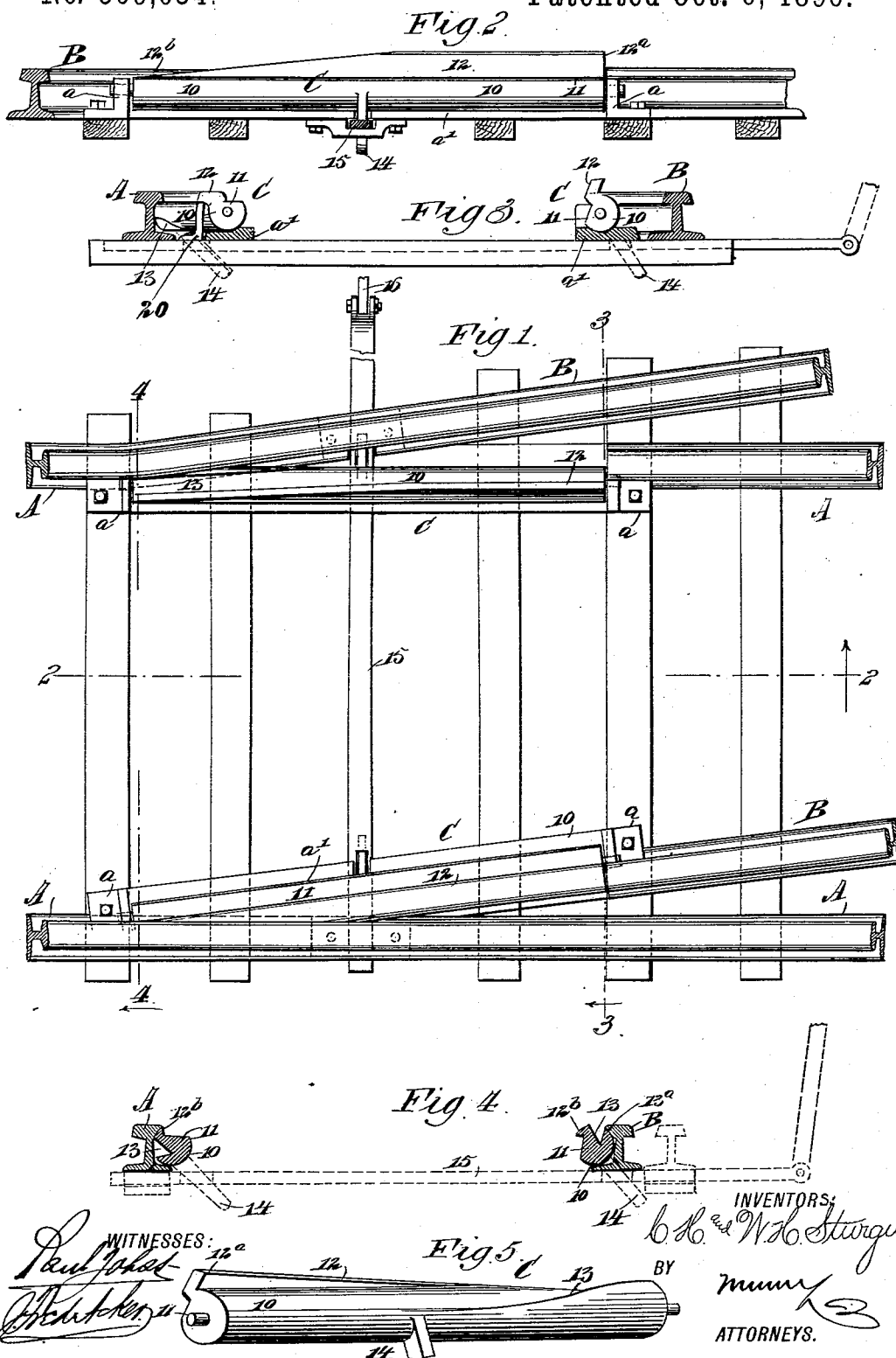


(No Model.)

C. H. & W. H. STURGIS.
RAILWAY SWITCH.

No. 569,034.

Patented Oct. 6, 1896.



UNITED STATES PATENT OFFICE.

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MICHIGAN.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 569,034, dated October 6, 1896.

Application filed June 18, 1896. Serial No. 595,991. (No model.)

To all whom it may concern:

Be it known that we, CHARLES H. STURGIS and WILBUR H. STURGIS, of Swartz Creek, in the county of Genesee and State of Michigan, have invented a new and useful Improvement in Railway-Switches, of which the following is a full, clear, and exact description.

The object of our invention is to provide a railway-switch which will have a rocking instead of the usual sliding lateral movement, the switch being simple, durable, and economic, and so constructed that it will not be affected by snow and ice and will be safe under all conditions.

A further object of the invention is to so shape the switches that the point of the switch thrown from the rail will have a surface adapted to be engaged by the wheel-flanges of a passing train, in such manner as to prevent a possible accidental displacement of the switches when the train first reaches them or while the train is in transit over them.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of a portion of a railway-track having the improved switch applied. Fig. 2 is a section taken centrally between the rails of the track, the said section being taken on the line 2 2 of Fig. 1. Fig. 3 is a transverse section taken, essentially, on the line 3 3 of Fig. 1. Fig. 4 is a transverse section taken, substantially, on the line 4 4 of Fig. 1, and Fig. 5 is a detail perspective view of one of the switches viewed from its under side.

In the drawings the rails of the main track are designated as A and the siding-rails as B, the arrangement of the main and siding rails being as usual. The switches C are placed in substantially the usual way to provide a transfer from the main line to the siding or from the siding to the main line, and the contracted ends of the rails of the switches are placed close to and inside of the main rails adjacent to where the siding-rails are to

connect with the main rails, one of the said switches extending from the continuous main rail A to the broken extension of the same, and the other switch extends from the opposite continuous main rail to the siding-rail, as illustrated in Fig. 1. Both of these switches are journaled at their ends in suitable bearings *a*, secured to the sleepers or ties, and preferably the bearings for each of the switches are connected by a horizontal brace-plate *a'*, the said brace-plates being usually provided with a longitudinal concavity in the central portion of their upper faces, as best shown in Fig. 3.

Each switch consists of a body-section 10, having a cylindrical or semicircular bottom and sides, and trunnions are located at each end of the said body to enter the aforesaid bearings *a*. The top 11 of the body is flat from end to end, and the switch-rail 12 is either attached to the upper portion of the body 10 or is made integral therewith, as illustrated in the drawings.

The switch-rails 12 taper from one end in direction of the other, terminating at one extremity in a point 12^b, which is located at that end of the switch which is adjacent to the convexed portion of the main track, and the opposite or wider end 12^a of each switch-rail 12 is located adjacent to the rail to which the transfer is to be made.

The switch-rails 12 at their wider ends extend over and beyond the outer faces of the body portions 10 of the switches, as shown particularly in Fig. 5, and are supported by one or more rests 20, which are fastened to the ties, thus keeping the projecting switch-rail from turning below the level of the stationary rails A and B. The distance that the switch-rails project beyond their bodies gradually diminishes until at the pointed ends of the switch-rails their outer faces are practically flush with and form substantially a continuation of the circle of the outer face of the base.

The track-rails, adjacent to the ends of the switches carrying the contracted ends of the switch-rails, are cut away upon their inner faces, as illustrated in Fig. 4, so that when a switch is thrown toward the outer rail B, for example, the outer cylindrical side of that

switch will pass the under face of the head of the track-rail freely and permit the outer side face of the contracted portion of the switch-rail to press against the said track-rail, as shown at the right in Fig. 4.

In the outer side face of the body portion 10 of each switch, at a point below the upper surface bearing the contracted end of the switch-rail 12, a groove or channel 13 is produced in said body, longitudinally thereof and having substantially a spiral direction, the highest point of the groove being at the end of the body, the said groove diminishing in depth until it finally vanishes at a point near the center of the body. This groove is V-shaped in cross-section, and at the end of the body forms a point or a flange 13^a, which, when the switch is thrown from the rail, as shown at the right in Fig. 4, will enter the cut-away portion of the rail, heretofore referred to, and will extend upward nearly to the top of the rail-head, and the wheel-flanges of a passing train, when they enter a switch or when they leave it, according to the direction in which the switch is approached, will engage with the inner face of this flange 13^a and will serve to hold that switch in the position to which it was thrown, consequently preventing the shifting of the opposite switch, since both of the switches are connected and are simultaneously operated.

It is obvious that under this construction of a switch it cannot be clogged by snow and ice, since there is no possibility of snow being packed between the switches and the track-rails. The brace-plates *a'* serve to strengthen and support the switches throughout their length, so that there can be no possibility of their sagging, no matter what weight is carried over them or how rapidly the train may be traveling.

The body portion of each switch is preferably provided with one more downwardly-extending arms 14, and these arms are in pivotal connection with one or more shifting bars 15, the said shifting bar or bars being carried beyond one side of the track and connected with and operated through the medium of a single lever 16 of any approved type.

When one of the switch-rails of a switch is in engagement with an outer main rail, the switch-rail of the opposite switch will be carried out of contact with the opposing outer rail, as shown in Figs. 1, 3, and 4, while, as heretofore stated, the switch whose rail is out of engagement with the outer track-rail will have its flange in engagement with that rail. Under such a construction the switch is made perfectly safe under all conditions, it is easily operated, requires but little power, and may be economically made.

The throw of the switches may be regulated as in practice may be found desirable. In the drawings the arms 14 from the body of the switches are shown as being passed downward through slots in the shifting bar 15.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. In a railway-switch, a switch member mounted to rotate between adjacent ends of a track-rail, the said switch member comprising a body having a rounded bottom and sides and a flat top, and a switch-rail located upon the flat upper portion of the body, extending beyond a side of the body at its wider end and being substantially flush with the said body at its contracted end, as and for the purpose set forth.

2. In railway-switches, a switch member mounted to rotate between adjacent ends of a track-rail, the said switch member consisting of a body having a flat top and rounded bottom and sides, a plate located beneath the switch member and having its upper surface curved for continuous engagement with the aforesaid body of the switch member, and a switch-rail located upon the upper portion of the said body, extending at its wider end beyond the body, the narrower end of the switch-rail being substantially flush with the side of the body, as and for the purpose set forth.

3. In a railway-switch, a switch member adapted to rotate between adjacent ends of a track-rail, the said switch member consisting of a body portion having its sides and bottom rounded, and provided with a flat top and a tapering V groove in its outer side, and a switch-rail secured to the top of the body, the wider end of the switch-rail extending beyond the outer side face of the body, the pointed end of the switch-rail being substantially flush with the inner wall of the aforesaid groove in said body, as and for the purpose set forth.

4. A switch having main and switch rails and two switch members or points forming continuations of the switch-rails and mounted to rock in the operation of the switch, each switch member or point having a rail formed thereon and the switch members being connected with opposite disposition whereby when the rail of one switch member or point is engaged with the main rail the rail of the remaining switch member or point will be out of engagement with the remaining adjacent main rail, substantially as described.

5. A switch having main and switch rails and two switch members or points forming continuations of the switch-rails, the switch members or points being mounted to rock and to carry the wheels of the car during its passage over the switch, the switch-rails being constructed to throw the wheels from one track to the other and being oppositely disposed to each other and connected to turn simultaneously, substantially as described.

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Witnesses:

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