(No Model.) 2 Sheets—Sheet 1.

M. S. PITTMAN.

RAILWAY SWITCH.

No. 565,921. Patented Aug. 18, 1896.

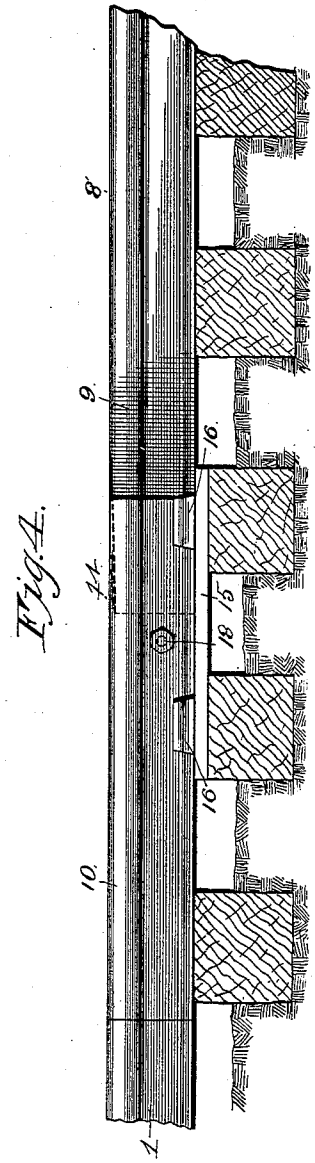

Fig. 4.

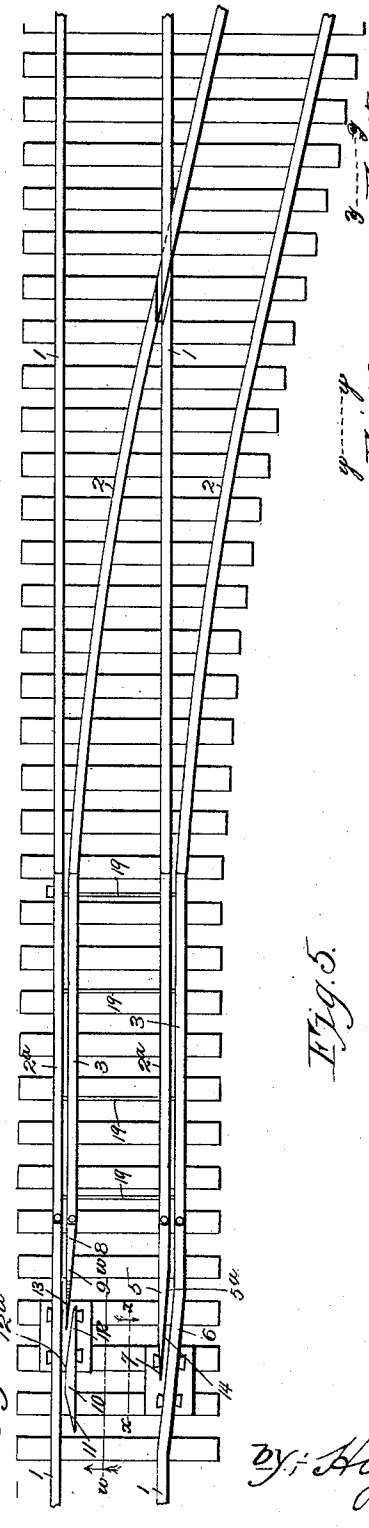

Fig. 1.

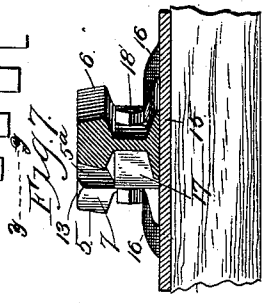

Fig. 7.

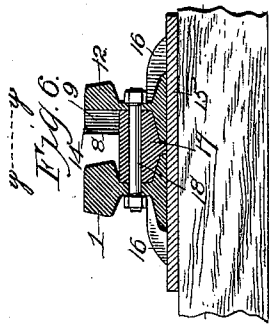

Fig. 6.

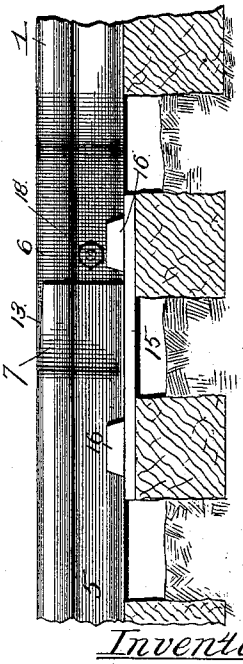

Fig. 5.

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(No Model.) 2 Sheets—Sheet 2.

M. S. PITTMAN.

RAILWAY SWITCH.

No. 565,921. Patented Aug. 18, 1896.

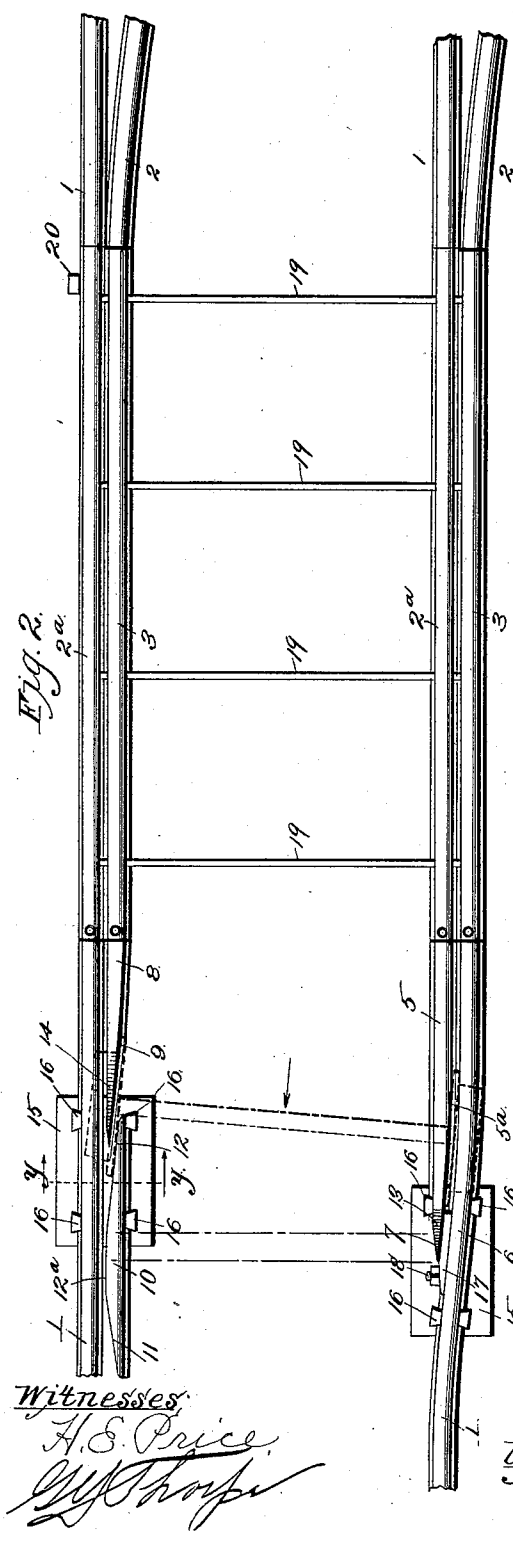

Fig. 2.

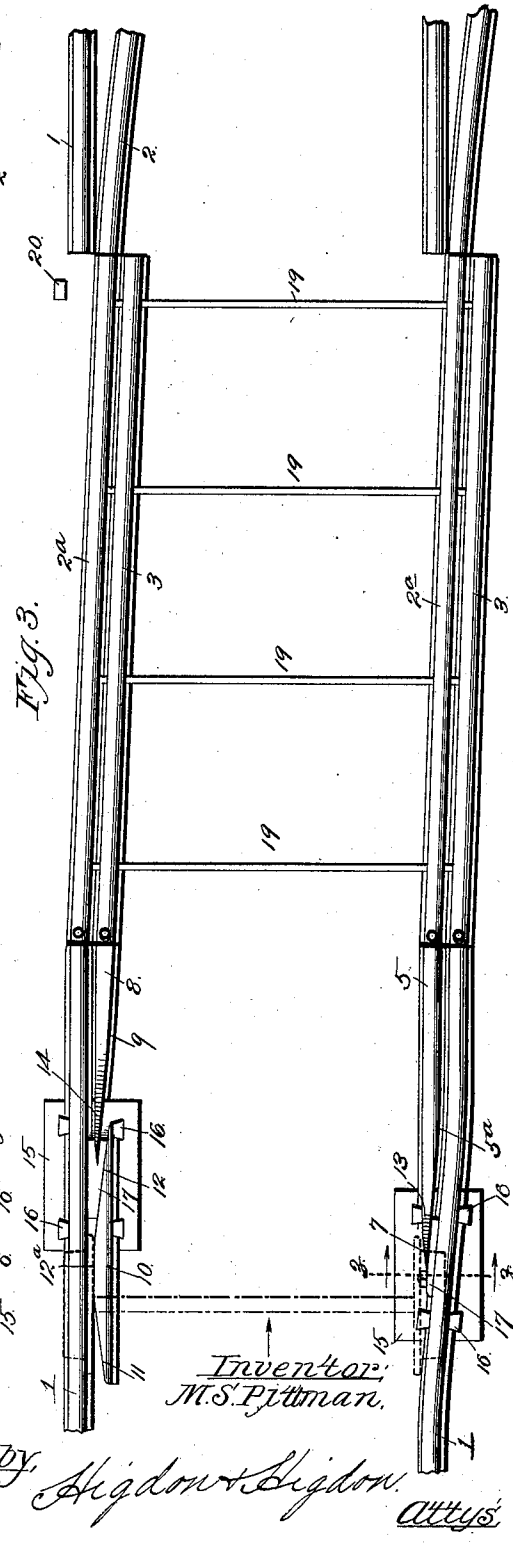

Fig. 3.

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UNITED STATES PATENT OFFICE.

MOSES S. PITTMAN, OF INDEPENDENCE, MISSOURI.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 565,921, dated August 18, 1896.

Application filed February 24, 1896. Serial No. 580,604. (No model.)

To all whom it may concern:

Be it known that I, MOSES S. PITTMAN, of Independence, Jackson county, Missouri, have invented certain new and useful Improvements in Railway-Switches, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to railway-switches; and my object is to produce a construction of this character whereby it will be impossible for a train passing along the main track or from a side-track onto the main track to become derailed, and impossible for it to pass upon any other but the desired track.

With this object in view the invention consists in certain novel and peculiar features of construction and combinations of parts, as will be hereinafter described and claimed.

In order that the invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 represents a plan view of a switch embodying my invention. Fig. 2 is a plan view of a portion of the structure shown in Fig. 1, and on a larger scale, and illustrates the relative position assumed by the wheels of the truck in passing from a side-track onto a main track. Fig. 3 is a similar view, but illustrates the truck-wheels passing in the opposite direction along the main track and occupying their proper relative positions. Fig. 4 is a sectional view, on an enlarged scale, taken on the line *w w* of Fig. 1. Fig. 5 is a sectional view taken on the line *x x* of Fig. 1. Fig. 6 is a cross-sectional view taken on the line *y y* of Fig. 2. Fig. 7 is a cross-sectional view taken on the line *z z* of Fig. 3.

Referring to the drawings, where like numerals designate corresponding parts, 1 designates the main-track rails. 2 designates the intersecting side-track rails, all of said rails being secured to cross-ties in the customary manner. The main-track rails at a suitable point are provided with movable switch-sections 2^a, and the side-track rails with similar movable switch-sections 3, which are arranged parallel to the sections 2^a and are pivoted at corresponding ends. Said rails 2^a and 3 are a distance apart preferably only sufficient to permit the flange of a wheel to pass freely between them. One of the main-track rails is provided with a short split-rail continuation 5, which is beveled at its outer side, as shown at 5^a, to correspond with the oblique and bent portion 6, which forms a portion of one section of one of the main-track rails 1 and connects the same with the pivoted end of the adjacent continuation 3 of the side-track rails. This oblique portion of the rail is arranged a distance from the beveled outer side 5^a of the short rail 5 corresponding to the distance between the rails 2^a and 3, or, in other words, said rails are a sufficient distance apart to permit the flange of a wheel to pass freely between them. The rail 5 is also beveled at its inner side, as shown at 7, so as to present the point or apex of said rail outward of the vertical plane of the inner side of the corresponding main-track rail, or so that the flange of a wheel passing along the main track in the direction indicated by the arrow, Fig. 3, will clear and pass inwardly of said pointed end, as shown clearly by dotted lines in the figure referred to.

8 designates a second short section of rail, and this section forms a continuation of the switch-sections 3 and the side-track rails, and is located opposite to the rail 5. Said rail 8 is shorter than the rail 5, for a purpose which will presently appear, and preferably is beveled only at one side, and is arranged so as to form an oblique surface 9, which extends approximately parallel with the inclined portion 6, hereinbefore referred to.

10 designates a guard-rail which is arranged in longitudinal alinement with the short rail 8, and at one end is beveled, as shown at 11, so as to diverge or flare away from the adjacent main-track rail, and at its opposite end it is beveled, as shown at 12, so as to flare away from the main-track rail in the opposite direction. It is also arranged so that this flared end or inclined surface 12 shall overlap at its inner side the pointed end of short rail 8 and shall extend parallel with the oblique side or surface 9 of the same. By thus beveling said guard-rail and locating it as described and illustrated it is obvious that the short unbeveled surface 12^a of said rail, which is arranged parallel with and adjacent

to the main-track rail, is opposite the break between the pointed end 7 of the rail 5 and the main-track rail 1. In fact, the said guard-rail is arranged so that said unbeveled surface 12^a overlaps slightly the pointed end of said rail 5, as illustrated by the dotted parallel lines, Fig. 2, so that when a train or a car is passing in the direction indicated by the arrow, Fig. 3, along the main track, the flange of the wheel to the left, which absolutely must pass between the main-track rail and the guard-rail 10 because of their relative arrangement, will cause the opposite wheel of the same axle to assume the position shown in dotted lines, same figure, where it will be noticed that the flange 7 is at the inner side of the beveled end of the rail 5, so that it is absolutely impossible for a car in traveling in the direction indicated to follow the oblique rail or section 6 and pass from the main track onto the side-track, as will be readily seen. It is equally obvious from the construction shown that a train traveling in the direction indicated by the arrow in Fig. 2 upon the side-track will positively and reliably be deflected from the side-track onto the main track, owing to the fact that the flange of the wheel to the left coming in contact with the oblique rail or section 6 will cause the truck to assume the position shown in said figure, the opposite wheel to pass positively and reliably between the beveled parallel surfaces 9 and 12 of the short rail 8 and guard-rail 10, respectively.

Owing to the fact that the rails 5 and 8 are beveled to a comparatively sharp point it is obvious that trains passing over them would soon, by continuous pounding, flatten them or so twist them that they would be unfit for service, and to obviate this I have beveled them downwardly toward the points at their upper sides, as illustrated more clearly in Figs. 4, 5, 6, and 7, the beveled surfaces of the rail 5 being represented by the numeral 13 and the beveled surface of the rail 8 being represented by the numeral 14. It is obvious from the relative position of the short rail 5 and the oblique section 6, connecting the main and side track, that a wheel in passing from the latter section of rail upon said short rail, owing to the width of its tread-surface, really bridges the point of said rail for some distance before it clears or leaves the said section 6 and rests fully upon said short rail, as will be clearly seen from reference to right-hand wheel in Fig. 3, where it will be noticed that the tread-surface for overlapping the point of the rail still rests squarely upon the inclined section of the rail 6. The same is true at the opposite side, where the wheel passes from said short rail 8 onto the main track 1. In this case, owing to the diminishing width of the short rail the tread of the wheel rides upon the main-track rail before it reaches the point or end of said short rail, and therefore the latter is relieved of the weight and the constant pounding of the wheels, as before explained. The split or pointed rails 5 and 8 and the guard-rail 10 may be spiked down into proper position relative to the adjacent track-rails and to each other, but for safety I prefer to secure them upon chair-plates 15, and said chair-plates may be secured to the cross-ties in the customary manner and will be provided with hooks or flanges 16 to engage the outer base-flanges of the main rails and the inner base-flanges of the pointed and guard rails to prevent the rails spreading apart. To prevent them moving inwardly, I will preferably employ separating-blocks 17 of any suitable form, through which and the adjacent rails securing-bolts 18 will extend.

From the foregoing it is obvious that a train may safely and reliably cross the intersecting points of the main track with the side-track without danger of getting onto the latter, or that it may pass from the side-track freely and reliably on the main track when going in the opposite direction without the manipulation of any switches or requiring any attention from those in charge of the train, and it is also obvious that this construction is applicable to street-car service as well as railway-train service.

When it is desired to switch a train from the main track to the side-track, it is only necessary to throw the switch-rails 2^a and 3, which are secured reliably together by tie-rods 19, or other suitable means, from the position shown in full lines, Fig. 2, to the position in full lines, Fig. 3, and when it is desired to permit a train on the main track to pass in an opposite direction these switch-rails must be moved back to their original position, and in so doing to prevent their moving beyond said original position I employ a stop-block 20 or an equivalent device. The principal object in arranging the track-rails 2^a and 3 close together is to get close to the depot or station where such switch is located. In moving said rails 2^a and 3 I may employ the ordinary switch-stand mechanism or any other mechanism suitable for the purpose, the precise means for accomplishing this being immaterial in this connection.

From the foregoing it is clear by duplicating this improved switch or track structure at suitable distances apart and by connecting them by a side-track at both ends, in the manner indicated in the drawings at one side only, that two trains traveling toward each other at any speed and reaching the switches at the same time will pass each other without the necessity of throwing any switches or requiring any attention on the part of the trainmen at all, as one will continue on the main track while the other will be deflected to the side-track, the latter train, after the passage of the other, pulling out upon the main track via the other switch automatically, and continuing its journey thereon; or in case the one traveling in the direction indi-

cated in Fig. 3 reaches the switch first it waits until the other has been deflected upon the side-track and then continues its journey. In case the other train arrives first it passes onto and remains upon the side-track until the one upon the main track passes. Again, in case a freight in advance and an express are traveling in the direction indicated by arrow in Fig. 3 the freight passes along the main track beyond the second switch and then backs upon the side-track until the express passes. The freight then pulls out upon the main track and follows the express.

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

1. A railway-switch comprising a main-track rail, a second main-track rail, a side-track rail connected to the second main-track rail by an oblique portion, a short rail forming a continuation of the main-track rail having one side beveled to correspond with the inclination of the oblique rail and the other side beveled as at 7 in the opposite direction so as to bring the point of the rail outward of the inner side of the corresponding main-track rail, a short rail forming a continuation of the other side-track rail and having one side beveled so that the rail may correspond to the inclination of said oblique rail, and a guard-rail arranged in longitudinal alinement with the last-named short rail and beveled at both ends; at one end so as to form an extension parallel with the pointed end of said short rail and at the other end so as to deflect the flange of the wheel upon the main rail toward said rail, having a short unbeveled surface at its outer side which extends parallel with said main rail and overlaps the point of the first-named short rail so that the wheel will be carried safely beyond its point and therefore continue upon the main-track rail, substantially as described.

2. A railway-switch, comprising a main-track rail, a second main-track rail, a side-track rail connected to the second main-track rail by an oblique portion, a short rail forming a continuation of the main-track rail having one side beveled to correspond with the inclination of the oblique rail and the other side beveled as at 7 oppositely so as to bring the point of the rail outward of the inner side of the corresponding main-track rail, a short rail forming a continuation of the other side-track rail and having one side beveled so that the rail may correspond to the inclination of said oblique rail, and a guard-rail arranged in longitudinal alinement with the last-named short rail and beveled at both ends; at one end so as to form an extension parallel with the pointed end of the short rail and at the other end so as to deflect the flange of the wheel upon the main rail toward said rail, having a short unbeveled surface at its outer side which extends parallel with said main rail and overlaps the point of the first-named short rail so that the wheel may be carried safely beyond its point and therefore continue upon the main-track rail, and switch-rails connected together and forming continuations of the main-track and side-track rails, substantially as and for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

MOSES S. PITTMAN.

Witnesses:
CHAS. W. CLARKE,
M. R. REMLEY.