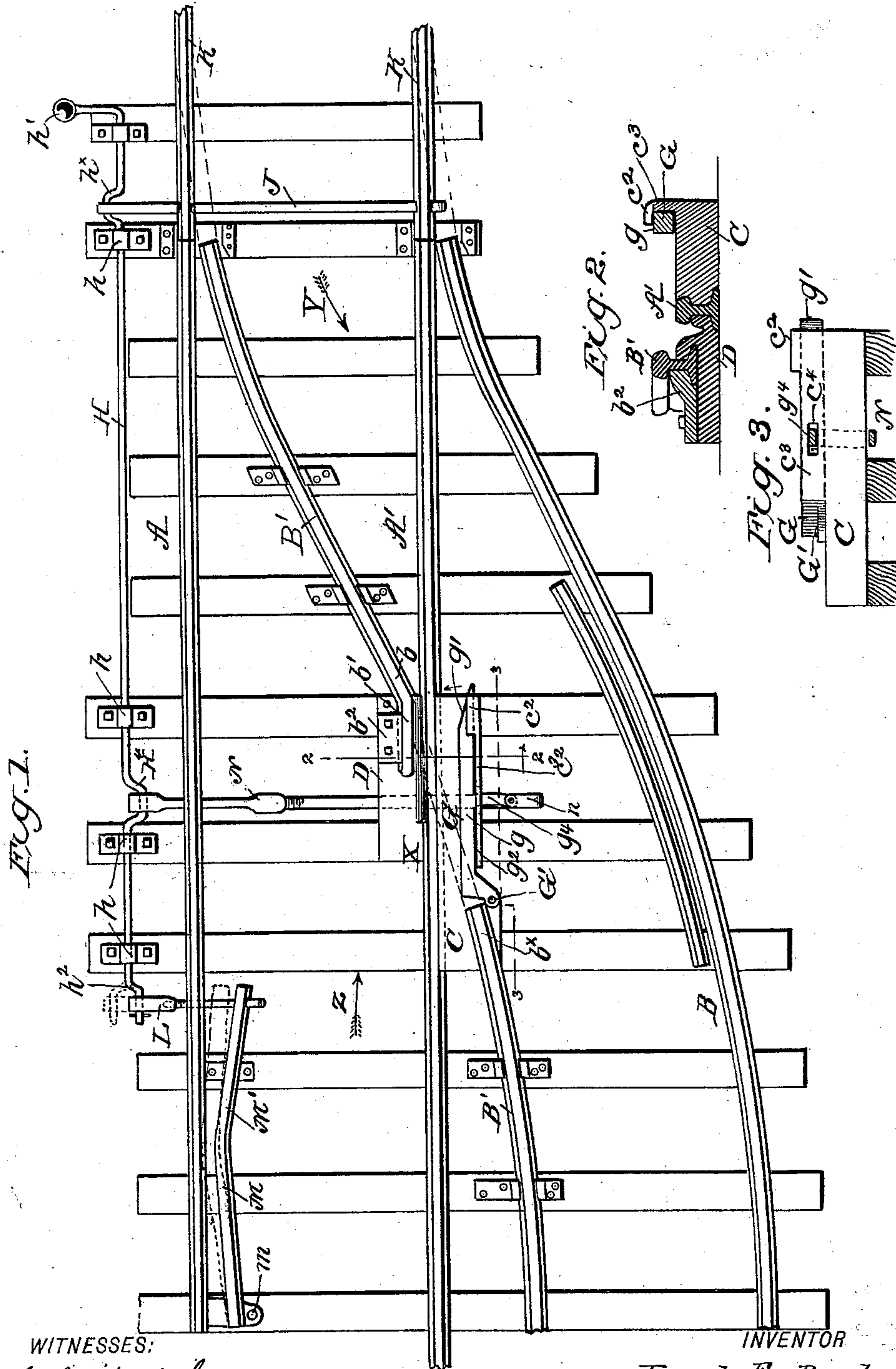


(No Model.)

J. E. DUNLEVY.
SAFETY HINGE SWITCH FROG.

No. 507,423.

Patented Oct. 24, 1893.



WITNESSES:
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JOSEPH EUGENE DUNLEVY, OF MEMPHIS, INDIANA.

SAFETY HINGE-SWITCH FROG.

SPECIFICATION forming part of Letters Patent No. 507,423, dated October 24, 1893.

Application filed April 1, 1892. Serial No. 427,425. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH EUGENE DUNLEVY, residing at Memphis, in the county of Clark and State of Indiana, have invented certain new and useful Improvements in Safety Hinge-Switch Frogs, of which the following is a specification.

My invention relates to railroad switches, and it has for its object to provide switch frog devices so constructed and arranged, whereby the main track will at all times be left free from joints, or splices at the frog, making as it were, a continuous track at such point, to permit trains to pass thereover at as high rate of speed, with as much safety, as at any other point on the main line.

It has also for its object, to facilitate the siding of trains, in a safer and simpler manner, than is now usually done.

With other minor objects in view, all of which will hereinafter be set out, my invention consists in the peculiar combination and novel arrangement of parts, all of which will hereinafter be fully described and pointed out in the claims, reference being had to the accompanying drawings in which—

Figure 1 is a plan view of my improved frog switch devices as applied for use. Fig. 2 is a transverse section of the same on the line 2—2 Fig. 1, looking in the direction indicated by the arrow. Fig. 3 is a detail vertical section taken on the line 3—3 Fig. 1.

Referring to the drawings A A', indicate the main track rails, and B B' the siding rails, the inner rail B' of which intersects the main rail A' at the point X, at which point are arranged the frog devices proper, the main rail A', at this point being a continuous section, and not spliced or joined, as will be clearly understood from Fig. 1 of the drawings.

The frog switch devices proper, comprise two base sections, one at each side of the main rail A', one of which C I term the long base section, and the other D, the short base section, the upper faces of such sections being however in different horizontal planes (see Fig. 2) for a purpose presently explained.

It will be noticed by reference to Fig. 1 that the inner siding rail B', has a cut out portion at the point where it crosses the main rail, the end b of one portion being connected to

the short base at b', and firmly held by the clamp section b², while the end b^x of the opposite portion is supported on the opposite end of the long base.

The long base section C, has its upper face flush with the top of the main rail A', while the short base section D which projects up to the opposite face of such rail, has its upper face at a point below the said rail A', to provide for a free passage of the car wheel flanges. It will be noticed by reference to the aforesaid Fig. 2, that the side rail section B', which rests on the short base, has its tread projected to a point above the main rail A', and flush with the tread face g of a switch bar G, hinged at G' on the long base C and adjacent the end b^x of the siding rail B'.

When the main track is clear as shown in Fig. 1, the hinged switch section G, is thrown back to the position shown in full lines, its front beveled end g', rests against a guide c² on the long base C, and its rear edge g² against a guard c³ apertured as at c⁴, and such rear edge has a curved horizontal arm g⁴, which projects through the apertured guard as shown.

H indicates a rock shaft, journaled in bearings h, to one side of the main track, which has at one end the usual weighted switch lever h', and is provided at such end with a crank member h^x to which is connected the switch bar J which in turn is connected to the ordinary switch rail sections K, which alternately are moved to connect with the main or siding track sections. This rock shaft has a crank portion h², at its opposite end, with which is adjustably connected switch bar L, which in turn is connected with the free or swing end of a shifting rail section M, pivoted at m, to one of the cross ties, and formed of an angular rail, the outer end M' of which is adapted to be brought up against the inner face of the main rail A, when the switch section G is moved to its closed position, in the manner presently described, such shifting rail being provided, to automatically open the siding switch G, in case it should be set when a train is moving on the main track, in the direction indicated by the arrow Z.

H⁴ indicates a crank member on the rock shaft H, to which is adjustably connected the

hinged switch operating bar N, which passes under the main track and the base sections C and D, and has an upturned end *n*, which connects with the outer end of the curved arm on the switch section G.

From the foregoing description taken in connection with the drawings, the advantages and operation of my improvements will be readily understood. It will be observed that normally the main line is open, and should it be desired to side track a train coming from the direction indicated at Y, the operator by turning the switch rod H, will simultaneously move the rail sections K, to register with the siding rails B B', swing the switch section G to connect the siding rail ends *b b'*, and move the shifting rail M, over against the main rail A as indicated in dotted lines in Fig. 1. It is manifest that by supporting the siding rail B' so its tread portion will be above the main rail, and mounting the hinged section G as shown, such section as it is swung to a closed position will swing over the main rail A'. Should the said switch sections remain to their closed positions as a train approaches from Z, the flange of the wheels would force the shifting section outward, which in turn would rock the shaft H, and thereby throw the hinged switch section back and away from over the main rail A'. By supporting the ends of the rail section B' and the swinging section G on the base members C and D a rigid support is provided for such parts.

Having thus described my invention, what

I claim, and desire to secure by Letters Patent, is—

1. In a railroad switch mechanism, in combination with the main rail, and the siding rails, the cross rail of which has its tread above the main rail A', the base sections C and D, the section C having an apertured guard at one side, the siding rail section B' terminating at one side of the rail on the section D, and at other side on the section C, the hinged section G pivoted on the section C and having an arm projected through the afore-said apertured guard, the rock shaft H having crank H⁴ and the bar N connected to the arm on the hinged section G all substantially as and for the purposes described.

2. In a railroad switch mechanism, the combination with the main rail and the siding rail, the cross rail of which has its tread above the main rail A', of the base sections C and D, the siding rail sections B' held to bear on the sections D and C, the flat hinged rail section pivoted on the section C, the rock shaft H having a crank H⁴, the adjustable bar N connected at one end to the crank H⁴ and a goose neck connection passed under the base sections C D, joined at one end to rock shaft H⁴ and at the other to the swinging section G, all arranged substantially as shown and described.

JOSEPH EUGENE DUNLEVY.

Witnesses:

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