(No Model.)

W. G. HUEY & T. J. LOVEGROVE.

CABLE RAILWAY.

No. 339,655. Patented Apr. 13, 1886.

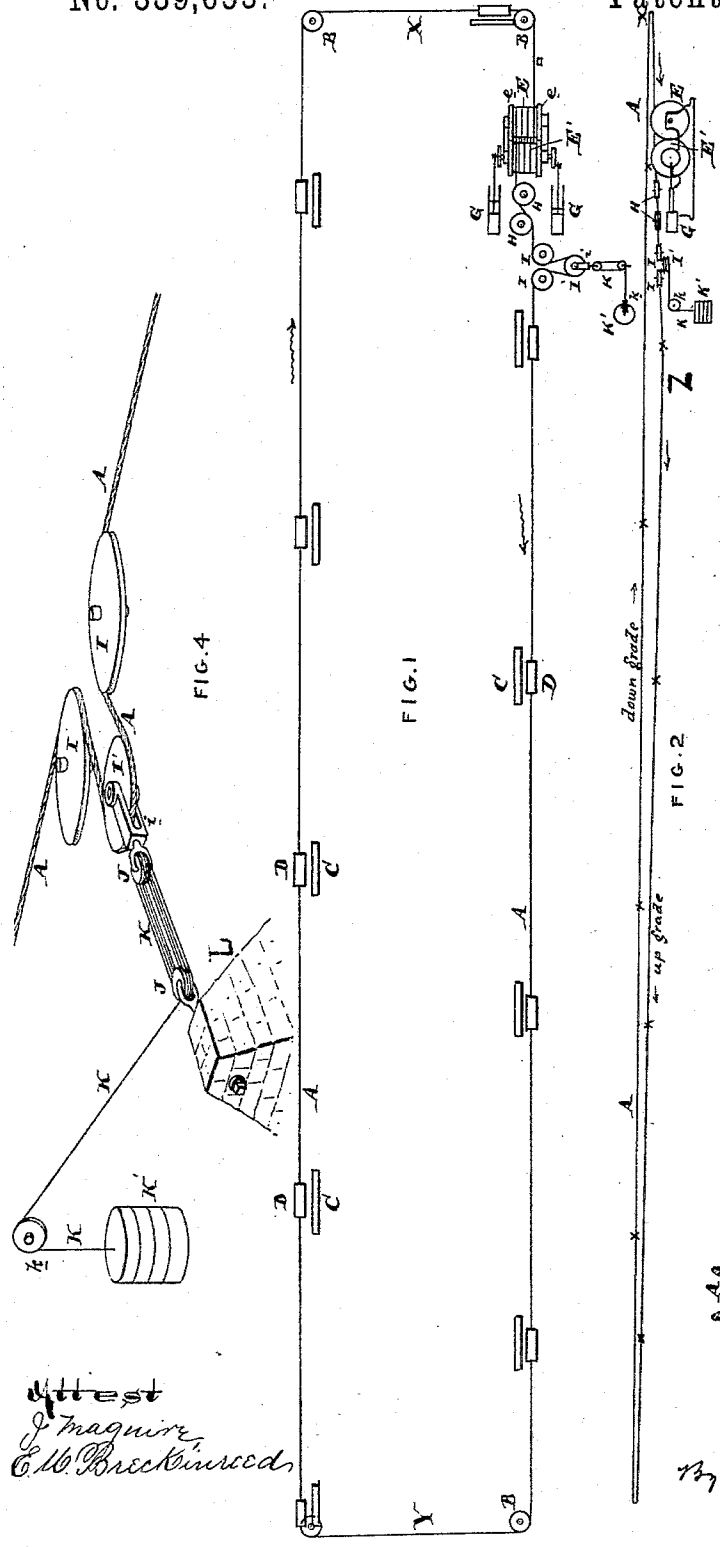


FIG. 1

FIG. 2

FIG. 4

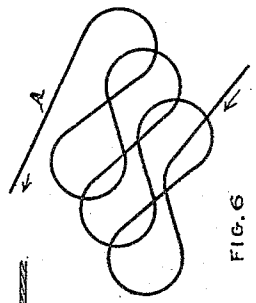


FIG. 6

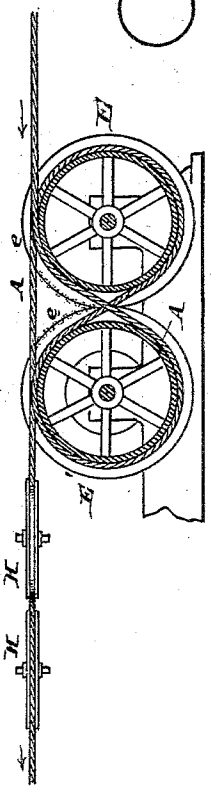


FIG. 3

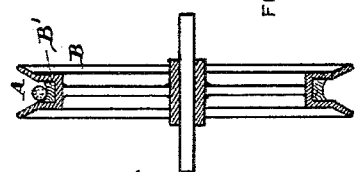


FIG. 5

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WILLIAM G. HUEY AND THOMAS J. LOVEGROVE, OF PHILADELPHIA, PA.

CABLE RAILWAY.

SPECIFICATION forming part of Letters Patent No. 339,655, dated April 13, 1886.

Application filed November 10, 1885. Serial No. 182,355. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM G. HUEY and THOMAS J. LOVEGROVE, of the city and county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Cable Railways, of which the following is a specification.

Our invention has reference to cable railways; and it consists in an endless cable combined with driving mechanism intermittently actuated to cause said cable to be moved over substantially equal distances in each interval of time and then come to rest, whereby a series of cars secured to said cable will be simultaneously arrested before a corresponding series of stations, to the end that each car will be caused to travel from station to station, and suitable means, hereinafter specified, to actuate and control the said cable, and in many details of construction, all of which are fully set forth in the following specification, and shown in the accompanying drawings, which form part thereof.

In the drawings, Figure 1 is a plan view of a cable-railway system embodying our improvements. Fig. 2 is a side elevation of same. Fig. 3 is a sectional elevation of the driving-drums. Fig. 4 is a perspective view of the take-up or tension device. Fig. 5 is a sectional elevation of the cable-supporting wheels; and Fig. 6 is a perspective view of the cable, showing the manner in which it is wound upon the propelling-drums.

A is the endless cable, which runs upon sheaves or pulleys B, having their faces preferably covered with wood B', and of which there may be any desired number.

E E' are the driving-drums, and have their surfaces grooved to receive the cable which is wound about said drums, as shown in Figs. 3 and 6, forming a figure **8**, and so that the incoming and outgoing cable shall always enter upon and leave the same place on said drum E. These drums are geared together by spur or friction wheels *e*, and are driven by engines G. The cable after leaving the driving-drums may be guided over wheels H H, to bring it again into line with the incoming cable, and the tension may be put upon said cable by means of guide-wheels I I and take-up wheel I', which latter is drawn back by a weight K', which acts through the agency of a rope, K, guided over pulley *k*, and passing around the pulley-blocks J J, one of which is secured to the wheel I by a yoke, *i*, and the other to the masonry-support L. This take-up device may be located at any place on the system.

C represents a series of stations arranged equidistant apart, and D represents a corresponding series of cars, also arranged equidistant and secured to the cable.

We may consider X and Y the two terminals of the railway, and from Y to X the car is, say, running downgrade, and from X to Z a short distance, and extending over the driving-drums E E' and the take-up, the downgrade is steep, and from Z to Y it is upgrade. These conditions can be obtained in almost every city, and while the grades from X to Y and Z to Y are not necessary, it is important to have the grade from X to Z over the driving-drums, for while the car is in motion the cable is freed, either by hand or automatically, by unclamping the grip-jaws, and the car passes by gravity to the point Z, where, as soon as the cable is brought to rest again, the grip-jaws are once more closed upon the cable and the car is ready for another trip. If it is impossible to get the downgrade from X to Z, it will be necessary to provide some other means to convey the cars over the driving-drums.

We are aware that take-up devices to keep cable railways with taut cables are old, and such being the case we only claim the specific construction of our take-up. The state of the art upon this subject is well illustrated in the following patents, viz: Dodge, of 1879, No. 215,586, in which the cable passes around a wheel supported on a carriage, and the carriage is drawn back by a weight and chain or cable passing over a sheave; Root, of 1881, No. 244,147, who has a similar device, with the addition that the said parts may be drawn back bodily by a block-and-tackle device, and Terry, of 1883, No. 270,509, who draws the cable down between two pulleys, causing it to pass around a weighted pulley. We therefore do not claim any of these constructions.

Having now described our invention, what

we claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a cable railway, of the cable A, driving-drums E E′, about which the said cable is wound, as shown, gearing or friction-wheels *e*, and engines G, substantially as and for the purpose specified.

2. In a cable railway, the cable A, in combination with the pulleys I I′, yoke *i*, pulley-blocks J, cable or rope K, and weights K′, substantially as and for the purpose specified.

3. In a cable railway, the cable A, in combination with pulleys I I′, yoke *i*, pulley-blocks J, cable or rope K, weights K′, and driving-drums E E′, about which the cable is wound, as shown, substantially as and for the purpose specified.

4. A cable railway arranged with three grades, in which the outer terminals of two adjacent grades coincide with the terminals of the other or third grade, substantially as and for the purpose specified.

5. A cable railway arranged with three grades, in which the outer terminals of two adjacent grades coincide with the terminals of the other or third grade, in combination with the driving machinery located in one of the said adjacent grades, substantially as and for the purpose specified.

6. In a cable railway, the cable provided with a short downgrade portion, in combination with the driving mechanism located in said downgrade, substantially as and for the purpose specified.

7. In a cable railway, the cable provided with a short downgrade portion, in combination with the driving mechanism, and take-up devices located in said downgrade, substantially as and for the purpose specified.

8. The cable of a cable railway, combined with two driving-drums geared together and adapted to rotate in opposite directions, and about which the cable is wound or looped like a figure **8**, substantially as and for the purpose specified.

In testimony of which invention we hereunto set our hands.

WM. G. HUEY.
THOMAS J. LOVEGROVE.

Witnesses:
ALEX. RAMSEY,
EDW. RAMSEY.