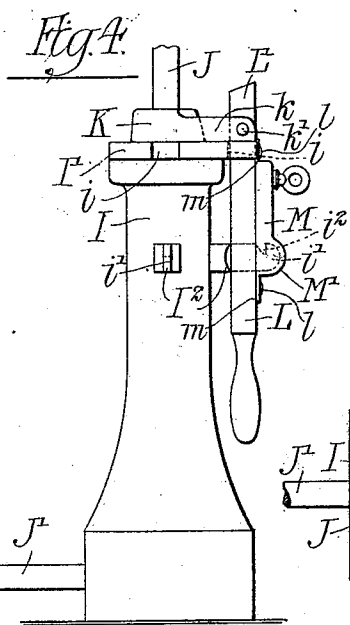
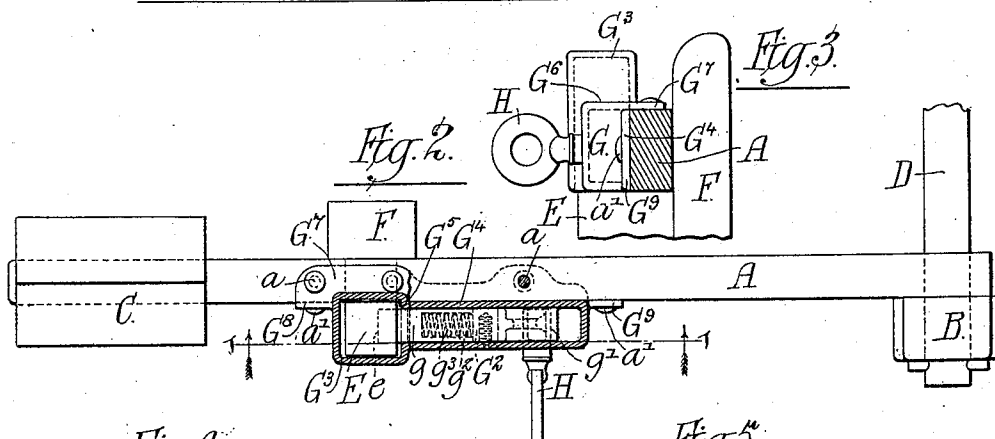
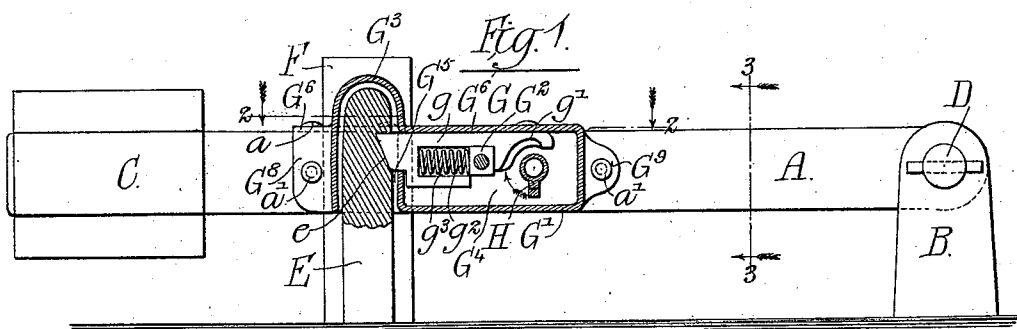


(No Model.)

D. LAVERY.
SWITCH LOCK.

No. 522,219.

Patented July 3, 1894.



UNITED STATES PATENT OFFICE.

DAVID LAVERY, OF KANKAKEE, ILLINOIS.

SWITCH-LOCK.

SPECIFICATION forming part of Letters Patent No. 522,219, dated July 3, 1894.

Application filed February 17, 1894. Serial No. 500,449. (No model.)

To all whom it may concern:

Be it known that I, DAVID LAVERY, of Kankakee, in the county of Kankakee and State of Illinois, have invented certain new and useful Improvements in Switch-Locks; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in automatic or spring locks for railroad switch stands, and it consists in the matters herein-after set forth and pointed out in the appended claim.

In the accompanying drawings:—Figure 1 is a sectional side elevation of one form of switch stand provided with my improved form of lock, taken on line 1—1 of Fig. 2. Fig. 2 is a sectional plan view of the same, taken on line 2—2 of Fig. 1. Fig. 3 is an end elevation, taken on line 3—3 of Fig. 1. Figs. 4 and 5 are side elevations of a different form of switch stand provided with my improved lock. Fig. 6 is a plan view of this form of switch stand.

The form of stand illustrated in Figs 1, 2 and 3 is of an ordinary type comprising an operating lever A pivotally secured to a suitable standard B, and provided at its free end with a heavy weight C by which it is normally held in a substantially horizontal position. Said lever is operatively connected with the movable rails of the switch in any suitable manner, being herein shown rigidly attached to its pivot D which is movably journaled in the standard B, and which may be provided with a crank or other suitable device (not shown) by which the switch is operated as the lever is moved. At its outer end the lever A normally passes between two guide standards E and F arranged on opposite sides of the lever, serving to protect the same from lateral displacement. One of said standards, in this instance the standard E, is designed to be engaged by a lock G provided on the lever A adjacent to said standard E. The bolt mechanism within the casing G' of the lock is of any ordinary self-acting or spring actuated type, comprising in this instance a reciprocating bolt *g* suitably formed at its rear end *g'* to be engaged and with-

drawn by a key H, and normally maintained in its protracted position by a coil spring *g*² inserted in a recess *g*³ in the bolt and resting at its rear end against a lug G² projecting from the wall of the casing. The outer end of the bolt *g* is shown beveled off in the usual manner in order that it may be automatically thrust inward by engaging the rounded upper end of the standard E as the lever is dropped, and said standard is provided with a suitable notch *e* into which the bolt slips as the lever A reaches its lowermost or horizontal position.

In order to prevent, as far as possible, any unauthorized person from tampering with the lock, the casing is extended at its front end to form an integral hood G³ which entirely covers the upper end of the standard E and the outer end of the bolt *g* when the lever is locked in place, it being evident that by this construction it is impossible to insert any instrument between the standard and the end of the bolt to retract the latter, unless said instrument be introduced from the under side where the space is so limited as to render the operation awkward and difficult. Said hood, moreover, enables the working portions of the lock, including the bolt, to be entirely protected from the weather.

A principal object of my invention is to provide a lock in such form that it may be readily adjusted to the switch stands at present in use, such for example as that herein illustrated. Inasmuch, therefore, as the standard E of such stands normally closely engages the side of the lever A, I have herein shown the inner side G⁴ of the lock casing cut away at that portion within the hood G² and have made the inner side G⁵ of the dome of said hood to project over the edge of the top of the lever A, as shown in Fig. 3. A lock casing of great strength is, however provided by extending inward the top G⁶ of the casing to form a flange G⁷ which rests upon the top of the lever and is secured thereto by suitable screws *a*; said flange G⁷ extending the entire length of the lock casing and being integrally connected at its extreme front end with a vertical flange G⁸ engaging the side of the lever A. A similar flange G⁹ is herein shown provided at the rear of the lock casing, said flanges G⁸ and G⁹ being secured to the lever

by screws *a'*. A lock constructed in this manner may obviously be readily applied to any old switch stand of the general pattern shown by simply tapping the necessary screw holes 5 in the operating lever *A*, and filing or otherwise cutting out a suitable notch *e* in the standard *E* to be engaged by the point of the lock bolt. When provided with a lock of this description, the switch obviously cannot be 10 operated except by one provided with a proper key, while at the same time the lever will be automatically locked without the use of the key as soon as it is dropped back in its normal horizontal position.

15 In Figs. 4, 5 and 6, I have shown my improved lock as applied to a well known form of switch stand of the vertical type. In said figures, I designate the supporting column within which a vertical operating shaft *J* is 20 journaled, said shaft being suitably connected at its lower end with a rod or shaft *J'* by means of which the switch is actuated as the shaft *J* is turned. *K* designates a sleeve rigidly secured to the shaft *J* immediately above 25 the standard *I* and provided with outwardly projecting parallel arms *k* between which an operating lever *L* is pivoted, the pivot *K'* thereof being herein shown arranged slightly below the upper end *L'* of said lever, so that 30 when the lever is swung up into a horizontal position said upper end *L'* passes between the parallel arms *k* and relieves the pivot of a large part of the strain. The upper end of the standard *I* is herein shown enlarged to 35 form a generally circular plate *I'* which is provided at suitable intervals with notches *i* into which the lever *L* is adapted to drop. Directly beneath said notches *i* are provided radially extending rigid arms *I²* reduced at their outer 40 ends to form tongues *i'* which are adapted to project through a suitable aperture in the lever *L*. Upon the outer face of the lever *L* is provided a spring lock *M* of a similar type to the lock *G* hereinbefore described and the casing of which is provided at one end with a 45 hood *M'* adapted to receive and conceal the

end of that tongue *i'* with which the lever is engaged, thereby preventing the insertion of an instrument between the tongue and bolt 50 to retract the latter, and at the same time protecting the parts from the weather. The lock casing *M* is herein shown as secured to the face of the lever by flanges *m* and suitable screws *l* passing through said flanges into said lever. With this construction, as with the 55 construction previously described as applied to the horizontal type of switch stand, my lock may be readily attached to the stand already constructed by simply tapping the operating lever to receive the screws *l* and forming in 60 the upper edge of the tongues *i'* a suitable notch *i²* for receiving the bolt of the lock. When supplied with a lock of this character the stand will obviously operate in all respects 65 as before, except that when once locked it can only be unlocked by one possessing the proper key; the lock being at the same time self-acting so as to securely fasten the lever when it is again dropped to engage either of the 70 tongues *i'*.

I claim as my invention—

A switch stand provided with a standard having an operating lever pivoted thereto, guide standards engaging the sides of the lever, a lock provided on the said lever adja- 75 cent to one of said guide standards and the bolt of which is adapted to engage a notch on said standard, flanges at the end of the lock casing, and a flange forming a continuation of the top of the lock casing and adapted 80 to engage the top of the lever, the inner side of the lock casing being cut away within the hood to permit the inclosed standard to directly engage the face of the lever, substantially as described. 85

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

DAVID LAVERY.

Witnesses:

J. P. CLEARY,
HARRY SYLVESTER.