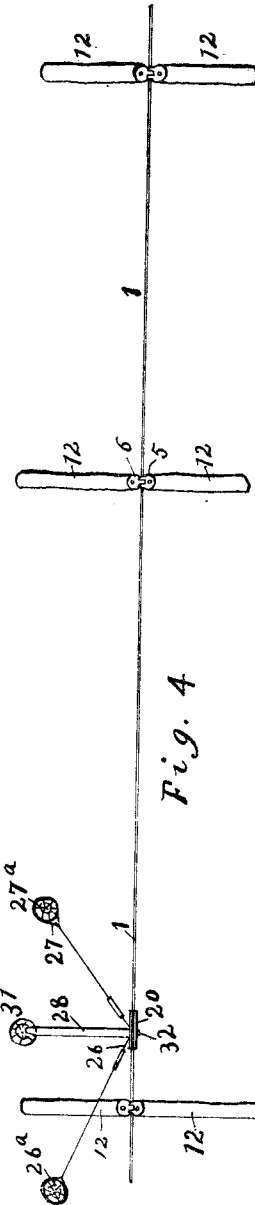


Fig. 4

Witnesses
Frank C. Raney
Edmund J. Witherspoon

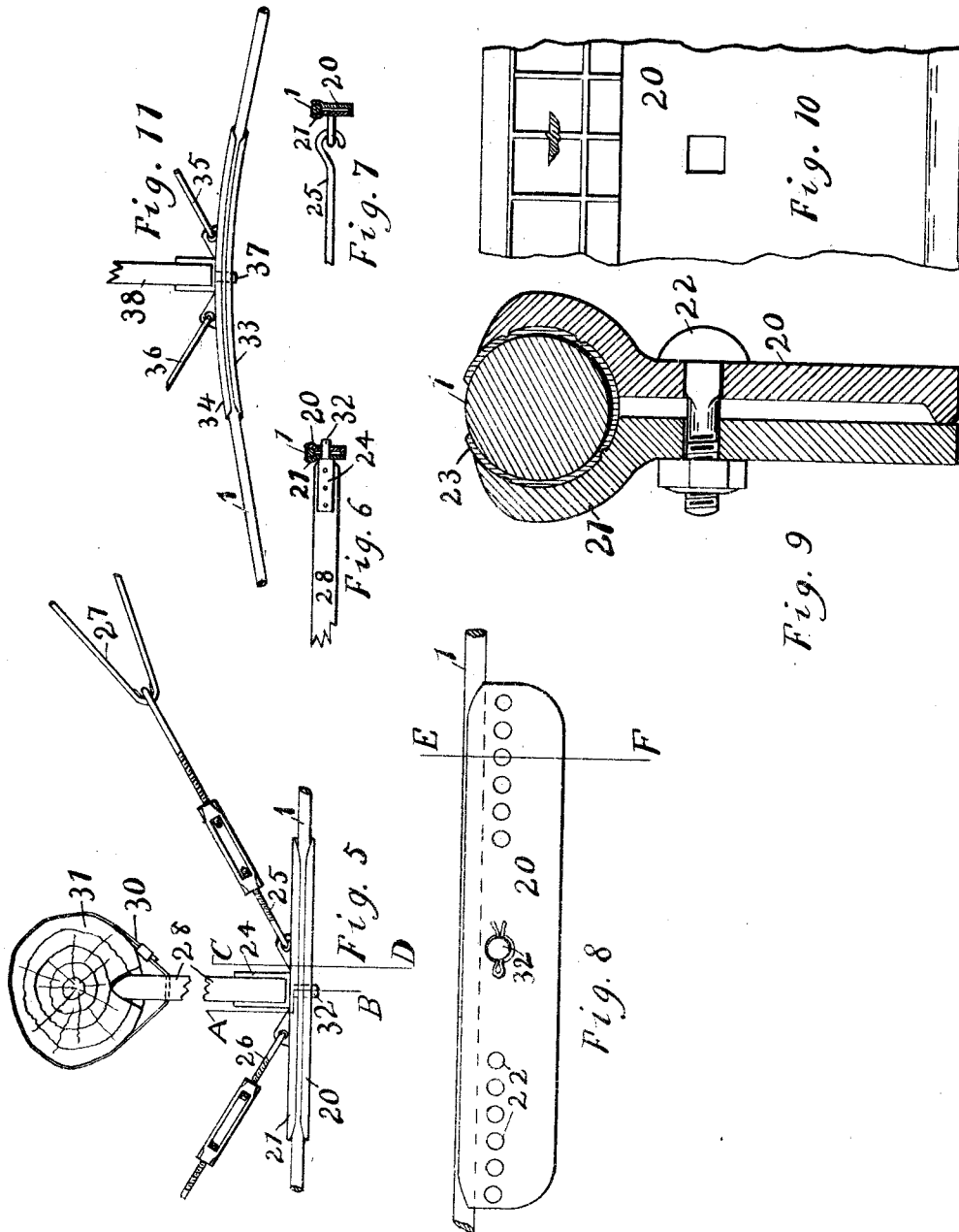
Inventors
Charles H. Vogel
George R. Taitt

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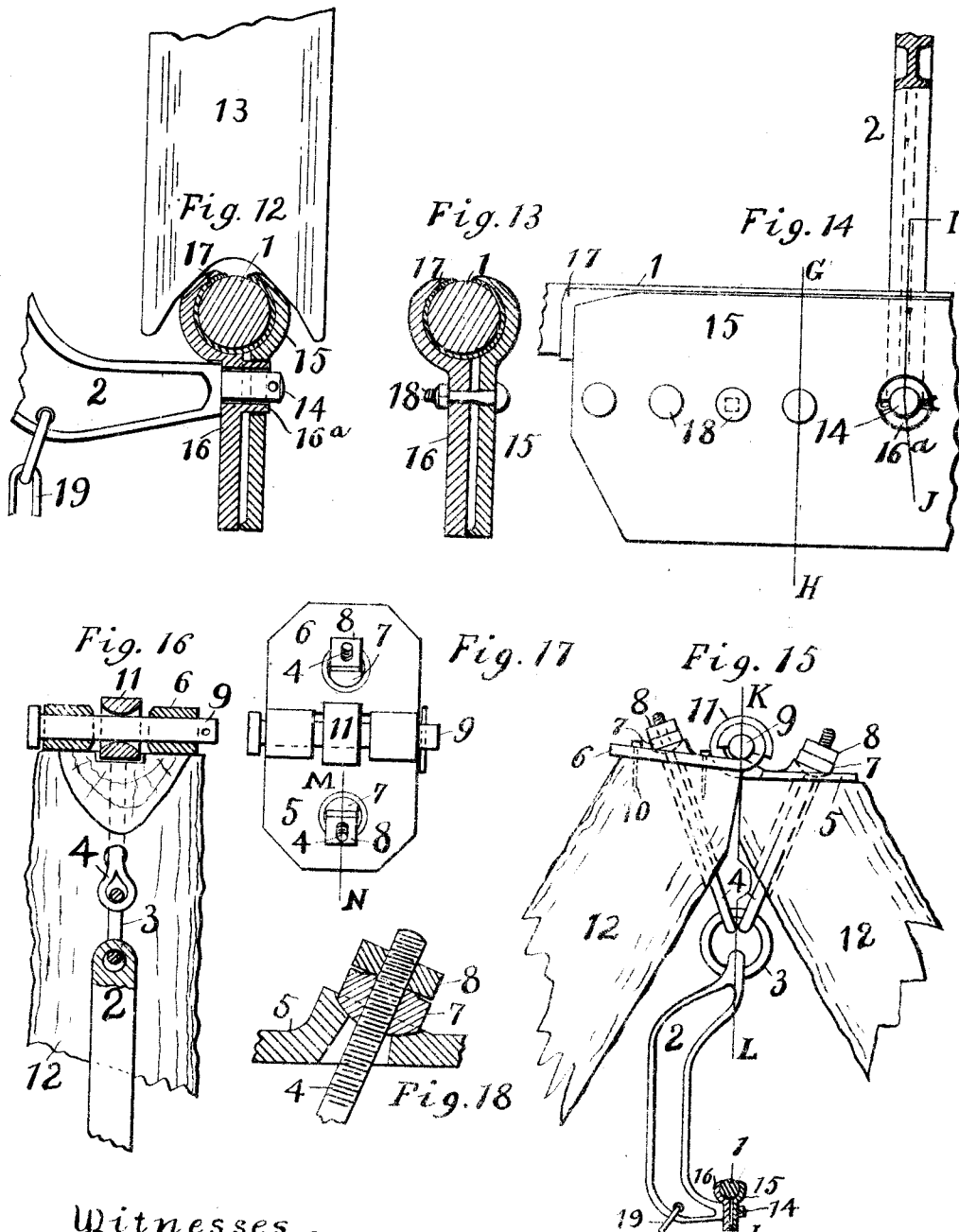
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 George R. Taitt

UNITED STATES PATENT OFFICE.

CHARLES H. VOGEL AND GEORGE R. TAITT, OF VANCOUVER, BRITISH COLUMBIA,
CANADA.

SUSPENDED-CABLE TRAMWAY.

1,076,337

Specification of Letters Patent.

Patented Oct. 21, 1913.

Application filed January 22, 1912. Serial No. 672,681.

To all whom it may concern:

Be it known that we, CHARLES H. VOGEL, a British subject, and GEORGE R. TAITT, a citizen of the United States, both residing in the city of Vancouver, in the county of Vancouver, in the Province of British Columbia, Canada, have invented new and useful Improvements in Suspended-Cable Tramways, of which the following is a specification.

The object of our invention is to improve certain parts of our invention in aerial tramways for which we applied for a patent under Serial No. 642,581, filed Aug. 5th, 1911, and to use it in connection with any suspended cable tramway having a stationary track cable.

The objects of our invention are: 1. To provide inexpensive but very effective intermediate supports for the track cable. 2. To provide grips for the track cable to hold the same at the intermediate supports and prevent the longitudinal movement of the cable in said grips and to keep the cable intact with its intermediate supports. 3. To provide means for rigidly anchoring the track cable at intermediate points to prevent the longitudinal movement of said track cable with respect to the earth; permitting, however, a slight longitudinal movement of the track cable due to slackness and moving loads between the above mentioned points. The said track cable is to hold the intermediate supports upright, permitting their tops to sway with the slight longitudinal movement of the said track cable.

Our invention is illustrated in the accompanying three drawings in which—

Figure 1 shows a side view of a portion of the cableway. Fig. 2 shows another side view of one of the intermediate supports. Fig. 3, shows another side view of the intermediate anchorage; Fig. 4, shows a top view of Fig. 1. Fig. 5, is a detail top view of the intermediate anchorage; Fig. 6, is a sectional side view of said anchorage on line A B of Fig. 5. Fig. 7, is a sectional side view of said anchorage on line C D of Fig. 5. Fig. 8 is a longitudinal side view of the anchorage clamp gripping the track cable; Fig. 9, is a sectional side view of the said clamp on line E F of Fig. 8. Fig. 10 is a detail showing the inner side of the said clamp. Fig. 11 shows an intermediate anchorage and a horizontal curve in the cable

tramway. Fig. 12 shows a section on line I J of Fig. 14 of the clamp securing the cable at the intermediate supports; Fig. 13 is a section of the same clamp on line G H of Fig. 14. Fig. 14 is a side view of the said clamp. Fig. 15 is a detail side view of the upper portion of an intermediate support from which the track cable is supported; Fig. 16 is a detail sectional side view of Fig. 15, on line K L; Fig. 17 is a top view of Fig. 15. Fig. 18 is a detail sectional side view on line M N of Fig. 17.

Similar numbers refer to similar parts throughout the several figures.

1—represents the track cable of the tramway and is securely fixed at both ends; 12 and 12 (see Fig. 2) are two stiff legs joined at their tops by the hinge members 6— and 7— and form intermediate supports for the track cable —1— by means of the two eye bolts —4—, ring —3— and hanger —2— which hanger carries the clamp members —15— and —16— which by the use of sheet lead —17— and bolts —18— grip the cable tightly and prevent it from moving between the said clamp members: (see Figs. 15, 12, 13, and 14). The hole in the hub 16^a projecting from the clamp member 16 is for the purpose of securing the clamp and cable to the hanger 2 by placing the hub 16^a over the gudgeon 14' on which it may rotate, thus permitting the cable 1 to maintain its alignment regardless of the varying angle from the vertical which the hanger 2 may at various times assume (see Fig. 14). 13 in Fig. 12 shows a portion of a wheel of a carriage traveling on the cable 1 as a track: the drawing shows the wheel over the clamp member 15 and 16. 19 is a chain secured to the lower part of hanger 2 and one of the legs 12, but used only where it is found necessary to prevent the cable 1 from rising up to the members 3 and 4 and becoming entangled.

From the portion of the hinge 5 which forms the eye 11 it will be seen that the member 5 may not only rotate on the pin 9 as an axis but may rotate to a limited extent on an axis as line M N projected (see Figs. 17 and 18), thus permitting members 5 and 6 to adjust themselves, without binding in the joints, to the flat tops of the legs 12 and form a large and uniform bearing surface: the eye bolts 4 and 4 bring the stress exerted by the cable 1 and the loads travel-

ing thereon, near the center of the members 5 and 6, each of which is provided with a concaved surface in the boss into which the rounded portion of the nut 7 may adjust itself, thus preventing a transverse stress on the eye bolts 4 and 4, regardless of the various angles which it may assume with the member 5 and 6. The nut 8 acts as a lock nut on the nut 7. The chain 41 prevents the stiff legs from spreading at the bottom. To effect the intermediate anchorage for preventing the longitudinal movement of the cable 1 at such points, the clamp members 20 and 21 are securely clamped to the cable 1 by means of bolts 22 and the sheet lead 23 which embeds itself in the irregularities of the surface of the cable 1 and the inner ribbed surface of the clamp members 20 and 21, thus holding the cable firmly in the clamps.

To the clamp member 21 are secured the guy rods 25 and 26 provided with turn-buckles and anchored to the trees 27^a and 26^a respectively, and thus, with the assistance of the intermediate strut 28 prevent the longitudinal movement of the track cable 1. The strut 28 enters a hole provided in the side of the tree 31, and is held into position by the cable 30, while the other end is connected with the clamp members 20 and 21 by the gudgeon 32. The cable 1 may move vertically under the deflection of the loads in which case the strut 28 may assume positions as shown by the dotted lines at 28^a.

The constant change of position of the heavy loads moving along the track cable 1, will produce changes in deflection which will cause a slight longitudinal movement of the track cable at the intermediate supports between the intermediate anchorages: to compensate for such we prefer not to guy the supports 12, to hold them rigid, but to permit them to sway at the tops as actuated by the track cable 1, permitting them to assume positions as shown at 12^a, and 12^b in Fig. 1; although the members 12 may be rigidly guyed and the longitudinal movement of the track cable 1 may be compensated by permitting the hanger 2 to swing with the cable movements.

Curves may be effected in the tramway line as shown in Fig. 11 by clamping the track cable 1 by curved clamp members 33 and 34 having the relative position of clamp members 20 and 21 in Fig. 5, only that they effect a curve or change of direction in the tramway line. The members 35, 36, and 38 in Fig. 11 correspond in construction and functions to those of 25, 26 and 28 respectively in Fig. 5.

Having thus described our invention, we claim:

1. In the intermediate supports of a suspended cable tramway, having a track cable, the combination of two compression mem-

bers, means for distributing the stress of the loads independently on each compression member and means for connecting their tops, substantially as described.

2. In the intermediate supports of a suspended cable tramway, having a track cable, the combination of two compression members, means for distributing the stress of the loads independently on each compression member and means for connecting their tops, and means to prevent spreading at the lower ends.

3. In the intermediate supports of a suspended cable tramway, having a track cable, the combination of two compression members each having at its top a plate having a hole, a tension member passing through each hole and sustaining the weight of the track cable, its hanger and traveling load at the tops of the above-mentioned plates.

4. In the intermediate supports of a suspended cable tramway, the combination of two compression members, a hinge composed of two leaves admitting of a rotary motion on three axes at right angles with each other for self adjustment to the tops of the compression members, a hole through each leaf and a concaved surface around the top of each hole, an eye-bolt passing through each hole and provided with a nut having a convex surface to adjust itself to the concave surfaces in the hinge leaves, a ring and a hanger, for the purpose of supporting the track cable and the moving loads upon it, substantially as described.

5. In the intermediate supports for the track cable of a suspended cable tramway, the combination of a hanger, means to secure the track cable to said hanger in a manner to prevent the longitudinal movement of the said track cable with respect to the hanger, and means to admit the track cable to maintain its alinement regardless of its angle with the said hanger.

6. In intermediate supports of a suspended cable tramway, having a track cable, the combination of a hanger, a clamp member, a friction member in connection with the clamp member and the track cable and means for admitting of movement between the hanger and the clamp member: substantially as described.

7. In intermediate supports of suspended cable tramways having a track cable, the combination of a suspended hanger to support the track cable and means to prevent the hanger from being raised to an objectionable extent.

8. In a suspended cable tramway having a track cable, means for anchoring the said track cable at intermediate points to prevent it from moving longitudinally, consisting of a clamp member and a friction member on the cable, a strut and two tension members, in a manner described.

9. In a suspended cable tramway having a track cable, means for securing said track cable to the intermediate supports to hold the said supports upright and to permit the
5 tops of said supports to sway with the longitudinal movement of the said track cable.

10. In a suspended cable tramway having a track cable, means for securing the said

track cable to the intermediate supports to hold the said supports upright.

CHARLES H. VOGEL.
GEORGE R. TAITT.

Witnesses:

EDMUND J. WITHERSPOON,
FRANK C. RANEY.