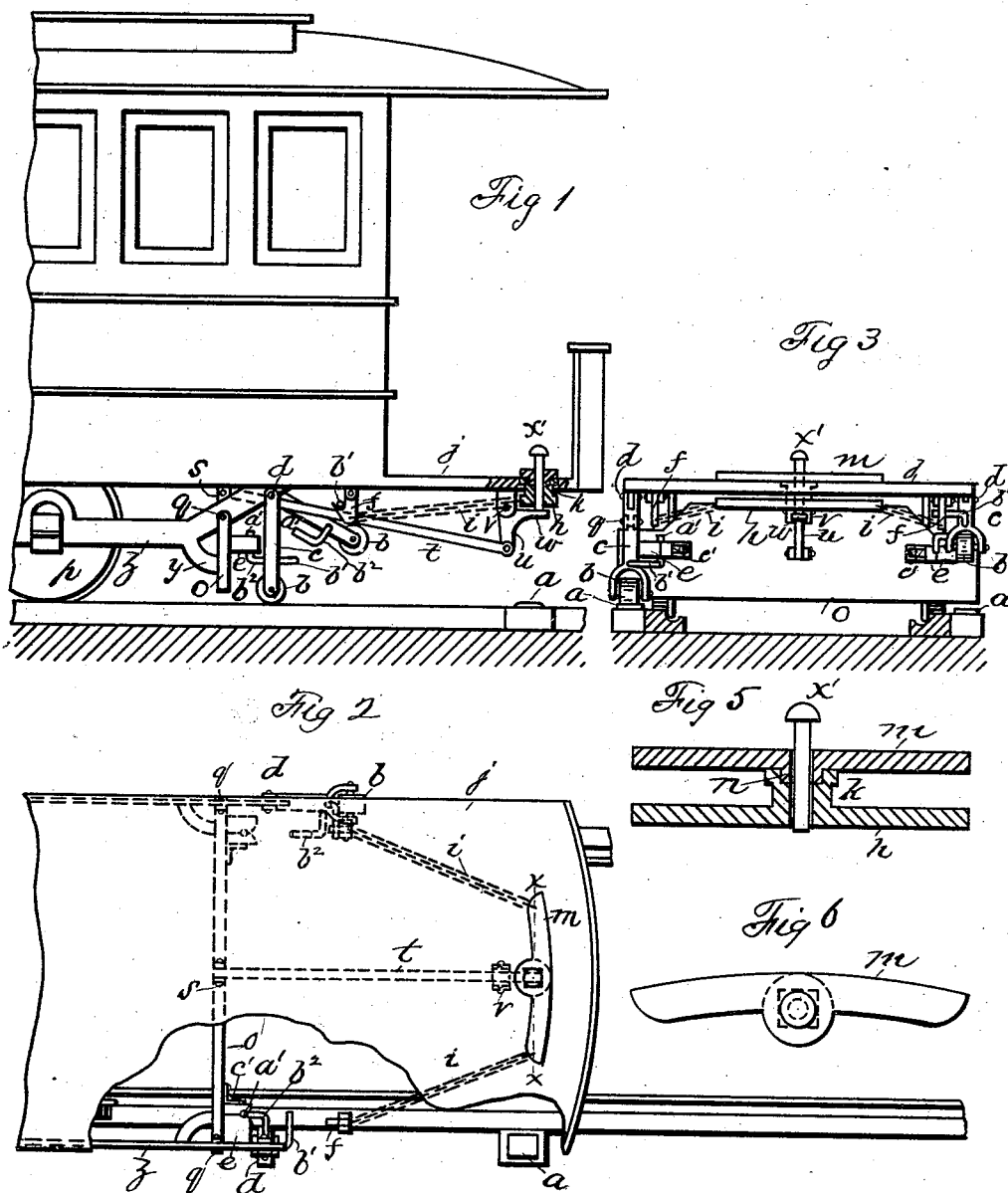


(No Model.)

G. T. JANVRIN & F. J. CONLON.
SWITCH ACTUATING APPARATUS.

No. 542,980.

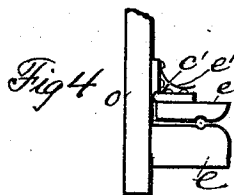
Patented July 16, 1895.



Witnesses:

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att'y

UNITED STATES PATENT OFFICE.

GEORGE T. JANVRIN AND FRANK J. CONLON, OF BROOKLYN, NEW YORK.

SWITCH-ACTUATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 542,980, dated July 16, 1895.

Application filed December 12, 1894. Serial No. 531,565. (No model.)

To all whom it may concern:

Be it known that we, GEORGE T. JANVRIN and FRANK J. CONLON, citizens of the United States, and residents of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Switch-Actuating Apparatus, of which the following is a specification.

Our invention consists of improvements in apparatus used on a car under the control of the motorman for actuating the switch, as hereinafter fully described, reference being made to the accompanying drawings, in which—

Figure 1 is a side elevation of part of a car provided with our improved switch-operating apparatus, part of which is represented in section, and one switch-operating roll is represented in the position for use. Fig. 2 is a plan view of the same with a part broken out. Fig. 3 is an end elevation of part of the car and front view of the apparatus with one of the switch-operating rolls in the position for use. Fig. 4 is a detail of the apparatus for supporting the switch-operating rolls in the working position on a large scale. Fig. 5 is a detail of the levers for working the apparatus in section on line *xx* of Fig. 2 on a larger scale; and Fig. 6 is a plan of the motorman's foot-lever, also on a larger scale.

The apparatus is of the character employed where the switch-point is so connected with a vertical push-stud, as *a*, located each side of the track, that it will be shifted either way—that is, opened or closed according as one or the other of said push-studs is forced down by a roll or other device on the car made to act on the push-stud at the will of the motorman. The means whereby the switch-point and the push-studs are so connected form no part of the invention herein claimed, and need not therefore be shown or described.

According to my improvements of the switch-actuating apparatus carried on the car, the rolls *b*, one for each side for effecting the downthrusts, are pivoted at one extremity of a staff *c* for each roll, the other extremity of which staff is pivoted to the under side of the car-body, as at *d*, so that the staff will hang vertically, as in Fig. 1, when allowed to do so, and will then carry the roll *b* at such

height that in passing the head of the push-stud it will thrust the push-stud down and actuate the switch-point, the staff being supported against a stop *e*, opposing the tendency of the resistance of the push-stud to force it backward of its operative position in the vertical line. After thus actuating the push-stud the staff is to be swung upward near the under side of the car, where it is secured by the hook *f* and retained until required to be let fall again for further use.

The hook engages a stud *b'* on the staff in which the roll is pivoted to hold it up. The hooks are connected to the extremities, respectively, of a rock-lever *h* by chains *i*, which lever is suspended under the front portion of the platform *j* on a vertical pivot *k*, fitted in the platform for turning freely and having a socket in the upper end in which a rock-lever *m*, adapted to be thrust one way or the other by the motorman with his foot, is detachably connected by a stud *n* of the lever inserted in said socket, so that the motorman can readily release either one of the rolls at will by thrusting the corresponding arm of the foot-lever, and the other roll will remain in its inoperative position. The foot-lever is made thus detachable for removal from one end of the car to the other, as is common to other of the motorman's implements, and for like reasons.

For returning the rolls to the keeping of the hooks we mount the guard *o*, commonly used in advance of the car-wheels *p*, on pivots *q*, so that it can be swung suitably for so turning the rolls, said guard taking effect on the roll-staffs by the stops *e* for resisting the thrusts of the push-studs on the staffs; and for working the guard a short arm or other extension *s* of the guard above the pivots is connected by a rod *t* with the pendent arm *u* of a bell-crank pivoted at *v* and having its short arm *w* extending forward under the pivot *k* of the rock-lever *h*, through which, said pivot being perforated axially, a push-pin *x'* extends and rests on said arm near its extremity suitably for the motorman to thrust the lever down by pressing on the head of the pin with his foot to operate the guard for raising the rolls.

The guard is supported by stops *y* against being thrust backward beyond its normal po-

sition, said stops being suitably placed on the bar z or other suitable part of the truck-frame. The stops e to the roll-staffs are also contrived for jaws, one of which is pivoted, as at c' , to open and receive the upturned member a' of a keeper b^2 , projecting from the rear side of each roll-staff, to stay the staff against lateral play through the effect of the shocks and jars to which it is subject when in the working position, also to prevent the roll-staffs from swinging forward, as they might from the same cause and also on down-grades, so that they might pass over the push-studs a without effect on them. It is to be noticed that by reason of these keepers having the upturned parts a' to be engaged by the jaws, also by the different positions of the pivots of the guard and of the staffs, the jaws are self-detaching from the keepers when returning the staffs to the normal position by rising upward away from the said upturned members of the keepers.

It is also to be noted that through the employment of the guard o for restoring the roll-staffs to the normal position both of said staffs are alike subject to the one push-pin and the push-pin is actuated alike for each, which is simpler for the motorman and less liable to mistake than where different prime movers are employed for the different staffs.

A spring e' is applied to the pivoted jaw e to close it on the part a' of the keeper.

We claim—

1. In switch operating attachments to a car, the combination with roll carrying staffs pivoted to the car body, of the guard employed in the front of the car wheels, fixed in the relation to the said roll staffs to support the staffs in the working position substantially as described.

2. In switch operating attachments to a car, the combination with the rolls, and the roll carrying staffs pivoted to the body of the car, of the guard employed in front of the car wheels, mounted on pivots and in the relation to said roll staffs to support them in the working position, and provided with means for restoring said roll staffs to the normal position substantially as described.

3. In switch operating attachments to a car, the combination with the rolls, and the roll carrying staffs pivoted to the body of the car, of the guard employed in front of the car wheels, arranged in the relation to said staffs, and provided with the stops for supporting said staffs against the thrusts of the push-

studs of the switch apparatus substantially as described.

4. In switch operating attachments to a car, the combination with the rolls and the roll carrying staffs pivoted to the body of the car, of the guard employed in front of the car wheels, the keepers on the roll staffs, and the keeper engaging and holding jaws on the guard substantially as described.

5. In switch operating attachments to a car, the combination with the rolls and the roll carrying staffs pivoted to the body of the car, of the guard employed in front of the car wheels, mounted on pivots and in the relation to said roll staffs to support them in the working position, the keepers on the roll staffs, the keeper engaging holding and automatically detaching jaws on the guard, and means to actuate said guard for restoring the roll staffs to the normal positions substantially as described.

6. In switch operating attachments to a car, the combination with the rolls and the roll carrying staffs pivoted to the body of the car, of the guard employed in front of the car wheels, mounted on pivots and in the relation to the roll staffs to support them in the working position, and to restore them to the normal position, the hooks for engaging and retaining the roll staffs in the normal position, the elbow lever connected with the guard for operating it, and the push-pin for operating the elbow lever substantially as described.

7. In switch operating attachments to a car, the combination with the rolls and the roll carrying staffs pivoted to the body of the car, of the guard employed in front of the car wheels, mounted on pivots and in the relation to the roll staffs to support them in the working position and to restore them to the normal position, the hooks for engaging and retaining the rolls staffs in the normal position, the elbow lever connected with the guard for operating it, the push-pin for operating the elbow lever, and the hook detaching chains and foot lever connected with said hooks substantially as described.

Signed at New York city, in the county and State of New York, this 21st day of November, A. D. 1894.

GEORGE T. JANVRIN.
FRANK J. CONLON.

Witnesses:

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S. H. MORGAN.