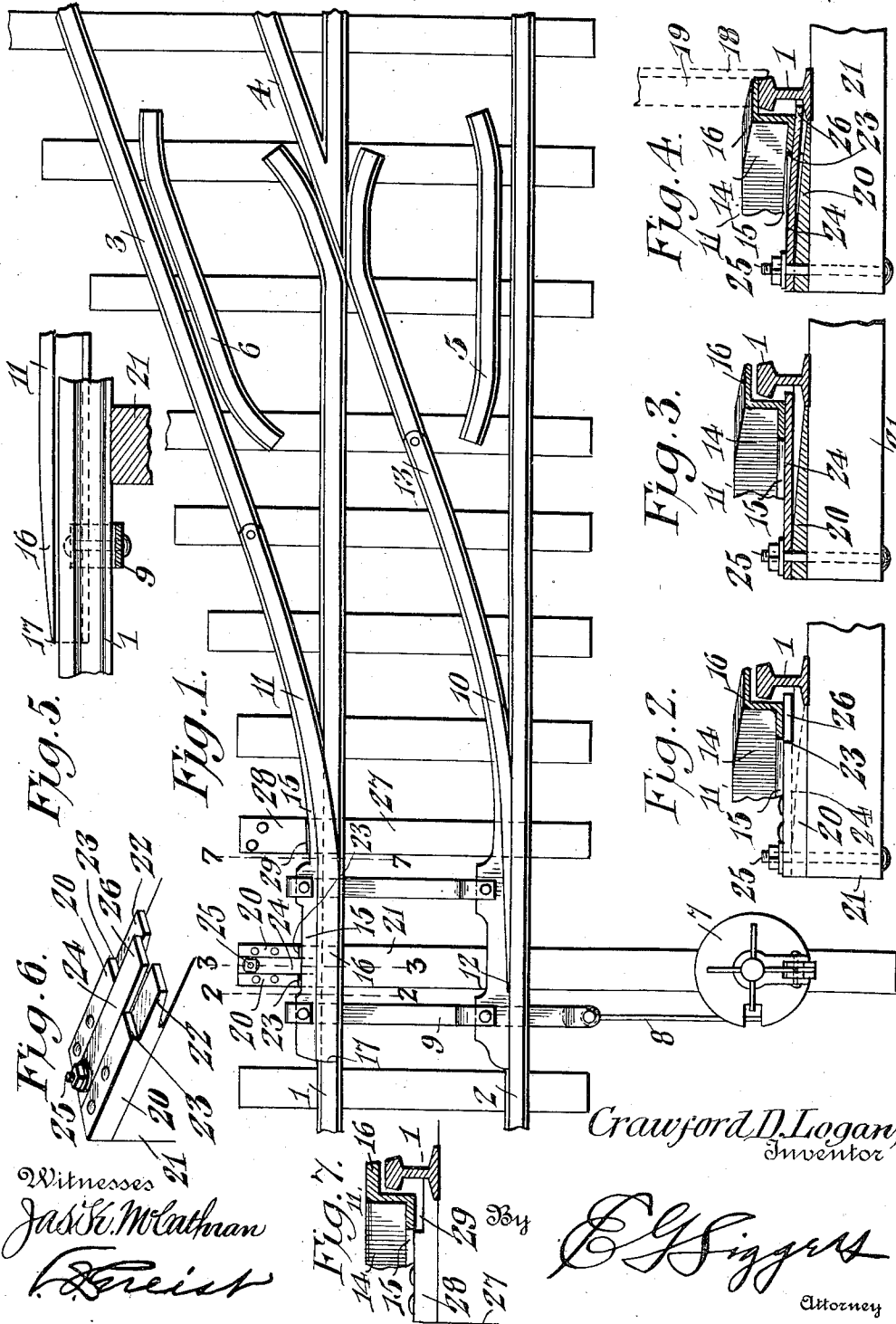


1,028,041.

Patented May 28, 1912.



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SWITCH.

1,028,041.

Specification of Letters Patent.

Patented May 28, 1912.

Application filed December 9, 1911. Serial No. 664,831.

To all whom it may concern:

Be it known that I, CRAWFORD D. LOGAN, a citizen of the United States, residing at Coal Hill, in the county of Johnson and State of Arkansas, have invented a new and useful Switch, of which the following is a specification.

This invention pertains to a switch construction, which provides for transfer of a car or train from the main line to a siding without necessitating the cutting of the main line rails.

An object of the invention is the safeguarding against accidents by reason of derailment at switches and also the simplifying of the switch construction, so that a siding may be arranged at any point along the line with the least change of the main line rails, it being only necessary to remove a single rail to install the frog.

The invention as hereinafter particularly claimed will be readily understood from the following detailed description, taken in connection with the accompanying illustrative drawings, in which:

Figure 1 is a plan view of a switch, embodying the preferred form of the invention. Fig. 2 is a transverse section on the line 2—2 of Fig. 1. Fig. 3 is a similar view on the line 3—3 of Fig. 1. Fig. 4 is a section taken on the same line as Fig. 2, but indicating the position of the parts when traversed by a car wheel. Fig. 5 is a fragmentary view in side elevation of one of the switch points. Fig. 6 is a detail perspective view of the automatic lock. Fig. 7 is a section on the line 7—7 of Fig. 1.

In this drawing, the main line rails 1 and 2 are of the usual construction, except that the rail 1 is not cut to allow for the passage of the wheel flange onto the siding composed of rails 3 and 4. The guard rails 5 and 6 are also of the usual construction; likewise the switch stand 7 and its shifting connections 8 and 9.

The novel features of the invention are embodied more especially in the switch points 10 and 11; the inner switch point 10 being of the usual construction except that it gradually rises from its initial portion 12 at the level of the main rail 2 to a higher level in its medial portion above the tread of the rail 2, and again descends to the level of the main line rails in its rear portion 13, whereby as the wheel traverses said point,

it is lifted for a purpose which will be later described, and then lowered to its former level.

The switch point 11 has in its forward portion the cross section shown in Figs. 2, 3, 4 and 7, that is, a web 14 rising from the outwardly extending base 15 and provided above with a laterally extending inwardly projecting tread 16, which overlies the tread of the main rail 1. The switch point 11 rests alongside the main rail 1 and closely adjacent thereto with its tread 16 overlying the tread of the rail 1. At its forward end it is beveled practically to an edge 17, and in its medial portion is thickened to bring the upper face of the tread portion into substantially the same horizontal plane as the upper face of the tread portion of the inner switch point 10, this elevation above the level of the main rail being at least equal to the height of the flange 18 of the car wheel 19. It will thus be observed that any cutting of the main rail 1 for the passage of the wheel flange is obviated, and that as a train passes from the main line onto the siding the switch points serve not only to deflect the wheels from the main line but also to lift the same, so that they clear the rails of the main line, lowering them to their original position after they have passed beyond said rails. An important feature of this construction as thus far described, is the elevating of both wheels so as to maintain the car level at this point.

In order to guard against any shifting of the switch points while pressed upon by the weight of the cars, I provide fixed locking means, which supplements the switch stand lock, the locking effect being distributed along the switch point. The improved feature consists in the provision of the recess beneath the switch point 11, formed either in the cross ties or in the metal plates arranged thereon beneath the switch point. Preferably a bifurcated metal plate or plates 20 is secured on the ties 21 on the outside of the rail 1, said plate reduced in thickness on its inner end at 22 to provide a shoulder 23, the extent of the portion 22 being substantially equal to the width of the switch point base 15, and also of a depth corresponding approximately to the thickness of the said base. Arranged between the two plates 20 or between the forks of the single

bifurcated plate is a spring member 24, secured by the bolt 25 with its inner end 26 over-hanging the recess 22 and serving as a yielding support for the switch point base 5 and normally holding the switch point 11 above and out of contact with the rail 1. Upon the outer end of the cross tie 27 is arranged a similar plate 28, except that the spring member 24 is omitted, this plate being provided with a recessed portion 29 underlying the switch point as in the case of the recess 22.

It will be observed that ordinarily the switch point 11 is maintained out of contact with the rail 1 and that when the switch is thrown from its open to its closed position, the spring 24 acts as a sliding support upon which the switch point is moved inwardly and any friction or obstruction, which would otherwise be present by the sliding engagement between the tread of the rail 1 and the underside of the tread portion of the switch point 11, is obviated, and when in the closed position the parts occupy the relation shown in Fig. 1 with the switch point 11 spaced above the rail 1. As soon, however, as the forward wheels of the car reach said switch point 11, it is depressed to the position shown in Fig. 4, and the base of the point enters the recess 22 and is confined therein by the shoulders 23, so that it is effectually prevented from shifting laterally while under the weight of the cars, whereas after the weight of the cars is removed, the switch point 11 is lifted to its normal position by the spring 24 and may then be opened by means of the operating mechanism of the switch stand 7.

What is claimed is:—

1. In a switch, the combination with the main track, and the siding, of inner and outer switch points having their upper faces elevated above the main rails to substantially the same extent and for a distance corresponding to the height of the wheel flange, and yielding means to normally hold the outer switch point above and out of contact with its main rail.

2. In a switch, the combination with the main track, and the siding, of inner and outer switch points having their upper faces elevated above the main rails for a distance corresponding to the height of a wheel flange, the outer switch point being normally arranged above and out of contact with its main rail, and fixed locking means arranged to engage with the outer switch point to hold the latter against outward movement when the said outer switch point is depressed.

3. In a switch, the combination with the main track, and the siding, of inner and outer switch points having their upper faces elevated above the main rails to substantially the same extent and for a distance

corresponding to the height of the wheel flange, the inner switch point lying closely alongside its main rail, and the outer switch point having a vertical web lying closely alongside its rail, and a laterally extending tread overlying the main rail.

4. In a switch, the combination with the main track, and the siding, of inner and outer switch points, the inner switch point lying closely alongside its main rail and its tread rising from its initial portion at the level of the main rail to a level in its medial portion above that of the main rail, and the outer switch point having a vertical web lying closely alongside its rail, and a laterally extending tread overlying the main rail at substantially the same elevation as the tread of the inner point.

5. In a switch, the combination with the main track, and the siding, of inner and outer switch points having their upper faces elevated above the main rails to substantially the same extent and for a distance corresponding to the height of the wheel flange, the inner switch point lying closely alongside its main rail, and the outer switch point having a vertical web lying closely alongside its rail, and a laterally extending tread overlying the main rail, and yielding means to normally hold the outer switch point above and out of contact with its main rail.

6. In a switch, the combination with the main track, and the siding, of inner and outer switch points, the inner switch point lying closely alongside its main rail and its tread rising from its initial portion at the level of the main rail to a level in its medial portion above that of the main rail, and the outer switch point having a vertical web lying closely alongside its rail and a laterally extending tread overlying the main rail at substantially the same elevation as the tread of the inner point, and yielding means to normally hold the outer switch point above and out of contact with its main rail.

7. In a switch, the combination with the main track, and the siding, of inner and outer switch points having their upper faces elevated above the main rails to substantially the same extent and for a distance corresponding to the height of the wheel flange, the inner switch point lying closely alongside its main rail, and the outer switch point having a vertical web lying closely alongside its rail and a laterally extending tread overlying the main rail, a longitudinally extending recess provided beneath the outer switch point and corresponding in width substantially thereto, and a spring member bridging the recess and yieldingly supporting the point thereabove and out of contact with its main rail.

8. In a switch, the combination with the main track, and the siding, of inner and

outer switch points having their upper faces elevated above the main rails to substantially the same extent and for a distance corresponding to the height of the wheel flange, the inner switch point lying closely alongside its main rail, and the outer switch point having a vertical web lying closely alongside its rail and a laterally extending tread overlying the main rail, metal plates arranged upon the ends of the cross ties beneath the outer switch point and provided with longitudinally extending recesses disposed beneath the outer switch point in the closed position of the switch and corresponding in width substantially to that of the switch point base, said recess bounded on its outer edge by an abrupt shoulder, and a spring member bridging the recess in one of the said plates and yieldingly supporting the switch point thereabove and out of contact with its main rail.

9. In a switch, the combination with the main track, and the siding, of inner and outer switch points, the inner switch point lying closely alongside its main rail and its tread rising from its initial portion at the

level of the main rail to a level in its medial portion above that of the main rail, and the outer switch point having a vertical web lying closely alongside its rail and a laterally extending tread overlying the main rail at substantially the same elevation as the tread of the inner point, metal plates arranged upon the ends of the cross ties beneath the outer switch point and provided with longitudinally extending recesses disposed beneath the outer switch point in the closed position of the switch and corresponding in width substantially to that of the switch point base, said recess bounded on its outer edge by an abrupt shoulder, and a spring member bridging the recess in one of the said plates and yieldingly supporting the switch point thereabove and out of contact with its main rail.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

CRAWFORD D. LOGAN.

Witnesses:

J. H. DUNN,
A. G. HILL.