No. 645,802. Patented Mar. 20, 1900.

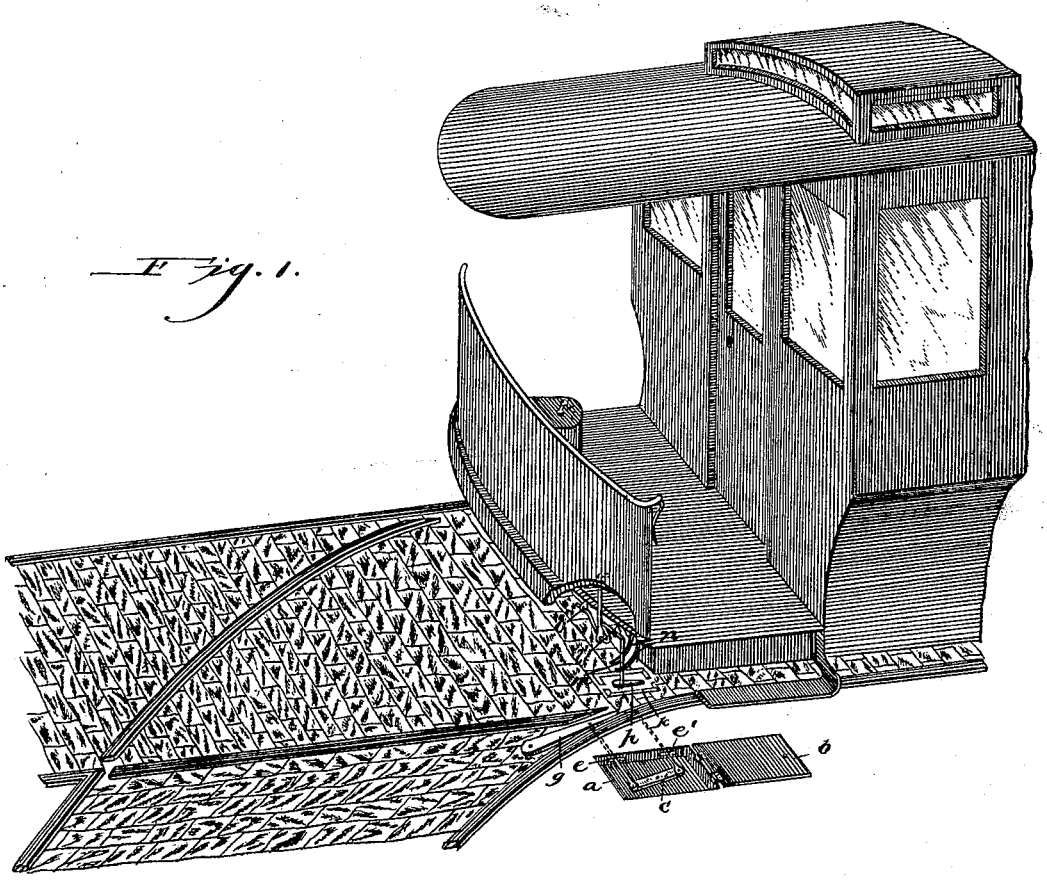
D. E. GILCHRIST.

STREET RAILWAY SWITCH.

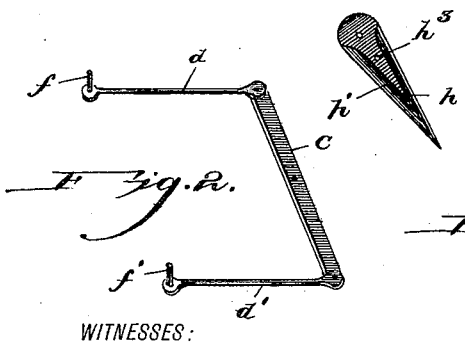
(Application filed Nov. 26, 1897.)

(No Model.)

F fig. 1.

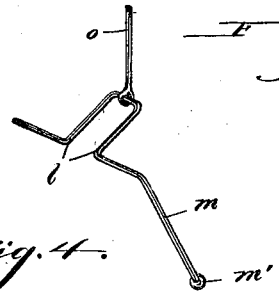


F fig. 3.

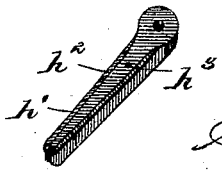


F fig. 2.

F fig. 5.



F fig. 4.



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DAVID E. GILCHRIST, OF PITTSBURG, PENNSYLVANIA.

STREET-RAILWAY SWITCH.

SPECIFICATION forming part of Letters Patent No. 645,802, dated March 20, 1900.

Application filed November 26, 1897. Serial No. 659,776. (No model.)

To all whom it may concern:

Be it known that I, DAVID E. GILCHRIST, a citizen of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Street-Railway Switches, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in switches; and it relates particularly to that class that are adapted to be operated by a motorman or conductor from the car-platform.

The invention has for its object to construct a switch of this class wherein the operating-levers of the switch-tongue will be arranged beneath the surface of the track and covered, so as to prevent their being injured by traffic of vehicles over the same.

The operating device that is attached to the car consists of a bell-crank lever that is operated by means of a foot-lever attached thereto, so as to bring the operating-arm of the bell-crank lever into engagement with the tongue for moving the levers arranged beneath the track and connecting with the switch-tongue, all of which construction will be hereinafter more specifically described, and particularly pointed out in the claim.

The invention is also designed to be extremely simple in its construction, strong, durable, and effectual in its operation, and comparatively inexpensive to manufacture.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like letters of reference indicate similar parts throughout the several views, in which—

Figure 1 is a perspective view of a portion of the track and of a car, showing my improved switch in position and with the lid of the casing open to disclose the position of the levers. Fig. 2 is a perspective view of the switch-tongue and its operating-levers. Fig. 3 is a perspective view of the tongue that is engaged by the lever attached to the car. Fig. 4 is a perspective view of a modified form of same. Fig. 5 is a perspective view of the bell-crank-operating lever attached to the car.

To put my invention into practice, I provide at the side of the track at a point opposite or near the switch-tongue a casing a, which is or may be provided with a hinged lid b. Pivotally secured to the bottom of this casing and of less length is a bar c, to one end of which is connected a rod or lever d, which passes through a slot e in the casing and has its other end connected by a pin f to the switch-tongue g. A similar but longer rod d' is attached to the other end of the bar c and passes through the slot e' and is connected by a pin f' to the tongue h, that is arranged in the bed of the track between the rails, the oblong slots e and e' being in alinement with the ends of the bar c. This tongue h is provided with chamfered sides h' and is held pivotally near its larger end. The said tongue may also be protected by guards k, arranged at the sides of the same. These guards k consist of elongated strips of suitable material having a portion of each end bent at an angle, so that each angle end of one guard will be in alinement with the angle end of the opposite guard, but not engaging each other. The operating device is attached to the car-platform and comprises a bell-crank l, which is supported by hangers l', and one end of which extends downwardly, forming an arm m to engage the tongue h and operate the switch, the said arm being provided on its lower end with a knob or shoe m', which is adapted to ride the chamfered sides of the tongue h until it has passed the point where the rod d' connects with the tongue, at which time the pressure of the rod against the said tongue will cause the switch to be operated. The strain upon this rod is relieved by means of guides n, attached to the car-body and between which the arm m operates. The bell-crank l has attached thereto the foot-lever o, which passes upward along the inside of the dashboard, so as to be in a convenient position for the motorman.

In Fig. 4 I have shown a modified form of tongue h^2 to be engaged by the operating-arm m, although I prefer the peculiar form that is shown in Fig. 3. The operation will be readily apparent from the views of the same that I have shown in the drawings, as it will be observed that when the operator releases the foot-lever the arm m is permitted to descend, and as the shoe m' comes in engagement with the tongue it will ride along the chamfered sides of said tongue until it passes

beyond the connecting-point h^3, at which time the pressure of the arm, by reason of the angle on the sides, will cause the tongue to move in the opposite direction from the side that is engaged by the arm, and thereby operate the rods d d', the bar c, and the switch-tongue, their direction of movement depending upon which side of the tongue h the operating-arm is engaging.

After the switch has been once laid in position the lid b will protect the same from injury, and as all the mechanism can be placed below the surface of the track no obstruction is presented to passing vehicles. The operating device attached to the car is also arranged so that no obstruction will be presented for the coupling of the cars together.

It will be noted that various changes may be made in the details of construction without departing from the general spirit of my invention.

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

The combination with a tapering switch-tongue pivoted at its larger end adapted to be used in connection with the rails of a street-railway, of a tongue h pivotally secured near one end in the bed of a railroad-track and provided with chamfered sides extending from the free end of the said tongue to a point on a central line with the pivot of the tongue which is arranged in the larger end thereof, a guard k mounted at each side of the said chamfered tongue and consisting of an elongated strip of suitable material having a portion of each end bent at an angle so that each angle end of one guard will be in alinement with the angle end of the opposite guard, but not engaging each other, a casing arranged at the side of the railway-track opposite the switch and chamfered tongues, said casing having a hinged lid and provided in its side nearest the track with a pair of oblong slots e, e', a flat elongated bar of less length than the said casing pivotally secured at its center to the bottom of the casing, the ends of the said bar being in alinement with the said oblong slots, a rod d' pivotally secured to one end of the bar c and operating through the slot e, a pin f' mounted in the outer end of the said rod d' adapted to be secured to the switch-tongue near the tapering end thereof, a rod d of greater length than the rod d' pivotally secured to the opposite end of the said bar c and operating through the slot e', a pin f mounted in the outer end of said rod d adapted to be secured to the chamfered tongue near the pivoted point thereof, and an operating means for the said tongues suspended from a car-platform and consisting of a bell-crank l, a pair of hangers secured to the underneath face of the car-platform in which is journaled the said bell-crank, a downwardly-extending arm m formed integral with the said bell-crank, a shoe m' mounted on its lower end and adapted to engage the chamfered sides of the tongue h for operating the same, a foot-lever connected to the bell-crank l, for operating the same, and a pair of downwardly-extending curved guides secured to the underneath face of the car-platform and adapted to be engaged by the said arm m when in the operative position and hold the same in engagement with the tongue h, substantially as set forth.

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

DAVID E. GILCHRIST.

Witnesses:
JOHN NOLAND,
WILLIAM E. MINOR.