(No Model.) 2 Sheets—Sheet 1.

M. TOLLE.

GRIP GEAR FOR CABLE ROADS.

No. 381,489. Patented Apr. 17, 1888.

Fig. 1.

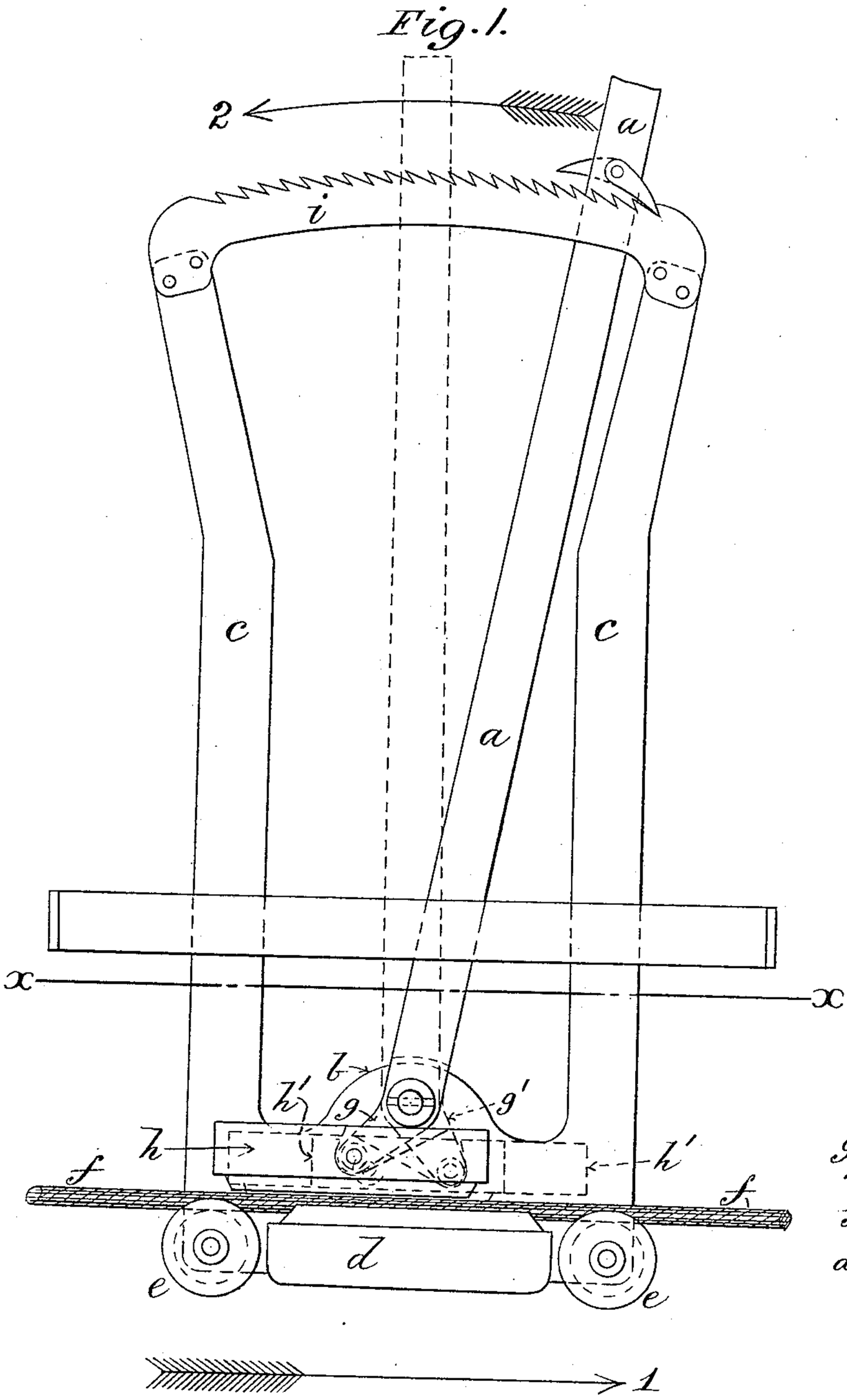
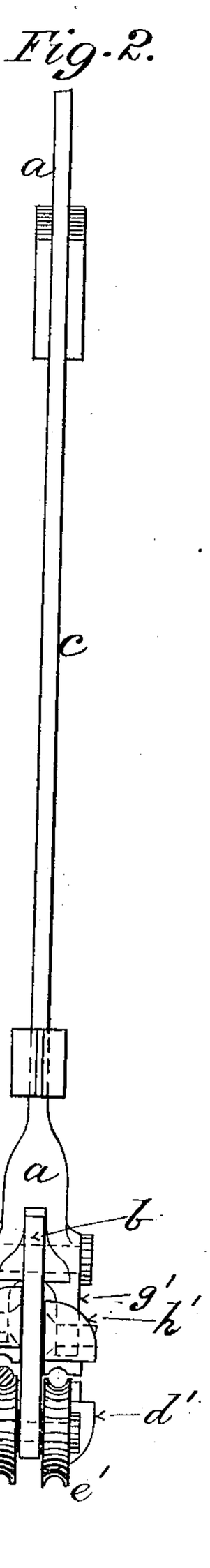


Fig. 2.



WITNESSES.
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his attorney.

(No Model.) 2 Sheets—Sheet 2.

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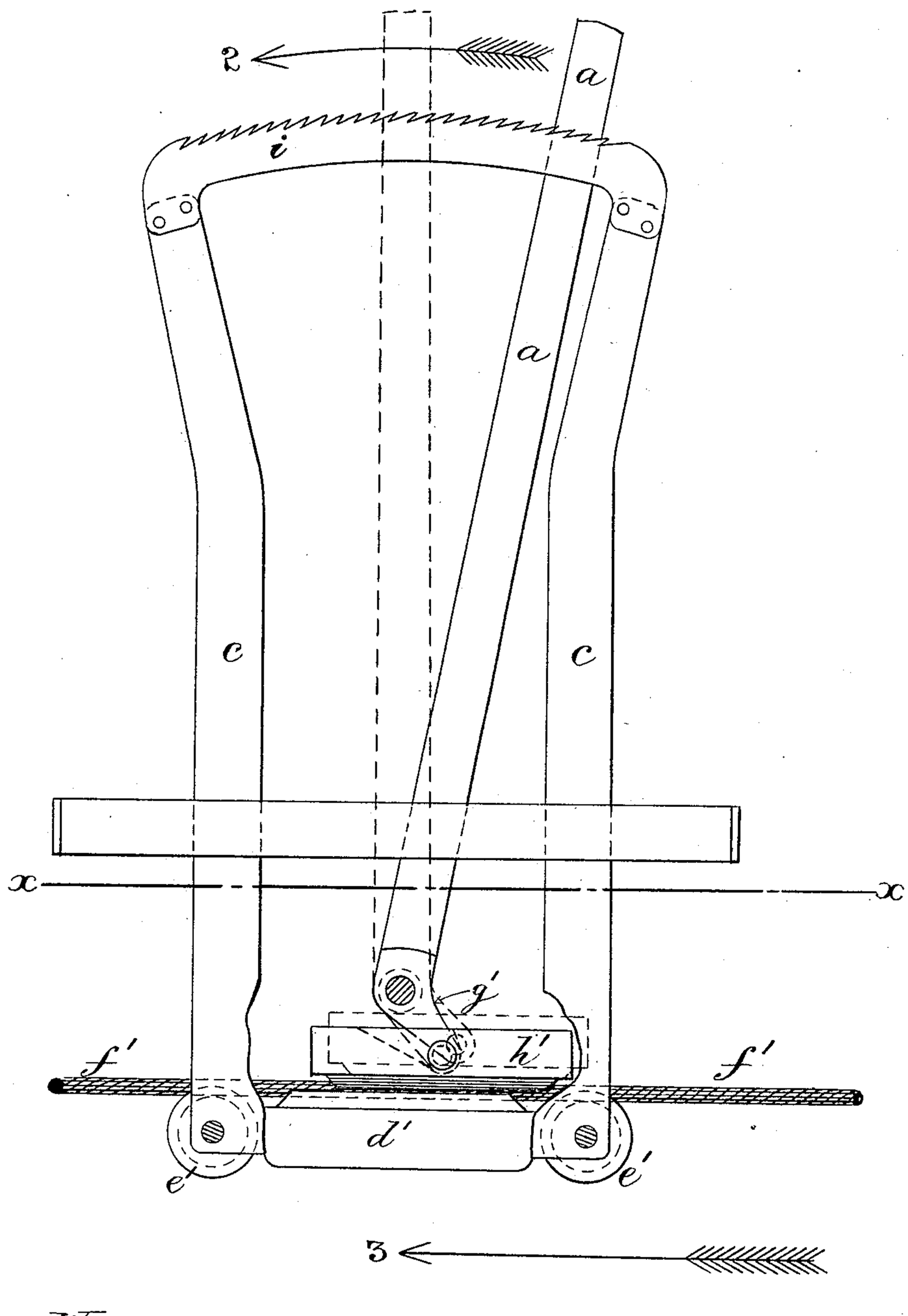
Fig. 3.



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Morris Tolle, by

Paul Bakewell,

his attorney

UNITED STATES PATENT OFFICE.

MORRIS TOLLE, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-THIRD TO HUGH L. FOX, OF SAME PLACE.

GRIP-GEAR FOR CABLE ROADS.

SPECIFICATION forming part of Letters Patent No. 381,489, dated April 17, 1888.

Application filed January 30, 1888. Serial No. 262,339. (No model.)

To all whom it may concern:

Be it known that I, MORRIS TOLLE, a citizen of the United States, residing at the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in the Grip-Gear for Cable Roads, of which the following is a full, clear, and exact description.

My invention relates to improvements in the grip-gear of cable roads, and has for its object to dispense with the vertical sliding plates carrying the lower part of the grip, with the adjustable link, and other parts in combination with the plates, and operating-lever on the dummy-car, thereby simplifying the construction and operation of the grip; also, to enable the grip to be effected by pulling the operating-lever over toward the operator when making the grip on either side.

My invention consists in extending the operating-lever downward through the floor of the "dummy" to the lower part of the frame-work carrying the lower part of the grip, to which frame-work the lever is fulcrumed and formed with one or two arms inclined downward from the fulcrum and pivoted to the upper movable part of the grip in such a manner that on throwing over the operating-lever in one direction the vibration of its lower arm will carry with it and cause the upper part of the grip to be lowered upon and in the other direction raised from the cable and lower part of grip, and in the case of the two arms and grips the movement of the operating-lever in the one direction, while lowering the upper part of the grip on one side, will raise the corresponding part of the grip on the other side, and vice versa.

On the accompanying drawings, Figure 1 is a side elevation representing my improved grip-gear; Fig. 2, an end view thereof, partly broken away; and Fig. 3, a side elevation broken away, representing the grip on the opposite side of the frame-work relatively with that seen in full lines in Fig. 1, like letters of reference denoting like parts in all the figures.

In carrying out my invention the operating-lever *a* on the dummy-car is extended downward through the floor of the car and through the roadway-slot (indicated by the line *x x* in Figs. 1 and 3) of the tunnel to the lower framing, *b*, which connects the side frame, *c*, and carries the lowest part, *d*, of the grip, with the rollers *e* for supporting and guiding the cable *f* in its passage over the lower part, *d*, of the grip, in the usual manner. The operating-lever *a* is fulcrumed to the framing *b* at a suitable distance above the lower part, *d*, of the grip, and is formed on one side with an arm, *g*, which is inclined downward from the fulcrum along the corresponding side of the framing *b*, its outer end being coupled to and carrying the upper part, *h*, of the grip *d h* in such a manner that when the cable is running in the direction indicated by arrow 1 in Fig. 1 and the operating-lever *a* is to the right hand of its ratchet-arc *i*, as shown, the upper part, *h*, of the grip *d h* will be in the raised position, or clear of the cable *f*. On throwing over the lever *a* in the direction of arrow 2 the upper part, *h*, of the grip *d h* will be lowered by the vibration of the arm *g* on its fulcrum until the lever *a* approaches, say, the position shown by dotted lines, when the upper part, *h*, of the grip will close upon and grip the cable *f*, from which it will be again released and raised by returning the operating-lever *a* to its original position.

On the other side of the operating-lever *a* (see Figs. 1, 2, and 3) is formed an arm, *g'*, which is inclined downward in an opposite direction to the arm *g* along the corresponding side of the framing *b*, which carries on this side the lower part, *d'*, and rollers *e'* of the second grip, the outer end of the arm *g'* being coupled to and carrying the upper part, *h'*, of the second grip, *d' h'*, the various parts of the two grips *d h* and *d' h'* being so arranged relatively with each other that when the car is running on one track in the direction of arrow 1 and the operating-lever *a* is moved in the direction before described for gripping the cable *f* the same movement of the lever *a* will vibrate the arm *g'* of the second grip, *d' h'*, so as to raise the upper part, *h'*, of the second grip, and vice versa; or, in other words, whether the car is running on one track in the direction of arrow 1, Fig. 1, with cable *f* engaged, or in the opposite direction, as arrow 3, Fig.

3, on another track, with its cable f' engaged by the second grip, d' h', the act of pulling over the operating-lever a toward the operator will grip the cable in either case. The arrangement also has the advantage that as the operating-lever a is being pulled for gripping the cable the movement of the latter, catching on the forward end of the upper part of the grip, will aid the operator in effecting the grip.

I claim as my invention—

1. In cable-road grip-gear, the operating-lever on the dummy, extended through the floor of the car, fulcrumed to the lower grip-framing, and having its lower end extending downward from the fulcrum as an arm, this arm being pivoted to the upper part of the grip, in combination with the lower part of the grip, substantially as described, and for the purpose set forth.

2. In cable-road grip-gear, the combination of the operating-lever on the dummy, extended through the floor of the car and fulcrumed to the lower grip-framing, and having arms at opposite inclinations from the operating-lever, with the upper and lower parts of grips, substantially as and for the purpose described.

In testimony whereof I affix my signature, in presence of two witnesses, this 23d day of January, 1888.

MORRIS TOLLE.

Witnesses:
S. L. SCHRADER,
PAUL BAKEWELL.