2 Sheets--Sheet 1.

A. A. SMITH.

Wire-Way.

No. 159,973

Patented Feb. 16, 1875.

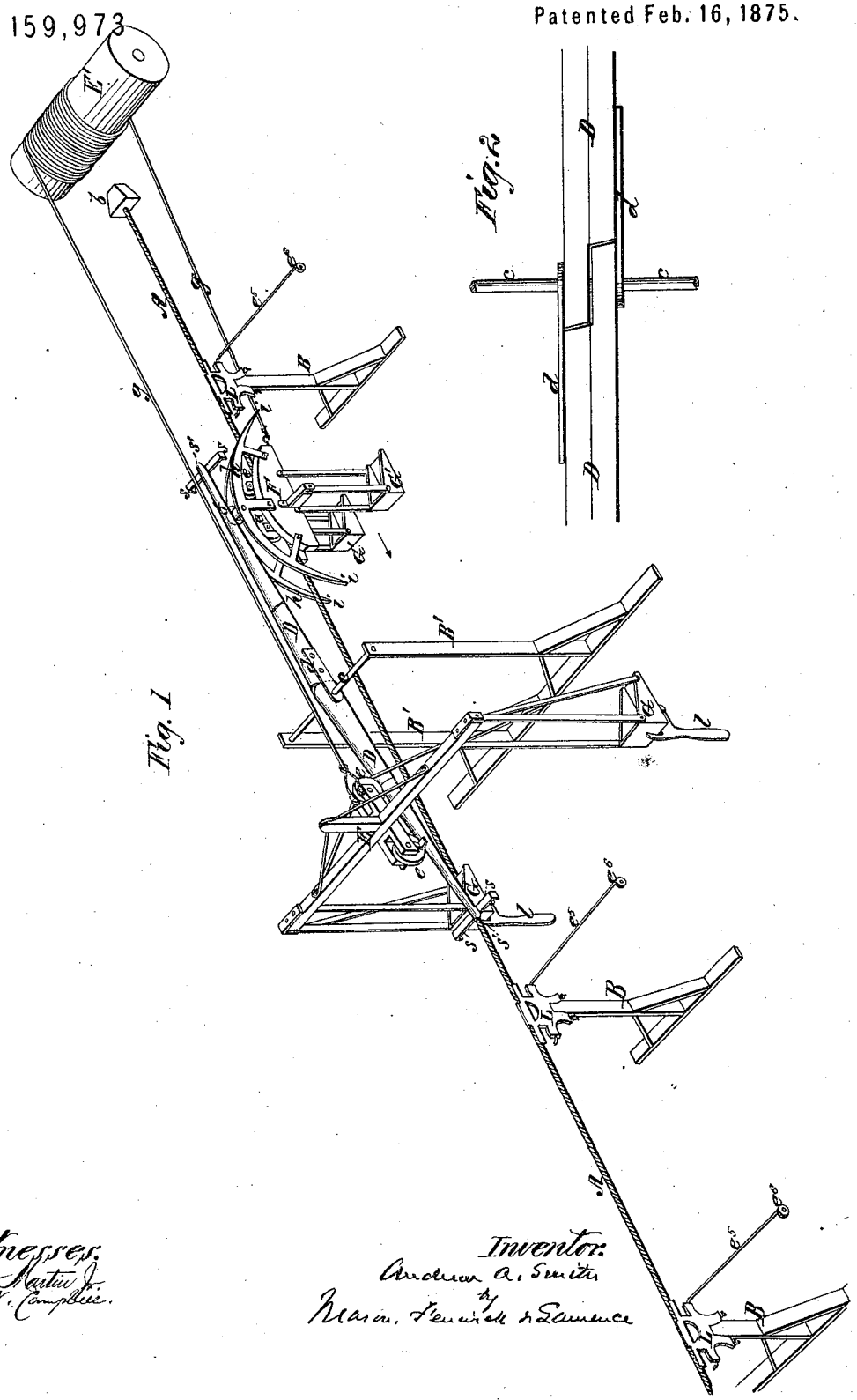

Fig. 1

Fig. 2

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2 Sheets--Sheet 2.

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Fig. 3

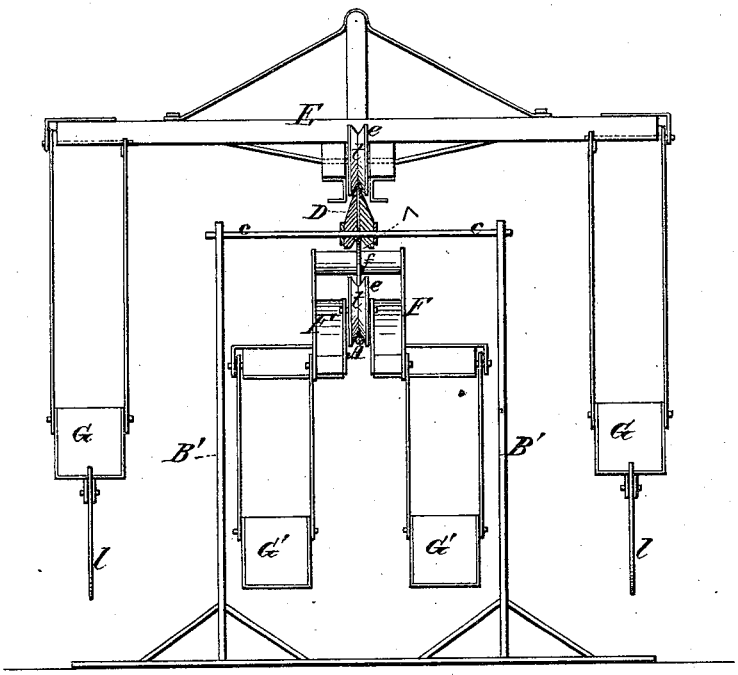

Fig. 4

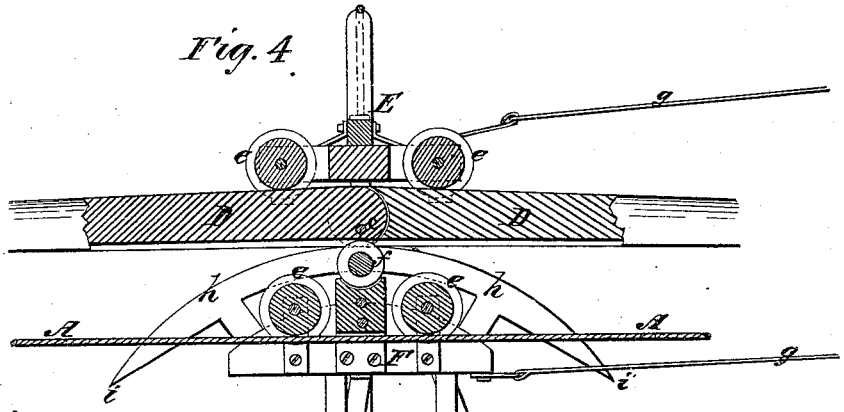

Fig. 5

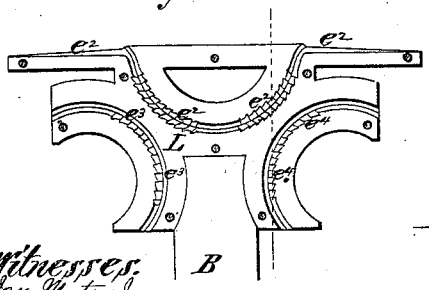

Fig. 6

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UNITED STATES PATENT OFFICE.

ANDREW A. SMITH, OF GEORGETOWN, COLORADO TERRITORY.

IMPROVEMENT IN WIREWAYS.

Specification forming part of Letters Patent No. **159,973**, dated February 16, 1875; application filed December 30, 1874.

To all whom it may concern:

Be it known that I, ANDREW A. SMITH, of Georgetown, county of Clear Creek, Territory of Colorado, have invented a new and Improved Cable-Way for Mining and other purposes; and I do hereby declare that the following is a full clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view; Fig. 2, plan view of the jointed riding-track; Fig. 3, a view in cross-section of the riding-track, the two transporting-cars, and the cable-track. Fig. 4 is a longitudinal section of Fig. 3. Fig. 5 is a longitudinal section of the cable and guy-clamp; and Fig. 6 a cross-section of same.

The object of my invention is the construction of a "cable-way," particularly adapted for mining operations, which can be cheaply constructed, and only utilize a metallic cable for a single transporting-track in the place of two transporting-tracks, as heretofore used.

In Fig. 1 I have shown my invention in perspective view, with a cable, A, supposed to be anchored in the side of a mountain at *b*, with its opposite end anchored below, at the foot of the mountain. The cable is rigidly stretched over, and supported at proper intervals upon, posts B B B. About centrol of the length of the cable are posts B′ B, one on each side of the cable, and tied together, near their upper ends, by a strong metal rod, *c*, which rod is to be made large enough to support the weight of the load which may be passed over a riding-track, D, through which said rod passes, and upon which the riding-track articulates. Fig. 2 shows the riding-track D jointed upon the rod *c*, the joint being strengthened by iron plates *d*, secured to the main parts of the riding-track, with the rod *c* passing through said plates. This riding-track D D is made, on its top, and along its whole length, in the form of the letter **V** inverted, while its under side is grooved in like form, such form being adapted on its top to receive the tread of the grooved wheels *e e* of the car E on its passage over the riding-track D D, while the groove along on the under side of the riding-track is adapted to receive a guide-roll, *f*, of the car F (clearly shown in Fig. 4) during its passage beneath said riding-track and on the cable A.

In Figs. 3 and 4 I have shown the transporting-cars E and F in the act of passing each other over my cable-way. A rope, G, as shown in Fig. 1, is attached at one end to the car E, which, after winding around a drum, E′, has its opposite end attached to the car F, so that by the rotation of the drum the car E may be drawn up the mountain on the cable-way, while the car F is allowed to pass down, or the reverse thereof, as circumstances may require. These cars, in their movement up and down the mountain, pass each at a central point of the line of cable-way. The supports B′ B′ indicate such point; and, by an inspection of Fig. 1, it will be seen that the car E is riding upon one section of the riding-track D D, while the other car F is passing beneath the other section of said riding-track and upon the cable A. Thus, that section of the riding-track which supports the car E, as shown in Fig. 1, has its lower end resting upon the cable A, while its upper jointed end is supported by the rod *c* of the supports B′ B′, and during this time the other section of the riding-track is elevated upon the guide-roll *f* of the car F while the car F is passing toward the bar *c*, at which point *c* the two cars pass each other, one upon the riding-track D D, and the other upon the cable A beneath the said track.

By reference to Fig. 3 it will be seen that the frame-work of the car F is of such width as to allow its passage between the supporting-posts B′ B′, while the frame-work of the car E is of such width as to freely pass on either side of such posts.

Figs. 1 and 4 show the frame of the car F made with curved guards *h*, the extreme ends *i* of which extend down below the cable on which the car is riding, so that when the car approaches the riding-track D D such end *i* will, at the proper time, pass under a cross-bar, *s*, attached to the extreme outer ends of each of the sections of the riding track D D, and thus elevate the same, according to the direction, either up or down the cable A in which the car F may be passing.

When the car F (supposing it to be moving in the direction of the arrow) is passing be-

neath one section of the riding-track, such section will gradually be lowered down, so that its extreme end *s'* will rest upon the cable A, and thus afford a passage-way for the car E to move down off from the riding-track upon the cable; and, while the car E is so moving down, the car F will be passing beneath the section of the riding-track which the car E has just passed over. In this manner the cars may pass each other in either direction, the one upon the riding-track, and the other beneath it on the cable A. I would state that when the cars pass each other at the bar *c* the sag of the cable A beneath such point will permit the under car to pass without bearing any of the weight of the car above it, the weight of the upper car being thrown upon the cross-bar *c*.

G G are buckets or vessels suspended from the car E, and G' G' are buckets or vessels suspended from the car F, into which the load to be transported over the cable-way is placed. These buckets are suspended by jointed rods, as shown in Fig. 3; which rods and buckets may so articulate as to keep the buckets in proper upright position while they are being transported up and down the mountain. To the buckets G tripping-levers *l* are applied, in order to facilitate the discharge of the load from the buckets, and like levers may be applied to buckets G', if desired.

In order to sustain and hold the cable-track A in a direct line, and prevent it from swaying from such line, I securely attach, in any proper manner, to the posts B B B, guy-clamps L. These clamps (see Figs. 5 and 6) may be of cast-metal plates bolted together, and having a groove, as at e^2, in which the cable A lies, and in which it is firmly clamped between the two plates which compose the guy-clamp. Serrations are formed in such groove in such manner as to hold the cable with a bite or grip, and thus prevent the slipping of the cable after adjustment therein. Like serrated grooves, as at e^3 and e^4, are formed in the inner faces of the guy-clamp L, in which guy-ropes e^5 are placed and held in a fixed position, as indicated in Fig. 1. One end of the guys e^5 is anchored in the rock or ground at e^6, immediately under cable A. The guys e^6 may be secured in position immediately under the cable at points in the ground above the connection of the guy with the cable at the posts, the guy running horizontal, or nearly so, from the ground to the clamp at the head of the post.

By my application of the guy-clamp L the cable A or transporting-track is divided into sections or divisions, although the strands of the cable are continuous, each section consisting of that portion of the cable A which lies between any two guys, or, at the extremities between the end and the nearest guy.

The strain from the weight of the car, as well as from the gravity of the cable or other cause, is thus brought upon a section of the cable A, instead of upon the cable throughout its whole stretch at one time; and, except upon the section where the cars pass, the weight of only one car can bear upon any one section at one time. The cable is thus held firm in place, and prevented from forward slip; and the lateral swing or other swaying of the cable is diminished in proportion as the length of the whole cable is to a single section.

What I claim as new is—

1. The cars E and F, in combination with the single cable A, substantially as and for the purpose described.

2. The riding-tracks D D, in combination with the cable-track A, substantially as and for the purpose described.

3. The support B' B' and bar *c*, in combination with the hinged riding-track D, substantially as described.

4. A transporting-car, E, constructed with curved guards *h*, or their equivalent, substantially as and for the purpose set forth.

5. Guy-clamps L, in combination with the cable A and guy-ropes e^5, substantially as and for the purpose set forth.

ANDREW A. SMITH.

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WM. B. HOUGH.