No. 677,827. Patented July 2, 1901.

D. N. WEATHERS & W. S. STEVENSON.

SWITCH OPERATING DEVICE.

(Application filed Aug. 18, 1900.)

(No Model.)

Fig. 1.

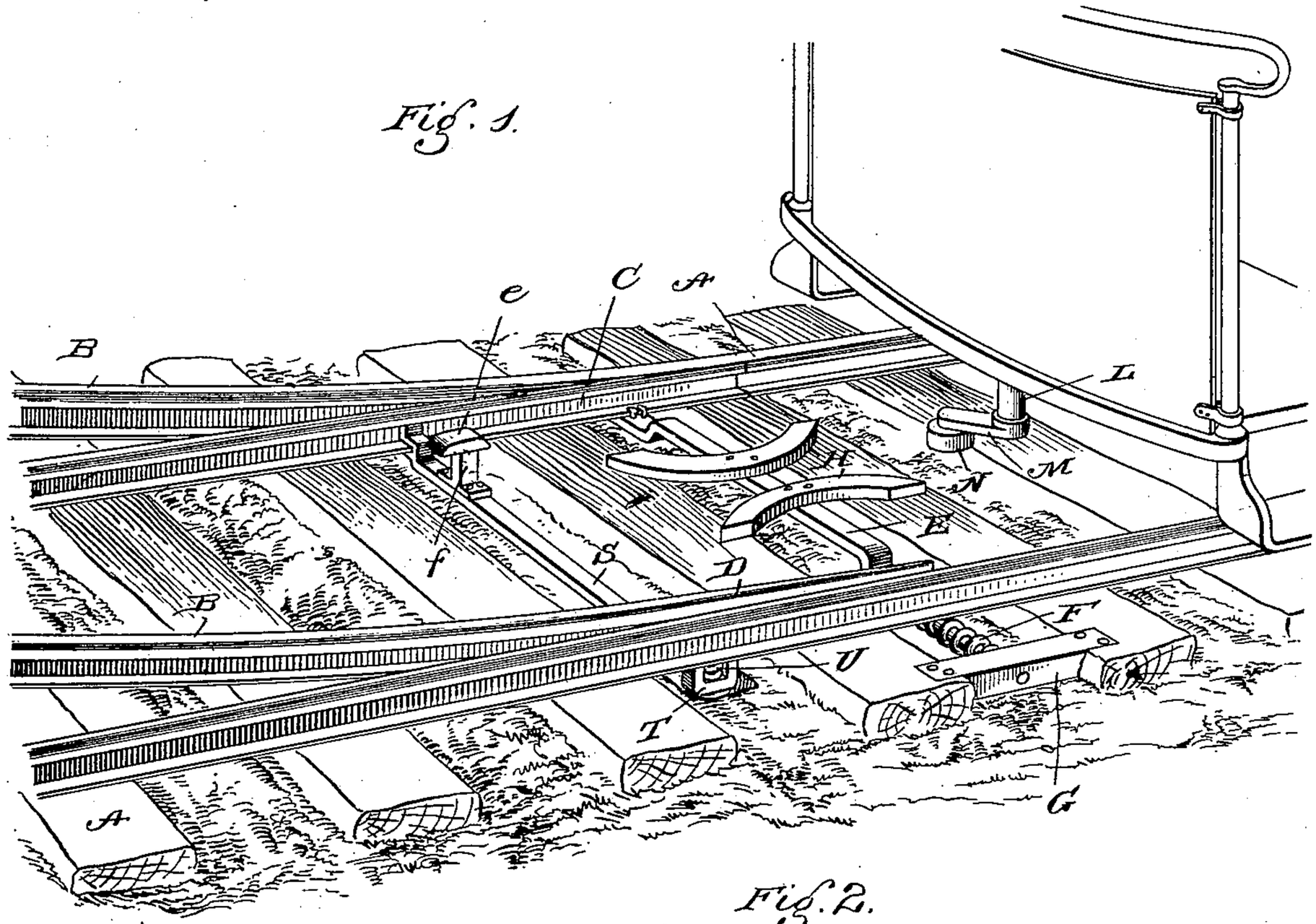


Fig. 2.

Fig. 3.

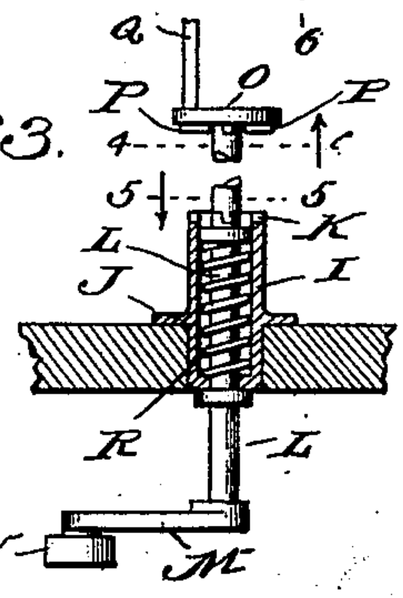


Fig. 4.

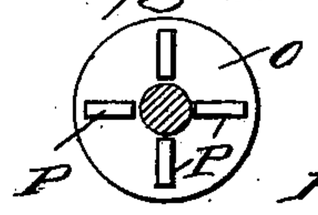
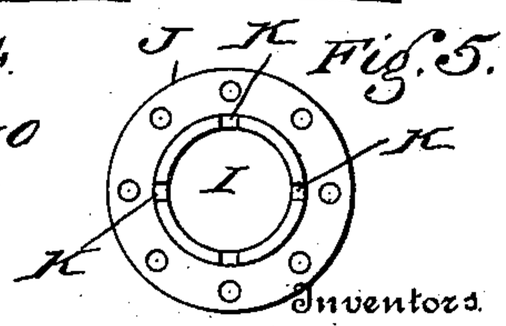


Fig. 5.



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UNITED STATES PATENT OFFICE.

DAVID N. WEATHERS AND WILLIAM S. STEVENSON, OF MARENGO, INDIANA.

SWITCH-OPERATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 677,827, dated July 2, 1901.

Application filed August 18, 1900. Serial No. 27,292. (No model.)

To all whom it may concern:

Be it known that we, DAVID N. WEATHERS and WILLIAM S. STEVENSON, citizens of the United States, residing at Marengo, in the county of Crawford and State of Indiana, have invented a new and useful Switch-Operating Device, of which the following is a specification.

This invention relates to improvements in switch mechanism; and the object is to provide an improved construction which may be readily operated by means carried by the car, which means may be reversed to operate the switch mechanism to open communication between the main track and a side or branch track disposed either at the right or left side of the former.

With the above object in view the invention consists in the novel features of construction hereinafter fully described, particularly pointed out in the claim, and clearly illustrated by the accompanying drawings, in which--

Figure 1 is a perspective view of the improved switch mechanism, the front portion of the car carrying means for operating the switch mechanism being included. Fig. 2 is a top plan view with the car omitted; and Fig. 3 is a vertical sectional view through the car-platform, showing the operating means for the switch mechanism. Fig. 4 is a plan view of the under side of the locking-plate of the plunger. Fig. 5 is a similar view of the upper end of the plunger-casing.

Referring more particularly to the drawings, A designates the main track, and B the branch or side track, each track having an interrupted inner rail.

C designates the switch-rail for the interrupted rail of the main track, and D the switch-rail for the interrupted rail of the side track, said rails being connected by the cross-bars E and adapted to swing to contact with the rails of the main track for the purpose of opening or closing communication with the branch track. The switch-rails are normally held in position closing communication with the branch track by a coiled spring F, positioned on the outside of the continuous rail of the main track, extending through an opening in said rail, and at one end bearing against switch-rail D and at its opposite end against a cross-piece G, secured between two of the ties.

Two cam-rails are secured to the cross-piece E of the switch-rails, said cam-rails being in the form of curved rails H, placed with their convex surfaces facing each other and separated to form a way therebetween, as clearly illustrated.

The car-platform is perforated vertically, and secured in this perforation is a casing I, projecting at its upper end above the platform and formed with a flange J, provided in its upper surface with diametrically oppositely extending grooves K. Movable vertically in this casing is a stem L, having on its lower end a crank-arm M, in which a friction-roller N is mounted. Upon the upper end of said stem is a circular plate O, having on its under side diametrically oppositely extending ribs P. This plate is provided with a handle Q, which extends upwardly within convenient reach of the motorman. A coiled spring R holds said stem raised, so that the friction-roller does not contact with the cam-rail until the stem is depressed by the foot of the motorman.

When it is desired to operate the switch mechanism, the handle of the stem is turned to bring the crank-arm to the right or left of the stem, according to whether it is desired to switch to a track disposed to the right or left of the main track. The stem is then depressed by the foot of the motorman and held depressed until the car has passed to the side track. When said stem is depressed, the ribs on the under side of the top plate thereof rest within the grooves of the upper end of the casing, so that the crank-arm is held from lateral movement while effecting the movement of the switch-rail.

For holding the switch set until the car has passed to the branch or side track a transversely-extending spring locking-bar S is provided, said bar being attached at one end to one of the switch-rails and having its opposite end projecting through and movable in an opening formed in a plate T, depending from the other switch-rail. A coiled spring U holds said end of the bar normally upward. This projecting end of the bar is formed with a hook V, having a cam outer end wall, and

as the switch-rails are moved by the plunger to establish communication between the main and branch tracks said hooked end is depressed by the engagement of the cam-wall thereof with the lower edge of a plate W, depending from one of the track-rails, until the opening of the hook is reached, when said bar will spring upwardly, receiving the lower edge of the depending plate in the hooked portion and securely holding the switch set until said bar is disengaged.

The locking-bar is provided with the standard *f*, upon which is formed a head *e* to be engaged by operating means carried by the car for the purpose of depressing the locking-bar, causing its hooked end to disengage the depending plate, and thus releasing the switch-rails, which are returned to their normal positions by the spring before referred to. The locking mechanism above referred to and the mechanism carried by the car for tripping the same are claimed in the application for Letters Patent filed by David N. Weathers, one of the joint inventors in the present application, said application having been filed August 11, 1900, Serial No. 26,625.

From the foregoing description it will be seen that we have provided a very simple switch mechanism and means for operating the same, which means may be reversed, so as to engage the cam-rail of the mechanism and operate the same to open communication with a side track disposed either to the right or left of the main track.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

In a switch mechanism, the combination with a switch-rail and a cam-rail carried thereby, of a vertically-movable and rotatable stem carried by the car, a crank-arm carried by the lower end of said stem and provided with a friction-roller, an operating-handle for rotating said stem, and means for locking said stem in position with the crank-arm extending either to the right or left thereof, substantially as described.

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