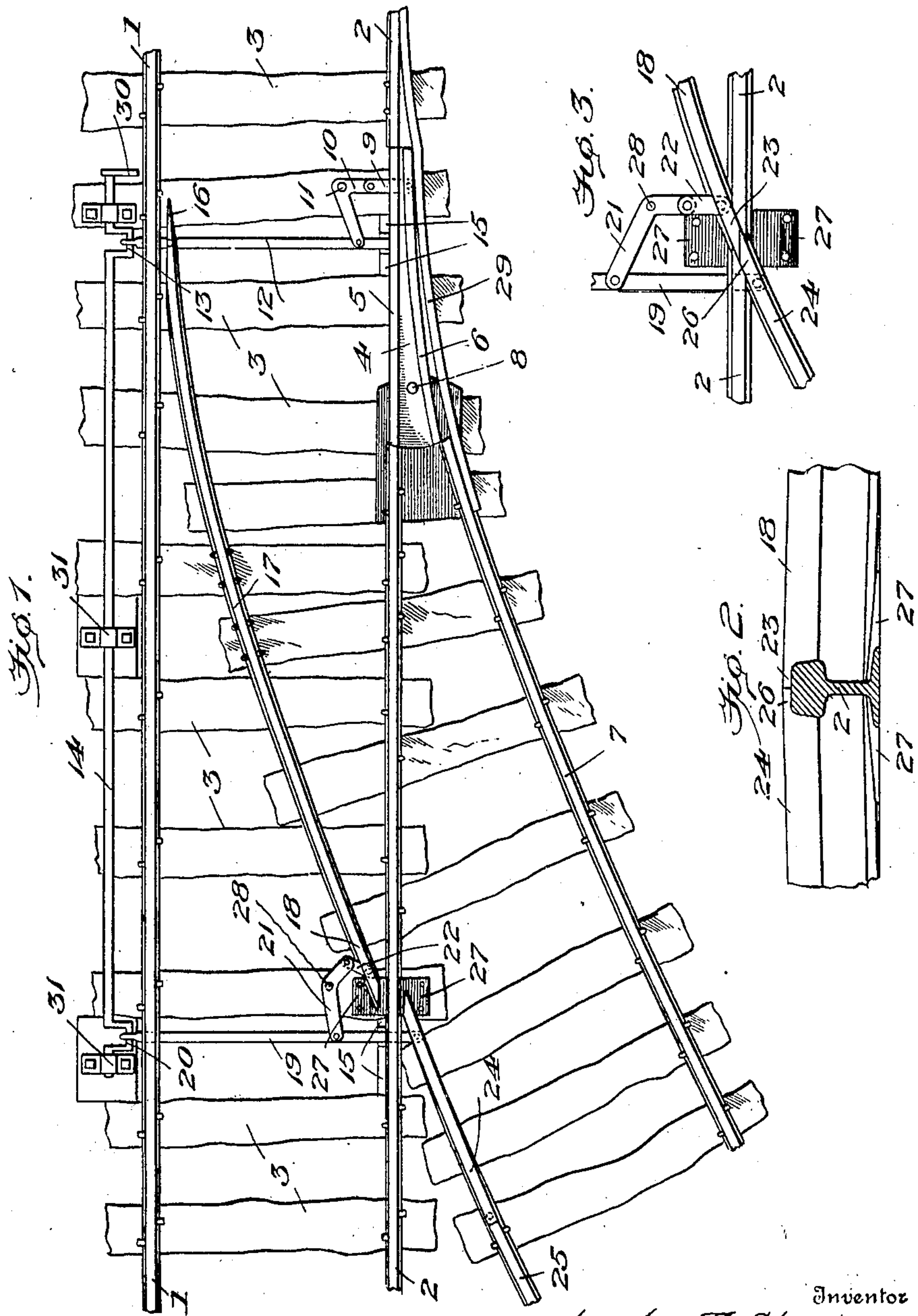


C. T. STACKS.
RAILROAD SWITCH.

APPLICATION FILED FEB. 20, 1909.

920,206.

Patented May 4, 1909.



Inventor
Charles T. Stacks

Witnesses

Edwin A. Bradford
Frank L. Dove

By

Robert D. Johnston Jr.
Attorney

UNITED STATES PATENT OFFICE.

CHARLES T. STACKS, OF BIRMINGHAM, ALABAMA.

RAILROAD-SWITCH.

No. 920,206.

Specification of Letters Patent.

Patented May 4, 1909.

Application filed February 20, 1909. Serial No. 479,222.

To all whom it may concern:

Be it known that I, CHARLES T. STACKS, a citizen of the United States, residing at Birmingham, in the county of Jefferson and State of Alabama, have invented new and useful Improvements in Railroad-Switches, of which the following is a specification.

My invention relates to an improvement in railroad switches having as its principal object to provide what is termed a crossover switch, thereby dispensing with frogs and leaving the main line rails unbroken, except at a single switch point. According to my construction one of the siding rails has adjustable crossover sections which abut over the tread of the main line rail which, as above stated, remains smooth and unbroken, except at the single switch point which opens or closes the siding.

It is the object of my invention to provide a novel means for bracing the crossover rail sections and holding all movable parts of the switch rigidly in position so as to insure their holding against the normal strains imposed upon switches.

My invention further consists in the novel features of construction hereinafter more particularly described by reference to the drawings, in which:—

Figure 1 is a plan view of my switch shown in open position, the main rails being continuous for through travel. Fig. 2 is a detail view showing the crossover sections of the siding rail. Fig. 3 is a plan view of the crossover showing it in the position when the switch is set to the siding.

Similar reference numerals refer to similar parts throughout the drawings.

In the illustrated embodiment of my invention I disclose the main rails 1 and 2 suitably connected in the usual manner to cross ties 3. The stub switch point 4 carries a rail section 5 which forms a part of the main line rail 2 when in the position shown in Fig. 1. This stub also carries a rail section 6 which connects with and forms a continuous part of the siding rail 7 when the switch is moved to position to open to the siding. The rail sections 5 and 6 are mounted upon a bed plate 4 which is pivoted near one end at 8 and the other end has pivotally connected thereto at some point below the plate 4 an arm 9. This arm 9, at its outer end, is pivotally connected to one arm of a bell crank lever 10 which is pivoted at 11 and has the outer end of its other arm pivotally connected to an operat-

ing rod 12, which passes under the stub 4 and the outer rail 1 and is connected to the crank portion 13 of the rock shaft 14. The rod 12 moves between suitable guides 15 connected to the cross ties or in any other suitable manner and is also connected in any suitable manner to the switch point 16 of the siding rail 17. The rail 17 is rigidly connected near its center to several of the cross ties and its two ends are left free for operation, the point 16 being thrown by the rod 12 and the crossover point 18 of the rail being operated by a rod 19, similar to 12, and connected to the crank 20 of the rock shaft 14. This arm also has guides 15 and operates a bell crank 21 which is connected by a pivoted link 22 to the point 18. The point 18, as illustrated in Fig. 2, is undercut to correspond with the contour of the half vertical cross section through the main rail. This construction leaves an overhanging lip 23 which is cut transversely so that it will stand in alinement with the longitudinal center line of the rail 2 when the point 18 is moved inwardly into engagement with the rail 2. The inner end of the rod 19 is connected to a pivoted switch point 24 which forms a part of the other siding rail 25, the inner end of the point 24 is undercut to form an overlapping lip 26 in the same manner as 23, and both the ends 26 and 23 rest upon inclined plates 27, up the inclined sides of which the points ride as they are moved together and their overlapping lips 23 and 26 are lifted so that they rise above and abut over the top of the rail 2. The ends of the rails 18 and 24 being cut to conform with the side contours, the rail 2 will abut solidly against this rail when in the position shown in Fig. 2. In this manner a crossover is provided which leaves the main rail unbroken, or as seen in Fig. 3.

In order to properly brace the rail 18 against the strain which will come upon it when the cars take the siding, it will be noted that the bell crank 21 and link 22 form a toggle connection which, in the closed position for the switch shown in Fig. 3, gives a straight line brace to the pivot pin 28 for the crank 21, which thereby serves to rigidly hold the point 18 against the strain. In like manner the crank 10 and link 9 form a toggle brace for the stub point 4, a straight line brace being shown in Fig. 1. As an additional bracing means for the stub point 4, I provide a guard rail 29 which connects to the

siding rail 7 and extends beyond the stub point and is bolted to the main rail 2, the construction being such that this rail serves as a rigid outer brace for the stub point when
5 in the position shown in Fig. 1, which shows the main line rail closed.

In operation, by turning the rock shaft 14 by means of a crank 30, which shaft turns in the bearings 31, the cranks 13 and 20 thereof
10 simultaneously throw the rods 12 and 19 in the same direction, which in throwing the switch from the position shown in Fig. 1, will simultaneously swing the point 16 against the rail 1, move the stub point until the rail 6
15 is in line with the rails 2 and 7, and by means of the rod 19, will draw the points 18 and 24 together until their overlapping lips 23 and 26 meet above the rail 2, in which position they will be rigidly held by the toggle bracing means described and by the abutting of
20 the point 24 against the main rail 2.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

25 1. The combination with main track rails and side track rails, of switch points to connect the siding track with the main track rails, one of the rails of the side track comprising movable sections which in one position overlap the main rail to form a continuous siding rail, and operating means for
30 said sections of the siding rail which comprise a rod connected to one of the overlapping track sections, a pivoted bell crank lever also connected to said rod and connected by
35 means of a link to the other section of the track, said lever being adapted to give a substantially straight line brace between its pivot point and the rail when the crossover
40 switch is in operating position.

2. The combination with main track rails and side track rails, of switch means to divert cars from the main track to said siding, one rail of the siding being parted where said rail
45 would normally intersect the main rail, the ends of said siding rail sections being under-

cut so as to overlap the main rail along its center line, inclined plates which support the said ends adjacent to the main rail, and operating mechanism for moving said rail sections to overlap the main rail comprising a
50 rod connected to one section, a crank and link pivotally connected to said rod and the other rail section, and a fixed pivot for said crank, said crank and link standing substantially in alinement when the rail has been moved to operating position, giving a direct
55 brace from the pivot of the lever to the rail, substantially as described.

3. The combination with main track rails
60 and side track rails, of switch means to divert cars from the main to the side track, one rail of the side track being parted to form sections which in one position overlap one of the continuous main line rails, the sections of the
65 siding rails being parted and the ends undercut so that they overlap and abut along the central longitudinal line of the main rail, inclined plates on which said ends of the siding rail sections ride, and operating mechanism
70 to open or close said sections simultaneously with the opening and closing of the switch means first above mentioned, the abutting ends of the siding rail sections corresponding to the side contour of the main line rails and
75 having overlapping lips which abut above the main line rails and said operating means comprising toggle arms pivotally connected to the rail and to a fixed pivot, one of said
80 arms being in the form of a bell crank lever and being so disposed that toggle arms assume a straight line brace from the pivot point of the lever to the rail when the siding is closed.

In testimony whereof I have hereunto set
85 my hand in presence of two subscribing witnesses.

CHARLES T. STACKS.

Witnesses:

H. H. GOLDSTEIN,
FROMIE WELSH.