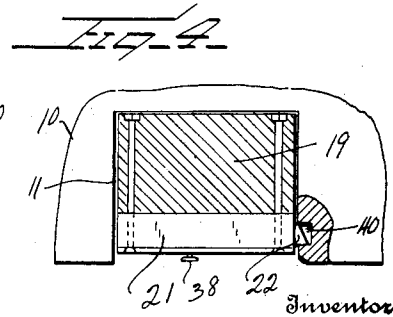
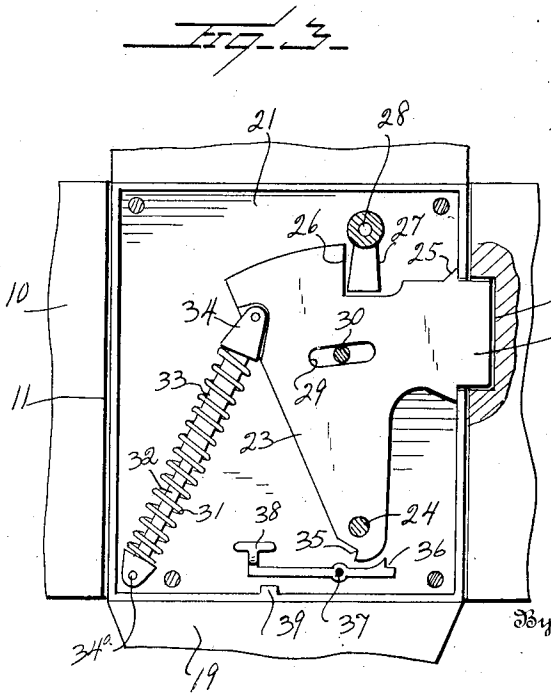
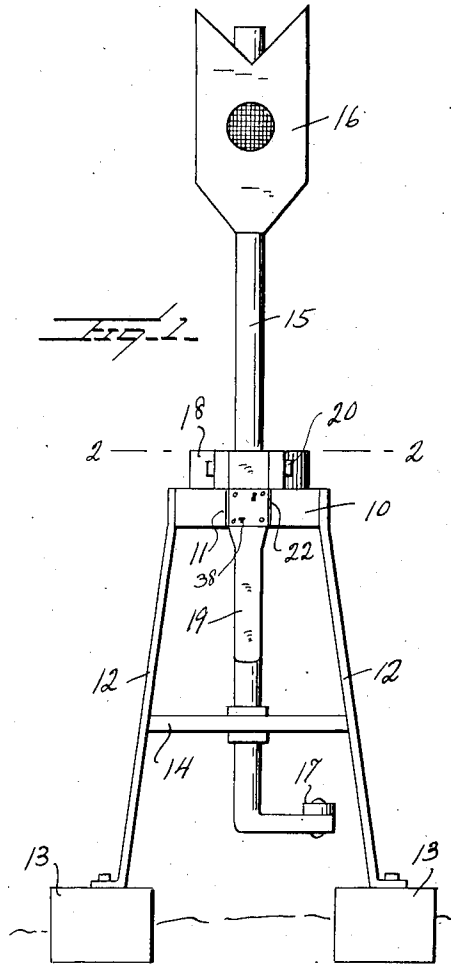
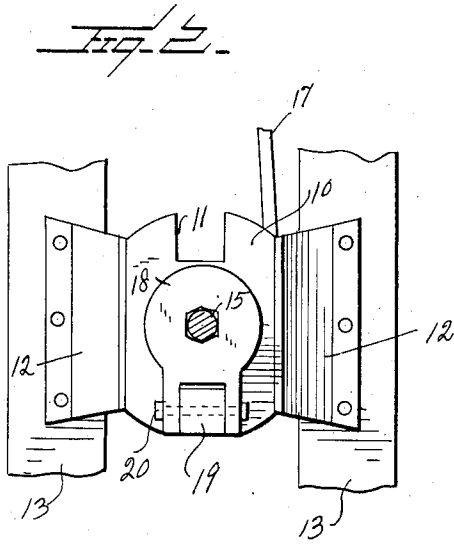


L. B. MARTIN.
 AUTOMATICALLY LOCKING SWITCH STAND.
 APPLICATION FILED MAR. 24, 1920.

1,348,292.

Patented Aug. 3, 1920.



Inventor
 L. B. Martin

Watson & Coleman
 Attorneys

UNITED STATES PATENT OFFICE.

LUTHER B. MARTIN, OF REXFORD, MONTANA.

AUTOMATICALLY-LOCKING SWITCH-STAND.

1,348,292.

Specification of Letters Patent.

Patented Aug. 3, 1920.

Application filed March 24, 1920. Serial No. 368,302.

To all whom it may concern:

Be it known that I, LUTHER B. MARTIN, a citizen of the United States, residing at Rexford, in the county of Lincoln and State of Montana, have invented certain new and useful Improvements in Automatically-Locking Switch-Stands, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to switch stands, and particularly to the locking mechanism thereof.

At the present time the great majority of switch stands are of that type in which the mast or shaft operating the switch extends vertically through a table, and is provided with a radially extending handle for turning the mast, this handle being formed in two sections and the table being notched so that when the switch has been fully thrown in one direction or the other, the hinged section of the handle may be dropped into a vertical position in a notch and thus lock the switch from further movement. In order to hold the handles in their depressed positions, a padlock is today used in the great majority of cases. The use of a padlock is open to a great deal of objection. It makes it necessary to manipulate the lock in order to manipulate the switch each time that the switch is thrown. This padlock is carried by a chain and the hasp of the padlock must be passed through an eye projecting through the handle when the handle is in its vertical position. As a consequence of this, trainmen quite often leave the switch unlocked because they have not time to pass the padlock through the eye and lock it. This is particularly true when a train is leaving a yard or siding, as it is usually going at a fast speed and the trainman is in a hurry to catch the rear end of his train and has not time to fumble with the lock, pass the hasp through the eye and lock it. Thus the switch is left unlocked and as a consequence may be meddled with or thrown by tramps, children or other mischievous parties, with resulting accident.

The general object of my invention is to provide, therefore, a lock which does not require, in order to lock the switch, any manipulation on the part of the switchman, but only requires that a key be used for releasing the lock. In other words, a lock which will latch automatically when the

handle is brought down to its vertical position within the proper notch in the table.

And a further object is to provide means whereby the lock may be thrown out of its operative position and held out of its operative position where the switch is being used in yards, for instance, where switching must be done frequently.

A further object is to provide a lock of an improved construction for this purpose which is very simple and which can not be removed or tampered with when the switch stand is locked and in which the projecting portion of the bolt is entirely protected so that a knife can not be slipped in and the bolt pushed back.

Other objects will appear in the course of the following description.

My invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a front elevation of a switch stand having a lock therein in accordance with my invention;

Fig. 2 is a section on the line 2—2 of Fig. 1;

Fig. 3 is a face view of the lock with the front plate removed, the connecting pins and the key being in section;

Fig. 4 is a transverse sectional view of the handle showing the lock casing in elevation and a portion of the adjacent table 10.

Referring to these drawings, it will be seen that I have illustrated a switch stand of the ordinary type comprising the table 10 having oppositely disposed notches 11 and supported on the legs 12, flanged at their lower ends to rest on ties 13 and provided with a transverse brace 14. Through this brace and through the table passes a vertical mast 15 carrying a target 16 at its upper end, and cranked at its lower end for engagement with the switch rod 17. All of these parts are old and well known. Mounted to rotate with the mast is a collar 18 or block which is relatively thick and heavy and which is positively connected to the mast to rotate therewith. Thus the collar may be many-sided and the mast at this point many sided. The collar or block has a diameter sufficient so that it will project out over the notches 11, and pivoted to this collar is the handle 19, this handle being pivoted, at 20, by a pintle, the ends of which are overturned so that the pintle cannot be withdrawn. The pivotal axis for this pin-

tle should be so disposed with reference to the inner end of the notches that the handle will drop into a vertical position when it comes opposite either of the notches. So far, I have described the ordinary construction of switch stands of the character stated.

Set into a recess within the handle and held by screws or bolts passing inward from the inside face of the handle is a lock casing 21. Disposed within this lock casing is a bolt 22 which is carried upon and is integral with a relatively triangular body 23, this body being pivoted at its lower end upon a pin or bolt 24, the bolt 22 extending out through an opening in the edge face of the lock casing, and the bolt being formed with shoulders 25 limiting its outward projection. The body 23 of the bolt on its upper face is formed with an upwardly extending shoulder 26 adapted to be engaged by the bit of a key 27 insertible through a suitable keyhole. This key is a hollow key and rotates on a pin 28 projecting from the lock casing. The bolt is guided by forming the body 23 with an arcuate slot 29 through which a pin 30 passes. The bolt is projected by means of a coiled spring 31. This spring surrounds telescopic members 32 and 33, one of which is formed with a bifurcated head 34 at its upper end pivoted to the body 23, and the other member 32 being pivotally mounted at its lower end, as at 34^a, upon the lock casing. This spring, therefore, acts to urge the bolt to a projected position, and when the bit 27 is rotated in a clockwise direction, it will retract the bolt against the action of this spring. In order to hold the bolt in a retracted position and, therefore, out of operative position for any desired length of time, I form the lower end of the body 23 below the pivot 24 with a tooth 35, and mount below the lower end of the bolt body a latch 36 pivoted, at 37, and formed to engage behind this tooth. The other end of the latch extends out of a slot in the lock casing and is provided with a head 38 whereby the detent end of the latch may be raised into engagement with the bolt. A stop block or equivalent device 39 prevents the too great depression of the latch or detent.

The inside face of one wall of each notch 11 is recessed, as at 40, to receive the extremity of the bolt 22, and it will be noted from Fig. 4 that this recess does not extend the full depth of the table 10, that is from top to bottom of the wall of the notch 11, but only partially along this wall so that when the bolt is projected into engagement with this recess, the bolt cannot be forced back by the insertion of a knife blade or like device. The end of the bolt is beveled or inclined so that it will slip past the corner of the recess 11 and be pushed back until the bolt has arrived opposite the recess 40, when the bolt will spring outward. When the

bolt has once sprung outward, it cannot be retracted save by using the key 27. The corner of that wall of the notch having the recess 40 may likewise be beveled or disposed at an inclination so that as the handle is turned downward, the beveled edge of the bolt will bear square against the corner so as to cause the pushing back of the bolt without any binding action. This is not absolutely necessary, however, because the handle is nearly in a vertical position when the bolt strikes the corner of the stand.

It will be seen that with this construction there is no necessity of the switchman stopping to insert the padlock, which is often difficult to do, particularly at night, or where the trainman is wearing heavy mittens, and which is difficult to do in a hurry, and that it is not necessary for the trainman to hold the key in the lock until the switch is locked and then remove the key, but that it is only necessary to shift the handle 19 into a vertical position in the proper notch and the switch automatically locks, and that when it is once locked, it cannot be shifted unless by an operator having a key, whereby the lock may be released. Thus this switch may be locked at night without delay and without having to fumble to insert a key to lock the switch or remove a key or insert a shank to inclose the padlock. Inasmuch as the lock casing is fastened to the handle 19 by bolts passing from the rear of this handle, it is obvious that these bolts cannot be removed and the lock casing cannot be removed so long as the handle is in a vertical position, and it will further be seen that the lock is to a very large extent protected by being disposed within the notch of the switch stand and being disposed within a recess in the handle so that there are no projecting portions of the lock case which will permit the lock to be opened or broken by pounding with a stone or stick. Where it is necessary, as in yards, that a switch be used a number of times in succession, the latch 36 permits the bolt to be held retracted for as long as necessary and until the switching operation has been ended, when the latch may be released and the bolt will then operate in the usual manner.

While I have illustrated a construction which is thoroughly effective for the purpose intended, yet it is obvious that minor changes might be made in the device without departing from the scope of the appended claims.

I claim:—

1. The combination with a switch stand having a notched table, a rotative mast, a handle member carried by the mast and rotating therewith and resting on the table, and a handle section hinged to the said member and adapted to be depressed into the notches of the table, of a lock casing carried

by the handle section and having an opening in one edge wall, a body pivoted at one end in said casing and having a bolt at its end opposite the pivot and projecting through said opening, the upper end of the body being formed with a shoulder adapted to register with a keyhole whereby a key may be inserted to engage said shoulder and retract the body and bolt, a spring engaging the free end of said body and urging the bolt outward, said body having means for limiting its outward and inward movements.

2. The combination with a switch stand having a notched table, a rotative mast, a handle member carried by the mast and rotating therewith and resting on the table, and a handle section hinged to the said member and adapted to be depressed into the notch of the table, of a lock casing carried by said handle section and having an opening in one edge wall, a triangular-shaped body pivoted at its lower end in said casing and having an integral bolt at its upper end projecting through said opening, the upper end of the body being formed with a shoulder adapted to register with a keyhole whereby a key may be inserted to engage said shoulder and retract the bolt, a spring engaging the free end of said body and urging the bolt outward, said body having means for limiting its outward and inward movements.

3. The combination with a switch stand having a notched table, a rotative mast, a handle member carried by the mast and rotating therewith and resting on the table, and a handle section hinged to the said member and adapted to be depressed into the notch of the table, of a lock casing carried by said handle section and having an opening in one edge wall, a triangular-shaped body pivoted at its lower end in said casing and having an integral bolt at its upper end projecting through said opening, the upper end of the body being formed with a shoulder adapted to register with a keyhole whereby a key may be inserted to engage said shoulder and retract the bolt, a spring engaging the free end of said body and urging the bolt outward, said bolt having means for limiting its outward and inward movements, the lower end of said pivoted bolt carrying body being formed with a tooth, and a detent shiftable into or out of position to engage said tooth and prevent the projection of the bolt, said detent having a finger piece extending to the exterior of the casing whereby the detent may be manipulated.

In testimony whereof I hereunto affix my signature.

LUTHER B. MARTIN.