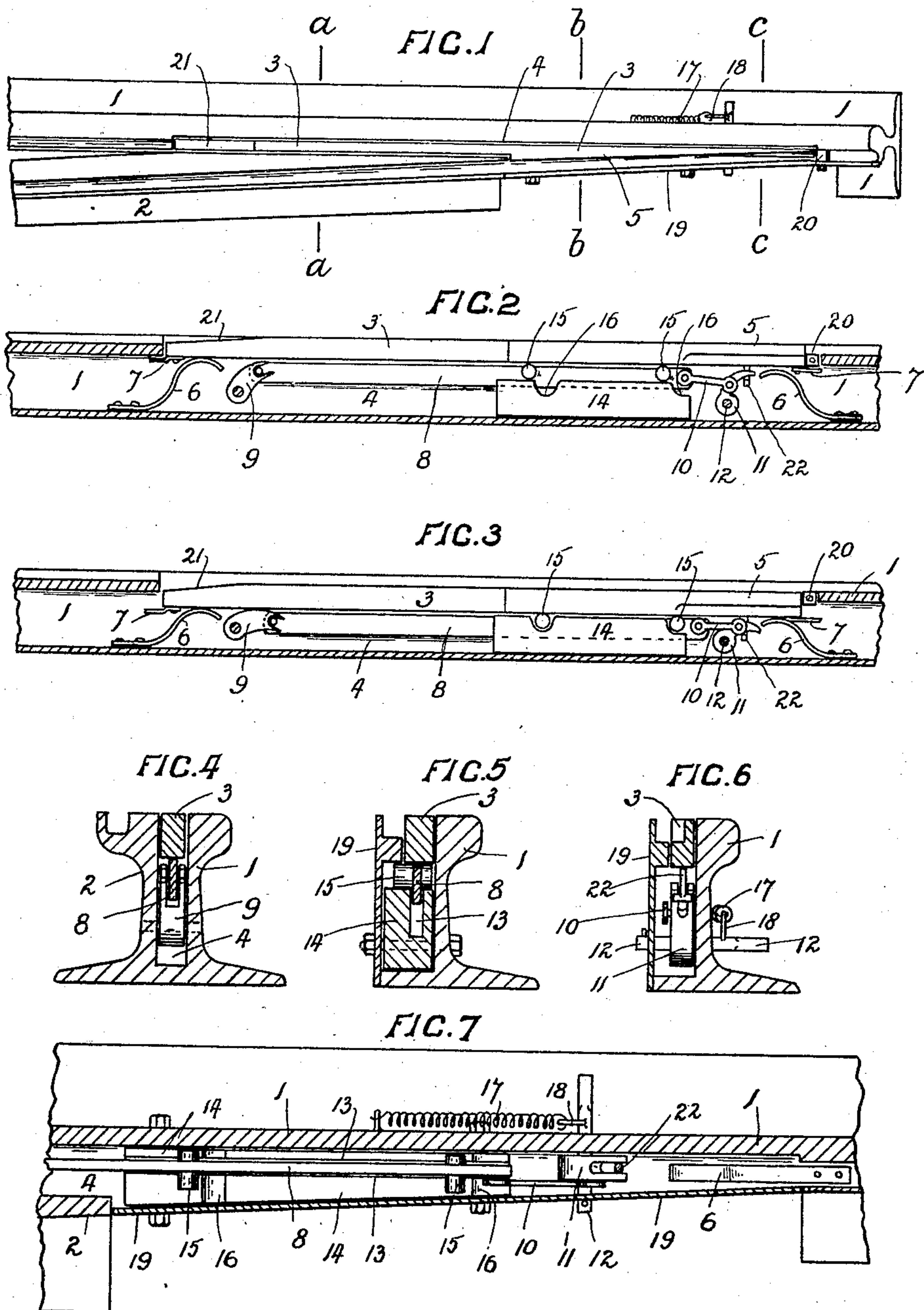


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RAILWAY AND TRAMWAY TRACK POINT.  
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966,193.

Patented Aug. 2, 1910.



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# UNITED STATES PATENT OFFICE.

ARTHUR GARDNER, OF WELLINGTON, NEW ZEALAND.

RAILWAY AND TRAMWAY TRACK POINT.

966,193.

Specification of Letters Patent.

Patented Aug. 2, 1910.

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*To all whom it may concern:*

Be it known that I, ARTHUR GARDNER, a subject of the King of Great Britain, residing at Wellington, in the Dominion of New Zealand, have invented a new and useful Improvement in Railway and Tramway Track Points; and I do hereby declare the following to be a full, clear, and exact description of the same.

10 This invention relates to an improved construction of points for railway and tramway tracks that has been devised with the object of doing away with the usual shifting tongue for changing over, working horizontally upon a pivot, and to substitute a tongue that works vertically up and down in the point. The horizontally moving tongue is open to certain disadvantages in working, as it is quickly worn by the car wheels running over it and is also very liable to choke by reason of the open space on one side or other being filled with dirt, etc., from the street. These disadvantages are obviated in the present construction of point.

25 In carrying out the invention the tongue is arranged within a slot formed in the point and is shaped in the usual manner to provide for the wheel of a car approaching in one direction being diverted on to the branch, that is, with a beveled edge leading from the main rail on to a beveled edge on the branch rail. This tongue is supported upon spring cushions which serve to keep it normally pressed up so that its top surface presents a uniform surface with the surfaces of the rails it overlaps. It thus provides for the car wheels being diverted on to the branch without any bump. The tongue is also so supported in the slot, that as the wheels of a car travel across it on to the branch, it will be held solidly on its supports and prevented from moving down in the slot, but as the wheels approach from the other direction it will be pressed down by the wheel flanges and will permit of the wheels running freely across the point in the usual manner. In order however that the invention may be thoroughly understood, reference will be made to the accompanying sheet of drawings, in which:—

50 Figure 1 is a plan of the improved point. Fig. 2 is a longitudinal sectional elevation thereof, with the tongue in the normal posi-

tion. Fig. 3 is a similar view showing the tongue in the depressed position. Figs. 4, 55 5, and 6 are cross sections, on an enlarged scale, taken respectively on the lines *a—*a**, *b—*b**, and *c—*c** of Fig. 1, in each case looking to the left of the line. Fig. 7 is a sectional plan, on an enlarged scale, of the right hand 60 portion of the point.

In describing the construction and working of the point, the right hand end according to the drawing, is herein treated and referred to as the front end, while the other 65 end is treated and referred to as the back end of the point.

1 is the main rail and 2 the branch rail leading at a tangent therefrom in the usual way to divert the wheels of a car approaching from one direction on to the branch. 70

3 is the tongue which is fitted into a slot 4 formed along the joint between the two rails and is shaped as shown in the drawings to extend along the rail groove and to provide 75 a beveled edge 5 leading from the inner edge of the main rail to the inner edge of the branch, and to overlap the point of connection of such rails, as shown in Fig. 1. Bowed springs 6, or springs of other suitable design are secured in the bottom of the slot and serve to support the tongue 3 and to keep its top surface uniform with the top surfaces of the rails as shown in Figs. 2, 4, 5 and 6. The tongue is prevented from rising farther by means of lugs 7 secured upon its ends and engaging beneath the rail grooves. 80

A bar 8 is arranged longitudinally beneath the tongue and this bar, at its back 90 end is supported upon a pivoted tumbler 9 articulated between the sides of the slot. The other end of the bar is connected by means of a link 10 with a forked lever 11 rigidly mounted on the spindle 12 extending across the slot 4 and projecting beyond one side thereof. A T piece 22 depends from the tongue and fits between the forks of this lever so that when the lever is turned down the tongue at that end will be drawn 100 down into the slot.

The tumbler 9 and lever 11 are so shaped and disposed as to permit of the bar 8 turning forwardly and downwardly, but to prevent it from turning upwardly and rearwardly. 105



The bar 8 at its forward end fits into a groove 13 (Fig. 5) formed in a block 14 resting solidly upon the bottom of the rail. The bar 8 is provided with cross pins 15 extending across the top of this block and serving to keep the bar from passing down into the groove. The block is however, formed with inclined depressions 16 upon its top surface into which these pins are adapted to fit and so disposed that when the bar is thrown forwardly by turning on the tumbler 9 and lever 11, the pins will pass into the depressions and allow the bar to drop.

A spring 17 is attached to an arm 18 upon the outer end of the spindle 12 and serves to keep the lever 11 normally drawn upward and the bar 8 pushed back so that the pins 15 will rest on the top surface of the block 14.

In use, as the car wheels run on to the front end of the tongue, they will be diverted by it on to the branch, the tongue being prevented from dropping by reason of the cross pins 15 resting upon the block 14 and engaging beneath the tongue, as shown in Figs. 2 and 5. As the wheels travel along the main line from the other direction, their flanges engage with the back end of the tongue, forcing it downward on its spring cushions, and throwing the bar 8 forward on its bearings so that the pins 15 pass down into the depressions 16 and thereby permit the forward end of the tongue to be also depressed. The wheels thus pass freely over the top of the tongue which is arranged to be depressed to the level of the bottom of the rail groove. As the wheel passes off the tongue, the springs 6 and 17 force it up again, and draw the bar 8 back to its normal position beneath the tongue.

The outer end of the spindle 12 is shaped to receive a hand lever for turning it, in order that the tongue may be depressed by hand when desired, and thus permit of the car wheels passing straight along the main line instead of being diverted on to the branch.

The back end of the tongue is formed with its top surface inclining downward to the level of the bottom of the rail groove, as shown at 21 Figs. 2 and 3, in order that the car wheels approaching from that end will engage with the tongue without any jar and so that the incline will tend to act as a wedge to force the tongue down in the manner described.

For facing points, *i. e.* points that are always to be actuated by hand for diverting the car, the tongue may be shortened and the tumbler bearing 9 dispensed with. The bar 8 will then rest solely upon the block 14 and the tongue lowered only by turning the spindle 12.

The various working parts are adapted to be removed when required by having one side of the slot formed of the removable plate 19 bolted into position. When this plate is removed, the different appliances may also be removed, repaired, or cleaned. The tongue is adapted to be lifted from the groove by having the lug 7 at one end engaging beneath a small block 20 held in position by means of a bolt.

What I do claim as my invention, and desire to secure by Letters Patent is:—

1. In railway and tramway track points, a diverting tongue fitted within a slot in the point and adapted to move vertically therein, springs bearing up against the bottom of the tongue, a bar extending longitudinally beneath the tongue, supported in such a manner as to be capable of moving forward and downward in one direction only connections between the tongue and the bar and means whereby such bar will be normally kept in the raised position in engagement with the tongue and whereby it may be moved forward and down, substantially as specified.

2. In railway and tramway track points, a diverting tongue fitted within a slot in the point and adapted to move vertically therein, springs bearing up against the bottom of the tongue, a bar extending longitudinally beneath the tongue, a pivoted tumbler piece supporting one end of such bar, a lever mounted on a spindle extending across the slot, adjacent to the other end of the bar, a connection between such lever and the tongue, a link connection between the lever and the bar, an arm upon the spindle and a spring bearing on such arm and forcing the lever up and the bar into contact with the tongue, substantially as specified.

3. In railway and tramway track points, a diverting tongue fitted within a slot in the point and adapted to move vertically therein, springs bearing up against the bottom of the tongue, a bar extending longitudinally beneath the tongue, a pivoted tumbler supporting one end of the bar, a block underlying the other end of the bar and formed with a groove therein into which the bar enters, cross pins upon the bar resting on the top of the block, inclined depressions in such top adapted to receive the pins, a lever connected with the bar, a spring bearing on the lever to keep the bar forced upward into contact with the tongue, and means whereby it may be moved downward, substantially as specified.

4. In railway and tramway track points, a diverting tongue fitted within a slot in the point and adapted to move vertically therein, springs pressing such tongue upward into position, lugs upon the tongue engaging with the rail, a bar extending longitudinally beneath the tongue, connections

between the bar and the tongue, a pivoted  
tumbler supporting one end of the bar, a  
block supporting the other end of the bar  
and means whereby the bar may be moved  
5 forward and downward on its supports and  
will be kept normally in a raised position,  
substantially as specified.

In testimony whereof, I have signed this  
specification in the presence of two sub-  
scribing witnesses.

ARTHUR GARDNER.

Witnesses:

W. ALEXANDER,  
M. E. BROWN.