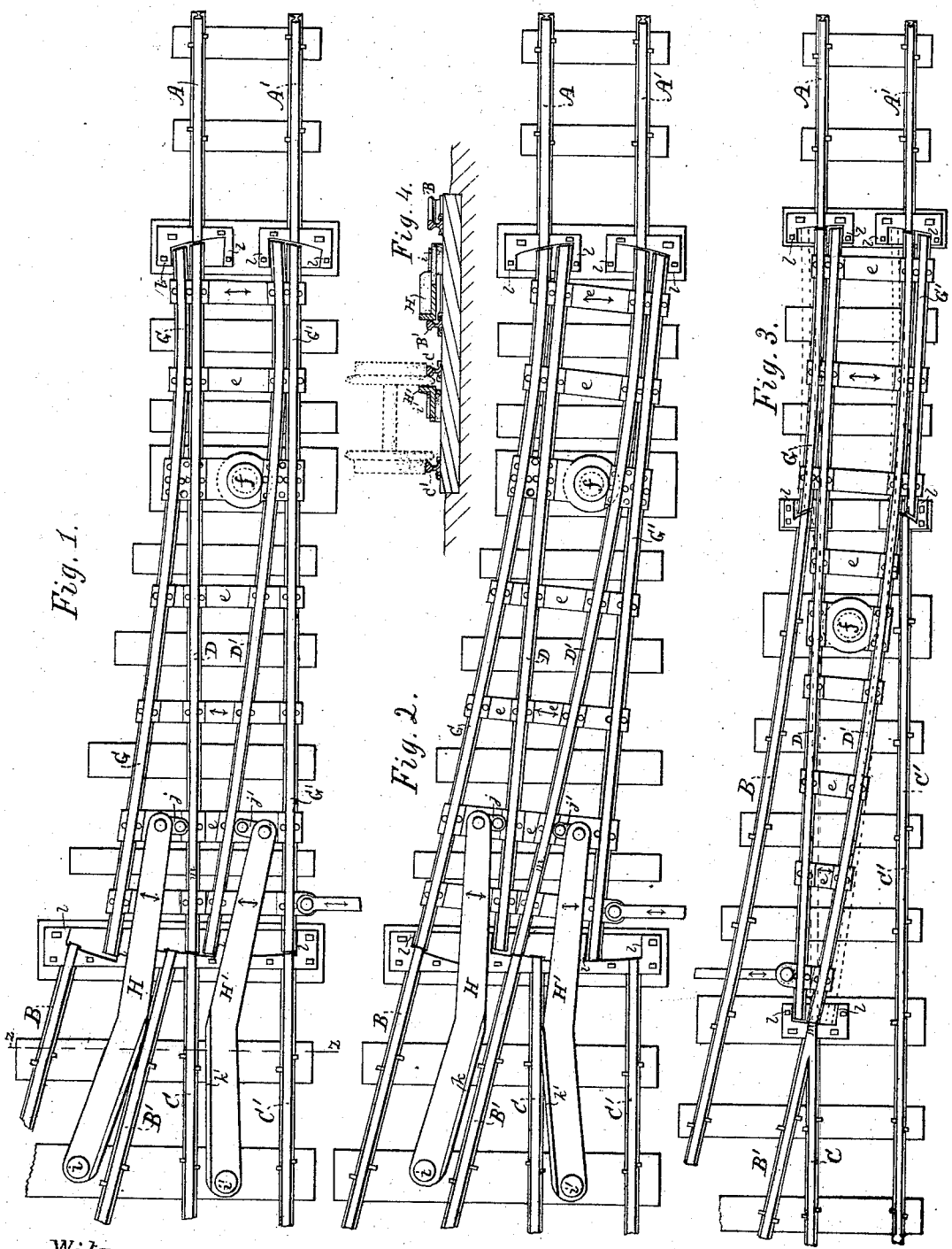
B. HINKLEY.

Railway-Switch.

No. 163,198. Patented May 11, 1875.



Witnesses.

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UNITED STATES PATENT OFFICE.

BENJAMIN HINKLEY, OF TROY, NEW YORK.

IMPROVEMENT IN RAILWAY-SWITCHES.

Specification forming part of Letters Patent No. **163,198**, dated May 11, 1875; application filed January 10, 1874.

To all whom it may concern:

Be it known that I, BENJAMIN HINKLEY, a resident of the city of Troy, in the county of Rensselaer and State of New York, have invented certain Improvements in Railway-Switches, of which the following is a specification, reference being had to the accompanying drawing.

One part of this invention consists of the means, hereinafter described, whereby each of the two stationary rails of a single track is temporarily connected with the corresponding one of the fixed inner rails of two converging tracks, at or before the point to which the said inner rails converge, substantially as hereinafter described.

Another part consists of the devices, hereinafter described, whereby the ends of the two stationary rails of a single track are temporarily connected with the ends of each of the two pairs of fixed rails of the two converging tracks, in combination with the means, hereinafter described, by which a car running toward the single track on either one or the other of the two converging tracks secures the connection of the single track with the track upon which the car is running.

In the aforesaid drawing, Figures 1 and 2 are plans showing this invention, and Fig. 3 shows the first aforesaid part of the same. Fig. 4 is a section of Fig. 1, at the line *z z*.

A A′ are the stationary rails of a single main track, and B B′ and C C′ are the fixed rails of two tracks which converge toward the single one. D D′ are two converging switch-rails, which extend from the ends of the rails A A′ to or past the place, *m*, to which the inner rails B′ C of the converging track converge, and to the ends of the latter rails. In Figs. 1 and 2, the switch-rails D D′ extend past the place to which the rails B′ C converge, and in Fig. 3 only to that place. The rails D D′ are connected firmly together by bars *e*, and are pivoted at *f*, so that both ends of those rails shall vibrate simultaneously in opposite directions. The rails D D′ are so arranged and pivoted, in respect to the rails A A′ and B′ C, that when the rails D D′ are turned and set at one side, as shown in Figs. 2 and 3, the rail D′ is then in the line of the rails A′ and B′, and connects them together, and that when the rails D D′ are turned and set to the other side, as shown in Fig. 1, and indicated by dotted lines in Fig. 3, the rail D is then in the line of and connects together the rails A and C. The switch-rails D D′ alone thus directly and completely connect the rails A and A′ with the converging rails B′ and C, and do away with the usual frog and guard-rail, and dispense with the separate sliding or vibrating section or sections of a rail or rails, as heretofore used at or about the place where the inner rails of the converging tracks would cross, if continued. G G′ are two switch-rails arranged outside of the rails D D′, and secured thereto by extensions of the bars *e*, so that the rails G G′ and D D′ shall all vibrate together. The rails G G′ are so arranged, in respect to the rails D D′, the rails A A′ of the single track, and the outer rails B and C′ of the converging tracks, that when the rail D connects the rail A with the rail C, as shown in Fig. 1, the rail G′ then connects the rail A′ with the rail C′, and that when the rail D′ connects the rail A′ with the rail B′, the rail G then connects the rail A with the rail B, as shown in Figs. 2 and 3. The switch-rails D D′ or D D′ and G G′ are generally to be moved and set in line with the rails of one and the other of the converging tracks by means of the usual or any suitable known devices for moving and setting railway-switches by manual power.

To render the switch self-acting, arms or levers H H′ are extended along the converging tracks, and pivoted at the ends *i i′* to the tracks, and connected at their other ends by links *j j′* to the connected switch-rails D D′ G G′. When the switch-rails are not set to properly connect the rails C C′ with the rails A A′, or are set to connect the latter with the rails B B′, as in Fig. 2, the arm or lever H′ will then be inclined toward or against the rail C, so that the flange of a wheel of a car approaching the switch on the rails C C′ will press between the rail C and the lever H′, as indicated in Fig. 4, and will thereby move that lever, and cause it to move the rails D and G′ into line with the rails C C′ and A A′ before the car can reach the end of the rail C. The movement of the rails D G′ into line with the rails C C′ brings the lever H into an inclined position against the rail B′, as in Fig. 1, so that in

case a car should then approach the switch by the rails B B′, a flange of a wheel of the car would press between the rail B′ and the lever H, and thus move the latter, so as to cause it to bring the rails G and D′ into line with the rails B B′ before the car could arrive at the end of the rail B′. The levers H H′ and their inclines *k k′* should be much longer than indicated in the drawing. Fixed stops *l* limit the lateral movements of the switch-rails D D′ and G G′.

When the ends of the rails B′ C are apart from each other, or terminate before reaching the place toward which they converge, as in Figs. 1 and 2, car-wheels having flanges on both sides of the treads thereof can then be used, and the expense of uniting and shaping those rails into, or adding thereto, a wedge-shaped end, as shown in Fig. 3, is avoided. By uniting the ends of the rails B′ C, or extending them to the place to which they converge, as shown in Fig. 3, the switch-rails D D′ may be shorter, and need not be moved so far to shift them into line with the rails B′ C as when the latter are separated at their ends, as in Figs. 1 and 2. The rails G G′ are longer and stiffen the rails D D′ more in Figs. 1 and 2 than in Fig. 3; but in the latter figure the combined switch-rails are lighter to move than in Figs. 1 and 2. When the rails G G′ are short, as in Fig. 3, they may be pivoted at one end to the rails B C′, and connected at the other end by links to the rails D D′, instead of being fastened rigidly to the latter; or the rails G D may be connected together in one pair, and the rails D′ G′ in another, and the two pairs mounted on separate pivots and connected together by links, so that in each case the rails D D′ G G′ shall all move together in respect to the rails A A′ and B B′ C C′, as hereinbefore described.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The two inside-converging switch-rails D D′, connected together and pivoted between their ends, in combination with the stationary rails A A′ and the fixed converging rails B′ C, terminating at or before reaching the point to which they converge, as shown and described.

2. The combination of the inside-converging switch-rails D D′, outside switch-rails G G′, and safety switching-levers H H′, with the fixed rails A A′, B B′, and C C′, substantially as described.

In testimony whereof I hereunto subscribe my name this 7th day of November, 1873.

BENJAMIN HINKLEY.

Witnesses:

WILLIAM F. BISSELL,

AUSTIN F. PARK.