

(No Model.)

3 Sheets—Sheet 1.

S. J. JOHNSON.  
RAILWAY SWITCH.

No. 500,393.

Patented June 27, 1893.

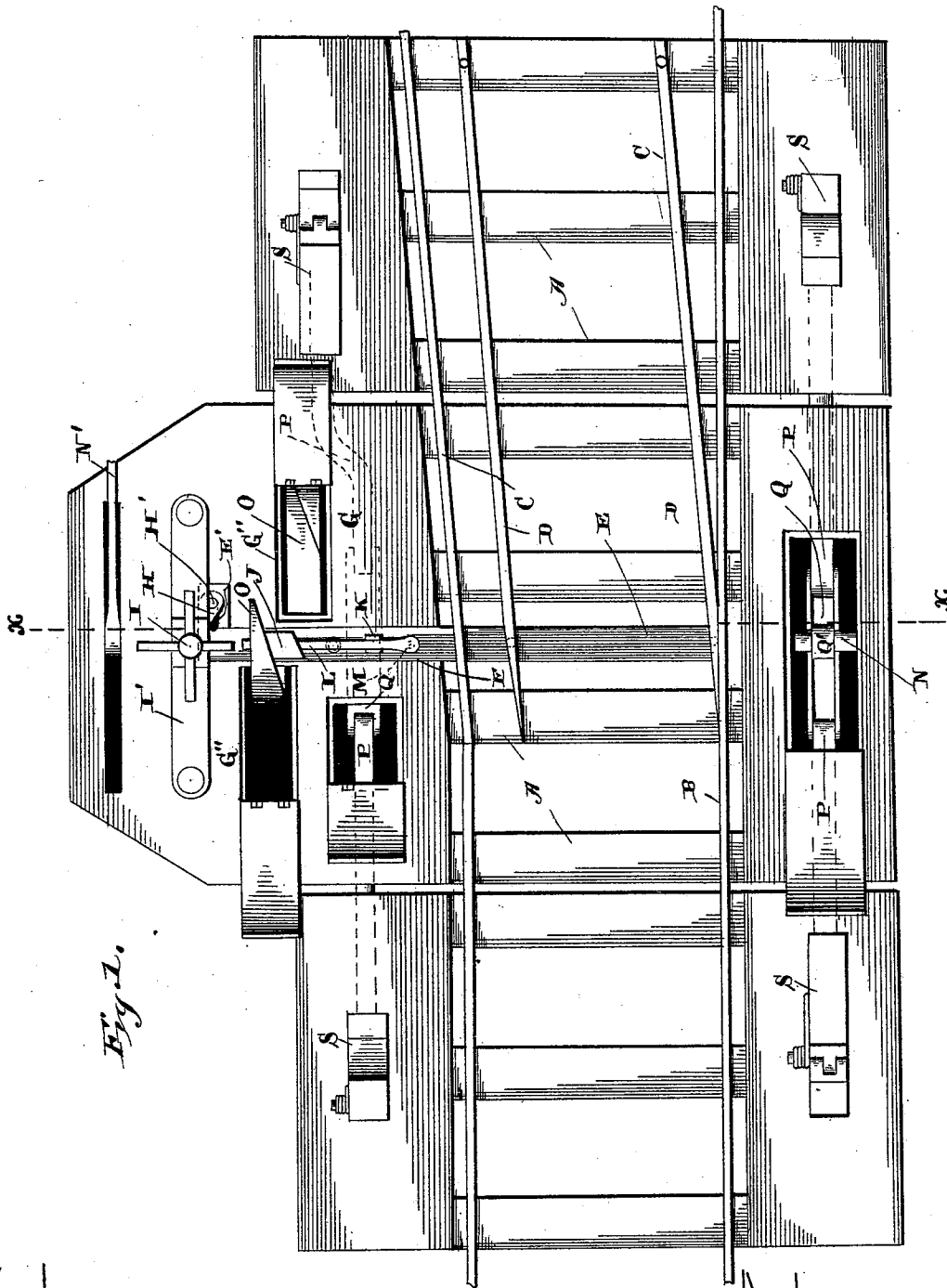


Fig. 1.

WITNESSES—

Geo. E. French,  
Chas. A. Fitzgerald.

INVENTOR—

S. J. Johnson  
Lehmann, Patterson & Nesbit  
attys.

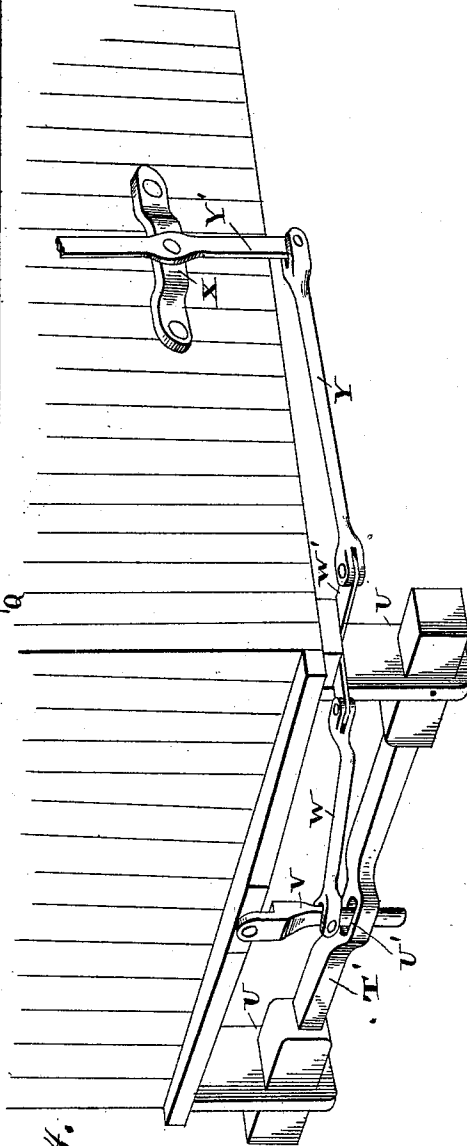
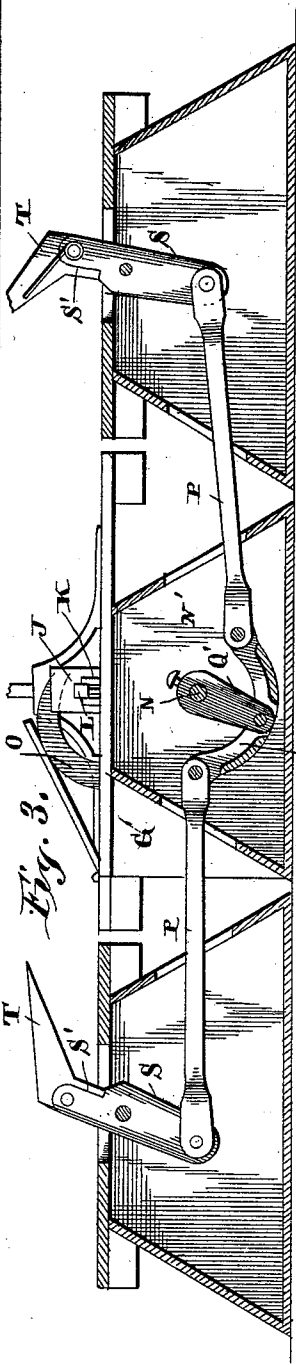
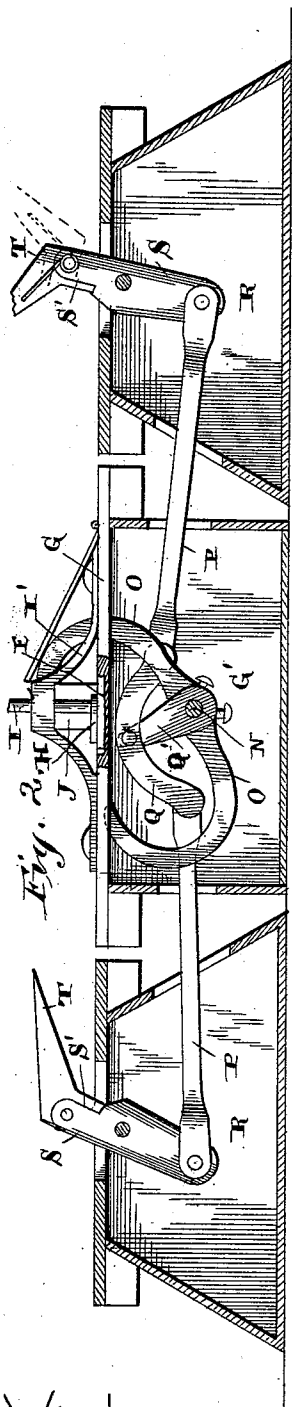
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*Fig. 4.*

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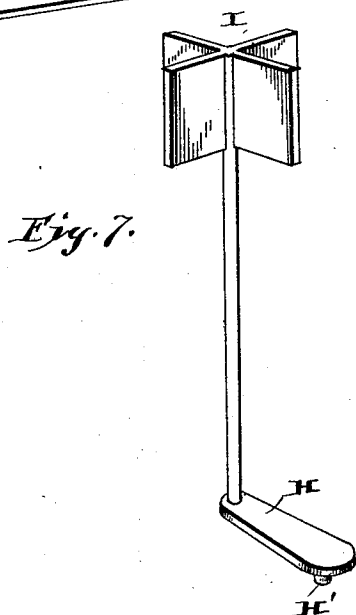
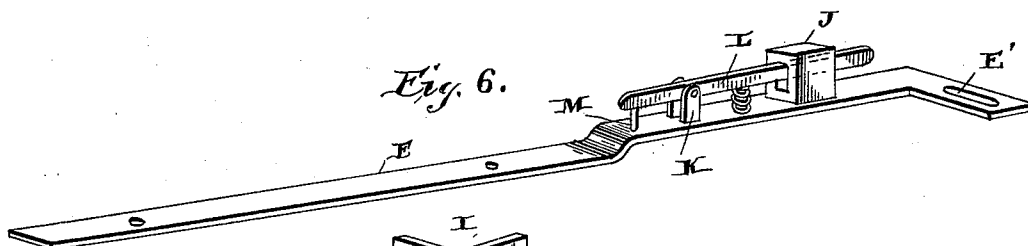
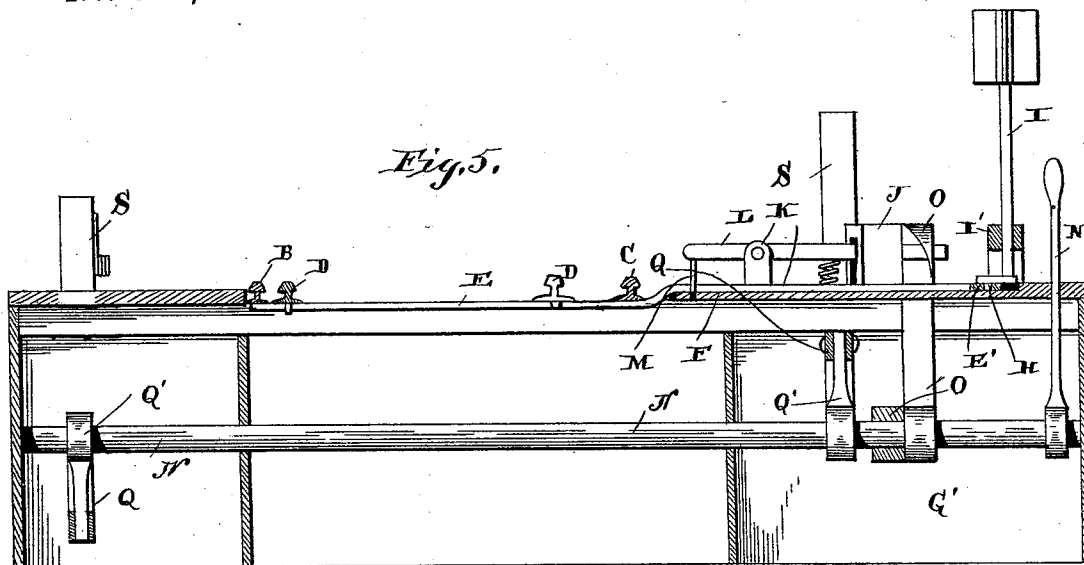
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3 Sheets—Sheet 3.

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# UNITED STATES PATENT OFFICE.

SAMUEL JOSEPH JOHNSON, OF ITASCA, TEXAS.

## RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 500,393, dated June 27, 1893.

Application filed July 14, 1892. Serial No. 440,028. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL JOSEPH JOHNSON, of Itasca, in the county of Hill and State of Texas, have invented certain new and useful Improvements in Switches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in switches; and it consists in the novel combination and arrangement of parts which will be fully described hereinafter, and more especially referred to in the claims.

The object of my invention is to construct a new and improved switch which may be operated by a passing car or train, and one which will be most effectual and certain in its operation and which will at the same time automatically adjust a signal at one side of the track which will indicate to the next approaching train the position of the switch.

Referring to the accompanying drawings,—Figure 1 is a plan view of my improved switch. Fig. 2 is a side elevation of the same, part of the casing being broken away. Fig. 3 is a similar view from the opposite side of the track. Fig. 4 is an end view of a car provided with my improved switch throwing mechanism. Fig. 5, is a vertical sectional view of line  $x-x$ , of Fig. 1. Fig. 6, is a detached view of the bar E. Fig. 7, is a similar view of the signal rod I.

A, represents the cross ties; B, the main track and C, the switch rails.

D, are the laterally moving wedge rails having projecting pins on their under sides which engage the movable cross bar E. This bar moves longitudinally through a way or depression F, on the upper side of the platform G. The outer end of this bar is L-shaped having a recess E', formed therein in which plays the depending pin H', on the under side of the arm H, which latter is secured to the lower end of the vertical revoluble signal carrying shaft I, which is supported in its vertical position by the bracket I', secured to the platform G.

Secured to the upper side of the bar E, is the block or stop J, which is recessed longitudi-

nally as shown and which is formed with bevel sides for the purpose presently to be explained. Projecting vertically from the bar E, a short distance inward from the stop J, is the standard K, and pivoted between its ends to the upper end thereof is the locking lever L. The outer end of this lever extends through the recess formed in the block J. Depending from its inner end is the vertical bolt M, which extends downward through an opening in the bar E, and engages at its lower end recesses formed in the bottom of the way F, thereby locking the switch on the desired adjustment, the locking bolt being moved longitudinally with the bar E, and automatically operated in the manner to be presently described.

Beneath the platform G, is the casing G', and extending entirely across and beneath the track and into this casing is the shaft N, which is journaled at its opposite end in the casing N', beneath the opposite side of the track. Secured to this shaft within the casing G', are the hooks O, which are curved upward from the respective sides of the shaft and which are formed with beveled upper ends as shown. The ends of these hooks are adapted to be projected through openings G'', in the platform G, so that when the shaft N, is rotated the end of one of the hooks moves by the stop J, and the latter is moved to one side and with it the bar E. As the engaging sides of the hook and stop are beveled the former acts as a wedge in pushing the stop laterally as will be readily understood. The switch may be either opened or closed by revolving the shaft N, in one direction or the other. Secured to the outer end of the shaft N, is the upwardly projecting lever N', for operating the switch by hand. The hooks O, in their circular movement curve upward around the bolt locking lever L and depress the outer end of the same raising the bolt at its inner end from engagement with the bottom of the passage F. Thus the bar E, is free to move but as soon as the end of the hook has passed over the lever or retracted therefrom the lever will be automatically raised at its outer end by a spring arranged beneath it, throwing downward its inner end and placing the bolt in engagement again, thus securely holding the switch in the desired position or adjustment. Extending parallel with the opposite

under edges of the track are the rods P, which are pivotally connected at their adjacent or inner ends to the U-shaped link Q, which curves upward over the shaft N, being connected to the latter by the projecting bar Q', to the upper end of which it is pivotally connected at its center. The outer ends of the rods P, extend into the casings R where they are pivotally connected to the lower ends of the trips S, which latter are journaled to the sides of the said casings. These operating rods and trips are the same on opposite sides of the track with the exception that, at the side opposite the switch throwing mechanism the link Q, passes around beneath the shaft N, instead of above it as above described.

The inner sides of the upper ends of the trip arms S, are cut in or recessed as shown at S', and pivoted to their upper slotted ends are the shoes T, having the depending extensions on their inner sides which fit the said recesses S', thus holding the shoes rigid with the arm S, when the latter is being moved toward the switch mechanism, but in moving in the opposite direction these shoes are adapted to turn upon their pivots thus allowing the operating projection on the passing car to move freely by them when leaving the switch. The sides of the shoes which are approached by the train when coming up to the switch are beveled, so that while they are turned by the projection on the train, yet the latter moves freely past them when the throwing operation has been accomplished. As these operating trips are on opposite sides of each approach to the switch it is apparent that the parts may be so adjusted as to make either one or the other close or open the switch as may be desired.

In Fig. 4 of the drawings is illustrated my preferred form of operating bar for the car, though I do not wish to limit myself to this particular form or construction as any device may be used which will effectually throw the tripping arms. The device here shown consists of the laterally moving bar T', loosely supported in the brackets U, on the under side of the car. In the center of this bar is formed the opening U', and depending therein is the arm V, which is pivoted at its upper end to the car end. Between the pivotal point of this arm and the bar R, is connected the rod W, which at its outer end is secured to the bell crank lever W', pivoted to the corner of the car. To the opposite end of this lever is connected the rod Y, which extends along the car side being secured at its opposite end

to the lower end of the operating lever Y', which is fulcrumed to the bracket X, supported on the car body. By this mechanism it will be seen that the operator from the car may project the bar T', from either one side or the other of the car, thus operating the desired tripping arm which in turn throws the switch to the desired position. Springs are arranged on the pivots of the shoes T, so that the latter are held normally in an upright position and ready for engagement with the operating bar on the car.

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

1. The combination of a track having movable end rails, a longitudinally movable bar to which the movable rails are connected, a stop on the bar, a hook journaled beneath said bar having a beveled outer end which when turned is adapted to turn upward and engage the stop thus moving the bar, and a means for operating the hook, substantially as shown and described.

2. The combination of a track having movable end rails, a longitudinally movable bar to which they are connected, a stop having beveled sides secured to the upper side of the bar a locking lever pivoted to said bar between its ends and extending longitudinally therewith, a revoluble shaft journaled beneath the said bar, and hooks secured at their lower ends to the said shaft and which are adapted to be extended upward on opposite sides of said stop engaging the same and at the same time depressing the outer end of the said lever, substantially as shown and described.

3. The combination, of a track having movable end rails a bar for operating the same, a recessed beveled stop on said bar, a lever carrying a depending bolt at its inner end fulcrumed on said bar—its opposite end extending through the recess of the stop, a revoluble shaft, and hooks thereon which are adapted to be turned upward and engage the respective sides of the stop from opposite directions, depressing at the same time the outer end of the lever, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

SAMUEL JOSEPH JOHNSON.

Witnesses:

C. I. COFFIN,

J. A. PERRYMAN.