

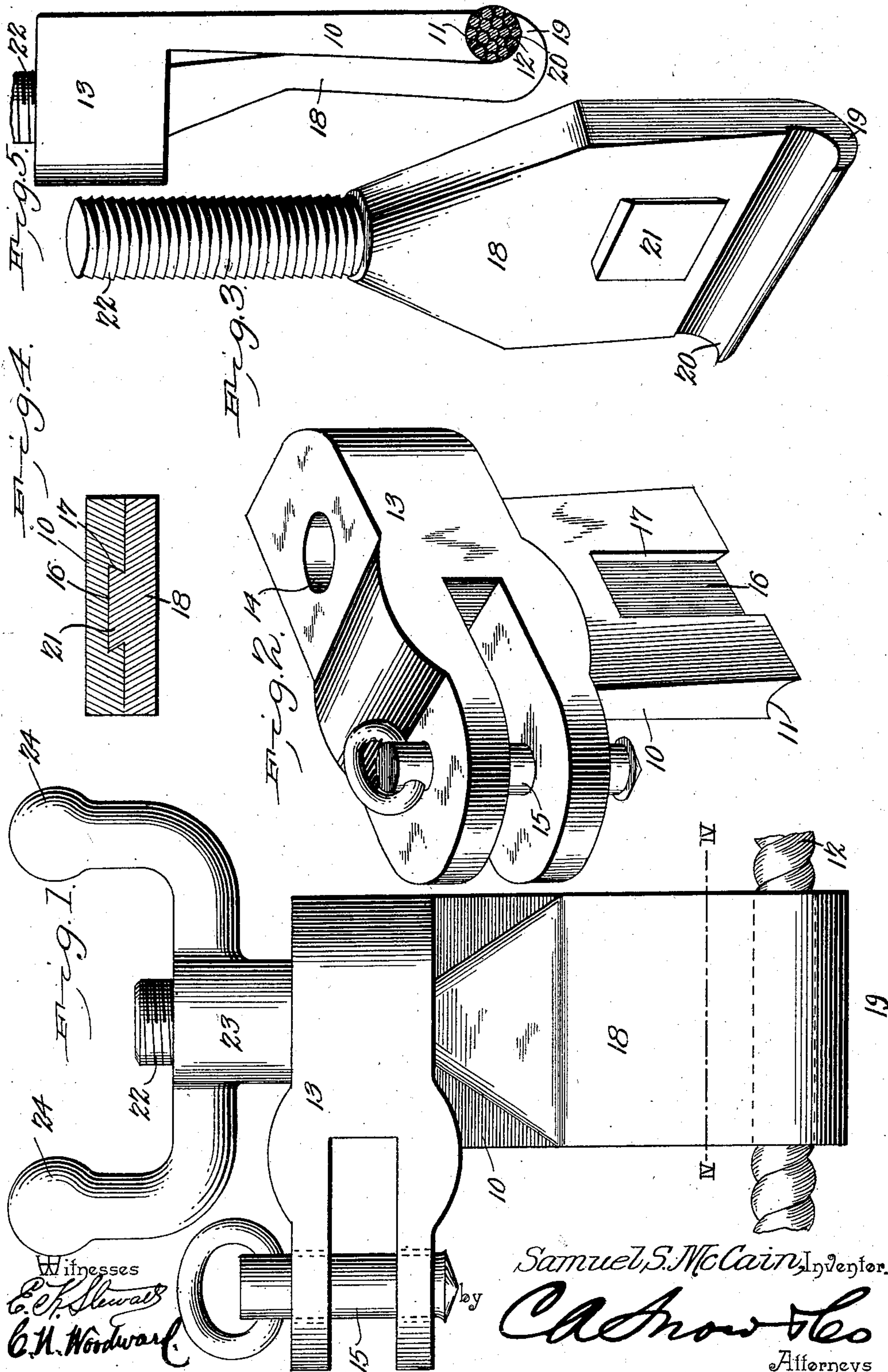
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S. S. McCAIN.  
CABLE GRIP.

APPLICATION FILED OCT. 28, 1902.

NO MODEL.



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# UNITED STATES PATENT OFFICE.

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## CABLE-GRIP.

SPECIFICATION forming part of Letters Patent No. 720,458, dated February 10, 1903.

Application filed October 28, 1902. Serial No. 129,163. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL S. MCCAIN, a citizen of the United States, residing at California, in the county of Washington and State of Pennsylvania, have invented a new and useful Cable-Grip, of which the following is a specification.

This invention relates to the mechanism employed for gripping the cable in cable-railways, more particularly to the endless cables employed in mines, manufactories, and similar localities where cars are used for transporting ore, coal, or other materials or products from place to place, and is designed more particularly for use upon that class of cable-lines which are carried around short curves at the intersections of other lines or in other localities and where switches and turnouts frequently occur, the improved device herein illustrated being especially designed to pass the carrier-sheaves at curves, crossings, and similar places.

The principal object of the invention is to provide a simply-constructed and easily applied and operating mechanism that will pass the carrier-sheaves and other obstructions without being affected thereby or injuring the sheaves and switches.

The invention consists in certain novel features of construction, as hereinafter shown and described, and specified in the claims.

In the drawings illustrative of the invention, Figure 1 is a side elevation of the grip mechanism detached from the car. Fig. 2 is a perspective view of the stationary portion of the device detached. Fig. 3 is a perspective view of the movable portion of the device detached. Fig. 4 is a transverse section on the line IV IV of Fig. 1 looking in the direction of the arrow. Fig. 5 is an end view of the lower or grip portion of the device with the cable in transverse section.

The improved device may be applied to any of the various forms of cable-cars, but, as before stated, is more particularly designed for use in connection with cars employed in mines, manufactories, and similar localities and will preferably be arranged in connection with the coupling means by which the cars are connected into trains.

While the device is thus designed more particularly for the class of cars above enu-

merated, I do not wish to be limited to any specific form of car or to any specific use to which the cars may be put, as the device may be employed to couple any of the cars employed upon any of the various forms of cable-railway.

The improved device consists in a stationary member 10, having a transverse recess 11 in one end adapted to engage one side of the cable, a portion of which is indicated at 12 in Fig. 1, the other end of the member 10 being connected to and integral with a coupling-head 13, the portion 10 extending from one side of the coupling-head, as indicated. An aperture 14 is formed through the coupling-head 13 in the rear of the coupling-pin 15 and in alignment longitudinally with the center of the member 10, as shown. Within the inner face of the member 10 is a cavity 16, longitudinally disposed relative thereto and with dovetailed sides 17, as indicated in Figs. 2 and 4.

The movable member is indicated at 18 and is provided on one end with a laterally-extended portion 19, having a semicircular cavity 20, corresponding to the cavity 11, and adapted to engage the opposite side of the cable 12 when the member 18 is placed in position in engagement with the member 10, as indicated in Fig. 5, the two portions 11 19 thus forming the opposing gripping-jaws, as will be obvious.

The member 18 is provided with a lug 21 extending from its inner face and formed with dovetailed edges corresponding to and adapted to engage the dovetailed edges 17 in the recess 16, the opposing portions 16 21 thus forming a guiding means between the parts 10 18, which will prevent lateral movement between them by means of the interlocking dovetailed edges and will likewise prevent transverse movement, while leaving the member 18 free to move longitudinally relative to the member 10.

The member 18 is provided with a threaded extension 22, adapted to pass through the aperture 14, and extend beyond the coupling-head 13, and provided with a threaded nut 23, having operative handles 24, as shown in Fig. 1. By this simple arrangement it will be obvious that by rotating the nut 23 the member 18 may be moved longitudinally of the member 10, and thereby grip the cable 12



firmly against the portion 11 of the member 10, the members 16 21 permitting this movement, while at the same time effectually preventing lateral or transverse movement between the parts.

It will be noted that the portions of the device below the head 13 are comparatively thin, the parts 10 and 19 being substantially equal to or slightly less than the diameter of the cable which they engage, and this comparatively thin portion extends for a considerable distance above the cable, so that no portion of the device extends beyond the cable on one side to come in contact with the guide-pulleys when passing around curves or at crossings, switches, and other similar localities.

The outer surfaces of the portions 10 12 adjacent to the cable are therefore entirely without projections of any kind to be engaged by guide-pulleys, switches, and other similar projections and will therefore run with the least possible friction and resistance.

The threaded extension 22, which is the operative screw portion of the device by which the "grip" is accomplished, it will be noted, is located either within or entirely above the coupling-head 13 and will therefore never come in contact with any of the obstructions adjacent to the cable, but will be fully protected from injury and friction, except that of its operating-nut 23. This forms a very simple, easily-applied, and effective device admirably adapted to the purposes designed, and will operate with the minimum of resistance, and will not injuriously affect the parts of the line with which it comes in contact.

The device may be located upon any portion of the car, but, as before stated, will preferably be located at one end in connection with the coupling member 13 15.

The device may be formed of any required size to adapt the device to be gripped to any-sized cable and may be modified in minor particulars without departing from the principle of the invention or sacrificing any of its advantages.

Having thus described the invention, what is claimed is—

1. In a device of the character described, a stationary member of a thickness substantially equal to the diameter of the cable and having a concaved surface engaging one side thereof, a movable member longitudinally disposed relative to said stationary member and provided with a lateral extension of a width substantially equal to the diameter of the cable and having a concaved surface engaging the opposite side thereof, and means for forcibly actuating said movable member whereby the cable will be gripped between said concaved surfaces with no portion of the device extending beyond the cable upon one side, substantially as described.

2. In a device of the character described, a

stationary member of a thickness substantially equal to the diameter of the cable and having a concaved surface engaging one side thereof, a movable member longitudinally disposed relative to said stationary member and provided with a lateral extension of a width substantially equal to the diameter of the cable and having a concaved surface engaging the opposite side thereof, a threaded rod extending from said movable member, and a nut operatively engaging said threaded rod and provided with means for rotating it, whereby said cable will be gripped between said concaved surfaces with no portion of the device extending beyond the cable upon one side, substantially as described.

3. In a device of the character described, a stationary member of a thickness substantially equal to the diameter of the cable and having a concaved surface on one end engaging the cable and with a perforated lateral extension upon the other end, a movable member longitudinally disposed relative to said stationary member and provided with a lateral extension upon one end of a width substantially equal to the diameter of the cable and having a concaved surface engaging the opposite side thereof, said movable member having a threaded extension movably engaging said perforation, and a nut engaging said threaded extension, whereby the cable will be gripped forcibly between said concaved surfaces and with no portion of the device extending beyond the cable upon one side, substantially as described.

4. In a device of the character described, a coupling-head provided with a perforation and having the stationary member of the grip mechanism extending therefrom of a thickness substantially equal to the diameter of the cable and having a concaved surface engaging one side thereof, a movable grip-jaw member longitudinally disposed relative to said stationary-jaw member and provided with a lateral extension of a width substantially equal to the diameter of the cable, and with a concaved surface engaging the opposite side thereof and having a threaded extension movably engaging the perforation in said coupling-head, a nut engaging said extension on the opposite side of said coupling-head, and means for rotating said nut, whereby the cable will be gripped with no portion of the device extending beyond the cable at one side, substantially as described.

5. In a device of the character described, a stationary member of a thickness substantially equal to the diameter of the cable and provided with a longitudinal recess having dovetailed sides, said stationary member having a concaved surface engaging one side of the cable, a movable member longitudinally disposed relative to said stationary member and having a lug provided with dovetailed sides and slidably engaging said dovetailed-sided cavity and provided with a lateral extension of a width substantially equal to the



diameter of the cable and having a concaved surface engaging the opposite side thereof, and means for forcibly actuating said movable member longitudinally of said stationary member, substantially as described.

5 6. In a device of the character described, a stationary member having a transverse grip-recess in one end and with a coupling-head extending laterally from the opposite end and  
10 having an aperture therethrough, a movable member longitudinally disposed relative to said stationary member and provided with a laterally-extended opposing grip member adapted to engage the cable on the opposite  
15 side from said grip-recess and with a threaded extension engaging said coupling-head aperture, and a threaded operating-handle engaging said threaded extension on the opposite side of said coupling-head from said movable  
20 member, substantially as described.

7. In a device of the character described, a stationary member having a transverse grip-recess in one end and a coupling-head having

an aperture therethrough upon the opposite end, said stationary member having a longi- 25 tudinally-disposed dovetailed recess in its inner face, a movable member longitudinally disposed relative to said stationary member and provided with a dovetailed lug slidably engaging said dovetailed recess, said movable 30 member having a laterally-extended grip member adapted to engage the cable on the opposite side thereof from said grip-recess and with a threaded extension movably engaging the aperture in said coupling-head, 35 and a threaded handle member engaging said threaded extension on the opposite side of said coupling-head, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in 40 the presence of two witnesses.

SAMUEL S. MCCAIN.

Witnesses:

JNO. B. MYERS,  
JAMES P. MCCAIN, Jr.