E. NEWMAN.

DEVICE FOR SWITCHING CABLES.

APPLICATION FILED MAR. 19, 1910.

979,687.

Patented Dec. 27, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

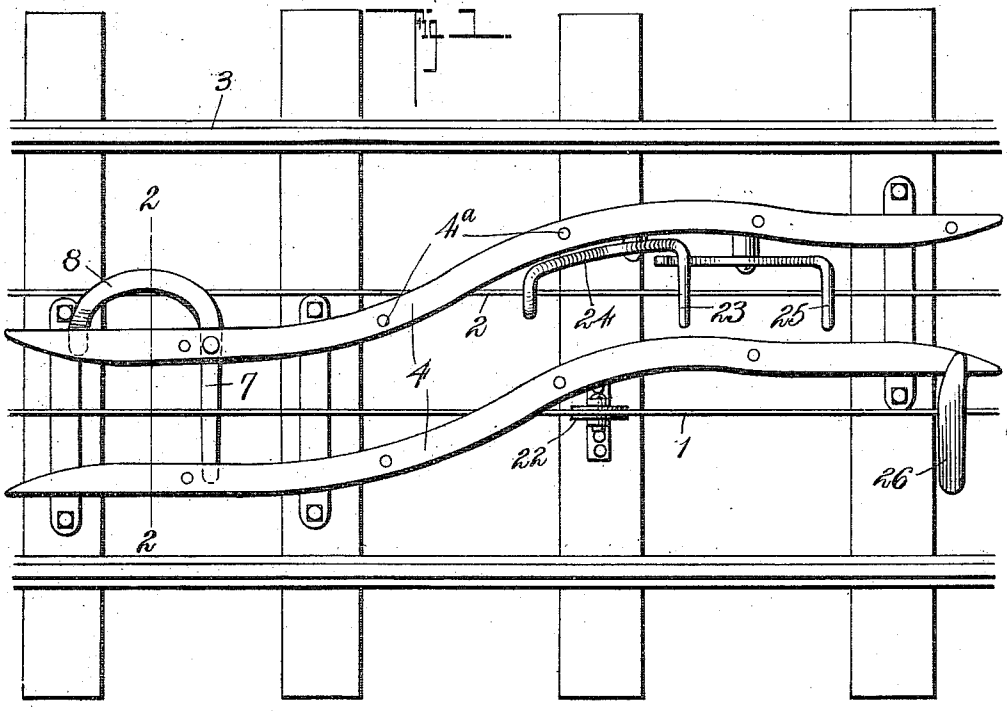


Fig. 2.

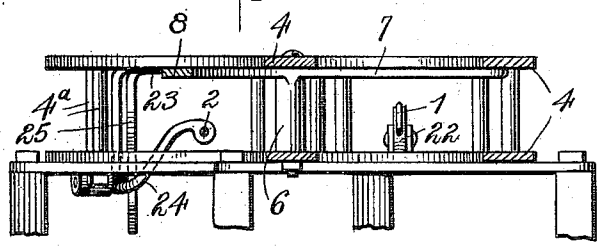


Fig. 4.

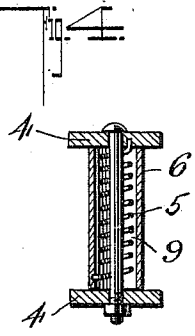
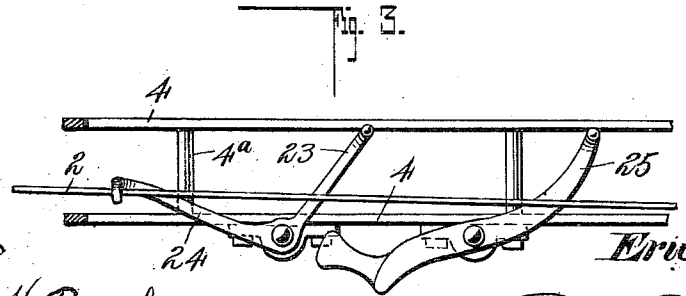


Fig. 3.



Witnesses

Philip H. Burch

E. B. McGrath

Inventor

Ulrick Newman,

By Chas. E. Brock

Attorneys

E. NEWMAN.

DEVICE FOR SWITCHING CABLES.

APPLICATION FILED MAR. 19, 1910.

979,687.

Patented Dec. 27, 1910.

2 SHEETS—SHEET 2.

Fig. 5.

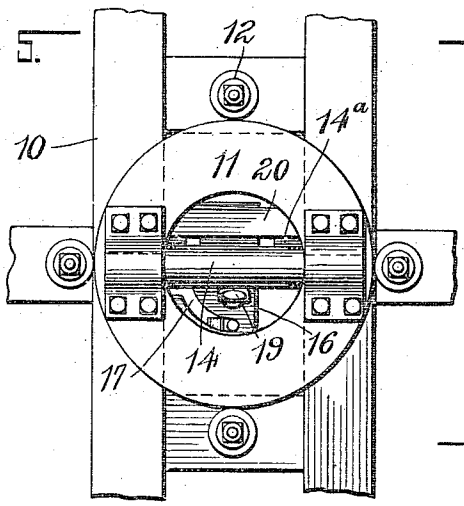


Fig. 7.

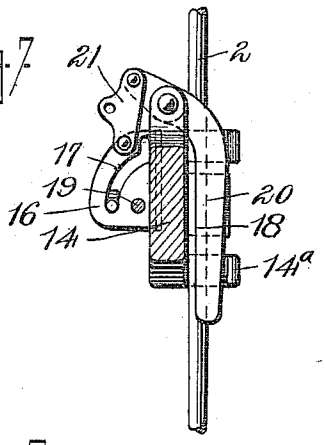


Fig. 8.

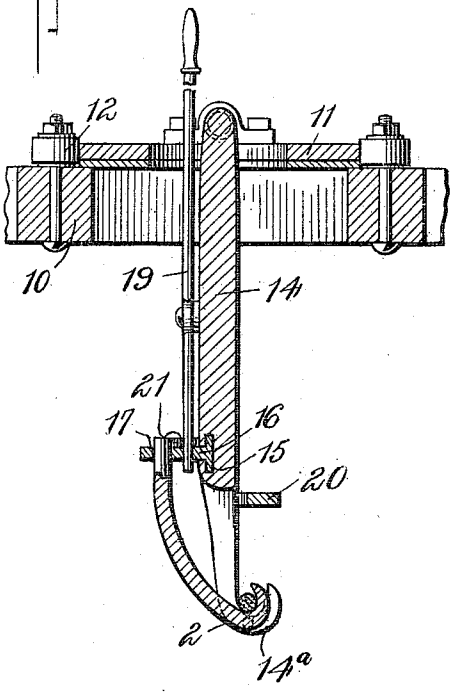


Fig. 6.

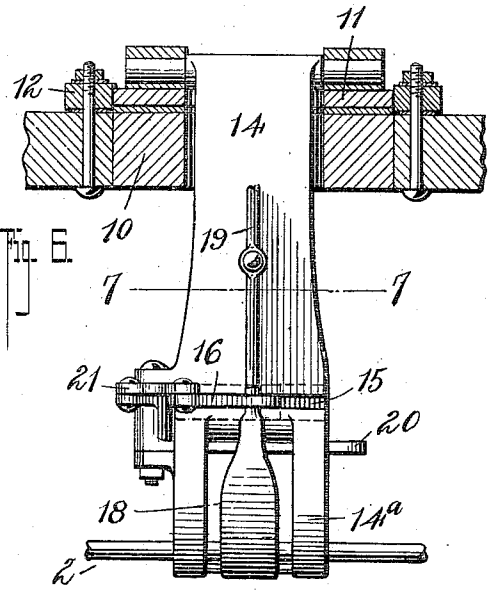
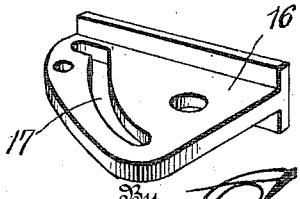


Fig. 9.



Witnesses

Philip H. Burch

C. B. McBatt

Inventor

Erick Newman,

By Thos. E. Brock

Attorney

UNITED STATES PATENT OFFICE.

ERICK NEWMAN, OF ASHLAND, WISCONSIN.

DEVICE FOR SWITCHING CABLES.

979,687. Specification of Letters Patent. Patented Dec. 27, 1910.

Application filed March 19, 1910. Serial No. 550,327.

To all whom it may concern:

Be it known that I, ERICK NEWMAN, a citizen of the United States, residing at Ashland, in the county of Ashland and State of Wisconsin, have invented a new and useful Improvement in Devices for Switching Cables, of which the following is a specification.

This invention relates to a device for switching cars or buckets from one cable to another or from one to a parallel portion of the same cable.

In practice a car or bucket is run by an endless cable from a loading point to a dumping point and returned. These may both be changeable points but at some fixed point the cable will be wound on a drum, thus providing motive power. To pass the car or bucket by this drum it must at some point be switched from one portion of the cable to another. This switching point may be at any convenient place along the line. By means of my device the grip which connects the car or bucket to the cable is automatically disengaged, swung to the other portion, or cable, and reëngaged. This avoids the expense of sending a man with each car or bucket, or placing one permanently at the switching point.

In the accompanying drawings:—Figure 1 is a plan view. Fig. 2 is a section on the line 2—2 of Fig. 1. Fig. 3 is a detail side elevation of a portion of the switching mechanism. Fig. 4 is a detail sectional view illustrating the pivoting of a lever operating device. Fig. 5 is an enlarged plan illustrating the manner of hanging the grip. Fig. 6 is a rear elevation of the grip, a portion of a cable being shown and a portion of the car being in section. Fig. 7 is a section on the line 7—7 of Fig. 6. Fig. 8 is a sectional edge view of the grip closed. Fig. 9 is a perspective view of a guide plate.

In these drawings 1 and 2 are cables, or portions of the same cable, and at the switching point these cables are parallel to each other. A car of any kind travels on a track 3, and a switch 4 is placed at a convenient point. This switch consists of two parallel upright frames, curved as shown in Fig. 1 and formed of upper and lower bars connected by pins or posts 4^a, as shown in Fig. 3. These frames form the switch proper. Pivoted on a pin 5 in one switch frame, is a sleeve 6 which carries a hore-shoe lever, an arm 7 of which normally rests across the switch and an arm 8 in a position to project into the space between the frames when the first arm is struck by the car or bucket grip. A spring 9 in the sleeve 6 holds the horseshoe lever 7—8 in normal position. The above mentioned lever is placed at the entrance to the switch in advance of the curved portion and serves to release the gripping jaws.

To understand the operation of the switching devices a brief description of the grip is necessary, although it will be understood that many changes might be made in the details of construction of the grip without requiring any alterations in my switching device.

On a rear platform or framework is a rotatable ring 11, turning between anti-friction rollers 12. Suspended through the ring and journaled in bearings on it is the fixed jaw 14 of the grip, the lower portion being bifurcated, and curved to form fingers 14^a. This jaw is transversely grooved on its rear face as at 15 and in said groove slides a horizontally arranged flanged plate 16, slotted at 17, the slot curving outwardly from the straight edge of the plate which works in the groove 15. A movable gripping jaw 18 has a broad curved lower end which is pivoted in the bifurcation of the jaw 14, and the reduced upper end rests in the slot 17 of the plate 16. A hand operated lever 19 is pivoted to the fixed jaw and passes through the plate 16. When a car is loaded the gripping jaws are set by hand by moving the lever 19, along the groove and as the head of the jaw 18 rests in the slot 17 of the plate this movement throws the jaw open or shut, depending upon direction of movement of the lever. To provide for automatic opening and closing of the grip I pivot to the fixed jaw 14 a curved lever 20 normally projecting across and beyond the front face of the jaw 14. This lever is connected by a link 21 to the plate 16 so that movement of the lever 20 causes a movement of the plate along the groove 15.

Returning to the switch operating device, the grip strikes arm 7 and throws it to one side. This causes the arm 8 to swing around and strike the lever 20, sliding the plate 16 and opening the grip. The cable is then lifted out of the jaw 14 by passing over a roller 22. The curvature of the switch frames then causes the grip to rotate, such movement being permitted by rotation of

the ring 11, and the jaws, in open position, are ready to grip cable 2. At this point the grip strikes an arm 23 of a bell crank, the cable 2 passing through an eye in the other arm 24. This lifts the cable 2 at the right time and the grip slips its jaws into position beneath it. Should the cable not drop by its own weight into the jaw, the grip pulls it down by striking a lever 25 which when depressed will return the arm 23 to its plate, thus drawing down arm 24 and the cable. The lever 20 of the grip which is in open position after being struck by the arm 8 then engages a cleat or other device 26 carried by one of the frames and is forced into closed position, thus closing the grip.

What I claim is:—

1. The combination with parallel cables, a grip adapted to engage said cables, a switching frame comprising parallel curved members, the grip traveling between said members, means arranged at the entrance to said switching frames for detaching the grip from a cable, and means arranged adjacent the rear ends of said frames for locking the grip to a cable, the said frames guiding the grip from one cable to the other.

2. The combination with an endless cable having parallel portions, means arranged adjacent said portions for disengaging a grip from one of said portions, means for locking said grip to the other portion, and a switching frame comprising parallel members between which the grip passes, for the purpose of transferring the grip from one portion of the cable to the other.

3. In a device of the kind described a grip having a fixed and a movable jaw, a lever pivotally connected to the movable jaw, a switch comprising parallel members curved intermediate their ends, means carried by one of said members in advancement of the curved portion for engaging the lever above mentioned and throwing the same into open position, thereby permitting the disengagement of the grip from a cable, means arranged at the rear ends of the curved portion of the switch for lifting a second cable, said means operated by passage of the grip, and means carried by the switch for returning said lever to its normal position as and for the purpose set forth.

ERICK NEWMAN.

Witnesses:
G. N. RISJORD,
JENNIE JENSON.