

(No Model.)

A. NEUBURGER.

SAFETY BRAKE FOR CABLE CARS.

No. 389,895.

Patented Sept. 25, 1888.

Fig. 1.

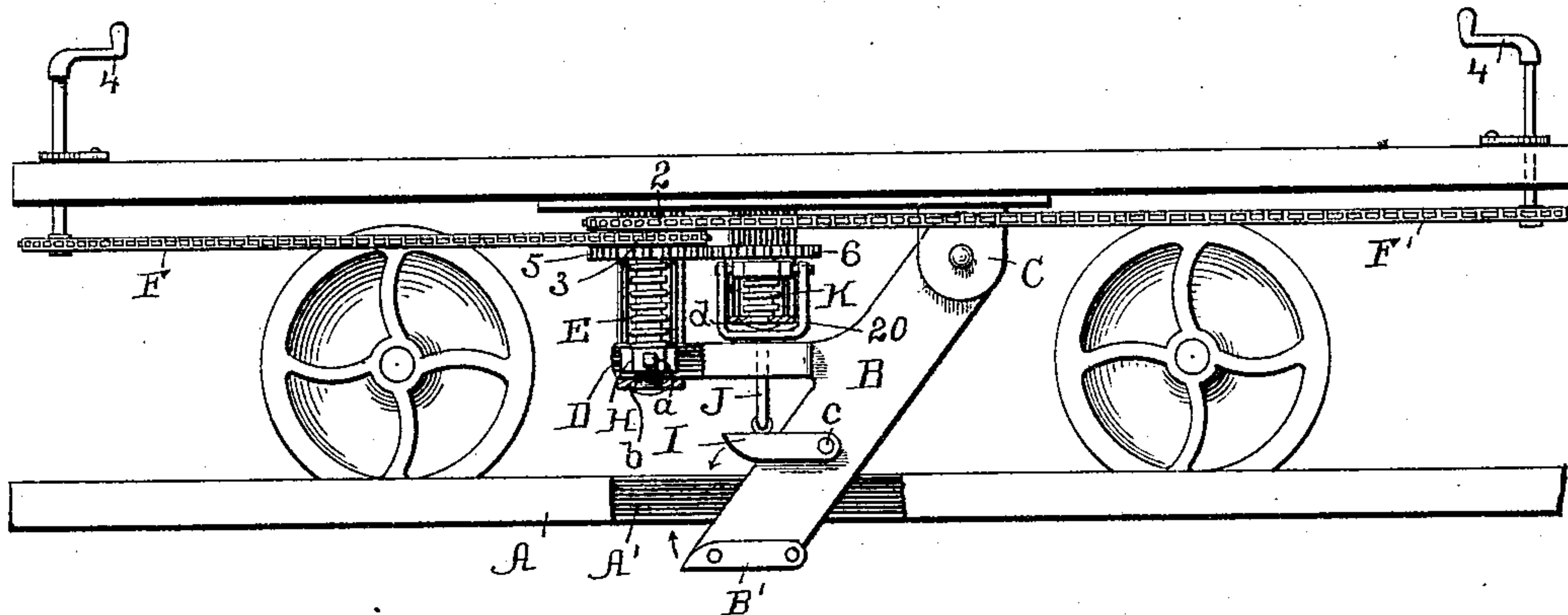


Fig. 2.

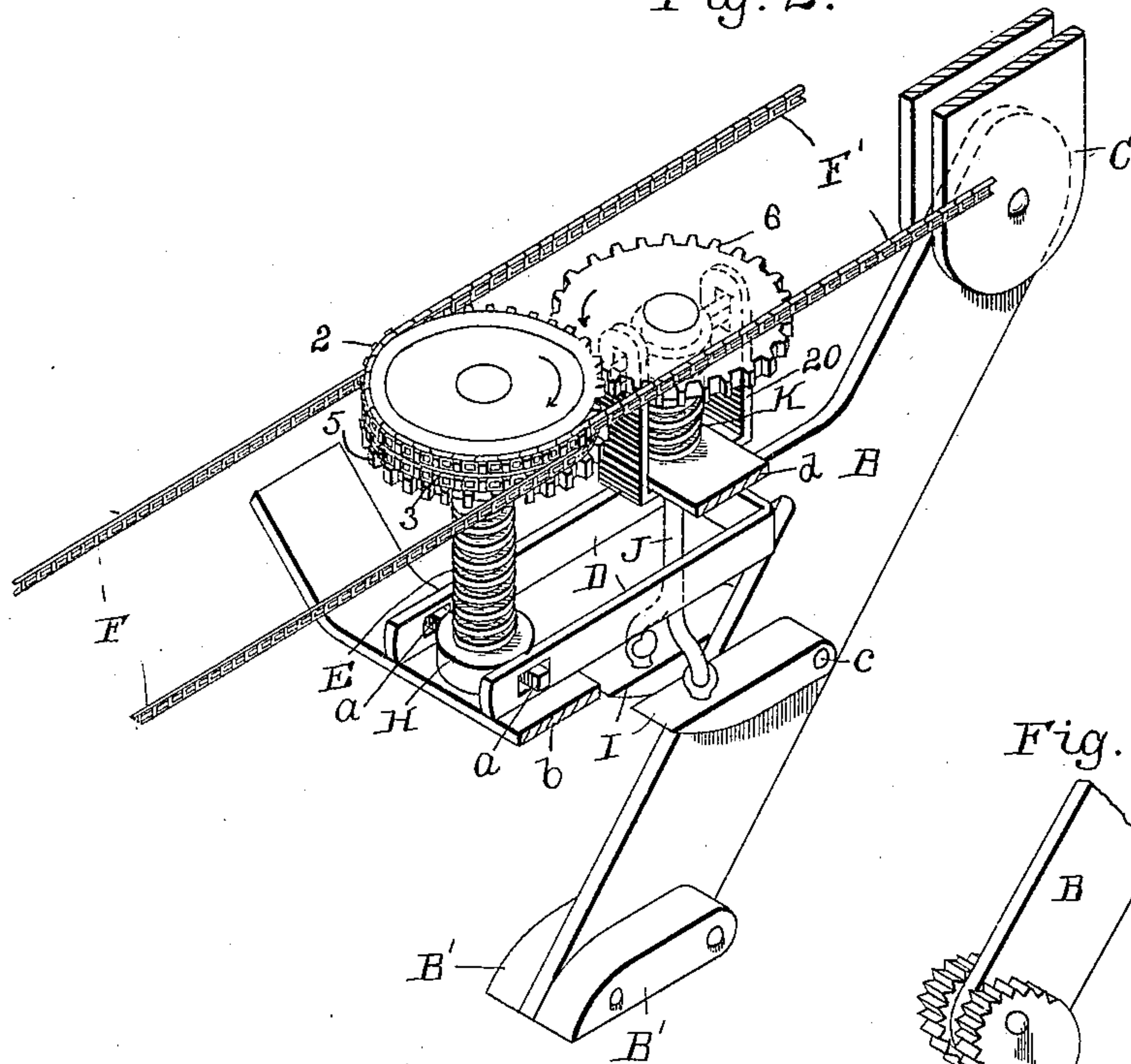
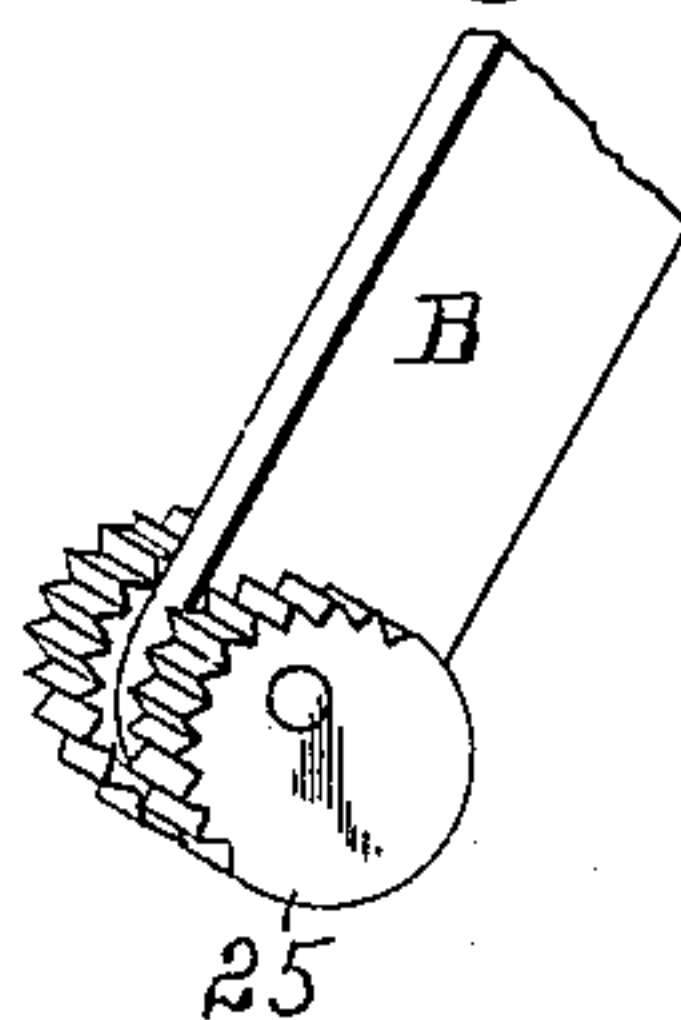


Fig. 3.



Witnesses

J. G. Fischer

E. E. Higdon

Inventor

Albert Neuburger

By His

Attorney

J. C. Higdon



# UNITED STATES PATENT OFFICE.

ALBERT NEUBURGER, OF KANSAS CITY, MISSOURI.

## SAFETY-BRAKE FOR CABLE CARS.

SPECIFICATION forming part of Letters Patent No. 389,895, dated September 25, 1888.

Application filed April 9, 1888. Serial No. 270,079. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT NEUBURGER, of Kansas City, Jackson county, Missouri, have invented certain Improvements in Safety Attachments for Cable Cars, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to brakes provided with gripping devices which engage a gripping-rail, and it may be said to consist in the particular devices and the peculiar combination, construction, and arrangement of parts hereinafter set forth, and pointed out in the claims.

The object of my invention is to secure safety for cable cars while ascending and descending heavy grades or inclined planes.

In the drawings, which illustrate the manner of carrying out my invention, Figure 1 is a broken side elevation of a car-frame having my improved safety attachment applied thereto. Fig. 2 is a detail view, in perspective, showing the operative parts in relative position; and Fig. 3 is a detail view illustrating a modified construction of the lower end of a swinging arm that is used in making up the invention.

In this construction I make use of a special swinging arm, B, which is hinged at its upper end to the car-frame by means of a suitable bracket, C, and which carries gripping-shoes B' and I at or near its lower end. These gripping-shoes are adapted to engage at top and bottom sides of the slot-rails A A', or any preferred form of gripping-rail that may be located between the track-rails of the road. Formed integral with the arm B, or secured thereto in some way, is an angularly-projecting arm, D, the outer end of which is connected with a vertical screw, E, whereby both the swinging arm and the said arm D will be raised and lowered during operation of the brake.

Firmly secured to the lower end of arm B, and on opposite sides thereof, are the lower gripping-shoes, B', which engage the under side of rails A A' when said arm is raised by the action of said screw. The connection between the free end of arm D and lower end of

screw E may be made in various ways; but I prefer to use that which I here show, which consists of a nut, H, provided with projecting lugs a, which engage corresponding apertures in said arm.

Upon the upper end of screw E, I locate a pair of sprocket-wheels, 2 and 3, respectively, and a gear-wheel, 5. The sprocket-wheel 3 is engaged by a sprocket-chain, F, which latter extends from said wheel to one end of the car, and passes around another sprocket-wheel located on the lower end of brake-handle 4, as shown. The gear-wheel 5 meshes with a corresponding gear-wheel, 6, located on the upper end of another screw, K, for operating the upper gripping-shoes, I. These latter shoes are pivoted at one end by means of pivots c to bar B, while their free ends are supported by vertical rod J, said rod having its lower end forked for connection to both shoes. Said screw operates through another nut similar to H, before described, and is connected to the upper end of rod J by means of yoke 20.

The letter b indicates a brace-bar for supporting the lower end of screw E, and the letter d indicates another brace-bar for supporting the lower end of screw K. It is evident, however, that any suitable form of framing may be used for this purpose. For the purpose of operating the rail-gripping mechanism from either end of the car, I arrange another sprocket-chain, F', upon a suitable wheel carried by another brake-handle, 4, at the opposite end of the car, and pass said chain around sprocket-wheel 2, located on the upper end of screw E, as shown.

The operation of the invention thus constructed is as follows: Upon turning either of the brake-handles toward the right hand the chains F and F' and the screw E will be moved in the direction indicated by the arrows, and the arm D and also arm B, carrying the gripping-jaws, will be raised until the lower shoes, B', are brought into forcible contact with the under side of rails A A', and at the same time and by continuing the movement the upper pivoted shoes, I, will be depressed into forcible contact with the upper sides of said rails, and said rails will thereby be gripped on both top and bottom sides by the shoes. It is evi-

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dent that the pressure and friction upon the rails exerted by this arrangement will be considerable, and that consequently the car may be readily stopped upon the steepest incline.

5 The bar B is adapted to extend down below the road-bed through the grip-slot between the slot-rails, as indicated more clearly in Fig. 1.

In some cases I may dispense with upper shoes, I, and may also displace the lower shoes, B', by revoluble eccentrics 25, which latter are properly journaled at the lower end of swinging arm B. These eccentrics may or may not be provided with teeth on their peripheries, as may be preferred.

15 The sprocket and gear wheels used are preferably all of the same diameter, and hence move with corresponding velocity, and the size and pitch of both screws used are alike, which construction imparts the same amount of movement to the free ends of shoes I that is given to shoes B'.

Having thus described my invention, what I claim is—

1. In a safety-brake for cable cars, an arm 25 hinged to the car at its upper end and having a gripping device at its lower end, said arm adapted to be raised and lowered by means of screws attached to the same and operated by means of sprocket wheels and chains, substantially as described.

30 2. In a safety-brake for cable cars, an arm suspended from the car, in combination with a pair of gripping-jaws provided with screws for opening and closing the jaws, and sprocket

wheels and chains for operating said screws, 35 substantially as described.

3. In a safety-brake for cable cars, a hand-lever provided with chains, in combination with sprocket and gear wheels, screws connected with said gear-wheels, and a hinged 40 arm provided with gripping-jaws, substantially as described.

4. A safety-brake for cable cars, consisting of an arm hung from the car and carrying two sets of brake-shoes, one rigidly and the other 45 pivotally secured thereto, and operative connections, substantially as described.

5. In a safety-brake for cable cars, a depending arm hinged to the car at its upper end, and having a gripping device at its lower 50 end, consisting of two sets of brake-shoes, one rigidly and the other pivotally secured to said arm, the whole operated by means of screws attached to the depending arm and pivoted shoes, respectively, substantially as described. 55

6. In a safety-brake for cable cars, the combination of an arm hung from the car, brake-shoes pivoted thereto, screws operating said bar and said pivoted shoes, respectively, and means for operating said screws, substantially 60 as described.

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

ALBERT NEUBURGER.

Witnesses:

S. S. MOREHOUSE,  
J. C. HIGDON.