

C. W. BURKE & J. D. PERKINS.

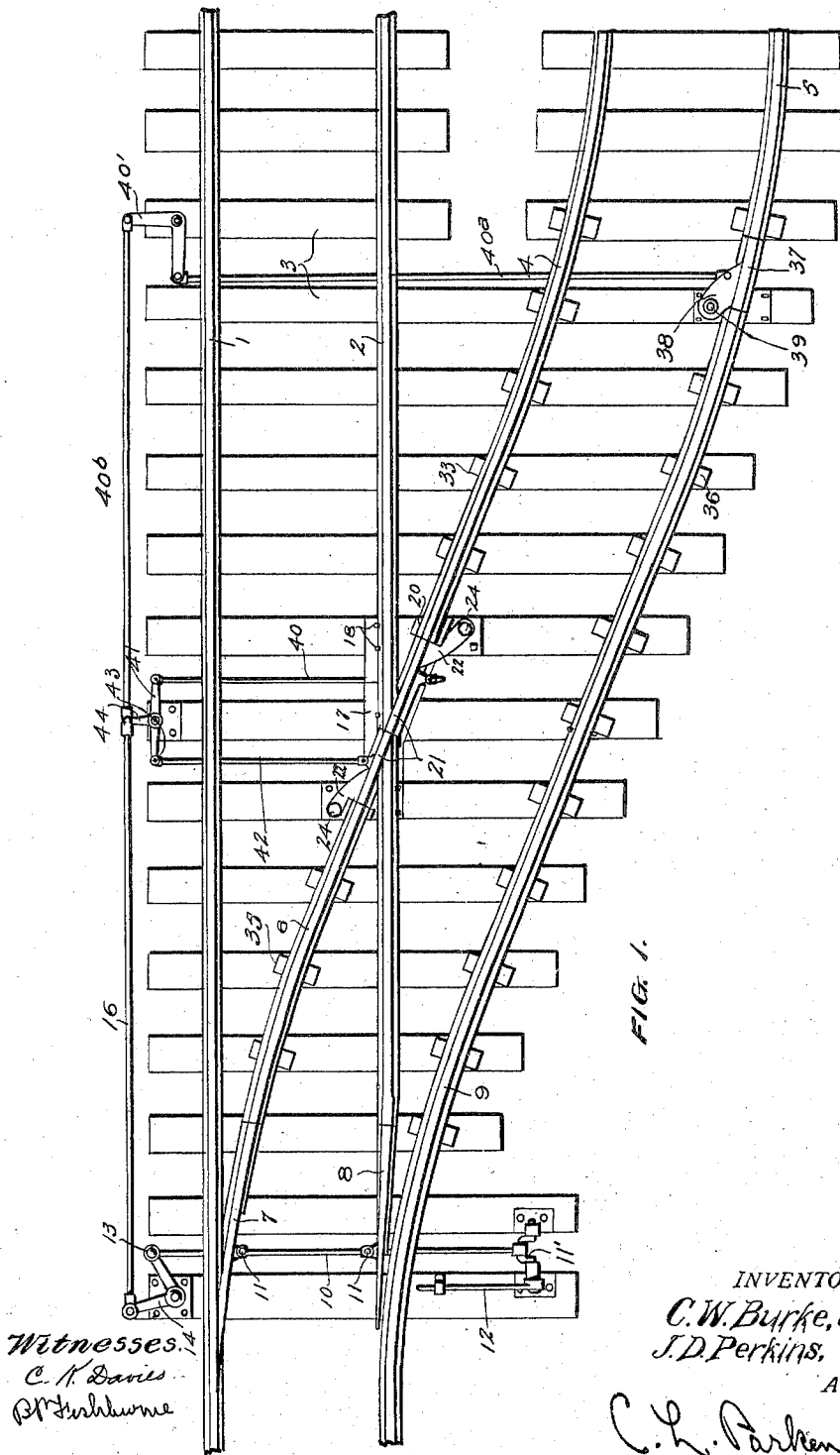
SWITCH.

APPLICATION FILED MAR. 26, 1910.

965,685.

Patented July 26, 1910.

3 SHEETS—SHEET 1.



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3 SHEETS—SHEET 2.

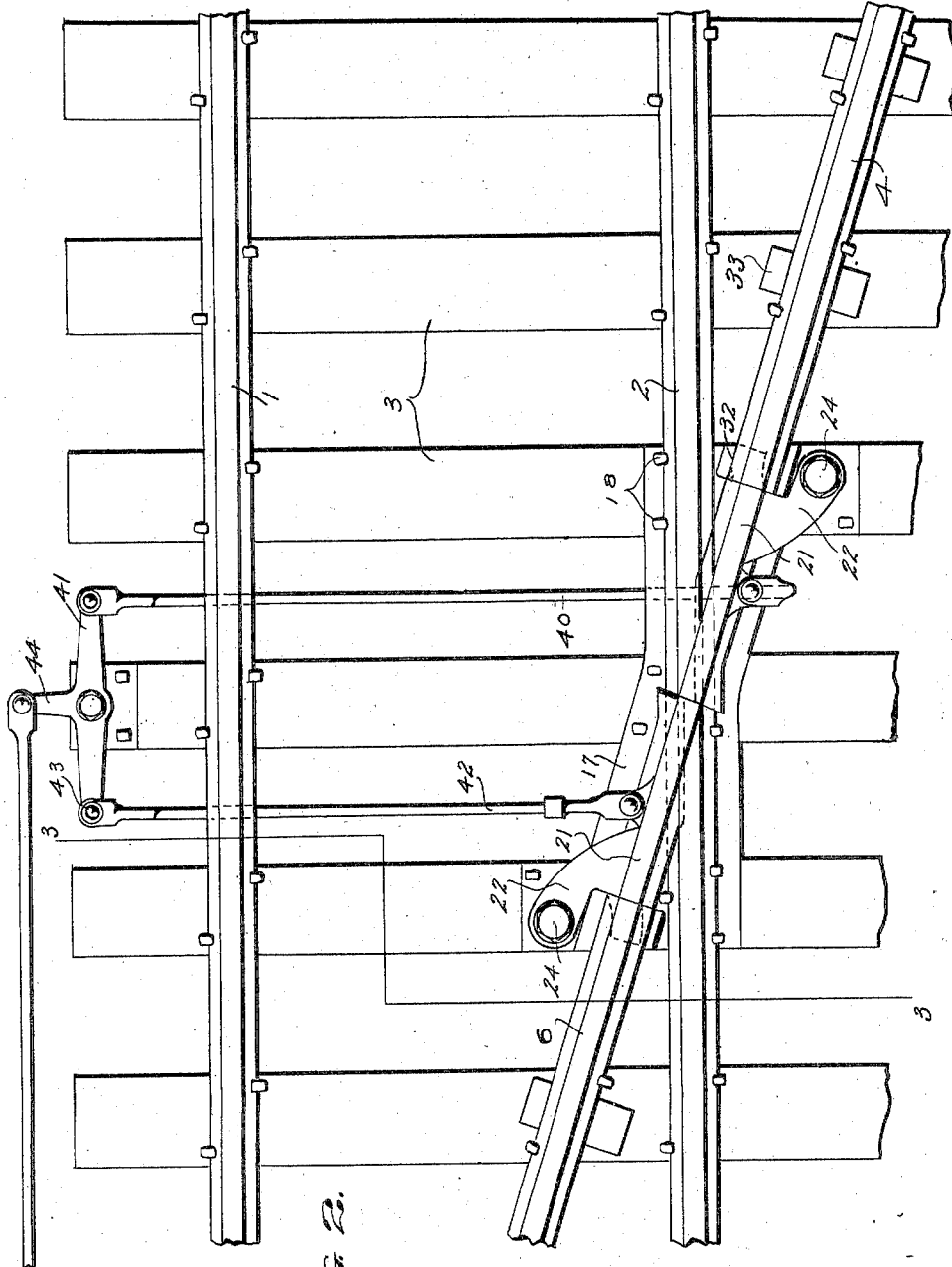


FIG. 2.

WITNESSES

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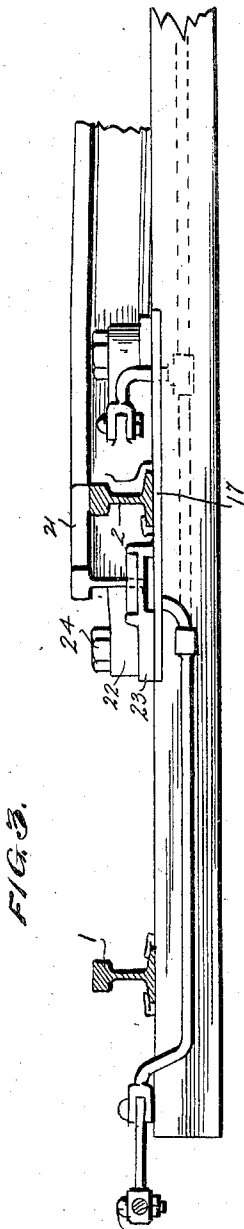


FIG. 3.

WITNESSES

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Brookline

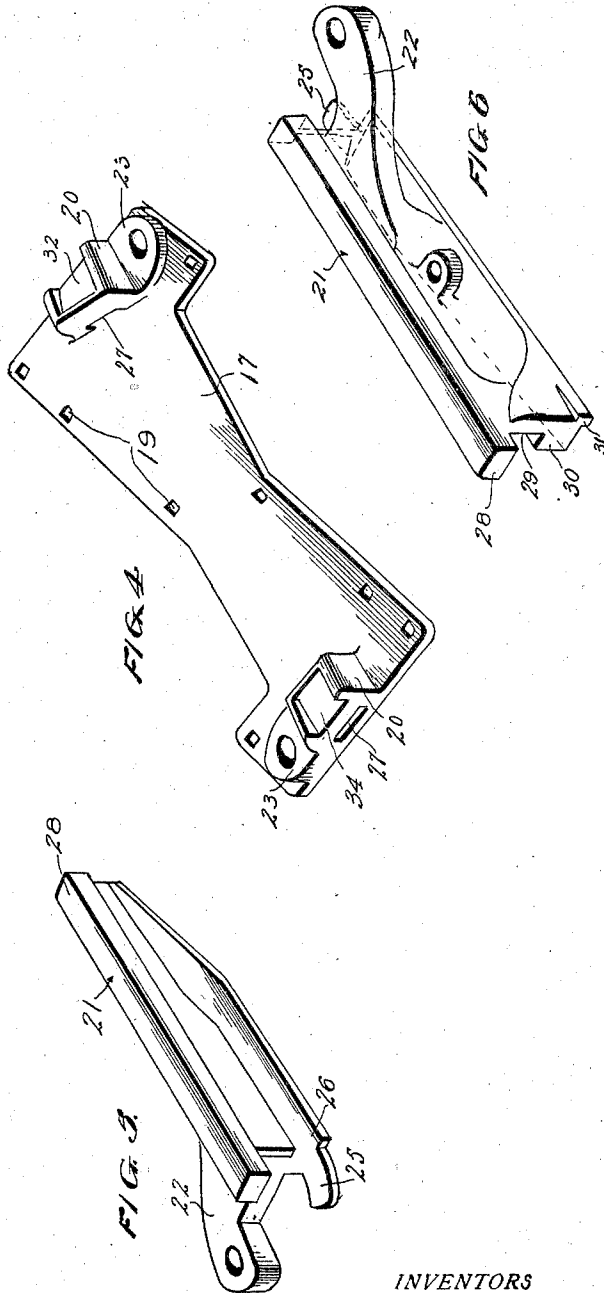


FIG. 4.

FIG. 5.

FIG. 6.

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SWITCH.

965,685.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, CHARLES W. BURKE and JAMES D. PERKINS, citizens of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented certain new and useful Improvements in Switches, of which the following is a specification.

Our invention relates to switches and particularly to a device of this character embodying means for dispensing with the ordinary frog.

An important object of this invention is the provision of means for dispensing with the ordinary frog, which means is positive in its operation, strong and very durable.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same, Figure 1 is a plan view of a section of a main track showing our improved switch applied to the same. Fig. 2 is an enlarged plan view of a portion of the siding, showing the swinging rails employed to take the place of the ordinary frog. Fig. 3 is a vertical section taken on line 3—3 of Fig. 2. Fig. 4 is a perspective view of the base-plate upon which the swinging rails are mounted. Fig. 5 is a perspective view of one of the swinging rails employed to take the place of an ordinary frog. Fig. 6 is a perspective view of the rail section shown in Fig. 5 looking from the opposite side.

In the drawings illustrating a preferred embodiment of our invention, the numerals 1 and 2 designate rails of a main track which are secured in the usual manner to ties 3.

The numerals 4 and 5 designate outer and inner stationary rails of a siding, which are secured to ties in any suitable manner. Adapted to cooperate with the inner rail 4 of the siding is a stationary rail 6 arranged between the rails 1 and 2 as shown and fixedly secured to the ties 3. The forward end of the rail 6 as shown at 7 is capable of being swung toward or away from the rail 1 as is common in the construction of the ordinary switching rail. The forward end of the rail 2 as shown at 8 is capable of being swung toward or away from a rail 9 which constitutes a portion of the siding. The swinging ends 7 and 8 are pivotally connected by means of a rod 10 as shown

at 11, this rod being disposed below the rails and having one end thereof pivotally connected to a crank-shaft 11'. This crank-shaft is swingingly mounted upon the ties 3 as shown and is actuated by a lever 12. The opposite end of the rod 10 is pivotally connected as shown at 13 to a bell-crank lever 14, which is also connected pivotally to a rod 16.

The construction thus far described is that of the ordinary switch and does not form a part of our invention but is shown in order that said invention may be clearly illustrated as to its application and function.

In the ordinary switch a frog would be employed at the junction of the rails 2, 4 and 6. As above stated our invention resides in the provision of means for dispensing with the ordinary frog, and to this end we provide a base-plate 17 which is rigidly secured to the ties 3 in any suitable manner. The rail 2 of the main track passes over and is supported by this base-plate as shown, said rail 2 being rigidly secured to said base-plate by means of spikes 18 which pass through openings 19 formed upon said base-plate as shown. The base plate 17 is provided at its ends and upon opposite sides of the rail 2 with upstanding portions 20, which are to be cast integrally with the base-plate 17. Upon opposite sides of the rail 2 are arranged swinging rails 21, each of which is provided at its outer end with a curved arm 22 which is formed upon the web of the same. The arm 22 is arranged upon a portion 23 of the upstanding portion 20 and is pivotally connected thereto by means of a pin 24. The swinging rail 21 is further provided adjacent the arm 22 with a curved tongue 25, which is shown as being formed upon the base-flange 26 of the same. When the swinging rails 21 are arranged in engagement with each other and with the rail 2, the curved tongues 25 are disposed within openings 27 formed within the base of the upstanding portions 20. By this construction the outer end of each of the swinging rails 21 is positively prevented from being vertically displaced, while the same is positively prevented from longitudinal displacement in one direction by being in engagement with the upstanding portion 20. It is to be understood that the swinging rails 21 are formed of rail sections which are much heavier than the rail 2, so that owing to the

size of said swinging rails 21 their heads 28 will be disposed upon the head of the rail 2 as shown. The inner end of each of the swinging rails 21 has its web provided with a recess 29 adapted to conform to and snugly receive the head of the rail 2. Below the recess 29 the rail section 21 is provided with a projection 30 which is adapted to snugly fit between the head and base flange of the rail 2. The rail section 21 is further provided upon its outer side with a flange 31 which is slidably mounted upon the base plate 7 and adapted to laterally engage the base flange of the rail 2. By the construction above described it is obvious that each of the swinging rails 21 fits snugly against the rail 2 and that the longitudinal movement of the same in the direction of said rail 2 is accordingly positively prevented. The inner ends of the heads 28 of the swinging rails 21 are cut square as shown and sufficient space is provided therebetween to permit of the expansion of the same when subjected to heat. The inner stationary rail 4 above referred to has its end disposed within a recess 32 formed upon the top of one of the upstanding portions 20. This upstanding portion therefore forms a chair for the rail 4 and said rail 4 being of the same weight as the rail 2 is accordingly elevated above the same to be flush with the rail sections 21, by being supported in chairs 33 as shown. The stationary rail 6 above referred to has one end disposed within a recess 34 formed upon the other upstanding portion 20 as shown in Fig. 4, and said rail 4 thus has one end arranged flush with the swinging rails 21, while the rail is supported upon chairs 35 and slants downwardly toward the rail 1 to be on a level with the same. The rail 5 is also supported upon chairs 36 in order that the same may be on a level or preferably slightly higher than rail 4.

It is thus seen that the siding comprising rails 4 and 5 is elevated above the main track which is generally the case, and this often causes accidents by a car located upon said siding breaking loose and running down upon the main track. To overcome this disadvantage we provide a swinging rail 37 which is disposed between rails 5 and 9 as shown and provided with a laterally extending arm 38 which is pivotally connected to the tie 3 as at 39. This swinging rail 37 is pivotally connected by means of a rod 40^a to a bell crank lever 40^b as shown, which is pivotally connected to a rod 40^b which in turn is pivotally connected as shown to a double bell crank lever 41. A rod 40 is pivotally connected to one of the swinging rails 21 as shown, and this rod is disposed below the rails 1 and 2 and extends beyond the rail 1 for pivotal engagement with the double bell crank lever 41. A connecting

rod 42 extends below rail 1 and is pivotally connected to the other swinging rail 21 as shown. The outer end of connecting rod 42 is pivotally connected to the double bell-crank lever 41 as at 43. The connecting rod 16 above referred to is pivotally connected to the middle arm 44 of the double bell-crank lever as shown.

In the operation of the switch if it is desired that a car be placed upon the side track, the switch is arranged in its operative position as shown in Fig. 1. The car is then free to run from the main track to the siding composed of the rails 4 and 5. Special attention is called to the fact that the swinging rails 21 have their heads arranged above the head of the rail 2, whereby the flanges of car wheels are prevented from engaging the rail 2. If it is desired to use the main line, the lever 12 is oscillated outwardly which accordingly throws the rail 8 into engagement with the rail 9 and rail 7 out of engagement with rail 1 thus permitting a car to travel along the main track. At the same time the double bell-crank lever 41 is actuated which simultaneously swings the rails 21 in opposite directions and at a suitable distance from the rail 2. The rail 2 is not cut or otherwise interrupted, since the swinging rails 21 do away with the necessity of a frog. The main track is thus free for rapid transportation and trains may pass the side track without being subjected to the jars which they would receive if a frog was employed. At the same time that the swinging rails are being swung away from the rail 2 the rail 37 is swung outwardly remaining in parallel relation to one of the swinging rails 21. The siding is thus opened during the use of the main line and should a car run down the same toward the main track it would be accordingly conducted by the cooperating swinging rails 37 and 21 away from the main track and accordingly ditched.

Having fully described our invention, we claim:—

1. The combination with the main track rail, of a base plate upon which the same is disposed, upstanding portions arranged upon said base plate near the ends thereof, swinging rails for coöperation with the main track rail provided with arms pivotally connected to said base plate, said swinging rails being much heavier than the main track rail so that their head flanges are disposed upon the head flange of said main track rail, said swinging rails being disposed when in a closed position to abut said upstanding portions to prevent their longitudinal movement in such directions, said upstanding portions being provided with recesses to receive the ends of side track rails to hold the same from lateral displacement and to elevate the same so that their head

flanges will be flush with the head flanges of said swinging rails.

2. The combination with the main track rail, of a base plate upon which the same is disposed, upstanding portions formed upon and integral with said base plate near the ends thereof, swinging rails for coöperation with the main track rail provided with arms pivotally connected to said base plate, said swinging rails being much heavier than the main track rail so that their head flanges may be disposed upon the head flange of said main track rail, said swinging rails being disposed when in a closed position to abut said upstanding portions to prevent their longitudinal movement in such directions, said upstanding portions being pro-

vided with recesses upon their upper ends to receive the ends of said track rails to hold the same from lateral displacement and to elevate them so that their head flanges will be flush with the head flanges of said swinging rails, said swinging rails being provided upon their outer ends with tongues formed upon their base flanges, and said upstanding portions being provided with openings for the reception of such tongues.

In testimony whereof we affix our signatures in presence of two witnesses.

CHARLES W. BURKE.

JAS. D. PERKINS.

Witnesses:

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W. J. HOGAN.