C. D. TISDALE.

Railway-Switch.

No. 160,040. Patented Feb. 23, 1875.

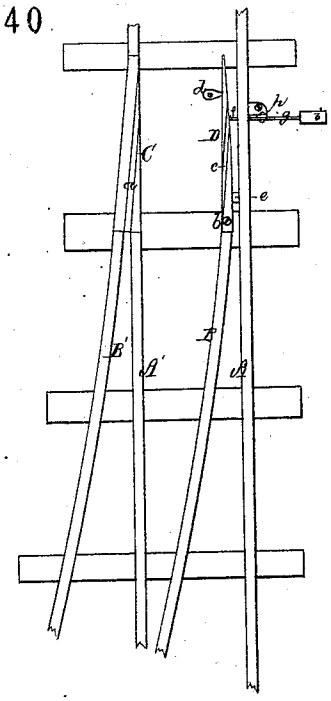
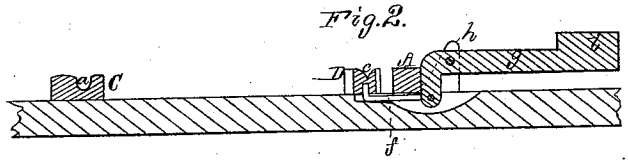
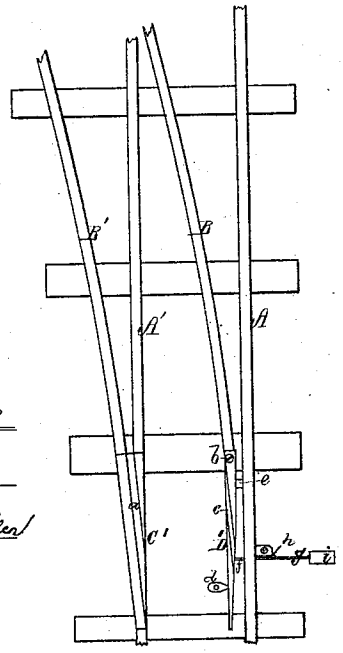


Fig. 1.

Fig. 2.





Witnesses

S. N. Piper

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UNITED STATES PATENT OFFICE.

CHARLES D. TISDALE, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN RAILWAY-SWITCHES.

Specification forming part of Letters Patent No. **160,040**, dated February 23, 1875; application filed December 19, 1874.

To all whom it may concern:

Be it known that I, CHARLES D. TISDALE, of Boston, of the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Railways; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 denotes a top view of a main track and turn-out provided with my invention. Fig. 2 is a transverse section taken through one of the frogs and its gravitating-lever.

The purpose of my invention is to insure by a common ground guide-plate and a frog (in the place of a switch at the junction of a main track and turn-out or siding) the main track being kept open at all times, when a train or car is to run over such track and by the turn-out or siding, and to have the tongue or frog opened automatically, it being closed by an attendant; also, to enable a train or car to run from the turn-out or siding upon the main track by crossing the frog while it may be open.

In carrying out my invention I combine with the frog a mechanism for opening it automatically, such mechanism, in order to effect closing the frog, being actuated by an attendant. I also provide the frog with a groove, extending obliquely through it, all being as hereinafter explained.

In such drawings, A A′ denote the main track, and B B′ the turn-out. In one of the lines of rails of the main track, viz., that marked A′, and at the junctions of such with the next adjacent turn-out line of rail, B′, are two grooved guide-plates, C C′. The groove of each of the said plates is parallel to the outer edge of the plate, and runs lengthwise through the plate, and opens out of one end and one side of it, all as shown in Fig. 1. At the termini of the other turn-out lines of rail, B, there are two wedge frogs or tongues, D D′, that turn horizontally on pivots *b b* near their larger ends, such frogs being arranged as represented. One or both of them should be grooved transversely and obliquely across it, as shown at *c*. When open or turned away from the main-track rail each frog brings up against one of two stops, *d d*, arranged as represented. Each frog is or may be provided with a spring, *e*, to force it away from the main-track rail and up to the stop. Furthermore, one of the frogs is connected by a rod, *f*, with the shorter arm of one elbow-lever, *g*, having its fulcrum in a standard or post, *h*, the longer arm of the lever being provided with a weight, *i*, fixed on it, such weight being sufficient to move the lever so as to cause the frog to move up to the stop. Such a lever and weight are also applied in a like manner to the other frog.

From the above it will be seen that the main track will be kept open for the passage of trains by the turn-out, except while one of the frogs may be closed for the passage of a train or carriage from the main track to and upon the turn-out, or from the turn-out to and upon the main track, provided the frog be without the oblique groove *c* extending across it, for with the groove in the frog a train or car passing from the turn-out to and upon the main track will have its wheel-flanges on one side of it pass through the groove without moving the frog.

With a common switch at the junction of the main and turn-out tracks there is danger of the switch not being changed back to the main track after being set to the turn-out; but the frog provided with operative mechanism as described does not depend on a person to move it to open it or move it away from the main track, as such is accomplished automatically, the closing of the frog being effected by manual power, and the opening of it taking place immediately on the withdrawal from it of the power applied to open it.

Furthermore, it will be observed that with my invention all that an attendant has to do is to close a frog in order to let a train or car pass from the main track to the siding or turn-out, for to get from the latter to the former requires no closing of the frog, provided it have the oblique groove *c*.

It will also be seen that not only is there avoided the danger of accidental running of the car or train off the track that frequently takes place, owing to misplacement of a switch, but the labor and attention of a switchman or attendant are greatly reduced. He is not required to keep in mind that he has a switch to open after he may have closed it for the pas-

sage of a train to or off the turn-out or siding, for all he has to do is to close the frog and keep it closed until the train may have passed it, all of which he accomplishes by lifting the weighted arm of the frog-lever and holding it up the required time. As soon as he may take his hand from such arm it will drop, and the frog will be opened automatically.

I claim—

In combination with the grooved guide-plate C and the frog D, arranged, as described, at the junction of a main track and siding or turn-out track, mechanism, substantially as explained, for operating the frog after closing of it by an attendant, such mechanism consisting of the elbow-lever *g* and its weight *i*, applied to said frog as set forth.

CHARLES D. TISDALE.

Witnesses:

R. H. EDDY,

J. R. SNOW.