

(No Model.)

2 Sheets—Sheet 1.

F. H. MORSE.

CABLE GRIP.

No. 385,195.

Patented June 26, 1888.

Fig. I.

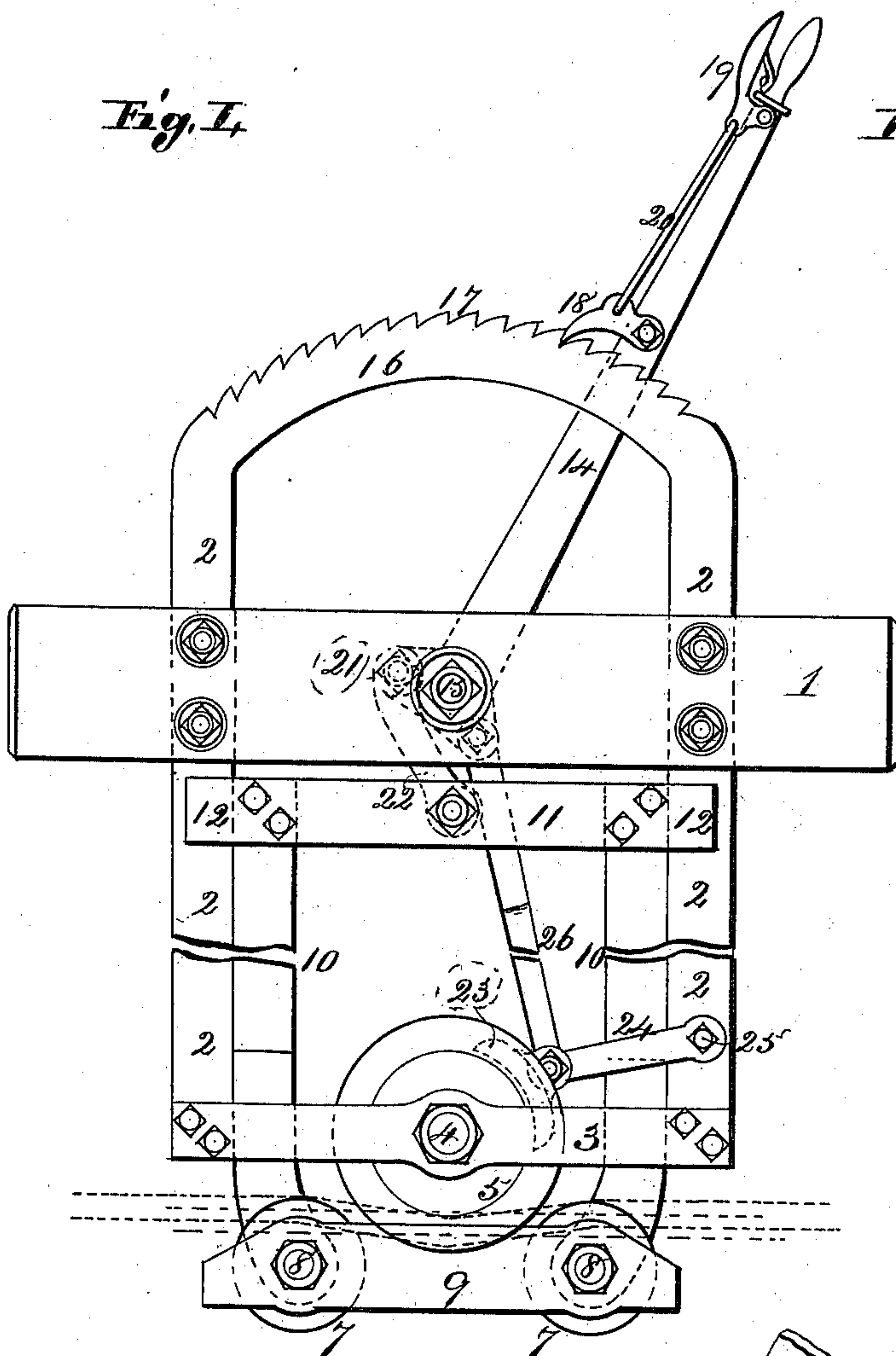


Fig. II.

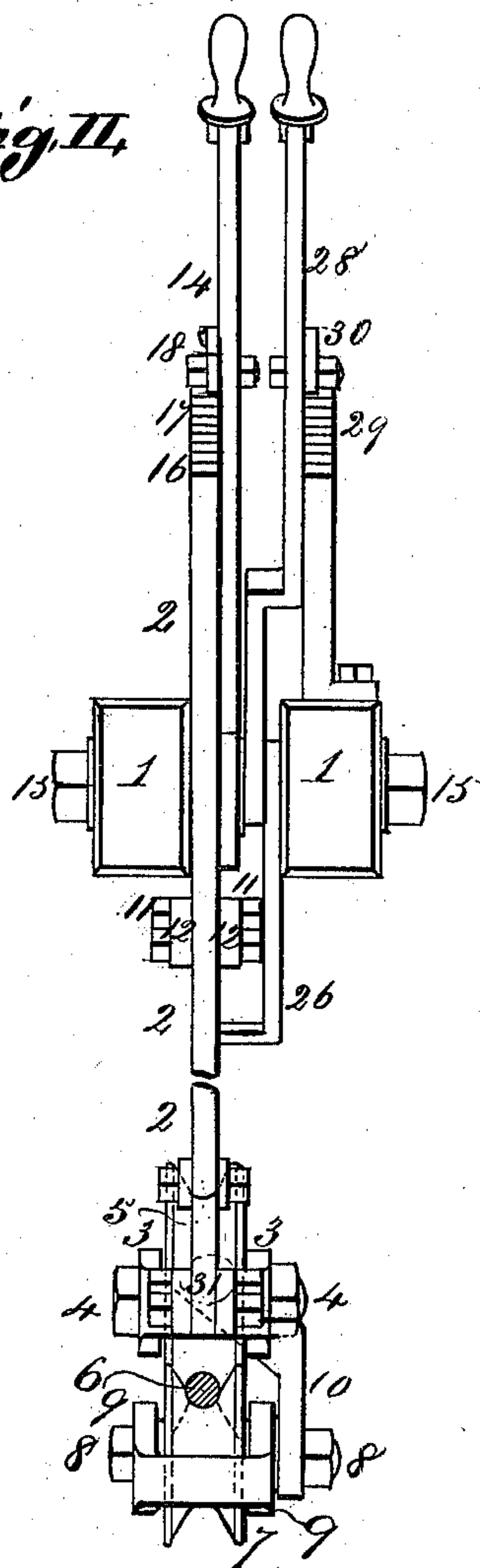
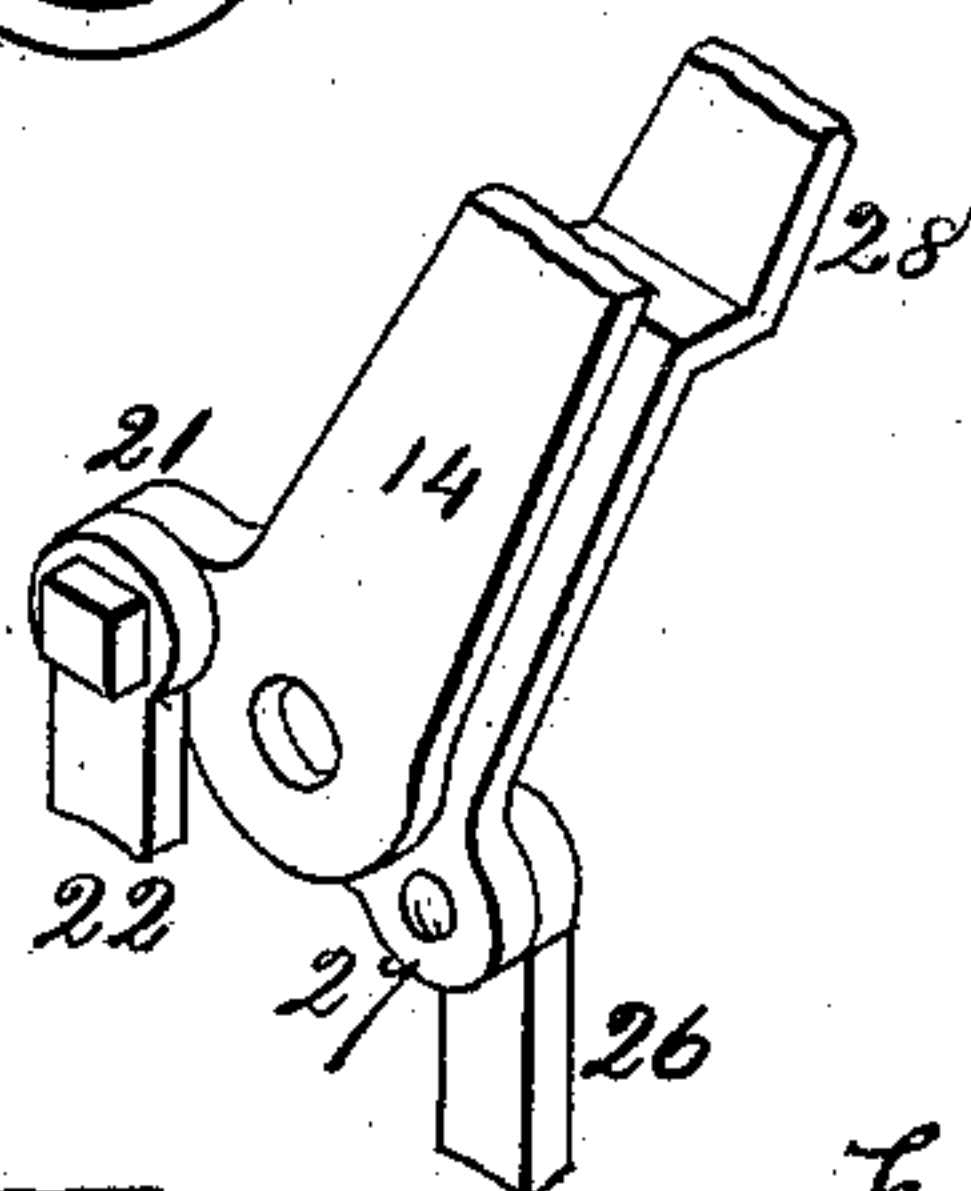


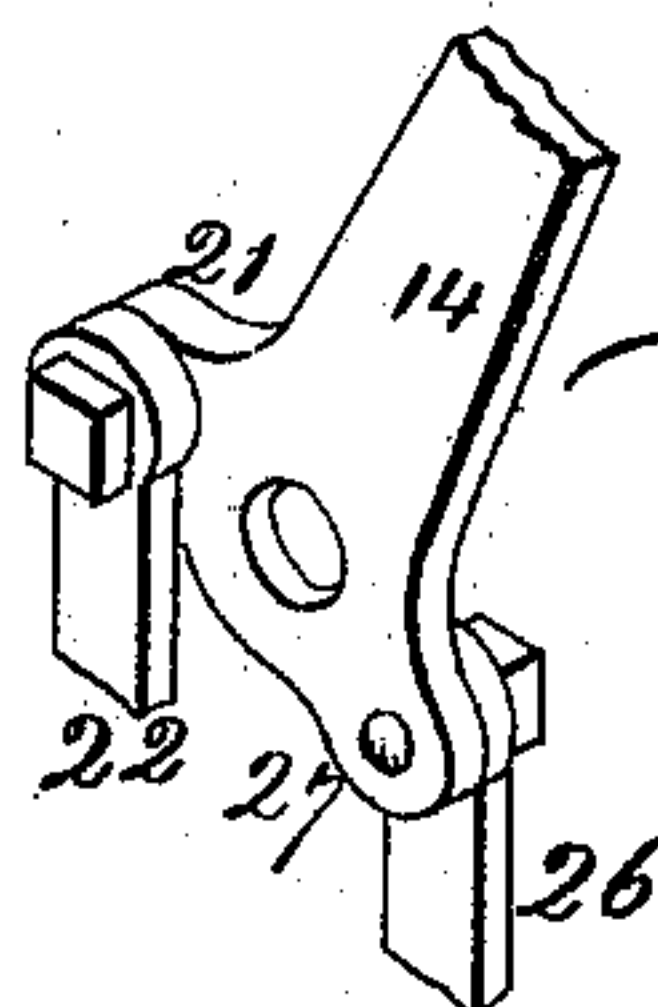
Fig. V.



Attest;

Geo. Wheelock
Emma Arthur.

Fig. VI.



Inventor;

Frederick H. Morse.

By Knight Bros.

Atty.

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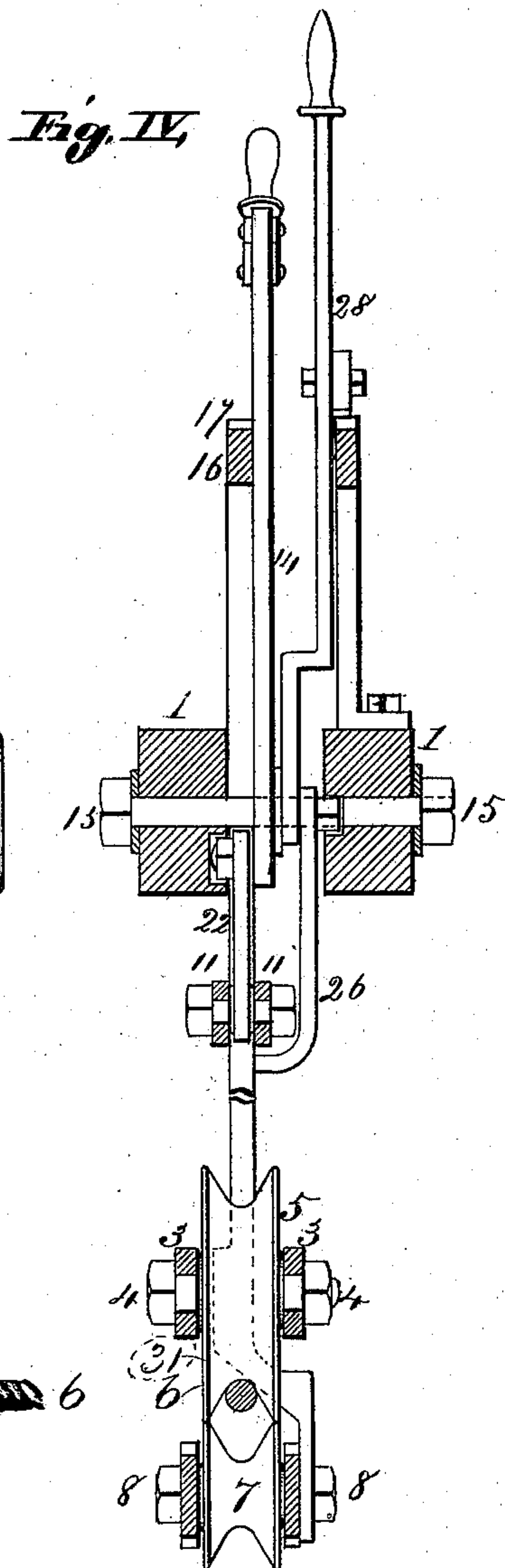
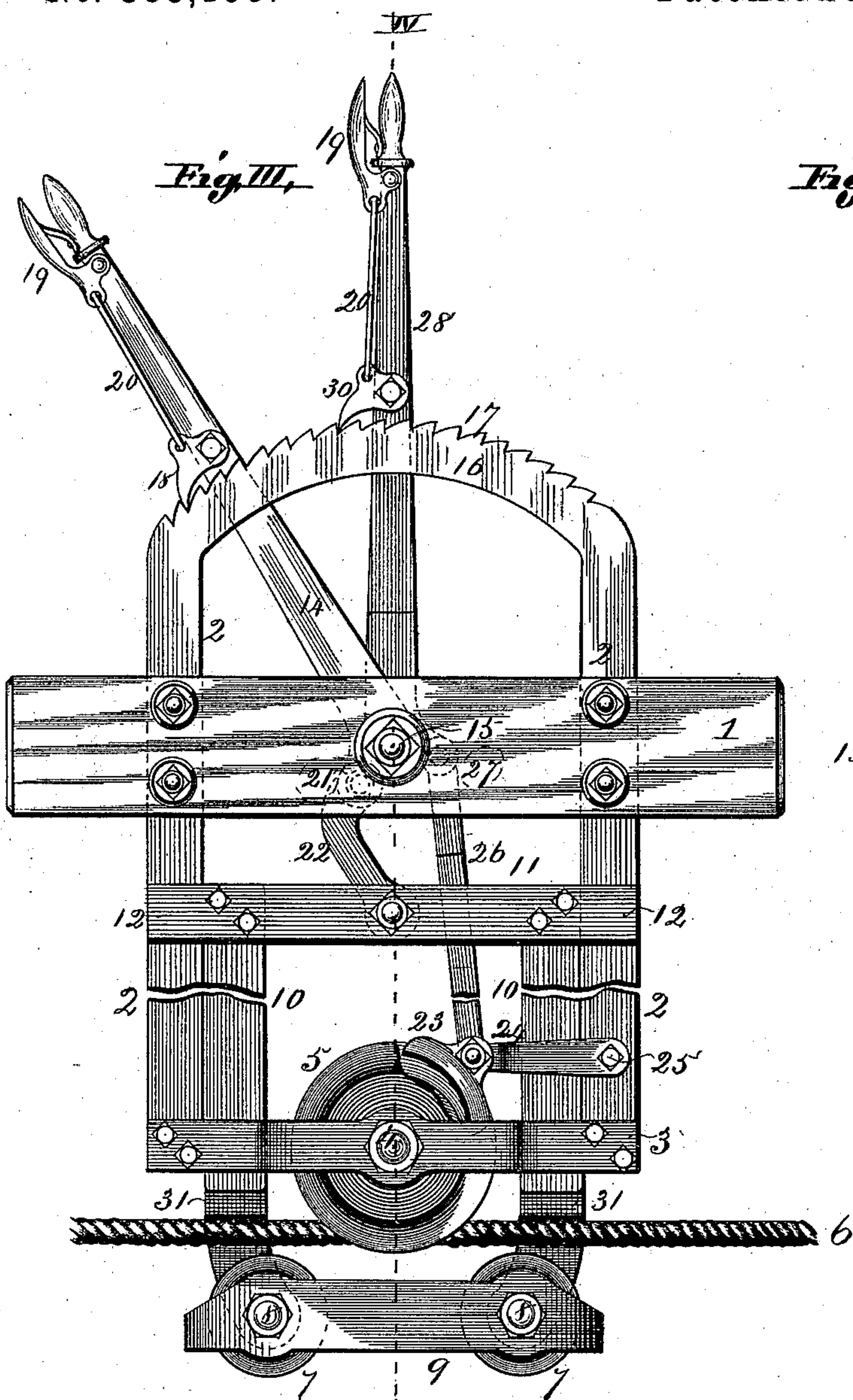
2 Sheets—Sheet 2.

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Emma Arthur*

Inventor;

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UNITED STATES PATENT OFFICE.

FREDERICK H. MORSE, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO
EDWARD M. STARR, OF SAME PLACE.

CABLE-GRIP.

SPECIFICATION forming part of Letters Patent No. 385,195, dated June 26, 1888.

Application filed April 11, 1887. Serial No. 234,414. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK H. MORSE, of the city of St. Louis, in the 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.

This is a device in which the cable runs between fixed and movable pulleys, a brake being arranged to bear against the fixed pulley to cause the car to be carried forward with the cable.

Figure I is a side view of the grip, parts being broken away. The device is shown in gripping position. Fig. II is an end view with the parts in position shown in Fig. I. Fig. III is a side view showing the cable ungripped. Fig. IV is a cross-section at IV IV, Fig. III. Fig. V is a detail perspective view showing the articulating parts of the two hand-levers. Fig. VI is a detail perspective view illustrating a modification in which a single hand-lever takes the place of the two.

1 1 are beams to which the device is attached. These beams may be attached to or connected with the car in any preferred manner.

2 is a frame firmly fixed to the beam. This frame has at its bottom horizontal bar or bars 3, giving support to a spindle, 4, on which turns a grooved pulley, 5. The pulley 5 forms the top bearing of the cable 6. The bottom bearing of the cable is upon two pulleys, 7, having bearing on spindles 8. The spindles 8 are supported on a vertically-moving frame having horizontal bars 9, preferably connected at the ends, as shown, upright bars 10, and horizontal bars 11 at top. The movable frame is guided by the uprights of the fixed frame 2 and by the bars 3 and the ends 12 of the bars 11, which lap over the sides of the fixed frame.

14 is a hand-lever fulcrumed to the beams 1 by a pin, 15, and working beside a guide-bar, 16, having a ratchet-rack, 17, on its upper side.

18 is a pawl pivoted to the hand-lever and engaging the teeth of the rack. The pawl is lifted from the rack by the usual means—namely, a small spring-lever, 19, and connect-

ing-rod 20. The hand-lever 14 has a short arm, 21, connected by a link, 22, with the cross-bars 11, so that when the lever is moved the frame carrying the lower pulleys, 7, is raised or lowered. When the pulleys 7 are in their upper position, as seen in Figs. I and II, the cable bears hard against these pulleys and also the upper pulley, 5, and this pressure may be made so hard as to form a slight bend in the cable, and this would tend to propel the car, as a certain amount of friction would result in the travel of the bend along the cable, and the resistance to the movement of the cable resulting from this cause would be applied to the movement of the car; but it is not proposed to depend alone on this pinching of the cable to drive the car. To cause the movement of the car, a brake-shoe, 23, is applied to the pulley 5 to arrest its rotation. The brake is connected to an arm, 24, which is pivoted to the side of the fixed frame by a pin, 25.

26 is a link connected at one end to the free end of the arm 24 and connected at the upper end to the arm 27 of a hand-lever, 28, fulcrumed on the same pin, 15, as the hand-lever 14, and held to position by similar means—namely, a ratchet-rack, 29, and pawl 30, the latter released by similar means. The upright bars 10 of the movable frame have inclined parts 31, which, when the frame is moved to its lowest position, push the cable sidewise from the groove of the pulley 5, and thus discharge it from the grip. These inclines are shown in Fig. III and their form plainly indicated by broken lines in Fig. IV.

In the use of the grip it is intended to put the lever 14 into about the position shown in Fig. I, so that the cable will press hard against the pulleys 5 and 7, but not so hard as to prevent it running forward while the car remains at rest. To grip the cable, the brake-shoe is forced down upon the pulley 5, so as to prevent its turning, or to at least check its rotation. Thus friction will be caused between the cable and this pulley and the car will be carried forward. Thus it will be seen that the gripman can grip or ungrip the cable with the movement of the brake-lever alone, but has the other lever in reserve to increase the press-

ure of the pulley on the cable on steep grades, or when otherwise required.

5 In shifting the cable from the grip the hand-lever 14 may be thrown down into a horizontal position, when the pulleys 7 will be thrown below the line of the cable and the inclines 31 will push the cable to one side.

10 In the modification illustrated in Fig. VI the arms 21 and 27 are both on one hand-lever, 14, so that the brake-shoe is applied and the pulleys 7 raised by the same lever.

I claim as my invention—

15 1. The combination, in a cable-grip, of a pulley against which the upper side of the cable bears, a brake adapted to lock said pulley, and a movable frame carrying pulleys adapted to bear against the under side of the pulley at each side of the top pulley, substantially as and for the purpose set forth.

20 2. The combination, in a cable-grip, of a

pulley adapted to bear upon the top of the cable, and a vertically-sliding frame carrying pulleys adapted to bear against the under side of the cable, and inclines on the frame adapted to push the cable aside as the sliding frame is moved downward, substantially as and for the purpose set forth. 25

3. The combination, in a cable-grip, of a stationary frame carrying a pulley against which the upper side of the cable bears, a brake adapted to bear against the pulley and operated by a hand-lever, and carrying pulleys adapted to press against the under side of the cable and force it against the upper pulley, for the purpose set forth. 30

FREDERICK H. MORSE.

Witnesses:

SAML. KNIGHT,
BENJN. A. KNIGHT.