

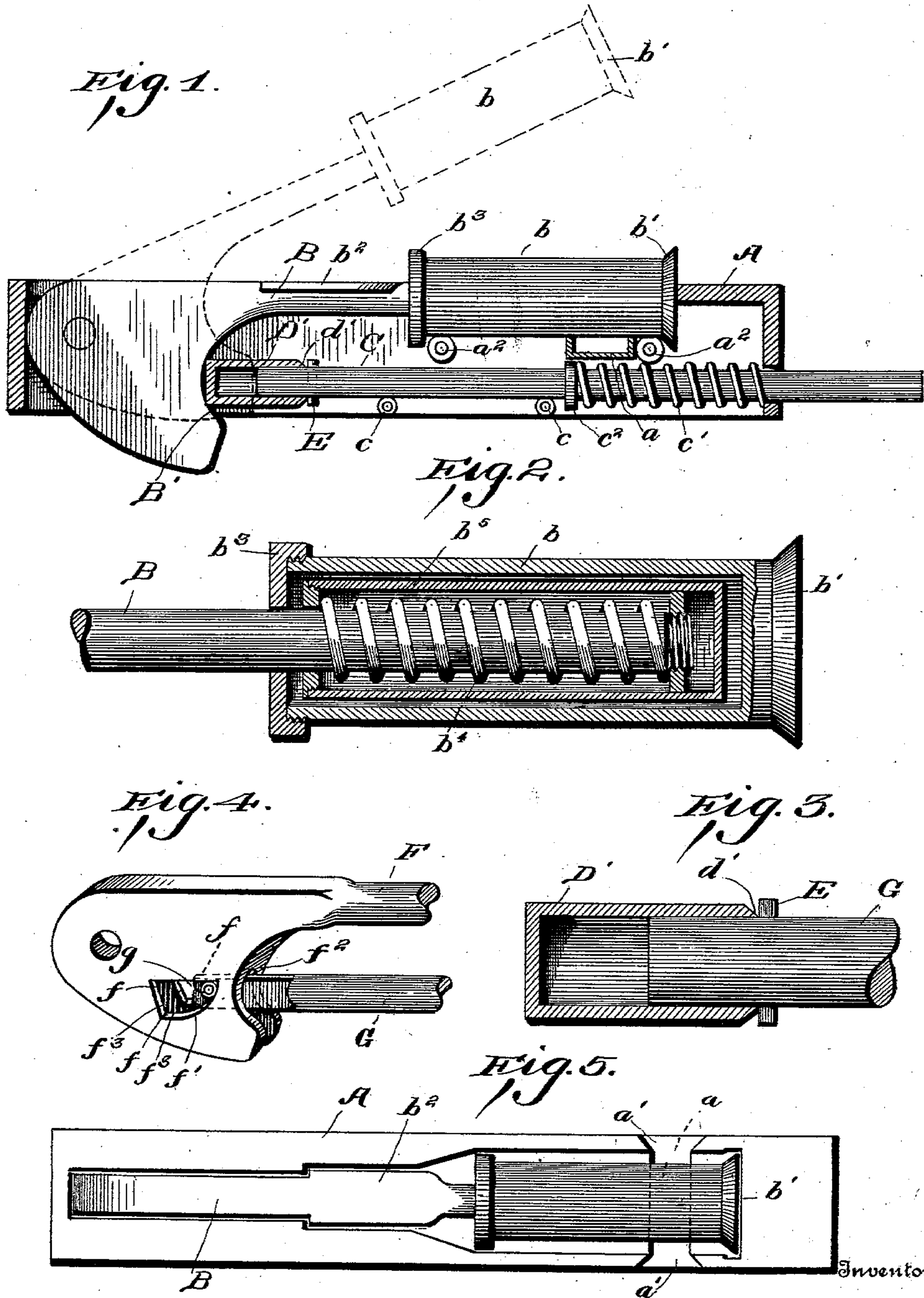
No. 694,742.

Patented Mar. 4, 1902.

G. G. GUENTHER.
RAILROAD SWITCH.

(Application filed Nov. 28, 1900.)

(No Model.)



Witnesses.

R. A. Boswell.
[Signature]

George G. Guenther,
By
Edw. S. Drivall, Jr.
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UNITED STATES PATENT OFFICE.

GEORGE G. GUENTHER, OF LOS ANGELES, CALIFORNIA.

RAILROAD-SWITCH.

SPECIFICATION forming part of Letters Patent No. 694,742, dated March 4, 1902.

Application filed November 28, 1900. Serial No. 38,051. (No model.)

To all whom it may concern:

Be it known that I, GEORGE G. GUENTHER, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Railroad-Switch, of which the following is a specification.

My invention is an improved switch for railroads designed to be capable of being automatically operated by the passing car.

My invention consists in the novel construction and combination of parts hereinafter fully set forth in the specification and particularly pointed out in the claims forming part thereof.

In the accompanying drawings, illustrating my invention, Figure 1 is a longitudinal sectional view of the switch-box, exposing the switch-operating mechanism to view and showing in dotted lines the switch-lever partly raised. Fig. 2 is a detail sectional view of the slidable roller upon the end of the switch-lever. Fig. 3 is a detail view. Fig. 4 is a detail view of a modified form of lever, and Fig. 5 is a plan view of the switch-box.

Like letters of reference designate identical parts throughout the several views of the drawings.

In the practice of my invention the switch-lever will be operated by a pick-up mechanism carried by the car and preferably automatic in its action; but it may be manually operated. I provide a rectangular switch-box A, in which the switch-operating mechanism is incased. At one end, preferably the end farthest from the track, may be pivoted or otherwise suitably mounted to swing upwardly the switch-lever B. An opening in the top of the switch-box permits freedom of movement of the lever. This lever B is provided with a roller *b*, slidably mounted on the end and forming an extension thereto. It is formed with an annular flange *b'* on its outer end to maintain it in engagement with the pick-up device. For a manual pick-up the lever is formed with the laterally-projecting ribs or flanges *b²* on the top thereof and between the roller and the pivotal point of said lever. This roller *b* has a removable cap *b³* with a central opening for the insertion of

the lever, which is rounded for a sufficient distance from its end to enter this roller. Within the said roller a helical spring *b⁴*, coiled around the lever, is confined within a closed cylinder *b⁵*, which serves as a journal for the roller. On its under side near the pivotal point the lever is formed with a cam-face B, which bears against or contacts loosely with and actuates the switch-bar C. This switch-bar may be cylindrical and lies in the switch-box longitudinally, resting on cross-rollers *c c*, which are mounted transversely in the box, and said bar C projects through an opening in the front of the box, and its outer end is suitably connected with the switch, which is not shown. A helical spring *c'* is coiled upon said switch-bar and confined between the end of the box and a collar *c²* on the bar and within the box. Between this bar and the roller *b* and passing from one side of the box transversely to the other is a guideway or channel *a*, having the flared entrances *a' a'* on either side of the box, through which the pick-up device may enter the box and lift the lever. Above this switch-bar are bolts *a² a²*, passing through the box transversely and forming rests for the roller. The end of the switch-bar, which contacts with the cam-face, is provided with a device for relieving the switch-operating bar from the pressure or force of the lever if further movement of said bar is arrested when the switch meets with an obstruction which might wreck the mechanism. This device consists of a thimble or cap *D'*, fitting loosely upon this end of the bar and provided around the mouth or rim with a cutting edge *d'*. This thimble rests against the projecting ends of a pin E, which passes diametrically through the bar. This pin may be formed of wood or other material easily cut by the thimble when a pressure upon the lever meets with a counter-pressure from the switch due to an obstruction, or there may be two of these pins merely seated in recesses in the sides of this bar instead of a single pin passing therethrough. This is too obvious a substitute therefor to need illustration. It will be noted also that this connection between the switch-bar and lever being merely a loose contact a car may back through the switch without disturbing the lever.

In Fig. 4 I have shown a modified form of arresting device adapted for switches wherein the movable rail-sections are to be pulled to the main rails instead of pushed away therefrom. The cam is formed from corresponding sides $f' f'$ of the opposite triangular openings $f f$, formed in the bifurcated end f^2 of a switch-lever F. The end of the switch-bar G passes between the two bifurcations of this end of the lever, and the thimble is dispensed with. A wooden pin g passes through the switch-bar and rests against this side f' ; but an obstruction in the switch will force the pin against the other side f^3 of the opening f , which side is provided with a cutting edge.

The operation of this invention will be obvious from the foregoing description.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination with a railroad-switch and a switch-throwing bar, of an operating-lever for said bar, and means for disconnecting the operating-lever and the switch-bar, when a counter force opposes the movement of the switch-rail.
2. The combination with a railroad-switch, a switch-throwing bar, a spring to return said bar to its normal position and an operating-lever, of a telescoping connection between said bar and the operating-lever, adapted to be operated by a counter force opposing the movement of the switch-rail.
3. The combination with a railroad-switch, a switch-throwing bar, means for returning said bar to its normal position, and an operating-lever, of a thimble mounted upon the free end of the switch-bar and interposed between said bar and the operating-lever, and adapted to telescope upon the end of the bar to destroy operative connection between the bar and lever.
4. The combination with a railroad-switch, of a reciprocable switch-bar, a telescoping thimble mounted upon the free end of the switch-bar, and a pivoted switch-lever, having a cam-face bearing against the thimble

upon the end of the switch-bar, substantially as described.

5. The combination with a railroad-switch, of a reciprocable switch-bar, having a free end, stops projecting from the sides of the bar, a predetermined distance from said end, a thimble on the free end of the switch-bar, and formed with a cutting edge around the mouth thereof, designed to bear against the projecting stops, a pivoted switch-lever formed with a cam-face, bearing against the end of the thimble and a spring acting upon said switch-bar, to return it to its normal position, substantially as described.

6. The combination with a railroad-switch and operating mechanism, of an upwardly-swinging, pivoted switch-lever, and a flanged roller, slidably journaled on the end of the lever, and designed to be engaged by a pick-up mechanism on the car.

7. The combination with a railroad-switch and operating mechanism, of an upwardly-swinging, pivoted switch-lever, a slidable cylinder, mounted on the arm of said lever and containing a helical compressible spring, and a removable roller loosely journaled on said cylinder and adapted to slide along the lever-arm, therewith, substantially as described.

8. The combination with a railroad-switch, and operating mechanism, an upwardly-swinging, pivotal switch-lever, and a flanged roller, slidably journaled on the end of the lever and designed to be engaged and lifted by pick-up mechanism on a passing car, of a switch-box for the switch-lever and operating mechanism, constructed with a guideway or channel beneath the roller on the lever and transversely of the box and said lever, with entrances from either side of said box, substantially as described.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in the presence of two witnesses.

GEORGE G. GUENTHER.

Witnesses:

A. G. G. GUENTHER,
C. G. KEYES.