

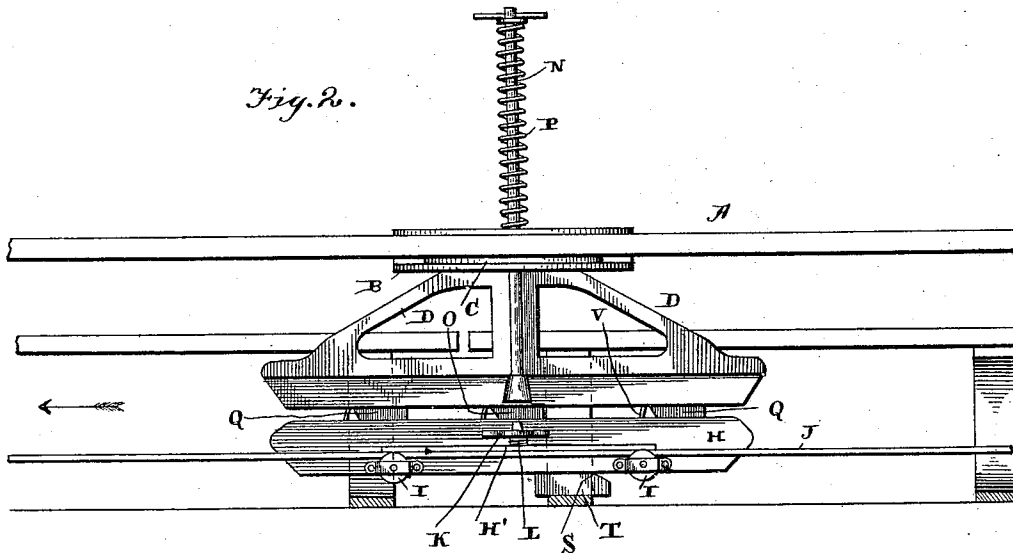
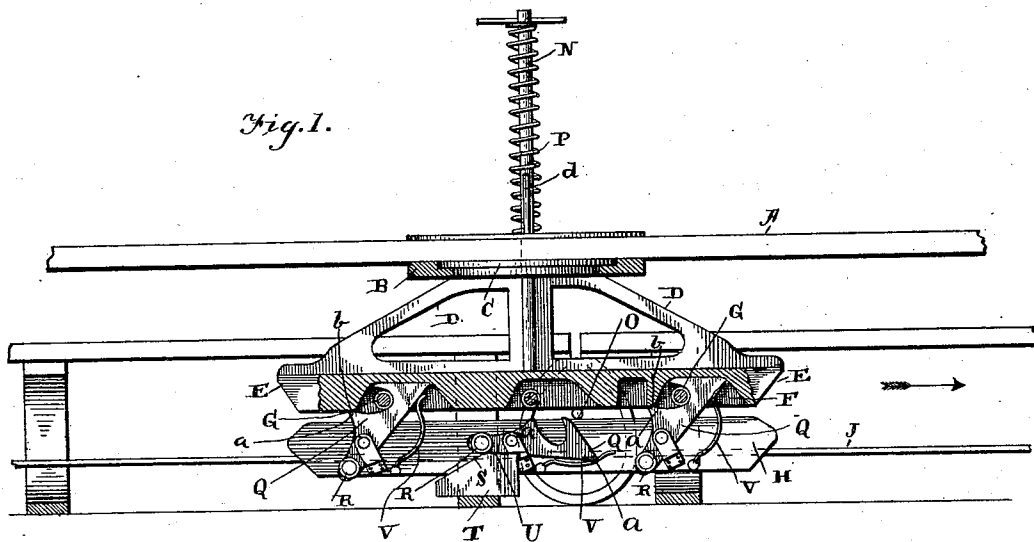
(No Model.)

2 Sheets—Sheet 1.

D. D. NOLLEY.
CABLE CAR GRIP.

No. 475,143.

Patented May 17, 1892.



WITNESSES—

Geo. C. Freck.
Roland C. Fitzgerald

INVENTOR—
David D. Nolley
per
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attys.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

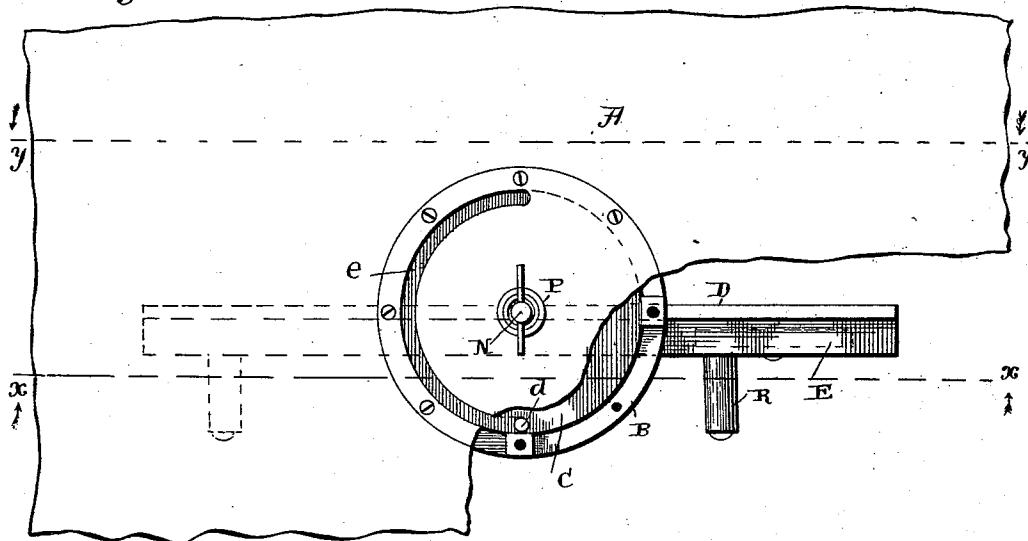
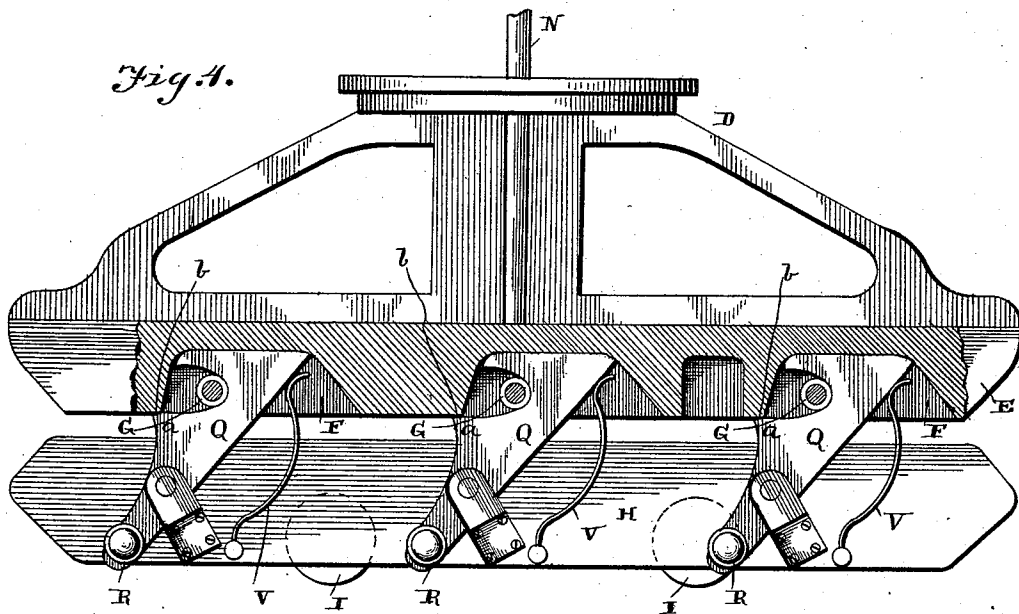


Fig. 4.



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UNITED STATES PATENT OFFICE.

DAVID D. NOLLEY, OF WILSON, NORTH CAROLINA, ASSIGNOR OF ONE-HALF
TO AMOS J. HINES, OF SAME PLACE.

CABLE-CAR GRIP.

SPECIFICATION forming part of Letters Patent No. 475,143, dated May 17, 1892.

Application filed December 22, 1891. Serial No. 415,887. (No model.)

To all whom it may concern:

Be it known that I, DAVID D. NOLLEY, of Wilson, in the county of Wilson and State of North Carolina, have invented certain new and useful Improvements in Cable-Car Grips; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in cable-car grips; and it consists in the construction, combination, and arrangement of parts, which will be fully described hereinafter, and particularly referred to in the claims.

The object of my invention is to provide a grip for the lower cable of crossing lines, which is so constructed that it automatically allows the crossing upper cable to pass through the grip, while at the same time the grip holds on to the lower cable and to the car, whereby power is transmitted to the car from the lower cable while it is automatically allowing the cross-cable to pass through it.

In the drawings, Figure 1 is a vertical section taken through the car longitudinally at one side of the grip, as shown by dotted line *xx* in Fig. 3, one side of the standard being broken away to show the hooks. Fig. 2 is a similar view taken through the car on the opposite side of the grip, as shown by dotted line *yy*, Fig. 3. Fig. 3 is a plan view, a portion of the bottom of the car being broken away. Fig. 4 is an enlarged view of the grip, showing the specific form of the automatic hooks.

A indicates the bottom of a car which is made of any desired size and style.

Secured to the under side of the bottom of the car is a circular ring or disk B, which is supported a suitable distance therefrom to receive a disk C between it and the under side of the car. Extending down from this disk C and either secured rigidly thereto or formed as a part thereof is a longitudinal standard D, to which the grip is connected. This standard is cut out, as shown, in order to save metal and make it light, while at the

same time it is left sufficiently strong to stand all strain brought thereon in drawing the car or cars. The lower edge of this standard has a laterally-projecting portion E, which has formed therein a series of vertical openings or sockets F, near one end of which are journaled the rollers G.

The grip proper consists of a longitudinal plate H, which is provided with the two rollers I, journaled upon one side thereof, which receives the cable J of the lower line upon their upper sides. Above these rollers a suitable distance and extending outward from the side of the plate H, preferably about midway between the two rollers or wheels I, is a bracket K, which is provided with a vertical screw-threaded opening to receive a clamping-screw L. The lower end of this clamping-screw is swiveled in the center of a plate H', which has its ends extending over the wheels I and above the cable J. In this manner, when the plate H' is forced down by turning the clamping-screw, it grips the cable between it and the wheels, thus securing the car to the cable, which is carried thereby in the ordinary manner.

The clamping-screw is operated by means of a vertical operating-rod N, which passes directly through the center of the plate C, for a purpose to be fully described hereinafter. This rod N is held up above the cross-cable O by means of a suitable spring P, and is provided at its lower end with an angular socket to receive the upper angular end of the clamping-screw. In order to operate the clamping-screw, the rod N is pushed down and then given a turn to force the clamping-screw and the plate carried thereby down to grip the cable J. The pitch of the thread on the clamping-screw will be great enough to force the plate down by giving it a partial turn, as will be understood.

Pivoted to the opposite side of the plate H from the wheels are a series of levers Q, which are provided at their upper ends with hooks that extend into the sockets F and catch over the rollers G. These levers are preferably inclined away from the direction the car is traveling, so that rollers R, which extend outward from their lower ends, will more easily pass up the incline S of a projection T, that

is secured to the bottom of the conduit in any suitable manner. As the car moves in the direction indicated by arrow in Fig. 1, the hooked levers are alternately operated by the incline S into the position shown by the central lever, Fig. 1, and are held in this position by the straight portion U of the projection T until the cross-cable O has passed the hook. As soon as the cross-cable has passed the hook the roller at the lower end of the lever drops off the projection T, and the lever is forced up into position by means of the springs V, which engage therewith in any suitable manner. In this way each hooked lever is turned and automatically detached from the car-standard and then instantly thrown back to position by its spring after the cross-cable has passed it. The hooked levers are each provided with rearward extensions or shoulders *a*, which overlap the sockets F and engage therewith at the point *b* to prevent back movement of the plate H, and as forward movement of the plate is prevented by the upper end of the hook engaging the upper end of the socket it will be seen that the said plate H is firmly held to the standard against movement in either direction.

From the above description it will be seen that only one hook is operated at a time and that two are in engagement while one is disengaged to allow the cross-cable to pass, thus keeping the car in connection with the cable of its line, while it is at the same time passing a cross upper cable. By means of this construction the car is being drawn by the cable as well when passing a cross-cable as when not, thus avoiding the necessity of raising the grip to let the car pass by its momentum in the usual manner, which is very objectionable. The ends of the standard and of the plate H are cut at an angle or inclined, as shown, in order to catch and guide the cross-cable between the two.

While I here show only three levers, it will be readily conceived that as many may be used as desired without departing from the spirit of my invention.

By means of the ring B and plate C the grip is readily turned around when the car reaches the end of the line, so that it will operate in the opposite direction. The grip is turned around by means of a vertical rod *d*, which has its lower end secured to the plate C and extending up through a semicircular slot *e*. By turning this rod from one end of the semicircular slot to the other the standard and the grip are turned in the reverse position to operate when the car is running in the opposite direction. Owing to this turning of the grip it is necessary to place the rod for operating the clamping-screw and also the clamping-screw at the center of rotation, so that they will be directly over each other, and to avoid the necessity of providing a circular slot for the said rod to travel in, which would be the case otherwise.

While I here show and describe a construc-

tion whereby the grip is revolved or rotated to operate in the opposite direction, it will be understood that this is not a necessary part of my invention, for the grip can be made stationary when the cars are turned around at the end of the line. If the cars are not turned around, as is ordinarily the case, then the grip is given a rotation, as described.

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

1. A grip comprising a standard, a plate carrying a grip, hooked levers pivoted between their ends for connecting the plate and standard, and a means at the cross-cable which operates the hooks, substantially as described.

2. A cable-grip comprising a standard, a plate carrying a grip, several hooked levers arranged one in front of the other for connecting the plate and standard, and a means at the cross-cable which alternately engage directly the hooked levers for operating them.

3. A grip comprising a revoluble standard upon the car, a plate carrying a grip, hooks pivoted upon the plate which incline away from the direction of travel, and a stationary incline which engage and operate the hooks, substantially as and for the purpose described.

4. A grip comprising a revoluble standard, a plate carrying a grip, a clamp for the grip at the center of rotation, a vertically-moving device at the center of rotation for operating the grip-clamp, and automatically-operating devices for connecting and disconnecting the plate and standard, as and for the purpose described.

5. A grip comprising a revoluble standard, a plate carrying a grip, hooks which automatically connect and disconnect the plate and the standard, and a vertically-moving device at the center of the standard to operate the grip, substantially as set forth.

6. A grip comprising a car-standard having pins or rollers, a plate carrying a grip, hooked levers pivoted to the said plate and catching over the said rollers, and an operating device held stationary for operating the hooks and disengaging them alternately from the said car-standard, substantially as specified.

7. A grip comprising a car-standard having a laterally-extending portion provided with sockets, pins or rollers in the sockets, a plate carrying a grip, hooked levers pivoted upon the plate, which engage the said rollers, and a means for turning the hooks upon their pivots and alternately disengaging them from the standard, substantially as set forth.

8. A grip comprising a car-standard having projections or pins, a plate carrying a grip, hooked levers pivoted between their ends upon the plate for engaging the pins or projections, and a stationary incline which engages the lower ends of the hooks and turns them upon their pivots, for the purpose described.

9. A grip comprising a car-standard having pins or rollers, hooked levers, a plate to which the levers are pivoted, shoulders upon the le-

vers, and stops upon the standard, which the shoulders engage, and a means for automatically operating the levers, substantially as specified.

5 10. A grip comprising a car-standard having sockets provided with projections or pins, a plate carrying a grip, levers pivoted between their ends upon the plate, which have their upper ends provided with hooks to engage the
10 pins or projections, springs for holding the hooked ends in engagement therewith, and a stationary incline which engages the lower ends of the levers automatically and disengages them from the standard, substantially
15 as set forth.

11. A grip comprising a car-standard, a plate carrying a grip, hooked levers pivoted between their ends to the said plate, which engage with the standard, the levers having laterally-extending rollers, and an incline which
20 engages the rollers for operating the hooks, substantially as specified.

12. A grip comprising a car-standard, a plate carrying a grip, hooked pivoted levers for connecting the plate and the standard, and
25 an operating device having an incline for engaging and operating the levers and a straight portion for holding the levers in this operated position for a prescribed distance, substantially as shown. 30

13. A grip comprising a car-standard, a plate carrying a grip, hooked levers which connect the standard and the plate, which are pivoted between their ends, and inclines in front of the cross-cable, which engage the lower ends
35 of the levers and automatically detach the same from the standard.

In testimony whereof I affix my signature in presence of two witnesses.

DAVID D. NOLLEY.

Witnesses:

HEATH SUTHERLAND,
ROLAND A. FITZGERALD.