G. D. WORLEY.

RAILROAD SWITCH.

APPLICATION FILED MAY 29, 1909.

941,220. Patented Nov. 23, 1909.

Fig. 1.

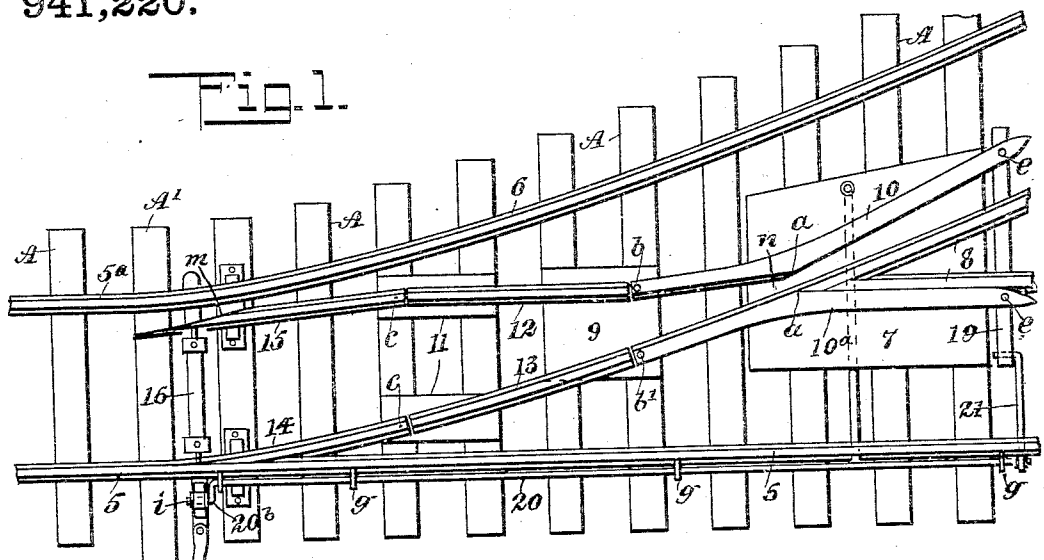


Fig. 2.

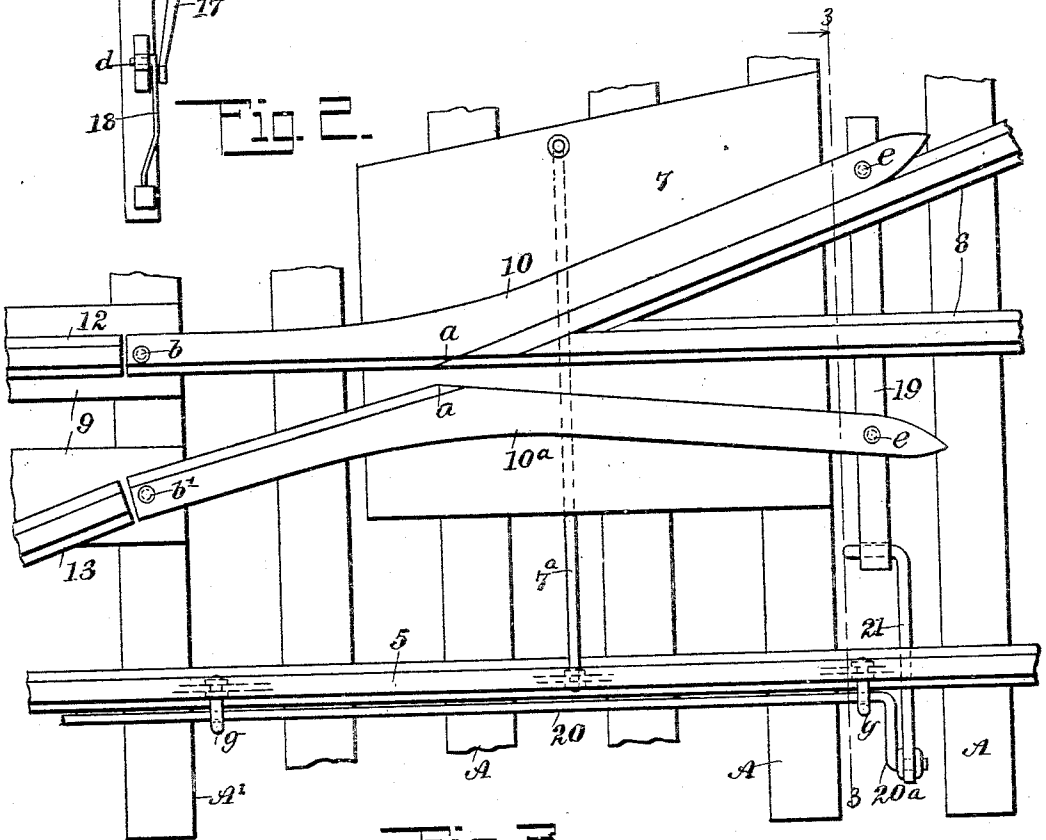
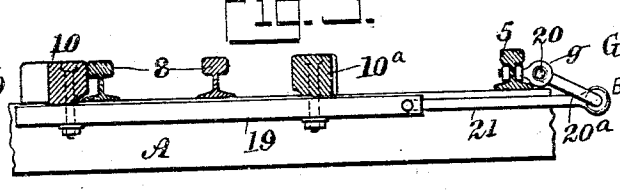


Fig. 3.



WITNESSES

L. Almquist.

Wm. P. Patton

INVENTOR

George D. Worley

BY Munn & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

GEORGE D. WORLEY, OF TEXARKANA, ARKANSAS, ASSIGNOR OF ONE-HALF TO JEFFERSON D. CLARK, OF TEXARKANA, ARKANSAS.

RAILROAD-SWITCH.

941,220. Specification of Letters Patent. Patented Nov. 23, 1909.

Application filed May 29, 1909. Serial No. 499,155.

To all whom it may concern:

Be it known that I, GEORGE D. WORLEY, a citizen of the United States, and a resident of Texarkana, in the county of Miller and State of Arkansas, have invented a new and Improved Railroad-Switch, of which the following is a full, clear, and exact description.

My invention relates to switches for railroads of a character which control the traverse of rolling stock from a main track to an intersecting side track, and from the latter to a main track; and has for its object to provide novel details of construction for a railroad switch, which coöperate with a fixed frog point and pivoted wing rails therefor, so as to enable the effective control of the switch and dispense with guard rails usually employed in connection with a switch of the type indicated.

The invention consists in the novel construction and combination of parts, as is hereinafter described and defined in the appended claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of a main track and a side track where connected, and of the improvement applied for controlling the connection therebetween; Fig. 2 is an enlarged plan view showing a changed adjustment of certain parts represented in Fig. 1; and Fig. 3 is a transverse sectional view, substantially on the line 3—3 in Fig. 2.

In the drawings A represents cross ties spaced apart and disposed on a railroad bed, at a point where a switch is introduced between a main track and a converging side track. On the cross ties A, a main track rail 5 is seated and secured, and at a proper distance therefrom, as shown at the left in Fig. 1, a parallel track rail section 5^a is secured on said cross ties, the rails 5 and 5^a constituting a main track. From the track rail 5^a extends the outwardly-curved track rail 6, which is secured upon the cross ties A, and in service is an outer rail for a side track. Upon the cross ties A, at a suitable distance from the point where the track rails 5^a and 6 are connected, a base plate 7 is seated and secured, said plate being located between the track rails 5 and 6, as shown at the right in Fig. 1. A transversely-disposed tie rod 7^a may be provided as a brace for the track rail 5, said rod being secured at its ends respectively upon the lower side of the base plate 7 and the track rail named, and it is to be understood that there may be any necessary number of transverse tie rods employed as usual, for tying the track rails together and holding them spaced apart a proper distance. Upon the base plate 7, a frog tongue 8 is secured, preferably midway between the rails 5 and 6. On the cross ties A, a suitable wear plate or plates 9 are secured, and on said plates 7, 9, which are on the same level, two wing rails 10, 10^a are mounted. The wing rails 10, 10^a that are co-acting members for the frog of which the tongue 8 is a part, are each similarly bent laterally at *a*, to give them obtuse angular form, and they are respectively disposed at opposite sides of the fixed frog tongue. The end portions of the wing rails 10, 10^a, which are seated upon the wear plate or plates 9 are spaced apart, and pivoted on said wear plate as shown at *b*, *b'*.

Two base plates 11 are preferably employed as supports for two track rail sections 12, 13, said plates seating upon the ties A at a suitable distance from the wear plate 9. The track rail section 12 is arranged parallel with the main track rail 5 and is alined with the main track rail section 5^a, one end of the rail section 12 being seated on the wear plate 9 and positioned opposite and near to the pivoted end of the wing rail 10, the other end of said rail section being seated upon one of the base plates 11. The rail section 13 is curved edgewise somewhat, to render it parallel with the side track rail 6, and is secured upon the wear plate 9 and the remaining base plate 11, as shown in Fig. 1, the end of said rail section, secured on the wear plate 9, being deposed near to and opposite the pivoted end *b'* of the wing rail 10^a.

Two switch points 14, 15, formed of T-rail sections are respectively pivoted at one end upon the base plates 11, opposite and near to the corresponding ends of the stationary rail sections 12, 13, as shown at *c*, *c*, in Fig. 1. The other ends of the switch points 14, 15 are cut away sidewise as shown in Fig. 1, so as to taper them to points that

are adapted for lapped contact with the inner sides of the respective track rails 5 and 6. The pivoted switch points 14, 15, are at their pointed ends, secured upon a shifting rod 16 that extends between a cross tie A and an elongated timber or head block A′, said head block projecting a suitable distance laterally from the main track rail 5.

The shifting rod 16, outside of and near to the main track rail 5, is connected to one end of a connecting bar 17, which extends outwardly, and at its outer end is pivoted upon the side of a rockable lever 18 that at an adjacent end thereof is pivoted in a box *d* that is secured upon the extension of the head block A′. It will be seen that when the lever 18 is disposed horizontally, the shifting rod 16 will be drawn outward and the sloped end of the switch point 14 be impinged upon the inner side of the main track rail 5, the point on the switch rail 15 being at the same time drawn away from the side track rail 6 at a point near its junction with the main track section 5^a, as appears in Fig. 1.

The ends of the wing rails 10, 10^a, that are adjacent to the frog tongue 8, are spaced apart and connected together by a shifting bar 19, whereon said wing rails are secured, as shown at *e* in the drawings.

Upon or in suitable boxes or ring eyes *g* that project laterally from the other side of the main track rail 5, an elongated rock shaft 20 is loosely mounted, and thus disposed horizontally. A downwardly-projected crank arm 20^a is formed or secured on the end of the rock shaft 20 that is opposite the shifting bar 19 and the crank arm and shifting bar are loosely connected by a link rod 21, said rod working below the rails. Upon the end of the rock shaft 20, that is adjacent to the shifting rod 16, a crank arm 20^b is formed or secured, having a crank pin thereon that is rockably secured on the extended end portion of the shifting rod 16, as shown in Fig. 1 at *i*.

It will be noted that when the lever 18 is rocked outward and downward, as represented in Fig. 1, the laterally curved switch point 14 will be impinged at its tapered end upon the track rail 5, and a gap *m* is produced between the point on the straight switch point 15 and the rail 6. Simultaneously with the described adjustment of the switch points 14, 15, the shifting bar 19 will be moved endwise, so as to open a gap *n* between the switch tongue 8 and the wing rail 10, and force the wing rail 10^a against the opposite side of the tongue 8, this relative adjustment of the parts appearing in Fig. 1, and it will be apparent that the switch is now adjusted for the free transfer of rolling stock from the side track to and upon the main track. In further explanation, it will be seen that the elevation of the lever 18 will rock the shaft 20, pull the shifting bar 21 toward the shaft, shift the wing rail 10^a away from the tongue 8, aline the wing rail 10 with the fixed rail section 12 and close the free point of the switch bar 15 against the rail 6, thus closing the main track for traverse of rolling stock past the switch, this adjustment of the parts with relation to the wing rails 10, 10^a and fixed rail sections 12, 13, being shown in Fig. 2.

It is apparent that as the wing rails 10 or 10^a are pressed respectively against the side of the frog tongue 8 when the switch is open to the side track or main track, the usual guard rails may be dispensed with, and the switch be rendered strong, durable and perfectly reliable in operation.

As the shifting rod 16 and bar 19 are both located below the track rails, it is obvious they may be covered by boxing of any suitable kind, and thus be protected from obstruction to free action.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A railroad switch, embodying a fixed tongue, two wing rails pivoted at like ends on a support and extending at each side of the fixed tongue, a shifting bar connecting the other ends of said wing rails, and a rock shaft connected with the shifting bar for simultaneously rocking the wing rails so as to alternately close a gap at one side of the tongue and open a gap at the opposite side thereof.

2. A railroad switch, embodying a straight main track rail, a curved side track rail, a fixed tongue disposed between said track rails, two wing rails bent laterally and oppositely at obtuse angles and pivoted on a support at like ends, said wing rails being positioned at each side of the fixed tongue, a shifting bar connecting the other ends of said wing rails, a fixed main track section spaced from and parallel with the other main track rail, a fixed side track section spaced from and parallel with the other side track rail, said track rail sections being respectively alined with the wing rails, two switch points tapered at like ends, and pivoted at their opposite ends near to the corresponding ends of the fixed track sections, a shifting rod connecting the tapered ends of the switch points, a shaft mounted to rock and provided with crank arms, and connections between the said crank arms and the said shifting bar and shifting rod.

3. In a railroad switch of the character described, the combination with a supported switch tongue, two wing rails pivoted at like ends and disposed at the respective sides of the switch tongue, and two switch points pivoted at like ends and tapered at their op-

posite ends, of a rock shaft, means for supporting said shaft rockably, a crank arm on each end of the rock shaft, a shifting bar connected to the diverged ends of the wing rails, a link bar connecting the crank arm with an end of the shifting bar, a shifting rod connected to the tapered ends of the switch points, the remaining crank arm being loosely connected with an end of the shifting rod, a rockable lever, and a connecting bar extended between the shifting bar and the lever and pivoted by one end on said lever.

4. A railroad switch, embodying a fixed tongue, two wing rails pivoted at like ends and extending at each side of the fixed tongue, a shifting bar connecting the other ends of said wing rails, two fixed track members that aline with respective wing rails, two switch points pivoted at the ends adjacent to the ends of the fixed track members, a shifting rod connected to the other ends of said switch points, and a rock shaft connected with the said shifting bar and the said shifting rod.

5. A railroad switch, embodying a straight main track, a curved intersecting side track rail, a fixed tongue disposed between an outer main track rail and an outer side track rail, two wing rails bent laterally and pivoted at like ends on a support and positioned at each side of the fixed tongue, a shifting bar connecting the other ends of said wing rails, a fixed main track section, and a fixed side track section respectively alined with the wing rails, two switch points pivoted by like ends adjacent to the corresponding ends of the fixed track sections, a rod connecting the other ends of said switch points, and a rock shaft connected with the said shifting bar and the said rod.

6. A railroad switch, comprising a fixed tongue, two wing rails pivoted at like ends and extending at the sides of the fixed tongue, a shifting bar connecting the other ends of said wing rails, two fixed track members that aline with the respective wing rails, two switch points extending from the fixed track members and pivoted at the ends adjacent to said members, a shifting rod connected to the other ends of said switch points, a shaft mounted to rock, a connection between the rock shaft and the said shifting bar to rock the wing rails when the shaft is rocked, a lever connected with the shifting rod to move the same to rock the switch points, and a connection between the said shifting rod and the rock shaft to rock the latter.

7. A railroad switch comprising a fixed tongue, two wing rails pivoted at like ends and extending at the sides of the fixed tongue, two fixed track members that aline with the respective wing rails, two switch points extending from the fixed track members and pivoted at the ends adjacent to said members, a shifting rod connected to the other ends of said switch points, a rockable lever pivoted at one end, a connecting bar connected at one end to the shifting rod and pivoted at the other end to said lever adjacent to the pivoted end of the latter, and connections between the shifting rod and the said wing rails.

8. A railroad switch comprising a straight main track, a curved intersecting side track rail, a fixed tongue disposed between an outer main track rail and an outer side track rail, two wing rails bent laterally and pivoted at like ends on a support and positioned at each side of the fixed tongue, a fixed main track section and a fixed side track section respectively alined with the wing rails, two switch points pivoted at like ends adjacent to the corresponding ends of the fixed track sections, a shifting rod connecting the other ends of said switch points, a rockable lever pivoted at one end, a connecting bar connected at one end to the shifting rod and pivoted at the other end on the side of said lever adjacent to the pivotal end of the latter, the said lever being adapted to move the said shifting rod to rock the pivoted switch points, and connections between the said shifting rod and the pivoted wing rails to rock the latter when the switch points are rocked.

9. In a railroad switch, a fixed tongue, two wing rails pivoted at like ends and extending at each side of the fixed tongue, a shifting bar connecting the wing rails, two pivoted switch points, a shifting rod connecting the switch points, a rock shaft connected with the shifting bar and the shifting rod, a lever and a connecting bar between the shifting rod and said lever.

10. In a railroad switch, a fixed tongue, pivoted wing rails, pivoted switch points, a shifting rod connected to the switch points, a connecting bar connected at one end with one end of the shifting rod, a rockable lever, a box in which one end of the lever is pivoted, the other end of said connecting bar being pivoted upon the side of said rockable lever adjacent to its pivotal end, and connections between the wing rails and the said shifting rod.

11. In a railroad switch, a fixed tongue, two wing rails pivoted at like ends and extending at each side of the fixed tongue, a shifting bar connecting the other ends of said wing rails, two fixed track members that aline with the respective wing rails, two switch points pivoted at the ends adjacent to the ends of the fixed track members, a shifting rod connected to the other ends of the switch points, an outwardly extending connecting bar connected to one end of the

shifting rod, a rockable lever pivoted at one end, the outer end of said connecting bar being pivoted upon the side of the rockable lever adjacent to the pivotal end of the latter, and connections between the said shifting rod and the shifting bar connecting the wing rails.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE D. WORLEY.

Witnesses:
M. F. CHESTNUTT,
P. J. AHERN.