

(No Model.)

R. McCULLOCH & J. VOLK.
CABLE LIFTER.

No. 460,484.

Patented Sept. 29, 1891.

Fig. I

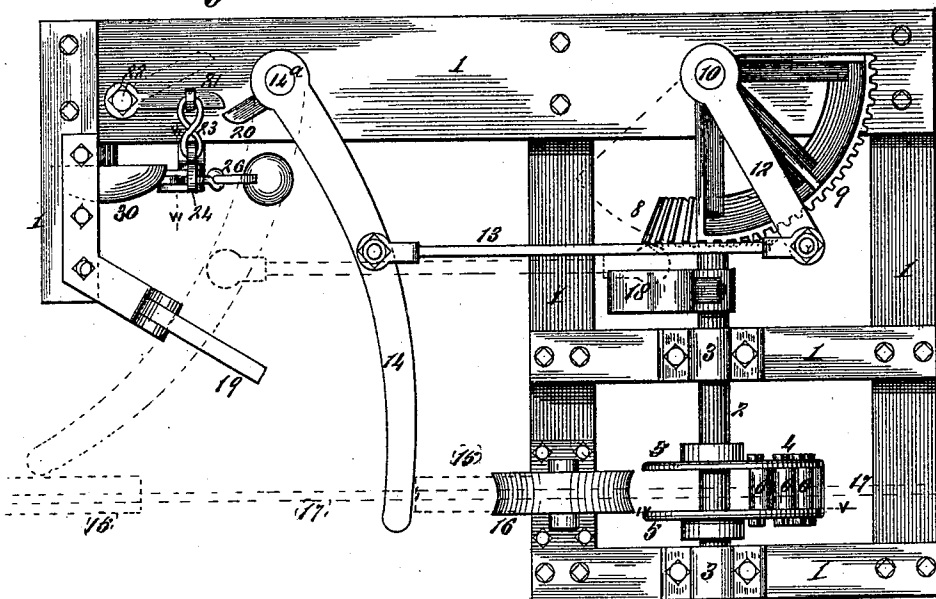


Fig. II.

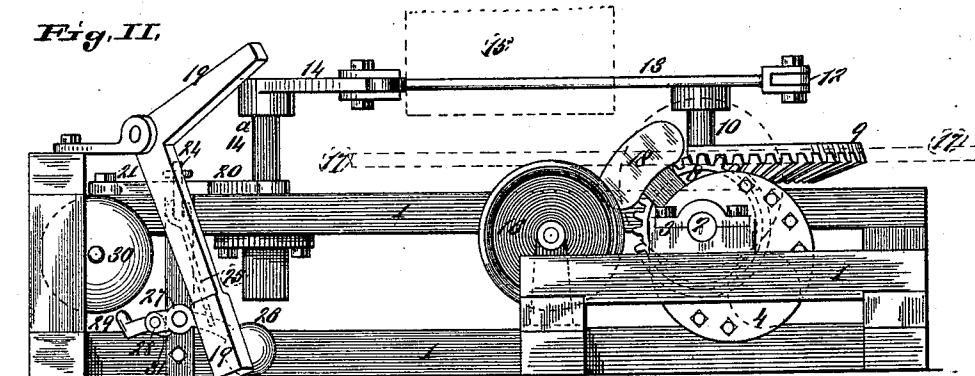


Fig. III.

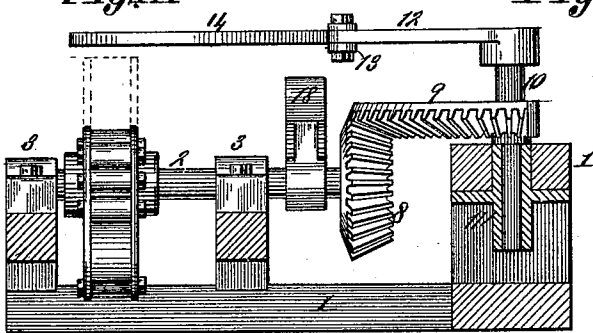


Fig. IV.

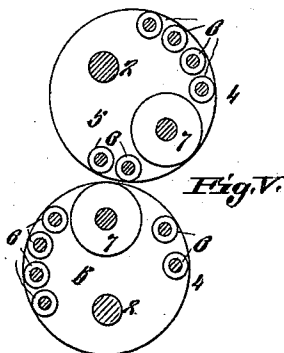
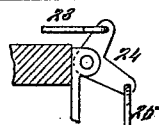


Fig. V.



Attest!
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UNITED STATES PATENT OFFICE.

ROBERT McCULLOCH AND JACOB VOLK, OF ST. LOUIS, MISSOURI; SAID VOLK
ASSIGNOR TO SAID McCULLOCH.

CABLE-LIFTER.

SPECIFICATION forming part of Letters Patent No. 460,484, dated September 29, 1891.

Application filed March 3, 1891. Serial No. 383,572. (No model.)

To all whom it may concern:

Be it known that we, ROBERT McCULLOCH and JACOB VOLK, both of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Cable-Lifters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

Our invention relates to a device for automatically lifting a cable so that it may be grasped by the grip; and it consists in features of novelty hereinafter fully explained, and pointed out in the claims.

Figure I is a top or plan view of our improved device. Fig. II is a side elevation. Fig. III is an end view, part in section. Figs. IV and V are vertical sections taken on line IV V, Fig. I, the two figures showing the lifting-cam in different positions. Fig. VI is a vertical section taken on line VI VI, Fig. I.

Referring to the drawings, 1 represents a suitable frame which is placed in the conduit of a cable railway.

2 represents a shaft journaled in boxes 3 secured to the frame. On this shaft is a cam 4, composed, preferably, of two disks 5, placed a short distance apart and connected by eccentrically-arranged rounds 6 and a roller 7. The cam is eccentrically secured to the shaft 2. (See Figs. IV and V.) On the shaft 2 is a bevel-wheel 8, engaged by a bevel-rack segment 9, secured to a shaft 10, stepped into a bearing 11, secured to the frame 1. (See Fig. III.) On the upper end of the shaft 10 is an arm 12, connected by a rod 13 to a lever 14, pivoted to the frame 1. The free end of the lever 14 is in the path of the grip 15 or other projection from the grip-car, (see dotted lines Figs. I and II,) so as to be moved by the grip-car from the position shown in full lines, Fig. I, to the position shown in dotted lines.

16 represents a pulley upon which the cable 17 rests when not raised to be grasped by the grip.

18 represents a counterbalance-weight on the shaft 2, which checks the too-rapid descent of the cam when it is returning to its normal position.

19 represents a counterbalance-weight in the form of a bell-crank lever pivoted to the frame 1, against which the lever 14 comes as it reaches the limit of its movement. The lever raises the weight 19 by coming against its upper arm, and when the grip leaves the lever the weight has a tendency to start the lever back to its normal position. On the lever 14 or its shaft 14^a is a projection 20, which, as the lever is moved by the grip, engages an arm 21, pivoted at 22 to the frame 1. The arm 21 is connected by a wire 23 to one end of a bell-crank lever 24, pivoted, as shown in Fig. VI, to the frame 1. The other end of the bell-crank lever is connected by a wire 25 (see Fig. II) to a weighted lever 26, pivoted at 27 to the frame 1. To the inner end of this lever is pivoted at 28 a hammer 29 for striking a gong 30. The hammer has a projection 31, which bears against the hub or pivot-point of the lever 26, so that when the lever falls, after being raised by the lever 14 through means of the described connection, the hammer will continue after the lever stops and strike the gong and then will fall back, as shown in Fig. II, with the projection 31 bearing against the hub of the lever.

The operation is as follows: The grip comes against the lever 14 and by turning the shaft 2 causes the cam 4 to move from the position shown in Fig. IV to the position shown in Fig. V and lift the cable, so that it can be grasped by the grip. As the grip moves the lever the hammer of the gong is operated, and when the projection 20 leaves the arm 21 the gong is rung, thus indicating to the man that the cable is raised sufficiently to be raised by the grip. When the grip leaves the lever 14, the parts all return to their normal positions ready to be operated again when the next car comes along. It will be understood that after the cam is started in its movement the cable, bearing on the rounds 6 and moving in the direction in which the cam is moving, will assist in turning the cam, and when the cam reaches the position shown in Fig. V the cable will ride on the roller 7. There is enough loose motion and spring in the projection 20 and arm 21 for the former

to slip past the latter as the lever 14 returns to its normal position, so that the projection will get in front of the arm, as shown in Fig. I.

We claim as our invention—

- 5 1. In a cable-lifter, in combination with a mechanism for raising the cable, a gong mechanism for indicating when the cable is raised.
2. In a cable-lifter, the combination of a cam consisting of two disks connected by the
10 rounds 6 and means for turning the cam automatically to raise the cable.
3. In a cable-lifter, the combination of a cam, a shaft upon which the cam is eccentrically placed, and means for turning the shaft
15 to operate the cam automatically, said cam being composed of disks connected by the eccentrically-arranged rounds 6, substantially as set forth.
4. In a cable-lifter, the combination of a
20 cam, a shaft to which the cam is secured, a pivoted lever adapted to be engaged by a projection on the car, and a connection between said lever and cam-shaft, whereby the cam is automatically operated to raise the cable, said
25 cam being composed of disks connected by rounds and having the roller 7, substantially as set forth.
5. In a cable-lifter, the combination of a cam, a shaft to which the cam is secured, a

bevel-wheel on the shaft, a bevel-rack segment engaging the bevel-wheel, a shaft to which the rack-segment is secured, an arm on the shaft, a pivoted lever adapted to be engaged by a projection on the car, and a rod connecting said lever to said arm, substantially as and for the purpose set forth.

6. In a cable-lifter, the combination of a cam composed of two disks joined by rounds and a roller, a shaft to which the cam is secured, a pivoted lever adapted to be engaged
40 by a projection on the car, and a connection between said lever and shaft.

7. In a cable-lifter, the combination of a cam, a shaft to which the cam is secured, a
45 bevel-wheel on the shaft, a rack-segment secured to a vertical shaft and engaging said bevel-wheel, an arm on said vertical shaft, a pivoted lever connected to said arm, a projection on the lever, an arm engaged by said projection, a weighted lever connected to said
50 arm, a gong, and a hammer operated by said weighted lever, substantially as and for the purpose set forth.

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In presence of—

E. S. KNIGHT,
A. M. EBERSOLE.