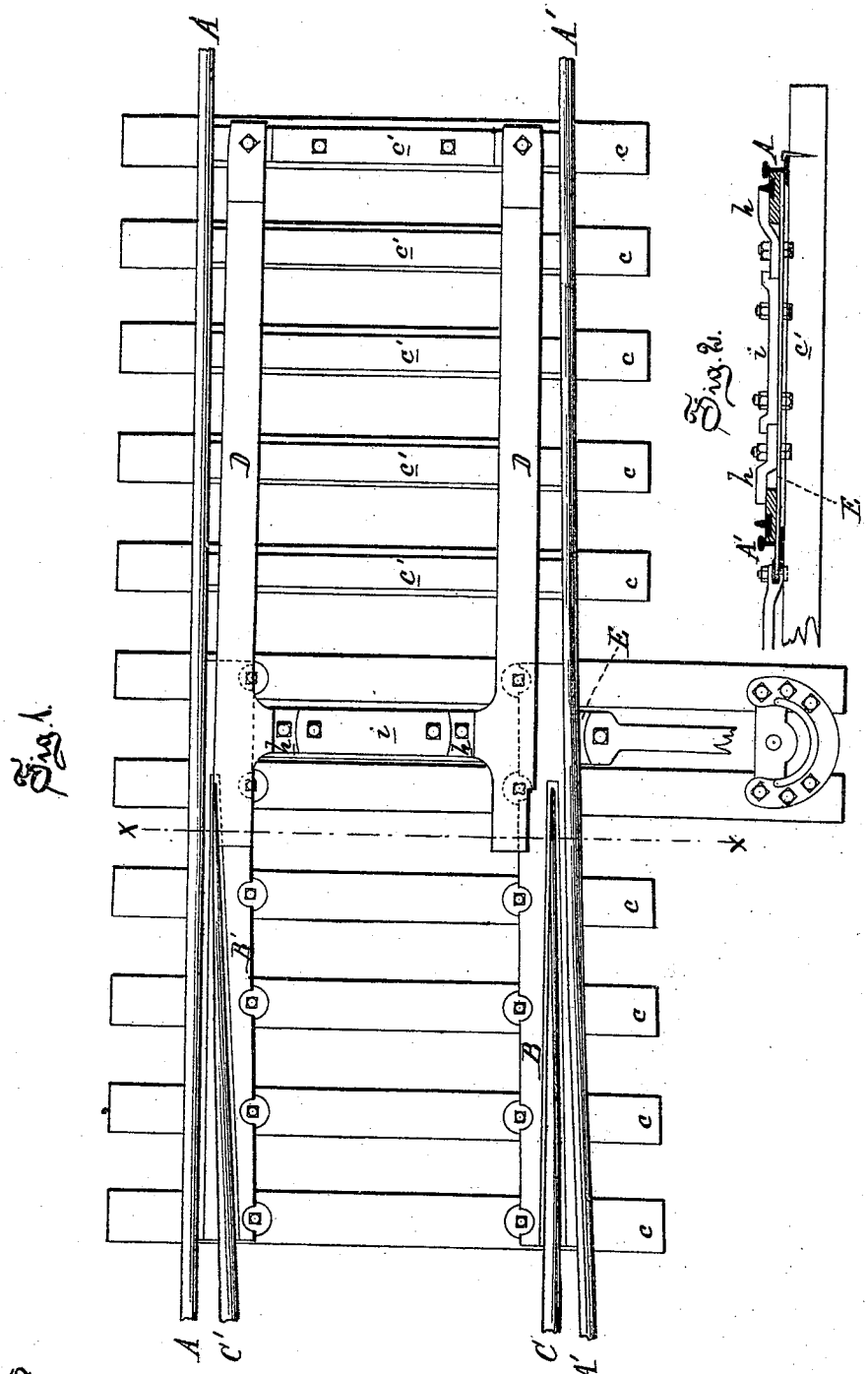
3 Sheets—Sheet 1.

C. H. WHITE.

RAILROAD-SWITCH.

No. 180,685. Patented Aug. 1, 1876.



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Thos. S. Sprague

3 Sheets—Sheet 2.

C. H. WHITE.

RAILROAD-SWITCH.

No. 180,685. Patented Aug. 1, 1876.

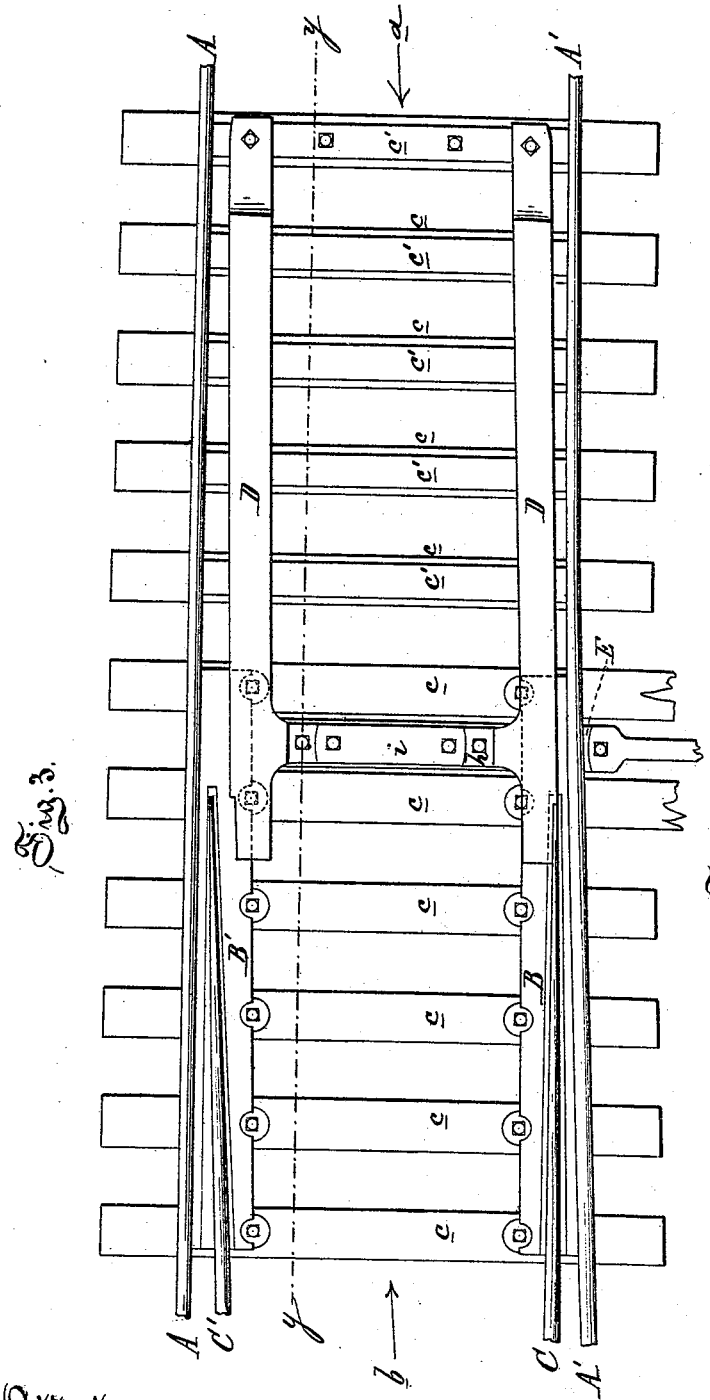

Fig. 3.

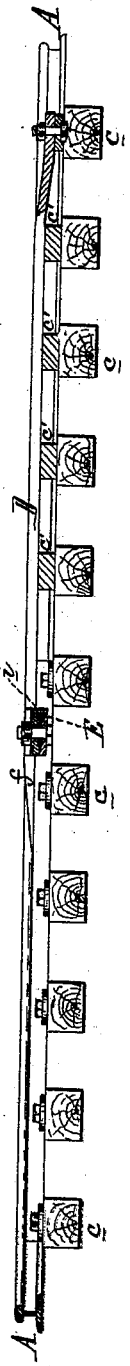

Fig. 4.

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3 Sheets—Sheet 3.

C. H. WHITE.

RAILROAD-SWITCH.

No. 180,685. Patented Aug. 1, 1876.

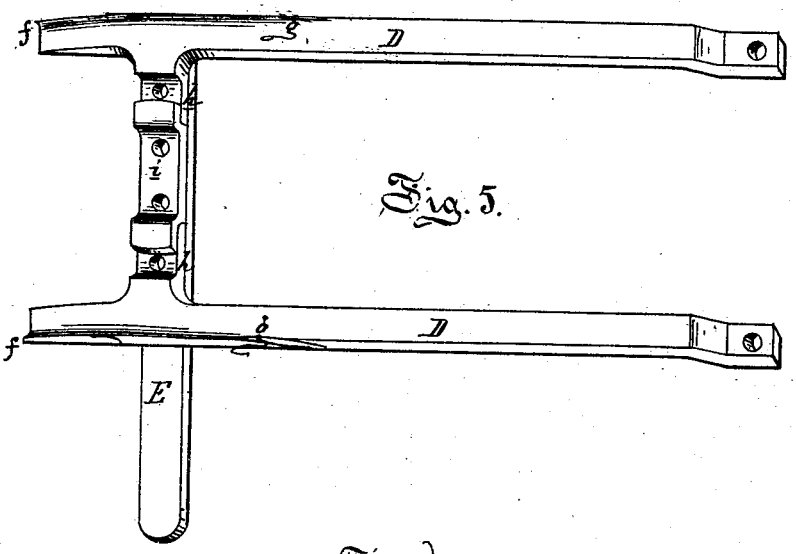


Fig. 5.

Fig. 6.

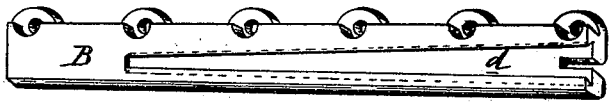
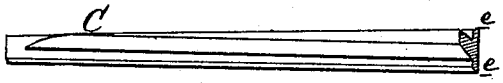


Fig. 7.



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UNITED STATES PATENT OFFICE.

CHARLES H. WHITE, OF DETROIT, MICHIGAN.

IMPROVEMENT IN RAILROAD-SWITCHES.

Specification forming part of Letters Patent No. **180,685**, dated August 1, 1876; application filed January 28, 1876.

To all whom it may concern:

Be it known that I, CHARLES H. WHITE, of Detroit, in the county of Wayne and State of Michigan, have invented an Improvement in Railway-Switches, of which the following is a specification:

My invention relates to an improvement in that class of switches wherein the train can pass from the main line to the siding and from the latter to the main line without crossing, running over, or shifting the main-line rails; and it consists in the construction and arrangement of the several parts composing the switch, all as more fully hereinafter explained.

Figure 1, Sheet 1, is a plan of the switch, showing the guide-rails set for the main line. Fig. 2 is a cross-section at *x x*. Fig. 3, Sheet 2, is a plan of the switch, showing the guide-rails set to switch a train from the main line going in the direction of the arrow *a* onto the side track, while a train on the main line going in the direction of the arrow *b* would pass the switch and keep on the main-line rails. Fig. 4 is a longitudinal section at *y y* in the same figure. Fig. 5, Sheet 3, is a perspective view of the shifting guide-rails and their connections. Fig. 6 is a perspective view of my improved frog-bed. Fig. 7 is a similar view of its frog-point.

In the drawing, A A′ represent two bars of T-rail, permanently secured to the cross-ties *c*. The former is straight and forms a portion of the main line, while the latter is bent at a very small angle from a right line, and forms part of the siding in that part which is not parallel with the rail A, the remainder forming part of the main line. B is a cast-iron frog-bed, fitted at the outer edge to the neck of the rail A′. It is firmly secured to the cross-ties by bolts passing through holes in lugs cast on the inner edge. In its upper surface there is molded a tapered dovetailed groove, *d*, extending from the heel nearly to the point, and in which is longitudinally inserted a tapered dovetail flange, *e*, at the bottom of a cast-steel frog-point, C. B′ is a similar frog-bed, whose edge is fitted to the neck of the rail A, and is secured inside of it to the cross-ties. It is also provided with a similar frog-point, C′, which forms part of the side track, while the frog-point C forms a part of the main line. Three or more sills, *c′*, are laid on and spiked to the cross-ties nearest the points of the frog-plates, and on the last one the ends of two guide-rails, D D, are pivoted, which extend over onto the frog-plates, overlapping the frog-points, to whose inner edges they are fitted. The guide-rails are sloped down to a flat point or edge at the free end, and are each formed with a sloping flange, *f*, at the edge next the frog-point, leading to a groove, *g*, for the flanges of the wheels of the trains to run into, which grooves run out at the edge of the guide-rail at some distance from the point of the frog. The sills *c′* are laid on the ties to raise the guide-rails to the plane of the top of the frog-plates. E is the switch-rod passing through a slot in the neck of the rail A′, and slots in the frog-plates. Each guide-rail is connected therewith by a lateral plate, *h*, by a pivot-bolt through its end, the connections being secured by a keeper-plate, *i*, overlapping their ends, and intermediately bolted to the switch-rod, which may be moved by a crank or other gear.

When the guide-rails are set for the main line, as seen in Fig. 1, trains running thereon will keep it. If a train be standing on the side track it can be run off onto the main line without shifting the guide-rails, the flanges of the wheels on the side next the rail A running up the sloped end of the guide-rail, and along its top until they drop off the outside edge thereof, as soon as they become tangent thereto. The groove *g* in each guide-rail need not necessarily be formed in the top thereof, for the flanges of the wheels running over it will soon cut or wear a depression by abrasion.

If the switch be set as seen in Fig. 3, and a train be coming down the main line from the direction of the arrow *b*, the flanges of the wheels next the side track will keep inside the frog-point B, and run up and onto the guide-rail D set against it until they drop off between the latter and the rail A′, by which time the treads of the wheels will have a full bearing upon the latter.

Thus it will be seen that at all times the flanges of the wheels are inside the main-line

rails in running over the switch, and thus no accident can occur, no matter which way the switch be set.

What I claim as my invention is—

1. In a railway-switch the combination of the stationary rails A A′, the latter forming a part of the siding, the stationary frog-beds B B′, having the tapered dovetail grooves *d*, the stationary frog-points C C′, having the dovetail flanges *e* embedded in the said frog-beds, and the movable guide-rails D D, all constructed, arranged, and operating substantially as described and shown.

2. The combination of the movable guide-rails D D, fitted to the sides of the frog-points, having their free ends sloped to a flat point, and provided with the flanges *f* and grooves *g*, substantially as described and shown.

3. The combination, with the movable guide-rails D D and switch-rod E, of the plate *h*, and keeper-plate *i*, all constructed and arranged substantially as described and shown.

CHARLES H. WHITE.

Witnesses:

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H. S. SPRAGUE.