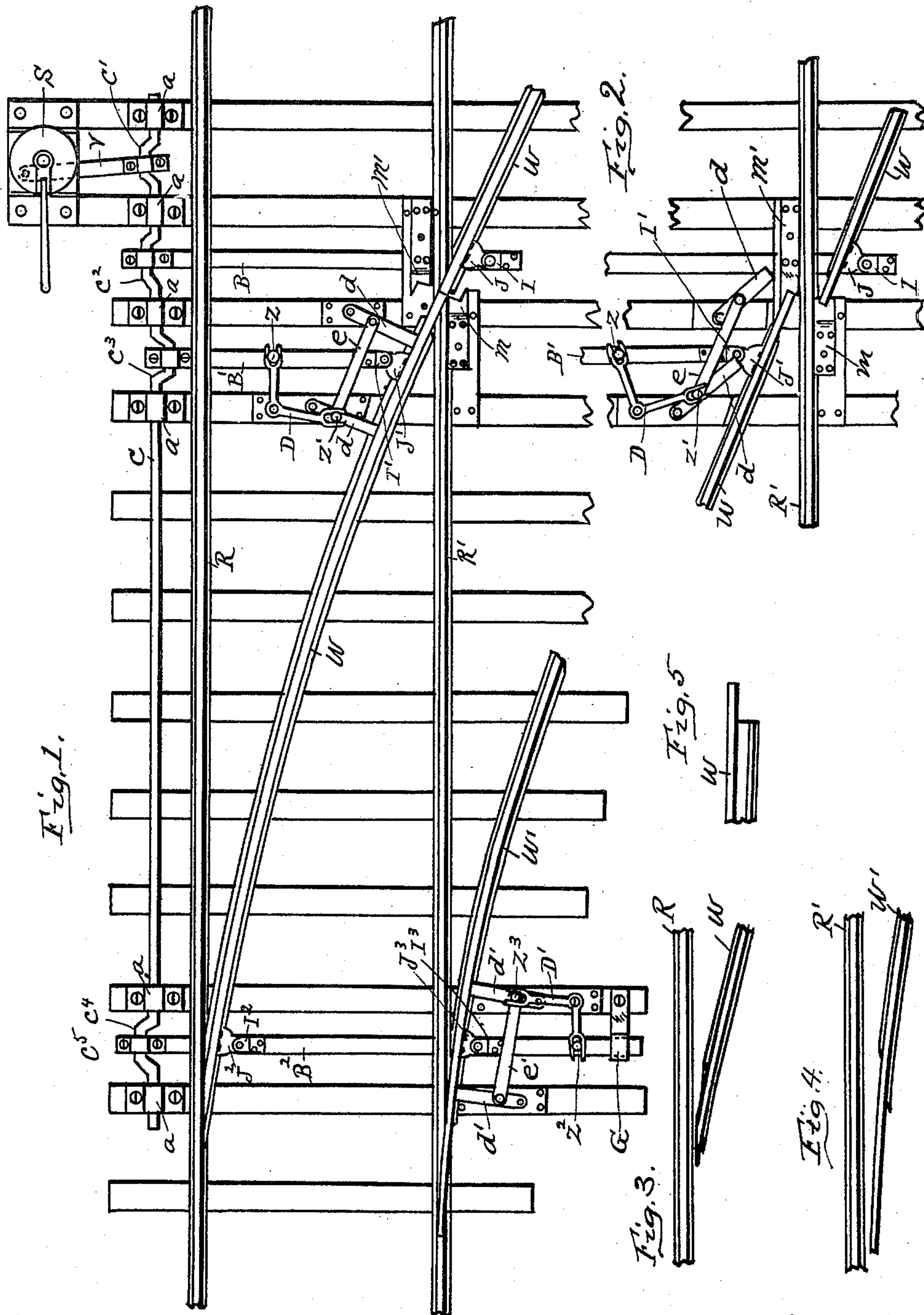


(No Model.)

D. GRUHLKEY.
RAILROAD SWITCH.

No. 584,350.

Patented June 15, 1897.



Witnesses,
P. J. Schrauff,
Herbert Cowell.

Inventor,
Daniel Gruhlkey
By John H. Hutchins atty

UNITED STATES PATENT OFFICE.

DANIEL GRUHLKEY, OF MARSEILLES, ILLINOIS.

RAILROAD-SWITCH.

SPECIFICATION forming part of Letters Patent No. 584,350, dated June 15, 1897.

Application filed March 16, 1897. Serial No. 627,818. (No model.)

To all whom it may concern:

Be it known that I, DANIEL GRUHLKEY, a citizen of the United States of America, residing at Marseilles, in the county of La Salle and State of Illinois, have invented certain new and useful Improvements in Railroad-Switches, of which the following is a specification, reference being had therein to the accompanying drawings, and the letters of reference thereon, forming a part of this specification, in which—

Figure 1 is a plan view showing the switch set for the side-track. Fig. 2 is a plan view of a section of one of the main-track rails and of the switch-rail that crosses over said main rail and of the parts connected to and for moving said switch-rail. Fig. 3 is a plan view of a section of one of the main-track rails and a plan view of the end of the point switch-rail located between the main rails and as said rails would appear when the switch is set for the main track. Fig. 4 is a plan view of a section of one of the main-track rails and a plan view of the end of the point switch-rail located outside of the main rails and as said rails would appear when the switch is set for the main track, and Fig. 5 is a side view of the notched end of one of the switch-rails for adapting it to swing over one of the main-track rails.

This invention relates to certain improvements in switches for railroad-tracks of the class wherein the main-track rails are unbroken and the switch-track rails swing over the main-track rails, which improvements are fully set forth and explained in the following specification and claim.

Referring to the drawings, R and R' represent the rails of the main track, which rails are continuous and unbroken in their parts upon which the switch-rails are operated.

W and W' represent the switch-rails, which are pointed at their ends that are adapted to move laterally to or from the sides of the main rails to operate the switch.

c is a crank rod or shaft located adjacent to and parallel with the main rail R at its outer side and journaled in the boxes a. The inner end of said shaft is connected with a switch-stand S through the medium of a pitman V, journaled at its inner end on crank c' of said shaft. The opposite or outer end

of said shaft is connected with the outer ends of the point switch-rails W and W' through the medium of the rod B² and pitman c⁵, journaled on crank c⁴ of said shaft, said rod B² being attached to said switch-rails through the medium of the plates J² J³, pivotally connected to said rod at I' and I³, respectively, said plates being riveted or bolted to said rails. The pitman c⁵ is intended to be hinged to the end of rod B', so it will permit rotation of said shaft. The rod B² extends out beyond the rails at its end opposite crank c⁴, so as to pass through a box G to guide and steady that end as it reciprocates therein.

d' d' are a pair of brace-arms having their inner ends pivotally connected to suitable ties or bed-plates, and are connected with each other by means of a link e'.

D' is a bell-crank pivotally connected at its angle with a suitable tie or bed-plate and forked at each extremity for forking, respectively, over stud Z² in rod B² and stud Z³ on arm d'. It is intended that when the rod B² is moved toward shaft c to set the switch for the side-track, as shown in Fig. 1, said brace-arms d' d' will be swung so as to have their outer ends brought to bear against the outer side of switch-rail W' for the purpose of holding the point of said rail in its proper place while the switch is set for the side-track, as shown in said figure. When said rod B² is moved backward from the position shown in Fig. 1, the brace-arms d' d' will, through the medium of said bell-crank D', be swung in the direction indicated by the arrow, so as to be free from said switch-rail W', so the switch may be set for the main-track rails.

The switch-rail W is cut at the point where it crosses the main rail R', and is notched, as shown particularly in Fig. 5, so that the tread of the rail may pass over the main rail R' and at sufficient height so the wheel-flanges of a car may not strike the main rail R' as they pass along on the switch-rails. The ends of the switch-rail W that cross or meet over main rail W are adapted to be swung laterally off from over said main rail, so as to leave it clear when the switch is set for the main-track rails, as shown in Fig. 2, or swing and meet over the said main rail when the switch is set for the switch-rails, as shown in Fig. 1. The switch-rail W is connected near

its end adapted to cross main rail R' with crank c^3 of shaft c by means of rod B' and plate J', secured to rail W and pivotally connected at I' with rod B', and the opposite end
 5 of rail W, adapted to cross main rail R', is connected with crank c^2 of shaft c by means of rod B and plate J, secured to rail W and pivotally connected at I with rod B. The cranks c^2 and c^3 are set opposite to each
 10 other, so that when they are turned they will swing the two parts of rail W in opposite directions from each other, as shown in Fig. 2, so as to swing said two parts of said switch-rail over or off the main rail R' to set the
 15 switch for the side-track rails, as shown in Fig. 1, or set the switch for the main track, as shown in Fig. 2.

$d d$ are a pair of brace-arms pivotally connected at their inner ends to a suitable bed-plate or tie and are connected by means of a
 20 link e .

D is a bell-crank pivotally connected at its angle with a suitable bed-plate or tie and having the forked ends of its arms fork over
 25 stud Z of rod B' and stud Z' of arm d , respectively. These arms $d d$ are intended to have their outer ends engage the side of switch-rail W, as shown in Fig. 1, to hold that part of said rail in place over the main rail R' when the switch is set for the side-track.
 30 When rod B' is moved backward by means of crank c^3 , said brace-arms $d d$ will be swung to the position shown in Fig. 2, so as to permit rail W to swing off the main rail R'. The
 35 plates J J' J² J³ are pivotally connected to their respective rods, so as to permit the rails to which they attach to move in the arc of a circle, which they could not do if rigidly secured to said rods.

40 M and M' are stop-blocks securely attached

to a suitable bed-plate or to the ties and are for the purpose of preventing the ends of rail W from swinging too far backward.

The end of switch-rail W' is formed so that its tread-point may swing over and lie
 45 on the top of main rail R', as shown in Fig. 1, when the switch is set for the side-track, so that the car-wheels may run up on said switch-rail point and their flanges be carried over said main rail.
 50

In operation Fig. 1 shows the switch set for the side-track. By turning shaft c by means of the switch-stand its cranks will be reversed and the switch-rails W W' will be moved to the position shown in Figs. 2, 3, and
 55 4, so as to set the switch for the main-track rails, leaving the main-track rails free and unbroken.

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

The combination of the main unbroken rails R, R', switch-point rail W cut at its point of crossing main rail R' in such manner that its cut ends may have lateral movement
 65 in opposite directions and so their tread may swing over and off the said main rail, crank-shaft c , rod B, pivoted plate J, rod B', pivoted plate J', pivoted brace-arms d, d , link e , bell-crank D, stops M, M', rod B² c^5 , pivoted
 70 plates J², J³, pivoted brace-arms $d' d'$, link e' , bell-crank D', and the means for operating said shaft and switch-rails, all arranged to operate substantially as and for the purpose set forth

DANIEL GRUHLKEY.

Witnesses:

ERNEST GOODELL,
 H. P. WIGHTMAN.