

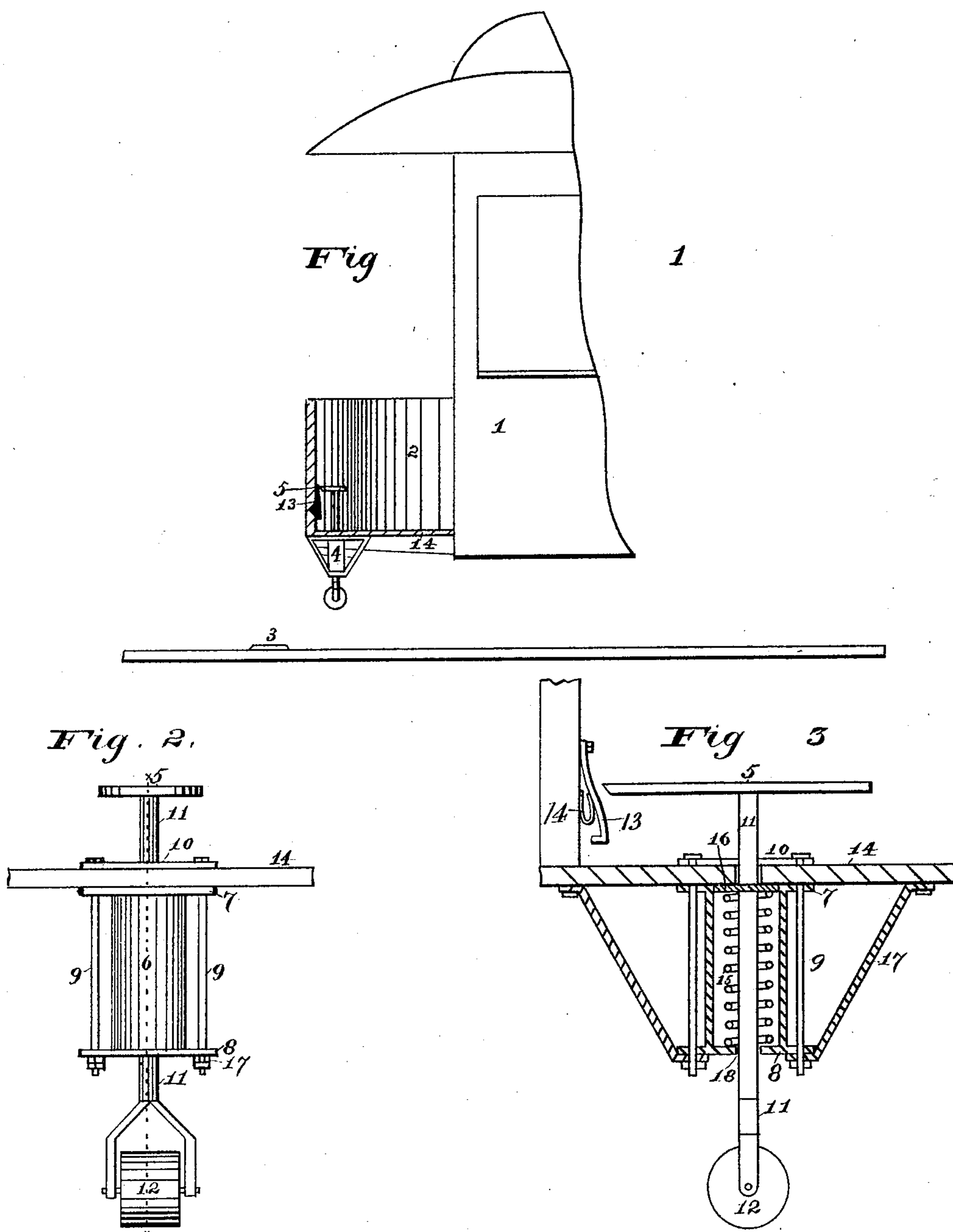
(No Model.)

J. M. SWEM.

MECHANISM FOR OPERATING RAILWAY SWITCHES.

No. 390,716.

Patented Oct. 9, 1888.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## MECHANISM FOR OPERATING RAILWAY-SWITCHES.

SPECIFICATION forming part of Letters Patent No. 390,716, dated October 9, 1888.

Application filed March 31, 1888. Serial No. 269,047. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES M. SWEM, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Mechanism for Operating Railway-Switches, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to means located upon the platform or on the body of a car and under control of the driver or other proper party for operating or controlling street-railway switches.

In a prior application for a patent bearing Serial No. 254,257 of the applications to the United States Patent Office, and filed by me on the 4th day of November, 1887, I have shown a switch to be operated automatically upon the depression by the wheel of a button or head projecting up to the side of the rail from the mechanism controlling the position of the switch-point, the car, in case of a double switch, or switch controlling both the continuity of a main track and the inlet to a branch therefrom or a side track, being caused to swerve slightly and take upon one rail or the other, or to one side or the other of the track, to cause the proper or desired operation of the switch. It has seemed desirable, however, that means should be provided for operating or controlling the switch independently of any side movement of the car necessitating a side draft on the part of the animal or animals when they are used as the motive power, and that such means should be under the immediate control of the driver, conductor, or other proper party, and so located on the car that such party can, when desired, without changing the line of movement of the car or leaving his position thereon, cause the switch-point to be placed in the proper or desired location, such means also enabling my improved automatic switch shown in the application referred to to be used on roads employing other motive power than animals.

The object of my invention, therefore, is to furnish and combine with a car means or mechanism for operating a switch mechanism,

such means being normally out of operative position, but which may instantly be thrown or placed into position to operate the switch by the proper party on the car, and as readily again thrown out of operative position or condition, and which means shall be simple and cheap in construction, readily applied, easily operated, and reliable in operation; to which ends it consists in the features and combinations more particularly hereinafter described and claimed.

In practicing my invention a cylinder or a cage is attached to the car, depending therefrom beneath the platform or the station of the person on the car who is to control the switching. Such frame or cage is a metal cylinder open at the top and closed at the bottom, the latter having an aperture for the passage of a rod therethrough. The cylinder is provided with suitable flanges for attaching it to the bottom of the car, the rod referred to passing through the cylinder and up through the floor of the car, projecting a few inches above the latter, where it ends in a small head or platform in convenient position to be operated on by the foot of whoever is to control the switching. At its lower end (projecting through and beneath the cylinder) it carries a roller or wheel, a convenient method for such carrying being to fork the rod and pivot or journal the wheel or roller within and between the limbs of the fork. This roller or wheel and the whole mechanism are so located and arranged that when the platform on the head of the rod is depressed by the foot of the driver or of the party in charge of the switching the wheel or roller will be thrust down sufficiently to take upon and depress the head or button projecting above the bed of the track from the automatic switch mechanism.

Within the cylinder or the cage a spring is combined with the rod, so as normally to keep the wheel or roller so lifted up that it is not in position to operate on the switch-head or button.

A suitable pawl is arranged to take upon the head thereof when depressed, so as to hold the mechanism in operative position as long as desired. When, therefore, it is desired to oper-



ate or throw the switch-point, as the car approaches such point the driver or other proper party, by placing his foot on the small head or platform referred to as being on the upper end of the rod, depresses the roller, so that it takes upon and in turn depresses the projecting switch-head or button. When the head or the rod is released from the action of the foot or of the pawl, if one be used, the tension of the spring causes the return of the parts to their non-operative position, in which position they are normally maintained by such spring.

The construction thus generally described may be better understood by reference to the drawings, which show an embodiment of my invention, and in which—

Figure 1 is a side elevation of part of a car to which the invention is applied; Fig. 2, a front view of the apparatus on a somewhat larger scale; and Fig. 3, a vertical section thereof on line *x x*, Fig. 2.

In the illustrations my improved mechanism is shown as located on the platform to be occupied by the driver, so as to be under his control; but it is to be understood that it may be located at any other point and be under the charge of any other proper person connected with the car or the train of which the car may be a part.

In the figures, the reference-numeral 1 indicates the body of a car; 2, one platform thereof, and 14 the floor thereof. Beneath the platform is suspended a cylinder, 6, provided with flanges 7 and 8, by which it may be secured to the car by means of bolts 9, passing through such flanges. Such cylinder is open at the top, the underneath side of the floor of the car acting as a cover to such open end when the cylinder is in position. In order the more firmly to secure the cylinder, a plate of iron, 10, may be placed on the platform above the cylinder and the bolts 9 passed therethrough, and, if desired, such plate may be sunk into the flooring, so that its surface is flush with the surface of the floor. The bottom of the cylinder is made with an aperture, 18, through which passes the rod 11, which is forked at its lower end, or to which is attached a fork, in and between the limbs of which is journaled the wheel or roller 12. The rod 11 passes through the cylinder and up through the floor 14, above which it ends in the head or small platform 5.

Within the cylinder is a spring, 15, the upper end of which takes against a pin, 16, or other equivalent device located on the rod and furnishing a bearing for the upper end of the spring, whose other end takes against the lower head of the cylinder, the spring acting to normally hold the rod and its attached roller in an elevated position, so that it will not touch or take upon the projecting head 3, connected to the switch mechanism, but shall pass over the same free from contact therewith or influence

thereon. Such head 3 is the projecting head of the switch mechanism before referred to. In the prior application noted it is shown as located immediately adjacent to the inside of the head of the rail, so as to be operated on by the flange of the wheel. In this instance, however, it should be located a few inches therefrom, so as to be out of reach of action by the wheel, the mechanism described being located on the car, so that its wheel or roller will pass immediately over the head 3.

Pivoted or attached to the wall of the platform, and in such relation to the head 5 that its lower or free end is just above the point to which the head 5 is depressed, to throw the roller 12 into operative position, is a locking-pawl, 13. Such locking-pawl may be of resilient material and secured at its upper end to the wall of the platform; or it may be non-resilient of itself and pivoted to the platform-wall, a spring, 14, serving to throw its free end into the path of the head 5, the free end being in such path, no matter how the pawl may be constructed. Then as a car approaches the switch the driver forces down the head 5, which, slipping under the free end of the locking-pawl, is automatically held there until released by the driver or other person. To assist in its more readily slipping thereunder, the edge of the head 5 may be beveled at such point, as clearly shown in Fig. 3.

The cylinder may be further braced in position and strengthened by the use of one or more brace-rods, 17, which may be secured to the cylinder by the bolts 9 and to the floor 14 of the car by any suitable fastenings.

While the parts are in the position shown in the figures, the wheel or roller 12 passes over any buttons or heads 3 in its line of travel without any influence thereon. If, however, it be desired to operate the switch, the driver, by his weight, placing his foot on the head 5, forces the roller 12 down, the pawl 14 holding the same down. 12 then takes upon and depresses the head 3, so that the switch is operated, whereupon, if the pawl be released from the head, the spring 15 throws the parts back into their inoperative and normal position.

The rod 11 should be square in cross-section, or of such contour as will prevent its turning in its seats; or, if round, should be feathered or splined for that purpose. These means may be located at one end or both ends of the car, as the requirements of the road may determine; or one or more may be located at desired place in or on the car.

Having thus described my invention, what I claim is—

The combination of the cylinder 6, open at its upper end and having the flanges 7 8, bolts 9, passing therethrough and securing the cylinder to the car, the rod 11, passing through the cylinder and projecting at both ends thereof and forked at its lower end, a roller, 12, journaled between the limbs of such fork, a spring, 130



15, around the rod 11 within the cylinder, a head, 5, located upon the upper end of the rod 11, and a pawl or stop, 13, pivoted or attached to the wall of the platform and adapted 5 to take upon the head and lock the rod and roller in a depressed or operative position, substantially as set forth.

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

JAMES M. SWEM.

Witnesses:

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W. M. HAYDEN.