(No Model.)

I. MAY.

SWITCH AND SIGNAL LOCK.

No. 347,494. Patented Aug. 17, 1886.

Fig. 2.

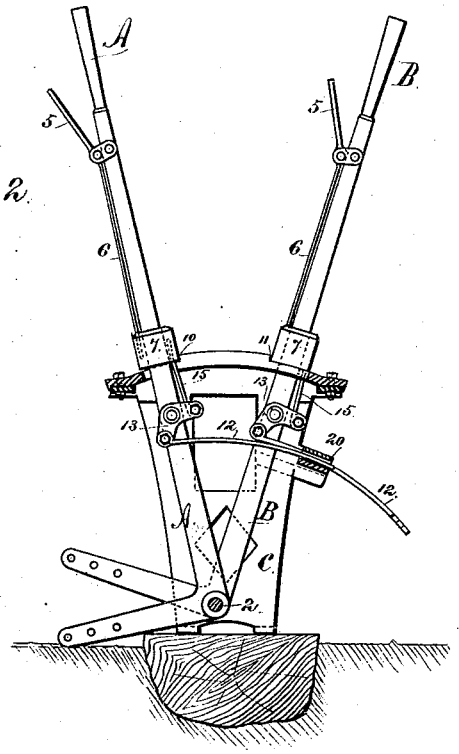


Fig. 1.

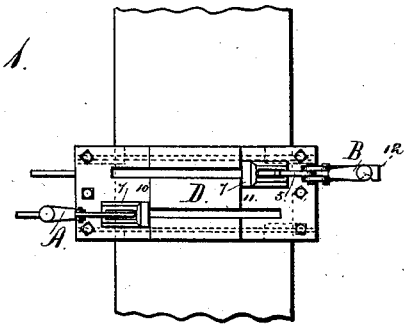


Fig. 3.

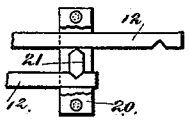
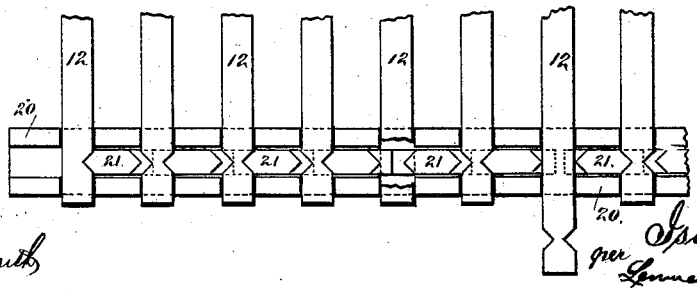


Fig. 4.



Witnesses
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SWITCH AND SIGNAL LOCK.

SPECIFICATION forming part of Letters Patent No. 347,494, dated August 17, 1886.

Application filed April 23, 1886. Serial No. 199,887. (No model.)

To all whom it may concern:

Be it known that I, ISAAC MAY, of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Safety-Locks for Switch and Signal Levers, of which the following is a specification.

It is common in the management of railways, especially where there are branches or intersections, to have all the signals operated from one station or tower, and in many instances all the switches are moved from the same tower or switch. Where there are several levers to be operated, or where there is a second man in the switch-house, it sometimes happens that one of the levers is moved to change a signal or switch before a conflicting signal or switch is returned to its normal position.

The object of the present invention is to prevent a switch or signal lever being moved when the other switches or signals are not in the required position, so as to avoid or lessen the risk of a wrong signal being given or a switch moved until the other parts of the track or system are in proper condition.

The manner of arranging the switches and signals and their connections varies according to the place or conditions of travel; hence my improvements are not limited to any particular arrangements of switches or signals or to any particular character of levers or connections; but said improvements may be used wherever there are two or more levers that require to be so operated that neither one can be moved until the other is in the proper or prearranged position.

In the drawings, Figure 1 is a plan of two switch-levers. Fig. 2 is an elevation of the same with the frame in section. Fig. 3 is a detached view of the lock-box; and Fig. 4 is a plan of the lock-box open, with numerous locks, some of the bars being removed.

The levers A B are of any desired size, shape, or character. I have shown them as pivoted at 2 upon the base of the frame C, and as swinging in slots between the segments D, such segments being fastened to the frame C.

Upon each lever is a pivoted handle, 5, corresponding generally to that which has before been used to operate a latch or other holding device. I have shown this pivoted handle as connected by a rod, 6, to the drop-box 7, that is in the form of a weight sliding upon the lever, and forming a stop against either the offset 10 or 11 upon the slotted segment.

To each lever there is connected a locking-bar, 12; but such connection is not direct, but it is through the secondary lever 13, pivoted upon the main lever, (A or B,) and this lever 13 is connected with the handle 5, so that when this handle 5 is moved an end motion is given to the locking-bar 12 before the main lever A or B is moved. I have shown the secondary levers 13 in the form of bell-crank or bent levers, the locking-bars 12 being pivoted to one end, and the connecting-rods 15 being pivoted to the other ends. The rod 15 is shown as fastened to the drop-box 7: but it may be a continuation of the rod 6, as these parts all move together. The locking-bars 12 slide endwise across the lock-box 20, which latter is made hollow and contains the bolt or bolts 21, that can slide endwise at right angles to the locking-bars. The ends of the bolts 21 are V-shaped, and there are correspondingly-shaped notches in the edges of the locking-bars 12, and the length of each bolt is such that when one of its V-shaped ends is within the correspondingly-shaped notch in one lock-bar the adjacent lock-bar can be moved endwise and slide just clear of the end of the bolt, as seen in Fig. 3; hence when either lock-bar is moved endwise by grasping the handle 5 it pushes the bolt endwise into the notch of the adjacent lock-bar, thereby holding the same and effectually preventing the moving of the second main lever until the notch of the lock-bar of the adjacent lever is opposite the end of the bolt. By this means the second lever cannot be moved when the other is in the improper position, and as the pivoted handle is moved in all cases before the main switch or signal lever there is no possibility of an incorrect partial motion of the switch or signal. Where a number of levers are associated in a group, the bolts are to be made as indicated in Fig. 4, the bolt itself being upon a base-plate that is slightly longer than the bolt, so as to reach across beneath the lock-bar; hence when either lock-bar is moved the bolts at its opposite sides are shifted to hold all the other lock-bars; but when all the signal or switch levers are in the normal positions either one of such main levers can be

moved; but before the actual movement of the main lever takes place the handle 5 of that lever gives motion to the lock-bar and moves all the bolts endwise, or some in one direction and others in the other direction, and holding the locking-bars of all the other levers, so that a wrong movement is almost impossible. Where the normal position of the levers varies, the notches will not be near the end in all cases, but some may be notched in the middle and others near the secondary levers.

I do not claim a locking device for the switch-lever and a rocker between the lever and the lock, as these have been used.

In my improvement I dispense with the rocker and give an end movement directly to the notched sliding lock-bar by the connection to the pivoted handle, and the notched sliding bars are directly acted upon by the locking-bolts to hold all those locking-bars that are not in use, and these lock-bars form direct and positive stops for holding the switch-levers, thereby lessening the risk of looseness in any of the parts, and simplifying the construction.

I claim as my invention—

1. The combination, with the switch or signal levers and the pivoted handles, of notched lock-bars at right angles, or nearly so, to the switch-levers, bent levers and connections between the pivoted handles and notched lock-bars, the lock-box across which the lock-bars slide, and bolts with beveled ends within the lock-box and between the notched lock-bars, substantially as specified.

2. The combination, with the switch or signal levers and the pivoted handles, of notched lock-bars at right angles, or nearly so, to the switch-levers, bent levers and connections between the pivoted handles and notched lock-bars, the lock-box across which the lock-bars slide, and a row of separate bolts with beveled ends in line with each other, and base-plates to the bolts extending across beneath the lock-bars, substantially as specified.

Signed by me this 17th day of April, A. D. 1886.

ISAAC MAY.

Witnesses:
GEO. T. PINCKNEY,
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