F. B. DYE.

AERIAL CABLEWAY.

APPLICATION FILED MAY 16, 1908.

900,713. Patented Oct. 13, 1908.

2 SHEETS—SHEET 1.

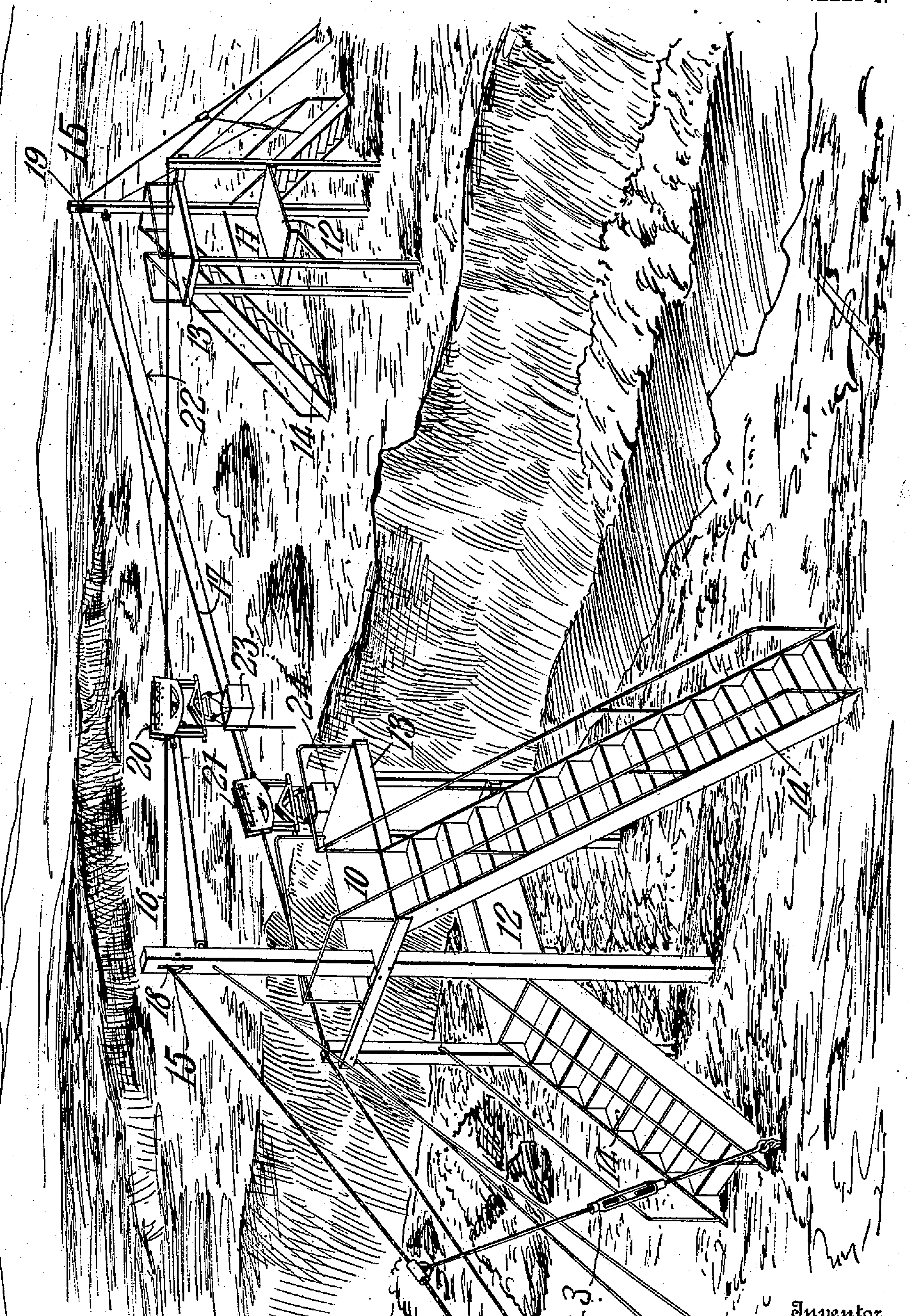

Fig. 1.

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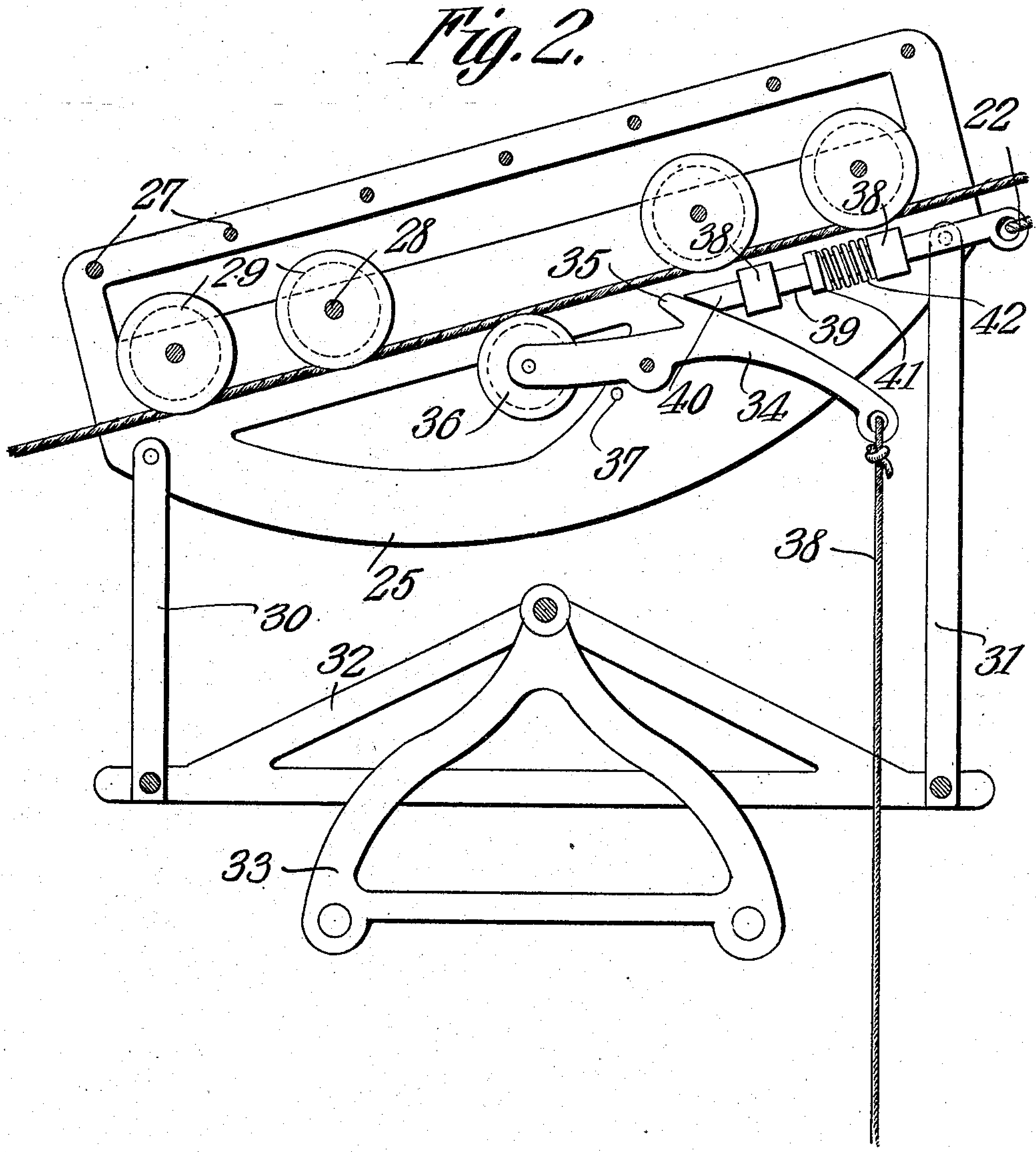
2 SHEETS—SHEET 2.

Fig. 2.



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AERIAL CABLEWAY.

No. 900,713. Specification of Letters Patent. Patented Oct. 13, 1908.

Application filed May 16, 1908. Serial No. 433,266.

To all whom it may concern:

Be it known that I, FREDERICK BLAINE DYE, a citizen of the United States, residing at Fay, in the county of Washington and State of Ohio, have invented a new and useful Aerial Cableway, of which the following is a specification.

This invention relates to aerial cable ways, and more particularly that class of cable way in which the motive power is derived from the weight of the load.

One object of the invention is to provide an improved general construction for such a cable way.

Another object of the invention is to provide a cable way of this character with means whereby the load will transport a pair of buckets alternately across the span of the cable way, said buckets moving simultaneously in the same direction.

The invention consists broadly in a pair of inclined cables so arranged that their opposite ends will lie in the same horizontal plane, and provided with a pair of travelers arranged to move simultaneously in the same direction from one end of said cable to the other.

The invention further consists in certain novel details of construction and combinations of parts, hereinafter fully described, illustrated in the accompanying drawings, and specifically set forth in the claims.

In the accompanying drawings like characters of reference indicate like parts in the several views, and; Figure 1 is a perspective view of the general construction of this device. Fig. 2 is a detailed side elevation of the travelers with one side removed to show the working mechanism.

In the construction of the device it will be noted that in Fig. 1 there has been shown a pair of towers 10 and 11. Supported on these towers are lower platforms 12 and upper platforms 13. Access is had to these platforms in the present showing by means of ladders or stairs 14. This part of the figure is simply to be taken as typical of any desired support for the cable way. It is obvious that various means might be used for obtaining access to the platforms of the towers, as for instance, an elevator might be installed or a chain or other conveyer used to lift material from the ground to the platforms. The rear posts of the towers are preferably of uneven height as clearly shown in the drawing and the longer post carries, in each case a sheave 15. Running over the sheave 15 is a cable 16. This cable is securely anchored in the ground behind the tower 10 and extends between that tower and the tower 11, there passing over the shorter of the rear posts and being anchored in the ground behind that tower. There is thus formed an inclined way from the upper end of the tower 10 to a point below that on the tower 11. A similar cable 17 extends from the top of the tower 11 to a point below the top of the tower 10, being anchored securely in the ground behind the tower. Sheave blocks 18 and 19 are mounted on the towers 10 and 11 respectively in close proximity to the sheave 15. Travelers 20 and 21, the detailed description of which will be given hereinafter, are mounted to run upon the cables 16 and 17 respectively. These travelers are connected by a rope 21 which is attached to the traveler 20, runs then to the sheave block 18, then to the sheave block 19 and then to the traveler 21 to which it is attached. These travelers have attached thereto, preferably in the manner which will hereinafter appear, suitable transporting means, as for instance the cars 22 and 23.

In order to obtain an understanding of the operation of the device up to this point let it be assumed that both of the travelers with both of their transporting cars are at the tower 10. The travelers and their cars being in this position, let it be supposed that the car 20 receive a load and be released for movement down the cable 16. As the loaded car travels down the cable 16, the unloaded car will be pulled up the cable 17 by the action of the rope 22 passing through the sheaves 18 and 19. The two travelers with their cars will thus move simultaneously to the opposite end of the cable way. Upon arriving at this end the car 20 is unloaded and the car 21 loaded, and the travelers with the cars will pass back to the tower 10 in the same manner as they traveled across with the sole difference that the traveler 21 will now do the hauling.

Referring now to Fig. 2, in order that the details of the traveler may be understood. Each of the travelers is preferably formed of a pair of side frames one of which is indicated at 25, the other one being removed to show the interior of the device. These side frames are secured together by any suitable means as a bolt 26. Mounted on a suitable

shaft 28 extending from one of the side frames to the other are rope sheaves 29 preferably arranged in two pairs one pair being at each end of the traveler. Each of the frames 25 supports a pair of links 30 and 31 so proportioned in regard to length that their lower ends will lie in the same horizontal plane. Pivotally attached to each of the pairs of links is a swinging frame 32 which supports a hanger 33 to which the cars 23 and 24 are arranged to be attached. Pivotally mounted between the frames 25 is a brake lever 34 provided with a cam surface 35 and having a brake wheel 36 at one end thereof. A stop 37 is held on one of the frames to limit the motion of the lever in one direction. A cord 38 is attached to the other end of the lever and by pulling upon this cord the lever is rotated through the arc of a circle, the brake wheel 36 being pressed against the suspending cable in such manner as to securely lock the device to the cable. As in some cases the rolling friction may not be sufficient to overcome the action of gravitation the brake wheel 36 may be held rigidly on the brake lever 34 and the friction will then be sliding friction, and will act in a stronger manner to hold the traveler from sliding along the suspension cable. In order that the brake may be automatically worked, I provide a pair of guides 38 attached to one of the side frames 25. These guides carry a bar 39 having a beveled end 40 arranged to bear against the cam 35 of the lever 34. A collar 41 is rigidly secured to the bar 39 and between that collar and one of the guides 38 is a spring 42 normally pressing said bar in the direction of said cam 35. The bar is provided with an eye at the end thereof and to this eye is attached the rope 22. If, in the course of operation, the rope 22 should break the spring 42 would force the bar 39 against the cam 35 and thus depress the lever 34 and actuate the brake. It is thus seen that the brake is capable of automatic as well as manual operation. A suitable means is provided for tensioning, without interrupting the continuity of the same, the suspension cables, here indicated by the tension rods and turnbuckles 43.

It is obvious that many changes may be made in the device without departing from the principles thereof. For instance, in place of the car being rigidly attached to the frame 33, the same may be made so as to raise and lower by suitable means thus permitting the loading of the car on the ground as is common in some types of cable ways. It is not therefore desired to confine the invention to the exact form herein shown and described, but it is wished to include all such as properly come within the scope thereof.

Having thus described the invention what is claimed as new, is:—

1. In a device of the character described, a pair of inclined suspension cables, the opposite ends of each lying in the same horizontal plane, transporting means on each of said cables, and other means connecting the transporting means and simultaneously moving the transporting means on one cable as the other transporting means moves.

2. In a device of the character described, a pair of inclined suspension cables, the opposite ends of each lying in the same horizontal plane, a transporting means on each of said cables, and a tension element connecting the transporting means to simultaneously move one of said transporting means as the other moves, the movement of both being toward the same end of the suspension cables.

3. In a device of the character described, a pair of inclined suspension cables, the opposite ends of each lying in the same horizontal plane, a transporting means on each of said cables, a pair of sheaves one held near each of the upper ends of said cables, a rope connected to one of the transporting means and running then the sheave at the upper end of the cable whereon said means move, then to the other sheave, and then to a connection with the other transporting means.

4. In a device of the character described, a pair of inclined suspension cables, the opposite ends of each lying in the same horizontal plane, transporting means on each of said cables, other means connecting the transporting means and simultaneously moving the transporting means on one cable as the other transporting means moves, and elements for controlling the movement of said transporting means.

5. In a device of the character described, a pair of inclined suspension cables, the opposite ends of each lying in the same horizontal plane, a transporting means on each of said cables, a tension element connecting the transporting means to simultaneously move one of said transporting means as the other moves, the movement of both being toward the same ends of the suspension cables, and elements for controlling the movement of said transporting means.

6. In a device of the character described, a pair of inclined suspension cables, the opposite ends of each lying in the same horizontal plane, a transporting means on each of said cables, a sheave held near the upper end of each of said cables, a rope connected to one of the transporting means and running then to the sheave at the upper end of the cable whereon said means move, then to the other sheave, and then to a connection with the other transporting means, and means for controlling the movement of said transporting means.

7. In a device of the character described, a pair of inclined suspension cables, the opposite ends of each lying in the same horizontal plane, a transporting means on each of said

cables, and a tension element connecting the transporting means to simultaneously move one of said transporting means as the other moves, the movement of both being toward the same ends of the suspension cables, and means for automatically controlling the movement of said transporting means.

8. In a device of the character described, a pair of inclined suspension cables, the opposite ends of each lying in the same horizontal plane, a transporting means on each of said cables, a tension organ connecting the transporting means to simultaneously move one of said transporting means as the other moves, the movement of both being toward the same ends of the suspension cables, and means for manually and automatically controlling the movement of said transporting means.

9. In a device of the character described, a pair of suspension cables inclined in opposite directions, a traveler mounted to run on each of said cables provided with means for supporting a load, a tension element connecting said travelers to simultaneously move one of said travelers as the other moves, the movement of both being toward the same end of the suspension cable.

10. In a device of the character described, a pair of suspension cables inclined in opposite directions, a traveler mounted to run on each of said cables provided with a means for supporting a load, a tension element connecting the travelers to simultaneously move one of said travelers as the other moves, the movement of both being toward the same end of the suspension cables, and means for controlling the movement of said travelers.

11. In a device of the character described, a pair of suspension cables inclined in opposite directions, a traveler mounted to run on each of said cables provided with means for supporting a load, a tension element connecting the traveler to simultaneously move one of said travelers as the other moves, the movement of both being toward the same ends of the suspension cables, and a brake mounted on said travelers to control the movement thereof.

12. In a device of the character described, a pair of suspension cables inclined in opposite directions, a traveler mounted to run on each of said cables provided with means for supporting a load, a tension element connecting the travelers to simultaneously move one of said travelers as the other moves, the movement of both being toward the same ends of the suspension cables, and an automatic brake to control the movement of said travelers.

13. In a device of the character described, a pair of suspension cables inclined in opposite directions, a traveler mounted to run on each of said cables provided with means for supporting a load, a tension element connecting the travelers to simultaneously move one of said travelers as the other moves, the movement of both being toward the same end of the suspension cables, and a manually and automatically operated brake to control the movement of said travelers.

14. In a device of the character described, a pair of suspension cables inclined in opposite directions, a traveler mounted to run on each of said cables provided with means for supporting a load, a sheave held near the upper end of each of said cables, a rope connected to one of the travelers and running then to the sheave at the upper end of the cable whereon said traveler moves, then to the other sheave, and then to a connection with the other traveler, and a brake mounted on said travelers to control the movement thereof.

15. In a device of the character described, a pair of suspension cables inclined in opposite directions, a traveler mounted to run on each of said cables provided with means for supporting a load, a sheave held near the upper end of each of said cables, a rope connected to one of said travelers and running then to the sheave at the upper end of the cable whereon said traveler moves, then to the other sheave, and then to a connection with the other traveler, and an automatic brake mounted on said travelers to control the movement thereof.

16. In a device of the character described, a pair of suspension cables inclined in opposite directions, a traveler mounted to run on each of said cables provided with means for supporting a load, a sheave held near the upper end of each of said cables, a rope connected to one of the travelers and running then to the sheave at the upper end of the cable whereon said traveler moves, then to the other sheave, and then to a connection with the other traveler, and a manually and automatically operated brake mounted on each of said travelers to control the movement thereof.

17. A pair of stations, a pair of oppositely inclined tracks arranged between the stations, cars arranged to run on said tracks, and a tension element connecting said cars to cause the same to move synchronously and in the same direction.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

FREDERICK BLAINE DYE.

Witnesses:

C. C. MIDDLESWART,

J. C. BRENAN.