

No. 797,905.

PATENTED AUG. 22, 1905.

H. S. MOORE.
CABLE GRIP.

APPLICATION FILED JAN. 5, 1905.

2 SHEETS-SHEET 1.

Fig. 1.

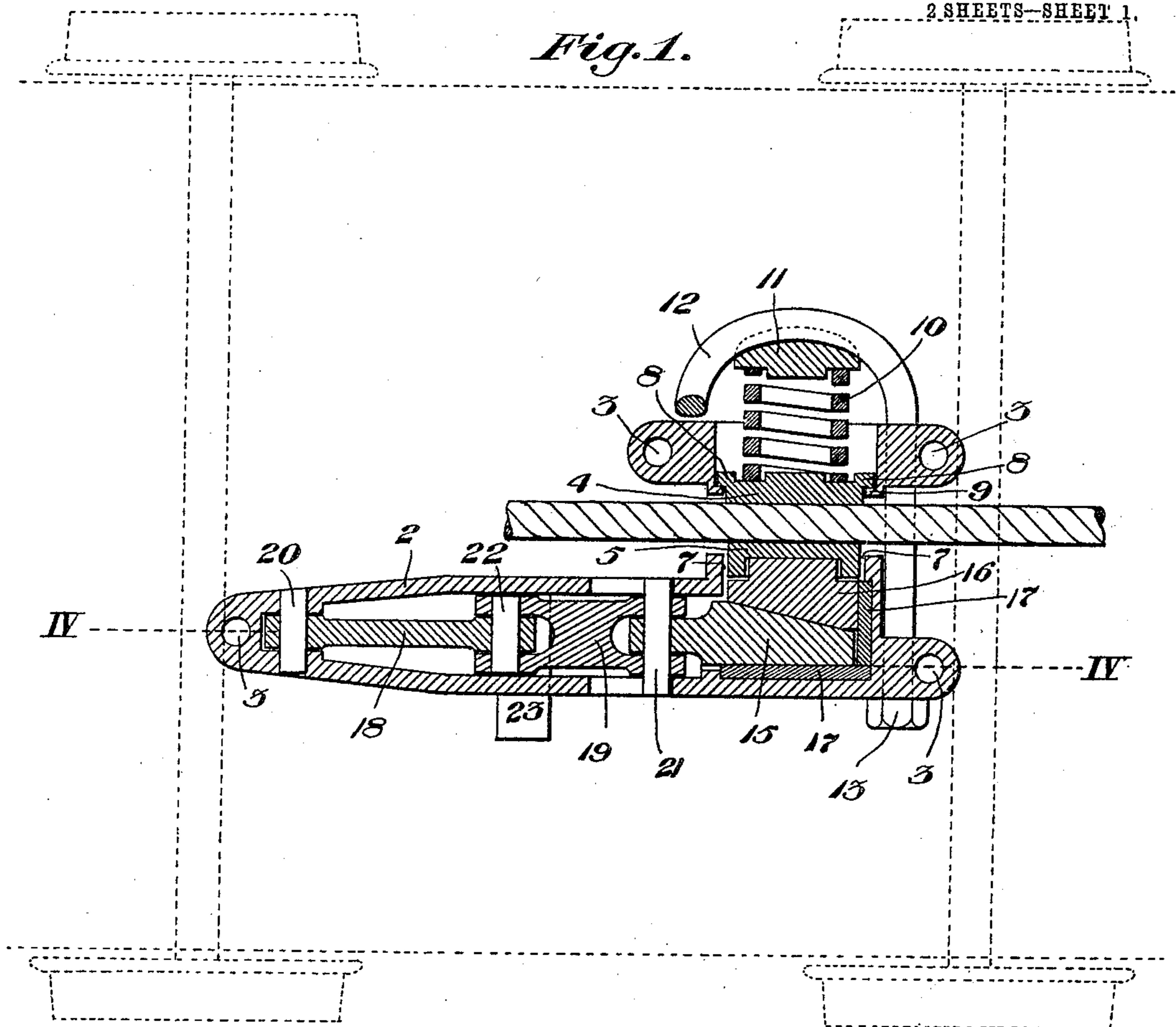
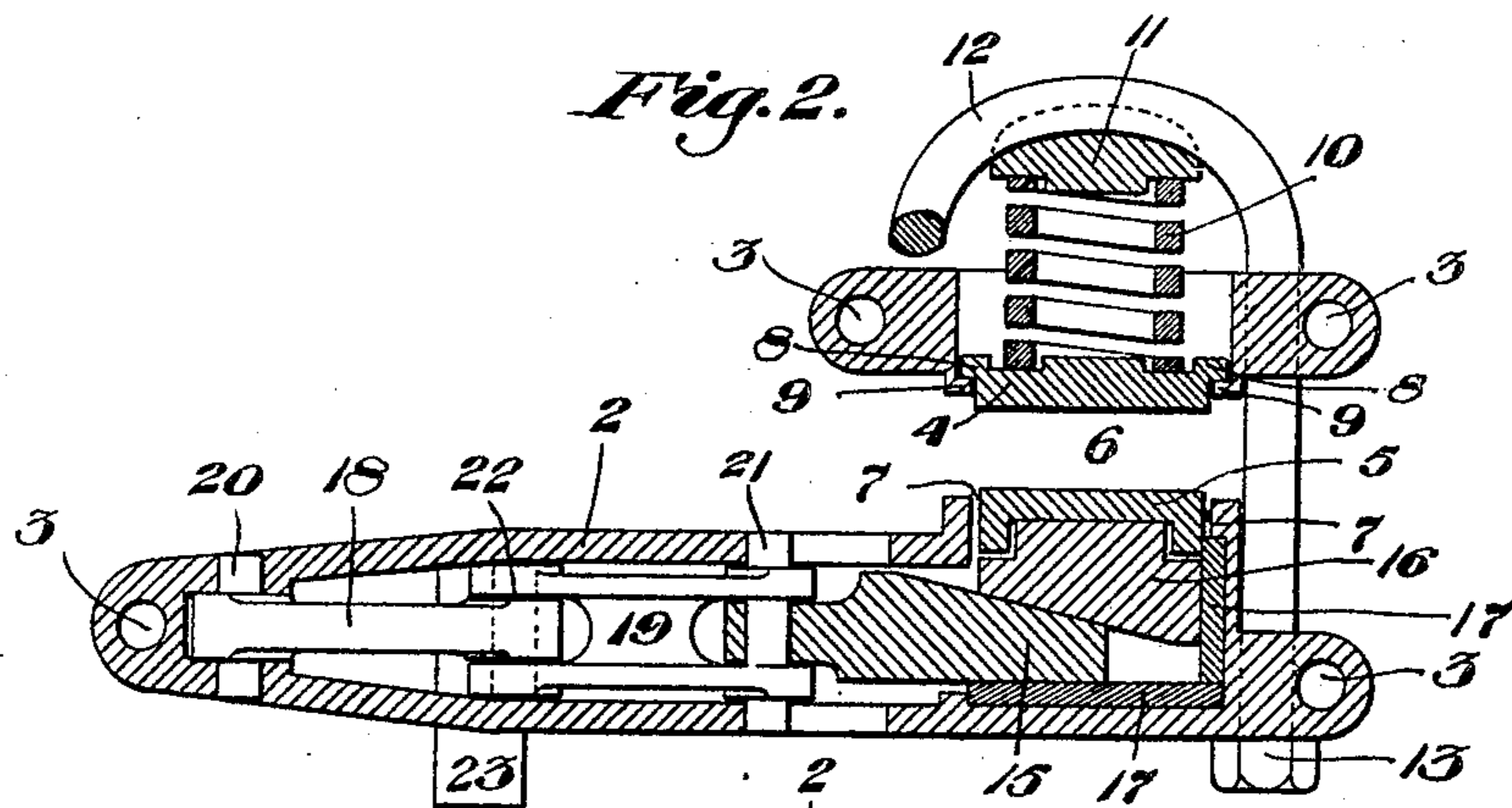


Fig. 2.



Witnesses:

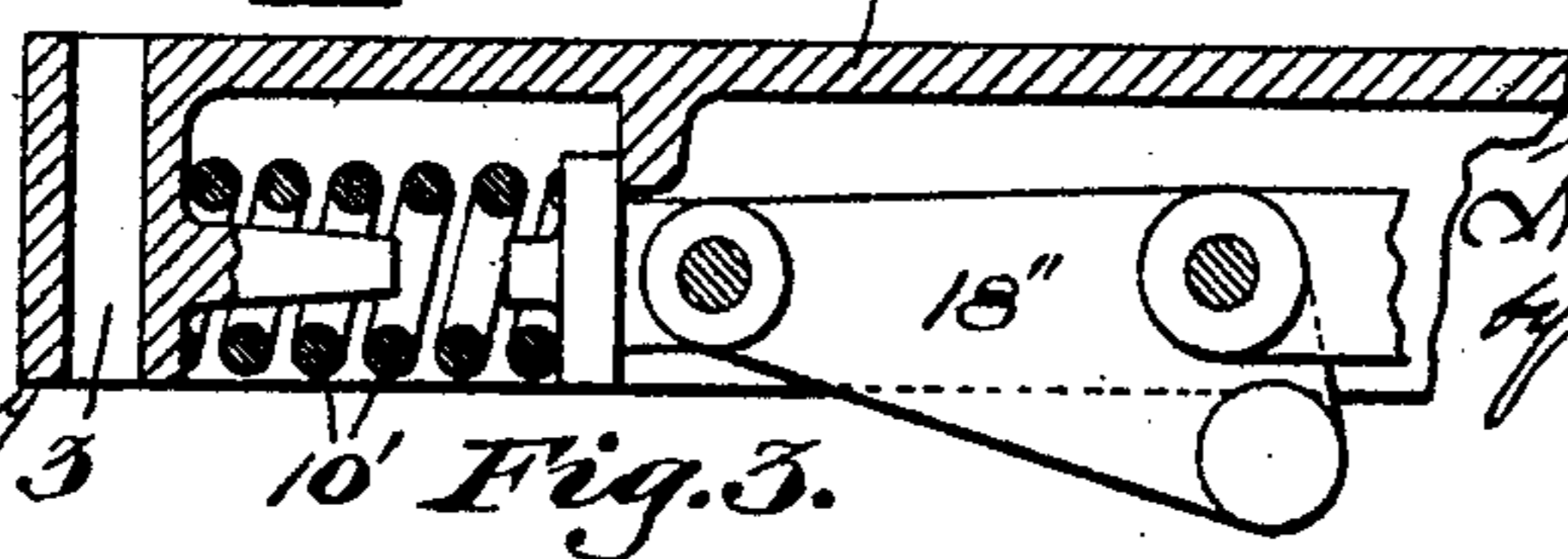
E. R. Rodd.

Chas. S. Riple

Inventor:

Horatio S. Moore

C. M. Clarke
his attorney



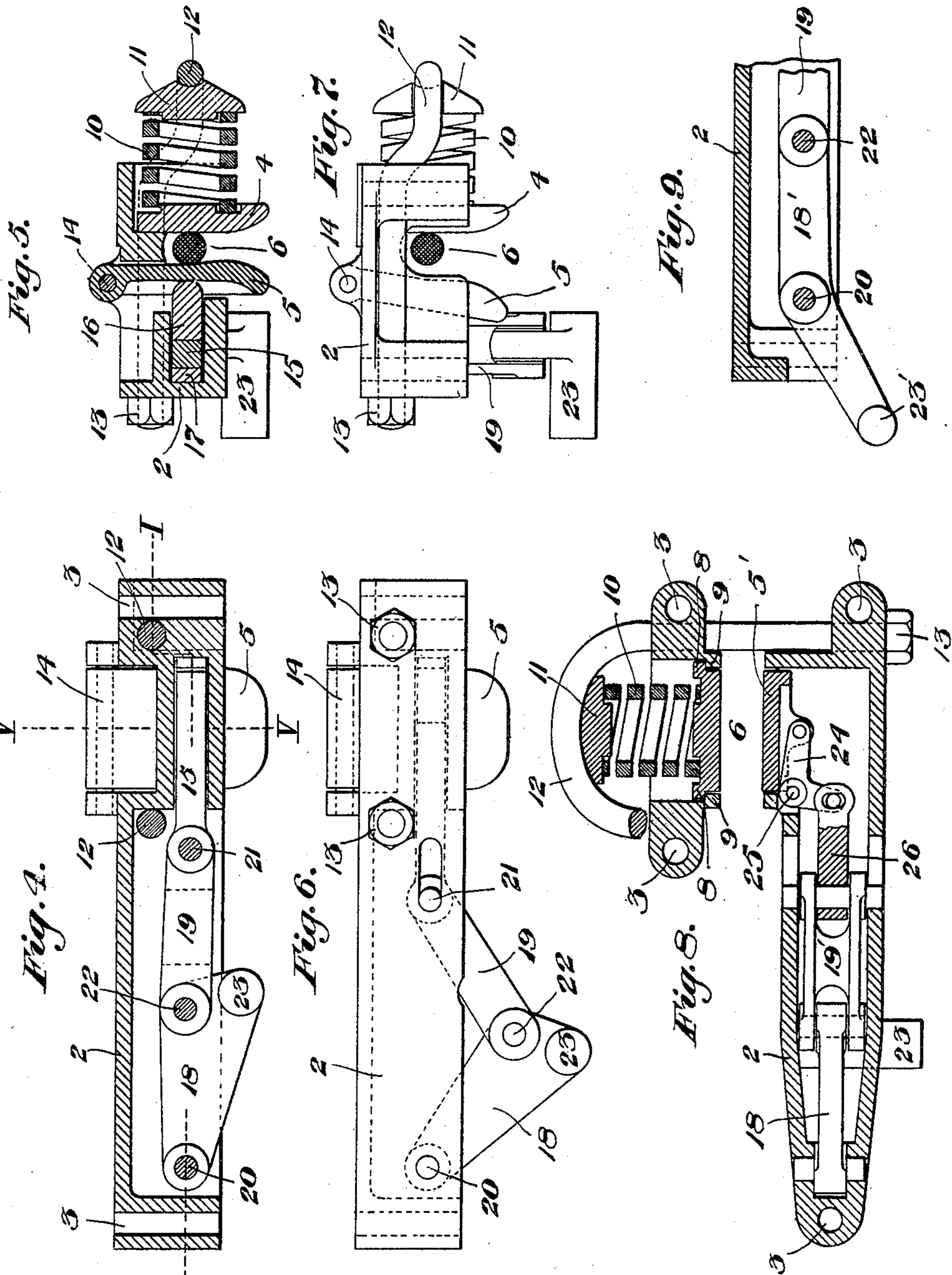
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2 SHEETS—SHEET 2.



Witnesses:
E. R. Rodd.

Chas. S. Pepley.

Inventor:
Horatio S. Moore
by O. M. Clarke
his Attorney

UNITED STATES PATENT OFFICE.

HORATIO S. MOORE, OF MONONGAHELA, PENNSYLVANIA.

CABLE-GRIP.

No. 797,905.

Specification of Letters Patent.

Patented Aug. 22, 1905.

Application filed January 5, 1905. Serial No. 239,769.

To all whom it may concern:

Be it known that I, HORATIO S. MOORE, a citizen of the United States, residing at Monongahela, in the county of Washington and State of Pennsylvania, have invented certain new and useful Improvements in Cable-Grips, of which the following is a specification, reference being had therein to the accompanying drawings, forming part of the specification, in which—

Figure 1 is a sectional plan view of my improved cable-grip engaging the cable, its position with relation to the car being indicated by portions of the car shown in dotted lines. Fig. 2 is a similar view of the device, showing the wedge withdrawn to release the cable. Fig. 3 is a sectional detail view showing a modified arrangement of cushioning-spring. Fig. 4 is a longitudinal vertical section indicated by the line IV IV of Fig. 1. Fig. 5 is a cross-section indicated by the line V V of Fig. 4. Fig. 6 is a side view of the grip, detached, in open position. Fig. 7 is an end view of Fig. 6. Fig. 8 is a horizontal sectional view similar to Fig. 2, illustrating a modified construction employing a bell-crank lever in place of the wedge. Fig. 9 is a sectional detail view of one end of the grip, showing a modified form of one of the toggle-links.

My invention refers to improvements in clutch or gripping devices for mine-cars, adapted for automatic operation to grip the cable or release it, controlled by actuating mechanism located between the rails of the track upon which the car travels. The present invention relates to the grip itself and not to the operating mechanism and is designed to operate with any suitable device adapted to engage a projecting portion of the grip construction to close the grip upon the cable or to release it from the cable. The device is designed to extend longitudinally of the car-bottom between the wheels and is suspended therefrom by any suitable means, as bolts from the bottom of the car or its framework.

Referring to the drawings, 2 is the main body portion of the grip, consisting of a frame supported from the car by bolts passing through holes 3 and provided at one end with oppositely-located gripping-shoes 4 5, adapted to have a limited range of movement toward or from each other across the intervening opening 6 for the cable. The main

frame is recessed at 7 on each side of the gripping-shoes for clearance, and the shoes are so mounted as to be capable of free movement.

The shoe 4 is provided with limiting-shoulders 8, engaging corresponding lugs 9, or with other suitable means, preventing undue backward travel, and a cushion-spring 10 is inserted between shoe 4 and a bearing 11, mounted in a U-shaped retaining-bolt 12. The terminals of said bolt extend through the opposite sides of the case and are threaded and provided with nuts 13, by which the pressure of the cushion-spring 10 may be regulated. Shoe 5 is pivotally hung at 14, and both shoes are preferably flared outwardly at the bottom to facilitate engagement of the cable. Shoe 5 is pressed inwardly to grip the cable against shoe 4 by a longitudinal wedge 15, slidingly mounted and engaging a corresponding wedge-shaped block 16, bearing against the shoe, as shown, both such wedges having a sliding bearing upon finished surfaces or interposed liners 17. The wedge 15 is actuated positively forwardly or backwardly by toggle-links 18 19, pivoted at 20 in the frame and at 21 to the wedge 15, respectively, being pivoted together at 22. One of said links, as 18, is provided with a projecting lug or gudgeon 23, adapted to ride upon a cam or inclined bar to throw the toggle-joint up to straighten the links and close the grips or to ride underneath an inclined flange or cam when in such straightened position to release the grips from engagement, as in Fig. 6. It will be understood that such lug 23 may be upon either of the links or that link 18' may be extended beyond its pivot 20 and provided with an actuating-lug 23', if desired, as in Fig. 9. In this latter construction the operation of the stationary actuating flange or cam is the reverse of the form used for the construction already described.

In Fig. 8 I have shown a construction wherein the shoe 5' is connected to link 19' by a bell-crank lever 24, pivoted in the frame at 25 and a connecting-link 26, as shown. The pin connections at the terminals of the bell-crank lever may be slotted for clearance, and this construction will serve to impart motion to shoe 5' to close or open simultaneously with the operation of the toggle-links.

In Fig. 3 I have shown a construction employing a cushion-spring 10', set against the

back of the frame and bearing forwardly with considerable initial compressed force against the toggle-link 18". This arrangement admits of considerable narrowing in width, as the main spring 10 may be dispensed with, the substitute spring 10' acting as a cushion to absorb all shock or provide for any necessary lack of full closing of the shoes in use. The operation will be readily understood from the foregoing description.

The advantages of my present invention are that it is very compact in construction and by reason of the longitudinal arrangement of the toggle-links in parallel with the line of cable does not occupy much space across the bottom of the car. It is very strong in construction, composed of few parts, not liable to get out of order, cheap to construct, and highly efficient in operation.

Changes and variations may be made by the skilled mechanic in the design or various details of construction; but all such changes are to be considered as within the scope of the following claims.

What I claim is—

1. A cable-gripping device provided with shoes adapted to grip or release transversely across the line of the cable, and actuating means therefor arranged longitudinally of the line of the cable, substantially as set forth.

2. A cable-gripping device provided with shoes adapted to grip or release transversely across the line of the cable, and actuating toggle-links therefor arranged longitudinally of the line of the cable, substantially as set forth.

3. A cable-gripping device provided with shoes, and a relatively movable wedge adapted to actuate one of said shoes, with means for actuating the wedge, substantially as set forth.

4. A cable-gripping device provided with shoes, a resilient backing for one of said shoes, and a wedge adapted to actuate the other shoe, with pivoted toggle-links connected with said wedge, one of said links having an operating-lug, substantially as set forth.

5. A cable-gripping device provided with shoes, and a wedge adapted to actuate one of said shoes, with an intervening wedge-block, and means for actuating the wedge, substantially as set forth.

6. A cable-gripping device provided with shoes, a resilient backing for one of said shoes, and a wedge adapted to actuate the other shoe, with pivoted toggle-links connected with said wedge, substantially as set forth.

7. In a cable-grip, the combination of a frame adapted to be secured underneath the car, transversely-arranged gripping-shoes, a backing for one of said shoes, a wedge and wedge-block providing a backing for the other of said shoes, means for actuating said wedge, and means providing a cushioning resistance therefor, substantially as set forth.

8. In a cable-grip, the combination of a

frame adapted to be secured underneath a car, transversely-arranged gripping-shoes, a U-shaped bolt providing a backing for one of said shoes, an intervening spring, and a wedge and wedge-block providing a backing for the other of said shoes, with means for actuating the wedge, substantially as set forth.

9. In a cable-grip, the combination of a frame adapted to be secured underneath a car, transversely-arranged gripping-shoes, a U-shaped bolt providing a backing for one of said shoes with an intervening spring, and a wedge and wedge-block providing a backing for the other of said shoes, with pivotally-connected toggle-links attached to the wedge and to the frame, and means incorporated with one of said links adapted to engage an opening or closing device, substantially as set forth.

10. In a cable-grip, the combination of a frame adapted to be secured lengthwise underneath a car, shoes mounted therein arranged to grip transversely of the line of cable, toggle-links arranged longitudinally of the frame, means connected with one of said links arranged to transmit motion to one of said shoes, and a cushioning device, substantially as set forth.

11. In a cable-grip, the combination of a frame adapted to be secured lengthwise underneath a car, shoes mounted therein arranged to grip transversely of the line of cable, toggle-links arranged longitudinally of the frame, means connected with one of said links arranged to transmit motion to one of said shoes, and a cushioning device, with means incorporated with one of said links adapted to engage actuating mechanism, substantially as set forth.

12. In a cable-grip, the combination of a frame adapted to be secured to the car, transversely-arranged gripping-shoes, a wedge adapted to actuate one of said shoes, means for actuating said wedge, and means providing a cushioning resistance therefor, substantially as set forth.

13. In a cable-grip, the combination of a frame adapted to be secured to a car, transversely-arranged gripping-shoes, a wedge adapted to actuate one of said shoes, pivoted toggle-links attached to the wedge and to the frame, and means incorporated with one of said links adapted to engage an opening or closing device, substantially as set forth.

14. In a cable-grip, the combination of a frame adapted to be secured lengthwise underneath a car, a stationary shoe and a movable shoe mounted therein arranged to grip transversely of the line of cable, and means arranged longitudinally of the line of the cable adapted to actuate the movable shoe, substantially as set forth.

15. In a cable-grip, the combination of a frame adapted to be secured lengthwise underneath a car, a stationary shoe and a mov-

able shoe mounted therein arranged to grip transversely of the line of cable, and means arranged longitudinally of the line of the cable adapted to actuate the movable shoe, with means incorporated with said actuating means adapted to engage an actuating mechanism, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HORATIO S. MOORE.

Witnesses:

R. H. McLARN,
C. M. CLARKE.