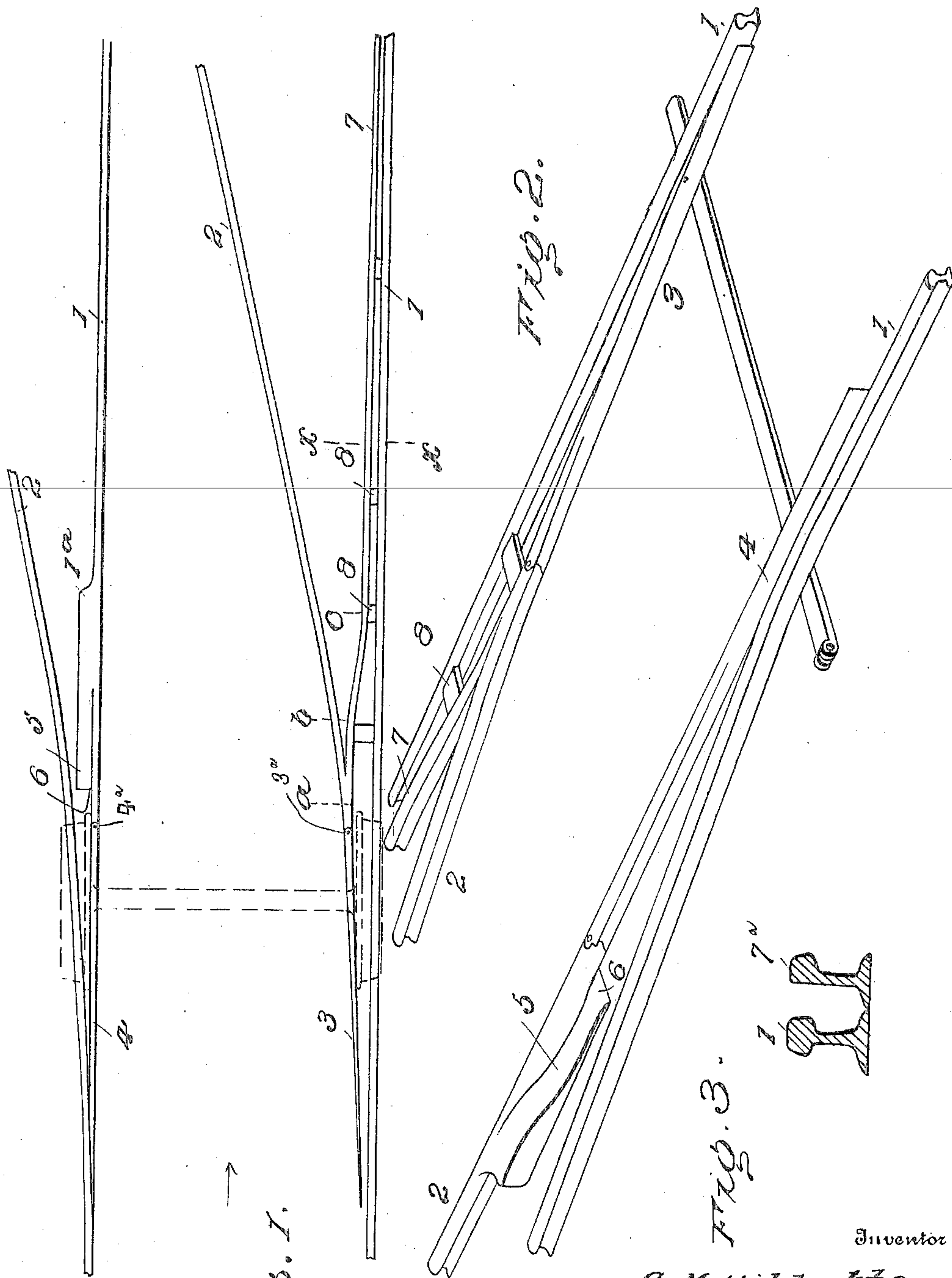


No. 797,772.

PATENTED AUG. 22, 1905.

C. M. HIBBETS.  
SWITCH.

APPLICATION FILED FEB. 21, 1905.



Witnesses

*James W. Woodson*

Fig. 1.

By

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Fig. 3.



# UNITED STATES PATENT OFFICE.

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## SWITCH.

No. 797,772.

Specification of Letters Patent.

Patented Aug. 22, 1905.

Application filed February 21, 1905. Serial No. 246,723.

*To all whom it may concern:*

Be it known that I, CHARLES M. HIBBETS, a citizen of the United States, residing at Washburn, in the county of Armstrong and State of Texas, have invented certain new and useful Improvements in Switches, of which the following is a specification.

Many serious accidents occur every year by derailing of trains, due to what is commonly called "splitting a switch." As is well known, a switch leading off to a siding or sidings is sometimes half-open, due to spreading of the rails, defective switches, or similar causes, and when the above condition of affairs is present wheels at one side of a car or other rolling-stock are caused to take a siding-rail, whereas the wheels upon the other side of the car hold to the main rail, the invariable result being a derailment of the car and wreckage, giving rise to loss of life.

This invention obviates likelihood of derailment by splitting the switches, so as to thereby secure a means for preventing the rolling-stock from being thrown from the tracks from this cause with advantages of obvious import.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings.

While the invention may be adapted to different forms and conditions by changes in the structure and minor details without departing from the spirit or essential features thereof, still the preferred embodiment thereof is shown in the accompanying drawings, in which—

Figure 1 is a plan view of an ordinary type of split switch, the same being modified in accordance with the invention. Fig. 2 is a perspective view showing the invention. Fig. 3 is a sectional view bringing out more clearly the form of the guard-rail preferably utilized in connection with the invention.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

In the drawings the numeral 1 designates the main rail of a track, and the numeral 2 the siding-rail. The switch is of a class at present in common use in general construction, the siding switch-point being indicated at 3 and the main-rail switch-point being in-

dicated at 4. Upon the outer side of the main rail at a point adjacent the switch-point 4 said rail is provided with a lateral wing 5, which may be rolled or cast with or independently of the rail and which extends from the rail several inches, dependent upon the size of the latter, said points being pivoted to adjacent siding and main rails, as shown at 3<sup>a</sup> and 4<sup>a</sup>, respectively. The wing 5 is several feet in length and extends between the main rail, from which it is projected, and the adjacent pivot of the siding-rail near the heel of switch-point, at which the said rails come together or converge. The end portion of the wing 5 adjacent the main-rail switch-point 4 is in a plane lower than the opposite end portion, as shown at 6, the upper side of the wing inclining upward toward the extremity remote from the switch-point 4 aforesaid. The ball or head of the main rail 1, extending from the wing 5, is of larger formation than the ordinary head or ball of a rail in order to facilitate the movement of the car-wheels toward a proper position upon the said main rail in the actual use of the invention.

The enlarged portion of the main rail is indicated at 1<sup>a</sup> and preferably extends all the way from the wing 5 to the frog of the switch, the latter not being illustrated. A guard-rail 7 is used in connection with the switch, and the form of this guard-rail comprises an essential feature of the invention. The rail 7 is located upon the inner side of the main rail 1 opposite that having the wing 5 and in spaced relation to said main rail. Said guard-rail extends from a point adjacent to the switch-point 3 to a point diametrically opposite the heel of the frog of the switch preferably, and this guard-rail is rigidly secured to the adjacent main rail 1 by suitable means. The side of the guard-rail facing the adjacent main rail is preferably flat, the head portion being reduced, as shown at 7<sup>a</sup>, this being advantageous in that the foot of a person is not likely to be caught between the guard and main rails, with resultant injury. Substantially the same form of guard-rail as described above may be obtained by enlarging the web of the guard-rail on the inner side, so as to make the same flush with the side of the head of the rail. If caught, such member may be readily extricated, because of the formation of the rails as above described. Preferably a number of spacing-blocks 8 are disposed at intervals between



the guard-rail 7 and the adjacent main rail of the track, and transverse bolts are utilized to secure the rails 1 and 7 together in such a manner as to subserve the rigidity thereof and to hold the same in proper spaced relation.

The guard-rail 7 is of peculiar form, the end portion of said rail adjacent the extremity which meets the adjacent siding-rail 2 being parallel with the main rail a distance about equal to the length of the wing, as indicated at *a b*, and then deflected or extended diagonally with reference to the adjacent main rail 1. In other words, the end portion of the guard-rail diametrically opposite the wing 5 is parallel therewith, after which it is inclined or extends at an angle to the adjacent main rail 1 for quite a number of feet, thence extending parallel with said main rail to its terminus opposite the frog of the switch. The portion of the guard-rail 7 which is deflected or inclined with relation to the adjacent main rail 1 is indicated on the drawings between the designations *b c*.

The above describes the structural features of the switch which constitutes this invention, and in actual use the advantages for novel parts above described will be apparent. For instance, as shown in Fig. 1, the switch-points 3 and 4 are located half-open or half-closed, so that under ordinary conditions the car passing over the main line in the direction of the arrow can take neither the siding nor main line, but will "split the switch." The wheels at one side of the trucks of the car will pass to the outer siding-rail 2 adjacent the main-rail switch-point, whereas the wheels upon the opposite side of the trucks will hold to the main line. The above would ordinarily result in derailment of the car or cars; but the provision of the member 5 and the peculiar guard-rail 7 will prevent the above. The size of the wheels of the truck is such that a portion of the wheels will hold to the main rail adjacent the siding switch-point 3, and since the guard-rail 7 is located adjacent the switch-point 3 said guard-rail will engage the wheels at a point between *a b* and prevent lateral movement thereof, which might entirely throw said wheels from the adjacent main rail. Further, as the portion of the guard-rail with which wheels on one side of the truck next come into contact is deflected laterally or toward the adjacent main rail 1 (between *b c*) the engagement of this portion of the guard-rail with the inner rim portion of the wheels will have a tendency to throw the wheels of the opposite side of the truck wholly upon the main rail when such wheels are brought flush with the rail 1 and are traveling on the ball portion 1<sup>a</sup>, extending from said wing 5. While the portion *b c* of the guard-rail 7 is tending to force the wheels with which it engages laterally, the wheels at the opposite side of the truck riding upon the

head portion 1<sup>a</sup> of the rail 1 will be gradually forced laterally by the deflected portion *b c* of the rail 7, above mentioned. The head portion 1<sup>a</sup> of the rail 1 being enlarged will give sufficient bearing for the wheels received upon the wing 5 until the deflected portion *b c* of the rail 7 has caused these wheels to be thrown into proper position upon the main track, the constant pressure of the wheels engaging the guard-rail and the play which is ordinarily allowed wheels less the gage of the track being such as to facilitate the proper rerailment of the car.

The reason for the inclination of the wing 5 is to more readily admit of the flanged portion of the car-wheels passing onto the wing, said flanges of course extending from the plane of the rim of the wheel somewhat more than an inch in the general formation of wheels of this class. The exact measures of the parts 5 and the relative distances between the guard-rail 7 and the adjacent main rail are not given, since the same are varied according to the size of the rails used for the track and dependent upon their actual existing conditions.

The wing 5 is preferably horizontal for the first few feet of its length, extending from the heel of the adjacent switch-point, so as to admit of the flanges of the car-wheels readily clearing the wing when trains are switching. The remote end of the wing will of course be flush with the surface of the portion 1<sup>a</sup> of the rail 1, as before premised.

Having thus described the invention, what is claimed as new is—

1. In means of the class described, the combination of the main rails 1, the siding-rails 2, the siding switch-point 3 and the main-rail switch-point 4 pivoted at 3<sup>a</sup> and 4<sup>a</sup> respectively, the integral wing 5 projecting outwardly from the main rail 1 to which the switch-point 4 is pivoted and extending from a point adjacent the pivot 4<sup>a</sup> some distance longitudinally of the said rail 1 and inclining upwardly in its length, the guard-rail 7 spaced from the inner side of the main rail 1 adjacent the switch-point 3 and joining the siding-rail 2 to which said switch-point 3 is secured near the pivot 3<sup>a</sup> thereof, and spacing-blocks between the guard-rail 7 and the adjacent main rail 1.

2. In means of the class described, the combination of the main rails 1, the siding-rails 2, the siding switch-point 3 and the main-rail switch-point 4 pivoted at 3<sup>a</sup> and 4<sup>a</sup> to respective siding and main rails, the integral wing 5 projecting outwardly from the main rail 1 to which the switch-point 4 is pivoted and extending from a point adjacent the pivot 4<sup>a</sup> longitudinally of the said rail 1, this wing 5 having the upper surface of the end portion nearer the pivot 4<sup>a</sup> extending horizontal for some distance, the upper surface of the wing inclining upwardly from the hori-

zontal portion aforesaid until about flush with the top of the head of the adjacent main rail 1, the guard-rail 7 spaced from the inner side of the main rail 1 opposite the switch-point 4 and having the side thereof facing this main rail flat from the base upward, the siding-rail 2 having the switch-point 3 meeting the guard-rail 7 near the pivot 3<sup>a</sup>, said guard-rail 7 being deflected or extended diagonally from adjacent siding-rail 2 at that

portion of the rail 7 diametrically opposite the wing 5, and the blocks 8 arranged in the space between the guard-rail 7 and adjacent main rail 1 and secured thereto.

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

CHARLES M. HIBBETS. [L. s.]

Witnesses:

W. E. HEIZER,  
G. M. JAMES.