

(No Model.)

J. WALSH, Jr.

GRIPPING MECHANISM FOR CABLE RAILWAYS.

No. 385,980.

Patented July 10, 1888.

FIG. 1.

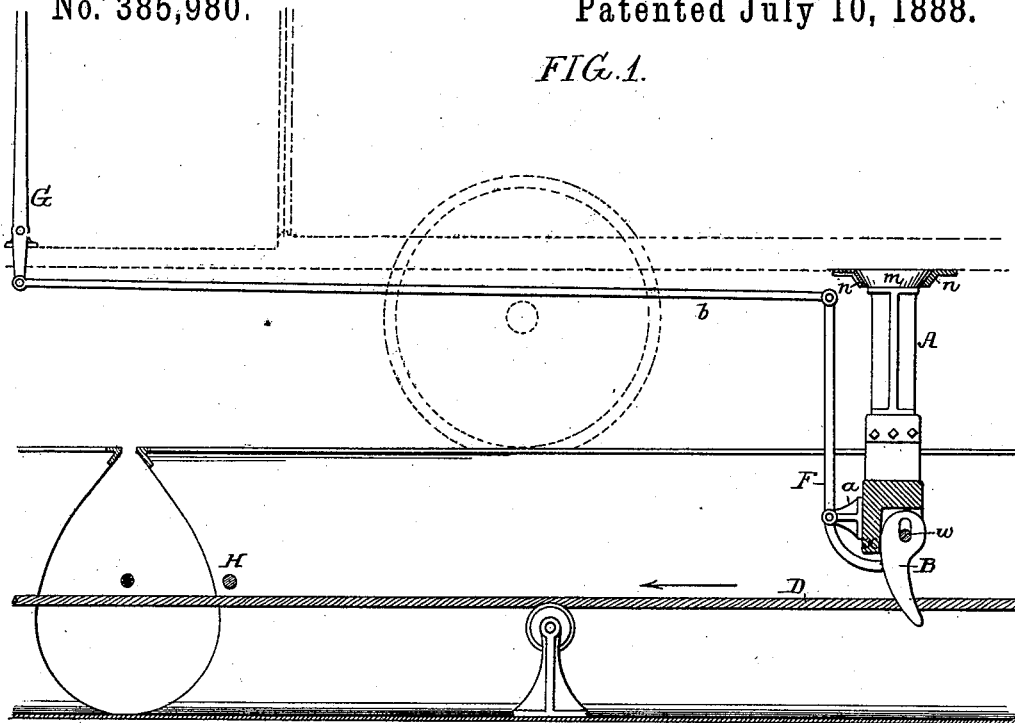


FIG. 5.

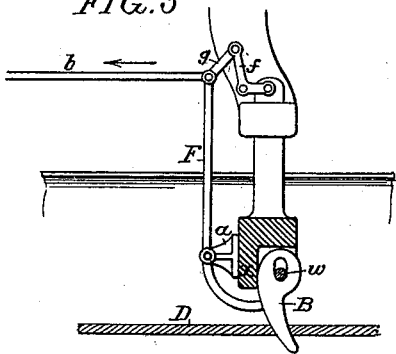


FIG. 2.

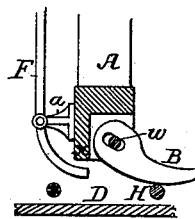


FIG. 4.

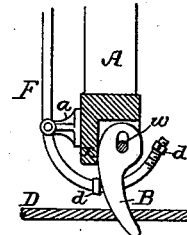


FIG. 6.

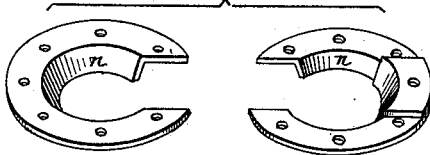
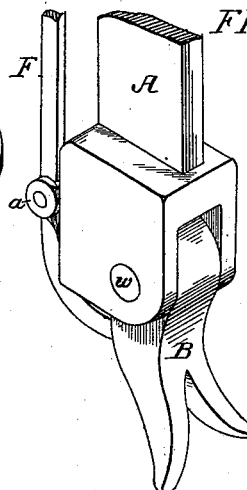


FIG. 3.



Witnesses:

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# UNITED STATES PATENT OFFICE.

JAMES WALSH, JR., OF PHILADELPHIA, PENNSYLVANIA.

## GRIPPING MECHANISM FOR CABLE RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 385,980, dated July 10, 1888.

Application filed May 17, 1888. Serial No. 274,118. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES WALSH, JR., a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Gripping Mechanism for Cable Railways, of which the following is a specification.

The object of my invention is to construct a simple form of grip for cable-cars, which will be self-releasing from the cable when it meets with any obstruction, and this object I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal section of a portion of a cable railway and part of the car with my improved cable-grip, the grip being shown in the operative position. Fig. 2 is a sectional view of the grip, showing the same released from the cable. Fig. 3 is a perspective view, on an enlarged scale, of the grip-head. Fig. 4 is a view of the grip with a double-acting operating-rod therefor. Fig. 5 is a view illustrating a still further improvement, and Fig. 6 is a perspective view of the device employed for hanging the grip-bar to the car.

To the rigid frame-work of the car is secured, as described hereinafter, a depending hanger, A, the shank of which passes through the slot in the cable-conduit, that part of the hanger within the conduit being enlarged and forked for the reception of the grip-head B, which is pivoted to the hanger, and is likewise forked, so as to present a V-shaped opening for the cable D. When the grip-head assumes its lowest position, the forward face of the said head bears against a shoulder, *x*, on the hanger, and prevents further forward movement of the grip-head independently of the hanger, the cable then occupying a position in the narrowest part of the V-shaped opening in the head, so as to engage with the latter and carry it forward. The grip-head has a vertical slot for the reception of the pivot-pin *w*, so that said head can move vertically independently of the hanger to follow any sag of the cable between the supporting-pulleys. Pivoted to a bracket, *a*, on the hanger is a lever, F, the short arm of which terminates close to the front of the grip-head B, the long arm of the

lever being connected by a rod, *b*, to an operating-lever, G, on the platform of the car. When, therefore, it is desired to release the grip-head from the cable, the lever G is operated so as to draw forward the long arm of the lever F and cause its short arm to bear upon the grip-head and push the same rearward, so as to lift it from the cable. By a movement in the reverse direction the grip-head is permitted to swing forward, so as to again engage with the cable, the latter taking but a slight hold of the grip at first, but this hold increasing as the narrower portion of the slot in the forked head of the grip is brought down on the cable, thus providing for the usual slip at first in order to start the car gradually.

Where two cables cross each other, the grip-head will be struck by the upper cable and thrown clear of the lower cable until it has crossed said upper cable, whereupon it will again fall into contact with the lower cable and be gripped thereto; or, if desired, a tripping-bar, H, may be placed in the conduit in advance of the point where the cable crosses the same, so as to effect the tripping of the grip-head without strain upon said crossing cable.

The speed of the car is not materially arrested in passing the cross-cable, so that there will be no sudden shock when the grip-head again falls into engagement with the cable after passing the cross-cable.

When it is desired to positively pull the grip-head into contact with the cable, I prefer to pass the short arm of the lever F through an opening in the grip-head, that portion of the lever in advance of the grip-head having a collar or shoulder, *d*, as shown in Fig. 4, and the portion in the rear of the grip-head being provided with an adjustable nut, *d'*, or other bearing for the head, which will serve not only to pull the grip-head down into operative position on the cable, but will also serve to limit the rearward movement of the grip-head when the same is automatically operated by contact with the crossing cable or tripper-bar.

To facilitate the release of the grip-head from the cable, the hanger A may, if desired, be mounted on the car, so that it can be moved vertically in respect thereto, as shown in Fig.

5, for instance, in which the lower portion of the hanger is free to slide in the upper portion, and is connected by a lever, *f*, and link *g* to the long arm of the lever *F*, so that in effecting the release of the grip-head from the cable there is a combined vertical and rearward movement of said grip-head.

In order that the hanger may be at liberty to assume a position at an angle to the longitudinal line of the car, as may be required in turning curves, I form at the upper end of said hanger a circular head, *m*, which is adapted to a socket composed of two segmental rings, *n*, Fig. 6, overlapping each other, and secured to the under side of the frame-work of the car, the shank of the hanger being passed through the slot in one ring, and the other ring being then slipped over the shank from the opposite direction, so that it will close the slot in the first ring and prevent the removal of the hanger.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

25 1. The combination of the hanger, the forked grip-head pivoted thereto and having a rigid bearing therein to resist forward movement, and a lever acting upon the grip-head to force the same backward and release it from the cable, all substantially as specified.

30 2. The combination of the hanger, the grip-head pivoted thereto and having a rigid bear-

ing therein to resist forward movement, and a lever passing through the grip-head and having a portion acting upon the same to force it rearward, and a bearing in the rear of the grip-head acting upon the same to restore it to the operative position or prevent undue rearward movement, all substantially as specified. 35

3. The combination of a forked grip-head with a vertically-movable hanger to which said grip-head is hung, and a lever for swinging the grip-head on said hanger, all substantially as specified. 40

4. The combination of the hanger, the forked grip-head pivoted thereto and slotted to permit vertical movement, but having a rigid bearing in the hanger to resist forward movement, and a lever to operate said grip-head, all substantially as specified. 45

5. The combination of the grip-head, the hanger having a circular head, and the socket for said head, consisting of a pair of segmental rings applied in reverse positions to the hanger and secured to the frame of the car, all substantially as specified. 50 55

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES WALSH, JR.

Witnesses:

EDWARD M. RILEY,  
HARRY SMITH.