

C. THOMPSON.
RAILROAD-SWITCH.

No. 175,205.

Patented March 21, 1876.

Fig. 1.

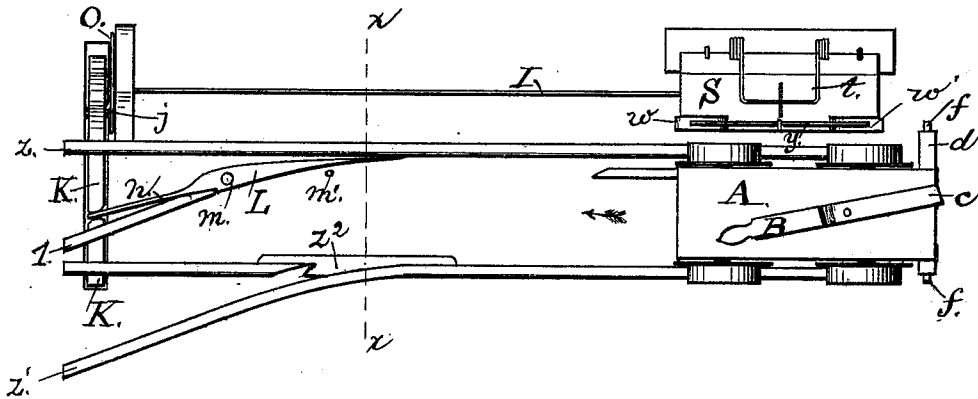


Fig. 2.

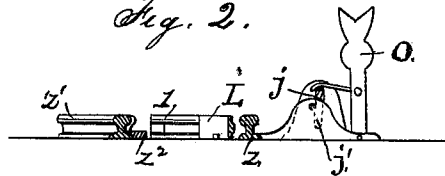


Fig. 3.

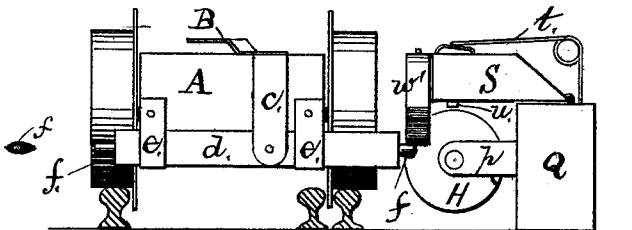


Fig. 5.

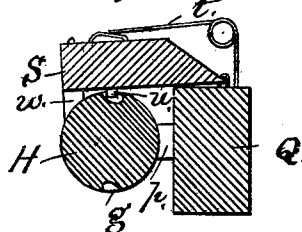
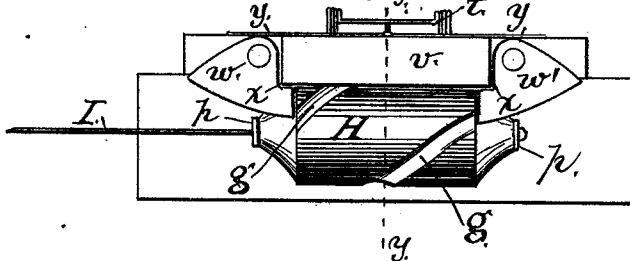


Fig. 4.



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IMPROVEMENT IN RAILROAD-SWITCHES.

Specification forming part of Letters Patent No. 175,205, dated March 21, 1876; application filed February 24, 1876.

To all whom it may concern:

Be it known that I, CLINTON THOMPSON, of Graham, in the county of Nodaway and State of Missouri, have invented certain new and useful Improvements in Railroad Switches, and in devices for operating the same, and which are fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a plan of a track with my improved switch and its connections, and showing how the switch may be operated by the engineer from a locomotive or truck, the switch being shown closed; Fig. 2, a cross-section in the line *xx* of Fig. 1, but with the switch open and the target or signal standing up or vertical; Fig. 3, an end elevation of the locomotive or truck, with its slide-bar in position to actuate the switch-operating devices; Fig. 4, a detail view, in elevation, showing the grooved cylinder or barrel and its immediate connections; and Fig. 5, a central cross-section on the line *yy* of Fig. 4.

My devices are designed to be operated to actuate the switch by the engineer or other attendant on the train while the cars are in motion.

On the locomotive or car A is a lever, B, the handle of which is so located as to be readily reached and operated by the engineer or employé, its rear end *c* being connected with, and serving to operate, a slide-bar, *d*, supported in any suitable guides, *e*, on the locomotive or car, and to slide it endwise, so that either of its ends, as desired, may be made to project over and outside of the track. The two ends of this slide-bar are severally provided with a boss or pin, *f*, preferably of double-convex-lens shape, so that it may readily enter edgewise one of the spiral grooves or furrows *g* in the semi-rotating cylinder or barrel H, which is secured to the rod or bar I, at the other end of which is a crank, *j*, for operating the slide-bar K, and through it the pivoted switch or foot L, pivoted at *m*, a pin, *m'*, limiting its range of movement. This foot is formed with, or has secured to it, a spring piece or heel, *n*, by which it is connected to the slide-bar K. The target or signal O is connected to, and operated by the movement of, the bar K, so as to stand at a vertical or

at an inclined position, to indicate the position of the switch or foot L, and inform the engineer whether the same is open or closed. The grooved barrel H is supported in bearings *p p* on a stationary support, Q, and has two similar furrows or grooves, *g g*, each of which winds half-way around the cylinder, the ends of each terminating diametrically opposite the ends of the other. To the support Q is hinged a flap or cap, S, a spring, *t*, of any appropriate kind exerting a constant tendency to press the flap downward, and thus to keep the steadying-pin or catch *u* in one of the furrows or grooves *g* or *g*. On the front side of the cap S—that is, on that side which is toward the track—are secured a fixed piece, *v*, and two swinging inclines or guides, *w w'*, each having a rabbet, *x*, to limit its swinging motion in a direction toward the fixed piece *v*, which is located between them. A spring, *y* or *y'*, serves to bear down upon the guides *w* or *w'*, respectively, and to restore each of them to position after being lifted.

The outside rails *z* and *z'*, it will be observed, are both continuous or unbroken; and the frog *z²* is simply a gap or opening in what would otherwise be a continuous straight rail of the main track, and it neither has nor needs any switch at that point, the single spring foot or switch L being the only one required under my mode of construction and operation, and forming the connection for guiding the trains to and from the turnout or side tracks *1 z'*.

The crank *j* works in a slot, *j'*, in the slide-bar K, or in any equivalent manner, to impart to it its sliding movements.

From the above construction it will now be seen that when a train is coming toward the switch, as indicated by the arrow in Fig. 1, and the target is perpendicular, the main track is clear, the switch L being open, and no obstruction is offered to keeping the main track. But if, under these conditions, the engineer wishes to switch off his train to the side track, he simply, by means of the lever B, shifts the slide-bar *d*, so that one of its pins *f* shall be moved laterally from the engine far enough to ride under the lower and inclined edge of the swinging guide *w'*, and thence into one of the spiral grooves *g* of the cylinder. This action of the pin lifts the cap, so as to

release the catch *u* from the groove, and permit the cylinder to be revolved half-around by the pin *f* running in its groove, and as it does so the switch is closed, and the train passes to the side track, the swing-guide *w* being lifted by *f* as it emerges from the groove, and the cap, swing-guides, and cylinder resume their proper positions, all ready for a train which may next come along.

When a train is running in the opposite direction it is immaterial whether the spring switch or foot *L* be open or closed, because, if closed, the resilience afforded by its spring-heel allows the flange of the wheels to press it aside, and pass without difficulty or obstruction between the outer straight rail *z* and the switch *L*, the latter yielding laterally to the extent needed, and then immediately, by force of the spring, resuming its position close against the rail.

A train may pass off the switch when the main track is open; or a train may pass and go from the switch when the switch is open.

There is really, therefore, no position in which this spring-switch can be left that will cause a train to get off the track.

When the target is perpendicular the main track is clear, and when it stands inclined toward the switch the switch is clear.

There are, practically, two continuous rails

under all conditions, and running in either direction, thus reducing to the minimum all liability of wreck of trains at the junction of this foot with the track.

I claim—

1. The cylinder *H*, provided with two similar spiral grooves, *g g*, open at their ends, and applied in combination with switch-actuating mechanism, substantially as and for the purpose set forth.

2. In combination, the slide bar or rod *K*, the pivoted switch-foot *L*, provided with a spring-heel, *n*, and the frog or gap *z*² in the main track, these parts acting in conjunction, substantially as and for the purpose set forth.

3. In combination with the grooved cylinder *H*, the yielding cap *S*, provided with a catch, *u*, and the swing-pieces *w w'*, substantially as and for the purpose set forth.

4. In combination with the spring foot or switch *L n*, and with the opening or frog *z*², the two continuous outer rails *z* and *z*¹ of the two tracks, the combination serving to prevent wrecks at turnouts, in whichever direction a train may be running, and whether the switch be open or closed.

CLINTON THOMPSON.

Witnesses:

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