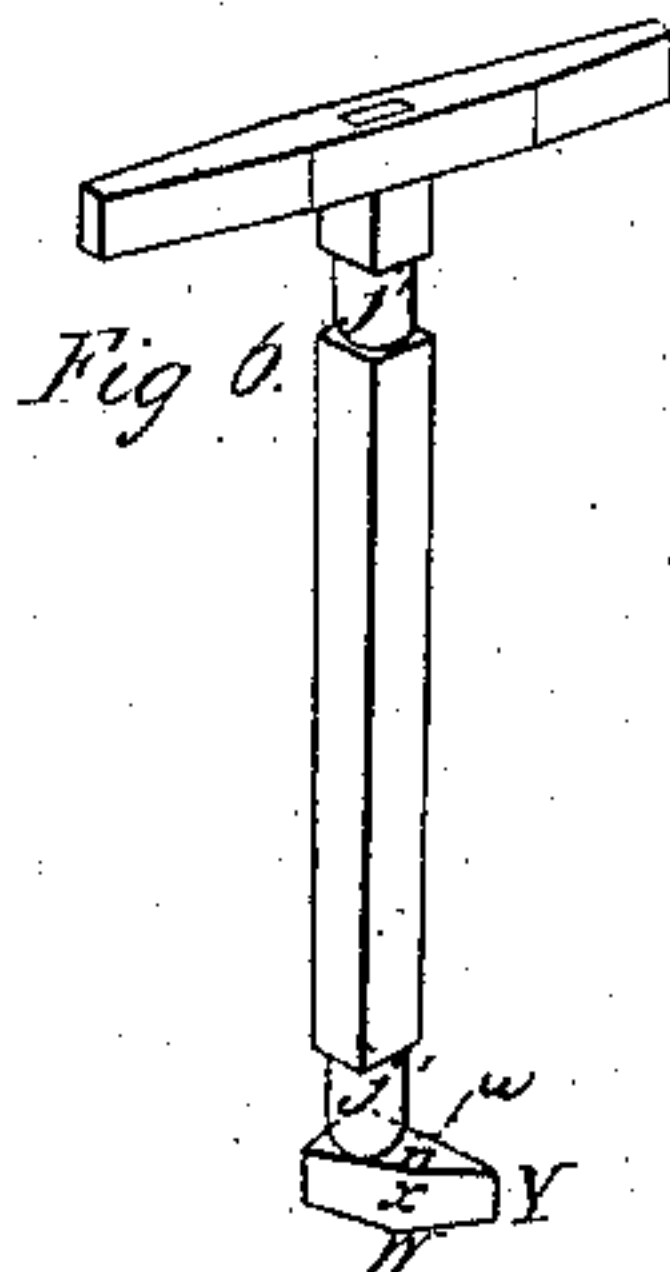
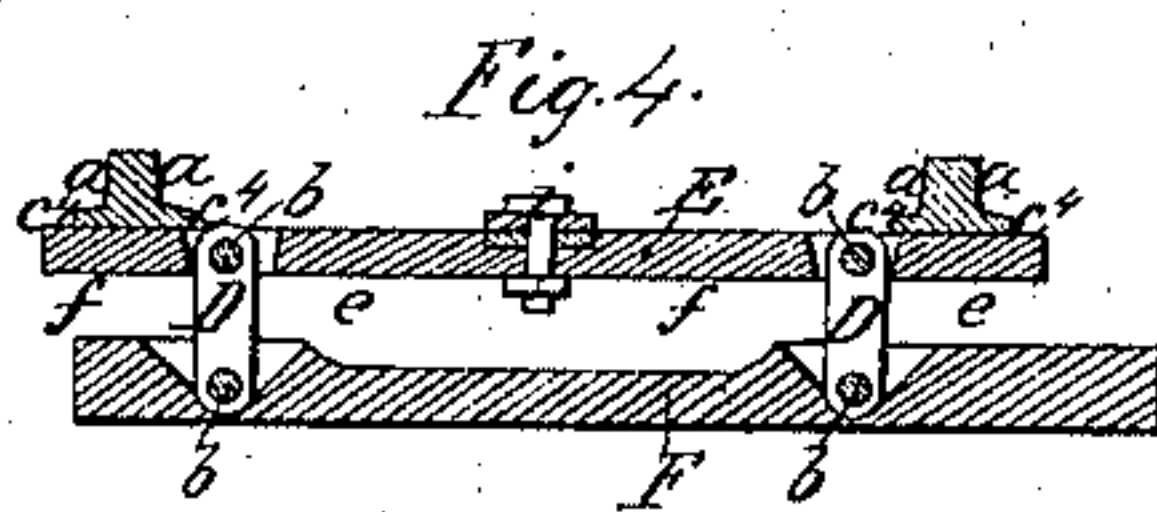
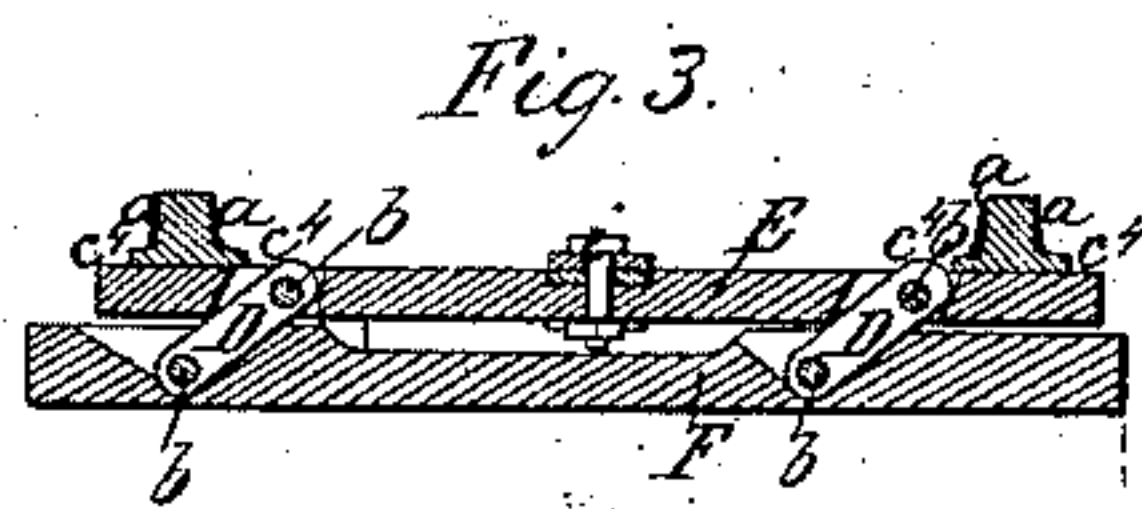
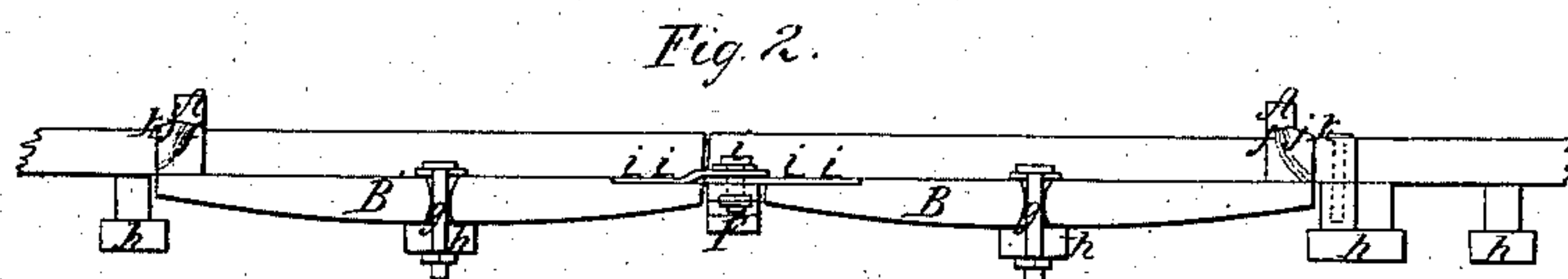
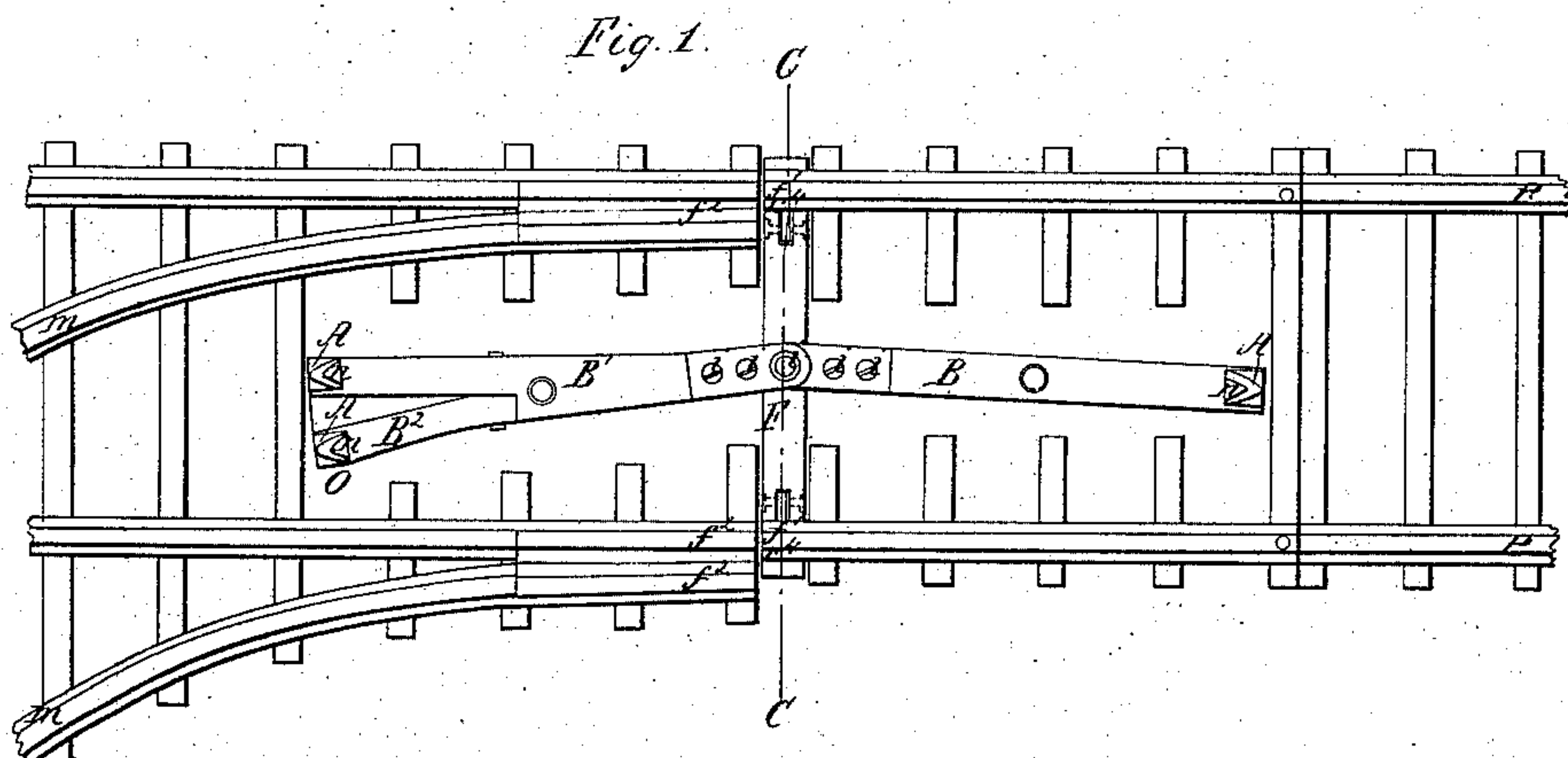


J. Reynolds,
Railroad Switch.

N^o 8,694.

Patented Jan. 27, 1852.



UNITED STATES PATENT OFFICE.

IRA REYNOLDS, OF REPUBLIC, OHIO.

RAILROAD-SWITCH.

Specification of Letters Patent No. 8,694, dated January 27, 1852.

To all whom it may concern:

Be it known that I, IRA REYNOLDS, of Republic, in the county of Seneca and State of Ohio, have invented a new and Improved
5 Mode of Changing the Switch-Rails of Railroad-Tracks; and I do hereby declare that the following is a full accurate description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon, the same letters referring to the same parts.

The nature of my invention consists in attaching radial links, or arms, and swiveled levers, to the stay bar, connecting the switch
15 rails, in such a manner as to secure a perfect change, and lock, for the same; but in order to enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation.

20 Figure 1 is a plan, showing a section of the main track and turn out, or side track, also the position of the longitudinal swivel levers, with a top view of the ways or projections A, A, A, for moving the same.
25 Fig. 2, is a central, vertical, longitudinal, section, showing the under side of the levers B, B', the point on which they turn, also a side view of A, Fig. 1, Fig. 3, is a transverse section on the dotted line C C of Fig. 1,
30 showing the position of the double hinged link or arm D, when the track is in place, Fig. 4, is a similar section, giving a vertical view of the link, or arm, as the track is being changed, Fig. 5 is an end view of the
35 double track showing the bevel and curve between the rails, Fig. 6 is a perspective view of the operative lever, which is attached to the locomotive and acts upon the ways or projections A which are attached
40 to the swivel levers B, thus adjusting the switch rails, at the will of the operator.

In constructing this switch, I use the common superstructure and place upon the sills thereof, a heavy bar or plate of iron F,
45 Figs. 2, 3, and 4 with slots, or mortises, through it, for securing the lower ends of the links, or arms, D, Figs. 3 and 4. I also attach to the ends of the switch rails, another heavy stay-bar, of iron E, with slots
50 or mortises as above in which I secure the upper ends of the links, or arms, by means of strong bolts, as seen in Figs. 3, and 4, at b, thus forming double hinges, in the two bars as above, these links or arms are made
55 of wrought iron of suitable size and length with holes in each end for the bolts b, on

which the link, or arm, turns, these links, or arms, may be made of different lengths but it is presumed that the length between the center of the holes, should be about
60 equal to the distance required for the switch rails to move, so that when the track is in place the link or arm forms a complete lock for the switch rails as seen in Fig. 3, and will hold them in that position until oper-
65 ated upon by the action of the swivel lever B, when they will turn upon the several hinge joints, thus scribing a segment of a circle from e, to f and acting as a stay or security, for the switch rails and stay bar,
70 and at the same time secure a perfect and uniform motion, and action, of the levers B in changing the track as seen in Fig. 4.

The lever B is made of strong timber or other material and is of suitable size to se-
75 cure the desired strength, and is about 16 feet long, this lever is sloped off on the under side so as to form a convex bearing in the center where it rests on the superstructure h, to which it is secured by a bolt, or
80 pin, g, Fig. 2, in such a manner as to form a swivel joint on which it turns; being thus attached, by the strong bolt or pin g, near the center of the track and to the stay bar F, by means of strong bars of iron, and
85 bolts, as seen in Figs. 1, 2, 3, and 4 at i, it is held firm and steady while the operative lever Fig. 6, acts upon the way or projection A Figs. 1, and 2, these ways or pro-
90 jections may be made of cast iron and of a wedge shape as seen at A Figs. 1, and 2. The upper portion n, being the smallest, forms shoulders j, Fig. 2, which are slightly
95 inclined both ways as seen at j j, Fig. 2, so that when the operative lever Fig. 6, (which is attached to the locomotive) strikes on the shoulder j, just above h, it presses it down and passes up until it strikes the
100 smaller portion n, which being of a wedge shape presses the lever sidewise, thus giving it a downward lateral motion and of course reverses the motion of the opposite end of the lever which is attached to the
105 stay bar F, the stay bar being attached to the switch rails, and secured by the arm or link, raises the stay bar and switch rails, as seen in Fig. 4, at which position, it will be
110 seen that the plane is reversed, thus giving a descending shoulder for the operative lever to pass down, while the side pressure continues until the operative lever has passed, the way, or projection, when the arms or

links will have scribed the segment of a circle from *e*, to *f*, Fig. 4, and the switch rails will again be secured and locked as seen in Fig. 3.

5 The lever B^1 is similar to that of B, described above with an arm B^2 Fig. 1, attached thereto with strong bolts, and is curved so that the end of the lever on which the way or projection is secured, comes in
10 in the center of the side track, and is operated in the same manner as the lever B of the main track, so that if the train was on the side track *m, m*, Fig. 1, by turning the operative lever Fig. 6, so as to strike the way
15 or projection on the side at O, Fig. 1, it would change the switch rails and receive the train on the main track, and would have the same effect upon the switch rails, as it would if the train were coming upon the main track
20 at P, P, Fig. 1, and desired to run on the side track *m, m*, the levers in both cases moving the same way. It will also be seen from this, that whenever the change is made at either end of the levers the opposite end
25 moves in the same direction, thus shifting the ways, or projections, on the opposite end, so that the operative lever, attached to the locomotive will pass without touching, whether the train is upon the main or side
30 track.

The operative lever Fig. 6 is made of a strong bar of iron with the lower end turned, in the form of an elbow, and is secured at the journals *j'* to the locomotive
35 or car by means of boxes in which it turns, but as I do not intend to claim anything new in the attaching of levers or shifters to the locomotive or car, I will proceed to describe that portion of it, in which my improvement consists, which is in the shape of
40 the elbow or shoe *x*, which is slightly tapered on its sides toward the forward end *y* as seen by the lines *u, u*, Fig. 6, the underside of this elbow or shoe is beveled each way
45 from the point at *w*, so that it will not catch before it strikes the shoulders of the ways or projections, as above described, thus forming a part of the means whereby the swiveled lever B, receives a downward lateral motion, thereby producing a perfect
50 natural and instant change of the switch rails. The point *y* of this operative lever may be easily turned and secured so as to strike either side of the ways, or projections, or it may be made double and slide down,
55 by having the two points at *y* set sufficient distance apart to strike on either side of the ways, or projections, and slid down by means of levers, so arranged that only one
60 will be down at the same time, and thus produce the same action and secure the same movement of the lever B as that produced by the operative revolving lever as above.

About 6 feet of the double track of this
65 switch forming the main track and turnout

is made of cast iron, so constructed as to form a sort of beveled groove, so curved at the bottom as to form a perfect, smooth, concave, between the rails, as seen at Fig. 5, the design of constructing these rails in
70 this manner, will be apparent by comparing them with the ends of the switch rails (as seen at *a*, Figs. 3 and 4) which are slightly beveled down to the flanges *c^4*, it will here
75 be observed by comparing the position of the switch rails and arm or link D, Fig. 3, with that of the switch rails *f'*, and the double track *f^2*, Fig. 1, that the instant the switch rails start, (when operated upon by
80 the levers) the motion is upward, thus bringing the action of the beveled groove of the main track, and the beveled and flanged ends *c^4*, Figs. 3 and 4 of the switch rails to
85 act in unison, so that if any obstruction was placed between the main track and across the switch, it would instantly be thrown out, thus obviating all of the difficulties which
90 have heretofore existed with reference to the switch being locked or blocked up by designing persons or otherwise. The action of the levers upon the stay bar, and switch
95 rails, when held secure, by the arms or links, is perfectly calculated to relieve itself from snow, ice, or other obstructions, and when in place the links or arms form a most
perfect lock for the switch rails, securing them in every position.

The ways or projections A, are secured to the swiveled levers, by strong bolts, or otherwise, or the swivel levers may be cast of
100 suitable proportions to secure the strength required, with the ways or projections as desired.

I am aware that carriers or tumblers have been placed under switch rails, in order to
105 carry them over, and secure a certain motion and lockage, of the same, by placing a tumbler, under the rails without securing them thereto, in which instances, the motion of the lever is only lateral, therefore the
110 upward motion of the rail is produced by the tumbler, and is evidently straining upon the levers, and fastenings, of the switch rails, which are not secured against the undue action of the levers, neither would they
115 form a lock if placed under a main track switch, but in my switch, the action of the levers upon the stay bar and switch rails, when held in place by the links or arms, gives them an upward lateral motion consequently, I do not wish or intend to claim the
120 placing, or attaching of links, arms, or tumblers, under the switch rails, or stay bars, for the purpose of carrying them over, but

What I do claim and desire to secure by
125 Letters Patent is—

1. The attaching of the links or arms to the stay bar or switch rails, and superstructure, for the purpose of holding the switch
130 rails, against the undue action of the levers,

and securing them in a perfect, and uniform motion, when acted upon by the levers, also to act as a stay, or lock, which shall effectually hold and secure the switch rails in
5 every position, substantially as set forth.

2. I claim a combination of the pivoted levers B and B¹ furnished with peculiar formed ways A, with the operative shoe *a*, so constructed and arranged that the switch

rails are moved upward and laterally in 10 manner substantially as described.

In testimony whereof I have subscribed my name before two subscribing witnesses.

IRA REYNOLDS.

Witnesses:

A. GREGORY,

A. E. T. C. JOHNSON.