

No. 838,388.

PATENTED DEC. 11, 1906.

E. L. DAVIDSON.
SWITCH ACTUATING MECHANISM.

APPLICATION FILED OCT. 19, 1906.

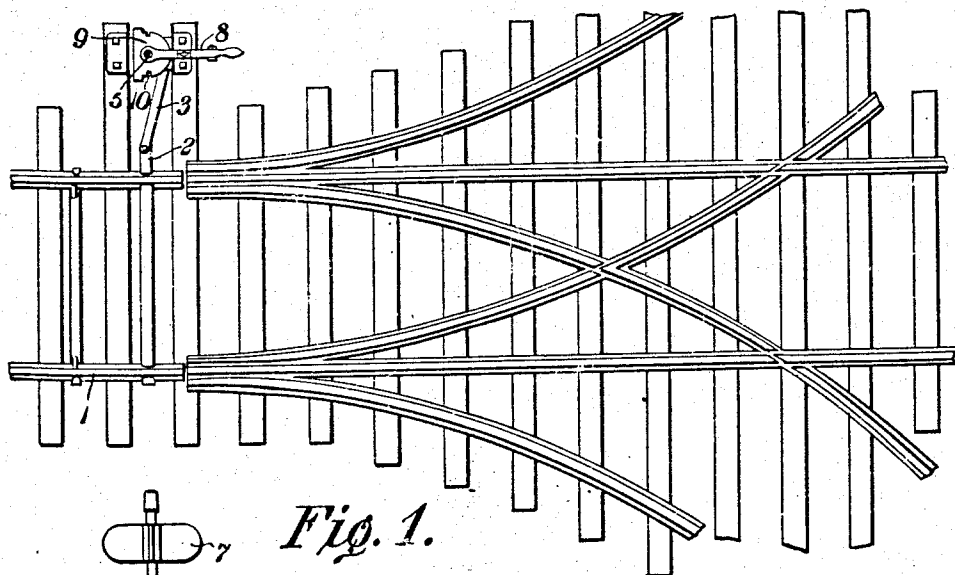


Fig. 1.

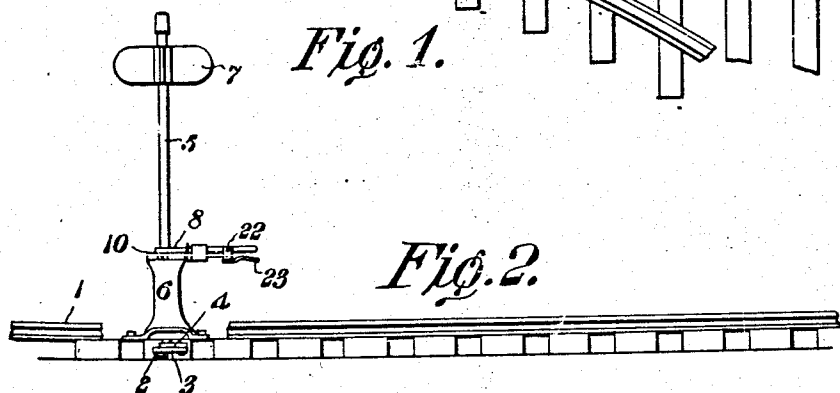


Fig. 2.

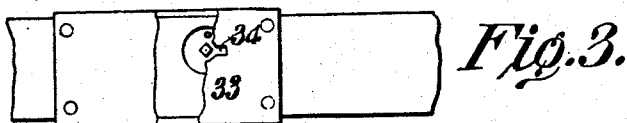


Fig. 3.

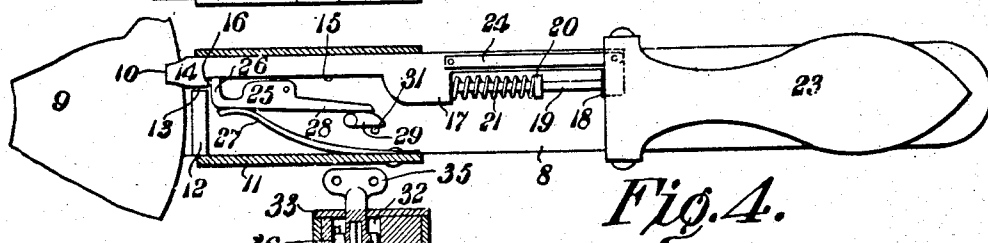
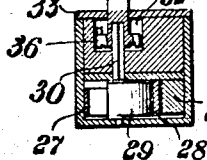


Fig. 4.

Fig. 5.



WITNESSES:

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EDGAR L. DAVIDSON, OF LAWRENCEBURG, TENNESSEE, ASSIGNOR OF ONE-FOURTH TO JAMES W. WILDES, ONE-FOURTH TO JOHN M. FORSYTHE, AND ONE-FOURTH TO EDGAR L. FORSYTHE, OF IRON CITY, TENNESSEE.

SWITCH-ACTUATING MECHANISM.

No. 838,388.

Specification of Letters Patent.

Patented Dec. 11, 1906.

Application filed October 19, 1906. Serial No. 339,714.

To all whom it may concern:

Be it known that I, EDGAR L. DAVIDSON, a citizen of the United States, residing at Lawrenceburg, in the county of Lawrence and State of Tennessee, have invented a new and useful Switch-Actuating Mechanism, of which the following is a specification.

This invention relates to railway-switches, and more particularly to switch-actuating mechanism and a lock therefor.

The object of the invention is to provide simple means whereby a railway-switch can be conveniently operated manually, said means having a key-operated lock, it being impossible to remove the key while the operating means is unlocked, and the lock being adapted when the key is removed to automatically secure the switch-operating mechanism against movement.

With these and other objects in view the invention consists of certain novel features of construction and combinations of parts, which will be hereinafter more fully described, and pointed out in the claims.

In the accompanying drawings is shown the preferred form of the invention.

In said drawings, Figure 1 is a plan view of a railway-switch and with the operating mechanism adjacent thereto. Fig. 2 is an elevation of said mechanism. Fig. 3 is an enlarged top plan view of a portion of the actuating-lever. Fig. 4 is a section through the lock upon said lever, and Fig. 5 is a transverse section through said lock and lever.

Referring to the figures by characters of reference, 1 is a switch connected, by means of an arm 2 and a pivot-rod 3, with an arm 4, which extends from the lower end of a rotatable stem 5, mounted within a standard 6. This stem carries at its upper end a semaphore 7, and secured to the stem directly above the standard 6 is an actuating-lever 8. The top of the standard 6 is preferably substantially semicircular in form, as shown at 9, and the curved edge thereof projects beyond the top of the standard and is concentric with the stem 5 and provided with notches 10, located at desired intervals. A lock-casing 11 is arranged upon the lever 8 close to the top 9 of standard 6, and one end of this casing is partly closed, as shown at 12,

there being an opening 13, through which projects a bolt 14, adapted to be seated within any one of the notches 10. A longitudinally-extending recess 15 is formed in one face of the bolt, there being a shoulder 16 at one end thereof and adjacent the end of the bolt, said shoulder constituting a stop, as will be hereinafter more fully explained. Lateral extensions 17 and 18 are formed upon the bolt at points removed from the recess 15, and these extensions are connected by a guide-rod 19, which is slidably mounted within an ear 20, extending over the lever. A spring 21 is disposed around the guide-rod between the ear 20 and one of the extensions 17 and serves to hold the bolt normally projected from the end of the casing 11. A yoke 22 embraces and is pivoted to the lever and has an arm 23 extending therefrom. This yoke is connected, by means of a spring-strap 24, with the bolt 14, so that each time the arm 23 is drawn toward the lever 8 the strap 24 will pull backward on the bolt 14, so as to withdraw the end of said bolt from any notch in which it may be seated.

A locking-lever 25 is pivotally mounted within the casing 11 and has a finger 26 extending from one end thereof and into the recess 15, said finger being adapted to rest directly back of the shoulder 16 when the bolt is projected, so as to prevent the bolt from being retracted. A spring 27 is secured within the casing and bears on the lever 25, so as to hold the finger 26 within the recess. An arm 28 extends from the lever and close to a rotatable cam 29, which is mounted within the casing and has a stem 30 extending into the lever, said stem being preferably angular in cross-section. A stop-pin 31 is provided for limiting the movement of the cam in one direction. The arm 28 serves to limit the movement of said cam in the opposite direction.

The stem 30 projects into a recess 32, which is formed within the upper face of the lever 8, and extending over this recess is a base-plate 33, having a keyhole 34. A key 35 is adapted to be inserted into the keyhole, and when so inserted will slide on to the stem 30. By giving the key a one-quarter turn the wings 36 thereof will be moved into such

position as to prevent the withdrawal of the key, and this movement of the key will result in partly rotating the cam 29, so as to press against arm 28 and withdraw the finger 26 from recess 15 and against the tension of spring 27. By pulling the arm 23 toward the lever the bolt 14 can then be retracted out of engagement with the top of the standard 6, and the lever can then be swung in either direction, so as to properly position the switch.

In order to withdraw the key 35, it is necessary to turn it until its wings can be withdrawn from the keyhole 24, and this operation will result in the return of the cam 29 to its initial position against the pin 31 and the finger 26 will bear against the bolt 14. If the bolt is not seated within a notch, the lever can be swung until the proper notch registers with the end of the bolt, whereupon the spring 21 will force the bolt forward and the finger 26 will spring into the recess 15 and lock the bolt.

It will be understood that by arranging the springs 21 and 24 in the manner shown the bolt 24 is not only held normally projected from the end of the casing 11, but the arm 23 is normally spaced from the lever 8 without requiring the use of a separate spring for that purpose.

It will be noticed that the lock is very simple in construction and the entire attachment can be connected to switch-operating mechanism at comparatively slight cost.

The preferred form of the invention has been set forth in the foregoing description; but I do not limit myself thereto, as I am aware that modifications may be made therein without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to make such changes as fairly fall within the scope of the claims.

What is claimed is—

1. In switch - operating mechanism the combination with a standard having notches, a partly - rotatable switch - operating stem within the standard, and an actuating-lever connected to said stem and bearing on the standard; of a spring-pressed bolt connected to the lever and normally projecting into contact with the notched portion of the standard, said bolt having a stop, a spring-pressed lever adjacent the bolt and normally in the path of the stop to lock the bolt in projected position, a key-actuated rotatable cam for operating the lever to withdraw it from

the path of the stop, and means for retracting the bolt when released.

2. In switch - operating mechanism the combination with a standard, and a switch-operating lever adapted to oscillate upon the standard; of a spring-pressed bolt upon the lever and normally engaging the standard, said bolt having an elongated recess in one face, a spring-pressed locking-lever normally seated within the recess to hold the bolt against movement, a cam mounted adjacent, and adapted to actuate the lever to withdraw it from the recess, and manually-operated means connected to the lever for retracting the bolt.

3. In switch-operating mechanism the combination with a standard; of a switch-actuating lever mounted to oscillate thereon, a lock-casing secured to the lever, a bolt slidably mounted therein and having an elongated recess, a guide-rod connected to the bolt and movable therewith, a lug upon the lever and constituting a guide for said rod, a spring interposed between the lug and bolt and upon the rod for holding the bolt normally projected from the casing, a spring-pressed lever normally seated within the recess to hold the bolt in projected position, means for retracting the lever from the recess, and manually-operated means for retracting the bolt.

4. In switch-operating mechanism the combination with a standard, and a switch-operating lever mounted to oscillate upon the standard; of a lock-casing carried by the lever, a spring-pressed bolt normally projected from the casing into engagement with the standard, said bolt having a recess, a spring-pressed lever normally seated within the recess, a cam for retracting the lever from the recess, a stem projecting from the cam into the recess within the lever, a face-plate extending over the recess and having a keyhole therein to receive a stem engaging the key, said key being non-removable when the cam is turned to retract the bolt-engaging lever, and means upon the oscillating lever for retracting the bolt.

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

EDGAR L. DAVIDSON.

Witnesses:

CHAS. D. WHITWORTH,
H. P. SEAVY.