L. G. SAINT.

RAILWAY SWITCH.

APPLICATION FILED FEB. 12, 1915.

1,156,183.

Patented Oct. 12, 1915.

3 SHEETS—SHEET 1.

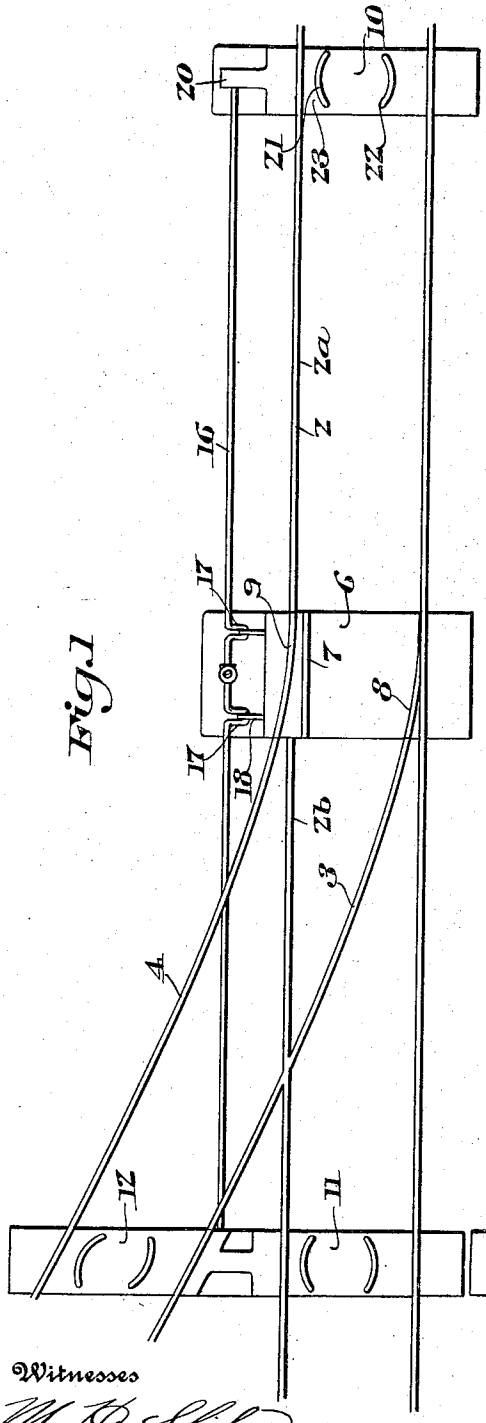


Fig. 1

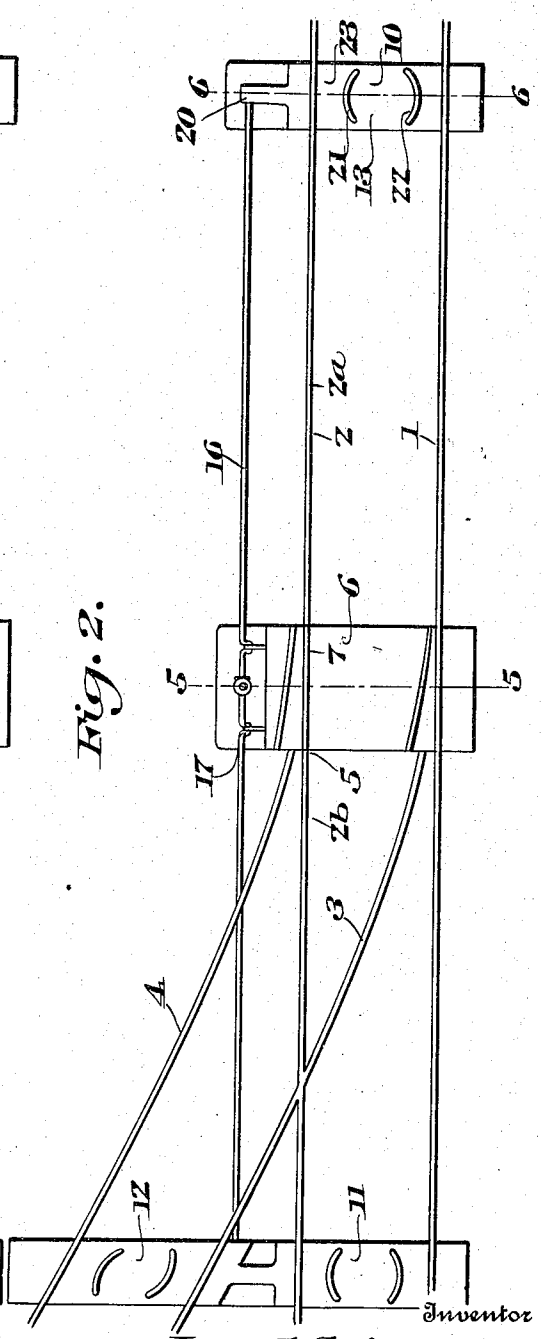


Fig. 2.

Witnesses

M. B. Slifer

A. A. Hines

Inventor

Lee G. Saint

By Victor J. Evans

Attorney

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

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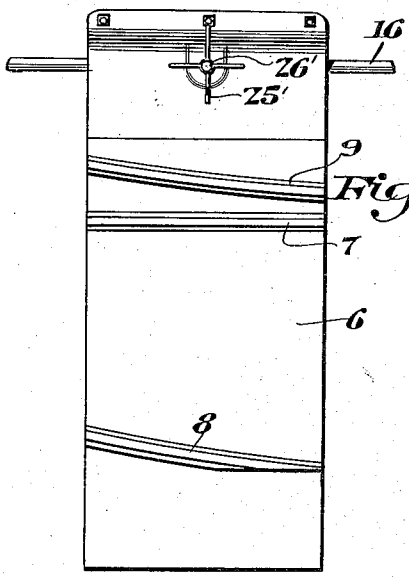


Fig. 3.

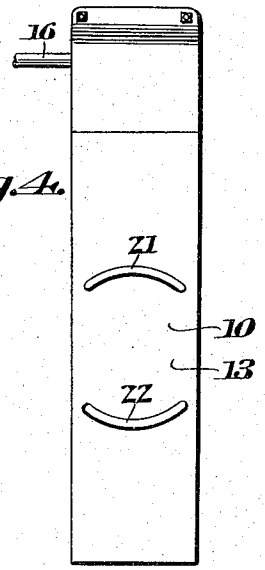


Fig. 4.

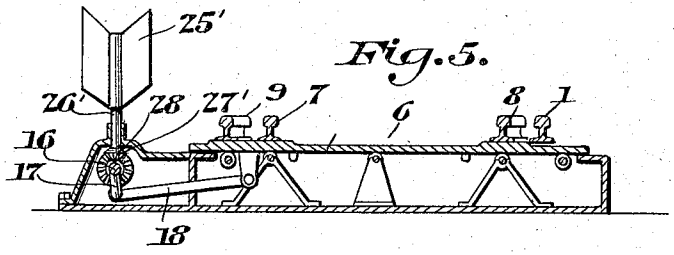


Fig. 5.

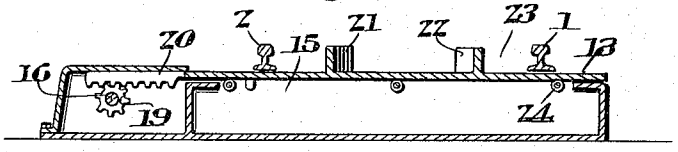


Fig. 6.

Witnesses

M. B. Slifer

C. E. Hines

Inventor

Lee G. Saint

By Victor J. Evans

Attorney

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

L. G. SAINT.

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3 SHEETS—SHEET 3.

Fig. 7.

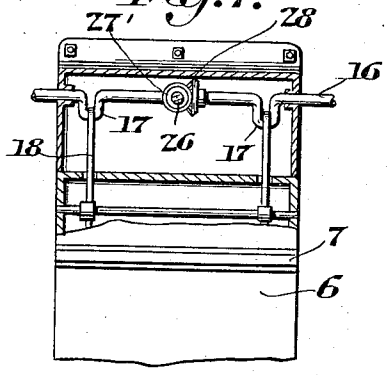


Fig. 8.

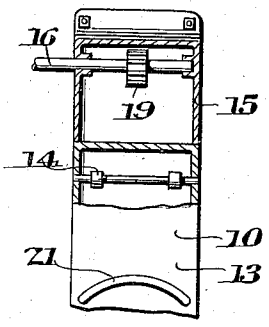


Fig. 9.

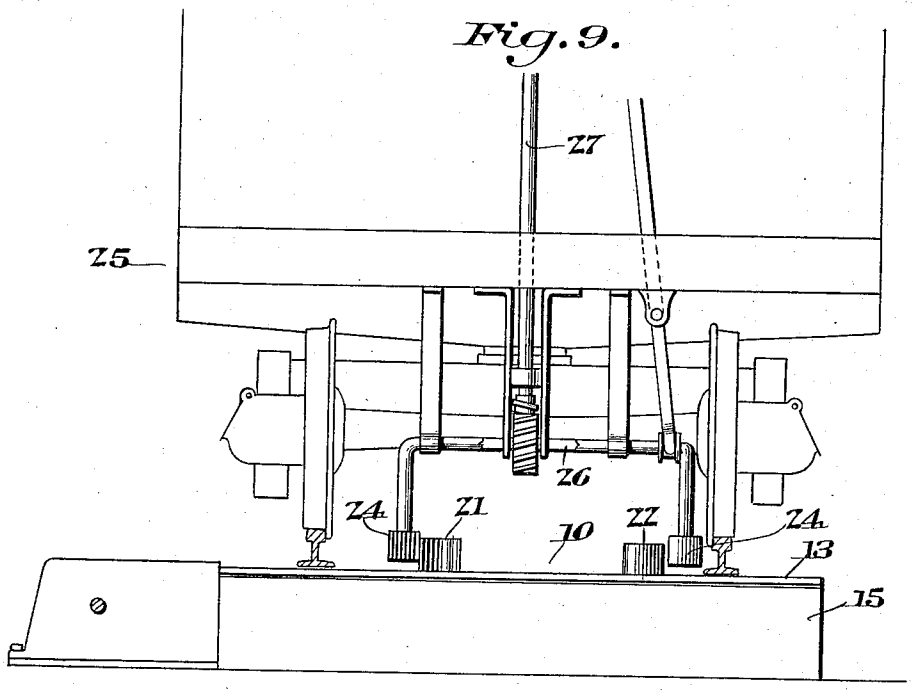
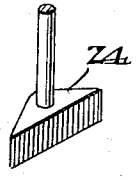


Fig. 10.



Witnesses

M. D. Stiefel.

C. E. Hines.

Inventor

Lee G. Saint

By Victor J. Evans

Attorney

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

LEE G. SAINT, OF MOUNT STERLING, OHIO, ASSIGNOR OF ONE-FIFTH TO A. SEYMOUR THOMAS, ONE-FIFTH TO WILLIS JONES, ONE-FIFTH TO CHAS. H. CLARK, AND ONE-FIFTH TO ZEBULON D. FISHER, ALL OF MOUNT STERLING, OHIO.

RAILWAY-SWITCH.

1,156,183. Specification of Letters Patent. Patented Oct. 12, 1915.

Application filed February 12, 1915. Serial No. 7,803.

To all whom it may concern:

Be it known that I, LEE G. SAINT, a citizen of the United States, residing at Mount Sterling, in the county of Madison and State of Ohio, have invented new and useful Improvements in Railway-Switches, of which the following is a specification.

This invention relates to railway switches, for controlling the passage of rolling stock between a main line and branch line or siding and vice versa, the primary object of the invention being to provide a novel and improved type of switch mechanism adapted to be operated and controlled from a passing locomotive, car or train, whereby the switch may be properly thrown to open position, set or held in such position, and closed upon the passage of the rolling stock beyond the switch point.

The invention further contemplates the provision of novel and improved trip mechanism adapted to be operated by devices upon the rolling stock to insure the proper operation of the switch.

A still further object of the invention is to provide an automatic switch mechanism which is simple of construction, reliable and efficient in operation and may be installed and maintained in proper working condition at a comparatively low cost.

The invention consists of the features of construction, combination and arrangement of parts herein fully described and claimed, reference being had to the accompanying drawings in which:—

Figure 1 is a plan view showing the application of the switch mechanism at a crossing, the switch appearing in open position for travel between the main and branch lines. Fig. 2 is a similar view showing the switch closed for travel over the main line. Fig. 3 is a top plan view of the switch member *per se* on an enlarged scale. Fig. 4 is a similar view of one of the trip members on an enlarged scale. Fig. 5 is a detail transverse section taken substantially on the line 5—5 of Fig. 2. Fig. 6 is a detail section taken substantially on the line 6—6 of Fig. 2. Figs. 7 and 8 are sectional plan views showing structural features in connection with the switch and trip devices. Figs. 9 and 10 are detail views, showing, respectively, the trip members on a car, and in detail, one of said trip members.

Referring to the drawings, 1 and 2 designate the main line rails of a railway track, and 3 and 4 branch line or siding rails associated with the main line rails at the switch point. The rail 1 is continuous, but the rail 2 is broken at the point 5, where the sections thereof are adapted to be connected by the main line switch rail, as hereinafter described.

The switch device comprises a sliding frame or support 6, preferably made up of parts of angle iron and sheet metal, and which is disposed in place of one or more ties at the switch point. This sliding frame or support carries a main line switch rail 7, movable into and out of the space 5, to connect the rail sections 2^a and 2^b, and branch line rails 8 and 9 adapted to move into and out of alinement with the rails 3 and 4 and when moved into alinement therewith to connect said rails with the rails 1 and 2^a for travel between the main and branch lines. Fig. 1 shows the switch arranged as above described, to connect the main line with the branch rails, while Fig. 2 shows the switch shaped to move the rails 8 and 9 out of alinement with the branch line rails to move the rail 7 into alinement with the rail sections 2^a and 2^b for travel along the main line.

Arranged within the main line on opposite sides of the switch point are trip devices 10 and 11, and arranged within the branch line or siding is a trip device 12, the said trip devices corresponding in construction to each other. Each of the said trip devices comprises a sliding frame or support 13, which may correspond in construction with the frame or support of the switch devices, and which is also mounted for movement in a direction laterally of the rails. The respective sliding supports may be mounted for travel upon anti-friction bearing rollers 14 carried by and journaled upon a foundation 15, suitably constructed to guide the support and limit it in its movements, as well as to hold it from accidental displacement.

Extending alongside the main track is a rock shaft 16 which is journaled in suitable bearings and is provided in line with the switch with cranks 17 coupled by connecting pitman rods 18 with a sliding frame of the switch, whereby when said shaft is rocked in one direction or the other the switch will

be opened or closed, as will be readily understood. At points in line with the trip devices the rock shaft carries gears 19 meshing with rack bars 20 on the sliding supports of the trip members, whereby when the trip members are moved in opposite directions the shaft will be correspondingly rocked and will transmit motion to the switch devices.

As shown, the frame support of each trip member has mounted thereon a pair of contact members or blocks 21 and 22, arranged in spaced relation to each other and to the track rails associated therewith, the arrangement being such that guide channels 23 are formed between the rails and the adjacent ends of the contact blocks. These contact blocks are designed for coöperation with wedge shaped actuating devices 24 suitably mounted upon a locomotive, car or other traveling vehicle 25, and which are mounted for simultaneous movement upon a rock shaft 26 in gear with a vertical controlling shaft 27 by which said shaft may be rocked and said members 24 projected or retracted. The wedge-shape members 24 are adapted to move through the channels 23 and engage the blocks 21 and 22 for the purpose of shifting a trip device, the normal arrangement of the trip devices being such that in the travel of the rolling stock from the main line to the branch line or vice versa the projected wedge-shape switch actuating members may first engage the trip device at one side of the switch and throw the switch for the proper passage of the rolling stock and may then come into engagement with the trip device on the opposite side of the switch and shift the same to move the switch back to normal position, it only being necessary in these operations to adjust the actuating devices on the rolling stock to the proper actuating positions. At one or more points, a target device or signal 25 may be arranged and mounted upon a rotary shaft or standard 26 carrying a gear 27 meshing with a gear 28 on the rock shaft or one of the sliding frame supports, so that the position of the switch may be indicated to allow the driver or motorman to ascertain the condition of the switch from a distance and to adjust the actuating devices or not accordingly.

By reference to Fig. 2 it will be seen that the switch rail 7 is in alinement with the rail sections 2^a and 2^b, thus making the main line rails continuous for travel therefrom, while the switch rails 8 and 9 are out of alinement with the track rails 3 and 4. When either of the trip devices, however, is shifted to switch throwing position, however, the switch rail 7 will be disposed out of alinement with the rail 2 while the rails 8 and 9 will be in alinement with the rails 3 and 4, thereby opening the switch for travel between the main and branch lines. It is apparent that as the switch mechanism is of simple construction, while of a strong and durable type, it may be installed and maintained in service at a comparatively low expense.

I claim:—

In an automatic railway switch, the combination of main and branch line rails, one of said main line rails being continuous and the other broken, a sliding switch support, main and branch line switch rails on said support, sliding trip members arranged in the main and branch lines, contacts upon said trip members arranged in spaced relation to the adjacent rails, a rock shaft provided with cranks, connecting rods between said cranks and said sliding switch support, gears upon the said shaft and rack bars upon the trip devices meshing with said gears to rock said shaft.

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

LEE G. SAINT.

Witnesses:
G. M. FISHER,
D. B. SAINT.

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