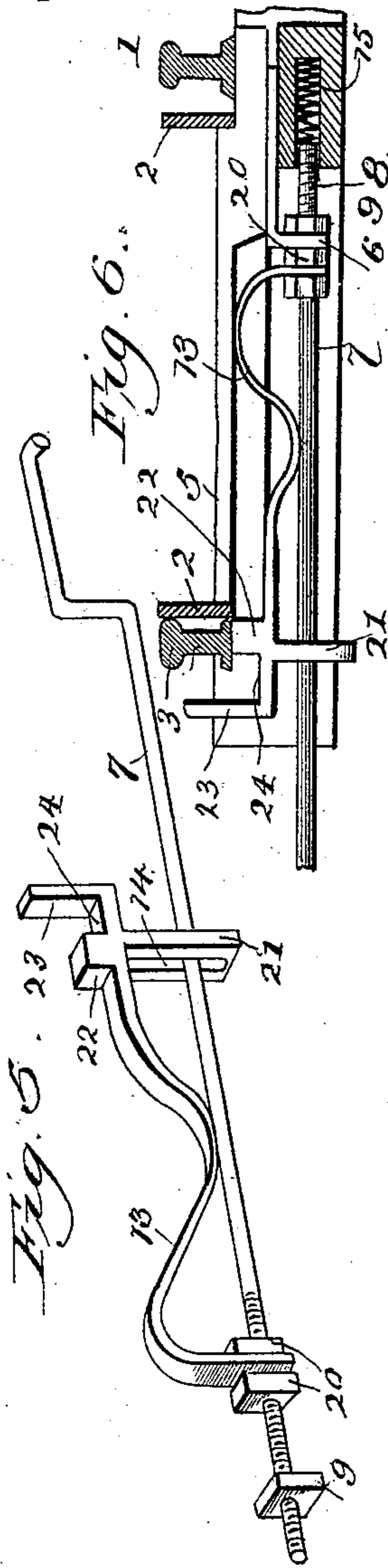
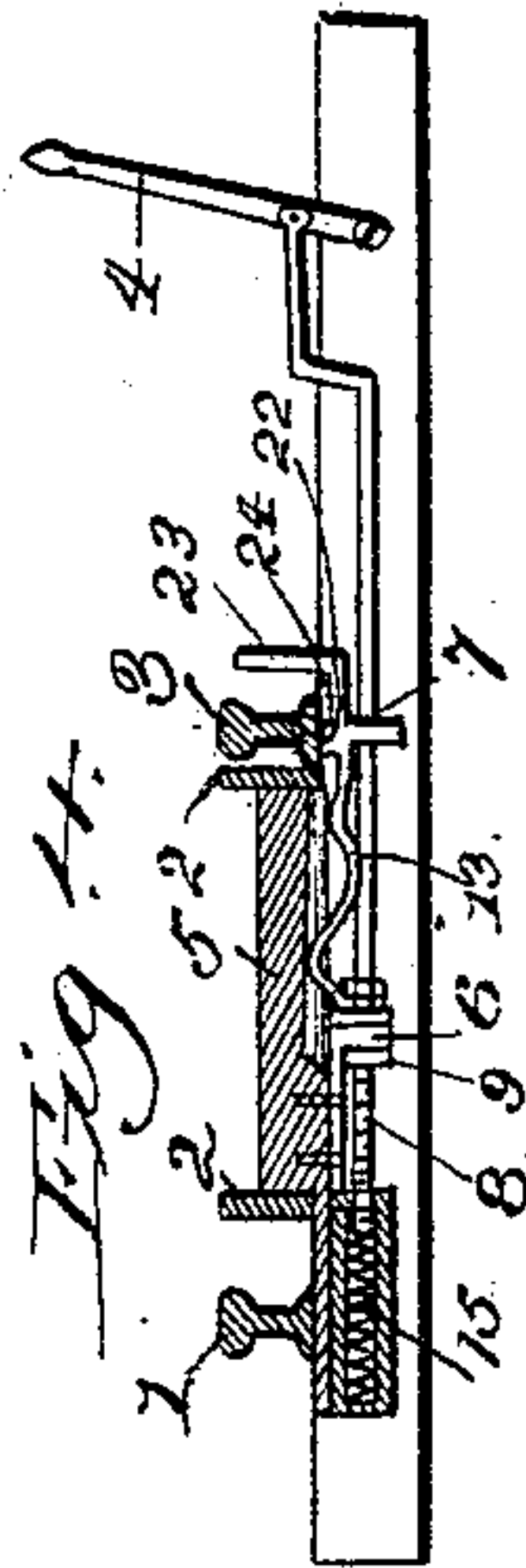
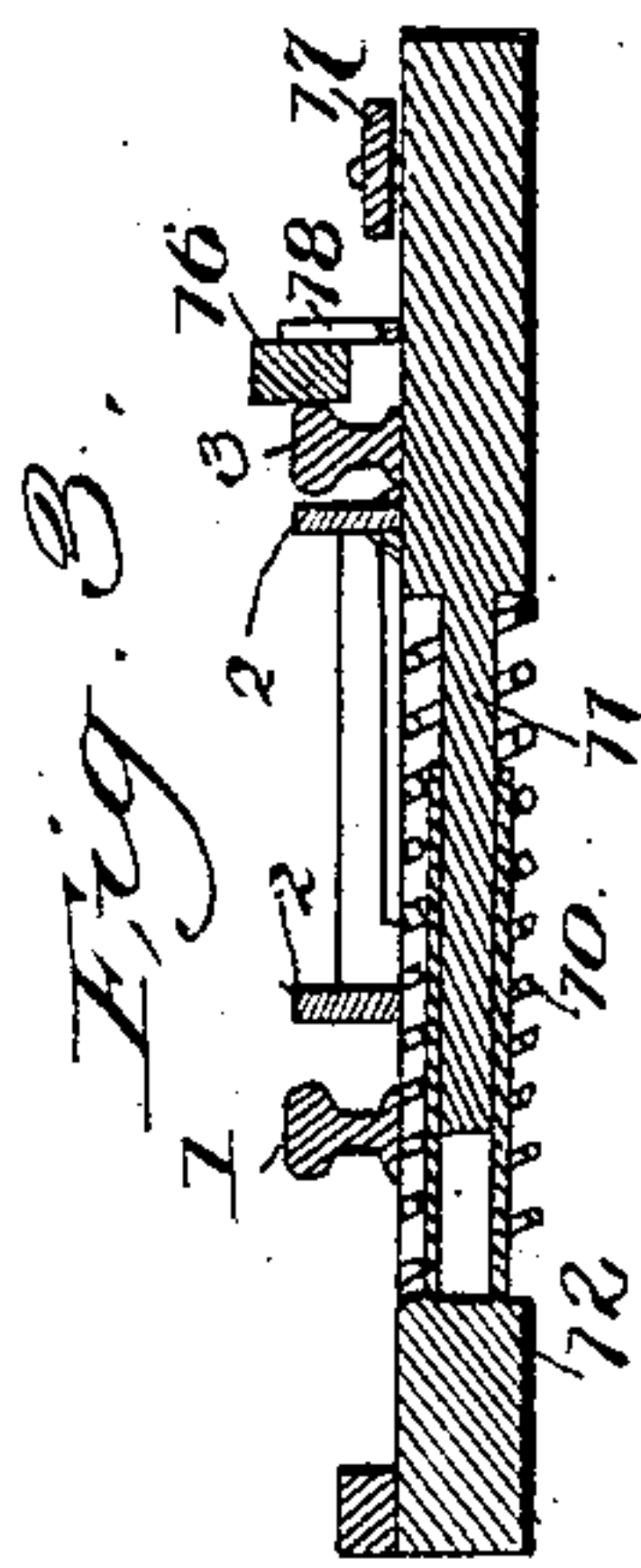
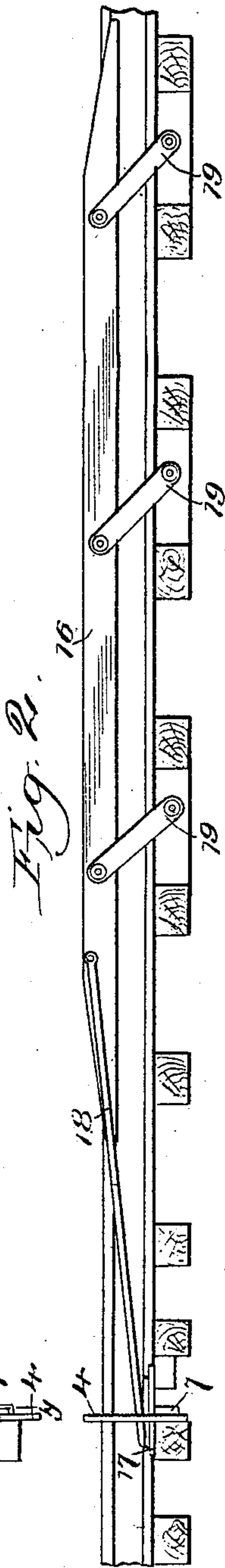
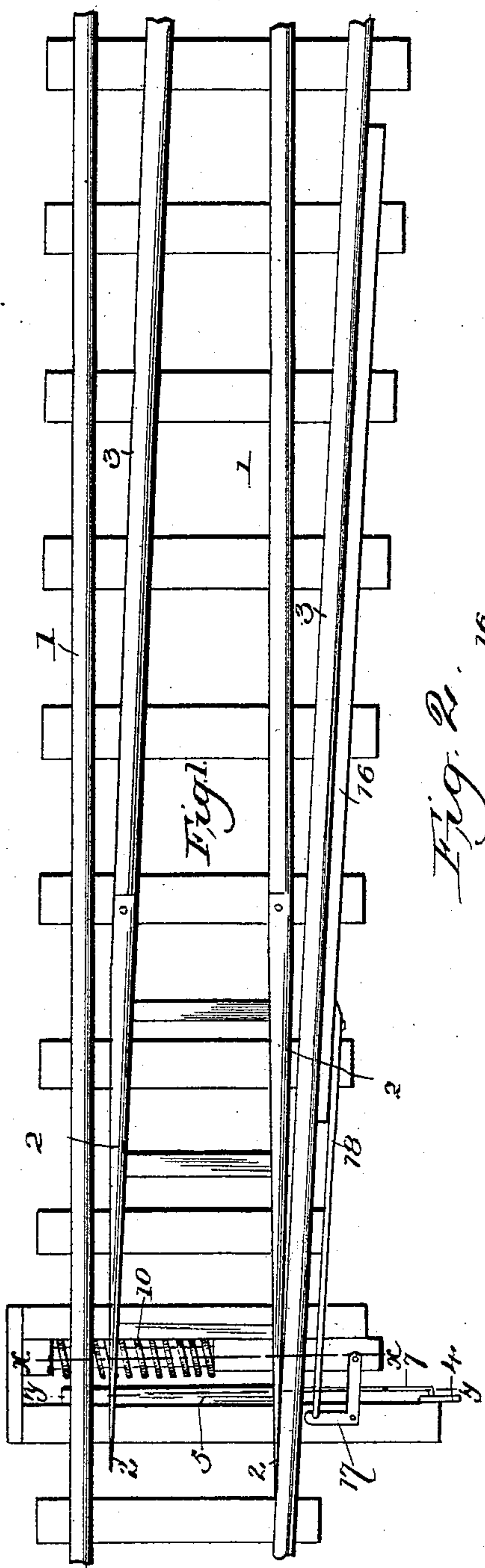


(No Model.)

J. A. HILL.
RAILROAD SWITCH.

No. 538,449.

Patented Apr. 30, 1895.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN A. HILL, OF LEECHBURG, PENNSYLVANIA.

RAILROAD-SWITCH.

SPECIFICATION forming part of Letters Patent No. 538,449, dated April 30, 1895.

Application filed December 13, 1893. Serial No. 493,594. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. HILL, a citizen of the United States, and a resident of Leechburg, in the county of Armstrong and State of Pennsylvania, have invented certain new and useful Improvements in Railroad-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 appertains to make and use the same.

This invention relates to improvements in railroad switches and has for its object to provide a self closing switch which will prevent a train from running into an open switch or into another train that has pulled into a siding, by automatically closing the switch as soon as the train pulls off the throw rail and thereby leading onto the main track.

A further object of the invention is to provide a switch which will be opened by a train running out of a siding, without the attention of a switchman, by the employment of a throw rail, and which automatically closes as soon as a train leaves the points, thereby permitting the train to proceed without any delay, saving time and also doing away with the necessity of the switchman being exposed to inclement weather.

With these and other objects in view the invention consists of the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a top plan view of a railroad-switch embodying the invention. Fig. 2 is a side elevation of the same. Fig. 3 is a section on the line $x x$, Fig. 1. Fig. 4 is a similar section on the line $y y$, Fig. 1. Fig. 5 is a detail perspective view of one of the parts detached. Fig. 6 is a transverse section slightly in advance of the line $y y$, showing the switch-points in their closed position in dotted lines.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

1 represents the main track, 2 point switches which are of the same construction as those commonly employed, and 3 the side track rails. To one side of the switch is mounted a throw lever 4, of ordinary construction, to be used by the switchman to open the switch to

allow the train to pass into the siding. The point switches 2, are provided with a cross bar or rod 5, having riveted or bolted thereto a lug 6, through which extends a connecting rod 7, said connecting rod being attached to the throw lever 4. The end of this bar or rod is threaded as shown at 8 and a nut 9 fits thereon, the said nut forming a shoulder, which coming against the lug on the switch points, throws the switch open. It will be seen that this nut can be screwed back and forth and set at any point to regulate the throw, as may be needed. The closing spring 10, has one end firmly fastened to adjacent cross ties 12 or in some other way distinct from the point switches 2, and the other end fastened to said point switches, so that the pressure of said spring holds the switch firmly closed. Said spring is a spiral spring and works on a rod 11 engaging a shoulder thereon. Beneath the cross bar 5 is a bow spring 13, one end of which is secured by means of nuts 20, 20 to the rod 7. It has a dependent lug 21 thereon in which is an elongated slot 14 just wide enough to fit around the rod 7, and on its upper face two projections or lugs 22 and 23, between which is formed a recess 24. The projection 22 is lower than the projection 23 and rests normally against the under side of the rail 3, as shown in Fig. 6. The tendency of the bow spring 13 is to throw its outer end upward. The rail 3 acts as a stop for this, the projection 22 engaging its under side. As the cross bar 5 is shifted to open the switch the spring 13 connected thereto is also shifted and the lug 22 is carried out of engagement with the rail 3, and the spring 13 flies upward, the recess 24 fitting around the rail 3 and the lug 23 flying up and projecting above the top of the rail. The lug 23 extends as much above the rail 3 as the lug 22 bears upward beyond the under side of the rail, so that when the train runs in and the wheels strike the lug 23 extending above the rail it throws the spring 13 down and drops the lug 22 below the rail, allowing the rod 7 to be thrown back by a lock spring 15 against which the said rod presses, when it is forced forward to open the switch. The switch points 2 are now in their locked position, in which they remain until the wheels of the train passing over and depressing the lug 23 projecting

above the same enable the spring 15 to shift the rod 7 and with it the cross bar 5 and the switch points 3 back to their normal positions. The lug 22 holds the switch open until the wheels pass upon a throw rail 16 and the train is clear of the throw rail, when the said closing spring will force the switch in closed position. The spring 15 is a small spring against which the connecting rod 7 presses as it throws the switch open and prevents the lock spring 13 from locking the switch open. A bell crank lever 17 is employed in connection with the device, having a fulcrum at the angle thereof, on one of the stationary cross ties and one arm pivotally attached to the switch points 3 while the other arm is attached by the rod 18 to the throw rail 16 before set forth. The latter is pivotally mounted by links 19, attached thereto and to adjacent ties, and has its opposite ends tapered so as to permit the wheels to readily engage the same and permit a train coming out of the siding to open the switch as previously set forth. As soon as the wheels leave the said throw rail and pass the switch points the closing spring comes into play, and closes the switch points and at the same time raises the throw rail in position shown in Fig. 2.

When the switch has been opened by the switchman, the locking spring 13 moves backwardly and holds the same open allowing the train to run in. The train releases the locking spring and the latter is thrown back by the spring 15. As soon as the switch opens, it operates the bell crank lever 17 which pulls the throw rail 16 forward and down level with the side track rail, and the train runs over the said throw rail and as soon as it leaves it,

the closing spring closes the switch and throws the throw rail back and up.

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

In a switch, the combination with the main track and siding, of a pair of pivotally mounted switch points a transverse bar connecting the same at their outer ends, a lug secured to the under side of said bar, a throw rod adjustably connected therewith, an operating lever connected to the outer end of said throw rod, a spring acting against the inner end of said bar for normally holding said switch points in their closed position, a spring adjustably mounted upon said throw rod having a depending lug thereon provided with an elongated slot through which said throw rod passes, two lugs upon the upper side of said spring having a recess between the same, one of said lugs projecting beyond the outside of the rail and slightly longer than the height of said rail, the other lug shorter than the first adapted to bear against the under side of the rail, whereby upon opening the switch by shifting the switch points, said shorter lug is adapted to fly up between the switch points and the adjacent rail, and upon the passing of the train said other lug is depressed, substantially as and for the purpose described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOHN A. HILL.

Witnesses:

A. J. STULL,
JAMES B. SMAIL.