S. D. MULLENS.

RAILWAY SWITCH.

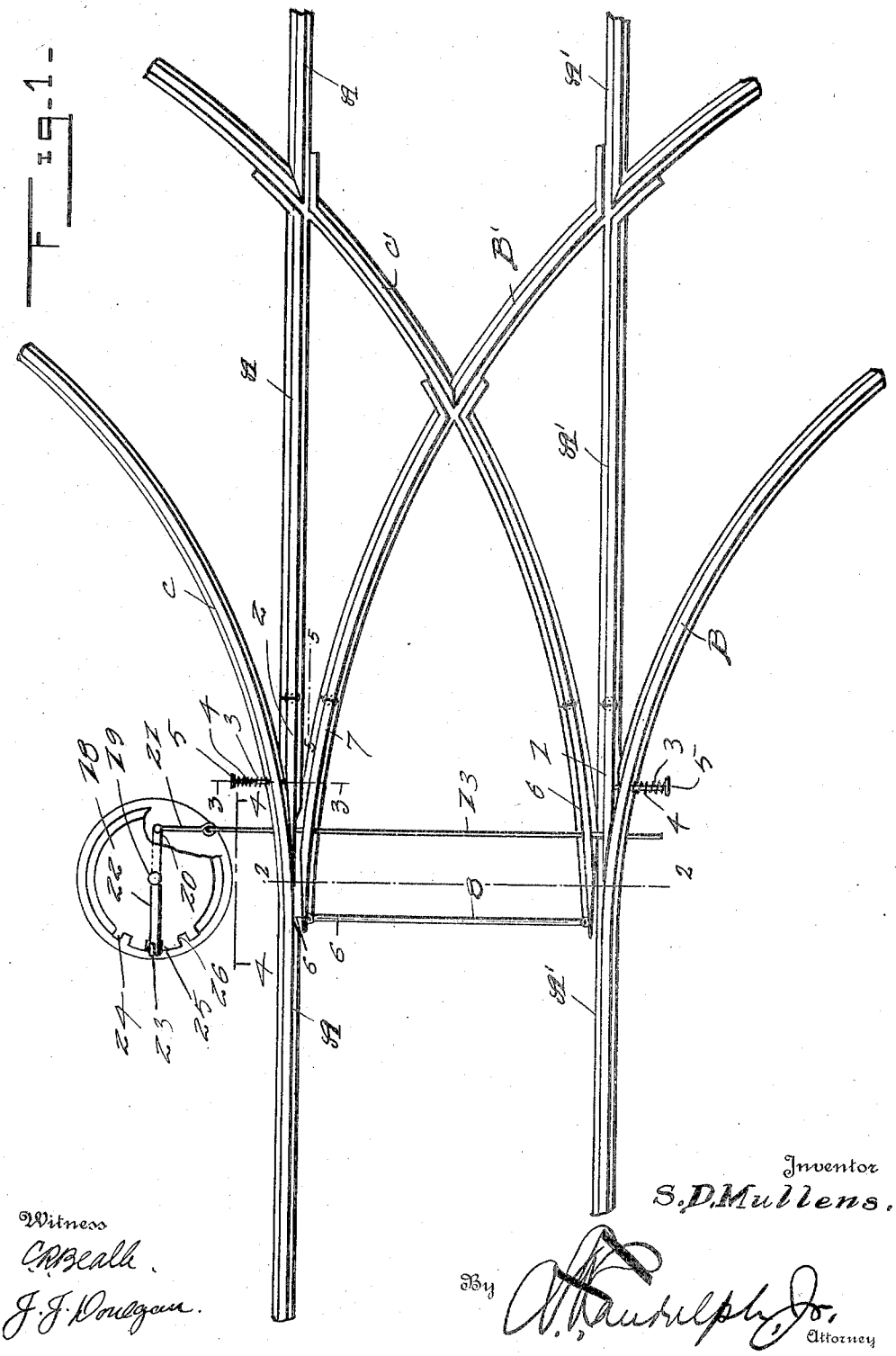
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1,291,084.

Patented Jan. 14, 1919.

2 SHEETS—SHEET 1.

Fig. 1.



Witness

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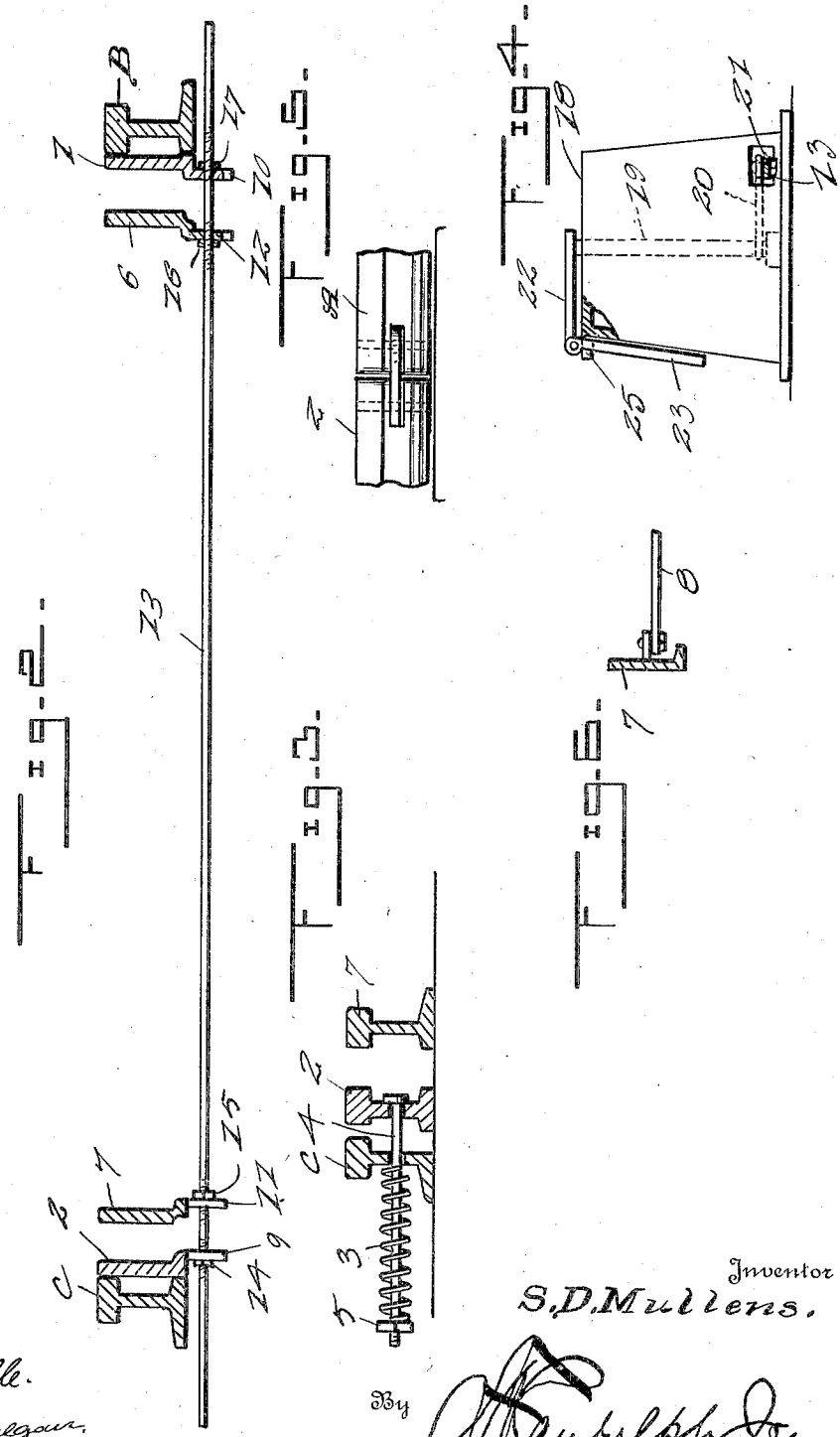
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UNITED STATES PATENT OFFICE.

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RAILWAY-SWITCH.

1,291,084. Specification of Letters Patent. Patented Jan. 14, 1919.

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To all whom it may concern:

Be it known that I, SANFORD D. MULLENS, a citizen of the United States, residing at Craneco, in the county of Logan and State of West Virginia, have invented certain new and useful Improvements in Railway-Switches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to railway switches of the "three-way" switch point type, adapted particularly to be employed in mine railways; and an object of the invention is the provision of novel and efficient operating mechanism for the switch points, which includes novel means for holding the points in a set position.

Another object of the invention is the provision of a switch of this type which includes a pair of relatively movable switch points normally held, by resilient means, in closed position with the main line of a track.

Other objects will appear and be better understood from that embodiment of my invention of which the following is a specification, reference being had to the accompanying drawings, in which:

Figure 1 is a plan view of a three-way switch and operating mechanism therefor,

Fig. 2 is a section on the line 2—2 of Fig. 1,

Fig. 3 is a section on the line 3—3 of Fig. 1,

Fig. 4 is a section on the line 4—4 of Fig. 1,

Fig. 5 is a section on the line 5—5 of Fig. 1,

Fig. 6 is a detail section on the line 6—6 of Fig. 1.

Referring to the drawings in detail, the letters A and A′ designate the rails of the main line, B and B′ the respective rails of a branch leading from one side of the main line, and C and C′ the respective rails of another branch extending in a direction opposite the first branch.

The rails A and A′ include a pair of movable switch points, designated 1 and 2, which have their free ends normally lying in engagement with the inner sides of the communicating points between the main rails A and A′ and the outer rails B and C of the respective branches. The points 1 and 2 are held in this position by means of expansive helical springs 3, which surround the outer ends of rods 4, which slidably extend through openings in the webs of the outer rails B and C of the respective branches and have their inner ends connected to the switch points 1 and 2. Heads 5 are carried by the outer terminals of the rods 4. The springs 3 are interposed between the heads 5 and the adjacent rails B and C, and exert an outward force on the heads 5 so as to effect tight engagement between the switch points 1 and 2 and the adjacent rails. The inner rails B′ and C′ of the respective branches include movable switch points, designated, respectively, 6 and 7. The free ends of the switch points 6 and 7 extend beyond the free ends of the points 1 and 2 and have connection with each other by means of a transverse rod 8. The switch points 6 and 7 move in unison. Thus when the points are moved in the direction of the rail A, on the main line, the point 7 will engage the inner side of the rail A, and the point 6 will lie in spaced relation to the rail A′. When the point 7 is in engagement with the inner side of the rail A of the main line, the branch rail B′ will be in communication with the rail A of the main line, and the rail A′ of the main line will be in communication with the other branch rail B, so as to admit of a train passing from the main line onto the branch defined by the rails B and B′, or vice versa. Likewise, when the switch point 6 is engaged against the rail A′ of the main line, and the opposite switch point 7 is in spaced relation with the adjacent rail A of the main line, the branch formed by the rail C and C′ will be in communication with the main line.

The switch points 1 and 2 are provided, adjacent their free ends, with a pair of depending lugs, designated, respectively, by the numerals 9 and 10. The switch points 6 and 7 are provided with depending lugs, designated, respectively, 11 and 12, which are arranged in opposing relation with the lugs 9 and 10. An operating rod 13 is located below the points of communication between the rails A and C and the rails A′ and B, and slidably extends through openings

in the lugs 9, 10, 11 and 12. A pair of stops, designated 14 and 15, lie on the outer sides of the depending lugs 9 and 11 carried by the switch points 2 and 7, and are adjustable on the rod 13. A second pair of stops, designated 16 and 17, lie on the outer sides of the lugs 12 and 10, and are adjustably mounted on the bar 13. When the rod 13 is moved in the direction of the rail A on the main track, the stop element 15 will engage the adjacent lug 11 on the switch point 7, and effect movement of the switch point 7 into engagement with the rail A. The stop element 17 on the opposite end of the rod will engage the lug 10 on the adjacent switch point 1 and withdraw the switch point 1 from engagement with the adjacent rail A'. When the switch point 7 is in engagement with the adjacent rail A on the main line, and the switch points 1 and 6 are in spaced relation to the main rail A', the main line, and the rails A—A and B and B' will be in communication, so as to admit of a train passing from the main line onto the siding, or vice versa. When the operating rod 13 is moved in the direction of the rail A', the elements 14 and 16 will engage the adjacent lugs 9 and 12 on the switch points 2 and 6 and effect movement of the switch point 2 to open position. The element 17 will be moved from engagement with the adjacent lug 10 on the switch point 1, and the spring 3 on the rod 4 carried by the switch point 1 will expand and effect movement of the switch point 1 into engagement with the adjacent rail A'. Further movement of the rod 13 will result in the switch point 6 being moved into engagement with the rail A' of the main line and establish communication between the rails of the main line and the rails C and C'.

Disposed to one side of the point of communication between the rails A and B is a switch stand 18. A vertical shaft 19 is journaled in the stand 18 and has its lower end provided with a laterally extending arm 20. The arm 20 has the outer end pivoted to one end of a link 21, and the other end of the link 21 has pivotal connection with the adjacent end of the operating rod 13. The upper end of the shaft 19 is connected to one end of an arm 22, the said arm 22 extending laterally therefrom. A handle 23 has one end pivotally connected to the outer end of the arm 22. The handle 23 is adapted to have vertical swinging movement on the arm 22 and when in raised position admits of the shaft 19 being rotated in either direction. The upper end of the switch stand 18 is provided with three pairs of spaced ears, designated, respectively, 24, 25 and 26. When the shaft 19 is rotated to effect movement of the rod 13, so as to move the switch point 6 into engagement with the rail A' and effect communication between the rails A and A' and the branch rails C and C', the handle 23 will overlie the pair of ears 24. The handle 25 can then be lowered and received between the ears 24, so as to lock the shaft 20 against rotation. Likewise, when the shaft 20 is rotated to effect movement of the switch points so as to connect the main line rails A and A' with the branch rails B and B', the handle 25 will overlie the pair of ears 26 and can be lowered and received between the ears 26 so as to lock the shaft 20 against rotation. When it is desired to set the switch for the main line, the shaft 19 is given a slight rotation so as to admit of the handle 23 being disposed above the pair of ears 25. When the handle is being moved to this last position, the rod 13 will have received sufficient movement to position the switch points 6 and 7 in spaced relation to the rails A and A' of the main line, as shown in Fig. 1 of the drawings. The handle 23 can then be lowered so as to be received between the ears 25, so as to lock the shaft 19 against rotation.

It is evident that various changes might be resorted to in the form, construction and arrangement of the several parts without departing from the spirit and scope of the invention as claimed.

Having thus described my invention what I claim as new, is:

1. A switch of the character described comprising, a main pair of rails diverging outwardly at the switching point; a pair of parallel rails extending from the main rails and in longitudinal alinement with the parallel portion thereof; switch points pivotally secured to the inner end portion of the parallel rails; horizontal rods connected at one end thereof to the pivoted switch points and extending through the main rail; coil springs arranged on the rods and adapted to normally maintain the pivoted switch points in engagement with the main rails; siding rails extending parallel to the outwardly diverging portions of the main rails; a second set of switching points pivotally secured to the siding rails and extending beyond the first-named switch point; and means to operate the switch points.

2. A switch of the character described comprising, a main pair of rails diverging outwardly at the switching points; a pair of parallel rails extending from the main rails and in longitudinal alinement with the parallel portions thereof; switch points pivotally secured to the inner end portions of the parallel rails; horizontal rods connected at one end thereof to the pivoted switching points and extending through the main rails, coil springs arranged on the rods and adapted to normally maintain the pivoted switching points in engagement with the main rails; siding rails extending parallel to the

outwardly diverging portions of the main rails; a second set of switch points pivoted to the siding rails and extending beyond the first-named switch points; depending apertured lugs carried by the forward portion of the first and second named set of switch points; a switching rod extending through the apertured lugs; stops arranged on the rods; and means to operate the switching rod.

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

SANFORD D. MULLENS.

Witnesses:

J. W. PERRY,

IRENE WOMELDORFF.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."