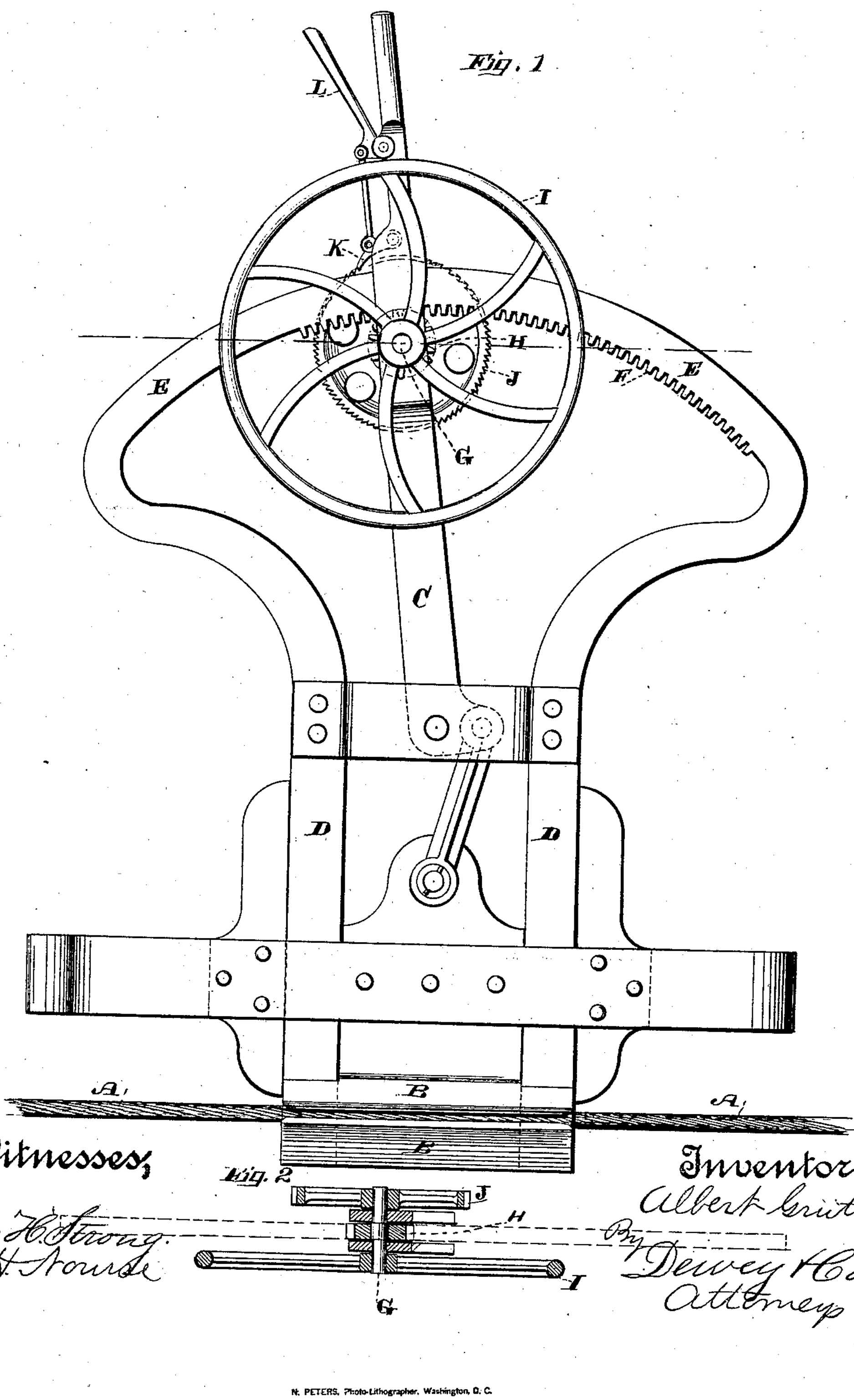
(No Model.)

A. GRÜTTER.

DEVICE FOR OPERATING CABLE RAILWAY GRIPS.

No. 266,029. Patented Oct. 17, 1882.



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UNITED STATES PATENT OFFICE.

ALBERT GRÜTTER, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO A. S. HALLIDIE, OF SAME PLACE.

DEVICE FOR OPERATING CABLE-RAILWAY GRIPS.

SPECIFICATION forming part of Letters Patent No. 266,029, dated October 17, 1882.

Application filed June 29, 1882. (No model.)

To all whom it may concern:

Be it known that I, ALBERT GRÜTTER, of the city and county of San Francisco, State of California, have invented an Improved Device for Operating Cable-Railway Grips, of which the following is a specification.

My invention relates to an apparatus for operating the grips of cable-railways, so that more power may be applied to close the grip when required.

It consists of a hand-wheel and a pinion, the shaft of which is journaled upon the ordinary operating-lever, so that the pinion may engage with the teeth of a rack formed in the lower part of the arc upon which the lever travels, so that the power of the wheel and pinion may be applied whenever desired.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a side elevation of the frame of a gripping apparatus, showing my invention. Fig. 2 is a horizontal section taken through the line of the axis of the wheel and pinion.

A is an endless moving cable, such as are employed to drive street-cars. B B are the gripping-jaws, which are closed upon the cable or opened by means of the lever C, which is supported upon the car; and D is a frame having an arc, E, at the top, by the side of which the lever moves. This frame usually has teeth upon the top, so that a pawl attached to the lever may engage with the teeth and hold the lever at any desired point. In my invention these teeth are dispensed with, and a rack, F, is formed upon the lower or inside of the arc, as shown. A shaft or axle, G, passes through the lever C just below the bottom of the arc, and has boxes, in which it turns, fixed to the lever. A pinion, H, is secured to the axle, so as to be just beneath the arc, and its teeth engage those of the rack F. Upon one end of this axle or shaft is fixed a hand-wheel, I, by which the shaft and pinion may be turned, and the pinion, moving along the teeth of the rack, will advance the lever with a power in addition to its own leverage equal to that due to the difference in the sizes of the wheel and pinion. This enables me to close the jaws of the grip with great power when necessary; but for ordinary movements the lever may be operated by its handle in the usual manner, the wheel and pinion rotating freely as the pinion moves along the rack.

In order to hold the device at any point after the rope has been gripped, I employ a ratchet-wheel, J, which is secured to the end of the axle opposite to the wheel I. A pawl, K, is pivoted to the side of the lever C, and is caused to engage with the ratchet-wheel by a lever, L, so placed as to be conveniently grasped from the handle.

The operation will then be as follows: The longer movements of the lever C may be made in the usual manner by means of its handle; but when the grip is closed upon the cable the pawl-wheel may be turned, and by means of a pinion and rack a much greater power may be applied to close the grip, and the pawl and ratchet-wheel serve to hold it when closed. The grip may be released and opened by pressing the lever L, so as to raise the pawl free from the ratchet, when the lever C can be pushed forward, the pinion and wheel revolving freely.

I have described the rack F as being formed on the lower or inside of the arc for convenience; but it will be manifest that it may be formed upon the outside, the pinion being correspondingly placed.

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

1. In a cable-railway, the gripping apparatus consisting of the jaws B B, the lever C, and the frame D, in combination with the pinion H, engaging the curved rack F, and the hand-wheel I, substantially as and for the purpose herein described.

2. The lever C of a cable-gripping apparatus, the pinion H, hand-wheel I, and the curved rack F, as shown, in combination with the ratchet-wheel J and pawl K, substantially as and for the purpose herein described.

3. In a cable-railway grip, and in combination with the gripping-jaws B, frame D, and lever C, a supplemental power consisting of the wheel I and pinion H, having the shaft journaled upon the lever C, and the segment-rack F, with which the pinion engages, substantially as herein described.

In witness whereof I hereunto set my hand.

ALBERT GRÜTTER.

Witnesses:
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