E. H. BRONSON.

Railway-Switch.

No. 210,293. Patented Nov. 26, 1878.

Fig. 1

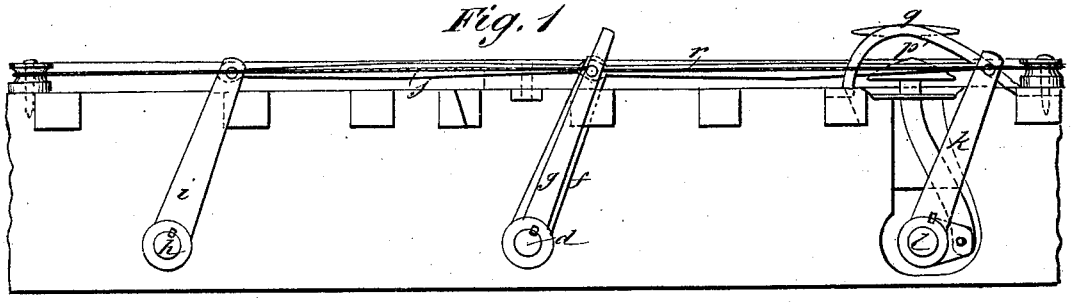


Fig. 2

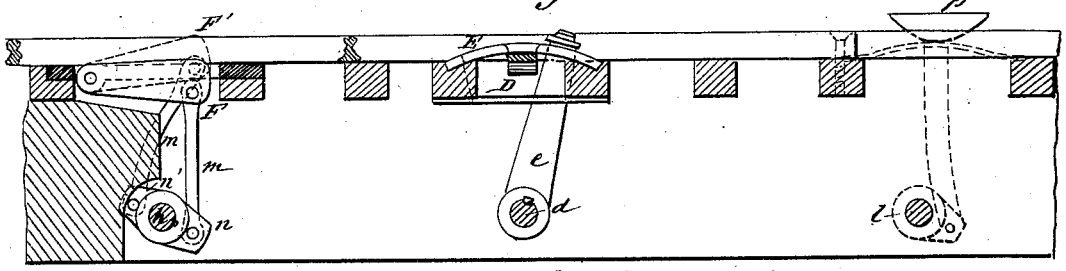


Fig. 3

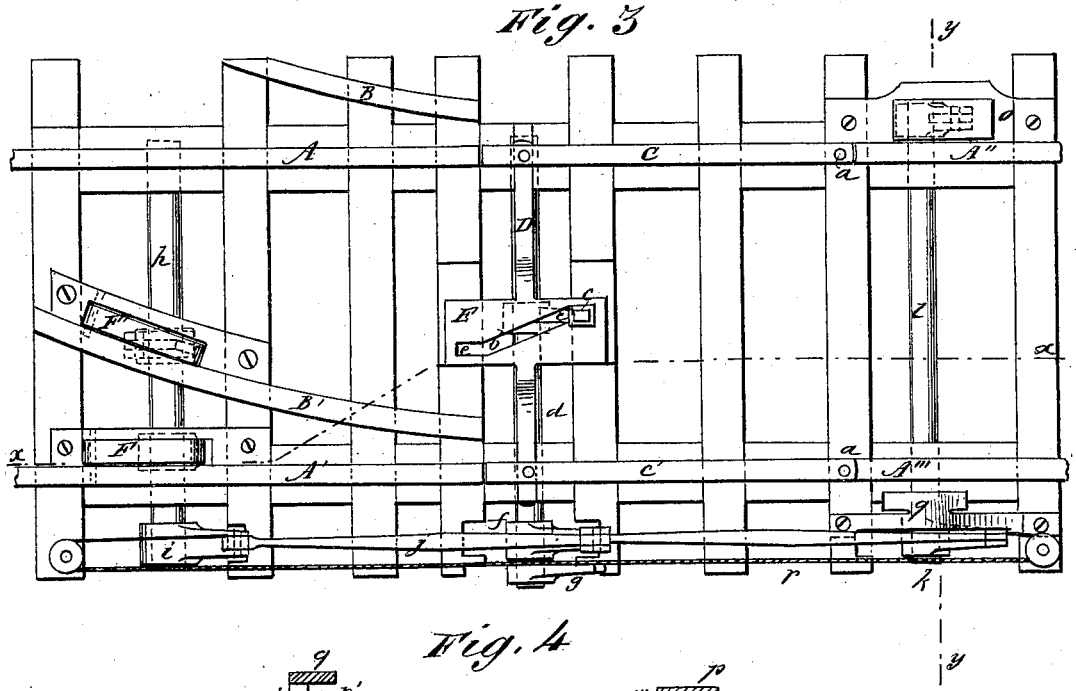
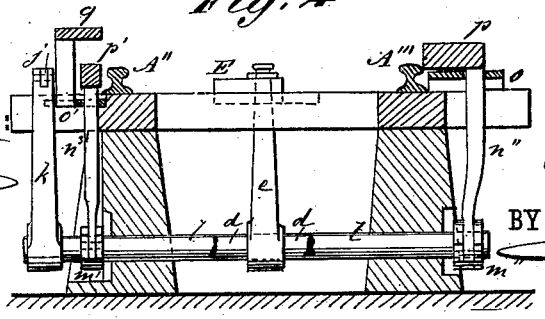


Fig. 4



WITNESSES:

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UNITED STATES PATENT OFFICE.

ERSKINE H. BRONSON, OF OTTAWA, ONTARIO, CANADA.

IMPROVEMENT IN RAILWAY-SWITCHES.

Specification forming part of Letters Patent No. **210,293**, dated November 26, 1878; application filed February 28, 1878.

To all whom it may concern:

Be it known that I, ERSKINE H. BRONSON, of Ottawa, in the Province of Ontario and Dominion of Canada, have invented a new and Improved Railway-Switch, of which the following is a specification:

Figure 1 is a side elevation of my improved switch. Fig. 2 is a longitudinal section taken on line *x x* in Fig. 3. Fig. 3 is a plan view. Fig. 4 is a transverse section taken on line *y y* in Fig. 3.

Similar letters of reference indicate corresponding parts.

My invention relates to automatic switches for railways; and it consists in the combination of rock-shafts, levers, treadles, and a switch-rail connecting-bar, having a cam-slot for receiving the end of the switch-operating lever.

The object of the invention is to provide a simple and effective switching device that may be operated by a train approaching from either direction.

Referring to the drawing, A A′ A″ A‴ are main-track rails. B B′ are branch rails, and C C′ are the movable switch-rails, which are pivoted at *a* to one of the cross-ties. The free ends of the movable switch-rails are connected together by a bar, D, in the middle of which there is a cam, E, having a slot, *b*, which traverses the bar diagonally, and has a straight portion, *c*, at each end. Below the bar D a rock-shaft, *d*, is journaled in suitable supports. Three arms, *e f g*, are secured to the said rock-shaft, and all extend in the same direction.

The cam E is curved on a circle struck from the center of the shaft *d*, and the upper end of the arm *e* projects through the slot *b*, and is capable, when oscillated by the shaft, of moving the bar D longitudinally sufficiently to shift the movable switch-rails from the main track to the branch, or the reverse; and when the rails are thus shifted they are locked by the entrance of the end of the lever into the straight portion *c* of the cam-slot.

The lever *g* is designed for moving the switch by hand, and the lever *f* is connected with the automatic apparatus.

Under the main-track rails and under the branch rails a rock-shaft, *h*, is journaled, and provided with an arm, *i*, that is connected with the arm *f* by means of a connecting-rod, *j*, which extends also to an arm, *k*, on the rock-shaft *l*.

At the inner side of the main-track rail A′ there is a treadle, F, which is connected by a rod, *m*, with a short arm, *n*, secured to the shaft *h*. A similar treadle, F′, is placed inside of the branch rail, and connected with an arm, *n′*, which projects from the shaft diametrically opposite the arm *n*. By means of this arrangement the switch is operated from the branch side of the switch.

If the train approaches the switch on the main-track rails A A′, and the movable switch-rails C C′ connect with the branch rails B B′, the switch-rails are shifted by the engagement of the flange of the pilot-wheel of the locomotive with the treadle F; and if the train approaches the switch on the branch rails B, the treadle F′ is engaged by the pilot-wheels, and the switch-rails are shifted from the main track to the branch.

The rock-shaft *l*, which is placed below the track-rails A″ A‴, is provided with two short arms, *m′ m″*, near opposite ends. A bar, *n″*, is pivoted to the arm *m″*, and extends upward through a guide, *o*, secured to the cross-ties, and has upon its upper end a cam, *p*, with two inclined faces. The cam is lowest at the center, and inclines upward each way toward the ends. The cam is arranged parallel with the track-rail and in position to be engaged by a stud or arm carried by the engine.

A bar, n^3, is pivoted to the arm *m′*, and extends upward through a guide, *o′*, secured to the cross-ties, and has upon its upper end a cam, *p′*, which is parallel with the track-rail, and has two inclined faces, the center of the cam being highest. A guard, *q*, is placed over this cam, to hold the operating stud or arm into engagement with the cam.

The engine is provided with two arms, one on each side, for engaging the cams *p p′*, the said arms being provided with levers by which they may be operated from the engine. As the engine approaches the switch one or the other of the cams is engaged, thus moving the rock-shaft *l*, and, consequently, the rock-shaft *d*, and the switch-rails are moved as may be required.

By means of the oppositely-arranged cams

p p' the switch-rail may be moved in either direction by the levers carried by the locomotive.

A cable or chain, r, may be connected with the switch-operating levers, so that the switch may be operated through a long distance.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The guard q, arranged over the cam p', to hold the projecting arm of the locomotive to its work, to prevent it from riding over the cams without throwing the switch-rails.

2. The combination, with rod D, of the diagonally-slotted cam E, whose slot is straight at each end, and the shaft d, having an operating-arm, e, and the movable switch-rails, as shown and described.

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Witnesses:
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