(No Model.)

S. F. McDILL.

CABLE GRIP.

No. 401,895. Patented Apr. 23, 1889.

Fig. 1.

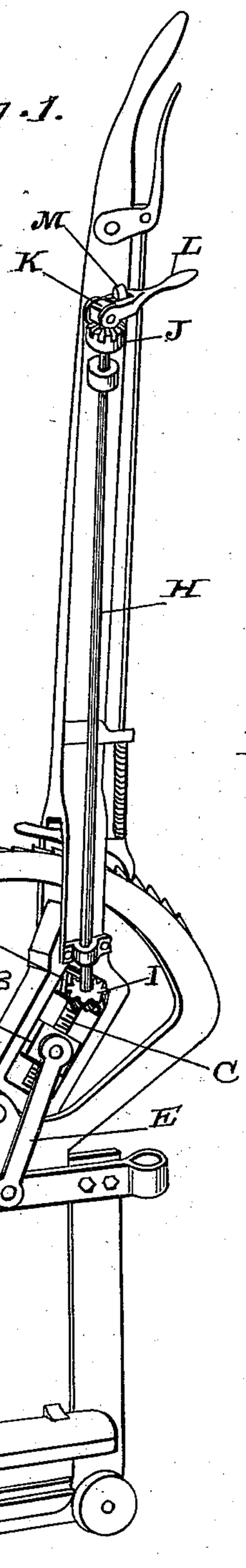


Fig. 2.

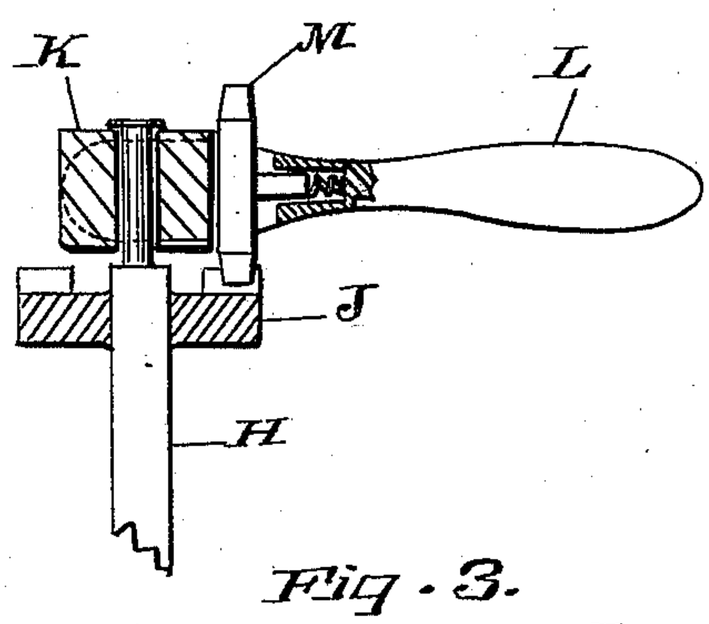


Fig. 5.

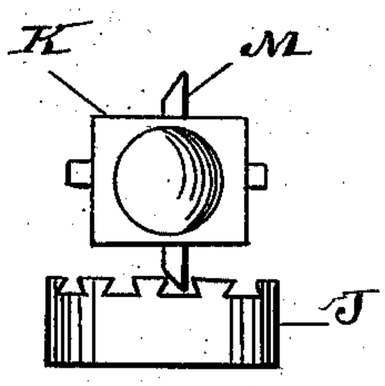


Fig. 3.

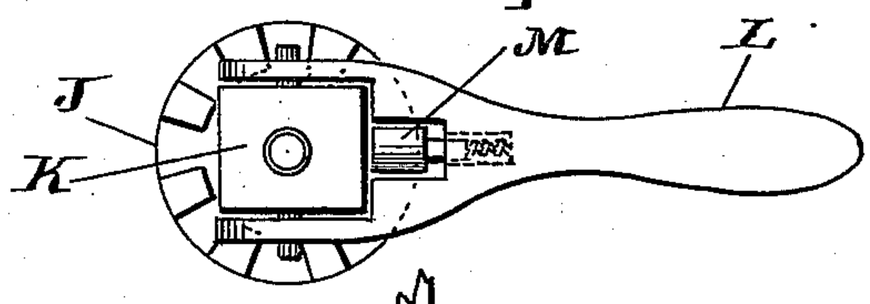
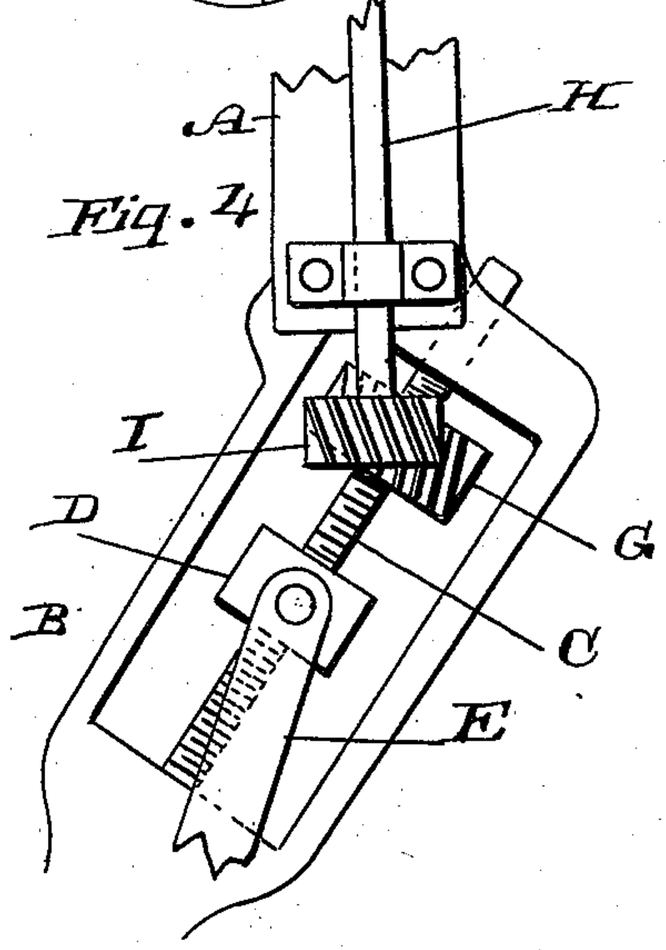


Fig. 4



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UNITED STATES PATENT OFFICE.

SAMUEL F. McDILL, OF SAN FRANCISCO, CALIFORNIA.

CABLE-GRIP.

SPECIFICATION forming part of Letters Patent No. 401,895, dated April 23, 1889.

Application filed January 19, 1889. Serial No. 296,908. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL F. McDILL, of the city and county of San Francisco, State of California, have invented an Improvement in Adjustments for Cable-Grips; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a means for adjusting the jaws of cable-grips, and thereby compensating for the wear of said jaws, so as to take them up from time to time as this wear occurs.

It consists of a screw-shaft turning in a slot at the lower end of the grip-lever, a nut fitted upon said screw-shaft and connected by links with the parts which carry the fixed jaw of the grip with gears by which this screw-shaft is rotated, and a shaft extending up beside the grip-lever and having a ratchet-and-pawl mechanism, whereby it may be turned, as will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a view of the grip-lever, showing my invention attached thereto. Fig. 2 is a vertical section of the double pawl. Fig. 3 is a top view of the same. Fig. 4 is an enlarged view of the screw-shank. Fig. 5 is a view of the double pawl.

This invention is especially designed to be applied to that class of grips wherein the cable is seized between two jaws, one of which is above the other, either one or both of said jaws being movable. In the present case I have shown my device as applied to a grip in which the lower jaw remains stationary and the upper jaw is raised or depressed with relation thereto, so as to release or seize the cable at will.

A is the grip-lever, the lower end of which is here shown bent at B to an obtuse angle to the upper end or handle of the lever. The extreme lower end of B is fulcrumed to the grip-frame, and the upper portion of B is slotted longitudinally, and has a screw-shank, C, extending up and down in the middle of this slot and adapted to turn around upon bearings at each end. The nut D fits into this slot, and the screw C passes through it.

E are links, the upper ends of which are connected with the nut by pins upon which the links turn, and the lower ends of the links are connected with the lower jaw, F, of the grip, as shown. Whenever the shoe which is fitted into the grip-jaw is worn so that the grip ceases to take proper hold of the cable, it is necessary to move it down by turning the screw so as to force the nut downward. G is a pinion, which is secured upon the upper end of this screw-shaft, so that when the pinion is turned the screw-shaft will be turned.

Upon the side of the lever A is journaled a shaft, H, having a pinion, I, fixed to its lower end, so as to mesh with and turn the pinion G. In the present case, on account of the angular position of the lower part, B, of the grip-lever, these two pinions have their teeth cut diagonally, so that they will mesh together properly. The shaft H extends up the handle of the grip-lever to such a point that it is within convenient reach of the gripman without his stooping. Upon the upper end of this shaft is fixed a ratchet-wheel, J, the teeth of which are so formed that a pawl may engage them from either side, so that the wheel and shaft may be turned in either direction at pleasure. In order to turn this ratchet, I employ a double pawl, which is constructed as follows: Upon the upper end of the shaft H a swivel-head, K, is fitted to turn, being held in place by an enlargement or head on the upper end of the shaft. Upon opposite sides of this swiveled head are pins which pass through the two lugs of the handle L, these lugs extending downward upon each side of the swivel-head K. A slot is made in the central portion of the handle L, and within this slot is fixed a double pawl, M, the ends of which project upon opposite sides of the handle and just above the swivel-head K. This pawl has a short stem extending up into the body of the handle, and this serves as a guide to keep the pawl from slipping out of place, and is also acted upon by a spring which forces the pawl down, so that it rests upon the square or flat top of the swivel-head K when the handle is not in use. This retains the handle in a vertical position and in continuation with the shaft H when not in use. When it is to be used, it is turned down about its pivot-pins into a horizontal position upon either side of the swivel-head J, the spring in the handle yielding to allow

it to pass the corners of the swiveled head, and when it is turned down to this position at right angles it is held in place by the spring in the same manner as when in a vertical position. When turned down upon one side, the bevel of the pawl is such that it will engage the teeth of the ratchet-wheel, so that when the handle is moved it will turn the shaft in one direction. When the handle is turned over upon the other side of the swivel, the other end of the pawl will engage the teeth of the ratchet, which, with the shaft H, may thus be turned in the opposite direction. From this construction it will be seen that by means of this handle it will be easy for the gripman at any time to turn the shaft H in either direction, and through the pinions G and I the screw-shaft C will be turned correspondingly, and will thus cause the nut D to travel up or down, as may be desired, within the slot in the portion B of the grip-lever. This movement acts, through the links E, to raise or depress the grip-jaw, and thus move it away from or toward the opposite jaw, as may be desired. By this construction it is possible for the gripman to adjust the jaws at all times, whether the car be moving or stationary, and without delaying or stooping to get at the screw and nut, as has heretofore been necessary in such cases.

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

1. The combination, with the screw and the movable nut whereby the grip-jaws are adjusted, of the shaft journaled upon the side of the grip-lever, the means for turning said shaft, a pinion upon the lower end of the shaft, and a corresponding pinion upon the screw-shaft, whereby the latter may be turned, substantially as described.

2. The grip-lever having the movable nut connected with the grip-jaw, the screw passing through said nut, a pinion upon the screw-shank, a shaft journaled upon the side of the grip-lever, and a corresponding pinion engaging the one upon the screw-shank, and a pawl-and-ratchet mechanism upon the upper end of the lever-shaft, whereby the latter may be turned, substantially as described.

3. The shaft journaled upon the side of the grip-lever, a screw-shank journaled in the lower part of the grip-lever and connected with the gripping-jaws, pinions upon the screw-shank and the lever-shaft engaging with each other, and a double ratchet fixed upon the upper end of the lever-shaft, in combination with a double-acting pawl and handle, substantially as herein described.

4. The pinion-shaft journaled upon the side of the lever, having the double-toothed ratchet-wheel fixed to its upper end, a swivel-head turning upon the upper end of the shaft above the ratchet, and a handle pivoted to said swivel-head and having the pawls projecting upon opposite sides thereof, so as to be engaged with the ratchet-wheel upon either side of the vertical shaft, and a spring whereby the handle is retained in either position, substantially as described.

In witness whereof I have hereunto set my hand.

SAMUEL F. McDILL.

Witnesses:
S. H. NOURSE,
H. C. LEE.