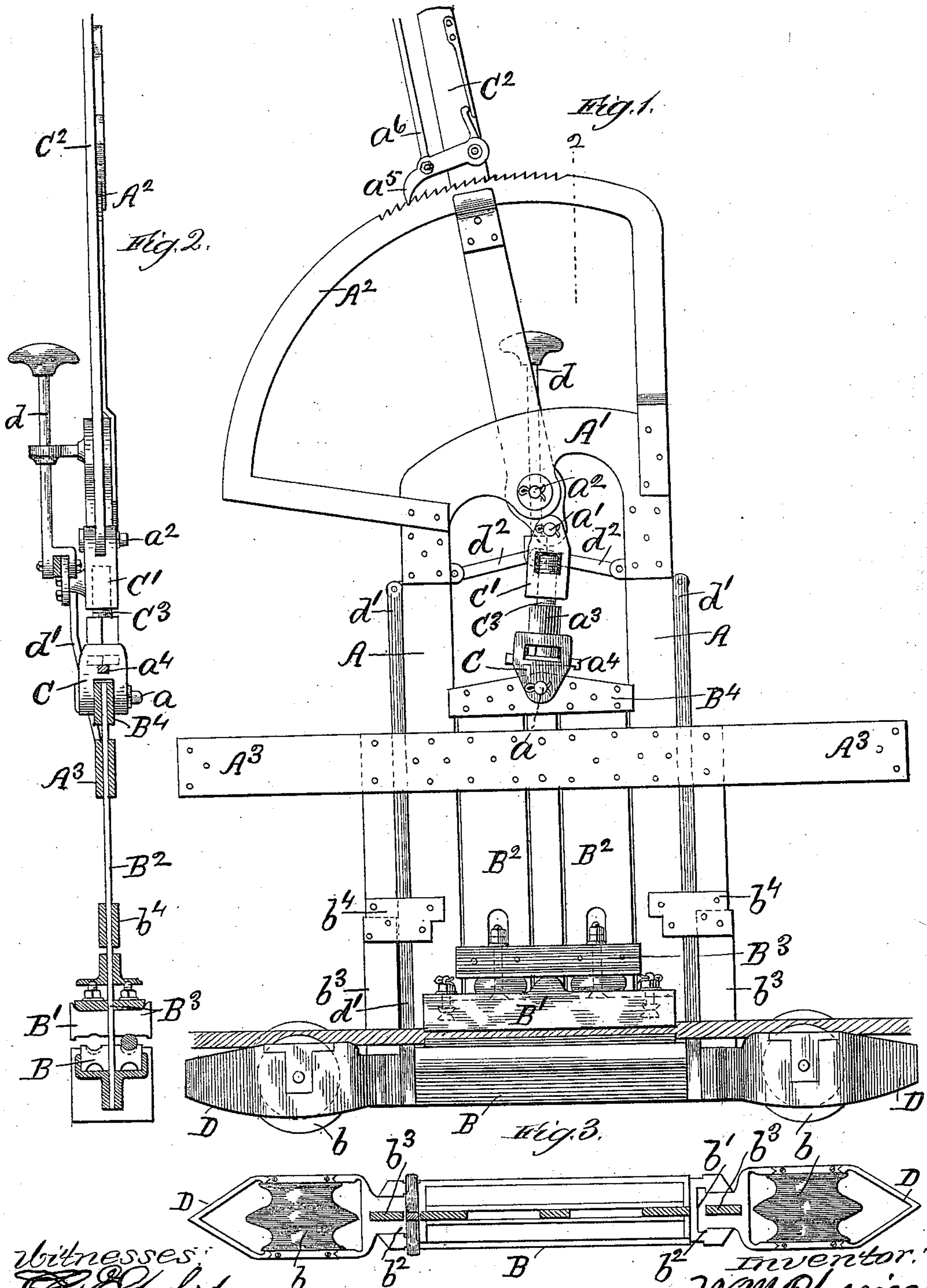


(No Model.)

W. PHENIX.
GRIP FOR TRACTION CABLES.

No. 441,377.

Patented Nov. 25, 1890.



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UNITED STATES PATENT OFFICE.

WILLIAM PHENIX, OF CHICAGO, ILLINOIS.

GRIP FOR TRACTION-CABLES.

SPECIFICATION forming part of Letters Patent No. 441,377, dated November 25, 1890.

Application filed March 7, 1890. Serial No. 343,037. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM PHENIX, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in a Grip for Traction-Cables, of which the following is a full, clear, and exact description, that will enable others to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to an improved grip apparatus for operating cable-cars; and the same consists of certain novel features in the construction, combination, and arrangement, as will be hereinafter set forth.

Figure 1 is a side elevation of a grip embodying my improved features. Fig. 2 is a vertical section in plane 2, Fig. 1; and Fig. 3, a horizontal section in the line of the cable, showing a plan of the lower or stationary grip-jaw.

Referring to the drawings, A A represent two upright stationary hanger-bars supporting the different parts forming the grip-stand. These bars are connected at their upper ends by the arched head or bridge piece A'. The respective ends of the quadrant or gradient bar A² are removably secured to the arched head or bridge piece.

A³ represents the usual grip-beam, B the lower or stationary jaw, and B' the upper or movable jaw. The upper jaw is secured to the lower ends of the vertically-adjustable bars B² B³. These vertically-moving bars are retained in proper relative position to the hanger-bars by means of the cap-plate B³ and the cross-head B⁴, the ends of which embrace the inner edges of the hanger-bars. The lower bifurcated part of the socket-piece C embraces the cross-head B⁴, and is removably secured thereto by the pivot-pin α . The upper bifurcated end of the screw-threaded socket-piece C' is connected to the lower end of the grip or operating-lever C² by means of the pivot-pin α' , said lever being provided with the fulcrum-bearing in the head or bridge piece at α^2 . The upper and lower socket-pieces are connected by the removable bolt C³, having a threaded engagement in the upper socket secured to the lower end of the grip-lever. α^3 represents a jam or locking nut on

said connecting-bolt. The key α^4 in the lower socket-piece bears against the head of the adjusting-bolt, and serves to retain the same in place. This connection provides for the proper adjustment of the parts controlling the movement of the upper grip-jaw in compensating for the wear on the cable-bearing surfaces. This arrangement and connection provides great gripping power with but little expenditure of force and with but a slight movement of the operating or gripping lever.

The operating-lever has the usual movement with relation to the notched quadrant-bar, and is provided with the locking-pawl α^5 , engaging with said notches, and the connecting latch-rod α^6 for throwing the same out of engagement. The shields or pointed ends D D are removably secured in the respective ends of the lower grip-jaw, and have the cable-sheave pulleys b b journaled therein. The ends of this grip-jaw are cut out to form the hook-mortise b' , as shown in Fig. 3, the inner ends b^2 of the shields being made of a corresponding shape to fit closely therein, and inserted from the under side. These shields are retained in place by being secured to the lower ends of the bars b^3 , the upper ends of which are fastened to the horizontal plates, which are in turn riveted to the hanger-bars and the chafing-bars b^4 . The object of this construction is to permit of the shields being readily removed and others inserted when broken or the sheaves have become much worn without being obliged to put in an entire new grip-jaw.

The mechanism for throwing out the cable, consisting of the foot-rod d and the vertical levers d' d' running down outside of the hanger-bars, and the connecting-links d^2 d^2 were made the subject-matter of a former application, filed July 13, 1886, Serial No. 207,855, and therefore will not be described here in detail.

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

1. In a cable-grip, the combination, with the cross-head, of the lower bifurcated socket-piece pivoted thereto, the upper companion socket-piece having its interior lower end screw-threaded, the adjusting screw-threaded bolt inserted up through the lower socket-piece and having a threaded engagement with

the upper socket-piece, and the operating-lever pivoted at its lower end to the bifurcated end of the said upper socket-piece, substantially as and for the purpose set forth.

5 2. In a cable-grip, the combination of the companion socket-pieces, the adjustable screw-threaded bolt connecting the same, the jam or locking nut on said bolt, and the key passing through the lower socket-piece and
10 bearing against the head end of the adjustable screw, substantially as described.

3. In a cable-grip, the combination of the hanger-bars, the bridge-piece connecting the upper ends of the same, the operating-lever
15 having a fulcrum-bearing in said bridge, the upper socket-piece pivoted to the lower end of said lever, the cross-head, the socket-piece pivoted thereto, and the screw-threaded bolt adjustably connecting said socket-pieces, sub-
20 stantially as and for the purpose set forth.

4. In a cable-grip, the combination, with the lower or stationary grip-jaw provided with mortised ends, of the pulley-carrying shields having the inner ends shaped to fit the mortised ends of the grip-jaw, whereby said shields 25 may be removed or replaced independently therefrom, substantially as set forth.

5. In a cable-grip, the combination, with the lower jaw, of the shields removably inserted in the respective ends thereof, the vertical 30 bars connected at their lower ends to said shields, and the horizontal plates, to which the upper ends of said bars are removably secured, substantially as and for the purpose set forth.

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