

(No Model.)

2 Sheets—Sheet 1.

E. PRUNETTI & G. AVIGNONE.  
AERIAL TRAMWAY.

No. 468,208.

Patented Feb. 2, 1892.

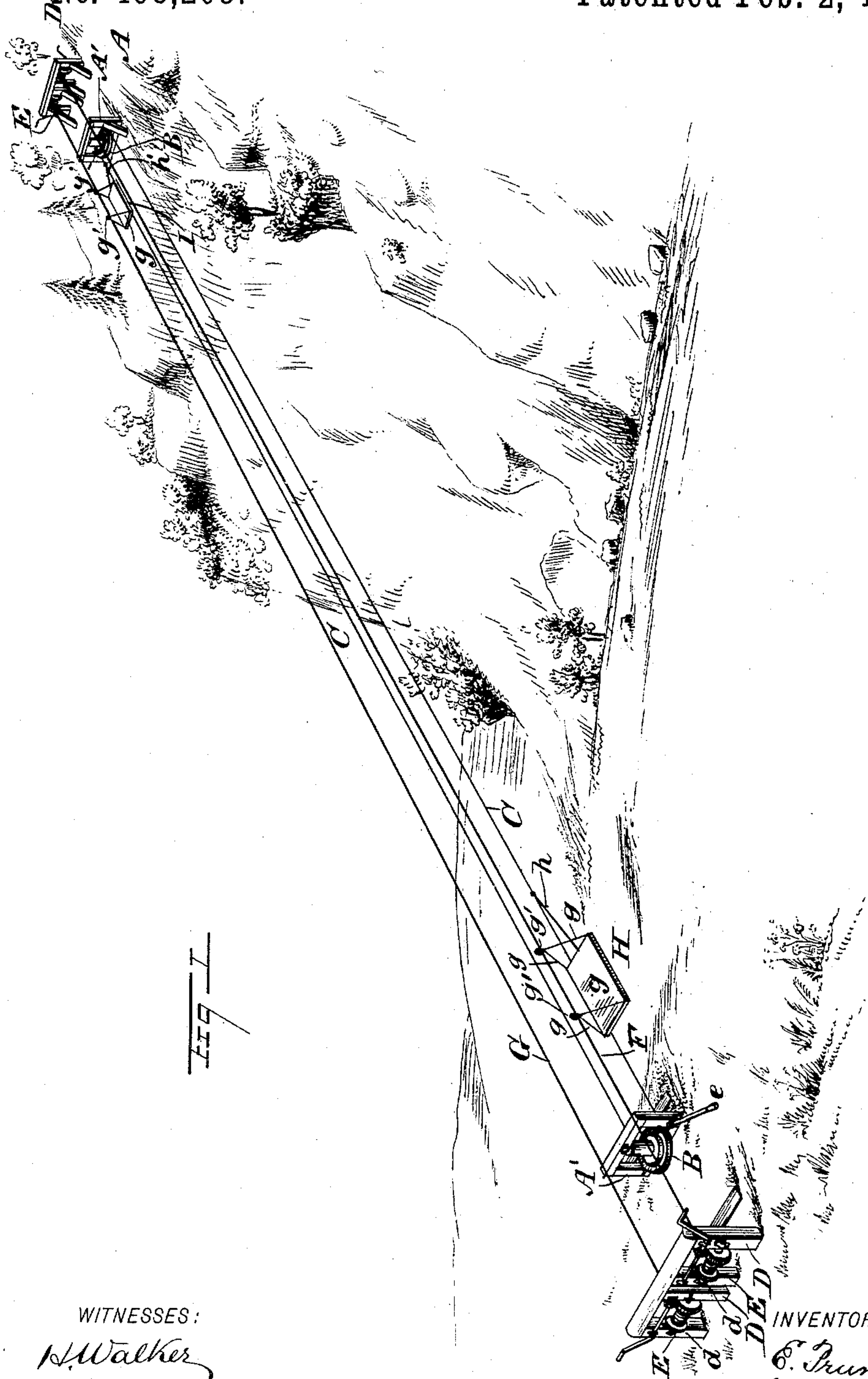


FIG. 1

WITNESSES:

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INVENTORS:

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BY *Munn & Co*  
ATTORNEYS

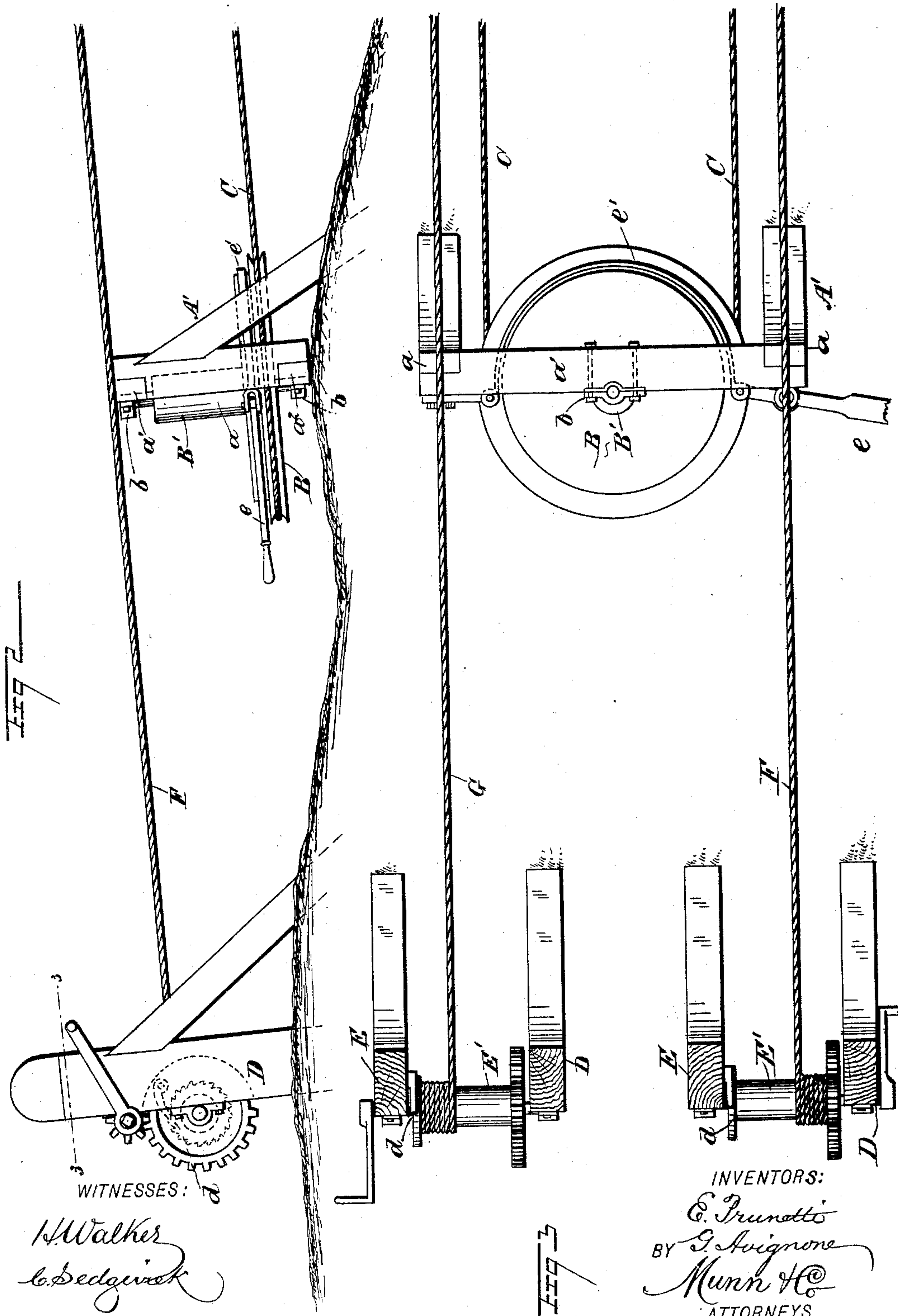
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# UNITED STATES PATENT OFFICE.

EMILIO PRUNETTI AND GIAMBATTISTA AVIGNONE, OF SIERRA CITY,  
CALIFORNIA.

## AERIAL TRAMWAY.

SPECIFICATION forming part of Letters Patent No. 468,208, dated February 2, 1892.

Application filed April 18, 1891. Serial No. 389,401. (No model.)

*To all whom it may concern:*

Be it known that we, EMILIO PRUNETTI and GIAMBATTISTA AVIGNONE, of Sierra City, in the county of Sierra and State of California, have invented a new and Improved Aerial Tramway, of which the following is a full, clear, and exact description.

Our invention relates to an improvement in suspension-tramways which operate by gravity to transport loads of materials in receptacles from an elevated position to a lower plane, and has for its object to provide a simple and inexpensive means for the speedy and safe transportation of material or passengers from an elevated point difficult of access to a lower station.

With this end in view our invention consists in certain features of construction and combinations of parts, which will be hereinafter fully described, and pointed out in the claim.

In some sections of the county, where mining for minerals is conducted on the sides or tops of rugged and nearly inaccessible mountains, and it is necessary, in order to reduce the ore and abstract the metal therefrom, that the material as mined be transferred to a lower plane, the device which is the subject of the present invention is of great convenience, as it affords a safe, cheap, practical, and readily-constructed aerial transit for such material.

Reference is to be had to the accompanying drawings, forming a portion of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of the device in position for use to transfer material from an elevated position to a lower plane. Fig. 2 is an enlarged side view of the brake mechanism and cable-stretching device at one station; and Fig. 3 is a sectional plan view of parts shown in Fig. 2, taken on the line 3-3 in Fig. 2.

A represents an elevation on which at a proper point the substantial timber frame A' is erected. As shown in Figs. 2 and 3, this frame consists of two uprights  $a$ , between which two transverse parallel beams  $a'$   $a^2$  are secured a suitable distance apart, having

their ends engaged with the sides of the uprights.

Centrally between the horizontal pieces  $a'$   $a^2$  and uprights  $a$  the grooved wheel B is located, said wheel being supported to rotate horizontally by the upright shaft B', on which it is mounted and secured, there being boxes  $b$  provided, that are affixed to the cross-beams  $a'$   $a^2$  for reception of journaled ends of said shaft. At a point lower down, which may be a level plain at the foot of the precipitous elevation on which the frame A' is located, and a considerable distance therefrom, a frame and grooved pulley-wheel are erected, which parts are duplicates of the frame A' and grooved wheel B.

The wire rope C is extended as a continuous belt upon the pulley-wheels B B and between the same, thus affording two parallel lines that move in opposite directions simultaneously when draft strain is applied to either.

At the rear of the frames A' strong posts D E are erected in pairs, and horizontal drums E' are revolvably secured between each pair of posts, said drums having an ordinary ratchet-and-pawl device secured thereto, as at  $d$  on post E in Figs. 2 and 3, thereby affording a windlass mechanism by means of which two independent cables F G may be supported and stretched taut. Said cables, having their ends secured to and wrapped around the windlass-drums, as shown, are thus maintained a suitable distance away from the endless cable C on each side of the same parallel thereto and in the same inclined plane.

A brake-lever  $e$  is provided for each wheel B and is pivoted to vibrate on one post  $a$  of each supporting-frame, said levers each having an inner end pivotally connected with an adjacent end of a friction-strap  $e'$ , that has its other end hinged to the opposite frame-post  $a$ , (see Fig. 3,) whereby an efficient frictional contact may be effected between the straps and a plane portion of each grooved pulley B when the outer ends of the levers  $e$  are manipulated to secure such a result.

The cars H I are made of any proper form to receive material and hold it securely. These are slung by tackle-ropes  $g$  to the brack-



et-supported traveler-wheels  $g'$ , which rest with their grooved peripheries on the cables F G, whereon they are designed to move.

In arranging the device for use a car H is 5 located at the lower station and is flexibly connected, as at  $h$ , to the adjacent strand of the endless cable C, and the other car I, being placed at the upper station, is attached by a chain or wire rope  $h'$  to the opposite strand 10 of the cable C. It will be seen that when the upper car I is loaded and released from its fastening, which has been provided to retain it at the upper terminus of the cable on which it is supported, its gravity will cause it to de- 15 scend the inclined wire or rope tramway G and by its connection with the endless cable C communicate movement thereto. The descent of the loaded car I will cause the attached car H to be drawn up the ascending 20 grade on the rope-tramway F, the speed of the moving cars being regulated by the brake-levers  $e$ , previously mentioned. If desirable

and the strength of the tramway-ropes is sufficient, more than one set of cars may be placed on the track-lines F G and be simulta- 25 neously moved by gravity, their control being effected through the endless cable C, as has been explained.

Having thus fully described our invention, we claim as new and desire to secure by Let- 30 ters Patent—

The combination, with an endless cable, two upright frames, two horizontally-located revol- 35 utable grooved pulleys mounted on the frames, and brake mechanism therefor, of two wire-rope tramways, windlass-supports therefor, and two cars mounted on the tramways and oppositely connected to the endless cable, substantially as set forth.

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