

(No Model.)

J. JUDGE.
SWITCH LOCK.

No. 470,056.

Patented Mar. 1, 1892.

Fig: 1.

Fig: 2.

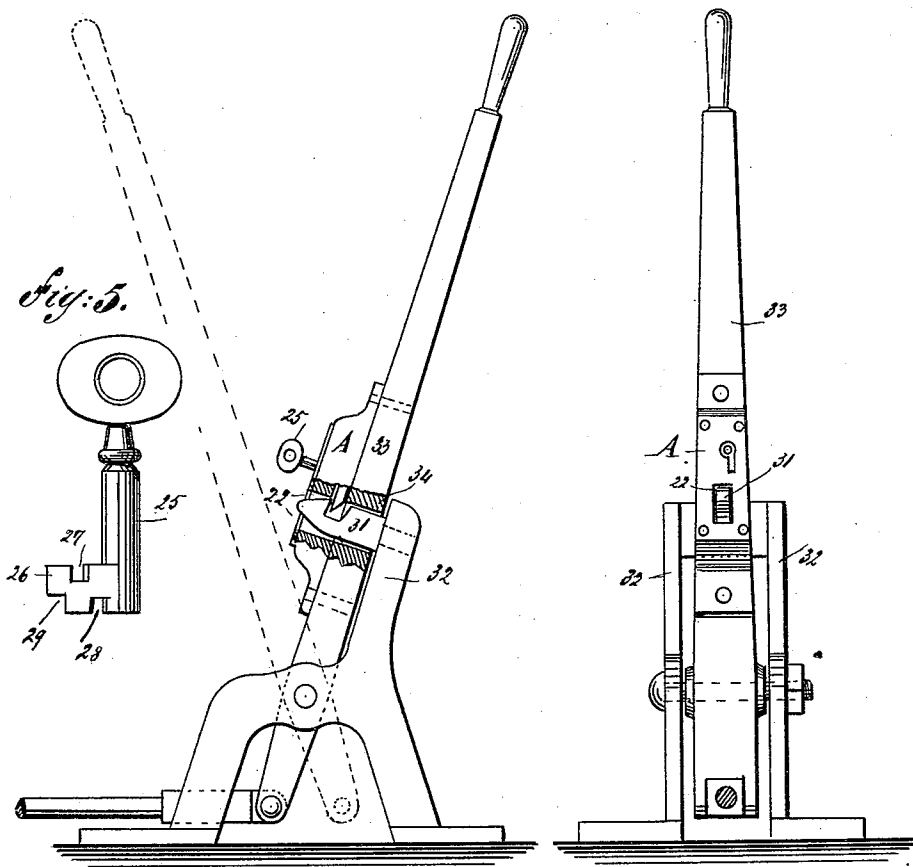


Fig: 3.

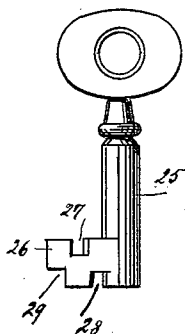
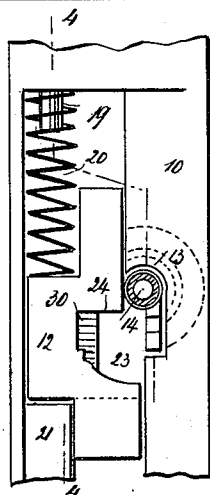
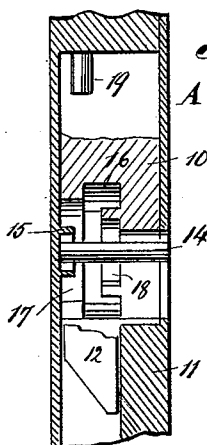


Fig: 3.



WITNESSES:
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Fig: 4.



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UNITED STATES PATENT OFFICE.

JOSEPH JUDGE, OF PITTSTON, PENNSYLVANIA.

SWITCH-LOCK.

SPECIFICATION forming part of Letters Patent No. 470,056, dated March 1, 1892.

Application filed September 5, 1891. Serial No. 404,814. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH JUDGE, of Pittston, in the county of Luzerne and State of Pennsylvania, have invented a new and useful Improvement in Switch-Locks, of which the following is a full, clear, and exact description.

My invention relates to an improvement in switch-locks, and has for its object to provide a lock capable of application to any form of switch, and to so construct and locate the lock that the moment the switch-lever is in position to close the switch it will automatically be locked to the switch-standard, and whereby the switch-lever cannot be released to open the switch without manipulating the lock through the medium of a key.

A further object of the invention is to provide a lock which cannot be opened by striking or otherwise jarring its exterior and which will be simple, durable, economic, and of but few parts.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of a switch stand and lever, illustrating the application of the lock thereto and showing the switch-lever in its closed position. Fig. 2 is a front elevation of the switch lever and stand. Fig. 3 is a plan view of the lock with its top plate removed. Fig. 4 is a longitudinal section through the lock, taken, practically, on the line 4 4 of Fig. 3; and Fig. 5 is a side elevation of a key adapted to open the lock.

The lock consists, preferably, of an essentially-rectangular casing A, the parts whereof are firmly riveted together or otherwise secured. One side 10 of the casing is preferably made considerably thicker than the opposite side, and the top-plate has attached thereto upon its under face a block 11, adapted to fit into the interior of the casing over the bolt 12 and prevent said bolt from having other than longitudinal movement or a movement in the proper direction.

In the inner face of the thicker side wall 10 of the lock-casing a vertical recess 13 is produced, one wall of which recess is semicircular, and adjacent to the semicircular wall of this recess the key-post 14 is located, being secured to the back of the casing. The post is surrounded at its junction with the back by a circular guard 15. A horizontal recess 16 is also produced in the inner face of the thicker side of the casing, which recess is semicircular and is cut at the back or bottom edge of the thicker side, as shown in Fig. 4. The recess is somewhat stepped—that is to say, the lower portion of the recess is of less diameter than the upper portion. In the lower portion of the recess a semicircular guard-rib 17 is formed, extending upward, and integral with the upper wall of the recess a smaller and correspondingly-shaped guard-rib 18 is produced, as is likewise best shown in Fig. 4.

At one end of the casing, within its chamber, a longitudinal stud 19 is located, and the said stud is surrounded by one end of a spiral spring 20, the opposite end of which spring bears against a shoulder produced in one end portion of the bolt 12, a corresponding shoulder being formed in the opposite end, which is adapted for engagement with a block 21, attached to the thinner side or forming a portion of the thinner side of the casing, the said block being adapted to limit the outward movement of the bolt, and the spring 20 normally causes the bolt to engage with the said block—that is to say, the bolt is normally maintained in a locking position.

A recess 22 is produced in one end portion of the lock-casing, which recess extends through from front to rear and exposes the locking end of the bolt 12, which end is beveled upon one face, as illustrated in Fig. 4. The bolt is provided with a suitable recess 23, located in the side opposite the key-post, in which the key is to turn, and a shoulder 24 is thus produced, against which the key in turning will have a bearing.

One form of key 25 is illustrated in Fig. 5, in which its bit 26 is provided with an upper recess or ward 27 and a lower recess or ward 28, as well as a second outer recess 29, and a shoulder 30 is formed in the base-wall of the

recess 23 of the bolt, over which the recessed portion 29 of the key passes in unlocking the lock.

In operation a keeper 31 is preferably attached to the switch-stand 32, and the lock is secured in any suitable or approved manner to the switch-lever 33, the switch-lever having an opening 34 produced therein, which registers with the opening 22 in the lock. As soon as the lever is carried to its locked position, as shown in positive lines, Fig. 1, the keeper 31 will have passed through the openings 34 in the lever and 22 in the lock and will be engaged by the bolt 12. Before the switch-lever can be carried to its unlocked position (shown in dotted lines, Fig. 1) to open the switch it is necessary that the proper key be introduced therein to turn back the bolt 12; and when the key is placed in the lock, a suitable key-hole being produced in the outer face of the casing, when the key is first turned its lower recess 29 will pass over the shoulder 30 of the bolt-recess 23 and the outer end of the bit will engage with the shoulder 24 of the lock and force the said bolt away from the keeper, at which time the switch-lever may be disconnected from the switch-stand. The key in being turned for withdrawal passes over the guards 17 and 18, said guards entering respectively the upper and lower recesses 27 and 28 in the bit, and after passing these guards the key may be readily withdrawn. Should a key of a different pattern be introduced, it might perchance throw the bolt; but after the bolt is returned to its normal position by the spring 20, which occurs the moment it is disengaged from the key, the key could not be withdrawn from the casing, as it

would be impossible for it to pass the guards 17 and 18. Thus it could be readily detected were the switch-lever to be opened by a person not having authority to act. But preferably the lock is so constructed that but one key, which is especially adapted for the purpose, will be able to throw the bolt.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with a switch-stand provided with a notched keeper, of an apertured switch-lever and a lock consisting of an apertured casing and a spring-pressed bolt in said casing, said keeper being adapted to pass through the aperture of the switch-lever and to be engaged by the bolt of the lock, substantially as described.

2. The combination, with a switch-stand and a keeper secured thereto, of a switch-lever provided with an opening therein, a lock secured to the switch-lever, also provided with an opening registering with that in the lever and adapted to receive the keeper of the switch-stand, the said lock consisting of a casing, a spring-controlled sliding bolt located in the casing, one end of which bolt normally extends into openings in the lock and the said bolt being provided with a recess in one side, guards formed in the casing, and a key adapted to turn in connection with the guards and to have engagement with the spring-actuated bolt, as and for the purpose set forth.

JOSEPH JUDGE.

Witnesses:

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EDWARD E. RANDALL.