C. HUGHES.

RAILROAD SWITCH.

No. 181,785. Patented Sept. 5, 1876.

Fig. 4

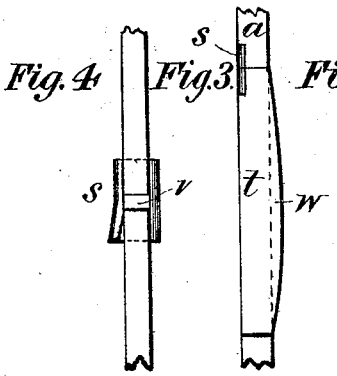


Fig. 3

Fig. 2.

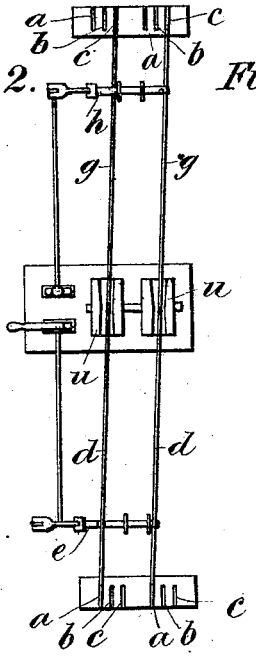


Fig. 1.

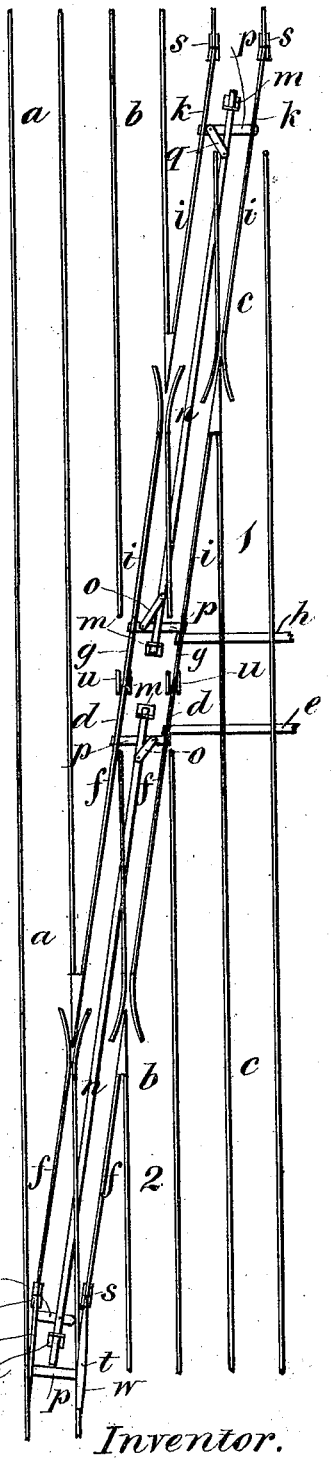
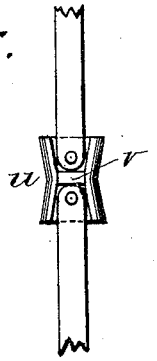


Fig. 5.



Witnesses.

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UNITED STATES PATENT OFFICE.

CHARLES HUGHES, OF MONTREAL, QUEBEC, CANADA, ASSIGNOR OF PART OF HIS RIGHT TO WILLIAM ANGUS, JOHN MACFARLANE, AND JAMES MACFARLANE, OF SAME PLACE.

IMPROVEMENT IN RAILROAD-SWITCHES.

Specification forming part of Letters Patent No. **181,785**, dated September 5, 1876; application filed June 8, 1876.

To all whom it may concern:

Be it known that I, CHARLES HUGHES, of the city and district of Montreal, in the Province of Quebec, Canada, have invented certain new and useful Improvements in the Construction of Railways; and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention has reference to an improvement on railway-switches, for the purpose of enabling cars or trains to be switched or shunted in such a manner that the assortment of cars to make up a train from an accumulated number of cars, or to disperse or divide a train onto different rails, may be more readily effected than by the switches at present in use, and will be found useful in the case of arranging cars for delivery of freight at sheds, &c. It also provides a means of crossing a track, or a number of tracks, on the level to any rail on the other side of them.

My invention further arranges a means of working two switches at the same time. It also dispenses, in certain cases, with the usual frogs, by what I call a "take-off," and a new form of chair to receive the end of the switch-rail.

In the drawings hereunto annexed similar letters of reference indicate like parts, and Figure 1 is a plan showing my invention. Fig. 2 is a plan of modification of Fig. 1. Fig. 3 is a side elevation of take-off. Fig. 4 is a plan of chair. Fig. 5 is a plan of chair modified.

Letters *a b c* may be taken to be three main tracks of rails. *d* is a switch, operated by a lever, &c., attached to the connection *e*, so that the switch-rails may be set, as shown in the drawings, to unite with the rails *f* or with the rails *b*. *g* is a similar switch, operated by a lever, &c., attached to the connection *h*, so that the switch-rails *g* may be set, as shown in the drawings, to unite with the rails *i* or with those *b*.

The levers attached to *e* and *h* will, by an arrangement of axles and cranks, be brought together, so that they may be operated by one person at the same time.

k is a switch connecting the rails *i* with those *c*, and *l* is a switch connecting the rails *f* with the rails *a*. These two switches, as shown in the drawings, are arranged to be operated simultaneously with the switches *d* and *g*; but this is not necessarily so, as they may, if desired, be arranged to be operated by a lever, in the ordinary manner.

My means of operating the two switches *d* and *l* or *g* and *k* simultaneously is as follows: *m* are two brackets attached to the sleepers of the track, having an opening to receive the flat bar *n*, sliding freely in them. To this is pivoted, in the position shown, one end of a link, *o*, while the other end of the link is attached to the distance-bar *p*, for holding the two switches the proper distance from each other, so that by moving the switch-rails, and setting them to the one track or the other, the bars *n* are caused to move longitudinally. In the form of switch shown at *k*, by attaching a link, *q*, to the bar *n*, and distance-bar *p* in the position shown in the drawings, the switch-rails are caused to move with the motion of the bar *n*. In the form of switch shown at *l*, the switch-rail *l* is provided with an arm, *r*, having a slot-opening under the bar *n*, to receive a pin set into the rail on its under side, so that the rail *l*, rotating with its end in the chair *s* as a center, is caused to move close up to the rail *a*, or remove to a distance from it in accordance with the motion of the bar *n*. To cause the rail *t* (being the other switch-rail, mate to the rail *l*) to move with it, a distance-bar, *p*, unites the two, the distance-bar passing under the rail *a*.

The particular form or construction of the chair *s* is more clearly shown in Fig. 4, and is similar to those already in use, only that it is formed with a central bridge piece, *v*, extending up the size and height of the rail, so that it may be said to form a short piece of the same; and the one half of the chair that receives the end of the switch-rail is flared out an amount equal to that required for the angle to which the rails have to move.

The chairs *u* are similar to those *s*, with the exception that, as they receive a switch-rail at both ends, they are "flared" or "belled" on both ends, as shown in Fig. 5. The "take-

f" is more clearly shown in Fig. 3. It is constructed with a flange, *w*, that comes over the il. This flange is tapered off at both ends, that the wheels passing over it readily ount or raise and lower, and by its thickness eir flanges are carried over without touchg upon the rail *a*, thus dispensing with the dinary frog.

In the modification shown in Fig. 2 of my vention, as compared to that in Fig. 1, the ils *a b c* are made to converge to one double itch, *g* and *d*, and in this case, although but ree sets of rails have been described and own in the drawings, yet the ends of a greater mber may be brought to the range of conecting with the double switch.

The operation of my invention is as follows: eferring, in the first instance, more particurly to Fig. 1, by setting the switches in the sition shown, a train coming on the line *a*, the direction from the bottom of the drawgs, can pass directly across the line *b* onto e line *c*, or, by setting the switch *g* to the ils *b*, it can pass onto them. In case of a ain arriving at the switch *l*, (coming from e direction of the bottom drawings,) requirg that the first portion of the train shall conue on the line *a*, the second on the line *c*, d the third on the line *b*, the cars for *b* will uncoupled and left at the switch *l*. The gine will then proceed, with the switches in e position shown in Fig. 1, onto the line *c*, d leave the second part of the train at 1. It ll then come back and connect with the third rt of the train, which it will leave at 2, and en return to the switch *l*, and can proceed ong the line *a* at once with the remainder of e train.

The switches shown in Fig. 1 may be set in ries, so that a greater number of tracks than three may be provided for, and if the lines are continued for some distance parallel they may also be set at intervals, to give a greater amount of accommodation.

In the modification shown in Fig. 2 the trains arriving at one end of the switch (by setting the switch one half to agree with the rail upon which the train is, and the other half either to agree with the continuation of the same rail or with any of the other rails) can, by passing over the switch, be transferred directly from one rail to the other.

In Fig. 2, the switch *d* is shown to connect with the rails *a*, while the switch *g* connects with those *c*. Therefore, in that position, a train passing over the switch will be transferred from the rails *a* to those *c*, and vice versa; or, by setting the switch to the rails *b* or *a*, the train would pass onto those rails.

The advantages of this switch in dividing or sorting out cars, either to make up a train from cars on different tracks or to distribute a train of cars onto different tracks, are at once apparent.

What I claim is as follows:

1. The combination of the switches *d* and *g* with rails *a b c* and *i f*, substantially as and for the purposes described.

2. The chair *s*, having bridge-piece *v* and flared or bell-shaped end, substantially as and for the purposes described.

3. The chair *u*, flared at both ends, having bridge-piece *v*, substantially as and for the purposes described.

Montreal, 8th day of May, A. D. 1876.

CHS. HUGHES.

Witnesses:

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E. L. STILWELL.