

No. 776,692.

PATENTED DEC. 6, 1904.

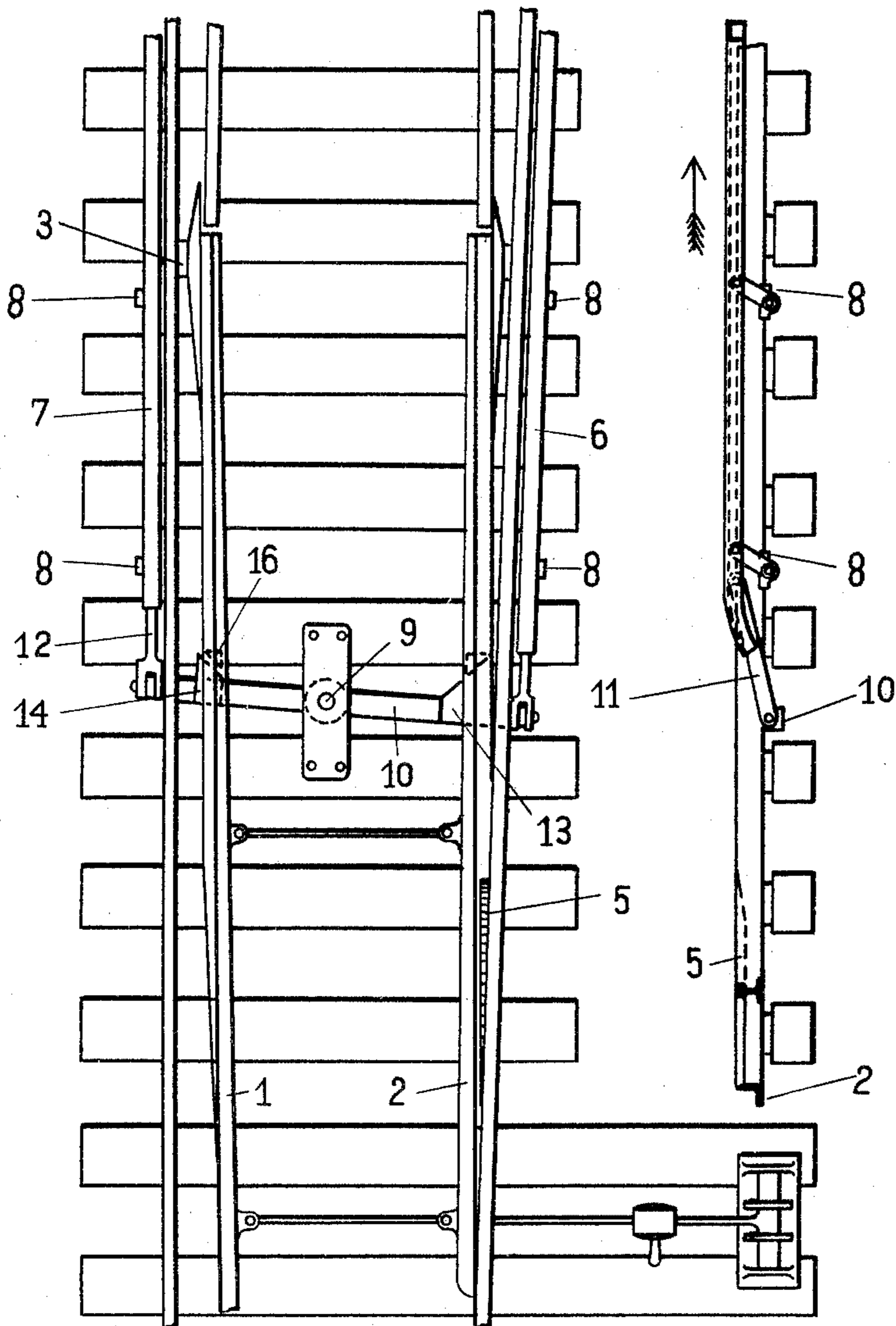
J. SCHILHAN.
RAILWAY SWITCH.
APPLICATION FILED APR. 22, 1904.

NO MODEL.

2 SHEETS—SHEET 1.

FIG. 1.

FIG. 2.



Witnesses

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E. M. Moore

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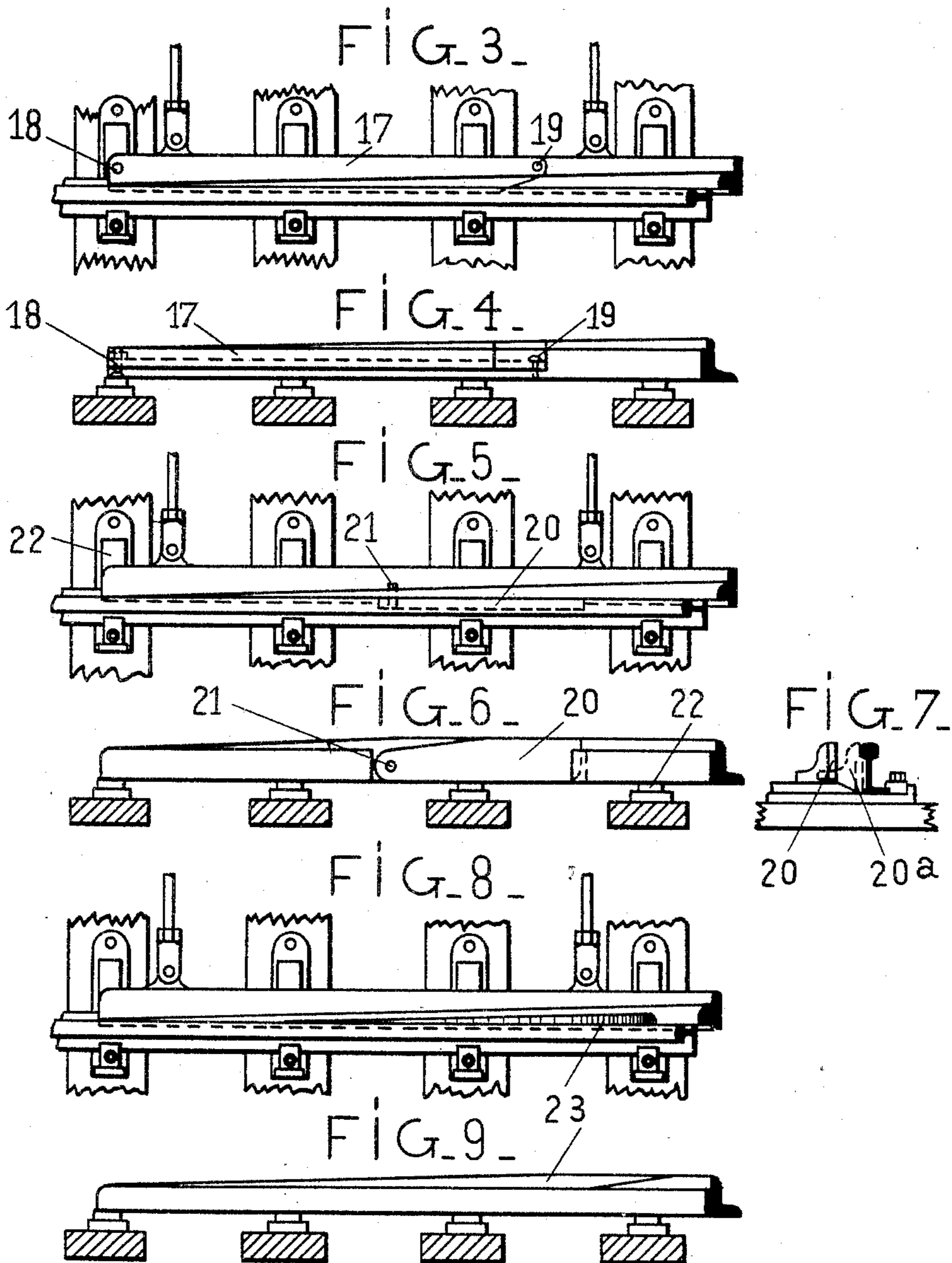
János Schilhan
by his Attorney *A. J. Madden*

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UNITED STATES PATENT OFFICE.

JÁNOS SCHILHAN, OF SZÉKESFEHERVÁR, AUSTRIA-HUNGARY.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 776,692, dated December 6, 1904.

Application filed April 22, 1904. Serial No. 204,450. (No model.)

To all whom it may concern:

Be it known that I, JÁNOS SCHILHAN, a subject of the Emperor of Austria-Hungary, residing at Székesfehérvár, Austria-Hungary, have invented a certain new and useful Improvement in Railway-Switches, of which the following is a specification.

This invention relates to improvements in railway-switches; and its object is to prevent the derailment of rolling-stock by switches. For this purpose means are provided for preventing the movement of the switch-tongues while a train is passing the switch and for insuring the passage of the train onto one or the other line if the switch is incompletely adjusted—that is to say, if neither of the tongues is in contact with the respective stock-rail and if the wheels pass between the tongues and the rails.

The invention is illustrated in the annexed drawings, in which—

Figure 1 is a plan view, and Fig. 2 a side view. Details of various forms of construction are shown in Figs. 3 to 9.

The device for preventing the shifting of the tongues under the train between the widely-separated axles of long cars and the like comprises two press-rails 6 and 7, arranged outside the outermost rail right and left, respectively, of the main track and of the branch track. The press-rails 6 and 7 are pivotally connected, by means of a series of short levers 8, to pivots fixed to the feet or lower flanges of the respective track-rails, and the ends of the said rails 6 and 7 are linked, by means of rods 11 and 12, with the ends of a lever 10, pivoted at 9. This arrangement is such that normally the press-rail at the side of the track-rail not to be used is elevated above the track-level, whereas the press-rail at the side of the track-rail to be used is in its lower position—that is to say, level with the track. If under exceptional circumstances the elevated track-rail—for example, 6—is depressed by the wheel of a locomotive or the like, it moves in the direction of the arrow, Figs. 1 and 2, and operates the lever 10 by means of its link 11, so that the other press-rail 7 is elevated. Fixed to the lever 10 are two abutments 13 and 14 with inclined

surfaces adapted to coöperate with abutments 15 and 16, fixed to the under surfaces of the switch-tongues, and to prevent, by means of the depressed press-rail, the shifting of the tongues when the train runs against the points.

In running in the direction of the points (right to left in Fig. 1) if the tongues are inaccurately adjusted automatic adjustment thereof is obtained by the depression of the elevated press-rail.

To prevent derailment and insure that the train will run into one of the track-lines in case the switch is incompletely adjusted, the following alternative arrangements can be used:

First, alternative arrangement.—The head of the rail forming the switch-tongue 2, Fig. 1, is cut away for a certain distance horizontally from the point of the said switch-tongue, and a separate part 17, Fig. 3, corresponding in shape so far as its operative part is concerned to the part so cut away is placed on the exposed surface. This part 17 is connected to the tongue 2 by a strong vertical pin 18 at the point end, and its chamfered end surface nearer the pivoted end of the tongue abuts against a similar chamfered end formed on the head of the rail of the latter. To prevent displacement of the part 17 during the normal working of the tongue, another vertical pin 19 is fixed thereto, which normally prevents the rotation of the parts 17 about a pin 18, but is weaker than the pin 18. If the switch is incompletely adjusted and the two wheels on any one axle of the train enter the spaces between the tongues and the stock-rails, one of the said wheels will be guided by the normal tongue 1, and the other wheel will by this means be powerfully pressed against the outer edge of the part 17 of the tongue 2—say at 5. This pressure will shear the pin 19 and cause the part 17 to rotate inward about the pivot 18, so that the wheel will run onto the inner edge of the tongue. The sheared pin 19 will indicate what has taken place or afford proof that the switch was only half-way adjusted when the train ran onto it. The pin 19 can be immediately replaced. Fig. 4 is a side view of the tongue with the part 17.

Second, alternative arrangement.—If it is desired to avoid using a switch-tongue of special construction, the same purpose can be effected by means of the device shown in Figs. 5, 6, and 7 in plan view, side view, and cross-section, respectively. In this case a cheek 20, with an inclined surface, is connected to the tongue 2 at 5, Fig. 1, by means of a pivot 21 at the point where the distance between the outer edges of the two tongues is equal to the distance between the flanges of the wheels on one axle. When the tongue is in the open position, the cheek 20 rests on the rail-chair 22. The latter has an inclined surface, so that when the tongue is moved into the closed position the cheek descends by gravity into a position under the head of the stock-rail. When the tongue is in the open or half-open position and jumping of points occurs, one of the two wheels guided by the action on the other wheel of opposite tongue 1 runs onto the inclined surface of the cheek 20 and then onto the upper edge of the tongue 2, from which it then slides onto the inner edge of the said tongue 2.

Third alternative construction.—In another form of construction one of the switch-tongues is provided at the place marked 5, Fig. 1, at its outer edge nearest the stock-rail with a wedge-shaped groove 23 in Figs. 8 and 9, ascending toward the tongue-pivot and serving as an ascent for the flange of the wheel. The said groove begins at the point 5, Fig. 1, where the distance between the outer edges of the two tongue-rails 1 2 is equal to the distance between the wheel-flanges on one axle. If the points are only half-way adjusted and two wheels enter the gaps between the tongues and stock-rails, the tongue 1 guides one of the said wheels, and the other wheel is drawn inward and ascends the inclined surface of the groove to the upper edge of the tongue and then runs onto the inner edge of the said tongue. The tongue might be provided at this point with a transverse groove, but would be considerably weakened and crippled thereby. The wedge-shaped groove need only be provided at the outer edge of the straight tongue-rail, and if the distance

between the points at the ends of the tongue-rails is suitably selected the groove can always be placed in front of the bearing-section of the tongue, so that the latter is not weakened or crippled in a manner which will affect its normal wear and tear.

To prevent the knocking over of the tongue-rails by the powerful side pressure exerted by wheels running over a half-adjusted switch, the rods connecting the tongue-rails must be of sufficient strength and the tongues must be provided at their tails with strong wedge-shaped fish-plates 3 and 4, adapted to come into contact with the sides of the track-rails. These fish-plates also assist the wheels over the gaps between the tongue-rails and stock-rails.

I claim—

1. The combination with a railroad-switch of two press-rails 6 7 respectively, exterior to the outermost stock-rails, links 11 12 and lever 10, said press-rails, links and lever being so connected that when either press-rail is depressed, the other is elevated, beveled abutments on said lever 10 and corresponding beveled abutments on the switch-tongues adapted to coöperate, whereby the switch-tongue is thrown to that side on which the press-rail is elevated.

2. The combination with a railroad-switch of two press-rails 6 7 respectively exterior to the outermost stock-rails, links 11 12 and lever 10, said press-rails, links and lever being so connected that when either press-rail is depressed, the other is elevated, beveled abutments on said lever 10 and corresponding beveled abutments on the switch-tongues adapted to coöperate whereby the switch-tongue is thrown to that side on which the press-rail is elevated, means being provided on one of the switch-tongues intermediate of its ends to facilitate the passage of a contracting wheel-flange from the outer to the inner side thereof.

In witness whereof I have signed this specification in the presence of two witnesses.

JÁNOS SCHILHAN.

Witnesses:

VAINOR FUTIG,
LOUIS VANDORN.