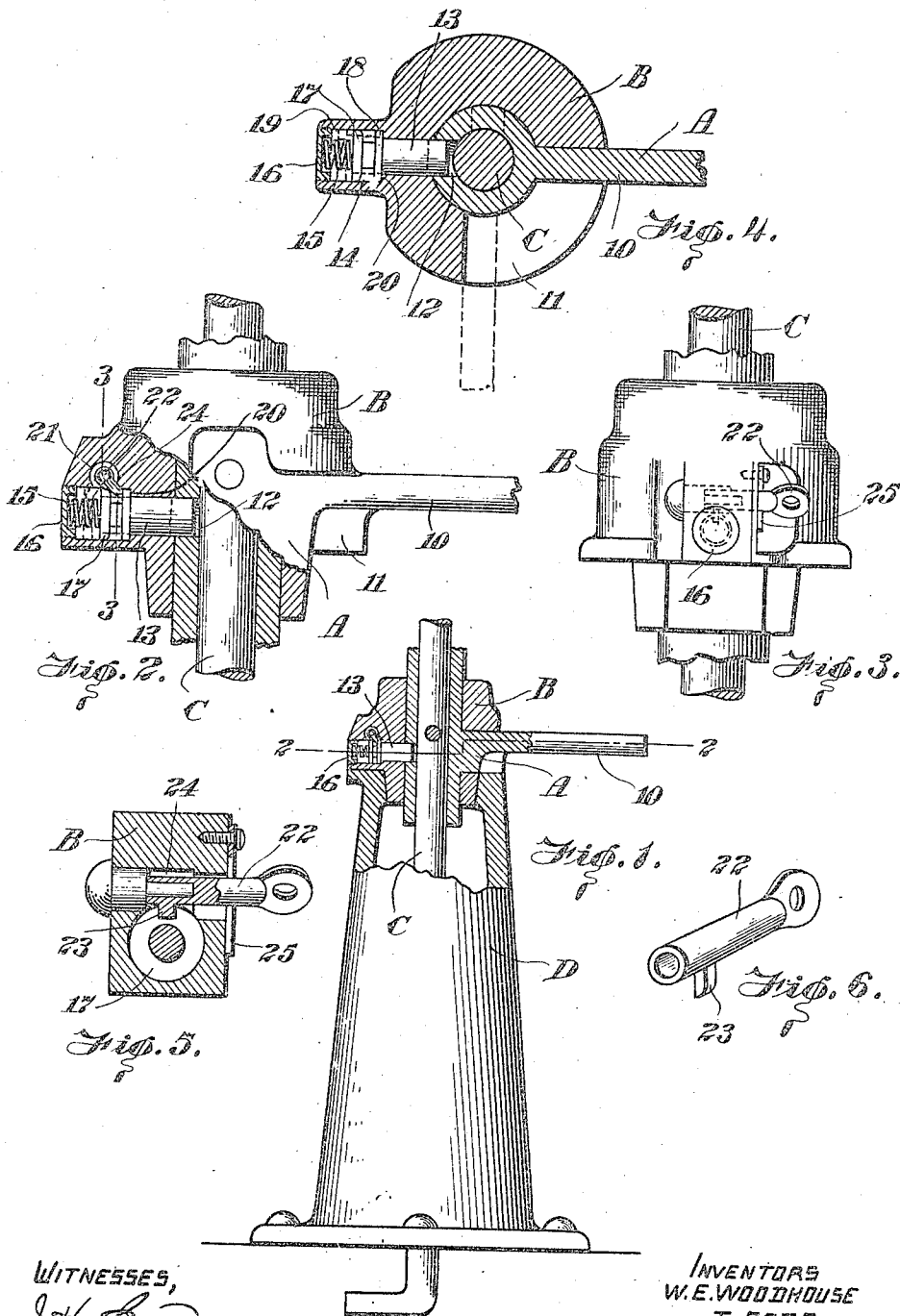


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 SWITCH LOCK.  
 APPLICATION FILED JULY 11, 1910.

987,784.

Patented Mar. 28, 1911.



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# UNITED STATES PATENT OFFICE.

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## SWITCH-LOCK.

987,784.

Specification of Letters Patent. Patented Mar. 28, 1911.

Application filed July 11, 1910. Serial No. 571,483.

*To all whom it may concern:*

Be it known that we, WILLIAM EDWARD WOODHOUSE, of the city of Winnipeg, in the Province of Manitoba, Canada, and THOMAS BATE, of the city of Calgary, in the Province of Alberta, Canada, have invented certain new and useful Improvements in Switch-Locks, of which the following is a specification.

Our invention relates to improvements in switch locks, particularly adaptable for railway switches, and the objects of our invention are to provide a lock which may be quickly operated to lock or unlock, and from which it will be impossible to withdraw the key until the switch is securely locked, thereby, avoiding the danger of leaving the switch in an unlocked condition as frequently now happens through neglect on the part of the switchman.

Further objects are to provide such a lock as cannot be tampered with without possession of the proper key, and further to protect the working parts of the lock from the action of the elements and from dust.

In its construction the invention includes a turning element having a suitable operating handle and being formed at one part with a slot, a slidable locking tumbler adapted when the switch is in closed position to take into said slot, said tumbler being supported in a suitable casing member and having a key seat so arranged that the key inserted therein may operate the tumbler, and may only be withdrawn when the tumbler is moved into the slot, all as hereinafter more fully set forth and described in detail in the accompanying specification and drawings.

In the drawings: Figure 1 is a vertical sectional view through the switch lock and switch showing a portion of the switch stand. Fig. 2 is an enlarged side elevation partially in section, showing the turning and casing elements. Fig. 3 is a side elevation taken at substantially right angles to the elevation shown in Fig. 2. Fig. 4 is a section on the line 2-2, Fig. 1. Fig. 5 is a section on the line 3-3, Fig. 2. Fig. 6 is a perspective view of the key.

In the drawings like characters of reference indicate corresponding parts in each figure.

Referring to the drawings, A represents the turning element pivotally supported

within the casing member B and being connected to and moving with a vertically extending operating shaft C, which is operatively connected to the switching mechanism in a manner well known in the art, the casing member B being supported from a switch stand D of usual construction.

The turning member is adapted to be turned through the medium of a laterally extending lever 10 extending through and operating in an arcuate slot 11 in the casing member. The turning member at one point is provided with a slot 12 adapted to receive the end of a longitudinally slidable locking tumbler 13 which tumbler is adapted to reciprocate within a laterally extending passage way 14 formed in the casing member, said tumbler fitting closely to said passageway and being held in innermost position by suitable means, as by a compression spring 15 extending between the end of the tumbler and a screw-threaded plug 16 which closes the end of the passageway.

The outer portion of the tumbler is provided with spaced flanges 17 and 18 adapted to receive the head of the key between them, said flanges in the embodiment illustrated being of slightly greater diameter than the body portion of the tumbler and reciprocating in an enlarged portion 19 in the passageway 14, the shoulder 20 formed at the end of said enlarged portion serving to limit the inward movement of the locking tumbler.

The casing member has a key seat 21 formed transversely across the passageway 14 and above the same, adapted to receive a suitable locking key 22, the head 23 of which is adapted to fit between the flanges 17 and 18, whereby, when the key is turned, it will engage the outermost flange and retract the locking tumbler, the arrangement being such that when in retracted position, the head 23 of the key will be out of registration with the key hole slot 24, and so cannot be withdrawn until the tumbler is again moved to innermost position. The outlet of the key seat is adapted to be normally covered by a pivoted plate 25. The normal position of the device is as shown in the drawings, in which position the switch is locked in closed position.

When it is desired to open the switch, the switchman inserts his key into the key seat and turns the same. This retracts the lock-

ing tumbler 13 from the slot 12 and leaves the turning member free to turn, and it may then be turned by the switchman. As soon as it has been turned a short distance, however, it will be impossible for the tumbler to move backwardly, because the slot 12 will be out of registration therewith, and the tumbler thus being held in outermost position, it will be impossible to turn the key to release the same, and consequently the key cannot be removed until the turning member is brought back to its original position, when the switch will be in closed position.

It will thus be seen that we have devised a very simple and effective lock well adapted to perform the functions required of it, and which will effectually guard against the carelessness of switchmen in leaving the switch in open position. Further, the invention provides a very ready means of checking switchmen, because each switchman is provided with a marked key, and on a switch being left unlocked, the key must remain therein, and this will identify the switchman who is responsible for leaving the switch in unlocked position.

It is of course evident that the lock may be located in any part of the switch so long as the locking tumbler operates against the moving element thereof.

As many changes could be made in the above construction and many apparently widely different embodiments of our invention within the scope of the claims constructed without departing from the spirit or scope thereof, it is intended that all matter contained in the accompanying specification and drawings shall be interpreted as illustrative and not in a limiting sense.

What we claim as our invention is:

1. An improved switch lock comprising in combination a turning element operatively connected to the switching mechanism formed with a slot therein, a casing member formed with a laterally extending passageway having an enlarged outer portion with

a shoulder at the inner end of the outer portion, a tumbler reciprocable in the passageway and having spaced flanges, the innermost one of which is adapted to abut the shoulder when the tumbler is in innermost position, spring means for forcing the tumbler inwardly, and said casing being further formed with a key seat extending across the passageway and so arranged that the key therein may engage the tumbler to move the same, said key seat being further so formed that the key may only be withdrawn when the locking tumbler is in engaged position.

2. An improved switch lock comprising in combination a casing member, a turning element pivotally supported in the same, a vertically extending shaft moving with the turning element and connected to the switching mechanism, said casing having an arcuate slot therein and also being formed with a laterally extending passageway, a laterally extending lever connected to the turning member and operating in the arcuate slot in the casing member, and a spring actuated sliding locking tumbler mounted in the laterally extending passageway, said turning member being formed with a slot into which the tumbler is adapted to take, said casing member being further formed with a key seat extending across the passageway and so arranged that the key therein may engage the tumbler to move the same, said key seat being further so formed that the key may only be withdrawn when the locking tumbler is in engaged position.

In witness whereof We have hereunto set our hands in the presence of two witnesses.

W. E. WOODHOUSE.  
THOMAS BATE.

Witnesses as to W. E. Woodhouse:

E. A. COHEN,  
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Witnesses as to T. Bate:

D. W. REDMAN,  
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