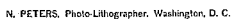


Patented May 1, 1888.



# UNITED STATES PATENT OFFICE.

WILLIAM JOSEPH EADINGTON CARR, OF LEAVENWORTH, KANSAS,  
ASSIGNOR TO HIMSELF AND JOSEPH EADINGTON CARR, OF SAME  
PLACE.

## CABLE-GRIP.

SPECIFICATION forming part of Letters Patent No. 381,905, dated May 1, 1888.

Application filed December 28, 1887. Serial No. 259,212. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM JOSEPH EADINGTON CARR, of Leavenworth, in the county of Leavenworth and State of Kansas, have invented a new and Improved Cable-Grip, of which the following is a full, clear, and exact description.

The invention relates to cable-grips, for which I filed an application for United States Letters Patent on the 5th day of April, 1887, Serial No. 233,725, which was allowed October 10, 1887.

The object of the present invention is to provide a new and improved cable-grip, which is very simple and durable in construction and effective in operation and contains no springs.

The invention consists in certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement with the jaws in an open position. Fig. 2 is a sectional end elevation of the same on the line *xx* of Fig. 1. Fig. 3 is a side elevation of the same with the front plate removed and the jaws in a closed position. Fig. 4 is a side elevation of the cam operating the movable jaw. Fig. 5 is an enlarged side elevation of the cam-bearing with parts in section, and Fig. 6 is a transverse section of the same on the line *yy* of Fig. 5.

The improved cable-grip A is provided with a casing, B, carrying on its ends the bolts C and C', respectively, on one of which is fulcrumed the rod or link D, hooked on the car in the usual manner, as shown and described in my application above referred to. On the casing B is permanently formed the stationary lower jaw, E, on the upper curved side of which is secured a die, F, of soft metal, to prevent the wear of the cable G, held on the die F, and adapted to be clamped thereon by the movable jaw H, provided on its grooved under side with a soft-metal die, F', similar in construction to the die F. The movable jaw H is provided with the upwardly-extending plate H',

adapted to slide in the recess B', formed in the casing B. On the upper edge of the plate H' operates the cam I, provided with trunnions J, which form its fulcrum, and with a handle, I', for operating said cam I. On the handle I', near the cam I, is secured a lug or projection, K, adapted to engage the upper inclined edge of the arm L' of the bell-crank lever L, pivoted on the front plate, B<sup>2</sup>, of the casing B. The other arm, L<sup>2</sup>, of the bell-crank lever L is adapted to engage the pin H<sup>2</sup>, projecting from the jaw-plate H' and passing through an aperture, B<sup>3</sup>, in the said front plate, B<sup>2</sup>, of the casing B.

The trunnions J of the cam I are supported in vertically-adjustable bearings N, held to slide vertically in the recess B<sup>4</sup>, formed in the upper part of the casing B. The bearings N are movable up and down by a set-screw, O, screwing in the casing B, its lower end extending into a recess, N', formed in the top of each bearing N. On the lower end of each set-screw O is formed an annular recess, O', into which projects one end of a set-screw, P, screwing through the outside of the respective bearing N, so that by turning the said set-screws O the bearings N are raised or lowered, and consequently adjust the cam in relation to the plate H', whereby all wear of the jaw H on the cable G can be taken up at any time.

The operation is as follows: The cable-grip, as shown in Fig. 1, is in an open position, and when the operator now desires to secure the grip A to the cable G he moves the handle I' of the cam I upward in the direction of the arrow *a'*, so that the cam I, acting on the top edge of the plate H', presses the latter, with the jaw H, downward, so that the die F' of the said jaw H presses the cable firmly against the die F in the fixed jaw E. The cable G is then firmly gripped in the jaws and the movement of the cable now propels the car or train of cars, to which the grip is connected by the link D. When the plate H' moves downward, as above described, its pin H<sup>2</sup>, acting on the arm L<sup>2</sup> of the bell-crank lever L, causes the latter to swing, with its arm L', into a vertical position, so that when the operator desires to release the cable G from the grip A he throws the arm I' of the cam I downward in the inverse direction of

the arrow  $a'$ , whereby the pin K on the said arm I' engages the wedge-shaped top end of the arm L' and causes the bell-crank lever L to swing upward in the direction of the arrow  $b'$ , whereby the arm L', acting on the pin H<sup>2</sup>, raises the plate H', and consequently moves the jaw H upward and out of contact with the cable G, which is thus released and thereby disengaged from the cable-grip A. The wear and tear of the cam I on the plate H' is taken up by adjusting the set-screws O, so that the bearings N, carrying the trunnions J of the cam I, are lowered accordingly. The soft-metal dies F and F' can easily be replaced by new ones when worn out.

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

1. In a cable-grip, the combination, with a slotted casing carrying a fixed jaw, of a movable jaw fitted in a recess of the said casing and provided with a pin projecting through the slot of the casing, a cam for pressing the said movable jaw downward, and a bell-crank lever pivoted on the said casing and operating with one arm on the pin of the movable jaw, said bell-crank lever being operated by a pin on the said cam, substantially as shown and described.

2. In a cable-grip, the combination, with a slotted casing carrying a fixed jaw, of a movable jaw fitted in a recess of the casing and provided with a pin projecting through the said slot of the casing, a cam pivoted in vertically-adjustable bearings and operating on the said movable jaw, a pin or lug secured

on the said cam, and a bell crank lever pivoted on the said casing and provided on one of its arms with an inclined edge on which operates said pin of the cam, while the other arm of the bell-crank lever operates on the said pin of the movable jaw, substantially as shown and described.

3. In a cable-grip, a casing carrying a fixed jaw and a movable jaw fitted in a recess of the said casing, in combination with a cam operating on the said movable jaw and provided with trunnions, bearings carrying the said trunnions and mounted to slide vertically in the recesses formed in the said casing, a set-screw screwing in the said casing, its recessed end passing into a recess of the said bearings, and a second set-screw screwing in the said bearings and into the said recess of the said first-named set-screw, substantially as shown and described.

4. In a cable-grip, the combination, with a casing and a fixed jaw formed thereon and provided with a curved die, of a movable jaw carrying a similar die and adapted to slide in the said casing, a cam operating on the said movable jaw and pivoted in the said casing, a pin or lug formed on the said cam, and a bell-crank lever, on one arm of which operates said pin, the other arm of the said bell-crank lever being adapted to act on a pin of the said movable jaw, substantially as shown and described.

WILLIAM JOSEPH EADINGTON CARR.

Witnesses:

ALFRED LAKE,  
CHAS. S. MOAK.