(No Model.)

E. D. SNOW.

RAILWAY SWITCH.

No. 580,738. Patented Apr. 13, 1897.

Fig. 1

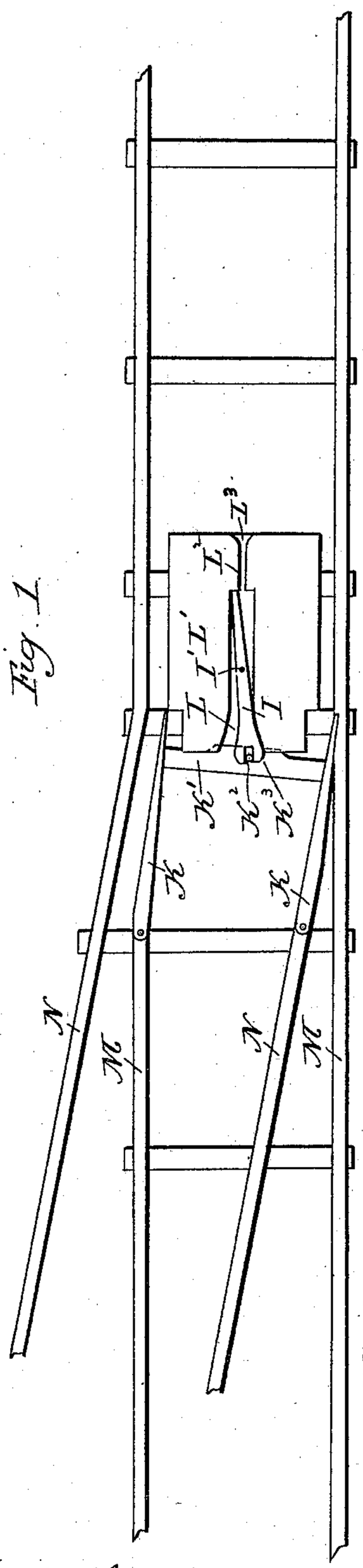

Fig. 2

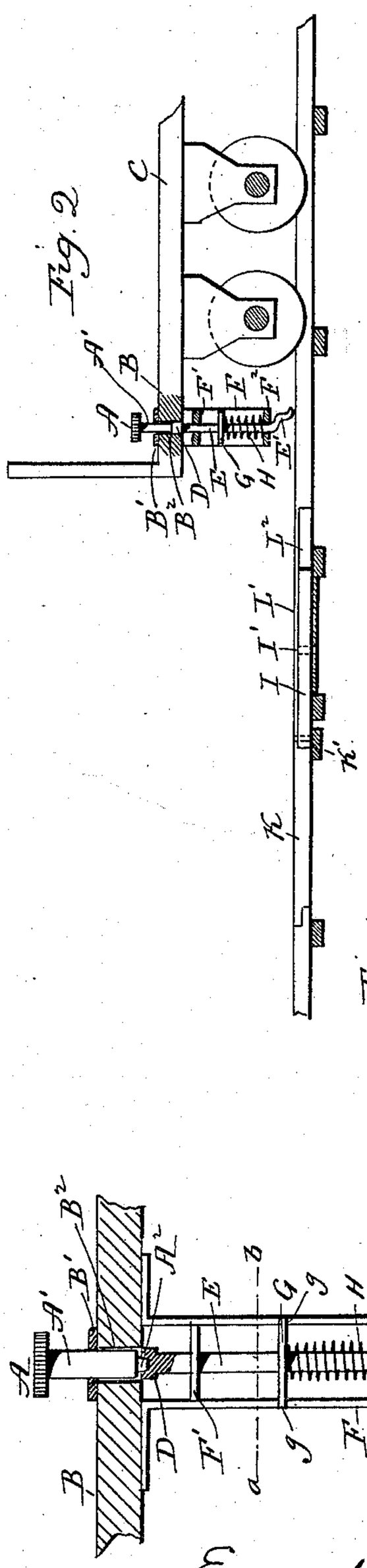

Fig. 5

Fig. 4

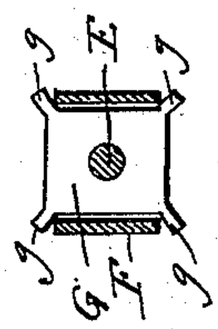

Fig. 3

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UNITED STATES PATENT OFFICE.

ERNEST D. SNOW, OF ANSONIA, CONNECTICUT.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 580,738, dated April 13, 1897.

Application filed August 10, 1896. Serial No. 602,225. (No model.)

To all whom it may concern:

Be it known that I, ERNEST D. SNOW, of Ansonia, in the county of New Haven and State of Connecticut, have invented a new Improvement in Railway-Switches; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a plan view of one form which a switch constructed in accordance with my invention may assume; Fig. 2, a view in broken vertical section, showing the switch and also a car carrying the means by which the same is operated; Fig. 3, a view, partly in front elevation and partly in section, showing the switch-operating mechanism and a portion of the car-platform; Fig. 4, a view in transverse section on the line *a b* of Fig. 3; Fig. 5, a detached reverse plan view of the operating-finger of the operating-rod of the switch-operating mechanism.

My invention relates to an improvement in railway-switches, and more particularly to switches designed for use in connection with street-railway systems, the switches of which are generally operated by the drivers or motormen of the cars.

The object of my present invention is to produce a simple, effective, and durable switch, composed of few parts and not liable to derangement, and constructed with particular reference to convenience and facility of operation.

With these ends in view my invention consists in a switch having certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In carrying out my invention as herein shown I employ a small knob or operating-button A, which is mounted in a vertical position at or about the center of the forward platform B of the car C, the button thus being arranged for the most convenient operation by the driver or motorman, who depresses the button with his foot. The button is furnished with a downwardly-projecting stem A′, passing through a plate B′, secured to the platform B, and downward through a vertical opening B^2, formed in the platform, the lower end of the stem being furnished with a beveled tongue A^2, entering a socket of corresponding shape formed in a head D, located upon the upper end of the vertically-movable operating-rod E, which has bearing in a bracket F, secured to and depending from the platform, the said bracket being furnished at its upper end with a bridge F′, in which the upper end of the rod has bearing, and formed at its lower end with a reach F^2, in which the lower end of the rod has bearing. A follower G, rigidly secured to the rod about midway of its length, is provided with four radially-arranged fingers *g*, which engage with the opposite edges of the opposite members of the bracket, so as to prevent the rod from rotating without interfering with its freedom of vertical reciprocation. A spiral spring H, interposed between the lower face of the follower G and the upper face of the reach F^2, exerts a constant effort to lift the operating-rod E, and hence the button A and its stem A′. The extreme lower end of the rod, which projects through and below the reach F^2 of the bracket, is bent rearward and downward to form an operating-finger E′, which is made wedge-shaped in cross-section, as shown in Fig. 5, the point of the wedge extending forward. This operating-finger coacts when the button and rod are depressed with a long, tapering, horizontally-arranged switch-lever I, having its opposite edges correspondingly tapered and arranged to swing upon a vertical pivot I′, located about midway of its length. The narrow end of the said lever extends outward with respect to the switch, which, as herein shown, consists of pivotal rails K K and a coupling-arm K′, uniting their outer ends and furnished with an upwardly-projecting coupling-pin K^2, entering a slot K^3, formed in the large end of the lever I. The said lever is located in a recess L, corresponding to it in general form, but larger, and formed in the center of a switch-plate or bed L′, whereby the lever is located midway between the rails of the track. The narrow outer end of the said recess is centrally intersected by a guide-way L^2, also formed in the said plate or bed, and having a flaring throat L^3 for the reception of the operating-finger of the operating-rod.

It will be observed by reference to Fig. 1 that the guideway L^2 is very much narrower than the recess, and that two shoulders are formed at the intersection of the guideway and recess, each sufficiently deep to protect the forward end of the switch-lever, which, as shown in Fig. 1, is protected by one of the said shoulders. In its opposite position it will be protected by the other shoulder.

As herein shown, M M are the main-line rails, and N N the siding-rails, but the arrangement of the tracks and the construction and arrangement of the switch itself may be widely varied without departing from my invention.

When it is desired to switch a car of a system provided with my improved switches from the main line to a siding or diverging line, the driver or motorman presses his foot upon the operating-button and depresses the same, and hence the operating-rod against the tension of the spring surrounding the latter in season to cause the operating-finger of the rod to enter the guideway L^2 in the switch-plate or bed and thence emerge into the recess L in position to engage with that edge of the switch-lever necessary to be engaged for moving the lever and shifting the switch from the main-line rails to the siding-rails. The car now passes onto the siding, as will the next car, provided the switch is not restored to its normal position; but if the next car is desired to run over the main line the driver or motorman depresses the operating-button and rod, now causing the operating-finger at the lower end of the rod to be engaged with the opposite face of the switch-lever, which is shifted so as to restore the switch to its normal position.

It will thus be seen that by means of my improved switch the driver or motorman of a car can easily operate the switch by his foot without stopping the car or moving from his post.

It is apparent that in carrying out my invention some changes from the construction herein shown and described may be made, and I would therefore have it understood that I do not limit myself to the same, but hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with the platform of a car, of an operating-button mounted therein at or about the center thereof, a bracket depending from the said platform, an operating-rod mounted in the said bracket, and constructed at its lower end with a downwardly-projecting operating-finger adapted to be engaged with a member of a switch arranged between the track-rails, a follower secured to the said rod and engaging with the bracket so as to prevent the rod from rotating without interfering with its freedom of vertical reciprocation, and a spring applied to the rod and engaging with the bracket, and arranged to exert a constant effort to lift the rod and hence the button.

2. In a railway-switch, the combination with a switch plate or bed containing a longitudinally-arranged recess and a narrow longitudinally-arranged guideway leading centrally into the outer end thereof and having a flaring throat formed at its outer end, two shoulders being formed in the plate or bed at the point of the intersection of the guideway with the recess; of a long, tapering pivotal switch-lever located in the said recess, having its forward end protected by the said shoulders, and having its beveled opposite edges adapted to be engaged for shifting it in one direction or the other by an operating-finger which enters the said recess through the said guideway; and a switch connected with the larger end of the said lever for operation thereby.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ERNEST D. SNOW.

Witnesses:
FRED. C. EARLE,
LILLIAN D. KELSEY.