

(No Model.)

J. W. TEW & J. D. RIGGS.
SWITCH.

2 Sheets—Sheet 1.

No. 502,149.

Patented July 25, 1893.

Fig. 1.

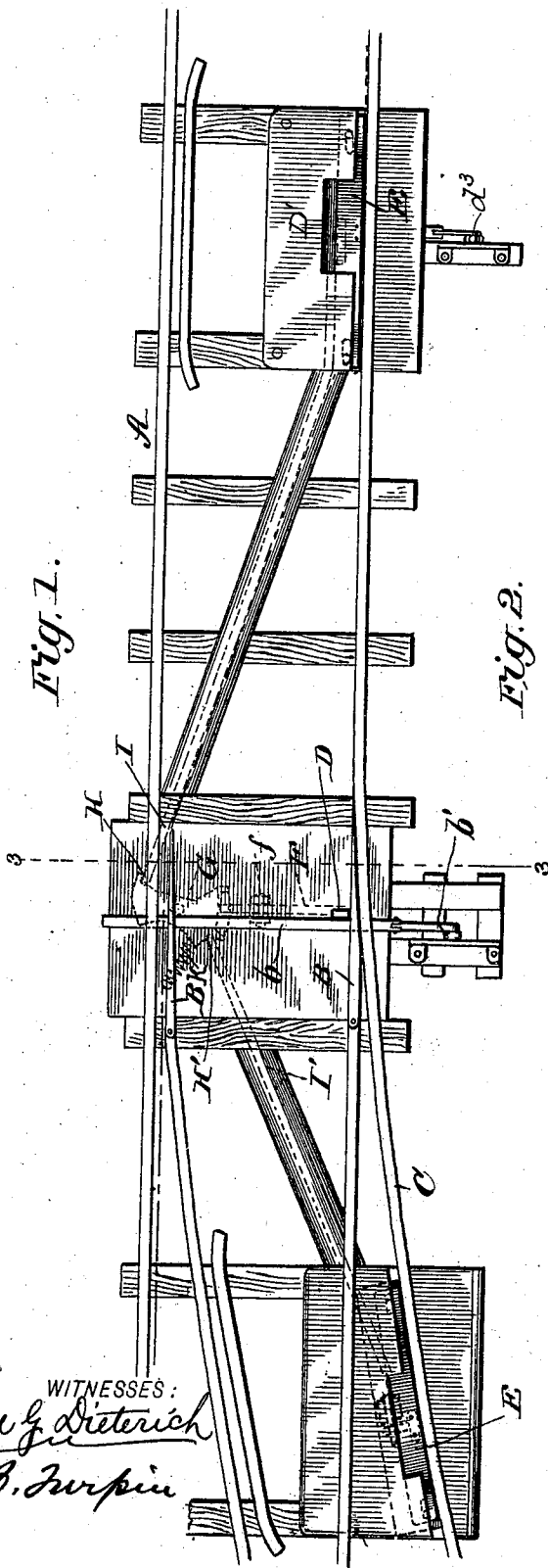


Fig. 2.

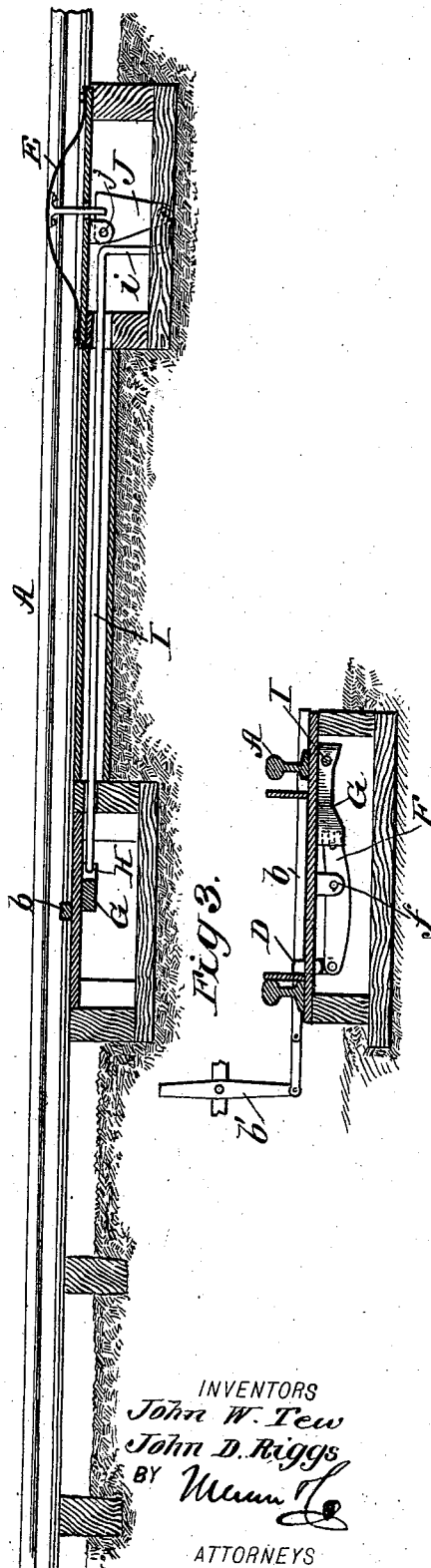


Fig. 3.

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ATTORNEYS

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J. W. TEW & J. D. RIGGS.
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Fig. 4.

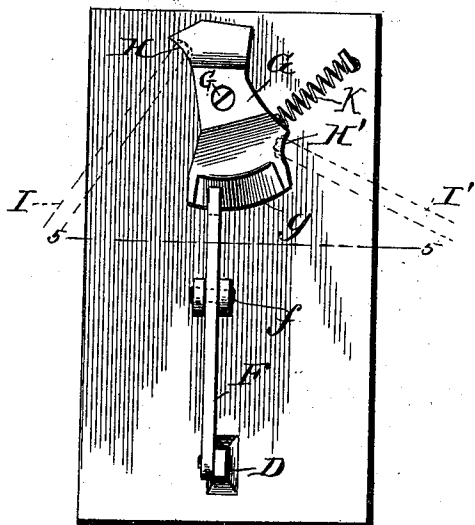


Fig. 5.

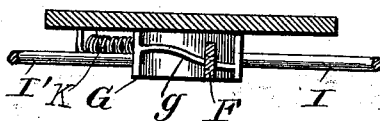
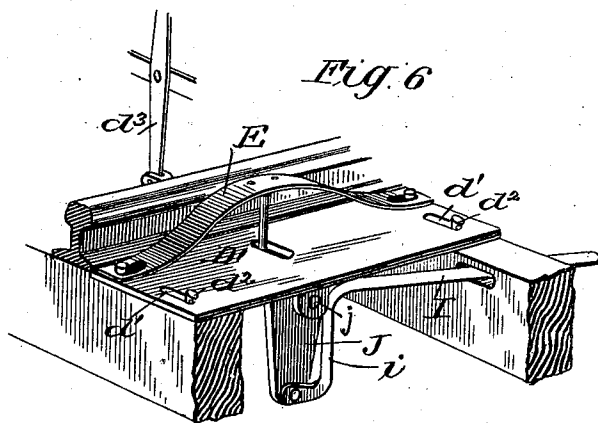


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN W. TEW, OF ROME, GEORGIA, AND JOHN D. RIGGS, OF SELMA,
ALABAMA.

SWITCH.

SPECIFICATION forming part of Letters Patent No. 502,149, dated July 25, 1893.

Application filed May 3, 1892. Serial No. 431,735. (No model.)

To all whom it may concern:

Be it known that we, JOHN W. TEW, residing at Rome, in the county of Floyd and State of Georgia, and JOHN D. RIGGS, residing at Selma, in the county of Dallas and State of Alabama, citizens of the United States, have invented a new and useful Automatic Safety-Switch, of which the following is a specification.

10 This invention is an improvement in rail road switches, and seeks to provide means whereby unauthorized persons may be prevented from throwing the switch by providing in connection with the switch devices,
15 locking means, to release which requires the exercise of great power or weight.

The invention consists in certain novel constructions and combinations of parts as will be hereinafter described and pointed out in the
20 claims.

In the drawings, Figure 1 is a top plan view, Fig. 2 a longitudinal section and Fig. 3 a transverse section of a switch provided with our improvements. Fig. 4 is a detail inverted
25 plan view of some of the lock operating devices. Fig. 5 is a cross section on about line 5, 5 of Fig. 4 and Fig. 6 is a detail view of one of the wheel contact plates and the parts immediately connected therewith.

30 The main line A and switch rails B leading to the siding C may be of any desired construction and the switch may be operated in any suitable manner. In the construction shown the pivoted switch rails B are shown connected by a rod or bar b and for operation
35 by a lever b' and the operation of the switch to open or close will be readily understood.

To lock the switch in closed position as shown in Fig. 1 and to prevent its being opened
40 except when desired are the purposes of this invention. To this end we provide a lock projection D which projects normally in position to lock the switch. This is preferably alongside one of the movable switch sections as
45 shown, so as to lock such section and its mate from movement. This will be best understood from Figs. 1 and 3.

Alongside the main line and siding rails, adjacent to the switch, are provided wheel
50 contact plates E arranged for contact by the flanges of the locomotive or car wheels and to

be depressed thereby, the weight of such car or locomotive depressing the contact plate. In connection with these contact plates E and the lock device D is provided intermediate
55 mechanism so that the depression of the contact plate will operate the lock device and set the same out of engagement with the switch rails so that the latter may be readily moved to open the switch. The movement or depression of the contact plate therefore operates to
60 adjust the switch locking device to unlocked position, or in other words to unlock the switch. These contact plates are of high tension and require a great weight to depress
65 them. While it is preferred to arrange the contact or tripping plates E to be depressed to unlock the switch it is manifest that it is not desired to limit the broad features of the invention to the special arrangement of trip-
70 ping or contact devices shown.

By making the tripping devices of high tension the weight of a locomotive or car will be required to operate them, and for such reason the unlocking and misplacement of the switch
75 by meddlers and evil doers are avoided.

The preferred construction of connections between the tripping or contact plates and the lock projections as shown will now be described. Such lock projection D is provided
80 or supported on one end of a lever F which is pivoted between its ends at f so that when rocked on said pivot the projection D will rise into or descend out of locked position. At its end opposite the locking projection the
85 lever F engages with a cam g on a centrally pivoted cam lever G so that the turning of said lever G on its pivot G' will operate to rock the lever F to depress the lock projection. This lever G is engaged at H H' by rods
90 or pitmen I I' which lead to and are connected with bell crank levers J which are pivoted at j and connect with and are operated by the tripping or contact plates E as clearly shown in Fig. 2, the pitmen I I' being provided next
95 the levers J with drop portions i to enable them to connect with the lower ends of the levers J as shown.

In operation, as the tripping or contact plate E is depressed it rocks its bell crank lever J
100 and the said lever by means of its rod I or I' engaging the lever G will operate the same to

causes its cam rib to rock the lever F to depress the locking projection D.

The operation of the said construction will be readily understood. A train on the main or side lines on approaching the switch can stop its locomotive with one of its wheels on the contact plate. This will unlock the switch through the devices before described. The switch can then be opened and the train pass into or out of the switch as the case may be. The switch may then be closed and will be locked as before, a spring K operating to readjust the cam lever G and throw the locking projection up after the switch has been closed. To avoid the wear and tear that would result from the contact plates being engaged and operated by every passing train the said parts are supported so they can be set laterally out of the path of the flange of the wheel. This will be understood from Fig. 6 in which the plate D' supporting the tripping plate E is shown as provided with slots d' for its fastening bolts or spikes d² and a lever d³ is employed for conveniently manipulating said plate to set it out of or into position for operation by the flange of the rail.

In pivoting the levers F and J they are fitted and pivoted between lugs dropped from the plates covering said levers as will be understood from Figs. 3 and 6.

We claim—

1. The combination of the switch rails, a lever pivoted between its ends and provided at one end with a lock projection for locking the switch, and an operating lever engaging directly with the opposite end of said lever and adapted to positively operate the latter into both locked and unlocked positions substantially as set forth.

2. The combination of the switch rails, the locking lever provided with a projection by which to lock the switch and an operating lever provided with a cam arranged to engage and actuate the locking lever substantially as set forth.

3. The combination with the switch rails of the locking lever pivoted between its ends and provided at one end with an upwardly extending locking projection and having a notch in its opposite end, and an operating lever pivoted to rock in a plane at right angles to the plane of movement of the locking lever and having a cam fitting in the notch of said lever substantially as set forth.

4. In a switch substantially as described the combination with the lever provided with the locking projection and the lever G pivoted between its ends and arranged to operate said first lever, of the contact or tripping plates and connections between the same and

the lever G including rods arranged on opposite sides of and engaging the opposite ends of the lever G all substantially as set forth.

5. In a switch the combination with the lever F provided at one end with a locking projection, of a cam lever engaging the opposite end of the said lever and mechanism for operating said cam lever substantially as set forth.

6. In a switch the combination of the lever F provided with the switch locking projection, the lever G arranged to operate the lever F, the tripping or contact plates, and intermediate connections between said plates and the lever G, all substantially as set forth.

7. The combination with the switch, the lever G, the switch locking device and connections between the same and lever G, of the tripping plate, a bell crank lever, operated by said plate, and a rod extending between said bell crank lever and the lever G substantially as set forth.

8. In an apparatus substantially as described the combination with a track of a tripping or contact plate arranged for operation by the wheel flange, a plate or support carrying said contact plate and movable laterally whereby it may be set with the contact plate to adjust the latter into and out of the path of the wheel flange, and the lever J carried by and movable with the supporting plate and connected with the contact plate all substantially as set forth.

9. The combination in a switch lock of the lever F having the lock projection, the lever G for operating said lever F the tripping or contact plate, the bell crank lever operated by said plate and the rod extending between the bell crank lever and the lever G substantially as set forth.

10. The combination in an apparatus substantially as described of the lever F pivoted between its ends and provided at one end with the switch locking projection and the lever G having a cam arranged to engage the opposite end of and operate the said lever F substantially as set forth.

11. The combination substantially as described of the switch, the lock for fastening said switch the lever F supporting said lock the spring actuated lever G having a cam by which to operate the lever F the tripping or contact plate E the bell crank lever J and the rod extending between the levers J and G substantially as set forth.

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