

(No Model.)

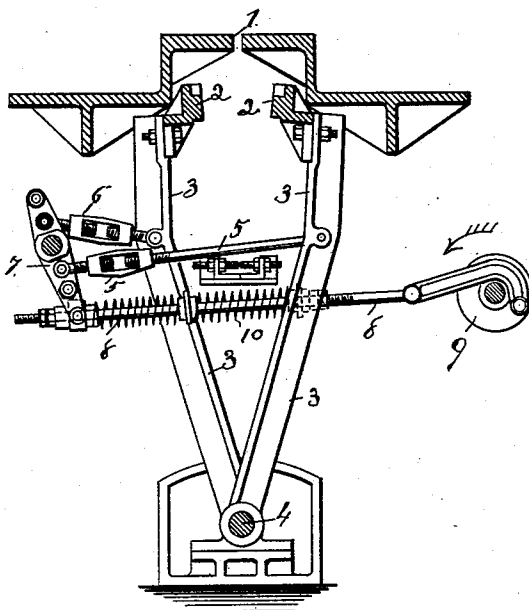
3 Sheets—Sheet 1.

L. J. HIRT.
MECHANISM FOR CABLE RAILROADS.

No. 570,635.

Patented Nov. 3, 1896.

Fig. 1.



WITNESSES:

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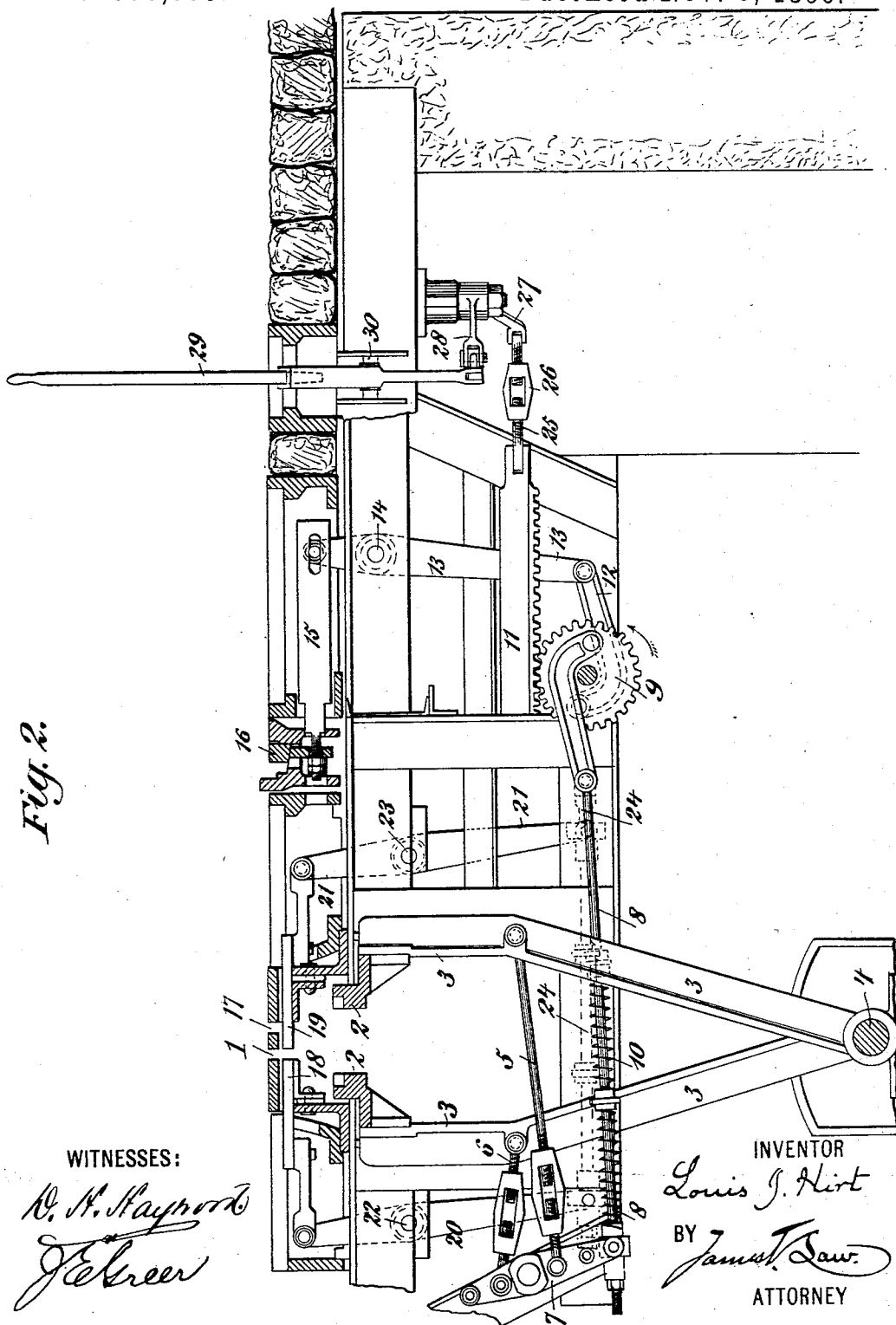
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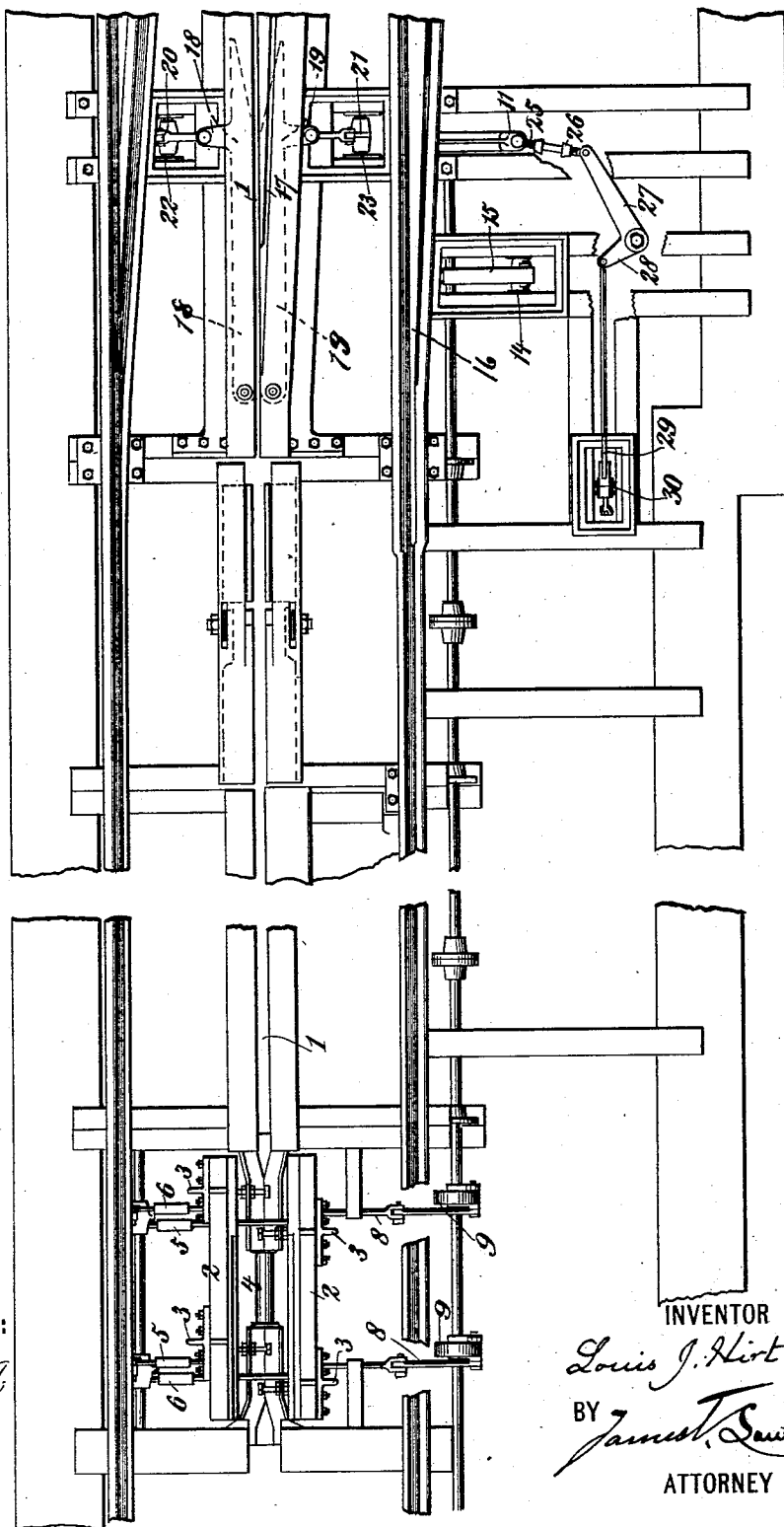
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Fig. 3.



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LOUIS J. HIRT, OF BROOKLINE, MASSACHUSETTS.

MECHANISM FOR CABLE-RAILROADS.

SPECIFICATION forming part of Letters Patent No. 570,635, dated November 3, 1896.

Application filed January 24, 1896. Serial No. 576,624. (No model.)

To all whom it may concern:

Be it known that I, LOUIS J. HIRT, a citizen of the United States, and a resident of Brookline, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Mechanism for Cable-Railroads, of which the following is a specification.

My improvement relates to mechanism used on cable-railroads for automatically operating the jaws of the grip on the cars while the latter are in motion; and it consists of an improved construction and arrangement of the mechanism whereby the automatic opening device may be thrown into and out of operation, so as to affect only certain cars passing over the road, and may also be used in connection with a switch for turning the affected cars onto an adjoining road.

My invention may be used with any of the ordinary cable-grips having movable jaws capable of being opened by tripper-bars and a cable-ejector mechanism, such as I have described in my application for Letters Patent filed November 12, 1894, Serial No. 528,462, and the tripper-bars may be of any suitable form and construction for operation with the grip used.

In the accompanying drawings, illustrating my improvement, which show the mechanism in connection with the road-bed, Figure 1 is an end sectional view of the movable trippers and their actuating mechanism. Fig. 2 is a sectional view of the movable tripper-bars and the switch-rail and their actuating mechanism in position in the roadway; and Fig. 3 is a plan view of the tripper-bars, switch-rail, and connecting mechanism.

In switching cable-cars from the main track along which the cable passes to a connecting track it is of course required to first detach the cable from the grip of the car before the latter can leave the main track, and heretofore to accomplish this it has often been necessary to bring the car to a full stop and open the grip and throw out the cable in the ordinary way by the gripman on the car. This stopping of the car causes considerable delay and consequent blocking of the road. My improvement is designed to obviate this stopping of the car in order to detach the cable,

and permits the car to make what is termed a "flying switch," that is, to be run from the main to the connecting track at full speed and without any stop whatsoever. With my improvement the grip of those cars which are to be switched is opened automatically and the cable ejected therefrom at the same time that the switch is turned, and thus the necessity of stopping the car is avoided.

In the drawings, 1 is the grip-slot at the surface of the street. 2 2 are the movable tripper-bars arranged along the top of the conduit and in position when brought into operation to throw open the jaws of the grip as the latter passes between them. The bars 2 2 are mounted on the upright frames 3 3, hinged or pivoted together at 4, at the bottom of the conduit, so as to swing toward or away from each other. The uprights 3 3 are actuated by the rods 5 6, the outer ends of which are connected to the oscillating beams 7. This beam is turned by the rod 8, attached at one end to the beam and at the other to the wheel 9.

As will be understood from the drawings, when the wheel 9 is turned in the direction indicated by the arrow the beam 7 is reversed from the position shown in Figs. 1 and 2 and the two uprights 3 3, and thus the tripper-bars 2 2, are brought toward each other or in a position to operate on the grip. A spring 10 on the rod 8 causes the uprights and tripper-bars to open or spring back when the wheel 9 is turned back into its first or normal position. To the wheel 9 is likewise attached a link 12, the outer end of which is pivoted to a vertical lever 13. This lever, which is pivoted to the frame of the conduit at 14, has its upper end connected with the sliding plate 15. The opposite end of this sliding plate is attached to the tongue 16 of the rail-switch, which is thus moved by the plate 15, lever 13, and wheel 9. The link 12 is so connected to the wheel 9, as shown in the drawings, that when the wheel is turned in the direction indicated by the arrow, that is, in the direction to bring together the tripper-bars 2 2, the lower end of the lever 13 is thrown outward, and hence the switch-tongue is turned so as to open the switch into the adjoining track. The same movement of the

wheel 9 therefore moves the tripper-bars, so as to open the grip and release the cable and open the switch.

To open and close the grip-slots 1 and 17 of the main and connecting roads, I employ the swinging tongues or plates 18 and 19. (Shown in dotted lines in Fig. 3.) These plates are pivoted, as shown, to a frame on each side of the slots and are operated by the vertical levers 20 and 21, Fig. 2, whose lower ends are connected by the rod 24 to the beam 7. As this beam is oscillated by the wheel 9 and rod 8 the levers 20 and 21 are caused to turn together and in the same direction, and thus by means of the rods connected to their upper ends swing the tongues 18 and 19 across the grip-slots in such a manner as to open the one slot and close the other, and, as will be seen from Fig. 2, when the wheel 9 is turned in the direction to bring together the tripper-bars and open the switch into the adjoining track the levers swing the tongue 18 across the slot 1 and the tongue 19 from beneath the slot 17, so as to open the latter. The tongues 18 and 19 thus move together with the switch and the tripper-bars, according as the car runs on the main road or is switched on the adjoining track.

In the construction shown in the drawings the wheel 9 and then the tripper-bars, switch, and slot-tongues are operated by the lever 29 on the street alongside of the tracks. This lever, which is pivoted at 30 by means of the links 28 and 27, slides the pinion 11 back and forth, and the latter, engaging with the cogs on the wheel 9, revolves the wheel in the desired direction to operate the several parts of the mechanism.

As the operation of all the parts is controlled by the wheel 9, it follows that the movement of the lever on the street connect-

ed with this wheel performs all the different functions of turning the switch, detaching the cable from the particular car that is to be switched, and opening the grip-slot to allow the grip to slide in the slot of the adjoining or branch road and without requiring the car to stop in its passage.

I do not wish to confine myself to the particular mechanism illustrated and described, as the details of the mechanism may vary from that I have here shown.

What I claim is—

1. In a cable-railway system, movable tripper-bars, arranged and adapted to be thrown into operation and open the cable-grip, and mechanism whereby the tripper-bars are operated from the surface of the road, substantially as described.

2. In a switch system for cable-railways, in combination with the switch, movable tripper-bars, adapted to be thrown into operation with the switch to open the grip, substantially as described.

3. In a switch system for cable-railways, in combination, a switch, movable tripper-bars, whereby the grip on the car is opened, and mechanism by which the switch and tripper-bars are operated together, substantially as described.

4. In a switch system for cable-railways, in combination, a switch; movable tripper-bars, whereby the grip on the car is opened; grip-slot guards by which the grip-slots are controlled; and mechanism by which the switch, tripper-bars and slot-guards are operated together, substantially as described.

LOUIS J. HIRT.

Witnesses:

FRED S. KEMPER,
J. E. GREER.