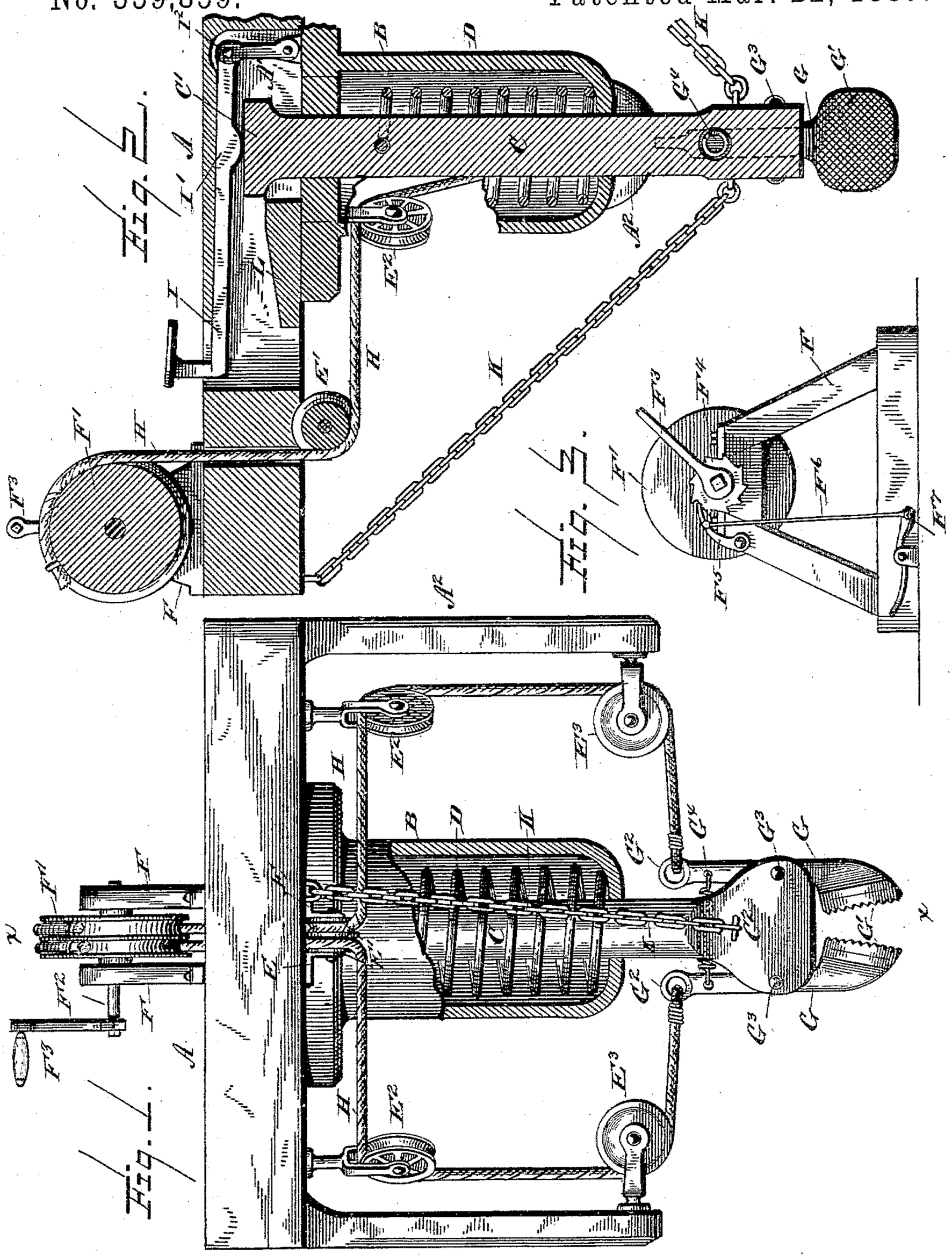
(No Model.)

C. L. GORRELL.

CABLE RAILWAY GRIP.

No. 359,859. Patented Mar. 22, 1887.



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UNITED STATES PATENT OFFICE.

CHARLES L. GORRELL, OF BELAIR, MARYLAND, ASSIGNOR OF ONE-HALF TO JOSHUA R. WHITAKER, OF SAME PLACE.

CABLE-RAILWAY GRIP.

SPECIFICATION forming part of Letters Patent No. 359,859, dated March 22, 1887.

Application filed December 20, 1886. Serial No. 222,023. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. GORRELL, a citizen of the United States, residing at Belair, in the county of Harford, State of Maryland, have invented certain new and useful Improvements in Cable-Railway Grips, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention has relation to gripping attachments for cable railways; and the object of the invention is to provide a gripper that will be positive in its gripping function, simple in construction, easy of manipulation, and which will grip a cable in a manner as to gradually start the car, thus avoiding sudden jerks.

With the above and other objects in view the invention consists in certain features of construction hereinafter specified, and particularly pointed out in the claims.

Referring to the drawings, Figure 1 is an end view of a portion of a car provided with grippers constructed in accordance with my invention. Fig. 2 is a central vertical section on the line X X of Fig. 1, and Fig. 3 is a detail in side elevation showing the releasing mechanism.

A represents the platform of a car, to the under surface of which is secured a housing, B, and through which passes the gripper-supporting rod C, which is provided with the head C′, extending up into a recess, A′, formed in the bottom of the car, and with the flared portion C^2 at its lower end. A coiled spring, D, inclosed within the housing B, circles the rod C and bears against the lower end of said housing, said spring having a tendency to keep the rod in an elevated position. In suitable brackets, E, are pivoted twin pulleys E′, and depending from each side of the car are swivel-pulleys E^2, and projecting at right angles to standards A^2, depending from the side of the car, are pulleys E^3. Mounted upon the platform of the car at a point convenient to the operator are standards F, which form bearings for the twin drum F′, which is mounted upon a shaft, F^2, having a suitable crank or wheel, F^3, secured at one end.

Within the flared lower end, C^2, of the rod C are pivoted, as at G^3, grippers G, which are provided with serrated or rubber gripping-faces G′ at their lower ends and formed with eyes G^2 at their upper ends. A spring, G^4, passing through the rod C, connects the grippers at their upper ends, thus drawing the upper ends toward each other, consequently opening or spreading the lower ends thereof.

Ropes or chains H are connected with the twin drum or pulley F′ and extend down and over the pulleys E′ E^2 E^3, said ropes or chains diverging after they pass the pulleys E′ and extending down and connected to the eyes G^2 of the grippers G. Within the recess A′ is a foot-lever, I, provided with lug I′ and adapted to bear upon the head C′ of the rod C, which lever is pivoted beyond the head and within the recess.

Running longitudinally with the car from rear to front are guy-chains K, said chains preventing the rod C from being drawn out of a vertical position. A stop, L, within the recess also aids to prevent the rod from being drawn out of a vertical position when the grippers are in contact with the cable.

The shaft F^2, upon which the twin drum F′ is mounted, is provided with a ratchet, F^4, and a pawl, F^5. A rod, F^6, extending from the pawl to the foot-lever F^7, serves to raise the pawl from out of contact with the ratchet, thus releasing the drum.

The operation of this invention is as follows: By reason of the spring D, the grippers are held above and out of contact with the cable. To start the cars in motion, pressure is applied upon the lever L sufficient to overcome the upward pressure of the spring B of the rod C, which former pressure causes the rod C to lower so as to bring the grip-jaws down to the cable. The operator then gives the crank F^3 about a half-revolution, which revolves the drum F′ and draws upon the ropes or chains H, thus causing the gripping-faces of the grippers to close upon the cable. As this closing movement is gradual, no sudden jars or jerks will be given the car. When a suitable grip has been attained, the crank is released, the pawl-and-ratchet mechanism described holding the same in the gripping position. To stop the car it is simply necessary to press the lever F^7 with the foot, which pressure causes the pawl F^5 to release the ratchet F^4 and allows the drum to be reversed, which action will open the gripping-jaws, releasing the rope,

and, by reason of the spring D, elevate the rod C and jaws above the cable.

Having described my invention and its operation, what I claim is—

1. In a cable-railway grip, a rod provided with a spring and with gripping-jaws, in combination with a lever for depressing the rod, ropes connected to said jaws, and a drum for winding up the rope, substantially as specified.

2. In a cable-railway grip, a rod provided with a spring and with gripping-jaws, in combination with a depressing-lever, a drum, and ropes passing from the drum and over pulleys of the gripping-jaws, substantially as specified.

3. In a cable-railway grip, a rod having gripping-jaws, in combination with a housing having a spring connected to the rod for elevating the same above the cable, and with a lever for depressing the same against the tension of the spring, and devices for opening and closing the jaws, substantially as specified.

4. In a railway-cable grip, a rod provided with a spring and having a head at its upper end and flared at its lower end, and provided with pivoted gripping-jaws, in combination with the bottom of the car, recessed to receive the head, and with a foot-lever for depressing the head, substantially as specified.

5. In a cable-railway grip, the combination of the rod C, having the gripping-jaws G, with the spring D, lever I, drum F′, ropes H, and pulleys E′ E² E³, and standards A², substantially as specified.

6. The combination of the platform A, recessed, as at A′, with the rod C, lever I, spring D, and jaws G, substantially as specified.

7. The combination of the rod C, platform A, spring D, and the guy-chains K, substantially as specified.

8. The combination of rod C, having gripping-jaws, spring D, ropes H, standards F, drum F′, ratchet F⁴, pawl F⁵, rod F⁶, and foot-lever F⁷, substantially as specified.

9. The combination of the rod C, having the grippers G, with the stop L, substantially as specified.

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

CHARLES L. GORRELL.

Witnesses:

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