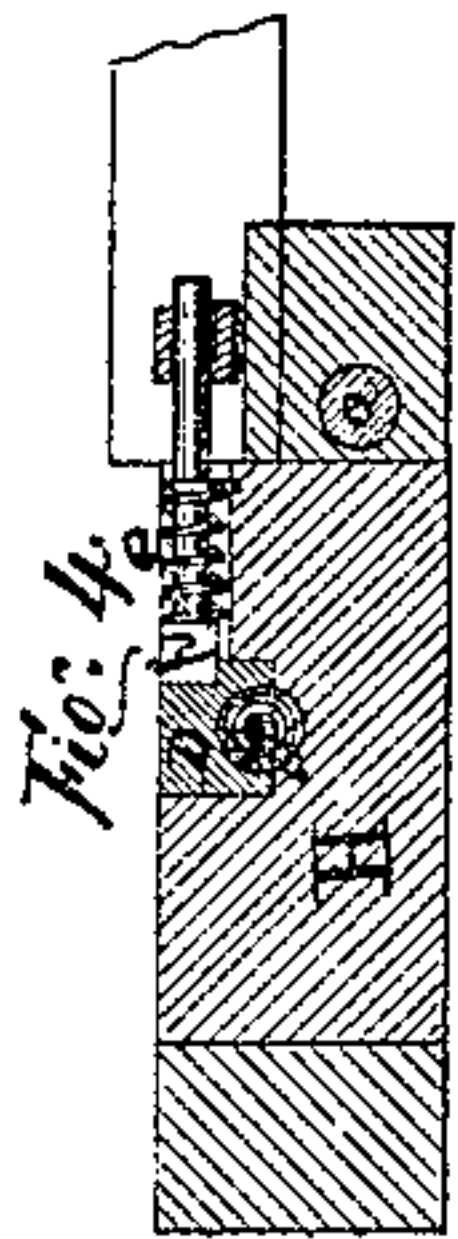
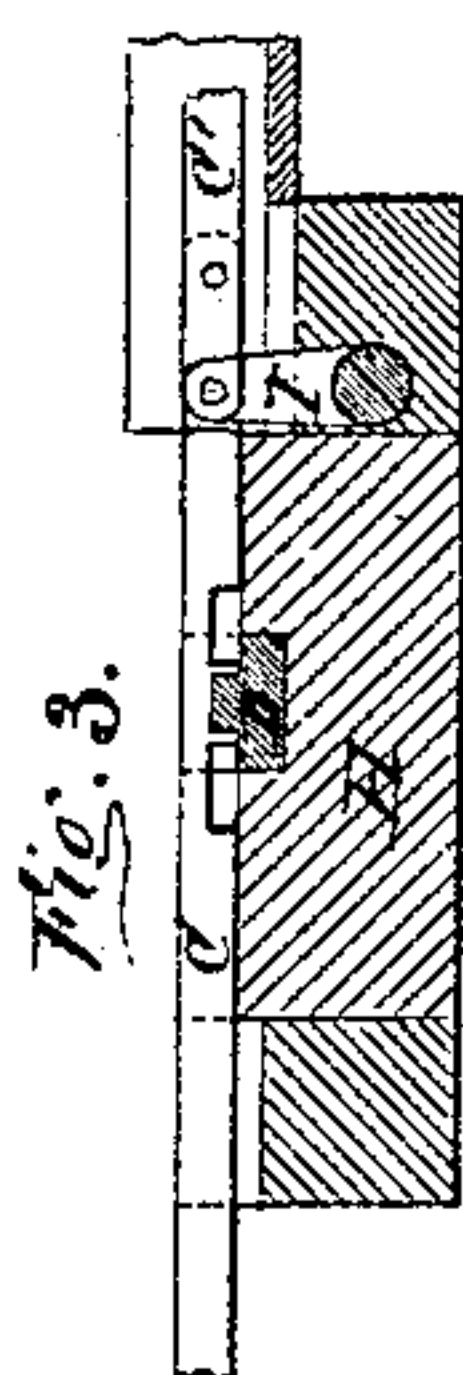
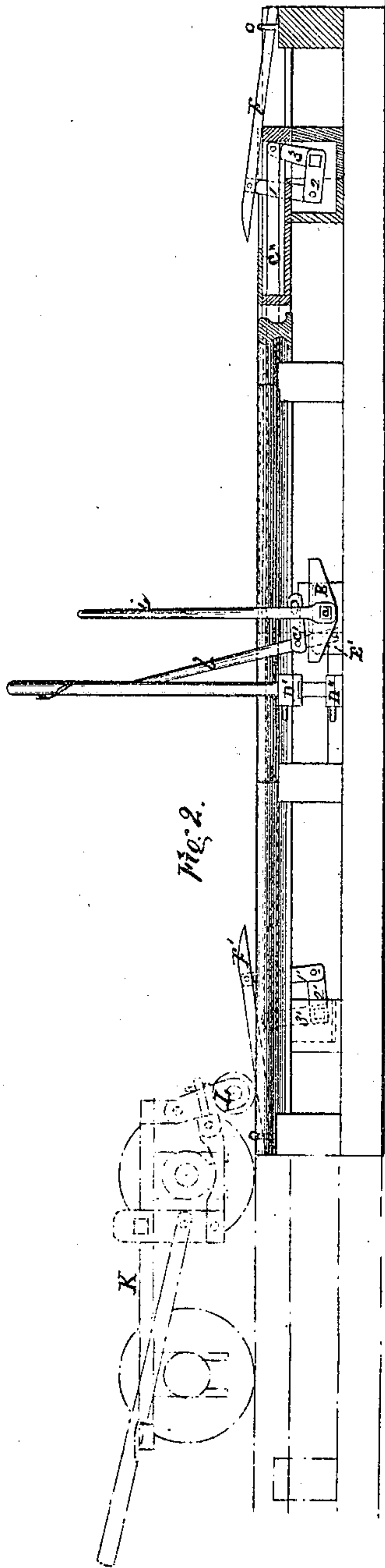
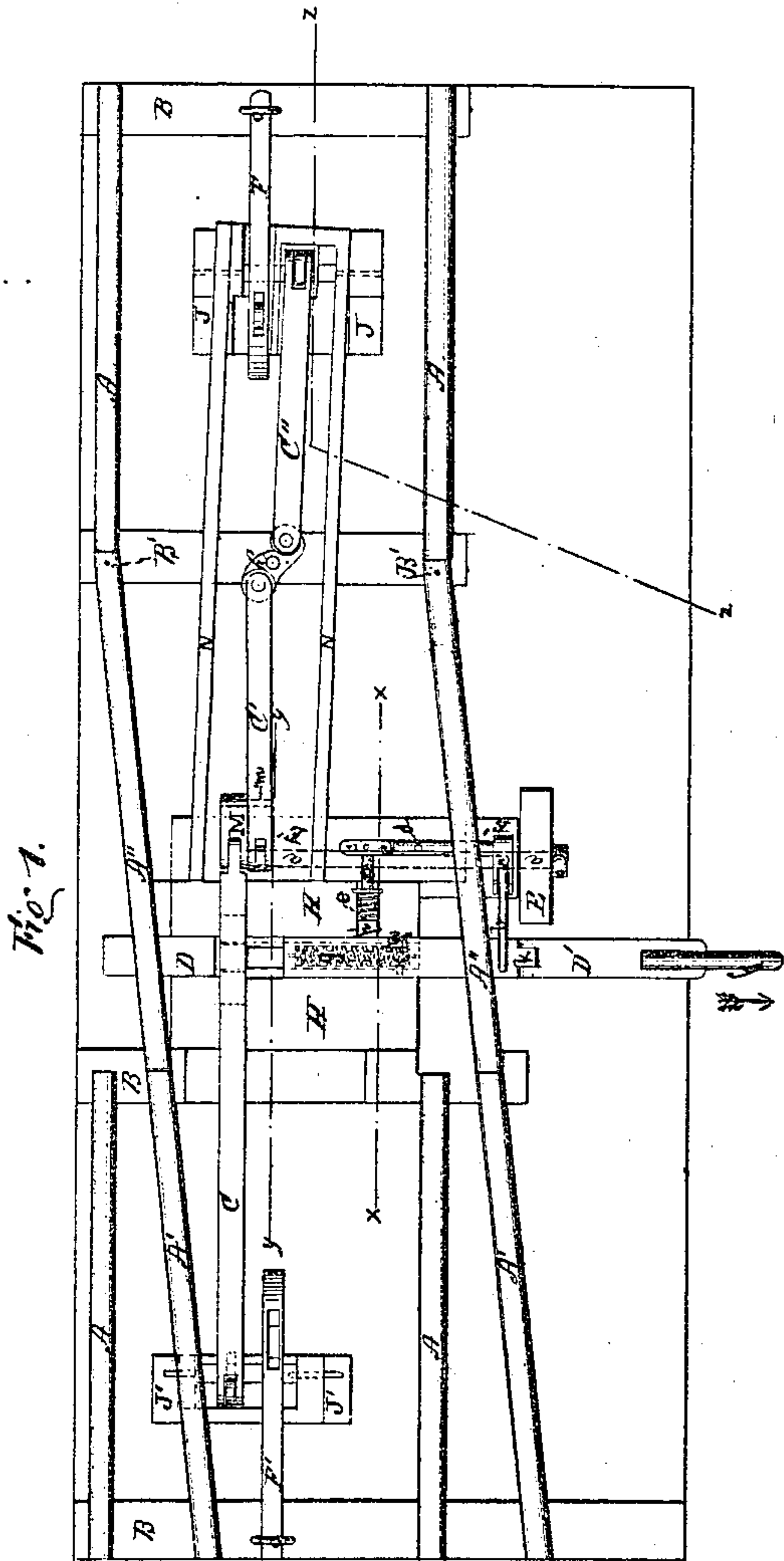


C. S. Smith,
Railway Switch.

No. 107,113.

Patented Sep. 6. 1870.



Witnesses:
G. Mathys.
James Blackford

Inventor:
Charles S. Smith.
by B. F. James.
his. Atty.

United States Patent Office.

CHARLES S. SMITH, OF SENECA FALLS, NEW YORK.

Letters Patent No. 107,113, dated September 6, 1870.

IMPROVEMENT IN RAILWAY SWITCHES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, CHARLES S. SMITH, of Seneca Falls, county of Seneca and State of New York, have invented a new and useful Improvement in Railroad Switches; and I do hereby declare the following to be a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification, in which—

Figure 1 is a top view of my invention;

Figure 2 is a side view, showing the two opposite ends, partly in vertical section;

Figure 3 is a cross-section of that part of fig. 1 through the line *y y*; and

Figure 4, a cross-section of fig. 1, through the line *x x*.

The nature of my invention consists in the method of attachment of the switch-rails to certain levers, the adjustment of springs thereto and securing the rails in their proper position.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

The main rails *A A A A* are attached to the ties and sleepers of the road-bed in the usual manner, as are also the siding-rails *A' A'*.

The switch-rails *A" A"* are pivoted to the tie *B'*, as shown in fig. 1, the opposite ends of said rails being allowed to rest upon and move freely upon the tie *B*.

Between the switch-rails *A" A"* is placed a bed-plate, *H H*, upon and within which the mechanism, by which said rails are moved and secured, is placed.

The sliding bar *D D'* is composed of two parts, and jointed at *k*, and is so constructed that the switch-rails may be fitted into the bar, resting in slots cut in the same, and conforming in shape somewhat to the flanges and web of the rails; this switch-bar is operated by means of a lever, *f*, the bottom of which is secured to a block, *D''*, (or in any other suitable manner,) and said lever passes through a mortise or slot of the jointed part of the bar *D'*; within the bar *D* is secured the coiled spring *g*, and a groove is made in the plate *H*, conforming to the shape and length of said spring, to allow an easy and free movement of the same, as seen in fig. 4.

When the switch-rails *A" A"* are in line with the main rails *A A*, (the same being the through or main track,) the lever *f*, being drawn toward the direction of the arrow, fig. 1, will cause the switch-rails *A" A"* to come into line with the siding-rails *A' A'*, and, by releasing said lever *f*, the power and force of the spring *g* will cause the switch-rails *A" A"* to return again to their alignment with the main track *A A*. It therefore becomes necessary to provide a means of

retaining and securing the bar *D* in the position desired to accommodate the transit of trains or cars over the road; this is done by means of the lever *C*, into the bottom side of which are cut grooves that fit into corresponding grooves in the bar *D*, as seen in fig. 3, in section; a rib or projection is left in the groove, formed on the bar *D*, that comes in contact with the rib formed on the lever *C*, between the two grooves, shown in fig. 3, and this arrangement holds the switch-rails in their proper position, as seen in fig. 1.

The lever *C* is connected with and pivoted to a series of levers contained within the box *J'*, being levers *1' 2' 3'*, as seen in fig. 2, and said lever *C* is also connected with the joint *M*, pivoted to the lever *C'* at *m*, and connected with the lever *C''* by means of lever *h*, which latter is pivoted centrally upon the cross-tie *B'*, as seen in fig. 1.

The lever *C''* is connected to a series of levers, *1 2 3*, contained within the box *J*, and are the counterparts of the levers to which the lever *C* is attached; and to the levers *1* and *1'* are attached the levers *F* and *F'*.

In order to secure the switch-rails *A" A"*, when in line with the main track *A A*, I employ another system of levers, springs, and stops, as follows:

The lever *b* is secured to the bottom of the piece *E'* that forms a part of the bed-plate, and is connected with the lever *c*, (which is pivoted at *d*, on the piece *E'*), by means of the arm *c'*, and at the opposite end of said lever *c* is pivoted a shaft or rod, *e''*; having secured upon it the coiled spring *e*, and a head, *p'*. This shaft plays in a groove formed upon the bed-plate *H*, and, when the bar *D* is released from the position shown in fig. 1, and the switch-rails *A" A"* are in line with the main track rails, the head *p'*, by means of the spring *e*, is forced into the socket *p* upon the bar *D*, so that the bar *D* cannot then be moved without withdrawing the head *p'*, by operating the lever *b*, with which it is connected, in the manner hereinbefore described.

E is a foot-treadle or lever that is attached to a shaft, *a*, that passes through the piece *E'*, and the opposite end of this shaft is connected with an arm or lever that is pivoted to the lever *C'*, and, by means of the joint *M*, to lever *C*. By means of this connection, if it is desired to change the switch-rails from the siding to the main track, all that is necessary is to place the foot upon the right side of the treadle *E*, which causes the lever *C* to be released from its contact with the rib on the bar *D*, and allowing the switch-rails to be forced, by means of the spring *g*, into the desired position. A lever, *i*, may be applied to the shaft *a* to operate the same in lieu of or in addition to the treadle *E*.

It will be noticed that when the switch-rails are in line with the siding-rails A' A' the levers F' F' are raised above the tops of the rails, so that a locomotive going in either direction, by means of suitable rods or rollers attached to the same, can, by depressing them, operate the switch automatically. Thus, if a locomotive is desired to pass along the main track it will, when approaching the lever F, cause the wheel-rod, or other suitable device, to be brought in contact with said lever, and the line of the main track remains unbroken by thus operating and moving the switch-rails; and if, from the same direction, it is desired to pass upon the siding, the wheel-rod, or other device, is raised, so as not to come in contact with the lever F.

N N are sides forming a box, if desired, containing within it the levers c', c'', h, &c., which can be covered, in order to prevent dirt or snow from coming in contact with the same.

The plate H H can also be covered in the same manner, if desired.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A railway switch, constructed and arranged in its several parts, and operated in the manner and for the purpose herein described.

2. The combination of the lever C and the bar D, constructed and arranged to lock the rails A" A" and hold them firmly in position, in the manner and for the purpose herein described.

3. The combination, of the treadle E and shaft a with the lever C', joint M, lever C, and levers F' 1' 2' 3', in the manner and for the purpose herein described.

CHARLES S. SMITH.

Witnesses:

C. H. WEED,
JACOB H. CORL.