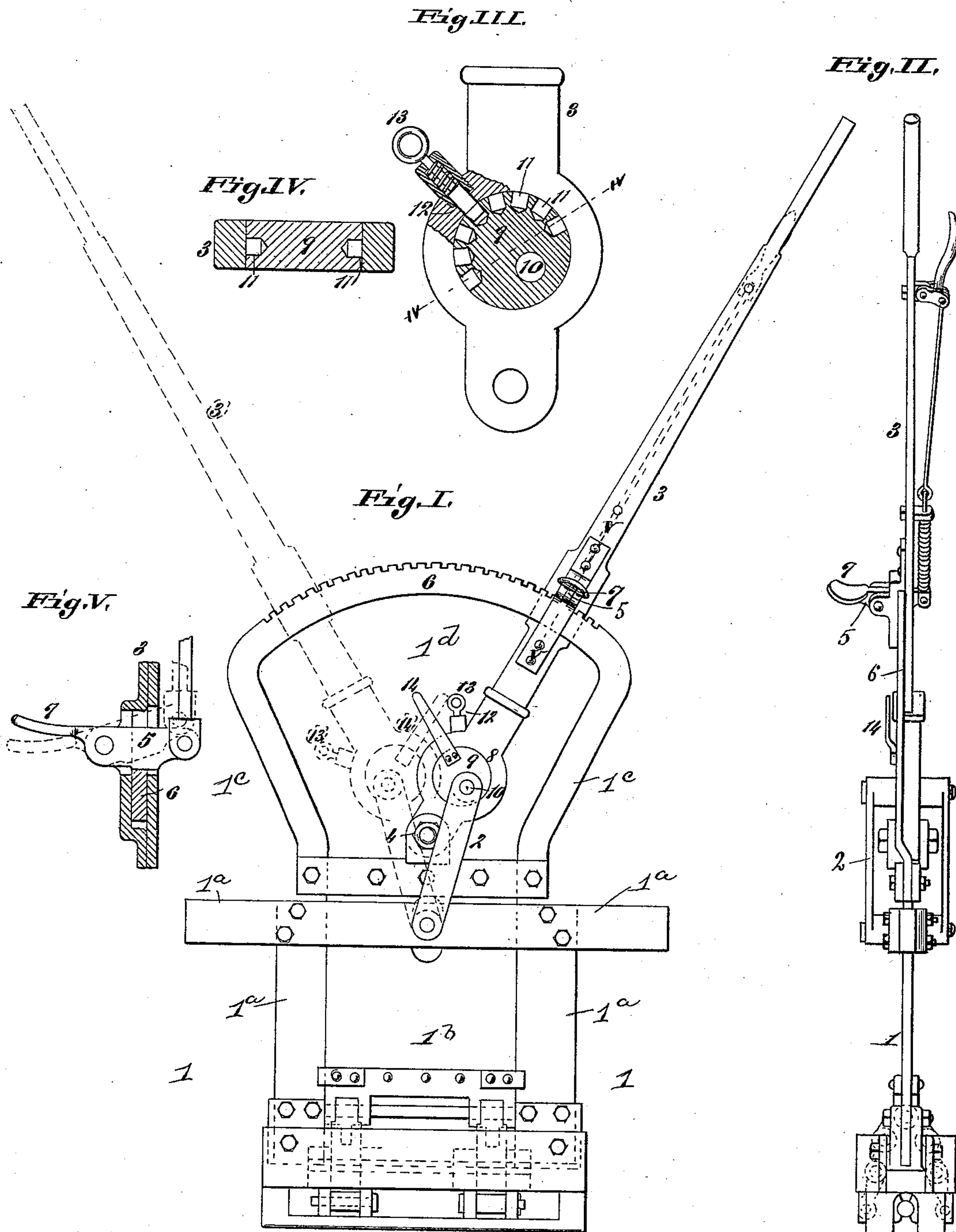


(No Model.)

F. A. YARD.
CABLE GRIP.

No. 483,952.

Patented Oct. 4, 1892.



Attest:
Harry S. Rohrer.
S. Cotton

Inventor:
Frank A. Yard
By Knight & Bro.
attys

UNITED STATES PATENT OFFICE.

FRANK A. YARD, OF ST. LOUIS, MISSOURI, ASSIGNOR, BY DIRECT AND
MESNE ASSIGNMENTS, TO EDWARD A. MORE, TRUSTEE, OF SAME
PLACE.

CABLE-GRIP.

SPECIFICATION forming part of Letters Patent No. 483,952, dated October 4, 1892.

Application filed April 15, 1891. Serial No. 389,024. (No model.)

To all whom it may concern:

Be it known that I, FRANK A. YARD, of the city of St. Louis and State of Missouri, have invented a certain new and useful Improvement in Cable-Grips, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My present invention relates to certain improvements in cable-grips, whereby the hand-lever in grasping the rope may be always pulled toward the operator while he remains facing the front of the car, and, further, the means for shortening or lengthening the stroke of the dies or jaws with a given movement of the lever, so that ropes of different diameters may be properly grasped, as more fully described hereinafter.

My invention consists in features of novel construction as hereinafter described, and pointed out in the claims.

Figure I is an elevation of my improved grip. Fig. II is an edge view. Fig. III is a vertical section through the eccentric portion of the grip. Fig. IV is a section taken on line IV IV, Fig. III. Fig. V is an enlarged section taken on line V V, Fig. I.

Referring to the drawings, 1 represents the lower part of a grip, which may be made and which is preferably made in accordance with the drawings and specifications of Patent No. 433,843, issued to myself and More, Jones & Co. August 5, 1890, although my present invention is susceptible of being used with almost any form of the lower part of a grip. I have shown it, however, in connection with a grip having a lower part constructed as in the patent referred to, so that a description of this part of the grip is here unnecessary. This lower part has a fixed frame 1^a and a vertically-movable plate 1^b. The movable plate is suspended from the movable frame 1^c of the upper part 1^d of the grip.

2 represents a link supporting the upper part and forming a connection between the hand-lever and the fixed frame, in which slides the vertically-movable plate which transfers the motion of the hand-lever to the jaw mechanism.

3 is the hand-lever, pivoted at 4 to the movable frame of the grip and having a catch 5 (see Fig. V) for engaging the teeth of the rack or segment 6 of the grip. The catch may be moved by hand through means of the ordinary hand-piece and rod connection, or it may be moved by the foot through means of a projection 7 formed upon it. I make no claim as inventor to the catch arrangement. The lower part of the hand-lever away from the pivot 4, or, in other words, between the pivot and the handle, is provided with a perforation or opening 8, in which fits an eccentric 9, to which the upper end of the link 2 is connected at 10. The eccentric has a number of holes or perforations 11 in its periphery, as shown in Figs. III and IV, adapted to be engaged by a spring-actuated pin 12, having a hand-hold 13 on its outer end. The pin holds the eccentric to any adjustment in the perforation of the hand-lever.

14 represents a short lever secured to the eccentric, by which the latter may be moved when the pin 12 is raised.

The operation is as follows: Supposing the jaws not to have the right amount of movement for grasping the rope properly, the pin 12 is raised and the eccentric turned slightly, so that the pin will engage a different hole 11. This turning of the eccentric will cause the same movement of the hand-lever to give a different movement or amount of movement to the jaws, and thus the jaws are adjusted to suit the size of the rope.

It is desirable for a gripman to be able to always pull the hand-lever toward him instead of pushing it away from him in grasping the rope, and my invention affords an easy means of accomplishing this result. When the car is moving in one direction, the point 10 of connection between the link 2 and eccentric 9 is thrown by means of the short lever 14 to one side, as shown by full lines in Fig. I, and when the car is moving in the other direction (without being turned around) the eccentric is moved to throw the point 10 of connection between the link 2 and eccentric 9 on the other side of the center, as shown by dotted lines in Fig. I, the eccentric being held in its different positions by the pin 12. The

pin 12 and short lever 14 being within handy reach the adjustment can be made almost instantaneously, and the gripman is enabled to always pull on the hand-lever in grasping the cable.

Particular advantage exists in locating the axis of the adjusting-eccentric away from the fulcrum or pivot 4 of the hand-lever 3 in that a finer adjustment is afforded as well as a toggle action provided, for it will be seen that the adjustment of the pin 10 is not on a line concentric with the pivot 4, and consequently the eccentric must be turned a greater distance for a given effective movement of the pin 10 than would be required if the pin were moved in an arc concentric with the pivot 4, thus affording a fine adjustment and providing a toggle action in which there is great strength or power during the latter part of the movement of the hand-lever as the cable is being grasped, while the first part of the movement of the hand-lever provides a rapid movement of the jaw of the grip.

I am aware that it is not new to connect the movable jaw of the grip to an adjustable crank movable on an arc concentric with the pivot of the operating-lever, as shown in the patent of Frank W. Hopps, No. 250,815, dated December 13, 1881, and do not make claim to anything therein shown and described.

Having thus fully described my invention and in what manner the same is to be performed, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In a cable-grip, the combination, with a gripping hand-lever, of an adjustable eccentric carried by the hand-lever, located between

the pivot and the handle of the hand-lever, and a connection between the eccentric and the gripping-jaws, substantially as set forth.

2. In a cable-grip, the combination of a gripping hand-lever, an eccentric carried by the hand-lever, located between the pivot and the handle of the hand-lever, a connection between the eccentric and the gripping-jaws, and a pin for holding the eccentric to different positions, substantially as set forth.

3. In a cable-grip, the combination of a gripping hand-lever, an eccentric carried by the hand-lever, located between the pivot and the handle of the hand-lever and provided with a perforated periphery, a connection between the eccentric and the gripping-jaws, a spring-actuated pin for holding the eccentric to its adjustment, and a hand-lever secured to the eccentric, by which it may be moved when the pin is raised, substantially as and for the purpose set forth.

4. The combination of the hand-lever carrying an adjustable eccentric located between its pivot and its handle, means for adjusting the eccentric, and connections from said eccentric to the jaws of the jaw-frame, substantially as described.

5. The combination of the hand-lever carrying an adjustable eccentric located between its pivot and its handle, means for locking the eccentric in different positions, an arm on the eccentric for rotating the latter, and connections from said eccentric to the jaws of the jaw-frame, substantially as described.

FRANK A. YARD.

In presence of—

E. S. KNIGHT,
THOS. KNIGHT.