

W. ANDERSON.

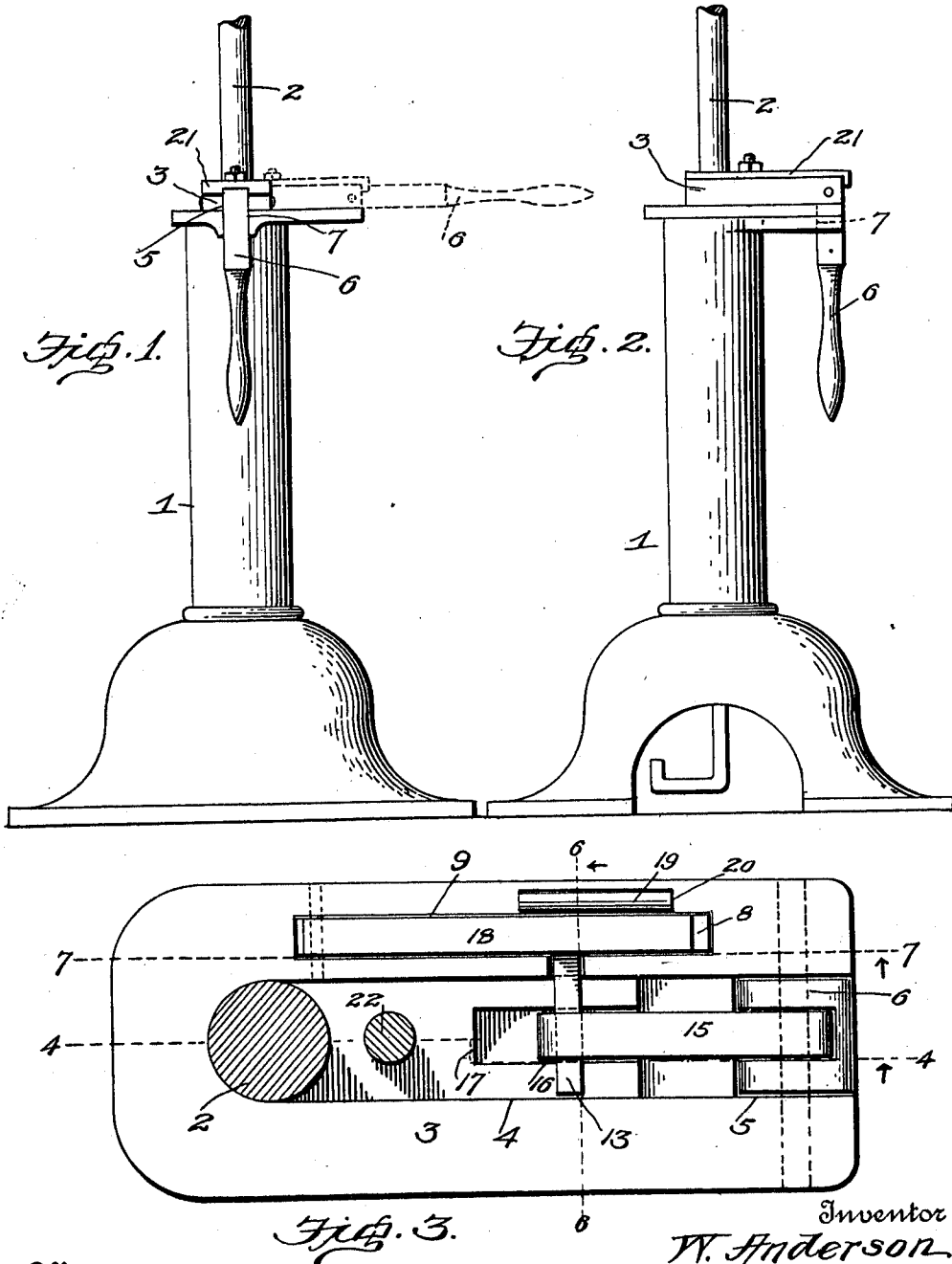
SWITCH LOCK.

APPLICATION FILED AUG. 29, 1910.

Patented May 9, 1911.

2 SHEETS-SHEET 1.

991,926.



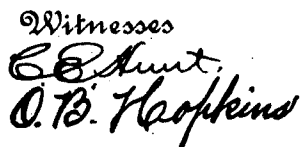
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APPLICATION FILED AUG. 29, 1910.

2 SHEETS-SHEET 2.

991,926.



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UNITED STATES PATENT OFFICE.

WILLIAM ANDERSON, OF MEMPHIS, TENNESSEE, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF THIRTY-TWO ONE-HUNDREDTHS TO WILLIAM FAY AND G. G. HALLOWAY, OF MEMPHIS, TENNESSEE, AND THIRTY-FIVE ONE-HUNDREDTHS TO JOHN FITZGERALD, OF ST. LOUIS, MISSOURI.

SWITCH-LOCK.

991,926.

Specification of Letters Patent.

Patented May 9, 1911.

Application filed August 29, 1910. Serial No. 579,542.

To all whom it may concern:

Be it known that I, WILLIAM ANDERSON, a citizen of the United States, residing at Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Switch-Locks; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in switch locks.

One object of the invention is to provide an improved key operated locking mechanism which when unlocked and the lever swung around to open the switch, will prevent the removal of the key until the lever is again swung back into position for closing the switch.

Another object is to provide a lock of this character having means adapted to be reversed to permit the use of either a right or left hand key.

With the foregoing and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings: Figure 1 is a front view of the upper portion of a switch stand illustrating the application of the invention and showing the lever in full lines in locked position and in dotted lines in an operative position. Fig. 2 is a side view of the same; Fig. 3 is a plan view of the lock case with the cover plate removed showing the lever locking mechanism in locked position; Fig. 4 is a vertical longitudinal sectional view on the line 4—4 of Fig. 3 showing the parts in locked position; Fig. 5 is a similar view showing the parts in open or released position; Fig. 6 is a vertical cross section on the line 6—6 of Fig. 3; Fig. 7 is a detail longitudinal section on the line 7—7 of Fig. 3 showing the construction of the key actuated operating mechanism; Fig. 8 is a detail perspective view of the key actuated operating mechanism shown in Fig. 7; Fig. 9 is a similar view of the reversible key hole plate which permits the use of either a right or left hand key.

Referring more particularly to the drawings, 1 denotes a portion of the switch stand in which is arranged the switch operating shaft 2, the lower end of which is operatively connected to the switch tongue in any suitable manner (not shown). The upper end of the operating shaft projects through and above the upper end of the switch stand and said projecting upper end of the shaft is adapted to receive a target or other form of signal (not shown).

Keyed or otherwise rigidly secured to the projecting upper end of the shaft 2 is an operating head 3, said head being hollow or provided with a longitudinal recess 4. In the outer end of the head 3 and communicating with the recess 4 therein is a notch in which is pivotally mounted the inner end of an operating lever 6 which when swung upwardly to a horizontal position provides means whereby said head and the switch operating shaft may be turned to open or close the switch. When the lever 6 is swung downwardly at right angles to the head 3, said lever will be engaged with a locking notch 7 in the edge of the top plate of the stand which will prevent the head from being turned and the switch thus opened. The head 3 is arranged on the shaft 2 in such manner that when the head and shaft have been swung around to the proper position for closing the switch the lever 6 will be in line with the notch 7 in the switch stand.

In order to lock the lever 6 into engagement with the notch 7 in the stand, I provide a suitable key operated locking mechanism, the key of which when turned to a position for releasing the locking mechanism cannot be removed therefrom until said mechanism has again been locked. The locking mechanism for the lever 6 comprises a bolt 8 which is arranged in a longitudinal recess 9 formed in the upper portion of the head 3 adjacent to one side thereof. The bolt 8 is pivotally connected to the head at one end of the recess 9 and is provided on its opposite end with a downwardly projecting plate 10 in which is formed a notch 11 adapted to receive the end of a key inserted through a suitable key hole 12 in one side of the head. When the key is inserted in the hole 12 and in engagement with the re-

cess 11 and turned, the ward thereof will engage the upper wall of the notch or recess 11 of the bolt and will lift this end of the latter. The bolt 8 is provided with a laterally projecting locking arm or bar 13 which projects through a suitable notch 14 in the head 3 and into the recess 4 formed in the head.

In the inner end of the lever 6 is formed a notch in which is pivotally secured the outer end of a bifurcated locking pawl or dog 15, the inner end of which is adapted to be engaged with stop shoulders 16 and 17 formed in the lower wall of the recess 4 of the head. When the lever 6 is swung down to an operative position for engaging the locking notch in the upper plate of the switch stand, the pawl 15 will be drawn forwardly to a position wherein the inner end thereof will drop into engagement with the stop shoulder 16 which will securely hold the lever 6 in locked engagement in the notch in the top plate of the switch stand, thus preventing the lever or the head 3 from being swung around on the stand and positively preventing the opening of the switch as long as these parts are in locked position. The arm 13 of the bolt 8 projects through the bifurcated inner end of the pawl 15 whereby when the bolt is raised by the turning of the key the pawl will also be raised thus permitting the lever 6 to be swung upwardly to a horizontal position and out of engagement with the locking notch in the top plate of the switch stand. When the lever is thus swung up, the end of the pawl 15 will be brought into engagement with the stop shoulder 17 in the recessed portion of the head. After the lever has thus been swung upwardly and the parts brought to the position described, the lever and head may be swung around on the upper end of the stand to turn the switch operating shaft in the proper direction for opening the switch. When the key has been manipulated to swing the bolt and pawl upwardly the ward thereof will be carried into engagement with the wall of the head above the keyhole and the key will be held against withdrawal until after the head has again been swung around and the lever swung downwardly into engagement with the notch in the top plate of the switch stand in which position the switch will have again been closed thus insuring the closing of the switch by the brakeman or operator before he can remove the key from the head 3. In order to retract or depress the bolt 8 after the key has been turned therein I preferably provide a flat leaf spring 18 which is arranged in the upper portion of the recess containing the bolt 8 and which bears against the latter as shown.

In order to provide for the use of a right or left hand key in connection with the lock-

ing mechanism, I provide a reversible key hole plate 19 which is loosely engaged with a notch or recess 20 formed in the wall of the recess occupied by the bolt 8. On the upper side of the head is arranged a cover plate 21, said plate having at the outer end a downwardly projecting flange adapted to fit over and engage the outer end of the head 3. The cover plate 21 is preferably secured in position on the head 3 by means of a fastening bolt 22 which is arranged through the head and cover plate and is provided on its upper end with a plate fastening nut 23. The head of the bolt 22 is preferably countersunk in the lower side of the head 3 thus permitting the head to freely turn on the upper end of the switch stand.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as defined in the appended claims.

Having thus described my invention, what I claim is:

1. A switch lock comprising a head, a combined locking and operating lever pivotally mounted to engage said head, a pawl arranged in said head and pivotally connected to the inner end of said lever whereby the latter is secured in a locking position, and a key operating bolt arranged within the head in engagement with said pawl to lift the same and thereby release said lever whereby the latter and said head may be actuated to open the switch.

2. A switch lock comprising a recessed head, an operating lever pivotally mounted in one end of said head, a pawl arranged in the latter and pivotally mounted in the inner end of said lever, stop shoulders formed in the recess of said head and adapted to be engaged by the inner end of said pawl whereby when the latter is engaged with one of said notches said lever will be secured in a locked position, a pivoted releasing bolt, a releasing arm formed on said bolt and adapted to engage said pawl whereby when the bolt is operated the pawl will be raised and said lever thereby released thus permitting the same and said head to be operated for the purpose of opening a switch.

3. A switch lock comprising a head adapted to be connected to the operating shaft of a switch, said head having recesses formed therein, a combined locking and operating lever pivotally mounted in said head and adapted to be swung down to a position for locking the head against movement, a lever locking pawl pivotally mounted in the inner

end of the lever to engage the head and
having a notched inner end, a key operated
bolt arranged in said head, an arm project-
ing laterally from the bolt and engaging the
5 notch in the end of the pawl, and a spring
arranged in the head and bearing upon the
bolt.

In testimony whereof I have hereunto set
my hand in presence of two subscribing wit-
nesses.

WILLIAM ANDERSON.

Witnesses:

E. J. BOWMAN,
L. E. ANDERSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
