

No. 643,642.

Patented Feb. 20, 1900.

S. A. FRASER.  
GRIPPER FOR CABLE CARS.

(Application filed Nov. 2, 1899.)

(No Model.)

Fig. 2.

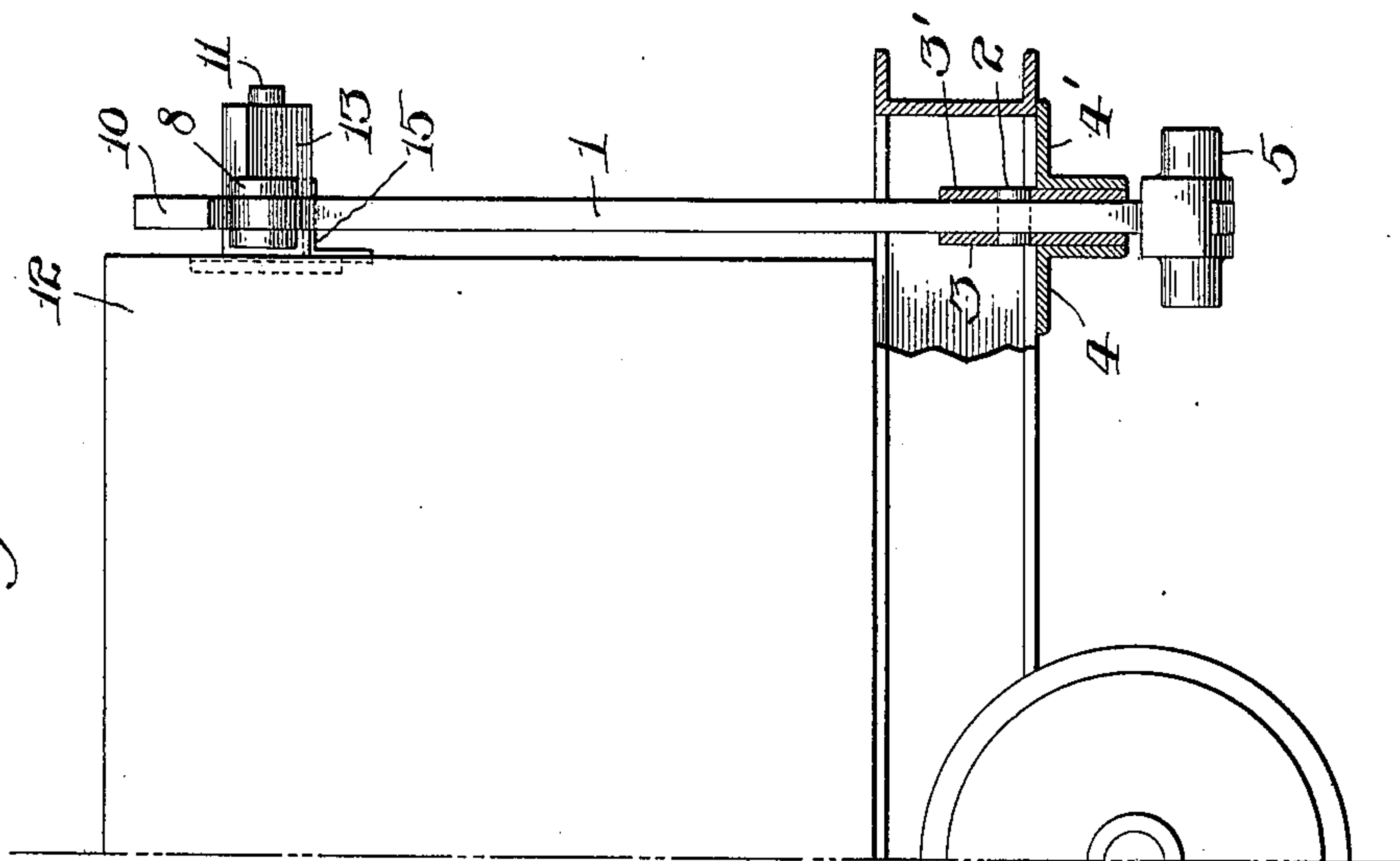
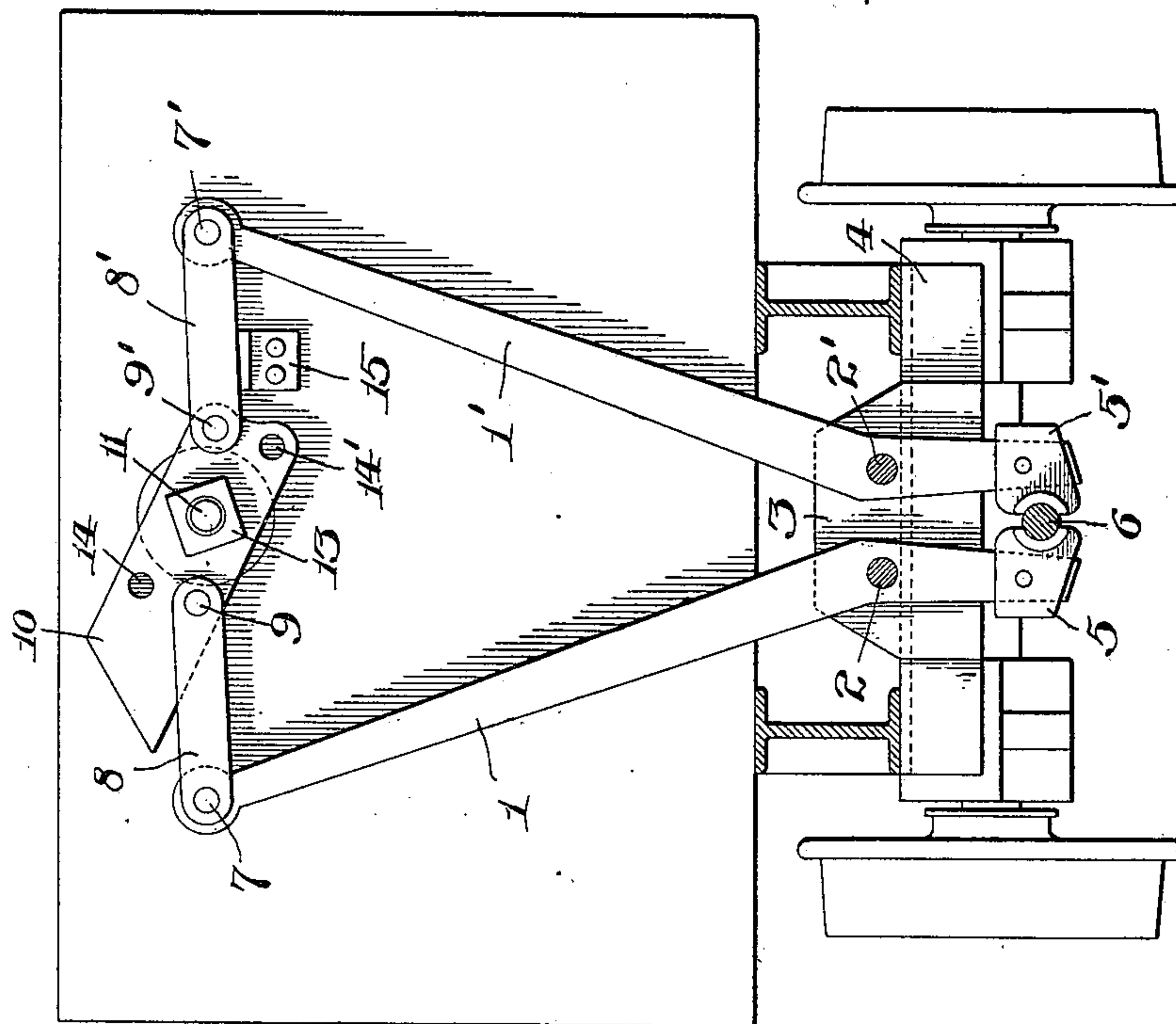


Fig. 1.



Witnesses.

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# UNITED STATES PATENT OFFICE.

SIMON A. FRASER, OF NEW GLASGOW, CANADA.

## GRIPPER FOR CABLE-CARS.

SPECIFICATION forming part of Letters Patent No. 643,642, dated February 20, 1900.

Application filed November 2, 1899. Serial No. 735,591. (No model.)

*To all whom it may concern:*

Be it known that I, SIMON A. FRASER, residing at New Glasgow, in the Province of Nova Scotia, Dominion of Canada, have invented certain new and useful Improvements in Grippers, of which the following is a specification.

My invention relates to the traction of cars, and is more particularly a frictional gripper for attaching cars to cables. Its primary object is to provide a simple, inexpensive, and easily-operated device which will automatically lock and firmly secure cars to cables.

In the accompanying drawings, illustrating my invention, Figure 1 is an end elevation, partially in section, of a car having my gripping mechanism attached thereto; and Fig. 2 is a side elevation thereof, part of the car-frame being broken away for the purpose of illustration.

As illustrated in the drawings, the levers 1 and 1' are pivoted upon the respective arbors 2 and 2', which are carried by the bearings 3 and 3', supported by the car-frame, the pivoted levers being braced in any suitable manner, as by the angle-bars 4 and 4'. The respective lower or short arms of the levers 1 and 1' are preferably provided with the shoes 5 and 5', which are adapted to coact in engaging or gripping the cable 6. The respective upper or long arms of the levers 1 and 1' are connected by the pivots 7 and 7' to the links 8 and 8', which links are connected, respectively, by the pivots 9 and 9' to the rocking lever 10. The lever 10 is supported upon the axle 11, which is secured to the car-body 12, a square head 13 being provided for the attachment of a wrench, by means of which the mechanism may be operated. The axle 11 may be either journaled or fixed in the car-body, but it is preferably fixed, and the rocking lever 10, with the head 13 secured thereto, journaled on the axle. The lever 10 is provided with the holes 14 and 14', farther removed from the axial point of the lever than are the pivots 9 and 9', the purpose of these holes being to provide for varying the action of the gripping mechanism in case of a smaller cable to compensate for wear or to increase the frictional resistance. A stop 15 is secured to the car-body in position to check the revolution of the lever 10, as by engagement with the link 8', after the lever has passed the dead-center or after the line joining the

points 9 and 9' has passed a position parallel with the line joining the points 7 and 7' in the action of spreading the long arms of the levers 1 and 1'. It will be seen that in this position of the mechanism the gripper is locked in frictional engagement with the cable, as the tendency of the rocking lever to revolve to the right and open the gripper, owing to the thrusts of the links, is checked by the stop, while to open the gripper it is merely necessary to knock down the long arm or turn the rocking lever to the left until it has passed the dead-center.

I claim—

1. In a gripper, a pair of pivoted gripping-levers, a pair of links each connected to one of said gripping-levers, a rocking lever connected to each of said links, which closes said gripper by spreading said links, and automatic means for locking said gripper, substantially as specified.

2. In a gripper, a pair of pivoted levers, a pair of links each pivoted to one of said gripping-levers, a rocking lever pivoted to each of said links, and having means for varying its pivotal connections with said links, and a stop coacting with said mechanism for locking the same, substantially as specified.

3. In a gripper, a pair of independently-fulcrumed gripping-levers, a pair of links each pivoted to one of said gripping-levers, a rocking lever pivoted to each of said links and fulcrumed intermediate of its pivotal connections with said links, and means for checking said rocking lever and automatically holding said gripper in closed position when said rocking lever has passed its dead-center position, substantially as specified.

4. In a gripper, a pair of independently-fulcrumed gripping-levers, a fulcrumed rocking lever, and means for connecting said rocking lever with each of said gripping-levers, by which the rotation of said rocking lever closes said gripper, and a stop coacting with said rocking lever for locking said gripper, substantially as specified.

Signed at New Glasgow, in the Province of Nova Scotia and Dominion of Canada, this 25th day of October, 1899.

SIMON A. FRASER.

In presence of—

ANNIE FRASER,  
ROBERT H. GRAHAM.