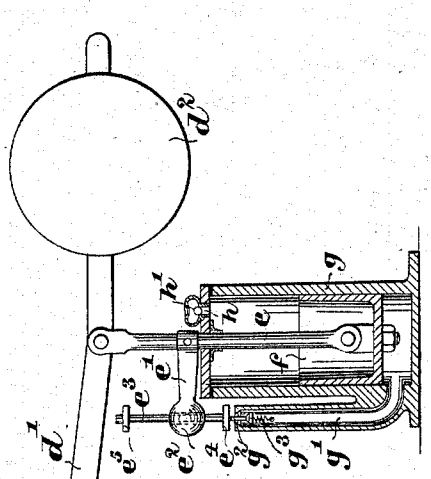
(No Model.)

J. G. DIXON.

SWITCH.

No. 527,482. Patented Oct. 16, 1894.



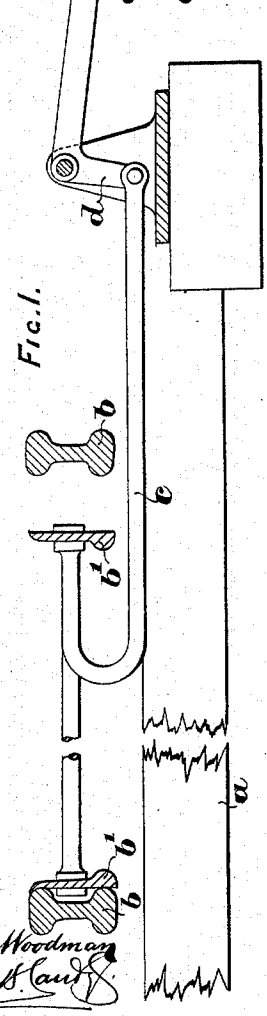
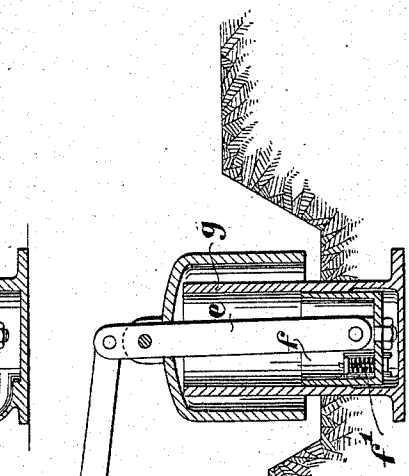


Fig. 1.



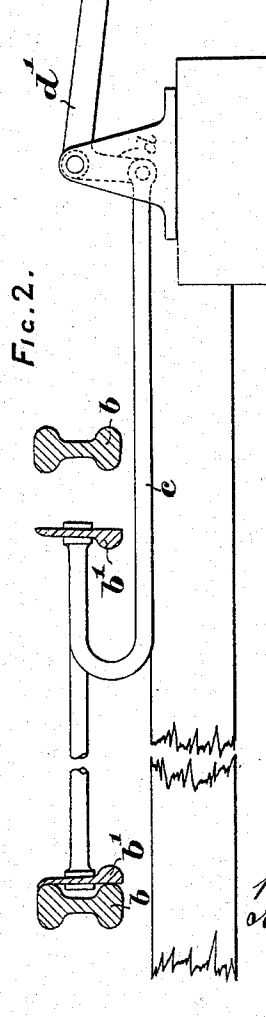


Fig. 2.

Witnesses:
Arthur Woodman
William B. Card

Inventor
John G. Dixon
per
Thos. P. O'Donnell
Attorney.

UNITED STATES PATENT OFFICE.

JOHN GEORGE DIXON, OF BIRKBY, ENGLAND.

SWITCH.

SPECIFICATION forming part of Letters Patent No. 527,482, dated October 16, 1894.

Application filed March 2, 1894. Serial No. 502,116. (No model.) Patented in England July 13, 1893, No. 13,646.

To all whom it may concern:

Be it known that I, JOHN GEORGE DIXON, a subject of the Queen of Great Britain and Ireland, residing at 98 Norman Road, Birkby, in the county of York, England, have invented certain new and useful Improvements Relating to Catch-Points or Switches, (for which I have obtained a patent in Great Britain, No. 13,646, dated July 13, 1893,) of which the following is a specification.

This invention relates to improvements for controlling catch points or switches.

This invention consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In order that my invention may be better understood and more readily carried into effect I will proceed to describe the drawings hereunto annexed, in which similar letters refer to similar parts in both figures.

Figure 1 illustrates a cross-section of the permanent way and a part section of one form of my apparatus for preventing the too rapid return of the switches to their normal position. Fig. 2 illustrates a cross-section of part of the permanent way and an alternative form of apparatus to that shown in Fig. 1.

Referring to Figs. 1 and 2 in connection with switch points, a is the sleeper; b, the stock rail; b', the switch rail; c, the connecting rod from the switch rail; d, d', the bell-crank lever; d^2, the counter-balance weight. e is the piston rod. e' is the tappet attached to the piston rod terminating in a guiding end e^2. e^3 is the slide working in the said guiding end e^2. e^4, e^5 are adjusting nuts on the slide e^3. f is the piston; g, the cylinder; g', the side tube; g^2, the spring valve of which g^3 is the spring. h is a hole or aperture on the upper side of the cylinder on which is a ball valve h'.

A train or vehicle approaching in the trailing direction of the switch moves the points and raises the balance weight d^2 and piston f. The piston is allowed to move rapidly upward by the air being sucked from the side tube g' and the valve g^2 being drawn downward, the air is forced out of the upper side of the cylinder through the aperture h and as long as the wheel is traveling between the switch and the stock rail the switch cannot return to the normal position. The return motion of the switch is retarded in consequence of the air having to escape by leakage from the under side of the piston to the upper side of the cylinder the ball valve h' closing the aperture on the top and the spring closing the valve g^2. In the normal condition the adjusting nut e^4 is on the top of the valve g^2 keeping the said valve open during the upward movement of the piston but when the termination e^2 of the tappet e' (refer to Fig. 1) comes in contact with the upper nut e^5, during the remaining upward motion the slide e^3 is moved upward and away from the valve g^2. Consequently on the return motion the valve g^2 is closed by means of its spring g^3 until the lower adjusting nut e^4 comes in contact with the top of the valve g^2 which instantaneously admits air and allows the final movement in the return of the switch to its normal position to be completed rapidly. The balance weight d^2 acts to return the switch and force the piston down.

In Fig. 2 is shown an alternative form of dash-pot, the upper cover over the cylinder acting as a balance weight in lieu of weight d^2. In this figure f' is a valve in the lower side of the piston which allows the piston to be moved rapidly upward. The valve is closed on the downward motion and the return of the switch to the normal position cannot take place until the air has leaked from the lower to the upper side of the piston.

What I claim is—

1. The combination, with the switch rails, and the rod c secured to them; of the pivoted bell-crank lever, a stationary air cylinder, a piston sliding therein, a rod connecting the said piston and bell-crank lever, a weight normally holding the piston depressed, and a valve permitting the air to enter the lower part of the cylinder when the piston is raised and obliging it to descend slowly, substantially as set forth.

2. The combination, with the switch rails, and the rod c secured to them; of the pivoted bell-crank lever, the stationary air cylinder

provided with the side tube g', the piston, the rod e connecting the piston and bell-crank lever, the tappet e' attached to the rod e, the valve at the top of the cylinder, the spring-pressed valve g^2 at the top of the tube g', and the slide e^3 provided with nuts on its ends above and below the said tappet, said slide being arranged over the said valve g^2 and adapted to operate it, substantially as set forth.

JOHN GEORGE DIXON.

Witnesses:
WM. RAMSDEN,
HAROLD H. RAMSDEN.