A. T. & G. J. HANSON.

SWITCH LOCK.

APPLICATION FILED JUNE 16, 1909.

964,910. **Patented July 19, 1910.**

Fig. 5.

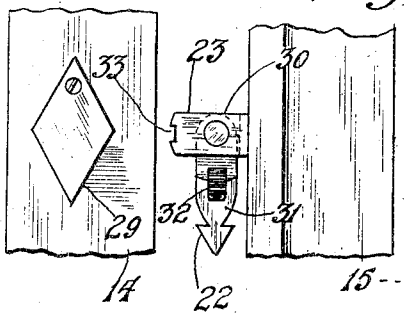


Fig. 1.

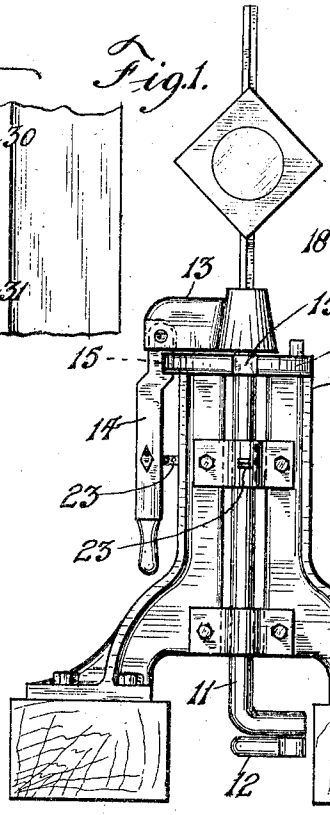


Fig. 4.

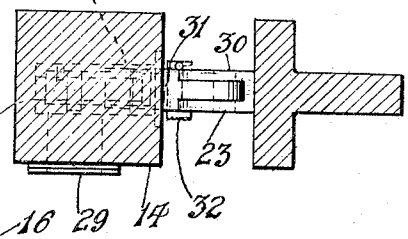


Fig. 6.

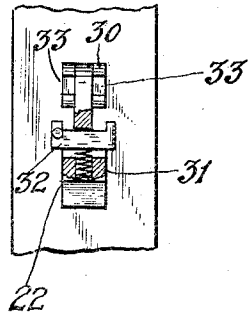


Fig. 8.

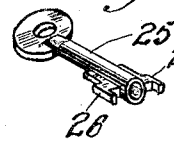


Fig. 7.

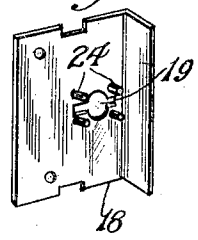


Fig. 2.

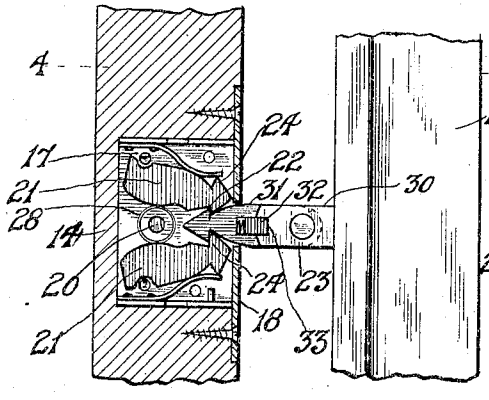
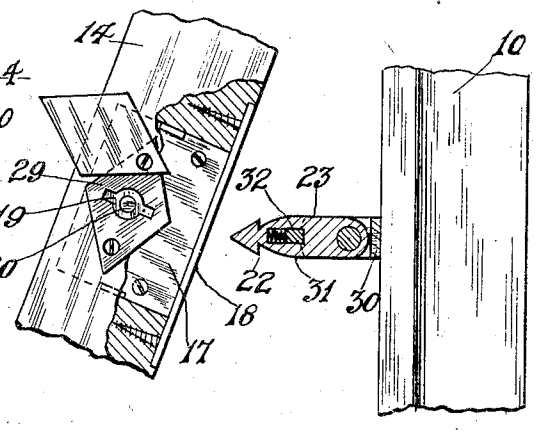


Fig. 3.



Witnesses.
A. Y. Andrews.
Anna Schmidtbauer

Inventors.
Albert T. Hanson & George J. Hanson,
By Benedict, Morsell & Caldwell.
Attorneys.

UNITED STATES PATENT OFFICE.

ALBERT T. HANSON, OF ANTIGO, AND GEORGE J. HANSON, OF MILWAUKEE, WISCONSIN.

SWITCH-LOCK.

964,910. Specification of Letters Patent. Patented July 19, 1910.

Application filed June 16, 1909. Serial No. 502,618.

To all whom it may concern:

Be it known that we, ALBERT T. HANSON, residing in Antigo, in the county of Langlade and State of Wisconsin, and GEORGE J. HANSON, residing in Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Switch-Locks, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

This invention relates to improvements in switch locks, particularly adapted for use in connection with railway track switches.

One of the objects of the invention is to obviate the use of independent switch locks and to provide a switch stand with new and improved non-separable means for locking the switch lever in positions of adjustment.

A further object of this invention is to provide the lever handle of a switch stand with a lock inserted therein which is adapted to engage a plurality of bolts fastened to the stand in order to lock the switch in different positions.

A further object of this invention is to provide a switch stand with means whereby when the lever has been turned to move a switch rail it is adapted to swing into engagement with one of the bolts and be automatically locked in adjusted position.

A further object of this invention is to provide a switch stand with bolts which are adapted to be moved into inoperative position when it is desired to leave the lever unlocked.

With the above, and other objects in view the invention consists of the switch locking means and its parts and their combinations, and all equivalents thereof.

In the accompanying drawing in which the same reference characters indicate the same parts in all of the views: Figure 1 is a side view of a switch stand provided with the improved locking means; Fig. 2 is a vertical sectional view of a fragment of the switch lever and lock shown in engagement with a bolt; Fig. 3 is a fragmentary view of the lever and stand with the lever shown disengaged from the bolt, parts broken away and other parts in section; Fig. 4 is a transverse section taken on line 4—4 of Fig. 2; Fig. 5 is a fragmentary view of the lever and stand, the bolt connected to the stand shown swung downwardly out of locking position; Fig. 6 is a front view of the fragment of the stand shown in Fig. 5, parts shown in section; Fig. 7 is a perspective view of the key hole plate portion of the lock case; and Fig. 8 is a perspective view of the key for operating the lock.

Referring to the drawing the numeral 10 indicates a switch stand or frame which may be of the ordinary construction provided with a cranked lever shaft 11 to which is connected a rod 12 which extends to the switch (not shown) adapted to be moved thereby. An arm 13 is rigidly connected to the upper portion of the shaft and has pivotally connected to the outer end thereof an operating lever 14 which normally depends downwardly therefrom and engages notches 15 provided in a segment 16 forming part of the switch stand. This lever is adapted to be swung out of engagement with the notches of the segment and turned horizontally to move the switch and then swung down into engagement with one of the notches and the lever is then locked by means about to be described.

The inner edge of the lever is recessed to accommodate a lock 17 which consists of a casing 18 provided with a key hole 19, a key pin 20 and a pair of spring pressed shouldered dogs 21 which are adapted to engage the outer shouldered ends 22 of bolts 23 connected to the switch stand to lock the switch in position. The outer ends of the bolts are pointed in the shape of an arrow head in order to force the shouldered ends of the dogs apart to engage the shoulders 24 of said dogs. The dogs are adapted to be moved farther away from each other to release the bolt in engagement therewith by means of a key 25 provided with diametrically opposite positioned bits 26 which are adapted to engage said dogs and force them apart to release the bolt. The lock casing is provided with four pins 27 and with a circular flange 28 and the key bolts are correspondingly notched to permit the key being turned. An escutcheon plate and swinging cover 29 covers the key hole to protect the lock from dust.

The bolt 23 consists of a fixed member 30 rigidly connected to the switch stand and a swinging member 31 pivotally connected to the fixed member and adapted to be swung downwardly when it is desired to leave the switch lever unlocked. The member 31 is provided with a transverse spring latch 32 which is adapted to engage recesses 33 pro-

vided in the bifurcated end of the stationary member 30 to hold the swinging member in proper position to be engaged by the dogs of the lock. The number of bolts provided correspond to the number of tracks with which the switch is adapted to connect.

The operation of the switch lock is as follows: When it is desired to move the switch the lever is unlocked from the bolt and swung upwardly to clear the segment and is then turned to move the switch until it registers with the other notch, and it is then swung downwardly into the last mentioned notch and into locked engagement with the bolt in alinement with this notch. As the dogs of the lock are spring pressed they will give and permit the bolt to enter into locked engagement therewith without the necessity of using the key.

From the foregoing description it will be seen that the switch lock is very simple in construction and operation and requires but a minimum amount of labor to move a switch.

What we claim as our invention is:

1. A switch lock, comprising a stand provided with a switching shaft, a lever pivotally connected to the shaft and adapted to turn said shaft a partial rotation, a plurality of pivoted bolts projecting from the stand, and a locking means forming part of the lever for engaging one of the bolts.

2. A switch lock, comprising a stand provided with a switching shaft and a lever holding means, a lever pivotally connected to the shaft and held by the holding means and adapted to turn said shaft a partial rotation when disengaged from the holding means, a plurality of headed bolts projecting from the stand, and a locking dog connected to the lever for engaging one of the bolt heads to lock the lever in engagement with the holding means.

3. A switch lock, compirsing a stand provided with a switching shaft and a lever holding means, a lever pivotally connected to the shaft and held by the holding means and adapted to turn said shaft a partial rotation when disengaged from the holding means, a plurality of headed bolts projecting from the stand and extending in a direction radially from the switch shaft, yielding locking dogs connected to the lever for engaging one of the bolt heads to lock the lever in engagement with the holding means, and a key for moving the dogs to release the bolt.

4. A switch lock, comprising a stand provided with a switching shaft and a notched segment, an arm connected to the shaft, a lever pivotally connected to the arm and adapted to swing into engagement with one of the notches, a plurality of headed bolts pivoted to and projecting from the stand and extending in a direction radially from the switch shaft, yielding shouldered locking dogs connected to the lever for engaging one of the bolt heads to lock the lever in engagement with the notched segment, and a key for moving the dogs to release the bolts.

5. A switch lock, comprising a stand provided with a switching shaft and a notched segment, an arm connected to the shaft, a lever pivotally connected to the arm and adapted to swing into engagement with one of the notches, a plurality of bolts provided with arrow shaped heads pivoted to and projecting from the stand and extending in a direction radially from the shaft, yielding shouldered dogs connected to the lever and positioned within a recess provided in the lever for engaging one of the arrow shaped heads to lock the lever in engagement with the notched segment, and a removable key for moving the dogs to release the arrow shaped head.

6. A switch lock, comprising a stand provided with a switching shaft and a notched segment, an arm connected to the shaft, a lever pivotally connected to the arm and adapted to swing into engagement with one of the notches, a plurality of bolts provided with arrow shaped heads pivoted to and projecting from the stand and extending in a direction radially from the shaft, spring latches for holding the bolts in adjusted positions, yielding shouldered dogs connected to the lever and positioned within a recess provided in the lever for engaging one of the arrow shaped heads to lock the lever in engagement with the notched segment, and a removable key for moving the dogs to release the arrow shaped head.

In testimony whereof, we affix our signatures, in presence of the witnesses.

ALBERT T. HANSON.
GEORGE J. HANSON.

Witnesses as to Albert T. Hanson's signature:

EDW. L. CONWELL,
JOHN W. BROWN.

Witnesses as to George J. Hanson's signature:

A. L. MORSELL,
ANNA F. SCHMIDTBAUER.