

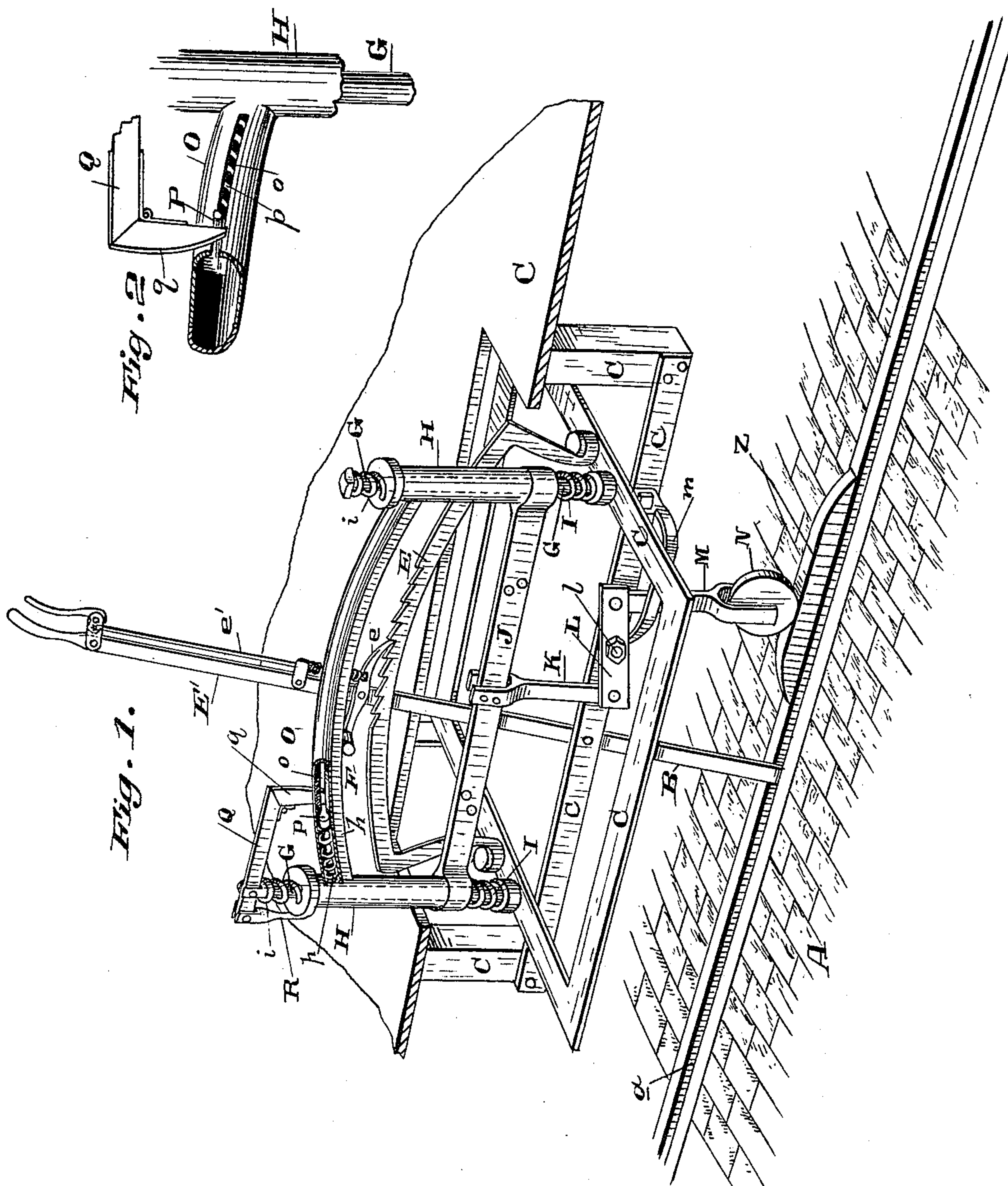
(No Model.)

J. T. COONEY.

GRIP RELEASING DEVICE FOR CABLE ROADS.

No. 365,168.

Patented June 21, 1887.



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UNITED STATES PATENT OFFICE.

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GRIP-RELEASING DEVICE FOR CABLE ROADS.

SPECIFICATION forming part of Letters Patent No. 365,168, dated June 21, 1887.

Application filed March 22, 1887. Serial No. 232,004. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH T. COONEY, of the city and county of San Francisco, and State of California, have invented an Improvement in Grip-Releasing Devices for Cable Roads; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to the class of cable roads or tramways, and to that class of improvements therein which relate to the means for automatically releasing the grip from the cable, the object being to avoid accidents which would result from retaining the cable and neglecting to cast it off at certain points where this is required, especially where one road crosses another, the cable of one passing under that of the other.

My invention consists in a movable bar operated through suitable intermediate mechanism by means of a fixed inclined plane or lug in the road-bed, said bar being adapted to bear down upon the rear end of and release the pawl which holds the grip-lever to its rack, and in a spring-actuated pin released by the movement of the bar, and adapted to come in contact with and force the main lever of the grip so as to open wide its jaws, whereby the cable is cast off, all of which I shall hereinafter fully describe.

The object of my invention is to provide simple and effective means for automatically releasing the cable at required points.

Referring to the accompanying drawings, Figure 1 is a perspective view showing a section of the carrying-frame and the application thereto of my device. Fig. 2 is a detail view showing the stop-piece *g*.

A is the roadway, and *a* is the slot therein, which communicates with the underground tube or tunnel and permits the passage of the grip-shank B. I have not herein deemed it necessary to show the tube or tunnel, nor the cable therein, nor the lower portion of the grip, as all these parts are well known and need only be referred to in the present case.

C is a portion of the truck or frame of the traveling car or dummy. To this frame is secured the rack E, beside which the lever E', which operates the grip-jaws, extends and plays, said lever being provided with a pivoted pawl, *e*, engaging the rack and held in

place by the spring-controlled rod *e'* passing up within reach of the gripman. The rear end of the pawl is extended, and has projecting from its side a small pin carrying an anti-friction roller, F.

Secured to the frame C and alongside of the rack are standards G, upon which are fitted the tubular pieces or sleeves H, to which are secured or have formed with them a curved bar, *h*, having approximately the same curvature as the rack E, and when in a normal position occupying a space above and to one side of said rack and above the friction-roller F on the rear end of the pawl *e*, though without touching it. This normal position of the bar is maintained by means of the springs I on the standards below and which bear up under the sleeves. Small springs *i* above serve as cushions to resist the action of the main springs below when throwing the sleeves back to place.

Between the lower ends of the sleeves extends a cross-piece, J, to which is pivoted a link, K, the lower end of which has connected with it a lever, L, which is pivoted at *l* to the frame C, and has connected with its other end a downwardly-extending standard, M, guided by a strap, *m*, and having its lower end forked to carry a wheel, N.

In the roadway A, and preferably upon the slot-iron, is secured an inclined plane or lug, Z, at a suitable point in the roadway where it is desired to effect the automatic action of the mechanism. The wheel N, approaching this inclined plane, passes up on it, and thereby raises the standard M, which throws the rear end of the lever L down, thereby pulling down the cross-piece J, depressing the sleeves H, and bringing down the bar *h* upon the anti-friction roller F on the rear end of the pawl *e*, thereby releasing the lever E'. When the wheel N passes off the inclined plane, it drops again, thereby allowing the springs I to throw the sleeves and bar up again, whereby the pawl is relieved. Extending between the upper ends of the sleeves is a tubular guide, O, in the side of which is a slot, *o*, through which from within projects a lug or pin, P, actuated by a spring, *p*.

In the top of one of the standards G is pivoted a lever, Q, to one end of which is hinged

a stop-piece, *q*, the hinge being of such a character as to prevent the stop-piece from moving in the direction of the other standard, but allowing it to move in the opposite direction.

5 This stop-piece rests directly in front of the spring-actuated pin projecting through the slotted guide and holds said pin back to one side, thus compressing and holding the spring *p*. The other end of the lever is attached to
10 the top of the vertically-moving sleeve *H* by means of the rod *R*.

The pin *P* is in the line of the main grip-lever *E'*, and when released is adapted to come in contact with said lever.

15 The operation of the mechanism is as follows: When the car approaches the point at which the cable should be released, the wheel *N*, coming in contact with and traveling up on the inclined plane *Z*, pulls down, as before described, the bar *h*, thus causing it to bear upon
20 the anti-friction roller *F* at the rear of the pawl *e* and disengaging said pawl from its rack, thereby freeing the lever. At the same instant this downward movement of the sleeves
25 *G*, through the connecting-rod *R*, raises the inner end of the pivoted lever *Q*, thereby withdrawing its stop-piece *q* from in front of the pin *P*, which, thus relieved, moves forward under the influence of its spring *p*, and, coming
30 in contact with the main lever *E'*, the pawl of which has just been relieved, forces said lever, thereby opening the gripping-jaws within the tube or tunnel wide and casting off the cable. The curved form and length of the bar *h* makes
35 it possible for it to still hold the pawl out of engagement during the movement of the lever. As long as the wheel *N* travels upon the inclined plane *Z* this is the condition of the mechanism, and the gripman cannot take hold of the
40 cable again. As soon as the wheel passes off the inclined plane, the parts being relieved, the springs *I* throw the bar *h* up again, thus relieving the pawl and allowing it to engage with the rack, and the gripman moving the
45 lever *E'* to close the jaws of the grip thereby forces back the pin *P*, which bears against it, until passing by the hinged stop-piece *q*, said piece drops behind it and holds it, and the lever and pawl are then completely free of the
50 mechanism and operate as usual.

I am aware that it is not new to release the retaining-pawl of the grip-lever by means of devices operated by coming in contact with a fixed lug in the roadway, and I do not claim
55 such, broadly.

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

60 1. A grip-releasing device for cable roads, comprising a vertically-adjustable curved bar above the retaining-pawl of the grip-lever, a spring-actuated sliding pin adapted to come in contact with the grip-lever, a contact-piece for engaging a fixed inclined plane or lug in
65 the roadway, mechanism connecting said piece with the adjustable curved bar for bringing the latter in contact with the retaining-pawl

and throwing it from its engagement with the rack, and a tripping mechanism operated by this movement of the bar for releasing the
70 spring-actuated pin, whereby it comes in contact with the grip-lever and forces it, thereby opening the jaws of the grip, substantially as described.

2. In a grip-releasing device for cable roads, 75 and in combination with the grip-lever, the rack, and the pivoted retaining-pawl having an anti-friction roller on its rear end, a vertically-adjustable bar in the vertical plane of and above said anti-friction roller, a wheel
80 adapted to come in contact with and be actuated by an inclined plane in the roadway, and mechanism connecting said wheel with the bar, by which it is depressed upon the anti-friction roller of the pawl, whereby said pawl
85 is thrown from its engagement with the rack, substantially as described.

3. In a grip-releasing device for cable roads, and in combination with the rack, grip-lever, and retaining-pawl having an anti-friction
90 roller on its rear end, fixed standards, sliding sleeves thereon having a bar above the anti-friction roller of the pawl, and springs for holding said sleeves up, a wheel or roller adapted to come in contact with and to be actuated
95 by a fixed inclined plane in the roadway, and mechanism connecting the wheel or roller with the sleeves, whereby the latter are depressed and their bar brought down on the anti-friction roller of the pawl to release
100 said pawl from its rack, substantially as described.

4. In a grip-releasing device for cable roads, and in combination with the rack, the grip-lever, and the retaining-pawl having an anti-
105 friction roller on its rear end, fixed standards, sliding sleeves thereon having a bar above the anti-friction roller of the pawl, a cross-piece between said sleeves, a pivoted lever below, a link connecting the pivoted lever with the
110 cross-piece, a standard connected with the other end of the lever, and a wheel or roller in the lower end of the standard adapted to be actuated by a fixed inclined plane in the roadway, whereby said bar is brought down upon
115 the anti-friction roller of the pawl for releasing it from its rack, substantially as described.

5. In a grip-releasing device for cable roads, the grip-lever, the rack, and the pawl having an anti-friction roller on its rear end, in combination with fixed standards, sliding sleeves
120 on said standards, springs for holding the standards up, a bar carried by the sleeves above the anti-friction roller of the pawl, a cross-piece between the sleeves, a wheel or
125 roller adapted to come in contact with a fixed inclined plane in the roadway, said wheel having a standard, a pivoted lever connected with the standard, and a connecting-link between the lever and the cross-piece of the sleeves, all
130 arranged and adapted to operate substantially as described.

6. In a grip-releasing device for cable roads, the rack, the lever, and the pawl on the lever

engaging the rack, in combination with the fixed standards, the vertically-adjustable sleeves thereon, and springs for holding said sleeves up, the curved bar carried by the sleeves
5 for coming in contact with the pawl and releasing it from its rack, a slotted tube or guide carried by the sleeves, a spring-actuated pin adapted to come in contact with and force the lever, a wheel or roller operated by fixed inclined plane in the roadway, mechanism connecting the wheel or roller with the sleeves for operating them, and a tripping mechanism operated by the sleeves for holding and releasing the spring-actuated pin, substantially as described.
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7. In a grip-releasing device for cable roads, the lever, the rack, and the pawl having an anti-friction roller on its rear end, in combination with the fixed standards, the spring-actuated sleeves thereon, the curved bar carried
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by the sleeves and bearing above the anti-friction roller of the pawl, the tubular slotted guide carried by the sleeves, and the spring-actuated pin within said guide in the line of the grip-lever, the wheel for coming in contact
25 with a fixed inclined plane in the roadway, the pivoted lever and connections with the wheel and sleeves, the pivoted lever in the top of one of the standards, having the hinged stop-piece *q*, for holding the pin back, and the
30 connecting-rod between said lever and the vertically-adjustable sleeve, whereby the said pin is released, all arranged and adapted to operate substantially as described.

In witness whereof I have hereunto set my
hand. 35

JOSEPH T. COONEY.

Witnesses:

C. D. CALL,

J. H. BLOOD.