M. L. R. MORROW.

RAILWAY SWITCH.

APPLICATION FILED DEC. 29, 1917.

1,302,407.

Patented Apr. 29, 1919.

3 SHEETS—SHEET 1.

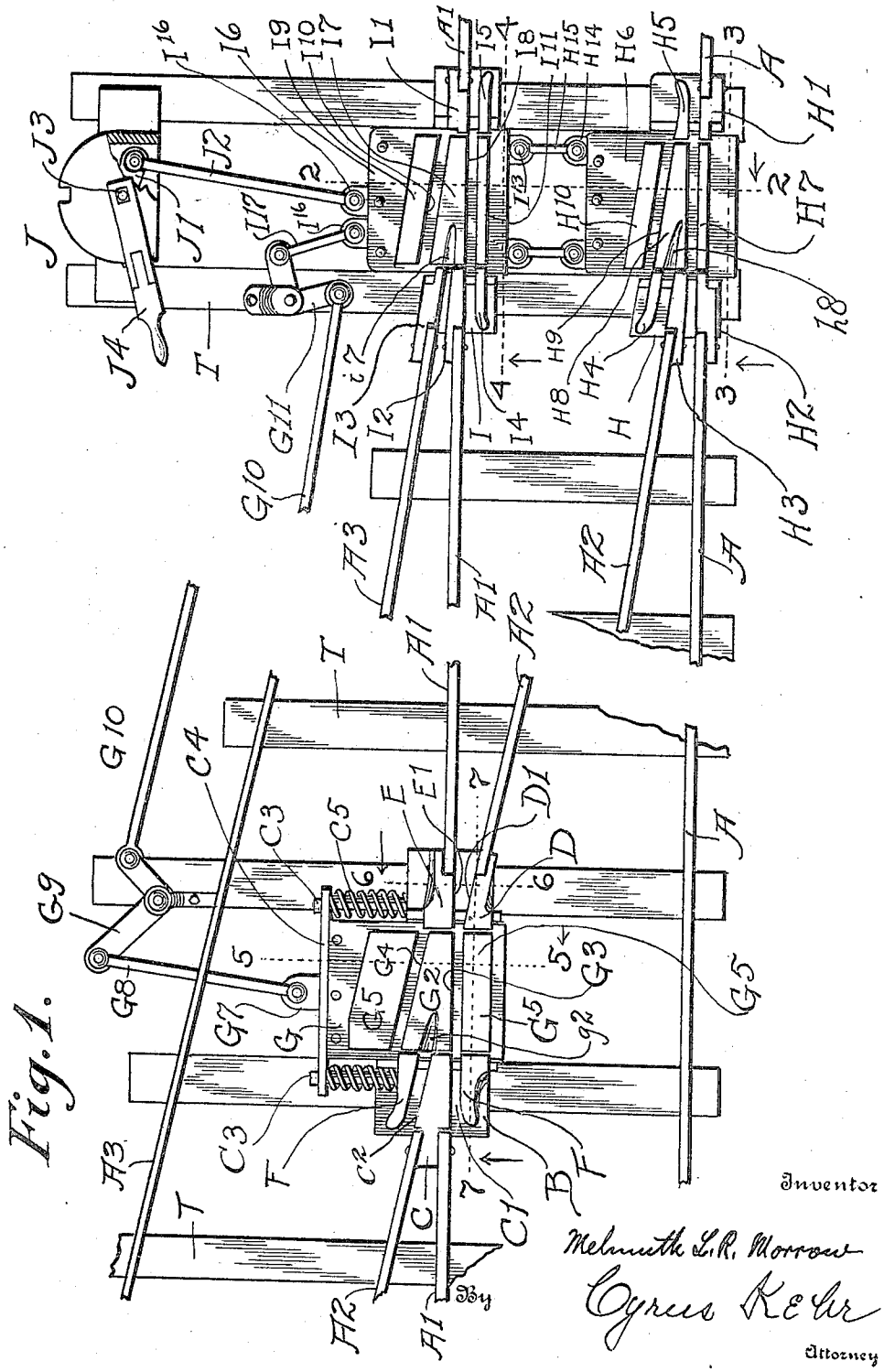

Fig. 1.

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Fig. 2.

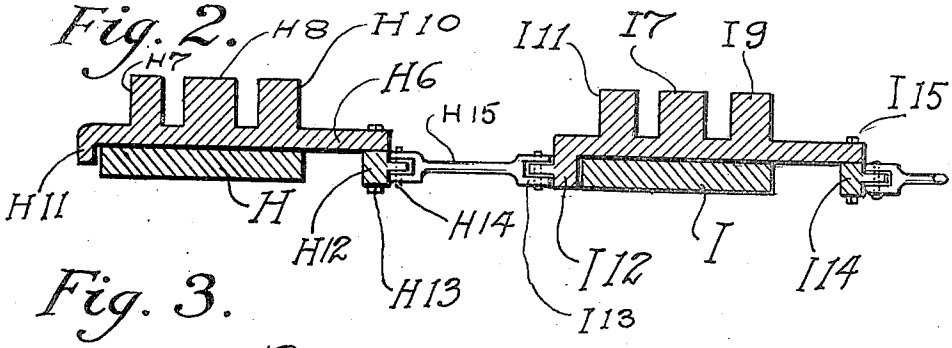


Fig. 3.

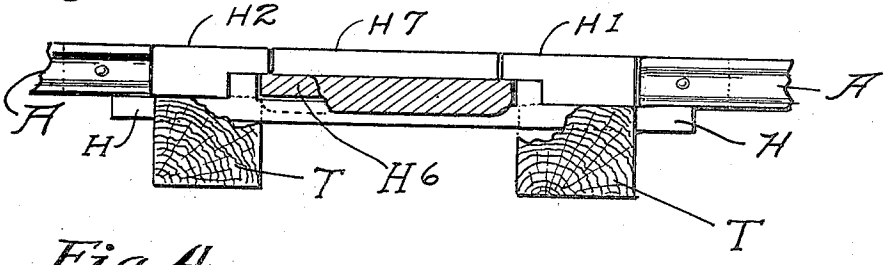


Fig. 4

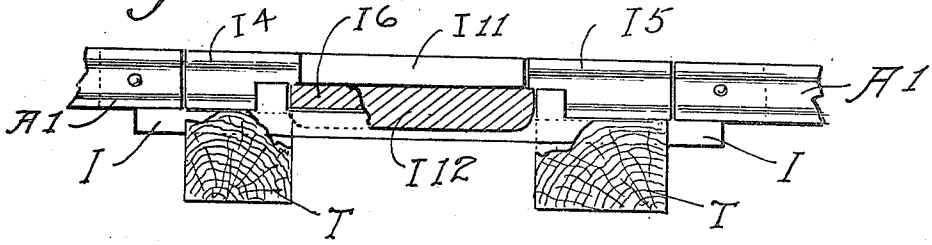


Fig. 5.

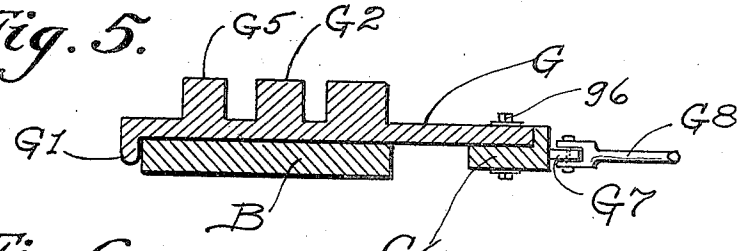
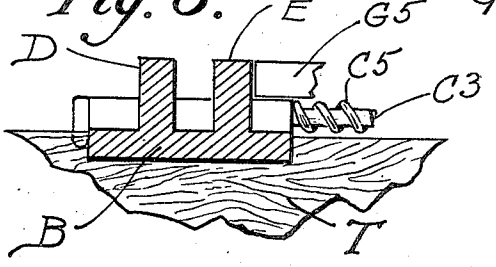


Fig. 6.



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3 SHEETS—SHEET 3.

Fig. 7.

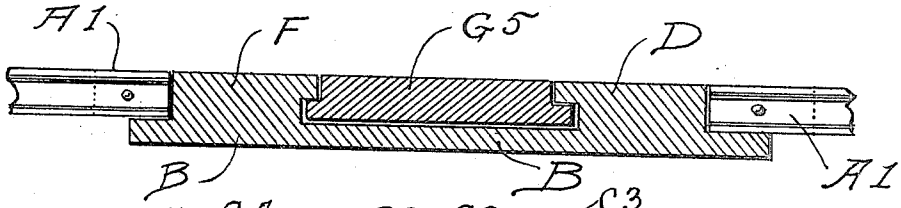


Fig. 8.

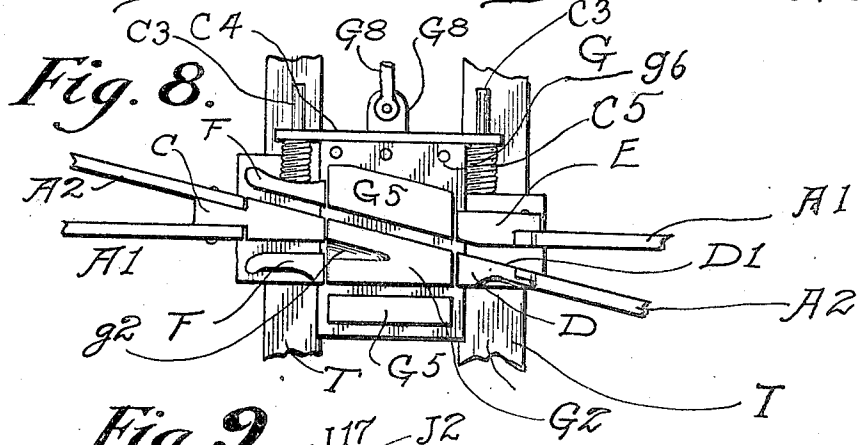
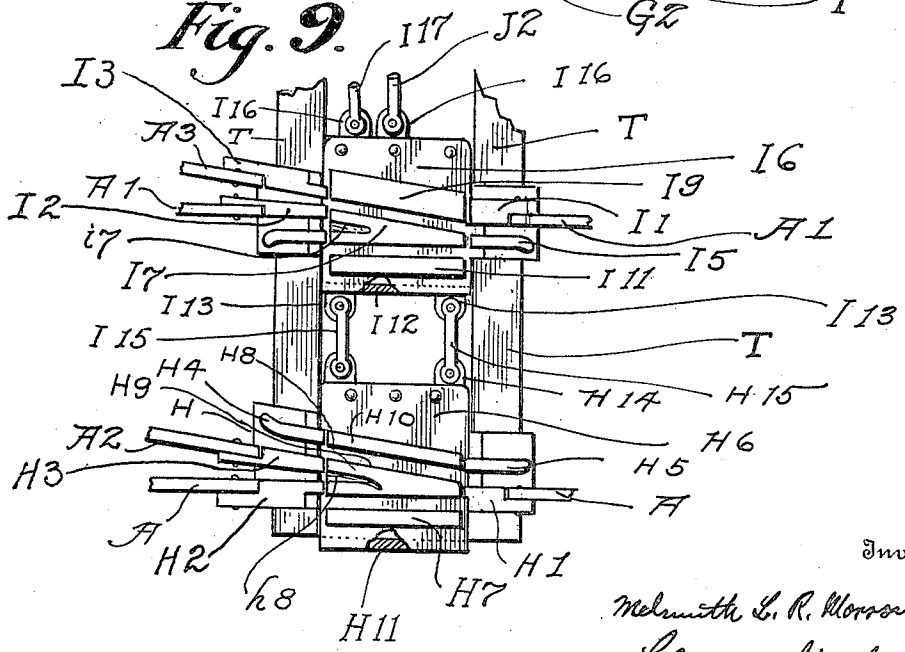


Fig. 9.



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UNITED STATES PATENT OFFICE.

MELMUTH LEE ROY MORROW, OF KNOXVILLE, TENNESSEE.

RAILWAY-SWITCH.

1,302,407. Specification of Letters Patent. Patented Apr. 29, 1919.

Application filed December 29, 1917. Serial No. 209,437.

To all whom it may concern:

Be it known that I, MELMUTH LEE ROY MORROW, a citizen of the United States, residing at Knoxville, in the county of Knox and State of Tennessee, have invented a new and useful Improvement in Railway-Switches, of which the following is a specification, reference being had to the accompanying drawing.

My improvement relates particularly to switches used on main lines of railways for making connection with side tracks.

The object of the improvement is to provide a switch construction which is strong and durable and which has parts adapted for positive placing and which will afford substantial continuity of rail surface and will preclude "splitting", and which will also preclude jarring and jolting of trains while passing the "frog", and which is so organized as to prevent thermal expansion and contraction from interfering with the movement of the movable parts of the switch structures.

In the accompanying drawings,

Figure 1 is a plan illustrating a switch mechanism embodying my improvement, portions being broken away;

Fig. 2 is an upright section on the line, 2—2, of Fig. 1, looking toward the left;

Fig. 3 is a vertical section on the line, 3—3, of Fig. 1, looking in the direction of the arrow;

Fig. 4 is a section on the line, 4—4, of Fig. 1, looking in the direction of the arrow;

Fig. 5 is a section on the line, 5—5, of Fig. 1, looking toward the left;

Fig. 6 is a section on the line, 6—6, of Fig. 1, looking toward the left;

Fig. 7 is a section on the line, 7—7, of Fig. 1, looking in the direction of the arrow;

Fig. 8 is a plan of the frog with the movable portion thereof set into alinement with one of the side track rails;

Fig. 9 is a plan of the point portion of the switch, the movable part being set in alinement with the side track rails.

Referring to said drawings, T, T, are ordinary ties. A and A^1 are the main track rails, and A^2 and A^3 are the side track rails. Said track rails are supported on the ties in the usual manner.

B is a stationary base forming a part of the frog. Said base is supported on two ties, the ties being cut away to bring the upper face of the base even with the upper faces of the ties. On the middle of the base rests a slide member, G. Under said slide member, the base presents a flat upper face. On the base, at the left of the slide member is a rail section, C, which presents an edge, C^1, in alinement with the inner edge of the main track rail, A^1, and another edge, C^2, in alinement with the inner face of the side track rail, A^2. On the base at the right of the slide member, is a rail section, D, which has an edge, D^1, in alinement with the inner edge of the side track rail, A^2. On the base, adjacent the rail section, D, is another rail section, E, which has an edge, E^1, in alinement with the inner face of the main track rail, A^1.

The base, B, is secured immovably to the ties and the rail sections, C, D, and E, are stationary on and preferably integral with the base, so that said raised members maintain a constant relation to each other and to the adjacent rails, excepting as such relation may be slightly and immaterially modified by thermal expansion or contraction. The ends of the rails, A^1 and A^2, which are adjacent the base rest upon the base and bear laterally against and are bolted to adjacent trackage members on the base, as shown, and they may be further supported and secured in such manner and to such extent as may be desired.

At each side of the rail section, C, is a guard member, F, separated from the section, C, by a space sufficient for the passing of a wheel flange. These guard members are also preferably formed integral with the base, B.

The upper parts of the rail sections, C, D, and E, and the guard members, F, extend over the side edges of the slide member, G, to confine the latter for horizontal reciprocation.

The base and said rail sections and guard members are preferably cast in a single piece, and said casting should be formed of very strong steel.

The slide member, G, which rests on the base, B, as already stated, is movable transversely to the course of the main track. At each side edge of said slide member, an arm, C^3, is supported rigidly on the base and extends horizontally and parallel to the sides of said member and toward the switch rail, A^3, and is surrounded by an expand-

ing coiled spring, C^5. A yoke bar, C^4, is secured to the edge of the slide member, G, which is toward the switch rail, A^3, and projects beyond the side edges of the slide-member. The arms, C^3, extend slidably through the ends of said bar. The expanding coiled springs, C^5, tend to press said yoke bar and the slide member, G, toward the switch rail, A^3. At its edge toward the main track rail, A, the slide member has a downwardly-directed lip-form stop, G^1, (Fig. 5) which bears against the adjacent edge of the base, B, when said member is at the limit of its movement toward the rail, A^3. Said stop serves to limit the movement of the slide member in response to the action of the springs, C^5.

Along the end edge of the slide member to which the yoke bar is attached, a stop, G^6, is applied to the lower face of the slide member. Said stop extends toward the base far enough to make contact with the latter when the slide member reaches the desired limit of movement in opposition to the springs, C^5. Midway between the ends of the yoke bar is a horizontal ear, G^7, which extends toward the rail, A^3. Said yoke bar and stop, G^6, and ear, G^7, are preferably formed of a single piece of metal and secured to the slide member by means of bolts, g^6, extending through the slide member and the stop, G^6, as shown. The slide member, G, is put into position on the base by moving the slide member horizontally over the base from the direction of the rail, A, the yoke bar and the stop, G^6, being at the time detached. When the slide member has been inserted, the detached parts are again secured in position.

On the slide member is a rail section, G^2, which has an edge, G^3, in alinement with the edge, C^1, of the rail section, C, and the edge, E^1, of the rail section, E, when the slide member is at its limit of movement toward the rail, A^3, the stop, G^1, resting against the edge of the base, B. Said edge, G^3, and the edges, C^1 and E^1, are in alinement with the inner face of the main track rail, A^1. The rail section, G^2, also has an oblique edge, G^4, which is in alinement with the edge, C^2, of the rail section, C, and with the edge, D^1, of the rail section, D, when the slide member is at its limit of movement away from the rail, A^3, in which position the frog is set to connect the side track and the main track. At each side of and parallel to the rail section, G^2, is a guard member, G^5. Said members are rigid upon and preferably integral with the slide member and separated from the rail section, G^2, by a space permitting the passage of a wheel flange.

To the ear, G^7, is coupled one end of a link, G^8, the other end of which is coupled to one arm of a bell-crank, G^9. To the other arm of said bell-crank is coupled one end of a longer link, G^{10}, the other end of which is coupled to one arm of a bell-crank, G^{11}.

At the junction of the main track rail, A, and the side track rail, A^2, the places at which a "point" on the rail, A^2, is usually located, a metal base, H, similar to the base, B, is placed in a gap in the rail, A, and on the ties, T, T.

Said ties are recessed to permit the upper face of said base to lie even with the upper face of the ties. On the middle of said base rests a slide member, H^6, which is similar to the slide member, G, already described as forming a part of the frog structure. Under the slide member, H^6, the base, H, presents a flat upper face upon which the slide member, H^6, reciprocates. At the right of the slide member, said base has a rail section, H^1, in alinement with the rail, A. On the base, at the left of the slide member, is a similar rail section, H^2, in alinement with the rail, A. On the base, H, adjacent the member, H^2, and at the side of the latter toward the rail, A^1, is a similar rail section, H^3, which is in alinement with the side track rail, A^2. On the base, adjacent the member, H^3, is a raised guard member, H^4, and adjacent the rail section, H^1, and at the side of the latter toward the rail, A^1, is a raised guard member, H^5.

The base, H, and the rail sections and guard members located thereon are preferably made an integral, strong steel casting, as has been described regarding the base, B. The upper parts of the rail sections and guard members on the base, H, project over the upper face of the slide member to confine the latter for horizontal reciprocation. The ends of the rails, A, and A^2, adjoining the base, H, are to be supported and secured as has already been described relative to the rails which meet the frog structure.

On the slide member, H^6, is a rail section, H^7, adapted to be brought into alinement with the rail sections, H^1 and H^2. On said slide member is also a rail section, H^8, which has an oblique face, H^9, which is adapted to be brought into alinement with the rail sections, H^3 and H^1, by appropriate shifting of the slide member. Adjacent the rail section, H^8, and at the side of the latter and separated therefrom by a space permitting the passage of a wheel flange is a raised guard member, H^{10}, which comes into alinement with the guard members, H^4 and H^5, when the rail section, H^8, is in alinement with the rail sections, H^1 and H^3.

Along the edge of the slide member which is adjacent the rail section, H^1 and H^2, the slide member has a lip-form stop, H^{11}, ex-

tending downward to abut against the adjacent edge of the base, H, when the rail section, H^7, is in alinement with the rail sections, H^1 and H^2. At the opposite end of the slide member, a stop bar, H^{12}, is secured to the lower face of the slide member by means of bolts, H^{13}. Said stop is positioned to make contact with the base, H, when the rail section, H^8, is in alinement with the rail sections, H^1 and H^3. Thus the stops, H^{11} and H^{12}, limit the reciprocation of the slide member. On the front of the stop bar, H^{12}, are two horizontal ears, H^{14}. Said ears are preferably formed integral with the stop bar. Said slide member body and the stop, H^{11}, and the rail sections, H^7, and H^8, and the guard member, H^{10}, are preferably cast as a unitary piece. The stop, H^{12}, is made detachable to permit the insertion of the slide member as has already been described in connection with the slide member, G, of the frog structure.

Directly opposite the base, H, and in a gap in a rail, A^1, is a base, I, similar to the base, H, and similarly placed upon and secured to the ties. A slide member, I^6, similar to the slide member, H^6, rests on the middle of the base, I. On the base, I, at the right of the slide member, is a rail section, I^1, in alinement with the rail, A^1; and on the base at the left of the slide member is a rail section, I^2, also in alinement with the rail, A^1. On the base, adjacent the section, I^2, is a rail section, I^3, which is in alinement with the rail, A^3. On the base, adjacent the rail section, I^2, and toward the rail, A, is a raised guard member, I^4. On the base and adjacent the rail section, I^1, and toward the rail, A, is a guard member, I^5. The base, I, and the rail sections and the guard members located thereon are preferably formed as a unitary casting; and the upper parts of said rail sections and said guard members project over the edges of the slide member, I^6, to hold the latter to horizontal movement, as has been described concerning the slide members, G and H.

On the slide member, I^6, is a rail section, I^7, which has an edge, I^8, in alinement with the rail sections, I^1 and I^2 when the switch is set for main line. On the slide member and at the side of the rail section, I^7, toward the bell-crank, G^{11}, is a rail section, I^9, which has an edge, I^{10}, adapted to be brought into alinement with the rail sections, I^1 and I^3. Adjacent the rail section, I^7, and at the side of the latter toward the base, H, a raised guard member, I^{11}, is located on the slide member, I^6, in position to be in alinement with the guard members, I^4 and I^5, when the rail section, I^7, is in alinement with the rail sections, A^1 and A^2. At the edge of the slide member, I^6, which is toward the base, H, a lip-form stop, I^{12}, is directed downward in position to make contact with the adjacent edge of the base, I, when the rail section, I^7, is in alinement with the rail sections, A^1 and A^2. On said stop are two horizontal ears, I^{13}, I^{13}, directed toward the base, H. Links, H^{15}, join the ears, H^{14}, to the ears, I^{13}, whereby the slide members, H and I, are connected to compel movement in unison. At its end edge toward the bell-crank, a bell-form stop, I^{14}, is secured to the lower face of the slide member by means of bolts, I^{15}. The body of the slide member, I, and the stop, I^{12}, and the ears, I^{13}, and the rail sections and guards located on said slide member are preferably made an integral casting. The stop, I^{14}, is made detachable to permit placing the slide member in position on the base, I, beneath the projecting ends of the rail sections and guard members located on the base, I.

On the edge of the slide member to which the stop, I^{14}, is applied are two ears, I^{16}. Said ears may be formed integral with said stop, as shown in the drawings. A link, I^{17}, is coupled by one end to one of said ears and by its other end to one arm of the bell-crank, G^{11}, the link, G^{10}, being coupled to the other arm of said bell-crank, as already described. A link, J^2, is coupled by one end to the other ear, I^{16}, and by its other end to the arm, J^1, which is on the upright shaft, J^3, of the switch stand, J, which latter is of well known form. On said shaft, J^3, is a handle, J^4, by which said shaft may be partially rotated to reciprocate the link, J^2, such reciprocation causing the simultaneous reciprocation of the slide members, I^6 and H^6. The reciprocation of the slide member, I^6, causes the reciprocation of the link, I^{17}, whereby the bell-crank, G^{11}, is oscillated for the reciprocation of the link, G^{10}. The latter reciprocation causes the oscillation of the bell-crank, G^9, and that causes the reciprocation of the link, G^8.

It will be observed that the bell-cranks and the link, G^{10}, are arranged to provide for pulling on the link, G^{10}, when the slide member, G, is to be moved into main track or main line position and that the springs, C^5, tend to move said slide member into main line position. These provisions are made for the sake of safety. Action through the link, G^{10}, by pulling is more reliable than by pushing, and the action of the springs supplements the pulling action exerted through said link, and if the bell-crank connections between the slide member, G, and the slide member, I^6, become deranged, the springs will operate independently to move the slide member, G, into main line position.

At the end of the rail section, G^2, which is directed toward the course of the side track, there is a slanting groove, g^2, which registers with the space between the rail section, C, and the guard member, F. Said groove terminates before reaching the edge, G^3, of the

rail section, G^2, in order that said section may present a continuous surface to a wheel running on the main line. In the rail section, H^8, there is a similar inclined groove, h^8, registering with the space between the rail section, H^3, and the guard member, H^4; and in the rail section, I^7, is a similarly-inclined groove, i^7, registering with the space between the rail sections, I^2 and I^3.

The function of said three grooves is to facilitate the passing of cars from the side track to the main track when the switch structures are set for the main line, such cars moving from the switch track through accident or oversight. In such case, the left hand wheels follow the rail, A^3, and the right hand wheels follow the rail, A^2, the flanges of the right hand wheels entering the space between the rail section, C, and the guard member, F, and then ascend in the groove, g^2, and pass over the edge, G^3, of the rail member, G^2, into the space between said rail member and the adjacent guard member, G^5. Thence said wheels follow the guard members, G^5 and D, and the rail, A^2. From the rail, A^3, the flanges of the left hand wheels, I^3, move and ascend the groove i^7, and over the right hand portion of the rail section, I^7, and drop into the space between the track member, I^7, and the guard member, I^{11}. At the same time, the right hand wheels move from the rail, A^2, over the rail section, H^3, the flanges of said wheels moving through the recess between the rail section, H^3, and the guard member, H^4, and upward through the groove, h^8, until said flanges drop into the space between the rail section, H^8, and rail section, H^7. Then said wheels, at both sides of the car, are on the main line.

The rail sections and the guard members on the bases, B, H, and I, and on the slide members, G, H^6, and I^6, coöperate with the track rails to complete the main tracks and the switch tracks, and hence said rail sections and said guard members may be regarded as trackage forming a part of the track structure.

It is also to be observed that provision is made for reversing the relation of the trackage on the slide member with the trackage on the bases without interference from the endwise expansion or contraction of the track rails. Each base isolates its slide member and protects it from interference by the track rails which extend to said base. The base is equally strong to resist endwise pressure of the rails, so that endwise expansion of the rails must be transmitted to the ends which are distant from the base. Only the effect of the expansion and contraction in the base can extend to the slide member, and this is true of only as much of the base as equals the width of the slide member. Hence the expansion and contraction of said two members, which, on account of the short distance, must be small, are substantially equal and no binding on the slide member is caused thereby. This provision for maintaining a free reciprocation path for the slide member is important; for force exerted through rail expansion is very large, and if such force caused pressure on the slide member, movement of the latter would at times be difficult and at other times impossible. In this connection, it is to be observed that the movement of the three slide members must be so free as to allow an attendant to easily shift said members by swinging the switch-stand hand lever, J^4, and the movement of the slide member of the frog structure must be so free as to allow the spring, C^5, to readily shift said member, into main line position, independently of force exerted through the connections between said slide member and the slide member, I^6.

I claim as my invention:

1. In a railway track structure comprising main track rails and side track rails, the combination with such rails, of a horizontal base and a horizontal slide member bodily slidable transversely on said base, the base occupying a gap in said rails and extending beyond each side edge of the slide member and such extended parts having trackage distinct from and in operative relation with the rails extending to said base and said slide member having trackage adapted to be brought into operative relation with the trackage of the base, and means for bodily shifting said slide member into either of two positions, substantially as described.

2. In a railway track structure comprising main track rails and side track rails, the combination with such rails, of a horizontal base and a horizontal slide member bodily slidable transversely on said base, the base occupying a gap in said rails and extending beyond each side edge of the slide member and such extended parts having trackage distinct from and in operative relation with the rails extending to said base, and said slide member having stop means and having trackage adapted to be brought into operative relation with the trackage of the base, and means for bodily shifting said slide member into either of two positions, substantially as described.

3. In a railway track structure comprising main track rails and side track rails, the combination with such rails, of a horizontal base and a horizontal slide member confined upon the base for bodily horizontal, transverse reciprocation, the base occupying a gap in said rails and extending beyond each side edge of the slide member and such extended parts having trackage distinct from and in operative relation with the rails extending to said base and said slide member

having trackage adapted to be brought into operative relation with the trackage of the base, and means for bodily shifting said slide member into either of two positions, substantially as described.

4. In a railway track structure comprising main track rails and side track rails, the combination with such rails, of a horizontal base, ties for supporting the base, and a horizontal slide member confined upon the base for bodily horizontal, transverse reciprocation, the base occupying a gap in said rails and extending beyond each side edge of the slide member and such extended parts having trackage distinct from and in operative relation with the rails extending to said base and said slide member having stop means and having trackage adapted to be brought into operative relation with the trackage of the base, and means for bodily shifting said slide member into either of two positions, substantially as described.

5. In a railway track structure comprising main track rails and side track rails, the combination with such rails, of a horizontal base, ties supporting the base, and a horizontal slide member bodily slidable transversely on said base, the base occupying a gap in said rails and extending beyond each side edge of the slide member and such extended parts having trackage in operative relation with the rails extending to said base and extending over the side edges of the slide member, and said slide member having trackage adapted to be brought into operative relation with the trackage of the base, and means for bodily shifting said slide member into either of two positions, substantially as described.

6. In a railway track structure comprising main track rails and side track rails, the combination with such rails, of a horizontal base, ties for supporting the base, and a horizontal slide member bodily slidable transversely on said base, the base occupying a gap in said rails and extending beyond each side edge of the slide member and such extended parts having trackage in relation with the rails extending to said base and extending over the side edges of the slide member, and said slide member having stop means and having trackage adapted to be brought into relation with the trackage of the base, and means for bodily shifting said slide member into either of two positions, substantially as described.

7. In a railway track structure comprising main track rails and side track rails, the combination with such rails, of a horizontal base and a horizontal slide member confined upon the base for bodily horizontal, transverse reciprocation, the base occupying a gap in said rails and extending beyond each side edge of the slide member and such extended parts having trackage distinct from and in operative relation with the rails extending to said base and said slide member bearing removable stop means and having trackage adapted to be brought into operative relation with the trackage of the base, and means for bodily shifting said slide member into either of two positions, substantially as described.

8. In a railway track structure comprising main track rails and side track rails, the combination with such rails, of ties, a horizontal base and a horizontal slide member bodily slidable transversely on said base, the base occupying a gap in said rails and extending beyond each side edge of the slide member and such extended parts having trackage in operative relation with the rails extending to said base and the base extending over the side edges of the slide member, and said slide member bearing removable stop means and having trackage adapted to be brought into operative relation with the trackage of the base, and means for bodily shifting said slide member into either of two positions, substantially as described.

9. In a railway track structure comprising main track rails and side track rails, the combination with such rails, of a pair of horizontal bases and a pair of horizontal slide members each slide member being bodily slidable transversely on one of said bases, each base occupying a gap in said rails and extending beyond each side edge of the companion slide member and such extended parts having trackage distinct from and in operative relation with the rails extending to said base, and each slide member having trackage adapted to be brought into operative relation with the trackage of the companion base, and means for bodily shifting said slide members into either of two positions, substantially as described.

10. In a railway track structure comprising main track rails and side track rails, the combination with such rails, of a pair of horizontal bases and a pair of horizontal slide members each member being bodily slidable transversely on one of said bases, each base occupying a gap in said rails and extending beyond each side edge of the companion slide member and such extended parts having trackage distinct from and in operative relation with the rails extending to said base, and each slide member bearing stop means and bearing trackage adapted to be brought into operative relation with the trackage of the companion base, and means for bodily shifting said slide members into either of two positions, substantially as described.

11. In a railway track structure comprising main track rails and side track rails, the combination with such rails, of a pair of horizontal bases and a pair of horizontal slide members each slide member being con-

fined upon one of said bases for bodily horizontal, transverse reciprocation, each base occupying a gap in said rails and extending beyond each side edge of the companion slide member and such extended parts having trackage distinct from and in operative relation with the rails extending to said base and each slide member having trackage adapted to be brought into operative relation with the trackage of the companion base, and means for bodily shifting said slide members into either of two positions, substantially as described.

12. In a railway track structure comprising main track rails and side track rails, the combination with such rails, of a pair of horizontal bases and a pair of horizontal slide members each slide member being confined upon one of said bases for bodily horizontal, transverse reciprocation, each base occupying a gap in said rails and extending beyond each side edge of the companion slide member and such extended parts having trackage distinct from and in operative relation with the rails extending to said base and each slide member bearing stop means and having trackage adapted to be brought into operative relation with the trackage of the companion base, and means for bodily shifting said slide members into either of two positions, substantially as described.

13. In a railway track structure comprising main track rails and side track rails, the combination with such rails, of a pair of horizontal bases and a pair of horizontal slide members each slide member being bodily slidable transversely on one of said bases, each base occupying a gap in said rails and extending beyond each side edge of the companion slide member and such extended parts having trackage distinct from and in operative relation with the rails extending to said base, and each slide member having trackage adapted to be brought into operative relation with the trackage of the companion base, means for bodily shifting said slide members into either of two positions, and a frog structure applied to two of said rails, substantially as described.

14. In a railway track structure comprising main track rails and side track rails, the combination with such rails, of a pair of horizontal bases and a pair of horizontal slide members each member being bodily slidable transversely on one of said bases, each base occupying a gap in said rails and extending beyond each side edge of the companion slide member and such extended parts having trackage distinct from and in operative relation with the rails extending to said base and each slide member bearing stop means and having trackage adapted to be brought into operative relation with the trackage with the companion base, means for shifting said slide members into either of two positions, and a frog structure applied to two of said rails, substantially as described.

15. In a railway track structure comprising main track rails and side track rails, the combination with such rails, of a pair of horizontal bases and a pair of horizontal slide members each slide member being confined upon one of said bases for bodily horizontal, transverse reciprocation, each base occupying a gap in said rails and extending beyond each side edge of the companion slide member and such extended parts having trackage distinct from and in operative relation with the rails extending to said base and each slide member having trackage adapted to be brought into operative relation with the trackage of the companion base, means for shifting said slide members into either of two positions, and a frog structure applied to two of said rails, substantially as described.

16. In a railway track structure comprising main track rails and side track rails, the combination with such rails, of a horizontal base and a horizontal slide member slidable transversely on said base, the base occupying a gap in said rails and extending beyond each side edge of the slide member and such extended parts having trackage in operative relation with the adjacent rails and said slide member having trackage adapted to be brought into operative relation with the trackage of the base, and means for shifting said slide member into either of two positions, and spring mechanism tending to hold the slide member in one of its two positions, substantially as described.

17. In a railway track structure comprising main track rails and side track rails, the combination with such rails, of a horizontal base and a horizontal slide member slidable transversely on said base, the base occupying a gap in said rails and extending beyond each side edge of the slide member and such extended parts having trackage in operative relation with the adjacent rails, and said slide member having stop means and having trackage adapted to be brought into operative relation with the trackage of the base, and means for shifting said slide member into either of two positions, and spring mechanism tending to hold the slide member in one of its two positions, substantially as described.

18. In a railway track structure comprising main track rails and side track rails, the combination with such rails, of a horizontal base and a horizontal slide member confined upon the base for horizontal, transverse reciprocation, the base occupying a gap in said rails and extending beyond each side edge of the slide member and such extended parts having trackage in operative relation with the adjacent rails and said slide member

having trackage adapted to be brought into operative relation with the trackage of the base, and means for shifting said slide member into either of two positions, and spring mechanism tending to hold the slide member in one of its two positions, substantially as described.

19. In a railway track structure comprising main track rails and side track rails, the combination with such rails, of a horizontal base and a horizontal slide member confined upon the base for horizontal, transverse reciprocation, the base occupying a gap in said rails and extending beyond each side edge of the slide member and such extended parts having trackage in operative relation with the adjacent rails and said slide member having stop means and having trackage adapted to be brought into operative relation with the trackage of the base, and means for shifting said slide member into either of two positions, and spring mechanism tending to hold the slide member in one of its two positions, substantially as described.

20. In a railway track structure, the combination with a main line and a switch track rail located on a course cutting the course of the main line rail diagonally, of a horizontal base and a horizontal slide member bodily slidable transversely on said base, the base occupying a gap in said rails at their intersection and extending beyond each side edge of the slide member and such extended parts having trackage distinct from and in operative relation with the rails extending to said base and said slide member having trackage adapted to be brought into operative relation with the trackage of the base, and means for bodily shifting said slide member into either of two positions, substantially as described.

21. In a railway track structure comprising main track rails and side track rails, the combination with such rails, of a horizontal base and a horizontal slide member bodily slidable transversely on said base, the base occupying a gap in said rails and extending beyond each side edge of the slide member and such extended parts having trackage distinct from and in operative relation with the rails extending to said base and said slide member having trackage adapted to be brought into operation relation with the trackage of the base, a portion of the trackage being grooved toward the side track, and means for bodily shifting said slide member into either of two positions, substantially as described.

22. In a railway track structure comprising main track rails and side track rails, the combination with such rails, of a horizontal base and a horizontal slide member bodily slidable transversely on said base, the base occupying a gap in said rails and extending beyond each side edge of the slide member and such extended parts having trackage distinct from and in operative relation with the rails extending to said base, and said slide member bearing stop means and having trackage adapted to be brought into operative relation with the trackage of the base, a portion of the trackage being grooved toward the side track, and means for bodily shifting said slide member into either of two positions, substantially as described.

23. In a railway track structure, the combination with a main line rail and a switch track rail located on a course cutting the course of the main line rail diagonally, of a horizontal base and a horizontal slide member bodily slidable transversely on said base, the base occupying a gap in said rails at the intersection of their lines and extending beyond each side edge of the slide member and such extended parts having trackage distinct from and in operative relation with the rails extending to said base and said base extending over the side edges of the slide member and said slide member having trackage adapted to be brought into operative relation with the trackage of the base, and means for bodily shifting said slide member into either of two positions, substantially as described.

In testimony whereof I have signed my name, this 19th day of December, in the year one thousand nine hundred and seventeen.

MELMUTH LEE ROY MORROW.