

931,089.

2 SHEETS—SHEET 1.



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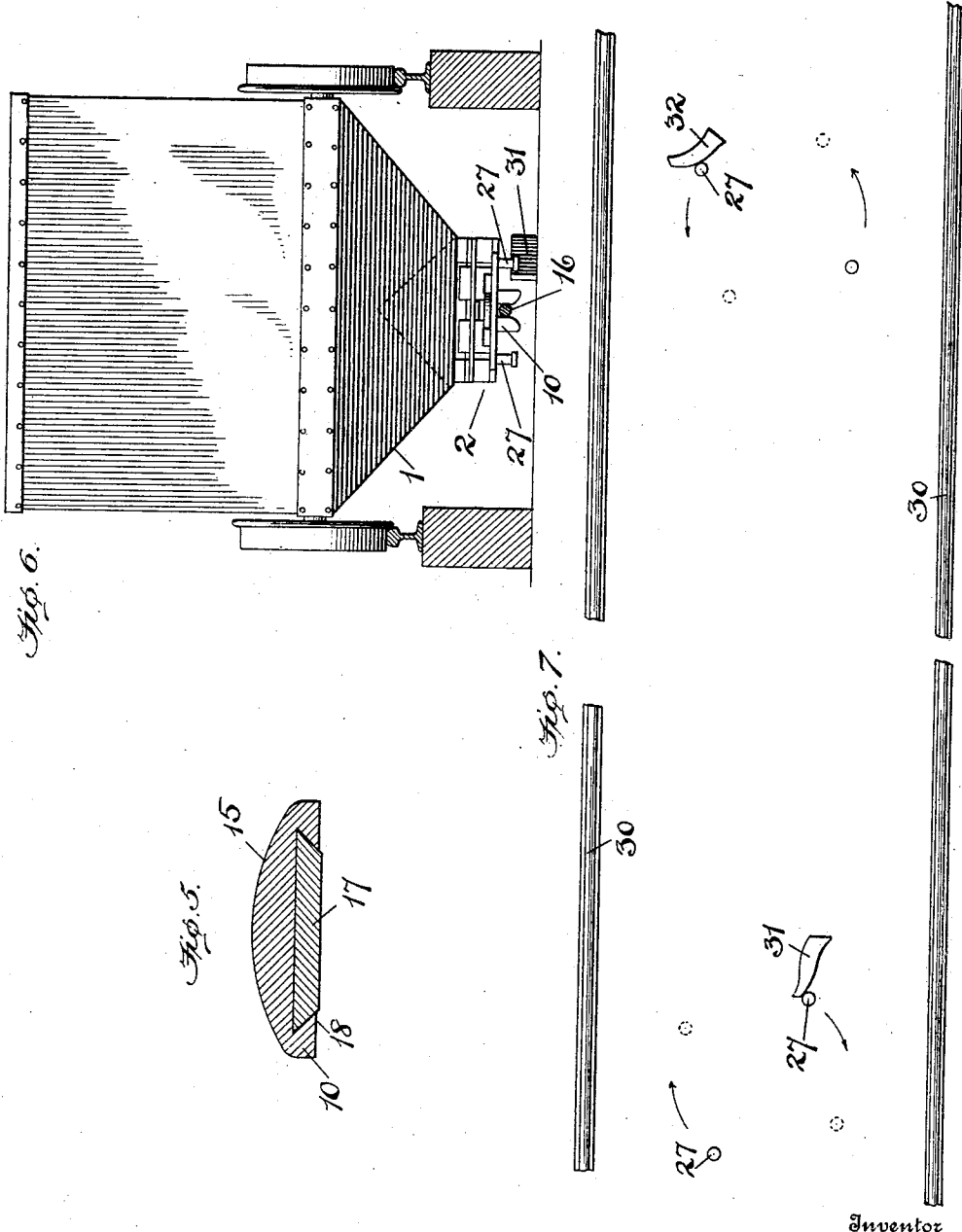
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CABLE CLUTCH FOR CARS.
APPLICATION FILED SEPT. 25, 1907.

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Patented Aug. 17, 1909.
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Witnesses

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UNITED STATES PATENT OFFICE.

HARRY S. ROBINSON, OF FALLSTON, MARYLAND, ASSIGNOR TO CHARLES B. MANN, JR., OF BALTIMORE, MARYLAND.

CABLE-CLUTCH FOR CARS.

No. 931,089.

Specification of Letters Patent.

Patented Aug. 17, 1909.

Application filed September 25, 1907. Serial No. 394,430.

To all whom it may concern:

Be it known that I, HARRY S. ROBINSON, a citizen of the United States, residing at Fallston, in the county of Harford and State of Maryland, have invented certain new and useful Improvements in Cable-Clutches for Cars, of which the following is a specification.

This invention relates to an improved cable-clutch for use on cars, to grip a moving cable and thereby impart movement to the car.

The object of the invention is to provide clutch mechanism for cars that are propelled by a power-driven cable.

The device is particularly applicable for cars employed in the transportation of ore and coal from mines, dirt and rock in railroad and other earthwork construction, and also timber and logs.

The invention is illustrated in the accompanying drawing, in which,—

Figure 1 is a top plan view of the clutch mechanism detached from the car. Fig. 2 is a side view of the same. Fig. 3 shows a face view of one of the clutch jaws. Fig. 4 is a side view of one of the jaws. Fig. 5 is a horizontal section across one of the jaws and shows the removable plate in the face of the jaw. Fig. 6 is an end view of a car to which the clutch shown on a smaller scale is applied. Fig. 7 is a plan view of a piece of railway track showing diagram of the studs which shift the clutch automatically while the car is moving. Fig. 8 is a view of the swiveled head, detached.

Referring first to Fig. 6, it will be seen that a car has a hopper-shaped bottom, 1, and that clutch mechanism, designated, 10, is attached to said bottom and is carried by the car. It is to be understood that the shape of the car is unimportant, and Fig. 2 merely shows how the frame of the clutch mechanism is carried by the car. A suitable frame comprising in the present instance two longitudinal parallel bars, 3, and cross-bars, 4, 5, near one end and other cross-bars, 6, 7, near the opposite end.

The levers, 8, are separately pivoted at, 9, to the cross-bar, 4, and these levers have movement in a horizontal plane. Two grip-jaws, 10, are each provided at their upper ends with a laterally-projecting head, 11, having a slot, 12, which opens in a horizontal direction; these slots take on the cross-bar, 5, of the frame and the jaws hang pendent

from said cross-bar and are slidable thereon. This will be clearly understood by reference to Figs. 1 to 4 inclusive.

Each grip-jaw has a lug, 13, projecting downward from the head and a space, 14, is left between said lug and the back of the jaw, 10; the back of the pendent jaw has a rounded surface, 15, and the end of a lever, 8, has position in the space, 14, between the back of the jaw and the lug. Both jaws and levers in this respect are alike. It will be understood that when the long ends of the two levers shown at the left-hand of Fig. 1, are spread apart, the two jaws, 10, will be forced toward each other, and of course will grip the cable, 16.

Figs. 3 and 4 show the preferred construction of the jaws, 10. The gripping face, 17, of the jaw is here shown to consist of a removable plate which may be hard metal, like steel; this removable face plate, 17, is held to the jaw, 10, by vertical undercut grooves, 18, in the jaw. The face plate may be lifted out from the jaw when badly worn, and a new plate inserted. It will be seen the wearing surface of the face plate, 17, project forward from the jaw. The lower end of the jaw has a rounded edge, 19, which is directly below the face plate, 17; this rounded edge facilitates the entrance to the cable between the jaws, and the top of said edge forms a projection, 33. The jaws are operated to close and open by movements of the two levers, 8, which turn on their pivots, 9. I have provided means and attached same to the clutch frame, for imparting movement to the long ends of the levers. As but little power is required to move the levers for opening the jaws, 8, I employ a spring, 20, which acts on the long ends of the levers, 8, to force them toward each other, and thereby open the jaws.

The means for spreading the long ends of the two levers and thereby close the jaws comprises a swiveled head, 21, which turns back and forward on a pivot, 22, in a bar, 23, which is attached to the frame.

The swiveled head carries two rollers, 24, one on each side of the pivot-hole, and the said rollers have position between the larger bar, 21, and a smaller bar, 25, and each roller turns on a pin, 26. The larger bar of the swiveled head has at each end a down-projecting wrist-pin, 27. Each lever is provided at its long end and on its edge with a

shallow notch, 28, into which the rim of one roller takes when the swiveled head is turned to the position which spreads the long ends of the two levers and thereby closes the jaws; this position of the said head is indicated by broken lines in Fig. 1. When the swiveled head is turned to the position last described, it abuts against a stop device, 29, which is fixed on the frame and projects downward at its under side. This stop holds the swiveled head from further movement and may be seen in Fig. 2, and its position is shown also in Fig. 1.

The relative positions of the track-rails, 30; the fixed clutch-closing stud, 31; the fixed clutch-opening stud, 32, and the wrist pins, 27, of the swiveled head, are shown in Fig. 7.

For the purpose of explanation, it may be assumed, that a car on the track of Fig. 7 is moving, or to be moved from the left side toward the right side. The two small circles, 27, in full lines at the left side indicate the position of the wrist-pins that project downward from the clutch mechanism of a car when the clutch jaws are open; the stud, 31, is fixed between the track-rails and one wrist pin, 27, of the swiveled head is in contact with said stud and consequently as the car moves forward toward the right-hand, the swiveled stud will be turned from its open position shown by full lines in Fig. 1, to its closed position shown in Fig. 1 by broken lines. By reference to Fig. 7, at the left-hand side the closed position of the two wrist-pins is indicated by the two small circles in broken lines.

The clutch-opening stud, 32, is shown at the right-hand side of Fig. 7, and the two small circles, 27, in full lines indicate the closed position of the swiveled head, that is, the position the wrist-pins have on the swiveled-head when the clutch jaws are closed. When the car continues toward the left the stud, 32, causes the swiveled head to turn until the wrist-pins thereon assume the position indicated by the two small circles in broken lines, whereupon the clutch jaws will be open.

From the foregoing description the operation of the clutch on a car for the purpose of gripping a moving cable, will be understood.

It may be remarked that this clutch is designed particularly for cars which are to travel on an aerial cableway, whose terminals have fixed rail tracks.

While in the present instance the grip-jaws are arranged to be movable by sliding, yet it is to be understood that in a combination with levers, and a swiveled head to impart movement to said levers, grip-jaws may be otherwise arranged for their movement.

What I claim and desire to secure by Letters Patent is,—

1. A cable-clutch having two grip jaws

each moved by a separate lever and said two levers movable in a horizontal plane, and a swiveled spreader between the two levers to close the said jaws.

2. A cable-clutch having in combination a frame; two levers pivoted on the frame and movable in a horizontal plane; two grip-jaws of which one is moved by each of said levers; and a head swiveled to said frame and carrying two rollers each of which is pivoted at points diametrically opposite the swivel—said rollers to act on the levers for the purpose of moving the jaws.

3. A cable-clutch having in combination two grip-jaws which are mounted so as to slide; two levers pivoted to move in a horizontal plane and one end of each of said levers engaging a grip jaw; a spring to move the levers for opening the said jaws, and means acting on the levers to close the jaws.

4. A cable-clutch having in combination two grip-jaws which are mounted so as to slide; two levers pivoted to move in a horizontal plane and one end of each of said levers engaging a grip jaw; and a swiveled head carrying rollers which act on said levers.

5. A cable-clutch having in combination two grip-jaws which are mounted so as to slide; two levers pivoted to move in a horizontal plane and one end of each of said levers engaging a grip jaw; and a swiveled head acting on the levers and causing them to operate the said jaws.

6. In a cable gripping device, a plurality of jaws, one of which is movably mounted on the frame, an actuating lever slidably engaging one jaw, a closing lever, and means for rotating the closing lever to swing the actuating lever to close the jaws.

7. In a cable gripping device, a plurality of jaws, a plurality of actuating levers, a slide upon which the jaws are mounted, a closing lever intermediate the actuating levers, and means for rotating the closing lever to close the jaws.

8. In a cable gripping device, a plurality of jaws, a plurality of actuating levers, a closing lever, rolls on the closing lever for engaging the jaw levers, and means for moving the closing lever to close the jaws.

9. In a cable gripping device, a plurality of jaws, a plurality of actuating levers each engaging a jaw, a closing lever, rollers on the closing lever for engaging the actuating levers, a slide upon which the jaws are mounted, and means for moving the actuating lever to close the jaws.

10. In a cable gripping device, a plurality of jaws, a plurality of actuating levers, a closing lever, means on the closing lever for engaging the jaw levers to close the jaws, a slide upon which the jaws are mounted, and means in the path of the closing lever adapted to engage it, swing it on its center and close the jaws.

11. In a cable gripping device, a plurality of actuating levers upon each of which a jaw is mounted, a closing lever, rollers on the closing lever for engaging the actuating lever to close the jaws, and a stationary cam adapted to engage the closing lever and move it to close the jaws.

12. In a cable gripping device, a plurality of actuating levers pivoted to swing in a horizontal plane, a cable engaging jaw on each lever, a closing lever pivoted between the jaw levers, rollers on the closing lever adapted to engage the jaw lever, a slide upon which the jaws are mounted, and means for rotating the closing lever to close the jaws.

13. In a cable gripping device, a plurality of actuating levers pivoted to swing in a horizontal plane, a cable engaging jaw on each lever, a closing lever pivoted between the jaw levers, rollers on the closing lever adapted to engage the actuating lever, means for rotating the closing lever to close the jaws, and a spring to open the jaws when closed.

14. In a cable gripping device, a plurality of jaws, an actuating lever, a jaw slide, a closing lever, and means on the closing lever adapted to engage the actuating lever and close the jaws.

15. In a cable gripping device, a plurality of jaws one of which is slidably mounted, an actuating lever, and a closing lever adapted to swing the actuating lever to close the jaws.

16. In a cable gripping device, a plurality of jaws, a slide upon which the jaws are mounted, actuating levers slidably engaging the jaws, and means for swinging the actuating levers to close the jaws.

17. In a cable gripping device, a plurality of jaws, a slide upon which the jaws are mounted, actuating levers engaging the jaws, a closing lever, and means for rotating the closing lever to swing the actuating lever to close the jaws.

18. In a cable gripping device, a plurality of jaws, a slide upon which the jaws are mounted, actuating levers engaging the jaws, a closing means, and stationary means in the path of the closing means for moving the closing means to swing the actuating lever to close the jaws.

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

HARRY S. ROBINSON.

Witnesses:

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