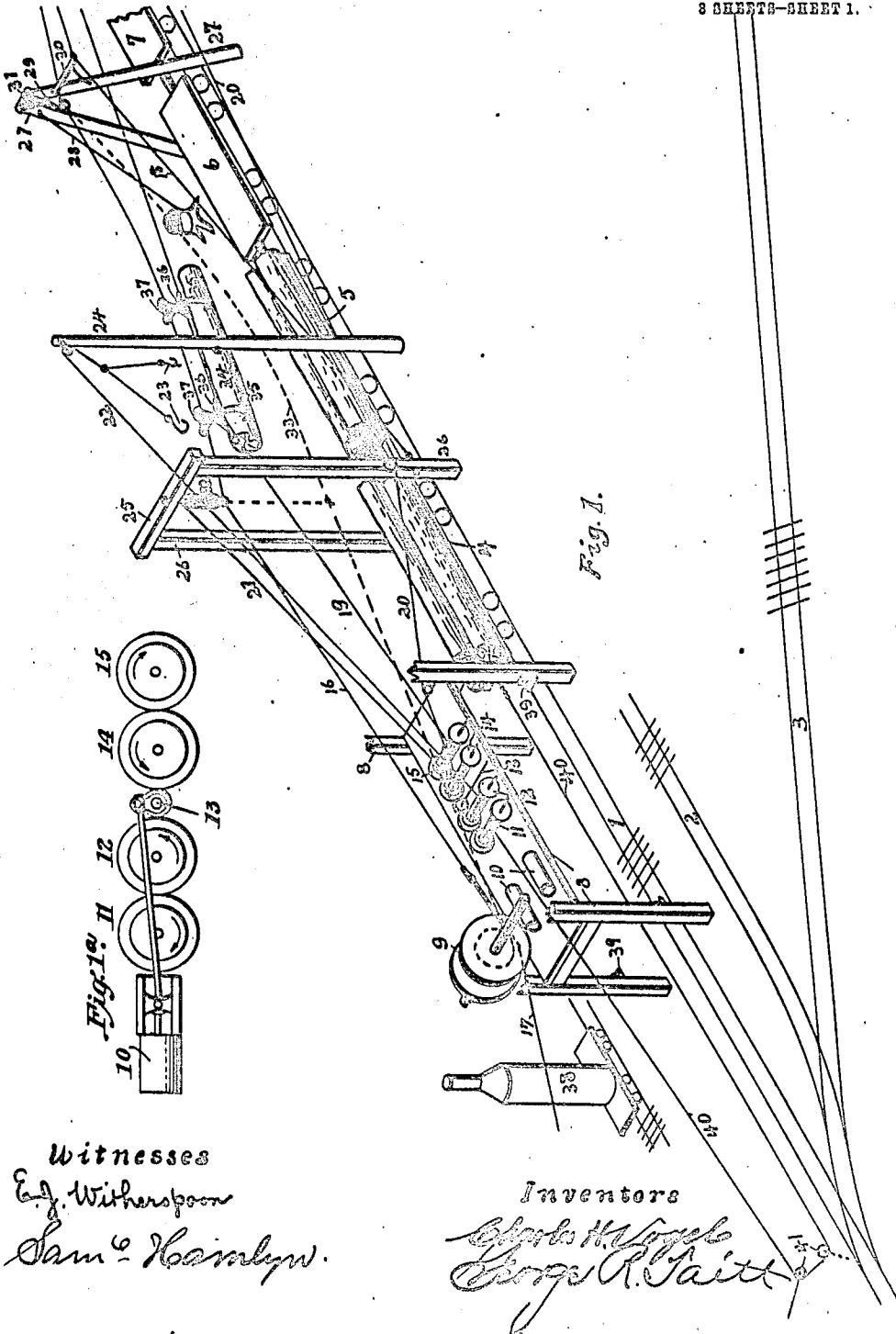


G. H. VOGEL & G. R. TAITT.
AERIAL TRAMWAY.
APPLICATION FILED AUG. 5, 1911.

1,041,916.

Patented Oct. 22, 1912.

3 SHEETS-SHEET 1.



Witnesses
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Sam C. Hamlyn.

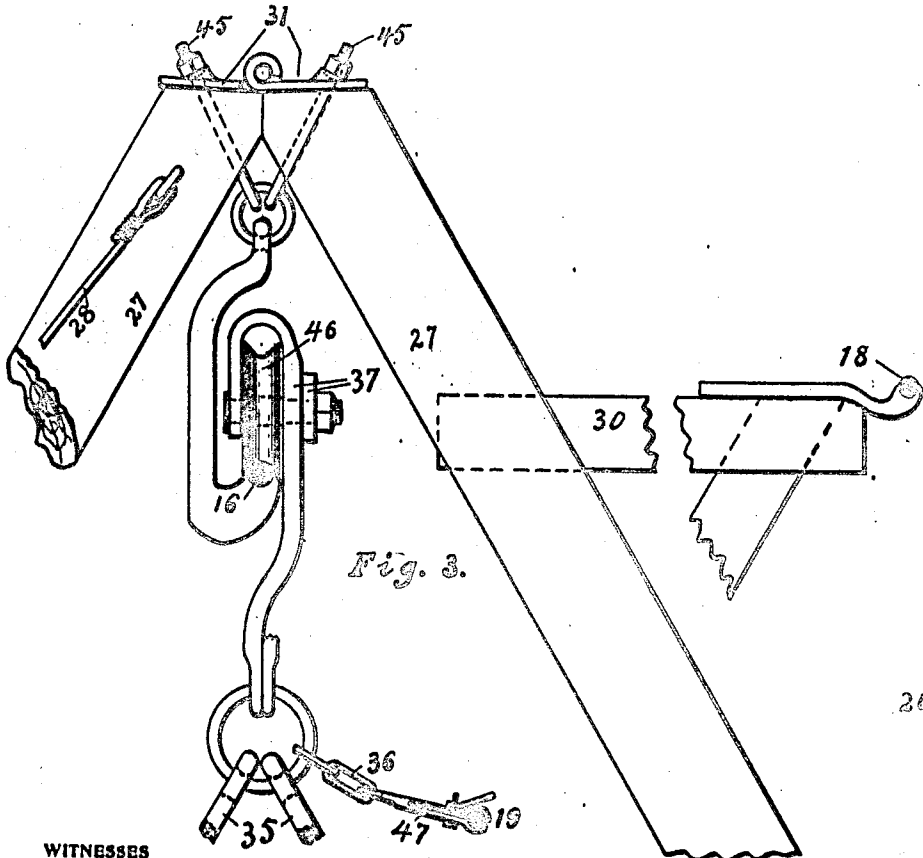
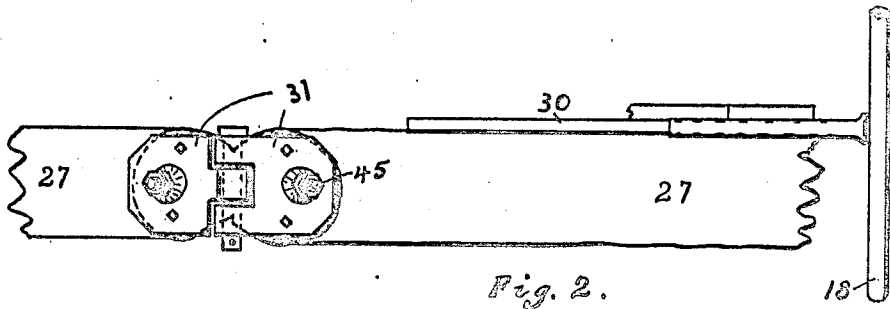
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3 SHEETS-SHEET 3.



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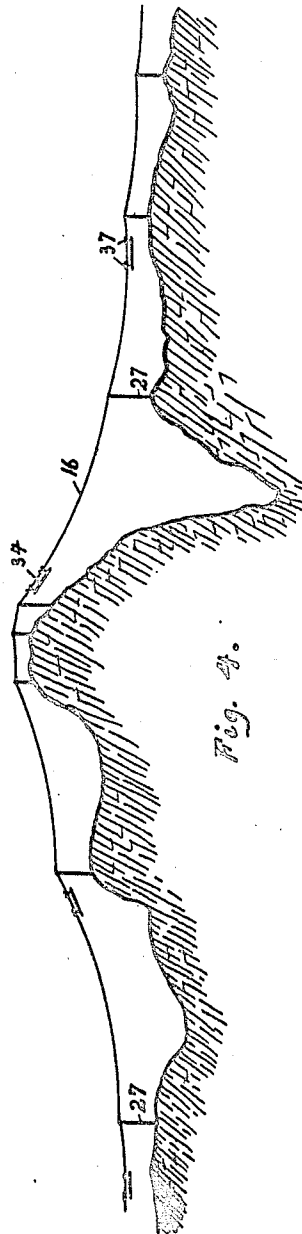
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

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

AERIAL TRAMWAY.

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Specification of Letters Patent.

Patented Oct. 22, 1912.

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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 and Province of British Columbia, Canada, have invented a new and useful Aerial Tramway, of which the following is a specification.

10 Our tramway, which is a modification of the Bleichert system, may be used for conveying any kind of material but the prime object in our invention is to use the tramway for the transportation of logs.

15 This tramway consists principally of a stationary track cable with intermediate supports, a continuous traction cable, a secondary track cable with intermediate supports, an engine with several drums and other appliances in connection therewith; also a series of carriages to run on the main track cable and to carry the logs, the said carriages to return on secondary track cable to the receiving point of the tramway.

25 Our invention consists of improvements by which the following objects are gained. 1. To provide means for raising the logs off the ground and suspend them on the track cable. 2. To provide means to lower the logs onto cars or the ground, or into water. 3. To provide means for transferring the carriages from one track cable to the other. 4. To provide means for placing a railway directly below the discharge end of the tramway and parallel with the main cable so the logs may be lowered into position on the cars. 5. To provide means for moving a train of cars for the purpose of loading the cars consecutively. 6. To provide convenient means for reeling up the track and traction cables for the convenience of transportation. 7. To provide means for the convenient transportation of the engine and appliances. 8. To provide inexpensive but very effective intermediate supports for the track cables.

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

50 Figure 1 represents the discharge end of the tramway with the railway and cars beneath it, also the boiler and engine. Fig. 1 shows a side view of the engine to produce the motive force for operating the system. Fig. 2 represents the top view of the intermediate supports. Fig. 3 represents a side

view of the intermediate supports as seen looking lengthwise with the cable. Fig. 4 represents a section of the tramway as seen from the side, showing only the main track cable and supports with logs traveling by means of carriages on the said cable.

Similar numbers refer to similar parts throughout the several figures.

1 represents the main railway extending longitudinally below the tramway to an extent to receive the required number of empty cars for a train of logs to be loaded. 3 represents a spur of sufficient length to hold a similar train of empty cars.

4, 5, 6 and 7 represent the cars on the main line.

8 represents a framework for supporting the engine, which is of the reciprocating type better shown in Fig. 1, in which 10 indicates one of the cylinders which by means of a piston, piston rod, cross-head, connecting rod and crank revolves the shaft 13, which has fixed upon it a pinion engaging in a train of gears connected with drums 11, 12, 14 and 15 by an independent friction on each drum in a manner customary for logging and hoisting engines, arranged with a lever for each drum so that the operator may engage one or more drums at any time and cause the engine to rotate them. 16 represents the main track cable, the end of which is coiled on drum 9 and 17 represents a guy line, of which there may be several, for exerting a tension on the main cable 16 to hold it in position, and prevent undue slack due to the weight of the logs between intermediate supports.

18 represents the secondary track cable for the return of the empty carriages, while 19 represents the portion of the endless traction cable on which the engine, through means of drum 15, is pulling the log toward it, while 20 represents a portion of the same traction cable moving toward the receiving end of the tramway and propelling the empty carriages on their return.

34 represents a log suspended on the tramway by the tongs 35 and the carriage 37 and secured to the traction cable by the grip 47 and links 36, shown in Fig. 3.

The operation of this tramway is as follows: With the log 34 in position shown, the operator releases the brake on the drum 14, which permits the cable 21 to pay out leaving the block 32 with the main cable

16 to lower under its own weight and the weight of the log till the main cable assumes the position shown by the dotted line 33, when the log rests in its proper position on the car 5; the tongs 35 are then released from the log and the grips 47 are also released from the traction cable which is at rest. The hooks 23 are then engaged in the carriages 37 and by means of the cable 22 and the drum 12 the carriages are lifted from the main cable 16 and placed on the secondary cable 18. The grips 47 are then connected with the traction cable 20, which is started in motion by engaging the drum 15 with the engine, thus carrying the empty carriages to the place where the logs are received; here the carriages are transferred to the main traction cable 16 by a similar means as before described as 23 and 22 but instead of a drum 12 a winch-head on the logging engine may be used. At the receiving end the main cable may be allowed to lower in a manner described as 32, 37, and the drum 14, in order to engage the tongs 35 with a log. The cable 16 may then be raised by the means just described until the log is lifted free from the ground, when the grips 47 are engaged with the traction cable 19, which draws it by means of the carriages along the main cable 16 to the discharge end as shown in Fig. 1.

When the car 5 is loaded the drum 11 is brought into motion and by means of the cable 40 draws the train of cars to the left, as shown in the drawing, until the car 6 is spotted to receive the logs. When all the cars are loaded, and assuming that meantime a locomotive has taken a train of logs away for unloading and is returning, the empty train will be run onto the siding 3, the locomotive will then be coupled to the car 4, pulling the loaded train out and connecting its rear end with the empty train on siding 3, pulling the two trains out onto the main line and backing the empty train on the main line 1 until the empty car nearest the locomotive is spotted to receive the logs in the manner shown by car 5, when it is uncoupled from the loaded train, leaving the locomotive to proceed to its destination.

There should be a sufficient number of carriages that a number of logs would be proceeding along the main cable at the same time, but preferably not close enough together so that two logs would come between two consecutive intermediate supports at any one time. Thus there would be a continuous string of logs proceeding toward the discharge end of the tramway, while a string of empty carriages would be returning to the receiving place.

If desired an additional drum and traction cable may be employed for returning the empty carriages. The grip 47 may be

an approved type now in use for such purpose. The logs may be brought from the forest to the cable way by one or more logging engines or any other suitable means, and the receiving station may be changed along the line of the tramway to the points where the logs can be most conveniently taken. Curves in the tramway may be successfully effected.

In Fig. 1—38 indicates a boiler which may be located at any convenient point to supply steam for the engine 10 although electricity or any other convenient source of power may be employed instead of steam, and it will be seen that when the discharge end of the tramway is much lower than where the logs are received the tendency would be for the logs to produce the motive power for operating the cableway, although it is recommended in any case to be equipped with an engine.

Suitable reels as shown at 9 may be employed and connected with the engine for the purpose of reeling up the track and traction cables when it is desired to move the tramway to a new location. While the framework 8 supporting the engine is built sufficiently high to permit the loaded trains to pass through beneath it, it will be seen that for the purpose of transportation a flat car may be placed beneath the engine and the engine frame raised sufficiently that a timber may be placed across the car at each end and beneath the lugs 39 on frame 8, thus supporting the engine with its frame on the car, when it may be transported to its new location. Other portions of the tramway may also be loaded on the cars and transported. It would also be practicable to build the engine on a car and place it on the siding 2 and provide suitable means for leading the cables. Or the siding 2 may be located in direct line with the tramway and the main track 1 may be curved to pass the car with the engine. For taking logs from the forest directly to the water the engine may be placed on a scow or preferably on two scows connected by suitable timber but leaving room for the logs to float through between them.

The various braces and guides to make the tramway and its equipment substantial should be provided and applied as may be required, and signal bells or whistles may be advantageously employed.

In Fig. 3—27 and 27 show two compression members used in the intermediate supports of the tramway, while 28 shows a guy cable. The plates 31 at the top of these compression members should be connected by a hinge fitting sufficiently loose to not only permit the two plates to swing on the axis of the pin but the pin should be sufficiently small to permit of movements in all directions, so that the two plates may ad-

just themselves to the straight surface at tops of the members 27, even though said surfaces may not be in the same plane. 45 and 45 represent the eye bolts, provided with
 5 nuts which are dome shape at the lower side, fitting into sockets in plates 31 in such a manner that the nuts will adjust themselves to a uniform bearing on all sides. 46 represents one of the two wheels of each carriage represented by 37, while 35 represents
 10 the upper end of the tongs.

It is obvious that the construction and arrangements of the parts may be variously and considerably altered within the scope
 15 of our invention.

Having thus described our invention, we claim:

1. An aerial tramway for transporting logs, having a track cable to support the
 20 logs, in combination with carriages, a traction cable to regulate the movement of the logs, a track cable on which the empty carriages return, and supports from which the track cable is suspended, and means for
 25 raising and lowering the logs.

2. An aerial tramway for transporting logs, having a track cable to support the logs, in combination with carriages, a traction cable to regulate the movement of the
 30 logs, a track cable on which the empty carriages may return, and supports from which the track cable may be suspended, and means for raising and lowering the logs and means for connecting and disconnecting the carriages with the traction cable, and means
 35 for transferring the carriages from one track cable to the other.

3. An aerial tramway for transporting logs, having a track cable to support the
 40 logs, in combination with carriages, a traction cable to regulate the movement of the logs, a track cable on which the empty carriages return, and supports from which the track cable is suspended, and means for rais-

ing and lowering the logs and means for 45 connecting and disconnecting the carriages with the traction cable, and means for transferring the carriages from one track cable to the other, a motor operating drums, a railway and means to admit cars to pass 50 longitudinally beneath the suspended logs, and means for loading the logs on to the car, and means for moving the cars.

4. An aerial tramway for transporting logs, having a track cable to support the 55 logs, in combination with carriages, a traction cable to regulate the movement of the logs, a track cable on which empty carriages may return and supports from which the track cable may be suspended and means for 60 transferring the logs from the ground to the track cable, and for transferring them from track cable to the ground.

5. In an aerial tramway, the combination of track cables, an endless traction cable, 65 intermediate supports, a motor and operating drums on portable supports to permit loaded cars to pass beneath it, and reels to wind up the track and traction cables for the purpose of transportation. 70

6. In an aerial tramway, the combination of track cables, a traction cable, intermediate supports and means for raising and lowering the material to be transferred at the receiving and discharging stations for the 75 purpose of suspending it on and releasing it from one of the track cables.

7. In an aerial tramway, means for lowering and raising the track cable for the purpose of attaching and detaching the logs 80 with said track cable, and for raising and lowering the logs with said track cable.

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