

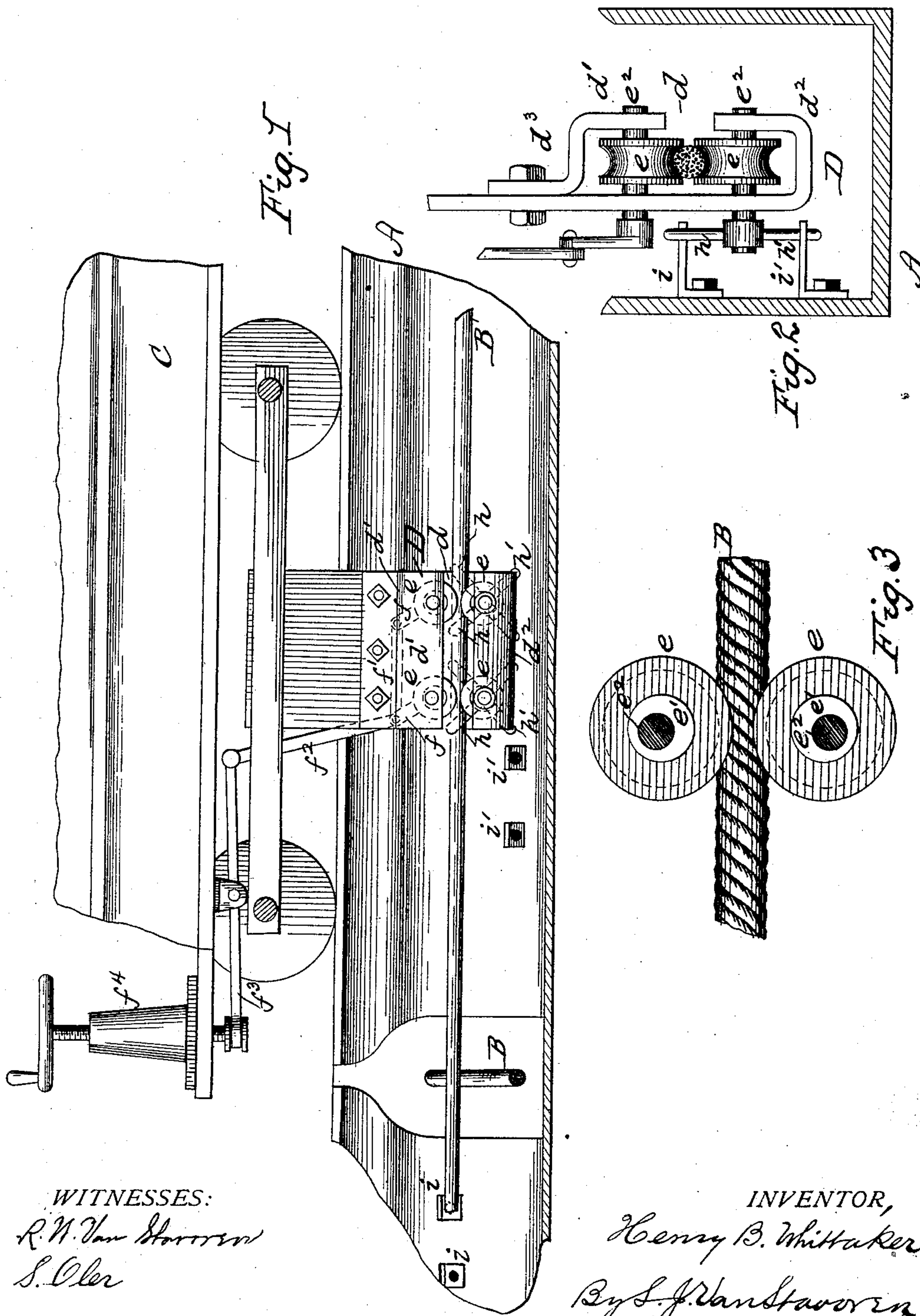
(No Model.)

2 Sheets—Sheet 1.

H. B. WHITTAKER.  
GRIP FOR CABLE MOTOR CARS.

No. 341,528.

Patented May 11, 1886.



WITNESSES:  
R. W. Van Stavern  
S. Oler

INVENTOR,  
Henry B. Whittaker  
By S. J. Van Stavern  
ATTORNEY

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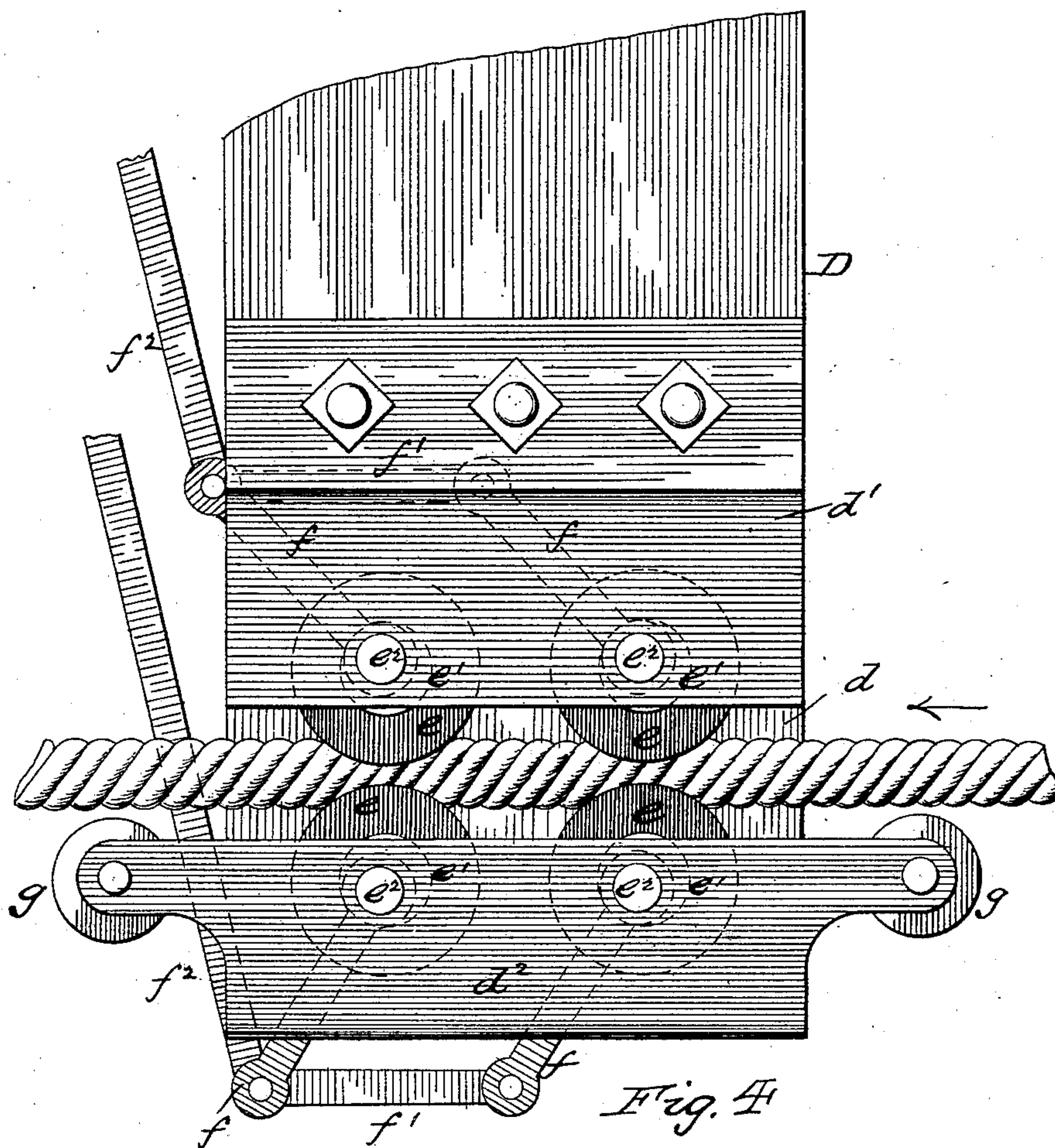
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# UNITED STATES PATENT OFFICE.

HENRY B. WHITTAKER, OF PHILADELPHIA, PENNSYLVANIA.

## GRIP FOR CABLE-MOTOR CARS.

SPECIFICATION forming part of Letters Patent No. 341,528, dated May 11, 1886.

Application filed December 30, 1885. Serial No. 187,171. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY B. WHITTAKER, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Grips for Cable-Motor Cars, of which the following is a specification, reference being had therein to the accompanying drawings, wherein—

Figure 1 is an elevation, partly sectional, of a portion of the line of way and a car for a cable-motor railway, showing my improvements. Fig. 2 is a transverse section of a part of the car-cable conduit, showing end view of the grip. Fig. 3 is a detail view showing a pair of opposing rollers, eccentric-shafts, and the cable; and Fig. 4 is a view of the lower part of the grip, drawn to an enlarged scale, showing operating-levers for the opposing roller eccentric-shaft.

My invention has relation to cable-motor railway-car grips having compressing or gripping rollers; and it has for its object to provide a roller-grip in which the rollers do not or cannot revolve when fully compressed or gripped upon the cable, and which revolve, when the car and cable are moving, at different rates of speed, thereby forming an effective roller-grip, through which the cable when not fully gripped slips without straining or wearing it.

My invention accordingly consists of the combination, construction, and arrangement of parts forming a roller-grip for cable-motor cars, as hereinafter described and claimed, having reference particularly to a roller-grip in which the rollers are concentrically mounted upon journals having eccentric-shafts, and to devices attached to the journal eccentric-shafts, and acting in conjunction with mechanism located within the conduit adjacent to crossing lines, or to other points along the line of way, for automatically releasing the rollers from the cable to allow it to move laterally out from between the gripping-rollers as the grip approaches a crossing line or another point whereat it is necessary to release the cable from the grip, and for correspondingly re-engaging the rollers with the cable after the grip has passed the crossing line or other point.

In the drawings, A represents a slotted conduit of any suitable form or construction, B

the cable, C a part of a car, and D the grip for a cable-motor railway. The grip may be suspended from the car in any suitable or desired way, and may be of any suitable form and construction, except that it has an opening,  $d$ , in one of its sides  $d'$ , and its rollers  $e$  are concentric with their journals  $e'$ , and that these journals have eccentric-shafts  $e''$ .

To form the opening  $d$  in the grip-shank D, its lower end is bent around, as shown at  $d^2$ , to form bearings for the lower roller-journal-shafts, and an upper bent plate,  $d^3$ , is bolted to said shank in line with bent end  $d^2$ , to form suitable bearings for the top roller journal-shafts. The last described, or the lower part of the grip-shank, however, may be otherwise formed or constructed, as desired, to provide opening  $d$ . The rollers  $e$  are preferably grooved rollers and are concentric with or have like bearings upon their journals  $e'$ ; but these journals are provided with eccentrically-arranged shafts  $e''$ , as shown, having suitable bearings in the sides of the grip-shank, so that the rollers, when rotated upon their journals, have a concentric motion thereon, but when moved by the eccentric-shafts of their journals said rollers have an eccentric motion or a movement to and from the cable.

To clamp or grip the rollers upon the cable, the eccentric-shafts  $e''$  for the upper roller-journals may be provided with crank-arms  $f$ , linked together, as shown at  $f'$ , and connected by a link,  $f^2$ , to a lever,  $f^3$ , operated by a screw mechanism,  $f^4$ ; or any other suitable devices may be used for moving or rotating the shafts  $e''$  to grip the upper rollers upon the cable. If desired, the lower rollers may also have corresponding operating devices, part of which are shown in Fig. 4, in which case the upper and lower rollers may be either separately or simultaneously moved into gripping engagement with the cable, and the grip is provided with end rollers,  $g$ , for supporting the cable when not gripped. I however prefer to so place the shafts  $e$  of the roller-journals of the lower rollers that they will normally be in gripping position with the cable, so that said rollers not only act as gripping-rollers, but also as rollers for supporting the cable when not gripped. In the last-described case, to rotate the journal-shafts  $e''$  of the lower rollers to release them from and to move them



into gripping engagement with the cable, said shafts are at one end—preferably at the end opposite that of shank-opening  $d$ —provided with radial arms  $h$  and  $h'$ , the former extending above and the latter below the shafts, as more plainly shown in Fig. 2; and in line with the radial bars  $h$   $h'$ , respectively, and located on the side of the conduits are fingers or projections  $i$   $i'$ , (see Fig. 2,) which are placed at the crossing of two lines, or at other points where ever deemed desirable. When the car is moving, or the grip is in engagement with the cable, and the lower arms,  $h'$ , strike the fingers or projections  $i'$ , the shafts  $e^2$  are rotated to lower the rollers  $e$  to release the grip from the cable and afford sufficient space between the upper and lower rollers to admit of the cable passing out of the side opening,  $d$ , of the grip-shank, if it is desirable to do so, which is the case when the grip is about passing a crossing line. After the grip has passed a crossing line the arms  $h$  then come into contact with fingers  $i$ , to rotate the shafts  $e^2$ , and move the rollers into engagement with the cable.

From the foregoing it is evident that when the rollers  $e$  are gripped upon the cable they rotate only to an extent that is sufficient to pinch the cable, and as their rotation is concentric with or on their journals the pinching of the cable by the rollers does not injuriously wear the cable, and when the rollers are released from gripping contact with the cable the latter slips through the rollers, and as they then rotate undue wear on the cable is avoided.

What I claim is—

1. A grip for cable-motor cars, having gripping-rollers provided with concentric journals having eccentric-shafts, substantially as shown and described.

2. In combination with a cable-motor grip, the shafts  $e^2$ , having eccentrics  $e'$  and rollers or wheels  $e$ , loosely mounted on said eccentrics, substantially as set forth.

3. A grip shank or frame for cable-motor cars, having side opening,  $d$ , and gripping-rollers provided with concentric journals having eccentric-shafts, substantially as set forth.

4. A grip for cable-motor cars, having gripping-rollers provided with concentric journals having eccentric-shafts, in combination with mechanism, substantially as described, for placing said rollers into gripping engagement with the cable and releasing them therefrom, substantially as set forth.

5. The combination of a conduit having fingers  $i$  and  $i'$ , arranged in different planes, a grip having rollers having concentric journals provided with eccentric-shafts, having at one end radial arms  $h$   $h'$ , for engagement with said fingers, substantially as set forth.

6. A grip for cable-motor cars having rollers provided with concentric journals having eccentric-shafts, in combination with mechanism located upon the car for gripping said rollers upon the cable, a conduit for the cable having devices for engagement with mechanism upon said eccentric-shafts for releasing the gripping engagement of said rollers, substantially as shown and described.

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

HENRY B. WHITTAKER.

Witnesses:

S. J. VAN STAVOREN,  
CHAS. F. VAN HORN.