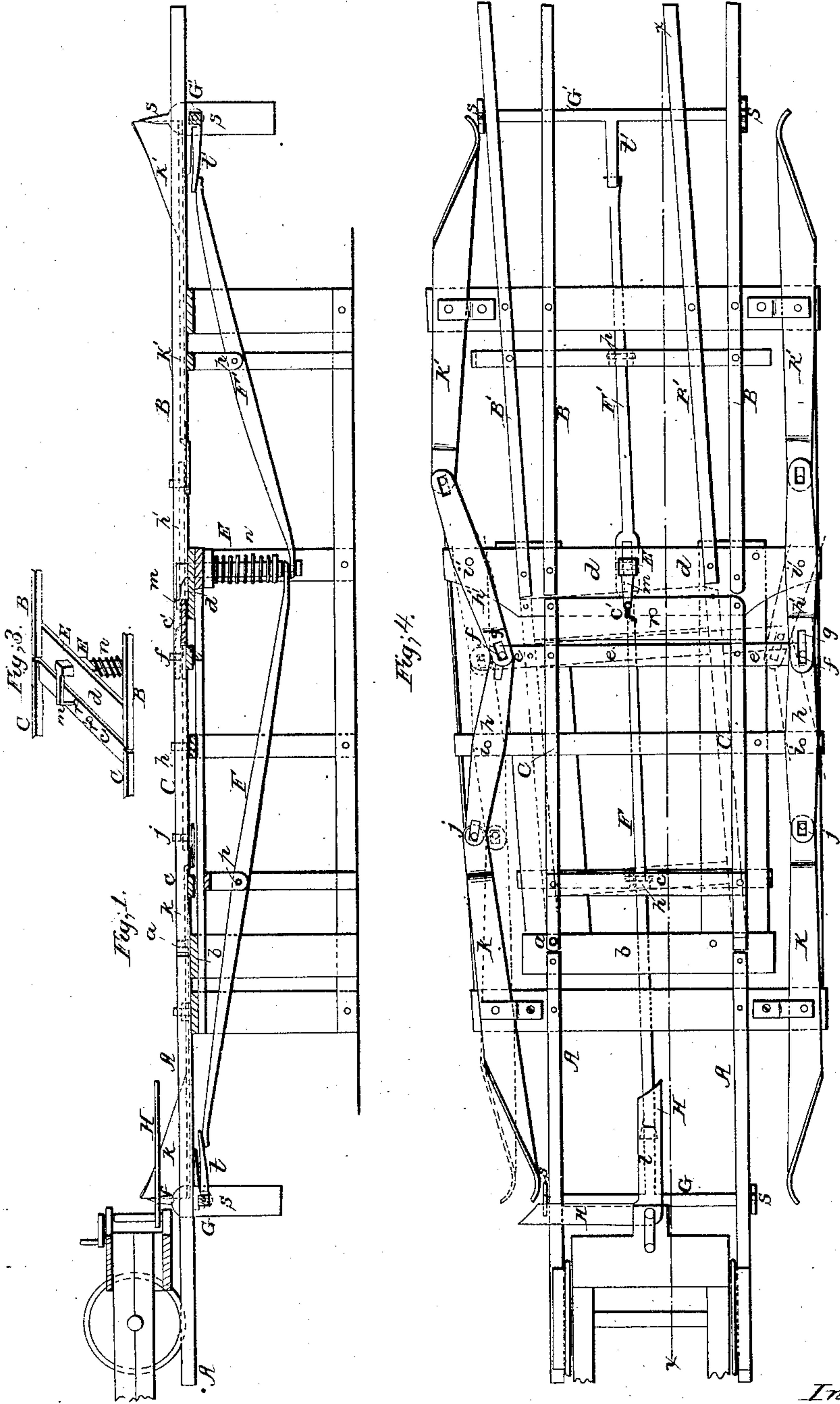


J.M. Brahm.

Railroad Switch.

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31,439.*

Patented Feb. 19, 1861.



*Witnesses;
J. Loombs
R. S. Spencer*

*Inventor;
John M. Brahm
per Munn & Co
Attorneys.*

UNITED STATES PATENT OFFICE.

JOHN M. BRAHN, OF RED BANK, NEW JERSEY.

RAILROAD-SWITCH.

Specification of Letters Patent No. 31,439, dated February 19, 1861.

To all whom it may concern:

Be it known that I, JOHN M. BRAHN, of Red Bank, in the county of Monmouth and State of New Jersey, have invented a new and Improved Automatic Railroad-Switch; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1, is a longitudinal section taken in the vertical plane indicated by the red line x, x , in Fig. 2. Fig. 2, is a plan view of the main rail-road track showing the switch rails and the levers which operate these rails, in two positions, also the arms on the locomotive which operate the levers. Fig. 3, is a perspective view of one end of the switch rails, and one end of the stationary rails showing the device which locks these rails together.

Similar letters of reference indicate corresponding parts in the three figures.

This invention relates to a novel improvement for automatically operating the switch rails of a permanent rail-road, so that as the train of cars approaches the switch in either direction certain appliances on the locomotive will operate the switch rails and switch the cars on the desired track, where the switch rails will be securely locked and held in the desired position, all as will be hereinafter fully explained.

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

A, A, represent the rails of the main track, and B, B, B', B', are the rails which branch from this main track A.

C, C, are the switch rails, one of which is pivoted at a , to the cross tie, or sleeper b , by a vertical pin which keeps this end of the switch, or movable rails up snugly against the end of one of the main rails A, A. The switch rails C, C, are tied together with the transverse pieces c, c' , and these rails C, C, are supported on sleepers b , and d , which sleepers may be made of wood and covered on top with metal plates, or solid metal sleepers may be used. The object of using metal for the two sleepers b , and d , is, that the switch rails may not wear them out very rapidly for the ends of these rails are made to slide on the sleepers b , and d , in changing them from one branch track to the other.

Alongside of the cross piece c' , is a bar e , which is bolted to the base of each switch rail C, and which projects out from the outside of each of these rails some distance. From the ends of this transverse bar e , project pins f, f , which pins pass through the slots g, g , in the ends of horizontal levers h, h, h', h' . Levers h, h , and h', h' , are pivoted at their opposite ends to levers k, k, k', k' , by means of pins j, j, j', j' , which pass through slots in the ends of levers h, h , and h', h' , as represented in Fig. 2, of the drawings.

The levers h, h , and $h' h'$ have their fulcrum at i, i, i', i' , on stationary cross sleepers which project out from each side of the rails. The slots in the ends of the intermediate levers h, h, h', h' , limit the movement of these levers and allow them to be moved by levers k, k, k', k' , only so far as will bring the ends of the switch rails C, C, opposite to the ends of the branch rails B, B, and B', B'. The levers k, k , extend along on each side of the main track A, A, for some distance and the two extreme ends of these levers k, k , are bent up and curved outward as represented in Figs. 1 and 2, so that these ends of the levers k, k , may be operated by arms which project out from the locomotive, as will be hereinafter described.

The levers k', k' , are carried along on the outside of the branch rails B, and B', a suitable distance and the extreme ends of these levers k', k' , are bent as described for levers k, k , so that one of these levers k, k, k', k' , will be operated by the arm projecting from the locomotive as the train of cars approaches the switch rails, over either of the branch rails, B, or B'.

E, is a square post, which passes perpendicularly through the middle of the sleeper d , and on the upper end of this rod or post E, a hook shaped projection m , is formed. This post E, is operated by a spring n , and also by two inclined levers F, F'. The levers F, F', are very long, and they extend from the lower end of the post E, off in opposite directions nearly as far as the extreme ends of levers k, k , and k', k' , along the middle of the track and below the plane of the base of the rails. These levers F, F', have their fulcrum at p, p , in suitable stationary supports. The hooked end m , of post E, is drawn down by spring n , into one or the other of holes r, r' , which are made

through the cross tie c' , of the switch rails C, C, when either one of these holes is brought over a corresponding hole which is made through the sleeper d , this hook therefore locks the switch rails C, C, to the sleeper. The two holes r , r' , through the switch rail tie c' , are made at such a distance apart that the hook m will drop through hole r , when the ends of the switch rails C, C, abut against the ends of the branch rails B, B, and when the switch rails are in a line with the branch rails B', B', the hook m , will drop through r' . By these means the switch rails are locked securely in place when they are properly adjusted.

A short distance beyond the extreme ends of the levers F, F', and arranged transversely across the bottom of the rails, are rock-shafts G, G', which have their bearings in suitable brackets under these rails. Each shaft G, and G', carries on its ends, outside of the rails, two perpendicular arms s , s , which are suitably weighted on their lower ends to keep them in a vertical position. From the insides of the shafts G, G', project arms t , t' , and the ends of these arms rest on the extreme ends of their respective levers F, F', so that by depressing arms t , t' , the levers will be caused to push up the post E, and release the hook m , from the switch rail-tie c' .

The levers F, F', together with the levers h , h , h' , h' , and k , k , k' , k' , should all be housed in and protected from snow and dirt or anything which would be liable to derange them and prevent them from working perfectly.

The device for operating the levers consists of two right angular arms H, H, which are pivoted to the truck frame of the locomotive in front of the boiler. These arms H, H, are held in a horizontal position and are to be so arranged that they may be operated by the engineer. The length of these arms is sufficient to strike the upper ends of arms s , s , on either side of the track, and also to strike the ends of levers k , k , and k' , k' , and cause these levers to move the switch rails C, C, the proper distance, through the medium of levers h , h , h' , h' . Only one of the arms H, H, can be made to operate at a time, and when it is desired to operate the switch rails, one of the arms H, H, must be so placed by the engineer that the proper arm and lever will be struck by it as the train passes toward the switch rails.

The operation of my invention is as follows: Let it be supposed that the train of

cars is approaching the switch rails C, C, on the main track A, and it is desired to pass on the branch rails B', B'. The engineer should throw out the left hand arm H, as represented in Fig. 2, of the drawings some time before the train reaches the switch rails. This left hand arm H, having been thrown out as described it will first strike the left hand arm s , and cause the lever F, to push up the post E, and thus disengage the hook m , from the switch rail-tie c' , and while the switch rails are free to move the arm H, pushes the extreme end of lever k , outward and this lever k , operates lever h , which is pivoted to it; and the bar e is thus moved a sufficient distance, transversely, to place the switch rails C, C, in a line with the rails B', B'. This movement takes place almost instantaneously and when the arms s , s , are released from arm H, the spring n , draws the post E, with its hook m , into the hole r , and locks the switch rails in position. Now should a second train approach the switch rails over the main track A, A, and the engineer desire to pass over the branch rails B, B, it is only necessary that he should arrange the arms H, H, so that the right hand levers will be operated by it. Should a train of cars approach the switch rails C, C, and be on either of the branch tracks B, B, or B', B', the engineer should arrange the arms H, H, so that one of them will operate upon the right or left hand levers k' , k' , whichever track he may be on.

From this description it will be seen that as the levers k , h , h' , k' , on one side of the truck are moved outward, the corresponding levers on the opposite side of the track are moved inward. These levers will therefore always be in a proper position to change the switch rails whenever it becomes necessary.

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

The post E, with its hook m , arranged as set forth so as to lock the switch rail-tie c' , to the sleeper d , in combination with the levers F, F', arms t , t' , transverse shafts G, G', and vertical arms s , s , s , s , all arranged and operating in conjunction with the horizontal levers k , k , h , h , and k' , k' , h' , h' , substantially as herein specified for the purposes set forth.

JOHN M. BRAHN.

Witnesses:

F. A. LITTLE,
FORMAN WHITE.