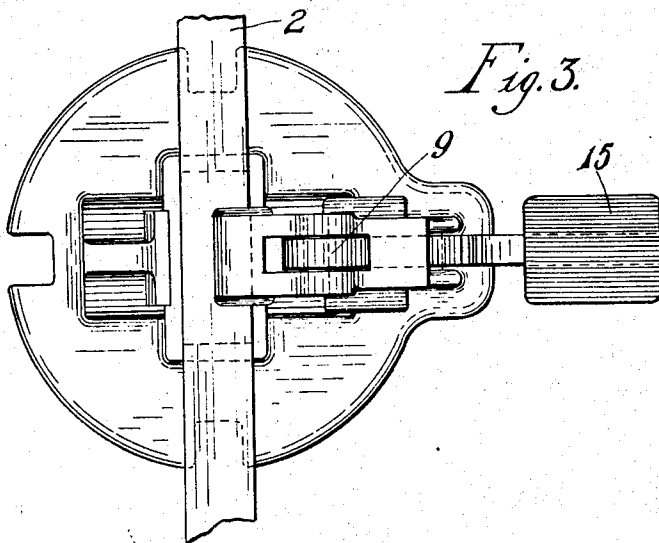
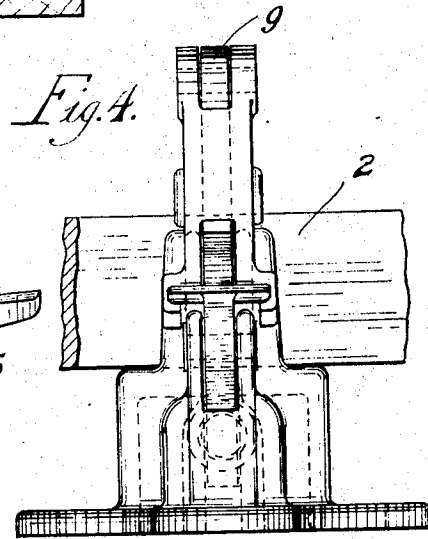
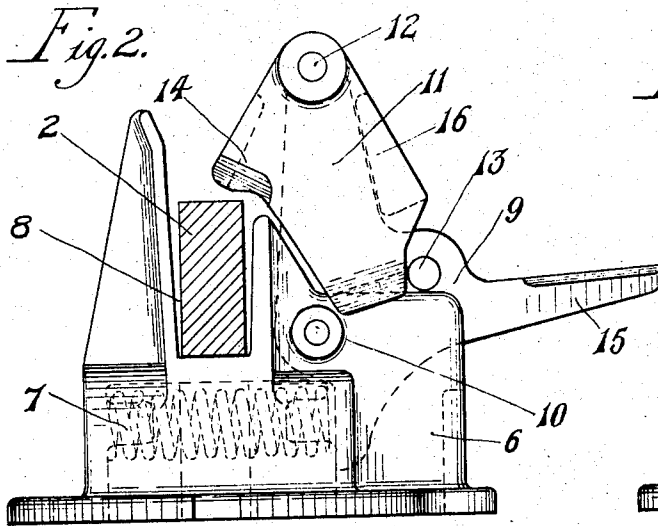
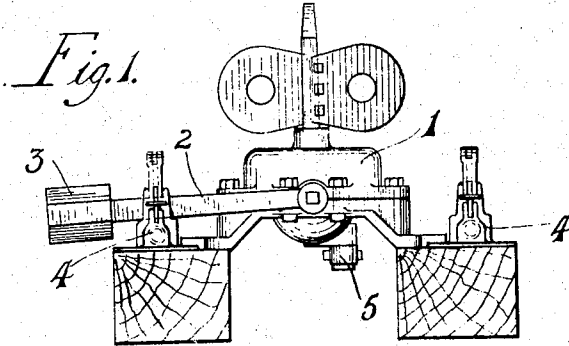


W. S. WESTON.
 AUTOMATIC SWITCH LATCH.
 APPLICATION FILED JULY 8, 1908.

933,511.

Patented Sept. 7, 1909.



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AUTOMATIC SWITCH-LATCH.

933,511.

Specification of Letters Patent.

Patented Sept. 7, 1909.

Application filed July 8, 1908. Serial No. 442,572.

To all whom it may concern:

Be it known that I, WILLIAM S. WESTON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Automatic Switch-Latches, of which the following is a specification.

The invention relates to that type of latch wherein the switch is held in position with a force sufficient to secure proper operation, but which yields when a train runs through without a reversal to properly receive it, thus preventing a derailment or breakage in the switch operating mechanism. The principal objects of the invention are; the provision of a latch which may be either automatically operated, hand operated, or foot operated, and one in which improved and novel means permitting the hand operation against slight resistance and without actuation of the latching spring; and the provision of a compact improved and simplified construction permitting of the use of the latch as a rigid lock when desired. One embodiment of the invention is illustrated in the accompanying drawing, wherein:—

Figure 1 is an assembled side elevation view showing the relation of the switch latch to the rest of the switch mechanism, and

Figures 2, 3 and 4 are front, plan, and side views respectively of the latch itself, the parts being in position of engagement with respect to the weighted switch lever.

Referring first to the general arrangement of parts as indicated in Figure 1, 1 is the switch stand which may be of any approved type, 2 is the operating lever provided with the weight 3, 4—4 are the automatic latching devices, in which my invention particularly resides, and 5 is the end of the connecting rod which leads to the switch.

Referring now to the particular construction of the latching mechanism as illustrated in Figures 2, 3 and 4, 6, is the base of the device, which base is recessed for the reception of the spring 7, 8 is a socket portion into which the lever 2 fits when in locked position, 9 is the latch supporting member, which member is pivoted to the frame at 10, 11 is the latch pivoted at 12 to the latch supporting member 9, and 13 is a hole in the latch supporting member 9 for the reception of the bar of a lock when it is desired to make the latch rigid. The spring 7 bears at

its right hand end against the lower end of the latch supporting member 9, so that such member is normally spring held in the position shown in Figure 2. The latch 11 is provided with a nose 14, which nose is held in the position indicated in Figure 2, for a purpose to be hereinafter set forth. The member 9 is provided at its rear side with a projecting pedal 15 so that if desired the device may be operated by the foot.

In moving to the position shown in Figure 2, the lever 2 engages the nose 14 and swings the latch 11 about the pivot 12 thus permitting the lever to seat itself in the socket 8 without moving the supporting member 9 or compressing the spring 7. When the operation is reversed, and force is applied from the switch tending to raise the lever 2, the latch 11 cannot be swung to the right without operating the member 9 and compressing the spring, as the point of application of force to the latch 11 is to the left of the pivot 12, and rotation of the latch about this point is prevented by virtue of the engagement of the back portion 16 of the latch with the rear side of the member 9. In order to free itself and move upward therefore, the lever 2 must swing the upper end of the member 9 to the right, thereby carrying the lower end to the left and compressing the spring 7. If it is desired to throw the lever 2 by hand, the latch 11 may be moved from operative position with its nose over the lever by simply grasping it by the hand and swinging it to the right. It will be noted that in this operation, no movement of the member 9 is necessary and therefore little force need be exerted in order to swing the latch. The device may also be operated by pressing the foot upon the pedal 15, but in this case the spring 7 has to be compressed, and a considerable amount of force exerted. The nose of the dog 11 is made of the contour indicated in Figure 2 in order that such nose may be always in close engagement with the lever 2, and yet at the same time permit a free swinging of such latch with a minimum of engagement with the lever. It will be seen that if this nose were made parallel to the entire top of the lever considerable space would have to be left between the nose and the lever, as otherwise the lever could not be swung to the right. It is desirable too that a flattened portion be provided on the nose so that the lever 2 be securely main-

tained in its lowest position in order that the lever should not have a tendency to push the latch aside and tend to open the switch owing to the spring pressure of the switch points, at any time unless sufficient pressure is applied to the switch points to compress the spring 7 and move the member 9 and latch 11.

The utility of the construction will be apparent from the foregoing. By making the latch 11 movable with respect to the member 9, the device may be hand operated with practically no resistance, which result cannot be attained where the latch and supporting member are made integral as in devices heretofore constructed. Another feature contributing to the compactness and simplicity of the device is the placing of the spring 7 in the recess 8. The number of parts necessary to the construction is reduced by this arrangement, and the spring is maintained and protected by the base of the device. Other advantages incident to the construction will be apparent to those skilled in the art.

Having thus described my invention and illustrated its use, what I claim as new and desire to secure by Letters Patent is the following:—

1. A locking means for a switch lever, comprising a member adapted to engage the lever, a movable spring-held latch supporting member, and a retaining latch movably mounted on the supporting member and engaging the supporting member so that on an upward movement of the lever the latch operates to move the supporting member against the resistance of the spring.

2. Locking means for a switch lever, comprising a frame adapted to engage the lever, a pivoted spring-held latch supporting member, and a retaining latch pivotally mounted on the supporting member, and otherwise adapted to engage the supporting member, so that on an upward movement of the lever, the latch operates to move the supporting member against the resistance of the spring.

3. Locking means for a switch lever, comprising a frame adapted to engage the lever, a pivoted spring-held latch supporting member, and a retaining latch pivotally mounted on the supporting member and positioned to engage the lever on one side of the point of pivotal support of the latch and to engage the supporting member on the other side of such point.

4. Locking means for a switch lever, comprising a frame adapted to engage the lever, a pivoted spring-held latch supporting member, and a retaining latch pivotally mounted on the supporting member and otherwise adapted to engage the supporting member so that on an upward movement of the lever the latch operates to move the supporting member against the resistance of the

spring, the said supporting member being provided with a hole for the reception of a locking member, so positioned that the said locking member will engage both the frame and the latch.

5. Locking means for a switch lever, comprising a frame adapted to engage the lever, a pivoted spring-held latch supporting member, and a retaining latch pivotally mounted on the supporting member and otherwise adapted to engage the supporting member so that on an upward movement of the lever the latch operates to move the supporting member against the resistance of the spring, and an operating pedal on the supporting member.

6. Locking means for a switch lever, comprising a frame adapted to engage the lever and provided with a recess opening downwardly through its base, an upright lever pivoted in the frame and having latching means for engaging the top of the switch lever, and a horizontally disposed spring lying in the said recess and engaging the lower end of the lever.

7. Locking means for a switch lever, comprising a frame adapted to engage the lever, a pivoted spring-held latch supporting member, and a retaining latch pivotally mounted on the supporting member in position to engage the lever, and provided with stop means for engaging the supporting member and preventing rotative movement of the latch when the lever moves upward.

8. Locking means for a switch lever, comprising a frame adapted to engage the lever, a pivoted spring-held latch supporting member, and a retaining latch pivotally mounted on the supporting member and having a nose for engaging the top of the lever, and stop means whereby rotative movement of the latch is prevented when the nose is operatively engaged by the lever in its upward movement.

9. Locking means for a switch lever, comprising a frame adapted to engage the lever, a pivoted spring-held latch supporting member extending to a point above the lever, a retaining latch pivoted to the upper end of the supporting member, such latch being provided with an engaging nose substantially as shown, and stop means for preventing a rotative movement of the latch when the nose is operatively engaged by the lever in its upward movement.

10. In a compound double automatic latch, a stand having a yoke adapted to receive a throwing lever, a main latch, and an auxiliary latch on the main latch, whereby the entrance of the throwing lever into the yoke is permitted without the movement of the main latch, and whereby the raising of the throwing lever from the yoke is only permitted by the movement of the main latch.

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11. In a compound double automatic latch, a stand having a yoke adapted to receive a throwing lever, a main latch pivoted to said stand, a spring adapted to normally hold said latch toward the throwing lever, and an auxiliary latch on the main latch having an extension normally held in the path of said lever by the pressure of said spring on said main latch, the auxiliary latch being yieldable with respect to the main latch when its extension is engaged on its upper side by the throwing lever, but being immovable with respect to the main latch when its extension is engaged on its lower side by the throwing lever.

12. In a compound double automatic latch, a stand having a yoke adapted to receive a throwing lever, a main latch and an auxiliary latch on the main latch, whereby the entrance of the throwing lever into the yoke is permitted without the movement of the main latch, and whereby the raising of the throwing lever from the yoke is only permitted by the movement of the main latch, and a spring adapted to exert pressure on the main latch to oppose its movement against the raising of the throwing lever.

13. In a compound double automatic latch, a stand having a yoke adapted to receive a throwing lever, a main latch and an auxiliary latch on the main latch whereby the entrance of the throwing lever into the yoke is permitted without the movement of the main latch and whereby the raising of the throwing lever from the yoke is only permitted by the movement of the main latch, a treadle on the main latch for moving it manually and a spring exerting pressure against the treadle to oppose the main latch to the raising of the throwing lever.

14. In a compound double automatic latch, a stand having a yoke adapted to receive a throwing lever, a main latch and an auxil-

iary latch on the main latch, whereby the entrance of the throwing lever into the yoke is permitted without the movement of the main latch, and whereby the raising of the throwing lever from the yoke is only permitted by the movement of the main latch, and a stop on said main latch adapted to engage the stand to limit the movement of the main latch.

15. In a compound double automatic latch, a stand having a yoke adapted to receive a throwing lever, a main latch and an auxiliary latch on the main latch, whereby the entrance of the throwing lever into the yoke is permitted without the movement of the main latch, and whereby the raising of the throwing lever from the yoke is only permitted by the movement of the main latch, said auxiliary latch being held in normal position for engagement with said throwing lever by the action of gravity.

16. In a compound double automatic latch, a stand having a yoke adapted to receive a throwing lever, a main latch, and an auxiliary latch on the main latch, whereby the entrance of the throwing lever into the yoke is permitted without the movement of the main latch, and whereby the raising of the throwing lever from the yoke is only permitted by the movement of the main latch, said main latch being opposed to the raising of the throwing lever by spring pressure, and said auxiliary latch being held in normal position on the main latch for engaging with the throwing lever by the action of gravity.

In testimony whereof I have hereunto signed my name in the presence of the two subscribed witnesses.

WILLIAM S. WESTON.

Witnesses:

PAUL CARPENTER,
G. W. CUNNINGHAM.