

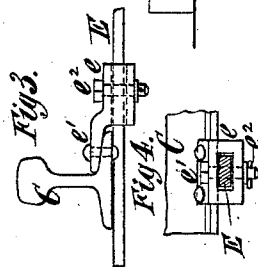
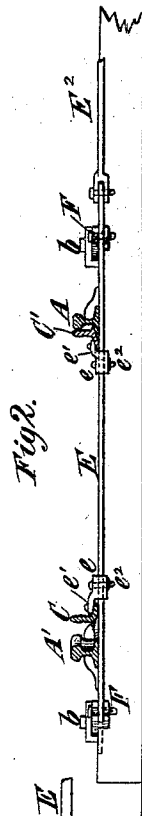
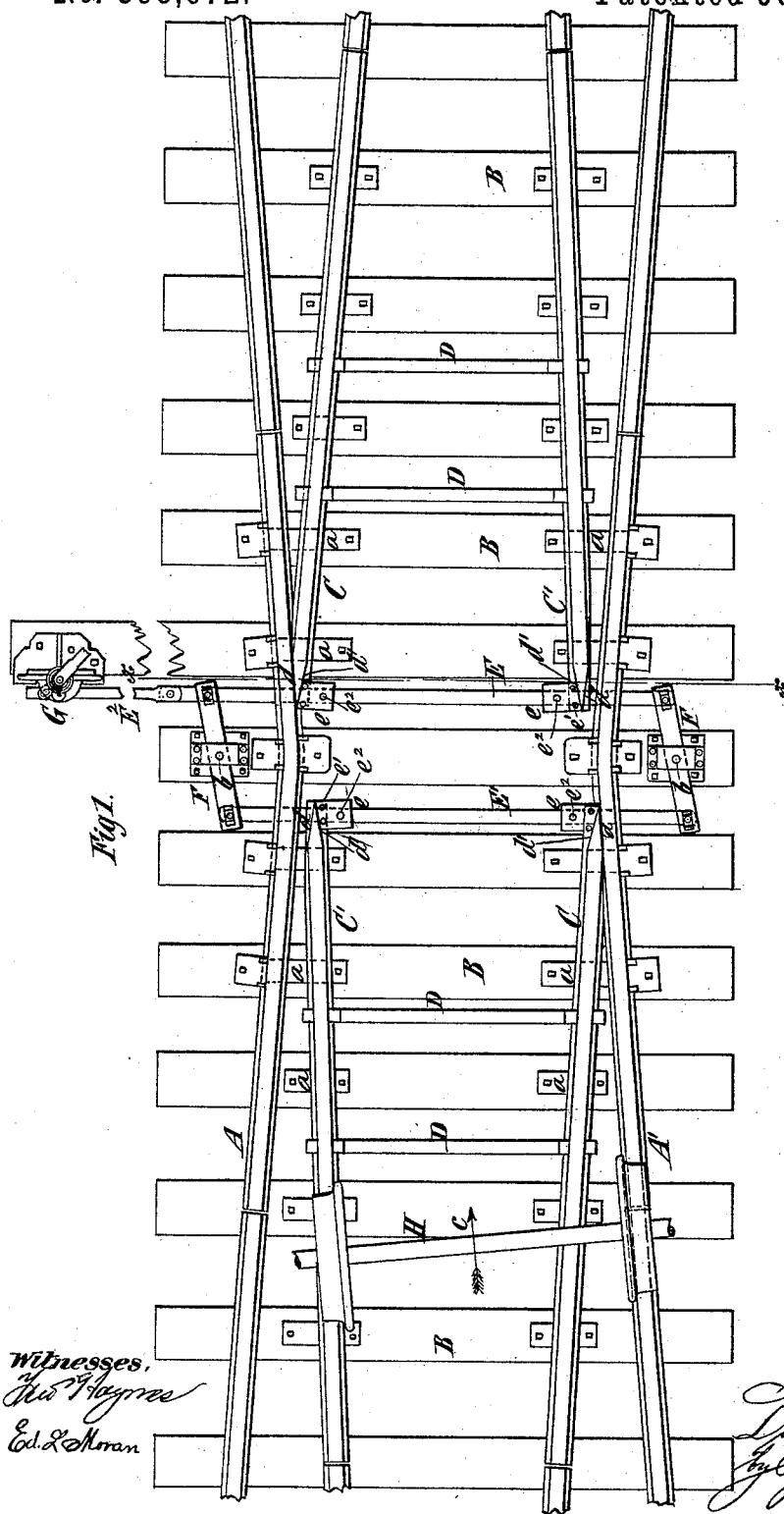
(No Model.)

D. TRACY.

DOUBLE SAFETY SWITCH CROSSING.

No. 395,672.

Patented Jan. 1, 1889.



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# UNITED STATES PATENT OFFICE.

DWIGHT TRACY, OF SUFFERN, NEW YORK.

## DOUBLE SAFETY-SWITCH CROSSING.

SPECIFICATION forming part of Letters Patent No. 395,672, dated January 1, 1889.

Application filed September 20, 1883. Renewed May 17, 1888. Serial No. 274,196. (No model.)

*To all whom it may concern:*

Be it known that I, DWIGHT TRACY, of Suffern, in the county of Rockland and State of New York, have invented a new and useful  
5 Double Safety-Switch Crossing, of which the following is a specification.

My invention relates to double-switch crossings in which the two switches, which are placed opposite each other, are connected so  
10 that the movement of one switch will produce a simultaneous movement of the other switch in a reverse direction. In such switch-crossings the two fixed rails are bent so that each forms a part of the main track and a part of  
15 the cross-track, and the two pairs of movable switch-rails placed opposite each other serve, in conjunction with the bent fixed rails, to form the main and cross tracks. The gage of the wheels is always somewhat less than the  
20 track, and consequently the wheels acting on the movable rails of one switch will not quite complete the setting of the opposite switch in case the switches have been wrongly set. Hence there has been a liability of the wheels  
25 running on the wrong sides of the switch-rails and so wrecking the train.

An important object of my invention is to prevent such accidents; and the invention consists in the combination of parts herein-  
30 after particularly described, and pointed out in the claims.

The invention also consists in a connection of novel form between the switch-rails and their tie-bars, which permits of the use of ordi-  
35 nary straight merchant-bar iron for the tie-bars and allows the necessary play at the junction of the tie-bar and switch-rails. This feature in my invention is applicable to switches generally.

In the accompanying drawings, Figure 1 is a plan of a double safety-switch crossing embodying my invention. Fig. 2 is a transverse  
40 section on the dotted line *xx*, Fig. 1. Fig. 3 is an end view of a rail and a side view of a tie-bar connected therewith according to my invention, and Fig. 4 is a transverse section of the tie-bar and a side view of the base portion  
45 of the rails.

Similar letters of reference designate corre-  
50 sponding parts in all the figures.

A A' designate the two bent and fixed rails of the crossing, the part A of each rail form-

ing a part of the main track, and the part A' of each rail forming a part of the cross-track. These rails are fixed to the ties B in any suitable manner. The two oppositely-arranged  
55 switches each comprise two movable switch-rails, C C', connected by rods D in a well-known manner. The switch-rails C, in connection with the portions A of the fixed rails, may be con-  
60 sidered as the main track, and the switch-rails C', in connection with the portions A' of the fixed rails, may be considered as the cross-track. To the ties B are fixed sole-plates *a*, on which the switch-rails C C' move.  
65

E E' designate the moving tie-bars, to which are connected the rails C C' of the two switches, and which are themselves connected to opposite ends of levers F, which are fulcrumed at  
70 *b*, so that the tie-bars are always caused to move simultaneously, but in reverse directions.

To the moving tie-bar E is connected the switch-operating rod E<sup>2</sup>, through which the switches are operated by the switch-stand G  
75 This switch-stand is what is known as a "safety-stand"—that is, it is so constructed that when the switches are set and locked and a train approaches on a track for which the switches are not set the stand will permit the  
80 switches to be shifted automatically by the wheels of the train to allow the train to pass in safety.

The stand G may be constructed like the one which forms the subject of Letters Patent  
85 No. 249,422, granted to me November 8, 1881, or like the one which forms the subject of my application for Letters Patent filed July 12, 1883, and of which the serial number is  
90 100,707.

As shown in Fig. 1, the switches are set for the passage of a train in either direction over the main track A C. If, however, a train be  
approaching, as indicated by the arrow *c* on the axle and wheels H on the cross-track A' C', the wheels will shift the rails C C', which  
95 are connected by the tie-bar E', in one direction and the rails C C' of the outer switch in the reverse direction, thus automatically setting the switches so as to allow the train to  
100 pass safely on the cross-track A' C'. The same operation would take place no matter in which direction the train on the cross-track approaches the crossing, and hence perfect

safety is secured for trains running on both the main and cross tracks and in either direction.

In all cases the gage of the wheels is somewhat less than the rail-gage, and hence the switches are liable not to be completely set by the wheels of the train. In such case there would be danger of the wheels striking on the wrong sides of the switch-rails and so wrecking the train. To obviate this difficulty, I not only bevel the points of the switch-rails C C' on the outer sides, *d*, or the sides next the portions A A' of their adjacent rails, but I also bevel said switch-rails on their inner sides, *d'*. By thus beveling the switch-rails on their inner sides the possibility of the wheels striking the switch-points is precluded.

I may connect the switch-rails C C' with their tie-bars E E' in any suitable manner, but prefer to employ the connection best shown in Figs. 3 and 4, but also shown in Figs. 1 and 2. This connection consists of a sleeve, *e*, which fits loosely on the tie-bar and which has a flange, *e'*, riveted to the switch-rail C or C'. The sleeve *e* is secured to the bar by a bolt or pin, *e*<sup>2</sup>, and ample play is afforded between the said sleeve and the tie-bar. By the use of this sleeve-connection I am enabled to use for the tie-bars ordinary merchant-bars cut to proper lengths and re-

quiring no forging, and thus enable the switch to be cheaply made.

I do not claim, broadly, a switch-rail having its point beveled on both sides, nor do I claim, broadly, the combination, in a double-switch crossing, of two pairs of switch-rails placed opposite each other and connected so as to move simultaneously in reverse directions; but

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

1. The combination, in a double-switch crossing, with the bent fixed rails A A', each forming parts of two tracks, of the pairs of movable switch-rails C C', placed opposite each other and having their points beveled on both their inner and outer sides, and connections between the two pairs of movable rails whereby they are caused to move simultaneously in reverse directions, substantially as herein described.

2. The combination, with a switch-rail and its tie-bar, of a connection between the two, consisting of a sleeve loosely fitting on and secured to the bar and provided with a projecting flange or ear, which is secured to the rail, substantially as described.

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Witnesses:

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