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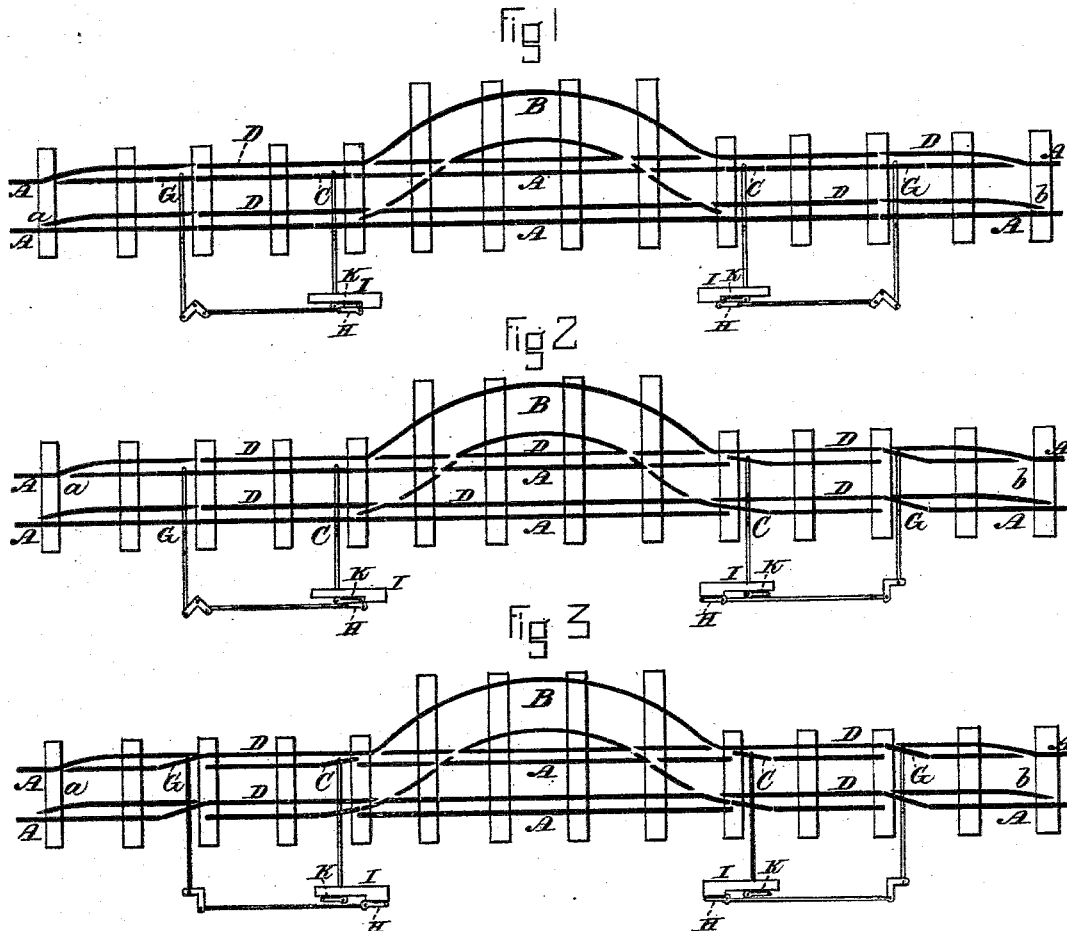
2 Sheets—Sheet 1.

G. H. SAMPSON.

SYSTEM OF TRACKS AND SWITCHES.

No. 301,526.

Patented July 8, 1884.



WITNESSES  
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*W. H. Murray*

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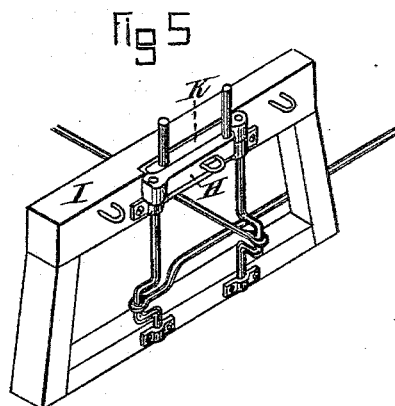
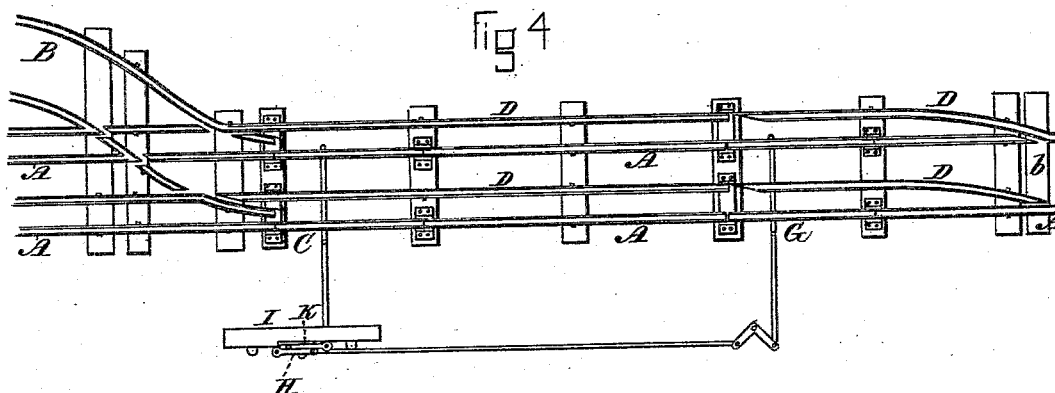
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# UNITED STATES PATENT OFFICE.

GEORGE H. SAMPSON, OF MEDFORD, MASSACHUSETTS.

## SYSTEM OF TRACKS AND SWITCHES.

SPECIFICATION forming part of Letters Patent No. 301,526, dated July 8, 1884.

Application filed August 29, 1883. (No model.)

### *To all whom it may concern:*

Be it known that I, GEORGE H. SAMPSON, a citizen of the United States, residing at Medford, in the county of Middlesex and State of Massachusetts, have invented an Improved System of Tracks and Switches for the Prevention of Accidents on Railways, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figures 1, 2, and 3 are plans representing my improved system of railway tracks and switches. Fig. 4 is a plan representing a portion of the tracks and two of the switches. Fig. 5 is a perspective view of one of the switch-stands, showing the interlocking mechanism for operating a pair of switches.

My invention has for its object to provide a simple and reliable means for the prevention of that class of railway accidents, caused by the switch of a siding or any branch track from a main track being carelessly left open, whereby a train is brought into collision with another train standing on the siding or branch track.

To this end my invention consists in the combination, with a main track and a siding or branch track, of a third or auxiliary safety-track, and two switches provided with an interlocking operative mechanism so arranged that one switch cannot be opened to allow a train to run onto the siding or branch track until the other switch has been set to connect the main track with the safety-track in advance of the siding-switch, thus rendering it impossible for an accident to occur from the carelessness or neglect of the switchman.

In the said drawings, A represents the main track, and B a side track or siding of any desirable length, having at each end a switch, C, for connecting it with the main line A.

D is an auxiliary safety-track, which is placed alongside of the main track A, at any convenient distance therefrom, and extends from the point *a* to the point *b*, the arrangement of the rails at each end of the safety-track D being such that while a train upon the track D must run directly therefrom onto the main track A it cannot run from the main track onto the safety-track except by means of a switch.

In advance of each of the siding-switches C is placed a switch, G, for connecting the main track A with the safety-track D, the distance between each pair of switches C G being in all cases equal to or greater than the length of the siding B, in order that the rear car of a train which is to be run onto the siding may be clear of the switch G before the front end of the train strikes the switch C. The switch G is operated by a crank, H, applied to an ordinary stand or supporting-frame, I, to which is also applied the crank K, for operating the switch C, the two cranks H K being so arranged with respect to each other that the crank H will lie over and lock the crank K, as seen in Figs. 4 and 5, thus rendering it impossible to set the switch C for the siding B until after the crank H has been swung out of the way in the operation of setting the switch G to cause a train following the one to be placed on the siding to run from the main track A onto the safety-track D.

It is obvious that any other suitable interlocking mechanism may be employed for operating the switches C G; but this mechanism must be so arranged that it will be impossible to set the switch C for the siding B until after the switch G has been moved to a position to connect the main track with the safety-track.

It is also obvious that the cranks to all four switches can be placed upon one switch-stand opposite the center of a siding, and so arranged that the two switches G must be set from the main to the safety track before either of the switches C can be operated for the siding; but this arrangement is not imperative for safety, as is hereinafter mentioned in my reference to any suitable system of frogs in common use.

The operation of my invention is as follows: The switches being in the positions shown in Fig. 1, the main line A is clear for the passage of trains. It being desired to run a train coming from the right-hand side onto the siding B, it is first run onto that portion of the main track between the two contiguous switches C G. The switchman then turns the crank H, which sets the switch G right for a train following to run onto the auxiliary safety-track D. This movement of the crank H releases the crank K, when the latter can be moved to set the switch C, as seen in Fig. 2, right for the siding B, onto which the train is then run.

Should the switchman now neglect to move the siding-switch C back again to its original position, as in Fig. 1, which is often the cause of terrible accidents, and another train should approach from the same direction as the first, it will, before it can reach the open siding-switch C, strike the first switch G, and be guided thereby onto the safety-track D, over which it will safely pass, and be led thereby again onto the main track A at a, all possibility of accident from the siding-switch C being left open being thus avoided, whereas, under the ordinary arrangement of switches, should the siding-switch C be forgotten, and the engineer of the approaching train fail to notice the danger-signal, a collision would occur with the rear of the train standing upon the siding or branch track, which cannot, under any circumstances, occur with my improved system of tracks and switches. If the trains are approaching from the left-hand side, the switches C G on the left-hand side of the siding B will be moved, as seen in Fig. 3, into the same positions, and in the same manner as above described for the switches on the right-hand side of the siding B, the switches C G on the left-hand side being provided with the same interlocking operative mechanism as those on the right-hand side. If, when the right-hand switches C and G are both open

and the left-hand switches C and G both closed, as seen in Fig. 2, a train were to approach from the left on the main track, it would be guided past the switches C and G on the right hand and along the main track by any suitable system of frogs which are now in common use for such contingencies. If all the switches are set in the position seen in Fig. 3, a train from either direction will be carried onto the safety-track D at the switch G, and thence return onto the main track A.

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

The combination, with the main track A and siding or branch track B, of the third or auxiliary track D, and the switches C G, provided with an interlocking operative mechanism so arranged that the switch C cannot be opened to allow a train to run onto the siding or branch track B until the switch G has been set to connect the main track with the safety-track in advance of the switch C, substantially as and for the purpose set forth.

Witness my hand this 25th day of August, A. D. 1883.

GEORGE H. SAMPSON.

In presence of—

P. E. TESCHEMACHER,  
W. J. CAMBRIDGE.