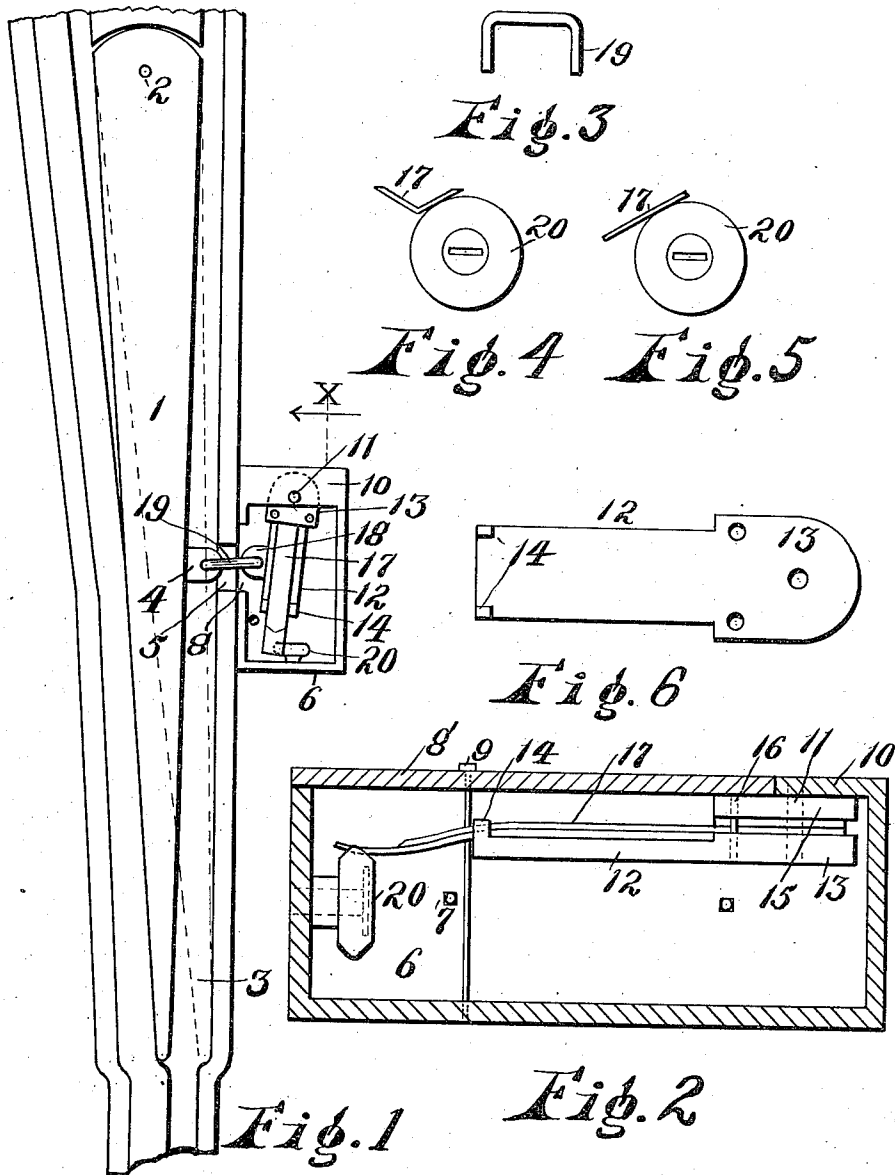


W. H. H. WELTON.
 SWITCH POINT LOCK.
 APPLICATION FILED SEPT. 25, 1911.

1,013,978.

Patented Jan. 9, 1912.



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UNITED STATES PATENT OFFICE.

WILLIAM HENRY HARRISON WELTON, OF AKRON, OHIO.

SWITCH-POINT LOCK.

1,013,978.

Specification of Letters Patent.

Patented Jan. 9, 1912.

Application filed September 25, 1911. Serial No. 651,276.

To all whom it may concern:

Be it known that I, WILLIAM HENRY HARRISON WELTON, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented new and useful Improvements in Switch-Point Locks, of which the following is a specification.

This invention relates to switch-point locks, that is to say, devices employed for holding a movable switch-point or tongue in one of its two operative positions.

The object of the invention is to prevent unintentional movement of a switch-point from one of its operative positions and so constructed as to securely hold the switch-point in one of its said positions, to thereby prevent the switch-point from assuming an intermediate position; said locking-device being so constructed that the normal tendency of the same is to move the switch-point to its extreme position after it has been started past a dead-center.

The employment of switch-point locks of this type is usually attended by the most unfavorable conditions, the switch-operating device being exposed to duct, dirt and water and to violent jarring and vibration due to the passage of the vehicle over the track and hence, a further object of the invention is to provide a locking-device of simple construction which will accomplish the results sought effectually without the employment of delicate mechanism which might easily become disarranged or ineffectual from the ordinary conditions to which they are subjected.

It will be understood that the device is not for the purpose of throwing the switch, which is done manually, but for securely holding it after being thrown in one of its two operative positions.

With the foregoing and other objects in view, the invention consists in the novel construction, combination and arrangement of parts constituting the invention to be hereinafter specifically described and illustrated in the accompanying drawings which form a part hereof wherein is shown the preferred embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

In the drawings in which similar reference numerals indicate like parts in the different figures: Figure 1, is a plan view of so much of a railroad switch as will show the operation of this device and my improved switch-point lock in operative connection therewith; Fig. 2, is a vertical sectional view approximately on line X of Fig. 1; and, Figs. 3, 4, 5 and 6 are detail views of the mechanism employed.

Referring to the drawings in detail the reference numeral 1 denotes a switch-point or tongue pivoted at 2 so as to swing laterally back and forth in a containing groove or cavity 3 formed in the frog or switch. The frog or switch is usually protected by ordinary guard rails but these features being of ordinary construction and not forming parts of the present invention they are not denominated by reference numerals. The lateral face of the switch-point 1 is provided with a laterally-projecting apertured lug 4. The side rail of the switch is further provided with a deep notch 5 opposite to the lug and of sufficient width to receive the lug 4 when the switch-point 1 is shifted.

Secured to the side face of the switch and adjacent to the notch 5 is a box or casing 6 preferably secured to the switch through the medium of hold-fast devices such as bolts 7. The wall of the box which contacts with the side of the switch is provided with a cut-away portion 8 which is arranged in alignment with the notch 5. The box is usually closed through the medium of a cover 8' secured in place by a bolt 9 or otherwise. The box is further formed with an upper wall 10 provided with an aperture in which is mounted a pivoting-bolt 11. Mounted on the bolt 11, as a pivot, is an oscillating-arm 12 comprising a head 13 provided with an opening to receive the bolt 11 and from which projects an extended portion with two upwardly-extending parallel lugs 14 spaced from each other for a purpose to be later described. Mounted on the upper face of the head 13 of the oscillatory-arm is a clamping-member 15 secured to the head 13 by means of clamping-screws or bolts 16. Secured to the head 13 by means of the clamping-member 15 is a spring 17 usually comprising a pair of leaves and with the forward end of the longer leaf shaped in cross-section to resemble a flat-

tened V for a purpose to be later described. The spring 17 rests upon the upper surface of the oscillating-arm 12 and is held from lateral movement through the medium of the lugs 14 and being clamped to the member 12 operates in unison therewith. Projecting laterally from the oscillating-arm 12 is an apertured lug 18 the aperture of which is adapted to receive one leg of a link 19, the other leg of which is inserted in the lug 4 on the switch-tongue 1 so that as the switch-tongue is shifted from one position to the other the arm and spring 17 will move in unison therewith.

15 In order to hold the oscillating-arm 12 in one of its extreme positions and thereby hold the switch-point in a similar manner I provide on the inner face of the wall of the casing 6 and immediately adjacent to the free end of the spring 17 a rotatable roller 20 the axis of which is in longitudinal alinement with the center of oscillation of the arm 12. This roller 20 may be mounted on any form of pin desired so as to be easily rotatable and is so arranged that when the arm 12 is oscillated in unison with the switch-point the free end of the resilient member 17 will encounter and ride over the surface thereof, and as the end of the spring is approximately V-shaped in cross-section it will be obvious that as soon as the arm 12 has passed the center of its oscillation in either direction the spring member will normally cause the arm 12 to move suddenly to its extreme position in either direction due to the pressure of the inclined faces of the spring member on the periphery of the roller 20 thereby effectually locking the switch-point 1 in one of its extreme positions.

Where the device is to be applied to what is known as a one-way switch, meaning thereby all cars in passing over the switch in one direction will take the same track and it is required to keep the switch-point in one extreme position at all times, but release the switch-point sufficiently to permit the flanges of the car coming from the switch-track onto the main track, the free end of the spring 17 may be formed as shown in Fig. 5, wherein the spring is inclined in one direction only so that as the switch-point is shifted laterally by the flange of a wheel the switch-point will return to its original position after passage of the vehicle due to the inclined portion of the spring engaging the rotatable roller 20.

From the foregoing it will be noted that the device is fully capable of holding and locking a switch-point in one of its extreme positions whenever the switch-point is manually shifted to swing the free end of the oscillatory-arm past the axis of the roller 20 and as the device contains nothing but

simple mechanism its operation is not impaired by the presence of the usually unfavorable conditions which are encountered in the use of devices of this character.

I claim:

1. The combination with a switch-point of a railroad track of an oscillatory-arm mounted adjacent thereto, means for connecting said oscillatory-arm with said switch-point, a resilient element carried by said oscillatory-arm, and a roller revolving upon a fixed axis and engaged by the free end of said resilient element for assisting in shifting said oscillatory-arm and its connected switch-point to one of its extreme positions.

2. The combination with a switch-point of a railroad track of an oscillatory-arm mounted adjacent thereto, means for connecting said oscillatory-arm with said switch-point, a resilient element carried by said arm, and a roller revolving upon a fixed axis and positioned in the path of said resilient element and cooperating with said fixed element for assisting in shifting the latter and its connected switch-point to one of its extreme positions.

3. The combination with a switch-point of a casing positioned adjacent thereto, a resilient element mounted in said casing, means for connecting said resilient element with said switch-point, and a deflecting element arranged in the path traveled by said resilient element and engaged by the latter tending to deflect said resilient element to one of its extreme positions whereby said connected switch-point is similarly moved.

4. The combination with a switch-point of a railroad track of a casing mounted adjacent thereto, an oscillatory-arm mounted in said casing, means for connecting said oscillatory-arm with said switch-point, a resilient element carried by said oscillatory-arm, and a roller revolving upon a fixed axis mounted in the path of said resilient element and cooperating therewith for assisting in shifting said oscillatory-arm and its connected switch-point to one of its extreme positions.

5. The combination with a switch-point of a railroad track of an oscillatory-arm mounted adjacent thereto, a casing inclosing said arm, means for connecting said oscillatory-arm with a switch-point, a resilient element provided with an inclined portion at its free end and carried by said oscillatory-arm, and a roller mounted upon a fixed axis and engaged by the inclined end of said resilient element and cooperating therewith for assisting in shifting said oscillatory-arm at its connected switch-point to one of its extreme positions.

6. The combination with a switch-point of a railroad track provided with a laterally-

arranged apertured lug, a casing mounted adjacent said track, an oscillatory-arm mounted in said casing and provided with an apertured lug, a link connecting said lug
5 on said switch-point with the lug on said oscillatory-arm, a spring carried by said arm and a member positioned to frictionally engage said spring when near the center of its oscillation in association with said arm
10 and coöperating with the latter in shifting

said oscillatory-arm and its connected switch-point to one of its extreme positions.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM HENRY HARRISON WELTON.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
