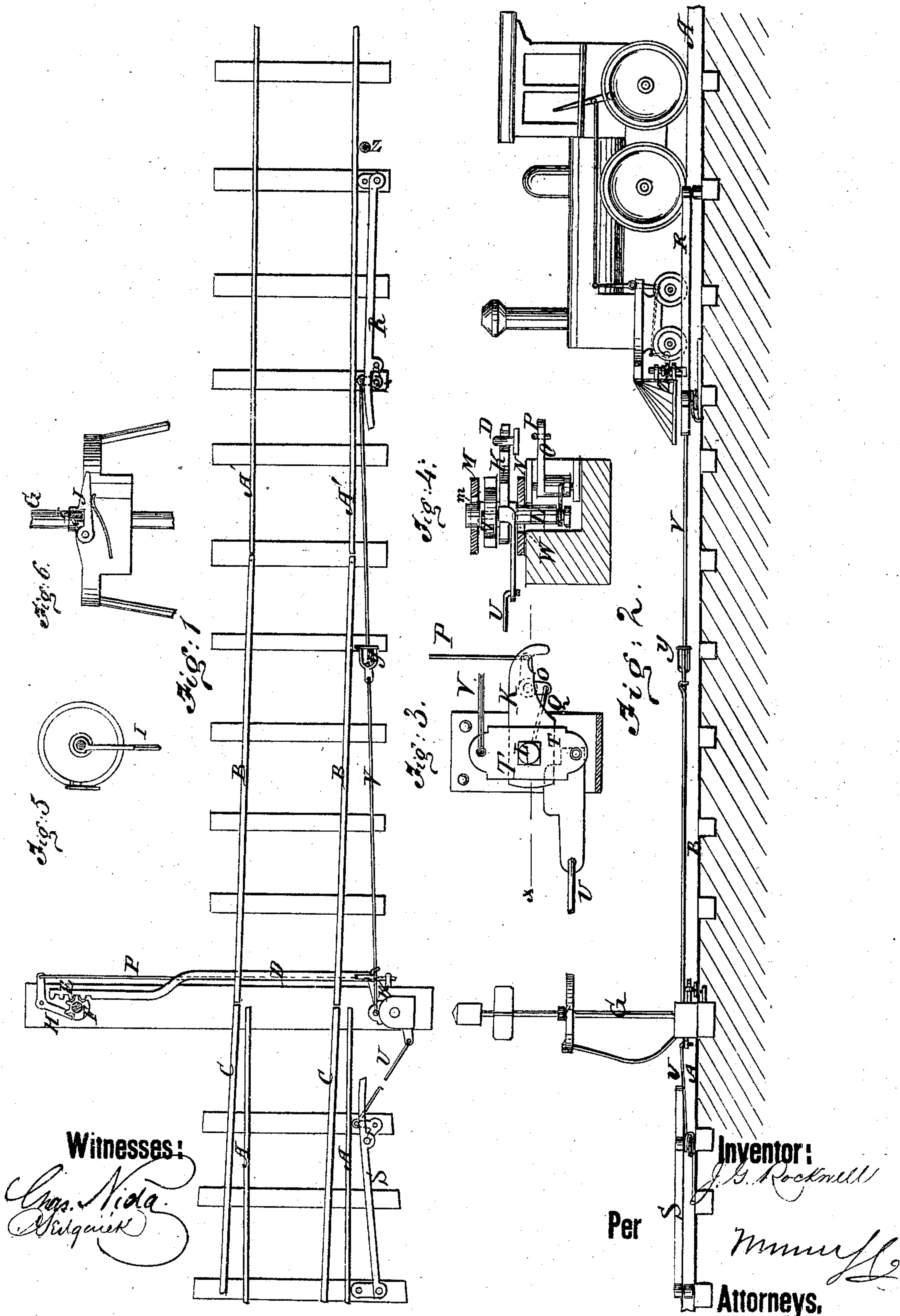


J. G. ROCKWELL.
Railway Switches.

No. 143,302.

Patented September 30, 1873.



UNITED STATES PATENT OFFICE.

JOSEPH G. ROCKWELL, OF SHELL ROCK, IOWA, ASSIGNOR TO HIMSELF
AND PETER C. WETTE, OF SAME PLACE.

IMPROVEMENT IN RAILWAY-SWITCHES.

Specification forming part of Letters Patent No. **143,302**, dated September 30, 1873; application filed
July 26, 1873.

To all whom it may concern:

Be it known that I, JOSEPH G. ROCKWELL, of Shell Rock, in the county of Butler and State of Iowa, have invented a new and Improved Automatic Switch, of which the following is a specification:

My invention consists of apparatus arranged in connection with the switch to be actuated by a shaft or wheel on the locomotive coming in contact with a lever alongside of the rail, and caused to unlock the switch and change it, and shift the target before the locomotive runs onto the switch, the said apparatus being arranged so that a locomotive approaching from either direction will shift it.

Figure 1 is a plan view of a switch and the actuating contrivance such as I propose to employ. Fig. 2 is a side elevation of the same and a locomotive with the shaft for operating the levers. Fig. 3 is a horizontal section of a portion of the apparatus, showing the arrangement of said portion in detail. Fig. 4 is a section of Fig. 3 on the line *x x*. Fig. 5 is a plan view of the target-catch, and Fig. 6 is a partial side elevation of it.

Similar letters of reference indicate corresponding parts.

A and A' represent the rails of the main line; B, the switch-rails, and C the rails of the branch or siding. D is the bar for shifting and holding the switch-rails. Said bar gears, by a toothed portion, E, at one end, with a pinion, F, on the target-shaft G to turn it when the switch shifts.

The bar D and the target are locked, when the switch is in the position represented in Fig. 1, by the pawl H, at which time the latch I of the target-shaft is in the position represented in Fig. 5. When the switch-rails are shifted over to the rails A of the main line they are locked by the latch I, which is then swung around to the spring-catch J, and engaged by it.

To unlock the switch when it is in the position represented in Fig. 1, and shift it over to the main line by the locomotive, I have the bar D connected to the arm K of a short vertical shaft, L, which is arranged in supporting-plates M N attached to the switch-tie at the side of the track opposite to the target.

I also have the pawl H connected by a rod, P, to a bell-crank, O, by the side of this shaft L, and connected to it by a rod, Q, and the shaft is connected to the levers R and S by the arms T T and rods U V, so that, when said levers are pressed down or moved laterally by a device on the locomotive as it passes them, they will cause shaft L to unlock the switch and throw it over to the main rails A. To cause said shaft to unlock the switch by releasing pawl H from the target-shaft before the force is applied to bar D, I have the hole for shaft L in plate M elongated in the direction of lever R, as shown at *m*, and the hole in plate N elongated toward lever S, as shown at *W*, so that the first effect of the movement of said levers is to pull the shaft toward them, so as to actuate the bell-crank O before it does the arm K, which is then turned, thus unfastening the switch first and then shifting it. The lever R pulls the top of the shaft, and causes the bottom to move in the reverse direction by oscillating it on the plate N, and the lever S pulls the bottom in the same direction by oscillating the shaft on the plate M. The bar D turns the target-shaft at the same time that it is shifted, and carries the arm I around against the step X, and into the notch of catch J.

As the rods U are necessarily quite long, and liable to considerable variations as to length by thermal changes, I propose to employ compensating springs Y at the joints, to expand and take up the slack when the rods elongate and contract when they do.

In this example I have represented vertical shafts Z on the locomotive for actuating the levers R and S, with a system of rods and levers to let them down to the positions for coming in contact with said levers and raising them up again; but I may have a horizontal shaft with wheels to act on the levers, the latter being arranged to swing down; and other contrivances may be employed; so that I do not limit myself to any particular arrangement of these devices.

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

1. The combination of the levers R S, con-

necting-rods U V, oscillating shaft L, and arms T and K, with the main rails, switch-rails, and the switch-bar, substantially as specified.

2. The combination of the bell-crank O, rod P, pawl H, pinion F, and target-rod, with the switch-bar D and shaft L, substantially as specified.

3. The arrangement of the holes W *m* in

the plates M N for the shaft L with the levers R and S, to actuate the pawl H in advance of the switch-bar, substantially as specified.

JOSEPH G. ROCKWELL.

Witnesses:

J. L. STEWART,

J. H. CARTER.