

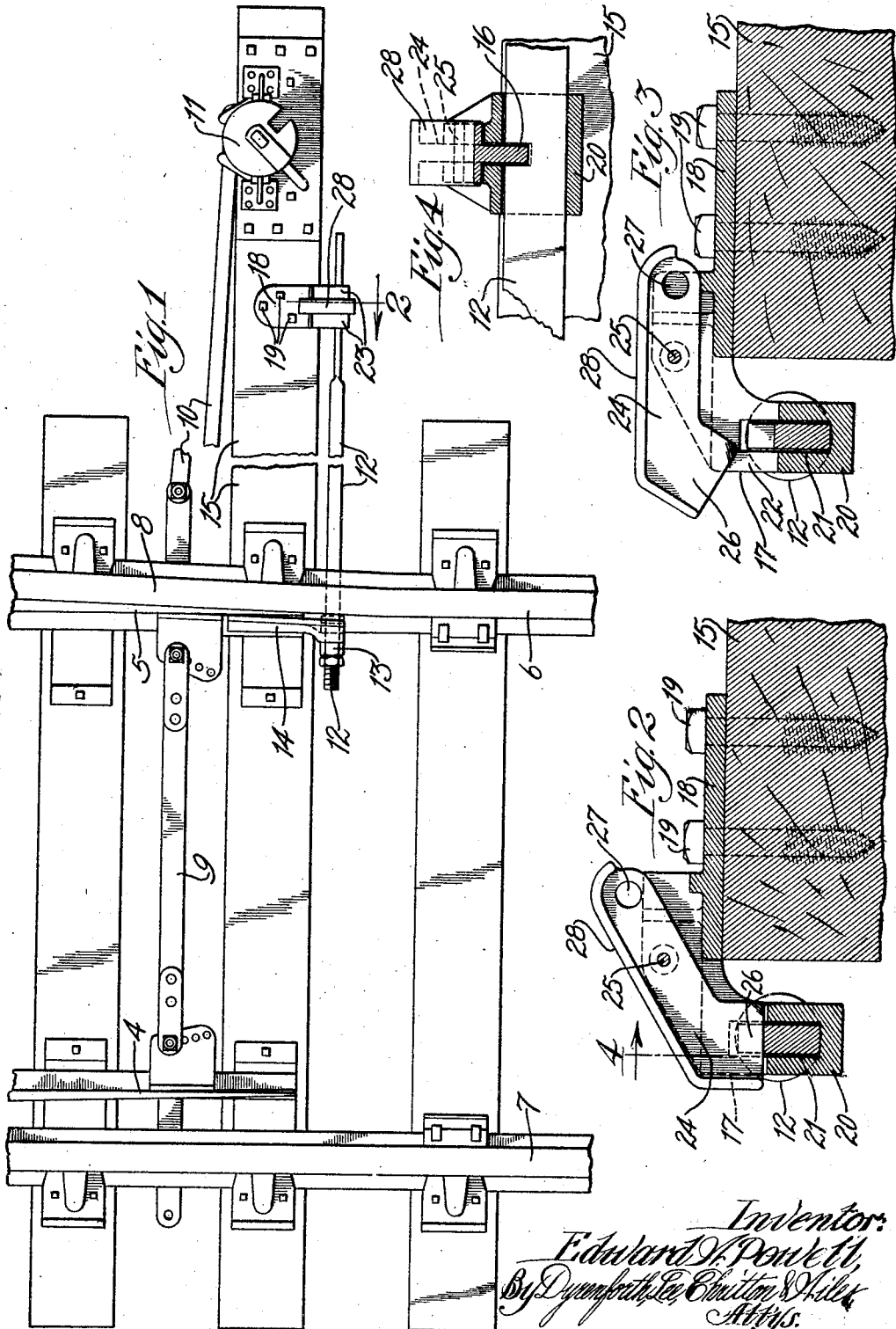
Dec. 18, 1928.

1,695,900

E. W. POWELL

SWITCH LOCK DEVICE

Filed Oct. 14, 1927



Inventor:  
Edward W. Powell  
By *Dunsmuir, Lee, Christie & Hill*  
Attys.

# UNITED STATES PATENT OFFICE.

EDWARD W. POWELL, OF CHICAGO, ILLINOIS, ASSIGNOR TO PETTIBONE MULLIKEN COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF NEW YORK.

## SWITCH-LOCK DEVICE.

Application filed October 14, 1927. Serial No. 226,138.

My invention relates particularly to devices for releasably locking the point rails of a switch in a predetermined position, as for example and preferably in a position in which the switch is closed to permit the trains in traveling over the main track to freely pass the switch; my invention having been devised for use more particularly as an adjunct to switch-throwing mechanism either of the hand-operated or power-operated type, for locking the switch points in a predetermined position independently of any lock provided by the switch-throwing mechanism thereby not only providing means which compels the proper positioning of the switch points in the predetermined position, before the locking device may be rendered effective, but also providing means which lock the switch in such position independent of the switch-throwing mechanism and which serve to prevent, until manipulated to open position, the opening of the switch by the switch-throwing mechanism either in the normal actuation of the latter or abnormally as in the case of accident.

My primary object is to provide a novel, simple and inexpensive construction of locking mechanism which may be readily operated and present the minimum danger of impairment, especially during freezing weather.

Referring to the accompanying drawing:

Figure 1 is a plan view of the switch-equipped portion of a railway track provided with my improved locking mechanism. Figure 2 is an enlarged broken view in sectional elevation of a portion of the locking mechanism, the section being taken at the line 2 on Fig. 1 and viewed in the direction of the arrow, the mechanism being shown in a position for locking the switch in closed position. Figure 3 is a view like Fig. 2 showing the locking member of the mechanism in releasing position; and Figure 4, a broken section taken at the line 4 on Fig. 2 and viewed in the direction of the arrow.

The arrangement of railway tracks shown in Fig. 1 comprises a pair of point rails 4 and 5 of a switch construction, the point rail 4 comprising a part of the switch track and the point rail 5 a part of the main track the point rail 5 being a continuation of the main

rail 6. The other main line rail is represented at 7.

The arrangement described is that which is common in switch constructions, it being understood that when the points 4 and 5 are in the position shown in Fig. 1 the switch comprising the point rail 4 and the laterally deflected extension 8 of the main rail 6 is closed so that the trains may freely pass back and forth over the main track.

In the arrangement shown the switch points 4 and 5 which are connected together by a head-rod 9 to be moved as a unitary structure, are connected, through the medium of a connecting-rod 10 with a hand-throw switch stand represented at 11 and which may be of any suitable construction.

The auxiliary locking means for the switch points comprises a lock-rod 12 which extends crosswise of the track beneath the rail 8 and is connected at its inner end, as represented at 13, with the end portion of a plate 14 rigidly secured to the point rail 5, this rod extending alongside of the elongated tie 15, to a point remote from the track and containing a notch 16 in its upper edge.

Secured to the outer end of the tie 15 is a guide member 17 for the rod 12. This guide member is formed of a plate 18 at which it rests upon the tie 15 and is secured thereto by lag screws 19. The outer edge portion of the plate 18 terminates in a head 20 which is located alongside, and depends below, the upper surface of the tie 15 and contains a guide opening 21 therethrough in which the rod 12 slidably extends, the upper portion of the head 17 containing a vertical slot 22 intersecting the opening 21 and with which slot the notched portion 16 of the rod 12 registers when the switch points are in the position shown in Fig. 1, namely, in switch-closing position.

The plate and depending head structure just described is provided with upwardly extending spaced apart lugs, or ears, 23, preferably formed integrally with the parts just referred to, the space between these ears being in registration with the slot 22 in the head.

The device also comprises a lock member, in the form of a latch 24 for projection into the notch 16 of the lock-rod 12 when the

latter is in the position above referred to, the member 24, which is located in the space between the lugs 23 and is pivoted between its ends to these lugs by the pivot pin 25, being in the form of a bar provided with an angularly disposed portion 26 at which it is adapted to enter the notch 16 in the lock-rod 12 and securely hold this rod against movement out of switch-closed position. The pivot 25 is so located that the center of gravity of the lock member 24 is between this pivot and the portion of the lock-member which engages the lock-rod, the member 24 being thus gravity operated to locking position. The other end of the lock-member 24 and which extends upwardly away from the plate 18 in the locked position of the member 24, is exposed to be engaged by the foot of the operator who presses down on this end of the member 24 to lift the latter out of locking position.

The member 24 is shown as provided with an opening 27 extending therethrough which, when this member is in locking position, extends just above the upper edge of the lugs 23 and thus is accessible for the insertion therein of the hasp of a pad-lock (not shown) by which the member 24 may be locked against unauthorized movement to releasing position.

To protect the parts of the locking mechanism against the weather, and particularly during stormy winter weather, I provide the lock-member 24 with lateral flanges which extend laterally in opposite directions from this member along its upper edge and the outer edge of its angular portions 26 and over the pad-lock-receiving hole 27 as shown in the drawings, these flanges which are preferably formed integrally with the member 24 overlapping portions of the lugs 23 and the head 22 at their lower ends, and at their upper ends forming, in effect, a hood for protecting the pivot 25 and the pad-lock-receiving hole 27.

It will be understood from the foregoing description that the lock-member 24 will swing down to locking position only when the locking-notch 16 registers with this member, namely, in the particular arrangement shown, when the switch points 4 and 5 are in switch-closed position, and with the pad-lock applied to the member 24 as stated the switch cannot be opened until the pad-lock has been removed and the member 24 rocked to the position shown in Fig. 3.

An arrangement as described thus ensures against the switchman leaving the switch in locked condition unless the switch point 5 is in proper engagement with the rail 6-8 for rendering the switch closed. Furthermore, as this locking device is independent of the switch-throwing mechanism, force exerted against the switch point and tending to move the switch to open position, as

sometimes occurs in the case of accidents, is ineffective to open the switch while the lock-member 24 is in locked position.

While I have illustrated and described a particular construction embodying my invention, I do not wish to be understood as intending to limit it thereto as the same may be variously modified and altered without departing from the spirit of my invention.

What I claim as new, and desire to secure by Letters Patent, is:

1. In a railway track, the combination with the point-rails of a switch therefor, of locking mechanism for said point-rails comprising a lock-rod operatively engaging said point-rails and provided with a notch, a stationary guide-member in which said rod is slidable longitudinally, and a pivoted locking member having a portion adapted to enter said notch and provided with flanges extending from its lateral edges laterally in opposite directions along the upper edge and the front edge of said member and overlapping said guide-member.

2. In a railway track, the combination with the point-rails of a switch therefor, of locking mechanism for said point-rails comprising a lock-rod operatively engaging said point-rails and provided with a notch, a stationary guide-member in which said rod is slidable longitudinally, and a pivoted locking member having a portion adapted to enter said notch and containing a lock-receiving opening, said member being provided with flanges extending from its lateral edges laterally in opposite directions along the upper edge and the front edge thereof and overlapping said guide member and shielding said opening.

3. In a railway track, the combination with the point-rails of a switch therefor, of locking mechanism for said point-rails comprising a lock-rod operatively engaging said point rails and provided with a notch, a support at one side of said track, a stationary guide-member secured to said support and having a slotted portion extending alongside of, and below, said support and in which said rod is longitudinally slidable, spaced apart lugs integral with said guide member and rising from said guide member and extending from a position directly over said support across said slotted portion, and a locking-member located between said lugs and pivoted thereto and having a portion adapted to enter said notch.

4. In a railway track, the combination with the point-rails of a switch therefor, of locking mechanism for said point-rails comprising a lock-rod operatively engaging said point rails and provided with a notch, a support at one side of said track, a stationary guide-member secured to said support and having a slotted portion extend-

ing alongside of, and below, said support and in which said rod is longitudinally slidable, spaced apart lugs integral with said guide member and rising from said guide member and extending from a position directly over said support across said slotted portion, and a locking-member located between said lugs and pivoted thereto and having a portion adapted to enter said notch, said locking-member having flanges extending from its lateral edges laterally in opposite directions along the upper edges and the front edges thereof and overlapping said lugs and the front surface of said slotted portion.

EDWARD W. POWELL.