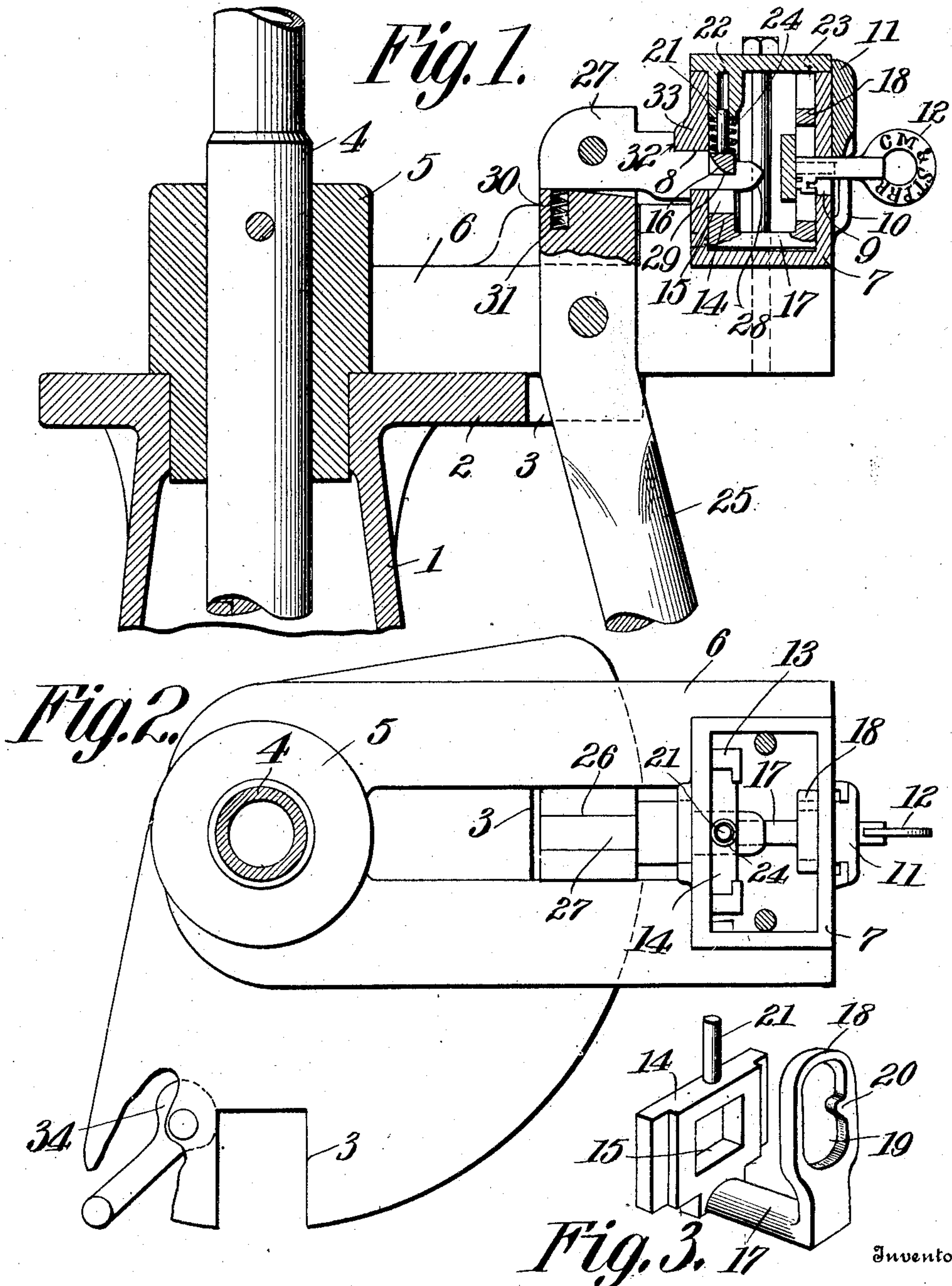


W. L. WILSON.
AUTOMATIC SWITCH LOCK.
APPLICATION FILED JUNE 18, 1908.

905,777.

Patented Dec. 1, 1908.



Witnesses,
E. J. Hunt
Arthur D. Lawson

Fig. 3.
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UNITED STATES PATENT OFFICE.

WILLIAM L. WILSON, OF DELMAR, IOWA, ASSIGNOR OF TWENTY-TWO AND ONE-HALF ONE-HUNDREDTHS TO E. C. McMEEL, TWENTY-TWO AND ONE-HALF ONE-HUNDREDTHS TO T. E. CANTY, AND FIFTEEN ONE-HUNDREDTHS TO WM. ZIMMERMAN, ALL OF DELMAR, IOWA.

AUTOMATIC SWITCH-LOCK.

No. 905,777.

Specification of Letters Patent.

Patented Dec. 1, 1908.

Application filed June 18, 1908. Serial No. 439,216.

To all whom it may concern:

Be it known that I, WILLIAM L. WILSON, a citizen of the United States, residing at Delmar, in the county of Clinton and State of Iowa, have invented a new and useful Automatic Switch-Lock, of which the following is a specification.

This invention relates to automatic switch locks for switch stands and its object is to provide simple and efficient means whereby the switch actuating lever can be automatically locked when swung into the holding notch in the switch stand, thus dispensing with the use of padlocks such as ordinarily employed in connection with devices of this character.

Another object is to provide a lock which, when in engagement with the lever, with its key removed, is completely closed against the admission of moisture, dust, etc., which might interfere with the proper operation of the parts.

Another object is to provide means whereby the lever may be temporarily secured within one of the notches of the stand.

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 vertical section through a portion of a switch stem and lever and through the lock embodying the present improvements, said lever being shown secured against movement. Fig. 2 is a plan view of the parts shown in Fig. 1, the top plate of the lock being removed and a portion of the table of the stand being broken away. Fig. 3 is a detail view of the tumbler of the lock.

Referring to the figures by characters of reference, 1 designates a switch stand having a table 2 of the usual or any preferred form, said table being provided with notches 3 into which the lever of the switch throwing mechanism is designed to be seated so as to hold the switch either open or closed. A revoluble rod 4 is mounted for rotation within the stand as ordinarily and has a collar 5 bolted or otherwise secured thereto and resting upon the table, there being parallel arms 6 extending from this collar and be-

yond the edge of the table. Arranged upon the outer end portions of the arms and bridging the space therebetween is a lock casing 7 which can be bolted or otherwise secured in place and within the rear face of this casing is an opening 8 designed to receive the tongue of the lock while in the opposite face of the casing is a key-hole 9 having guide cleats 10 arranged at opposite sides thereof and engaging the side portions of the slide 11. This slide constitutes a closure for the key-hole and is designed to automatically drop into position thereacross, when the key, indicated at 12, is removed from the lock.

Parallel guide cleats 13 are formed upon the inner face of the rear wall of the lock casing and mounted therebetween and retained thereby is a rectangular bolt 14 provided preferably with an angular opening 15 designed to register with the opening 8. The upper wall of this opening is beveled upwardly toward the adjoining wall of the lock casing as shown at 16. A bar 17 extends from one face of the bolt 14 and connects it with the lower portion of a tumbler 18 having a key receiving opening 19 therein normally disposed directly behind the key-hole 9. This tumbler has one or more projections 20 in the opening 19 designed to be engaged by the key which, when rotated, will thus elevate the tumbler and the bolt. A stem 21 extends from the bolt 14 and is slidably mounted within a socket 22 formed in a cap 23 which is bolted or otherwise secured upon the casing 7. A spring 24 surrounds stem 21 and bears at its ends against the socket portion of the cap 23 and also against the bolt, as shown particularly in Fig. 1.

Pivotaly mounted between the arms 6 is a lever 25 having one end forked as shown at 26. Within this forked end of the lever is pivotaly mounted a tongue 27 preferably stepped toward its free end and having its terminal pointed as at 28, there being a recess 29 in the upper face of the tongue adjacent the pointed end thereof designed, when the lever is swung a predetermined distance, to become positioned below the beveled wall 16 of the bolt 14. A recess 30 is formed within the forked end of lever 25 and has a spring 31 seated therein and constantly bearing against tongue 27 so as to hold said tongue normally at a predetermined angle to the lever. One of the steps 32 of the tongue

constitutes a stop shoulder and is designed to abut against a projecting rod or enlargement 33 upon the casing 7 so as to limit the movement of the tongue 27 into the opening 9. Said enlargement 33 also constitutes means for shedding water and preventing it from flowing downward into the opening 8.

It is to be understood that the normal position of the bolt 14 is with the bar 17 resting upon the bottom of the casing 7. When it is desired to shift a switch a key is inserted into the lock and the tumbler is elevated so as to lift the bolt out of recess 29 in tongue 27. Lever 25 can then be swung upwardly out of the notch 3 in which it is seated and this movement will cause the tongue 27 to be withdrawn from the lock casing. By pushing or pulling on lever 25 arms 6, collar 5, and rod 4 can be turned a desired distance after which lever 25 can be swung downward into the adjoining notch 3. This will cause tongue 27 to swing toward the casing 7 and the spring 31 will hold the pointed end 28 thereof so positioned as to readily pass into opening 8. After entering this opening the tongue will push against the beveled wall 16 and elevate the bolt 14 until the recess 29 is brought into position within the bolt whereupon it will be shot by spring 27 into the recess and thus lock the tongue and lever against further movement. When the key is withdrawn from casing 7 the slide 11 will drop into position over the key-hole.

When it is desired to secure the lever 25 temporarily in one of the notches 3 a locking device such as shown in Fig. 2 may be utilized. This consists of a cam 34 mounted upon the bottom face of the table 2 adjacent each notch 3 and designed, when swung in one direction, to bind upon the lever and hold it frictionally against movement.

What is claimed is:

1. The combination with a switch stand, a rod mounted for partial rotation therein, and an arm extending from and movable with the rod; of a lock carried by the arm, a lever fulcrumed upon the arm, and a tongue movably connected to the lever and shiftable thereby into the lock casing.
2. The combination with a switch stand, a rod mounted for partial rotation therein, and

an arm movable with the rod; of a lock casing carried by the arm, an actuating lever pivotally mounted upon the arm and movable into engagement with the switch stand, a tongue movably connected to the lever and shiftable thereby into the casing, and means within the casing for automatically engaging and locking the tongue.

3. The combination with a switch stand, a rod mounted for partial rotation therein, and an arm extending from and movable with the rod; of a lever pivotally mounted upon the arm, a tongue pivotally mounted upon the lever, elastic means for holding the tongue normally at a predetermined angle to the lever, and a lock fixedly mounted upon the arm for the reception of the tongue, said lock constituting means for automatically engaging the inserted tongue.

4. The combination with a switch stand having a notched table, a rod mounted for partial rotation within the stand, and an arm extending from and movable with the rod; of a lever pivotally mounted upon the arm and disposed to spring into one of the notches, and means movably mounted upon the table for frictionally engaging the lever while positioned within the notch to hold said lever against accidental displacement.

5. The combination with a switch stand, a rod mounted for partial rotation therein, and an arm extending from and revoluble with the rod; of a lock carried by the arm and comprising a casing having an aperture therein, an apertured spring pressed bolt slidably mounted within the casing and having a beveled inner wall, a tumbler integral with and spaced from the bolt, a lever pivotally mounted upon the arm, and a pivoted tongue carried thereby and insertible into the casing opening and the opening in the bolt, said tongue having a recess for the reception of the beveled wall of the bolt.

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

WILLIAM L. WILSON.

Witnesses:

WILLIAM ZIMMERMAN,
JOHN WATERS.