

W. H. FRANKLIN,  
 LOCK FOR SWITCH STANDS.  
 APPLICATION FILED FEB. 24, 1921.

1,406,363.

Patented Feb. 14, 1922.

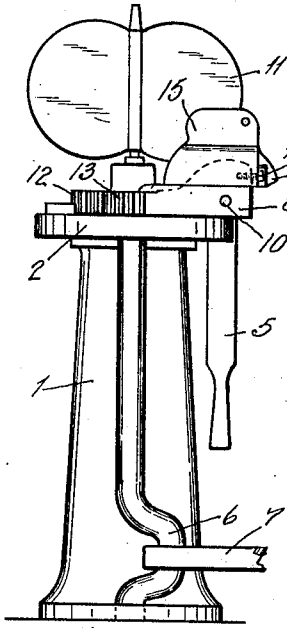


Fig. 1

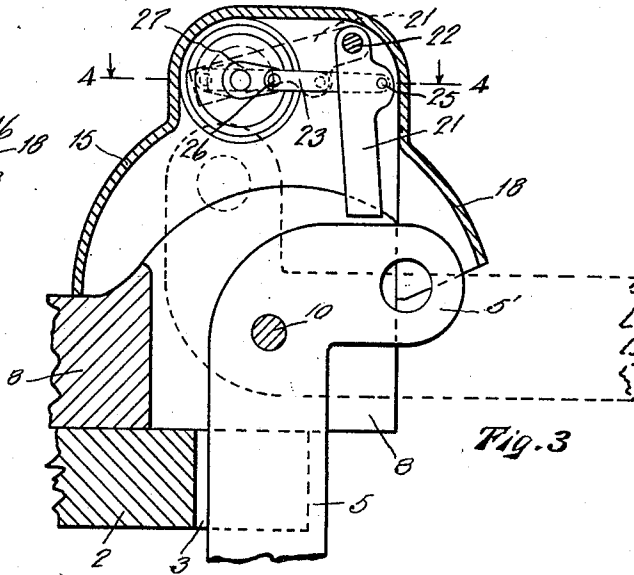


Fig. 3

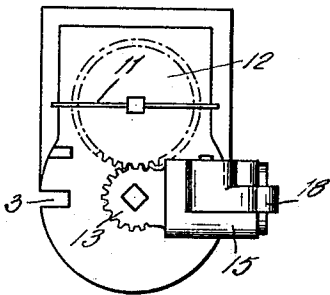


Fig. 2

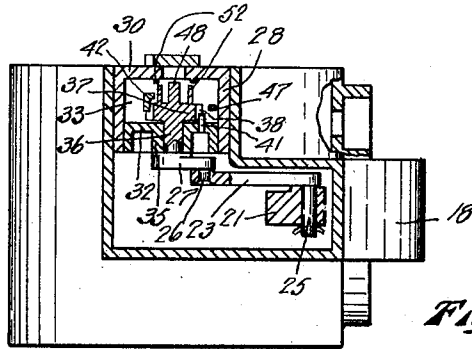


Fig. 4

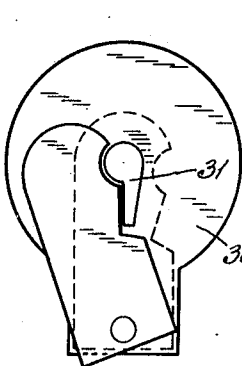


Fig. 5

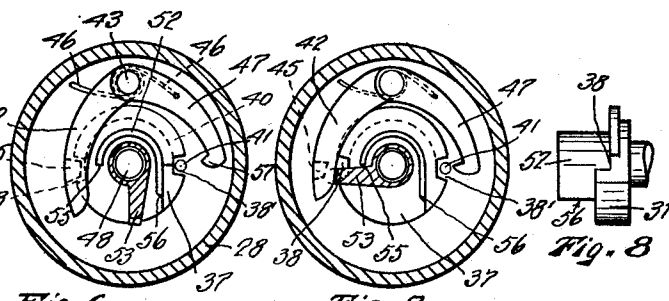


Fig. 6

Fig. 7

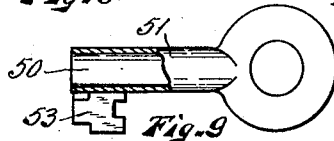


Fig. 9

INVENTOR  
 Walter H Franklin  
 BY ATTORNEY,  
 Horace Barnes

# UNITED STATES PATENT OFFICE.

WALTER H. FRANKLIN, OF MOUNT VERNON, WASHINGTON, ASSIGNOR TO RAILWAY SAFETY SWITCH LOCK COMPANY, OF SEATTLE, WASHINGTON, A CORPORATION OF WASHINGTON.

LOCK FOR SWITCH STANDS.

1,406,363.

Specification of Letters Patent. Patented Feb. 14, 1922.

Application filed February 24, 1921. Serial No. 447,374.

To all whom it may concern:

Be it known that I, WALTER H. FRANKLIN, a citizen of the United States, residing at Mount Vernon, in the county of Skagit and State of Washington, having invented certain new and useful Improvements in Locks for Switch Stands, do hereby declare that the following is a full, clear, and exact description of the same.

10 This invention relates to improvements in railway switch-stands and means for locking the same, and particularly to improvements in my former patent application Serial Number 364,531.

15 The present invention has for its object the provision of a simple and serviceable device for locking the switch-stands upon railways so that they cannot be tampered with and so that the switch may be locked with security in either of its set positions and the key may not be withdrawn until the switch is so set.

20 The invention consists in the novel construction of the switch locking devices to be particularly described in the following specifications, illustrated in the accompanying drawings, and finally set forth in the appended claims.

25 In said drawings, Figure 1 is a view in side elevation of a switch-stand illustrating the manner in which my improved lock is applied thereto.

Fig. 2 is a plan view of the same.

35 Fig. 3 is an enlarged view in vertical section through a portion of the switch-stand and through my locking mechanism, the working parts being shown by broken lines in unlocked position.

40 Fig. 4 is a horizontal section on line 4-4 of Fig. 3.

Fig. 5 is a frontal view in elevation of the lock casing.

45 Fig. 6 is a transverse sectional view of the working parts of the lock actuating mechanism within said casing, showing the same in locked position.

Fig. 7 is a view similar to Fig. 6 showing the lock actuating mechanism in another position.

50 Fig. 8 is a detached view in side elevation of an element of the locking mechanism.

Fig. 9 is a view in side elevation, partly broken away, of a key adapted to operate the lock.

55 Referring to said views, the reference nu-

meral 1 designates the pedestal of a railway switch stand, and 2 the table thereof provided with slots 3 upon diametrically opposite sides in which the throwing lever 5 is secured in dependent position, as illustrated in Fig. 1.

60 6 indicates the switch crank pivoted at its opposite ends in the foot of the pedestal and in said table and 7 is the connecting rod between said crank and the switch point. An arm 8 is fixedly secured to said switch crank above the table and is bifurcated at its outer end wherein the lever 5 is pivotally secured, as at 10. The lever handle 5 may be swung outwardly and upwardly in line with the arm 8 and clear from the respective slot 3, whereupon the switch crank 6 may be swung about its axis and the switch point changed to its opposite operative position whereat the lever 5 will be in position to drop into the other oppositely disposed slot 3.

11 indicates a switch target arranged to be turned through an arc of 90 degrees by a gear wheel 12 which is in mesh with a segmental pinion 13 formed on the arm 8 so that the target will indicate at all times the open or closed condition of the switch.

My improved locking mechanism includes a housing 15 fixedly secured on the outer end of said switch arm 8 by the screws 16 whose heads are retained in sockets in the housing so that the screws can only be removed with a socket wrench of suitable size. Said housing may be cast or formed in a single piece of specific shape and design to fit snugly over the particular model of switch arm for which it is intended, said arm closing the bottom of the housing. The front of the housing is formed with a forwardly extending hood 18 to afford space for the angularly directed end 5' of the lever 5 to swing therein.

65 A detent 21 is pivoted at 22 at the top of the housing over said end 5' and is arranged to swing downwardly at its free end when the lever 5 is in its dependent position so that it will overlies the end 5' in relatively close proximity and prevent the lever 5 being raised out of the notch 3 until the detent 21 has been swung upwardly. In locked position the detent lies in a substantially vertical position.

70 23 indicates a link which is connected at one end to said detent, as by a pin 25, near

the pivot 22. At its opposite end said link is connected to a crank pin 26 of a crank 27 forming a part of a key-actuated mechanism to be presently described. Said crank 27 may be oscillated by the key through an arc of 180 degrees as indicated in full lines and broken lines in Fig. 3, and at the opposite ends of its travel where it is in substantial horizontal alignment with the pin 25 the crank pin 26 is brought to rest upon or slightly beyond a line drawn through the axis of the crank 27 and the pin 23 when the detent is lowered to locking position.

28 indicates a lock-casing of tubular configuration which is received in a circular recess in the side of the housing 15 its front wall consisting of an integral escutcheon plate 30 wherein the key-hole 31 is located and an inserted rear wall 32 enclosing a lock-chamber 33. Said rear wall is formed with a bearing 35 for the arbor 36 which is integral or otherwise fixedly connected to the crank 27. Said arbor within the chamber 33 is formed with a circular flange 37 having notches 38 and 38' at diametrically opposite sides corresponding to the two opposite extreme positions of the crank 27. A shallow groove 40 is formed in the edge of the flange 37 next to the rear wall 32 connecting said notches 38, 38' into which groove protrudes a pin 41 from the wall 32 to limit the movement of the arbor in its opposite oscillating movements. 42 designates a dog pivoted at 43 above the arbor and extending downwardly to one side where near its lower extremity it is formed or provided with a lug 45 arranged to be pressed into the notch 38 in the locked position of the device and in notch 38' when the arbor is in its unlocked position. Said dog and lug are arranged to yieldingly engage said notches, respectively, through a spring 46 which is engaged with an integral extension 47 of said dog.

Said arbor is further provided with a stem 48 which is adapted to enter the barrel 50 of a key 51 and enter the latter when turning. 52 is a rib on said arbor which extends outwardly in the path of the key-tang 53 and is arranged to be engaged by the key to turn the arbor and thus actuate the crank 27.

Referring to Fig. 6, wherein the lock is shown in the locked condition of the switch lever, the key is inserted through the key-hole 31 and turned to the left whereupon the key-tang engages the dog 42 and removes the lug 45 from the notch 38, as shown in Fig. 7. Then the tang engages the edge 55 of the rib 52 and thus actuates the arbor about its axis until the opposite end of its travel is reached as limited by the pin 41, whereupon the lug 45 drops into notch 38' and the crank 27 is in the position indicated by broken lines in Fig. 3 with the

detent 21 raised out of the path of the end 5' of the switch lever which can then be raised to throw the switch. Until the switch is thrown or the lever again lowered into a notch 3 the key may not be returned to position to remove it owing to the detent 21 striking the upturned end 5' of the lever.

After the lever 5 is lowered into a slot 3 the key is again turned only in a reverse direction whereupon the tang will strike the dog 42 near the pivot 43 to raise the lug 45 clear of the notch 38' and then engage the edge 56 of the rib 52 to return the arbor to its original position as shown in Fig. 6 and lower the detent 21 to the position shown in full lines in Fig. 3 where the lever 5 is shown locked, whereupon the key may be removed from the lock. The extension 47 is provided with a hook 57 at its extremity as a safeguard against persons tampering with the lock. Should the dog 42 be pushed over too far by an unsuitable key or instrument with which to pick the lock the hook 57 will engage the notch 38' and prevent the arbor from turning.

Having described my invention, what I claim, is—

1. A lock for switch stands, consisting in combination with a switch throwing arm, and a lever pivoted to said arm, of a housing mounted on said arm, a detent arranged to prevent the operative movement of said lever, and a key-actuated rotatable arbor operatively connected to said detent to throw the detent into and out of its locking position.

2. A lock for switch stands, consisting in combination with a switch throwing arm, and a lever pivoted to said arm, of a housing mounted on said arm, a detent arranged to prevent the operative movement of said lever, a key-actuated rotatable arbor operatively connected to said detent to throw the detent into and out of its locking position, and key-actuated means for releasably retaining said arbor in its locked and unlocked positions, respectively.

3. A lock for switch stands consisting in combination with a switch throwing arm, and a lever pivoted in said arm, a housing mounted on said arm enclosing the upper end of said lever, a pivoted detent arranged to swing into position to prevent the operative movement of said lever, an arbor disposed to oscillate in said housing, operative connections between the arbor and said detent to swing the detent into and out of locking position, a locking dog associated with said arbor to releasably maintain said arbor in its locked position, and a key adapted to successively release said dog and actuate the arbor.

4. A lock for switch stands consisting in combination with a switch throwing arm, and a lever pivoted in said arm, a housing

mounted on said arm enclosing the upper  
end of said lever, a pivoted detent arranged  
to swing into position to prevent the oper-  
ative movement of said lever, an arbor dis-  
posed to oscillate in said housing, operative  
connections between the arbor and said de-  
tent to swing the detent into and out of  
locking position, a locking dog engaging  
said arbor on one side to releasably maintain  
the arbor in its locked and unlocked posi-  
tions having an extension engageable with  
the arbor on its opposite side, said extension  
being operative to lock the arbor upon the  
use of an actuating key in excess of a prede-  
termined size.

5. A lock for switch stands, consisting in

combination with a switch stand including  
a throwing arm having a lever pivoted to the  
outer end thereof, of a lock-housing secured  
to the arm over said lever, a pivoted detent  
in said housing arranged to retain said lever  
in locked position, an arbor disposed to  
oscillate in said housing and operatively con-  
nected to actuate said detent to and from  
its locked position, a spring-pressed dog dis-  
posed to maintain said arbor in locked posi-  
tion, and a key adapted to successively re-  
lease said arbor from the dog and to oscil-  
late said arbor.

Signed at Mount Vernon, Washington, 30  
this 26th day of January, 1921.

WALTER H. FRANKLIN.