

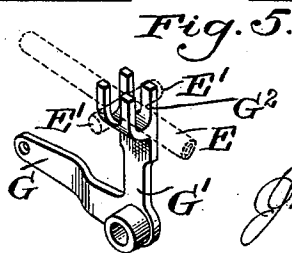
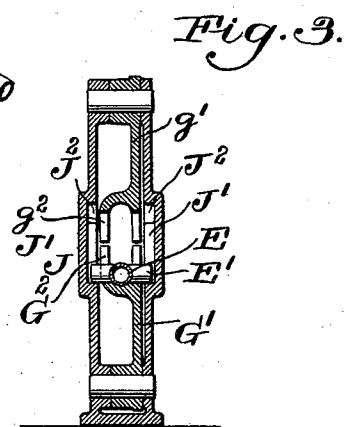
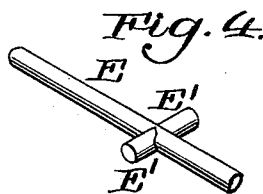
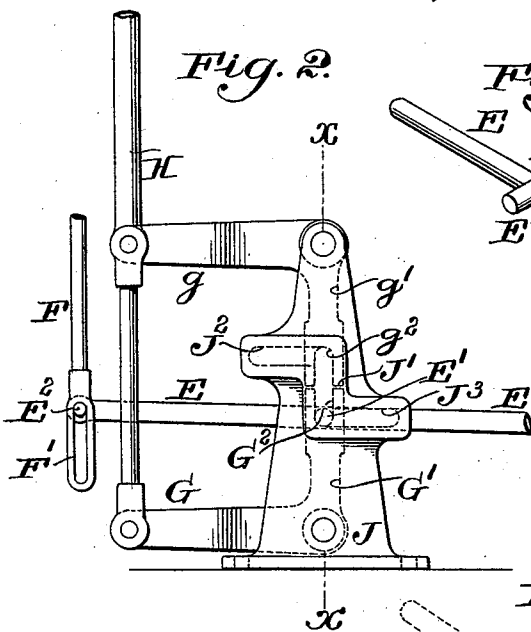
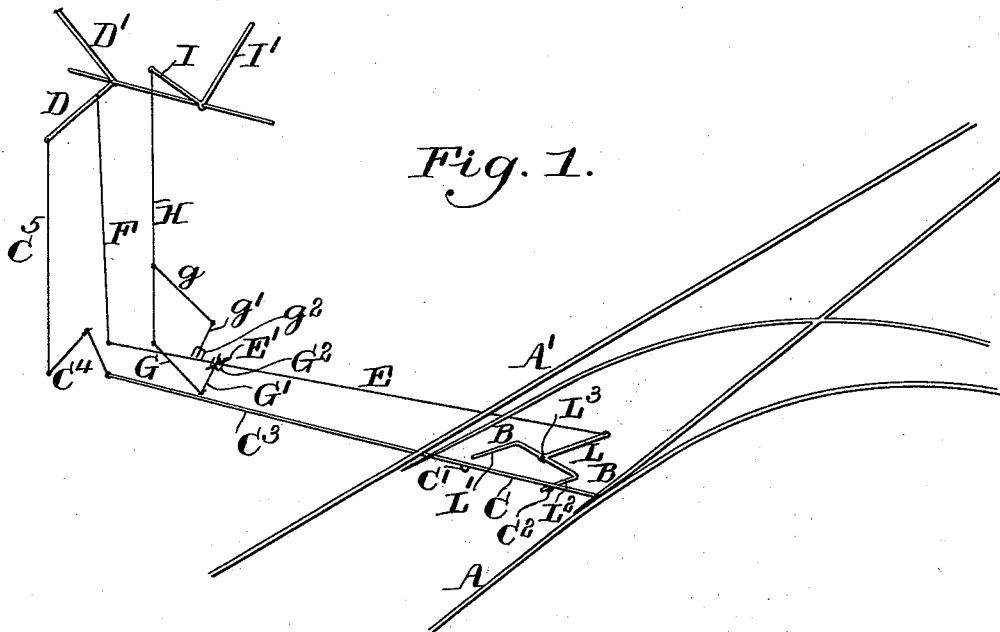
(No Model.)

J. J. TURNER.

INTERLOCKING MECHANISM FOR RAILROAD SWITCHES.

No. 536,669.

Patented Apr. 2, 1895.



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INTERLOCKING MECHANISM FOR RAILROAD-SWITCHES.

SPECIFICATION forming part of Letters Patent No. 536,669, dated April 2, 1895.

Application filed December 27, 1894. Serial No. 533,060. (No model.)

To all whom it may concern:

Be it known that I, JAMES JEWETT TURNER, a citizen of the United States, residing in the city of Pittsburg, county of Allegheny, State of Pennsylvania, have invented a certain new and useful Improvement in Interlocking Mechanism for Railroad-Switches, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part thereof.

My invention relates to the interlocking mechanism of railroad switches, and has for its object to simplify and at the same time improve the mechanism whereby the movement of one of the elements of the interlocking system is made dependent on the movement of another element.

It will be understood by those skilled in the art that my improved device can be used in connection with any two elements of an interlocking system, and that it is capable of extensive modification in form and arrangement without departure from its essential features, but as I desire in this application to claim certain features of construction peculiarly applicable to the interlocking of the switch and switch-locks, I have in the drawings shown my device arranged for this special function.

The invention will be best understood as described in connection with the drawings, in which—

Figure 1, is a perspective diagrammatic view illustrating my invention as applied to the interlocking of the switch and switch-lock; Fig. 2, an elevation showing the construction of the clutch-levers, and by which motion is transmitted to the switch-lock, which in this case is the second element to be operated upon. Fig. 3, is a cross sectional view on the line $x-x$ of Fig. 2; Fig. 4, a perspective view of the clutch engaging device, and Fig. 5, a perspective view of one of the clutch levers showing in dotted lines the clutch engaging mechanism.

A and A' are the fixed rails of the switch; B B, the movable rails, the points of which are connected together by the cross bar C, which in turn is operated through the rod C³, lever C⁴ and rod C⁵ by the switch actuating lever D D'.

For simplicity and clearness of illustration I have indicated at C' C² notches for the en-

gagement of the switch locking bolts L' and L², which, as shown, are secured at the respective ends of a pivoted bar or lever, which turns on the center L³ and is actuated by the lever arm L. Of course it will be understood that any convenient locking device can be used in place of that here illustrated.

The lever arm L is actuated through the rod E, which rod, as shown, is transversely movable as well as longitudinally, the transverse shift being given to it by means of a connection F from the switch actuating lever D D'.

It will be apparent when the device is understood as a whole that the only reason for transversely shifting the rod E in the construction shown is to shift the clutch engaging device indicated at E' and therefore, of course, it is only essential that the said clutch engaging device should be transversely movable, and that it should so engage the rod E as to impart to it any longitudinal motion which it may receive.

The clutch engaging device is arranged in connection with two clutches so that in normal position it can be shifted from one to the other, and the two clutches are in turn secured to power transmitting devices which move simultaneously the clutches in opposite directions, so that the engaging device, the rod connected therewith, and the mechanism actuated by said rod, (in the present case the switch lock), are operated in opposite directions in accordance with which clutch is engaged. In the construction shown, the clutches consist of the forked ends G² and g² of the oppositely disposed lever arms G' and g', G and g being respectively the opposite ends of the said levers through which motion is communicated to them by means of the rod H, which rod is actuated in the plan shown by the lever I I', and it will be obvious that in each move of the said lever the lever arms G' g' and their clutches move in opposite directions.

J indicates a standard, to the bottom and top of which respectively are pivoted the levers G G' and g g', the clutch ends G² and g² of which register with each other in normal position, as indicated in Fig. 2, in which position obviously, the clutch engaging device or pins E' can be readily shifted from one clutch to the other.

I form in the standard a guide slot J' in which the pins E' move up and down, and at the extremity of the said slot I form the transverse guide slots J² and J³ in which slots the pins E' move when actuated by the clutch levers. This arrangement of the guide slots, it will be seen, effectually prevents, and locks the mechanism against any improper movement, the vertical slot or guide preventing any longitudinal movement of the pins E' while being shifted laterally, and the guide slots J² and J³ preventing any vertical movement of the pins E' while they are being acted upon by the clutch levers.

In the construction shown, the clutch engaging device or pins E' are normally in engagement with the clutch G², and when the switch is unlocked the clutch levers are normally in the position indicated in Fig. 2. When the switch actuating lever is moved so as to throw the switch points over against the rail A, the pins E' remain in their engagements with the clutch G², and the slot C² is brought to register with the bolt L². The motion of the lever I, I', then operates the clutch levers as indicated in Fig. 1, forcing the bolt L² into the notch C² and locking the switch. If, however, the switch be moved over into contact with the rail A', then the connection F operated also by the lever D D' will shift the rod E laterally raising the pins E' into the clutch g², and then the movement of the lever I, I' will draw the switch lock in the opposite direction forcing the bolt L' into the notch C', which registers with it in this position of the switch. As shown the connection between the rod E and the rod F is through the pin E² and the slot F', this connection being used simply because it is not necessary or desirable to move the end of the rod E or the pins E' as far as they would move if a fixed connection were employed.

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

1. In a switch interlocking system, the combination with a single actuating connection as rod H of two devices for transmitting motion arranged to move in opposite directions with each impulse of the connection and having clutches which register with each other in normal position, a second actuating connection as rod E connected with the first through the clutches aforesaid and capable of being engaged by either clutch by a transverse motion, and a third actuating connection as lever D D' operating a separate element of the sys-

tem to that operated by the first and second, and so connected with the second as to move it transversely and determine with which clutch it shall engage.

2. In a switch interlocking system, the oppositely arranged levers G G', g g', having clutches as G² g² arranged to register in normal position, a rod H connected to lever arms G, g, so as to actuate the clutches in opposite directions, a rod E having a clutch engaging device as E' engaged with the clutches so as to be capable of shifting from one to the other when the clutches register, and an actuating device as lever D D' arranged to shift the clutch engaging device.

3. In a switch interlocking system, the oppositely arranged levers G G', g g', having clutches as G² g² arranged to register in normal position, a rod H connected to lever arms G, g, so as to actuate the clutches in opposite directions, a rod E having a clutch engaging device as E' engaged with the clutches so as to be capable of shifting from one to the other when the clutches register, and an actuating device as lever D D' arranged to shift the clutch engaging device and at the same time to actuate an element of the interlocking system.

4. In combination with a switch B B and an actuating device as lever D D' for operating it, a switch lock as L' L² arranged to lock the switch in either of its operative positions, a lock operating connection E having a clutch engaging device as E' secured to it and said device E' being adjusted by the motion of the actuating connection which moves the switch, the two oppositely disposed levers G G' and g g' having clutches G² and g² which register in normal position and in which the engaging device E' is engaged and transferable and a rod H connected to the arms G and g of the levers, and by which the switch lock is actuated through the clutches and connection E.

5. The standard J having the guide slots J² J' J³ in combination with the levers G G' and g g' pivoted above and below said slots, the clutches G² g² secured to said levers so as to register with the slot J' and with each other, when in normal position, the clutch engaging device E' movable in the guide slots and adapted to engage with either clutch, the power transmitting connection as E connected to the device E' and the lever actuating rod H.

JAMES JEWETT TURNER.

Witnesses:

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