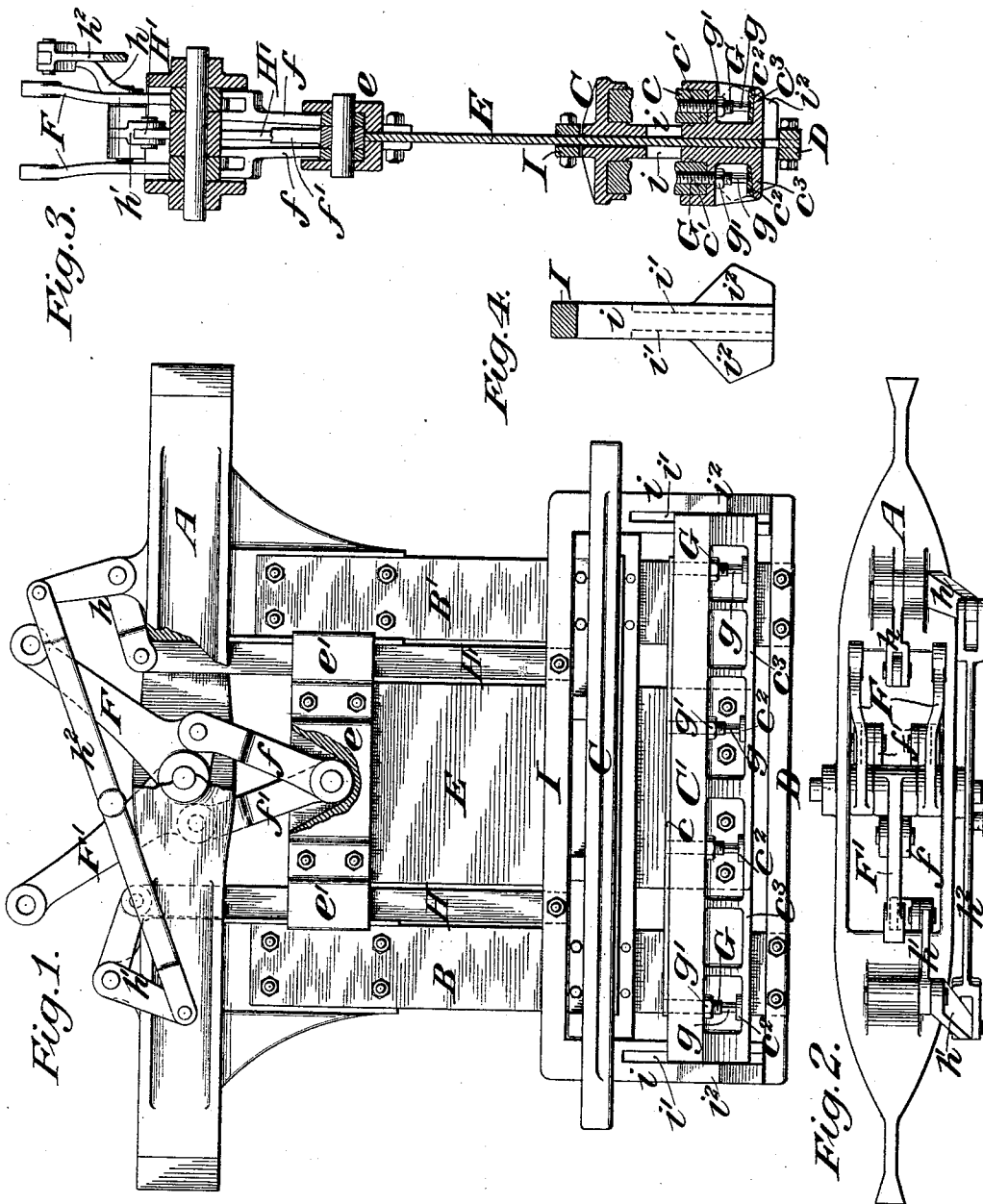


(No Model.)

J. H. ROBERTSON.
GRIP MECHANISM FOR CABLE RAILWAYS.

No. 484,920.

Patented Oct. 25, 1892.



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UNITED STATES PATENT OFFICE.

JOHN H. ROBERTSON, OF NEW YORK, N. Y.

GRIP MECHANISM FOR CABLE RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 484,920, dated October 25, 1892.

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To all whom it may concern:

Be it known that I, JOHN H. ROBERTSON, of New York, in the county and State of New York, have invented a new and useful Improvement in Grip Mechanism for Cable Railways, of which the following is a specification.

My invention relates to an improvement in grip mechanism for cable railways, with the object in view of providing for the prompt throw-out of the cable and for the further object of taking up the wear upon the gripping-dies by the adjustment of the dies themselves.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 is a view of the grip in side elevation, partly in section. Fig. 2 is a top plan view. Fig. 3 is a transverse vertical central section, and Fig. 4 is a view in detail of one end of the throw-out.

A represents the head-frame of the grip, provided with the flat hangers B and B', depending therefrom and forming a support for the upper stationary jaw C of the grip and the base-piece or runner D, as is usual. The movable lower jaw C' is fixed to the broad central plate E, occupying a position between the hangers B B' and spaced therefrom and provided with a cross-head e, to which the operating-links f and f' are pivoted at their lower ends. The upper ends of said links f f' are pivoted to the short arms of the operating angle-levers F and F'. One of the operating-levers F F'—in the present instance F—is bifurcated or formed in duplicate, as clearly represented in Fig. 2, and the other operating-lever—in the present instance F'—is located centrally between the parts of the lever F, so that when strain is exerted simultaneously upon the parts of the lever F it will be equally distributed upon opposite sides of the central plane of the grip, and the same will be true when strain is exerted upon the operating-lever F', and hence in operating the movable jaw to draw it into engagement with the cable to grip the latter between the movable and stationary jaws there will be no tendency to sway the grip-frame out of its central plane parallel with the walls of the slot in the slot-iron, and the wear upon the diagonal opposite

edges of the frame will be thereby materially reduced.

The gripping-dies in the movable lower jaw are represented by c, and they are secured within sockets in said jaws by means of screws G, which engage screw-threaded sockets c', extending through from the face to the back of said dies, the heads g of said screws being seated upon bosses c², provided upon the upper sides of flanges c³, extending laterally from the base of the movable jaw C'. The heads g of the screws are preferably squared for the purpose of receiving a wrench to turn them, and they are provided with jam-nuts g' for the purpose of locking them in position.

I find it convenient to make the heads of the screws G small enough to permit of the screw-head being passed through the screw-threaded socket c' in the die and the screw turned downwardly through the die from its face toward its back until the end of the screw has reached a position flush with the gripping-faces of the die. As the faces of the die c become worn away the dies themselves may be set upwardly independently of the jaw C' by turning the screws G and locking them in their adjustments, the pressure upon the die when forced into contact with the cable to grip it being then transmitted through the screws G to the flanges c³ of the jaw. By this means I am enabled to adjust either one of the dies with great accuracy and independently of the other die and without disturbing the relative positions of the stationary and movable jaws, and a worn-out die may be readily replaced whenever occasion requires.

Between the plate E and the hangers B and B', I locate strips H and H' for carrying the devices for throwing the cable out of the jaws. The strips H and H' have a limited vertical movement independent of the movable jaw, and the ends of the head-frame e are arranged to embrace the strips, as at e', and form guides therefor. The upper ends of said strips are connected with operating-levers h and h', the operating-levers themselves being connected by a rod h² for simultaneously operating them. To the lower ends of the strips H and H' there is secured a bar I, to the ends of which depending arms i are secured, or the latter might be formed integral with the bar I. The

bar I and the strips H H', to which the bar is secured, form a vertically-reciprocating frame for supporting and operating the depending arms which effect the throw-out independently of the movement of the movable jaw. The arms *i* extend downwardly through the base of the stationary jaw C and are provided with grooves *i'* in their sides for the reception of corresponding ribs or feathers on the ends of the movable jaw C'. The lower ends of the arms *i* are provided with outwardly-flaring wings *i*², which when the cable is running between the jaws are located below the cable and out of contact therewith. When, however, it is desired to unship or throw out the cable from between the jaws, it is only necessary to raise the bar I and with it the arms *i*, and the flaring tops of the wings *i*² will thereby lift and at the same time force outwardly the cable without any liability of failure. This construction of throw-out obviates the difficulty which has heretofore arisen by the cutting of a groove in the throw-out under the continuous action of the cable and the consequent liability of the cable becoming caught in such groove when the throw-out is brought into action. The present structure provides for distributing such slight wear as may take place along the entire slanting top of the wings *i*², so that there will at no time be a groove cut therein. It will further be observed that the present structure is eminently simple in that the arms and their wings may be formed integral and the whole lifted directly by the lifting of the bar I.

What I claim is—

1. A grip-jaw provided with a laterally-extended base, a gripping-die set within the jaw, and adjusting devices engaged with the die and seated upon the base of the jaw for adjusting the die relatively to the jaw to take up wear, substantially as set forth.

2. The grip-jaw provided with seats on the upper sides of the flanges extending laterally from its base, a gripping-die seated in the jaw, and screws engaged with the die and resting at one end on the said seats on the base for forcing the die toward the opposite jaw to take up wear, substantially as set forth.

3. In combination, a grip-frame, the grip-jaws, and the throw-out, the latter comprising a vertically-reciprocating frame having arms depending from its ends and provided with slanting-faced projections for engaging the cable, said depending arms with the slanting-faced projections being independent in their movement of the movements of the movable gripping-jaw, substantially as set forth.

4. In combination, a grip-frame, grip-jaws, and a throw-out, the latter comprising a vertically-reciprocating frame having depending arms at its ends, the depending arms having slanting-faced projections and a tongue-and-groove connection with the movable gripping-jaw, whereby the movement of the throw-out is wholly independent of the movable gripping-jaw, substantially as set forth.

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