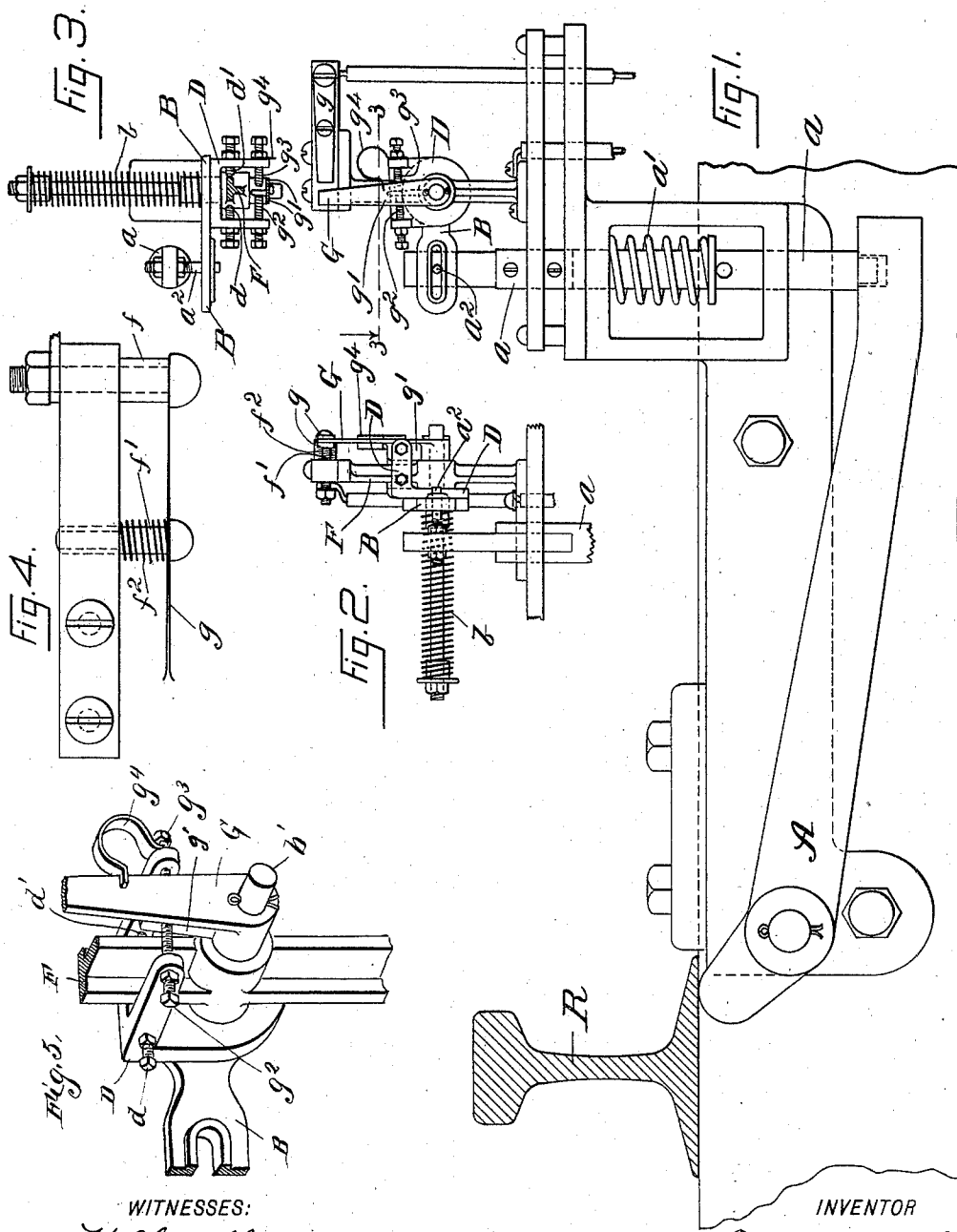


(No Model.)

F. M. BRINCKERHOFF.
CIRCUIT CONTROLLING APPARATUS.

No. 580,519.

Patented Apr. 13, 1897.



WITNESSES:
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UNITED STATES PATENT OFFICE.

FRANCIS M. BRINCKERHOFF, OF MATTEAWAN, NEW YORK, ASSIGNOR TO THE ROWELL-POTTER SAFETY STOP COMPANY, OF PORTLAND, MAINE.

CIRCUIT-CONTROLLING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 580,519, dated April 13, 1897.

Application filed March 10, 1896. Serial No. 582,523. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS M. BRINCKERHOFF, of Matteawan, Dutchess county, State of New York, have invented an Improved Circuit-Controlling Apparatus, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is an elevation of my apparatus applied to a railway for closing a circuit by the passage of a train. Fig. 2 is an elevation of a portion of the apparatus shown in Fig. 1. Fig. 3 is a plan, partly in section, on line 3 3. Fig. 4 is a plan, on a larger scale, of the portion of the apparatus not shown in Fig. 3. Fig. 5 is a perspective view, enlarged for clearness, of the parts shown on right of Fig. 2.

My invention consists in details of construction of a circuit-controlling apparatus made up of a switch-jaw and a moving member actuated through suitable connections by the passage of a train.

In the drawings, A is a lever actuated by the pressure of a passing train on rail R in the usual way and carrying the plunger *a*, which is moved endwise against the force of its spring *a'* when a train passes over rail R and retracted by the force of spring *a'* after the train has passed. Plunger *a* is connected by pin *a''* with friction-arm B. Friction-arm B is mounted upon stud *b'*, carried by standard F, and a spring *b*, surrounding stud *b'*, continually presses arm B against friction-arm D, also mounted upon stud *b'*, thus giving the two arms a frictional connection. Screws *d d'*, carried by arm D, serve, in connection with standard F, as stops to limit the motion of arm D, as may be desired. (See Fig. 3.)

It will be obvious that by means of the friction connection B D excessive movement of the actuating mechanism of the circuit-controller is rendered harmless to the mechanism of the circuit-controller, as the motion of the outer end of friction-arm B upward (the apparatus being in the position shown in the drawings) will carry with it friction-arm D until stop *d* brings up against standard F, and thereafter friction-arm B will move independently of friction-arm D. Friction-arm D also carries two other adjustable stops *g² g³*. Mounted at the outer end of stud *b'* is

an arm *g'*, the end of which projects upward between the stops *g² g³*, (see Figs. 1 and 3,) and fast to the upper end of arm *g'* is a contact-knife G. A spring *g⁴* connects arm D and arm *g'* and tends to keep arm *g'* pressed against stop *g²*.

The operation is as follows: When arm B is moved upward by the passage of a train, arm D moves with it by reason of the frictional contact of the two arms. Arm *g'* being in contact with stop *g²* under pressure of spring *g⁴* the movement of arm D, which carries stop *g²*, forces arm *g'* to the right (see Fig. 1) until knife G, fast to the upper end of arm *g'*, is forced between the jaws of the switch-jaw *g*, which are supported by pins *f f'* in bar *f³*, the two members of the jaw being kept closely connected by a spring *f²* upon pin *f'*. It will be obvious that resistance to the entrance of knife G between jaws *g* and its exit therefrom will be more or less great, according to the pressure exerted by spring *f²*, and the relative strength of springs *f²* and *g⁴* is a matter of practical importance in the construction of my controller. When the outer end of arm B makes its downward stroke under the influence of spring *a'*, arm D will be returned to its normal position with stop *d'* against standard F, arm B completing its back stroke after arm D is arrested by its stop *d'* if the upward stroke of arm B was in excess of the motion to which arm D is limited by its stops; but arm *g'* not being fast to arm D, but independently mounted upon stud *b'*, will not move with arm D, for the friction of knife G in jaws *g*, which are pressed together by spring *f²*, (see Fig. 4,) is sufficient to prevent arm *g'* from moving under the thrust of spring *g⁴* until stop *g³* strikes arm *g'* and compels arm *g'* and knife G, fast to arm *g'*, to move. As soon as knife G is forced out of jaws *g* by stop *g³* spring *g⁴* is left free to act and throws arm *g'* over against stop *g²*, thus preventing an arc between knife G and jaws *g*. The parts B, D, and *g'* are all loosely mounted upon the stud *b'*.

What I claim as my invention is—

1. A circuit-controlling apparatus consisting of a standard F; a stud *b'* projecting from that standard; an arm D loosely mounted upon that stud and controlling arm *g'*; that

arm g' carrying a knife G , and loosely mounted upon stud b' ; spring g^4 connecting arm D and arm g' ; jaws g , fast to standard F and means to actuate arm D , all organized and operating
5 as described.

2. In a knife-switch the jaws; a post at one end, sustaining the jaws; a guide-post for the jaws; and a spring, as f^2 , tending to press the

jaws together, and cause them to press upon the knife; all combined substantially as described.

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Witnesses:

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