

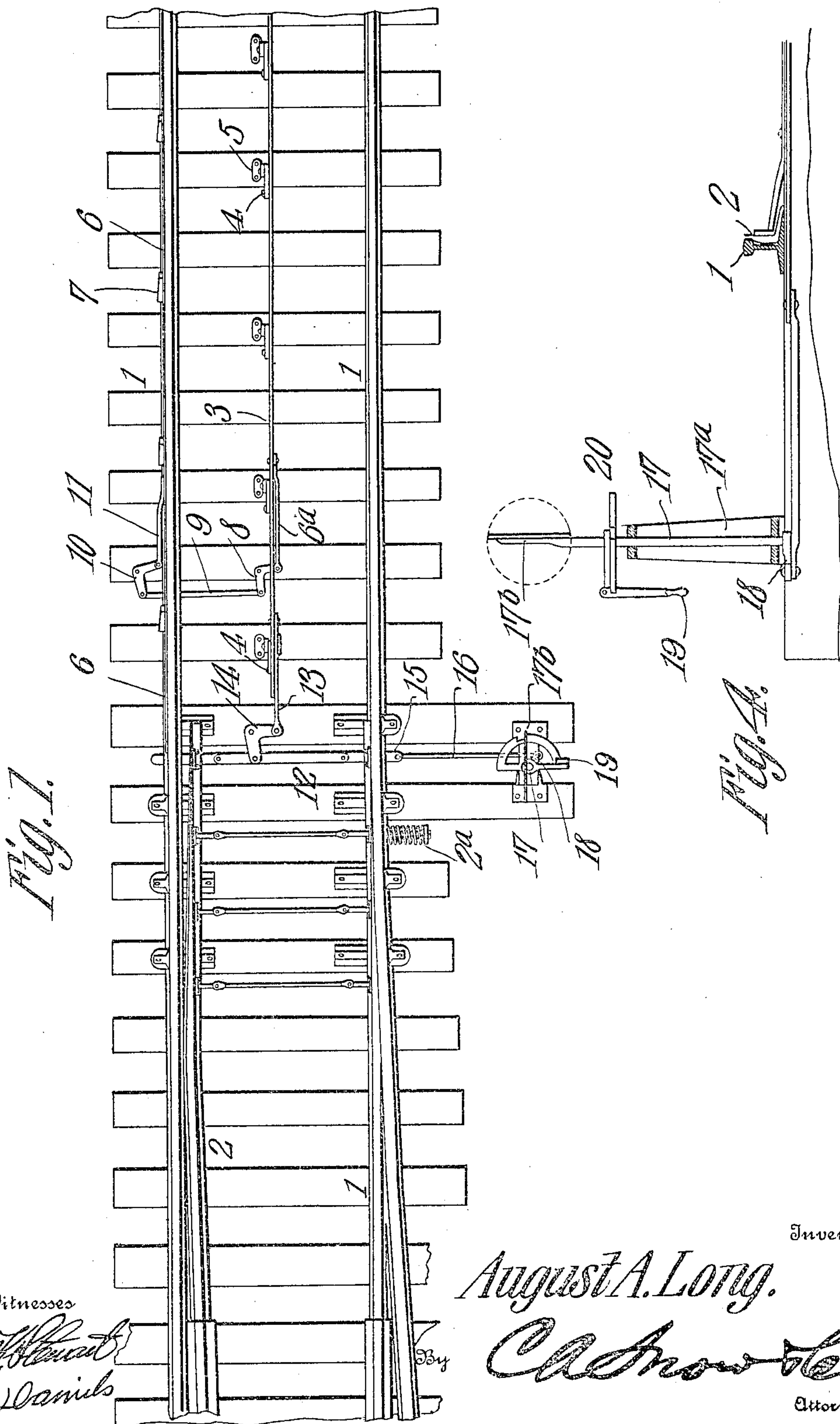
RAILROAD SWITCH.

APPLICATION FILED FEB. 29, 1908.

Patented July 13, 1909.

2 SHEETS—SHEET 1.

927,564.



Witnesses
E. J. Hurst }
C. Daniels }

Inventor
August A. Long.
Cashmore
Attorneys

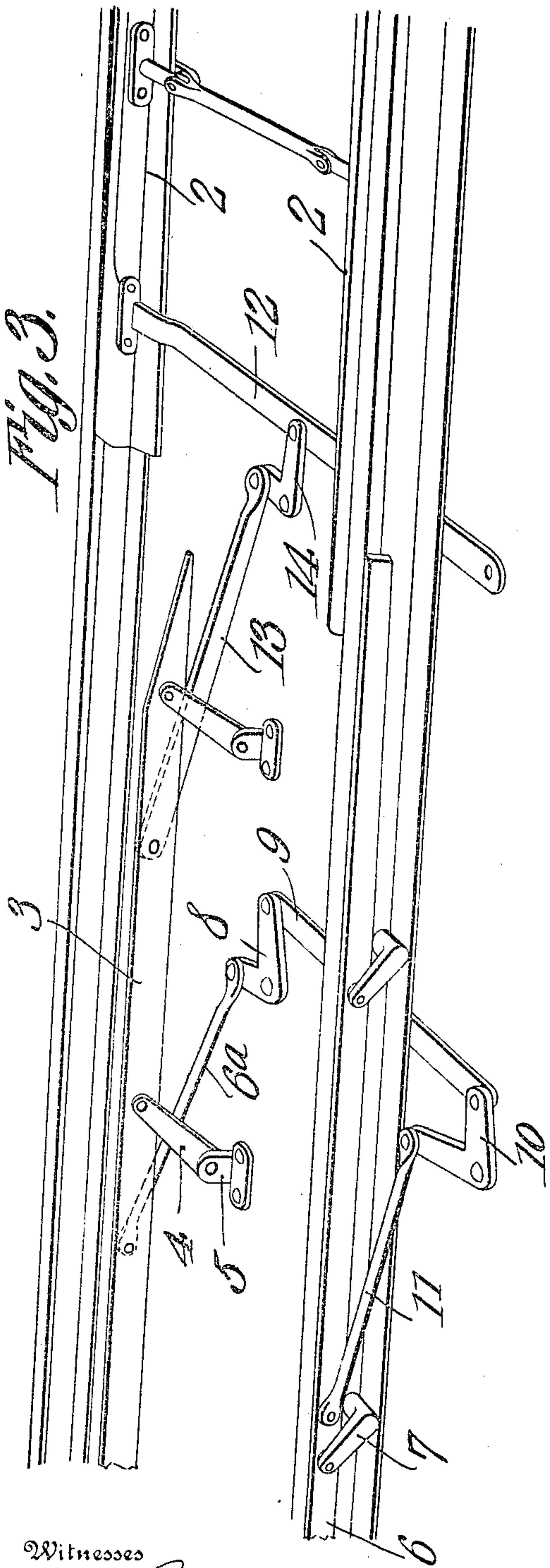
RAILROAD SWITCH.

APPLICATION FILED FEB. 29, 1908.

Patented July 13, 1909.

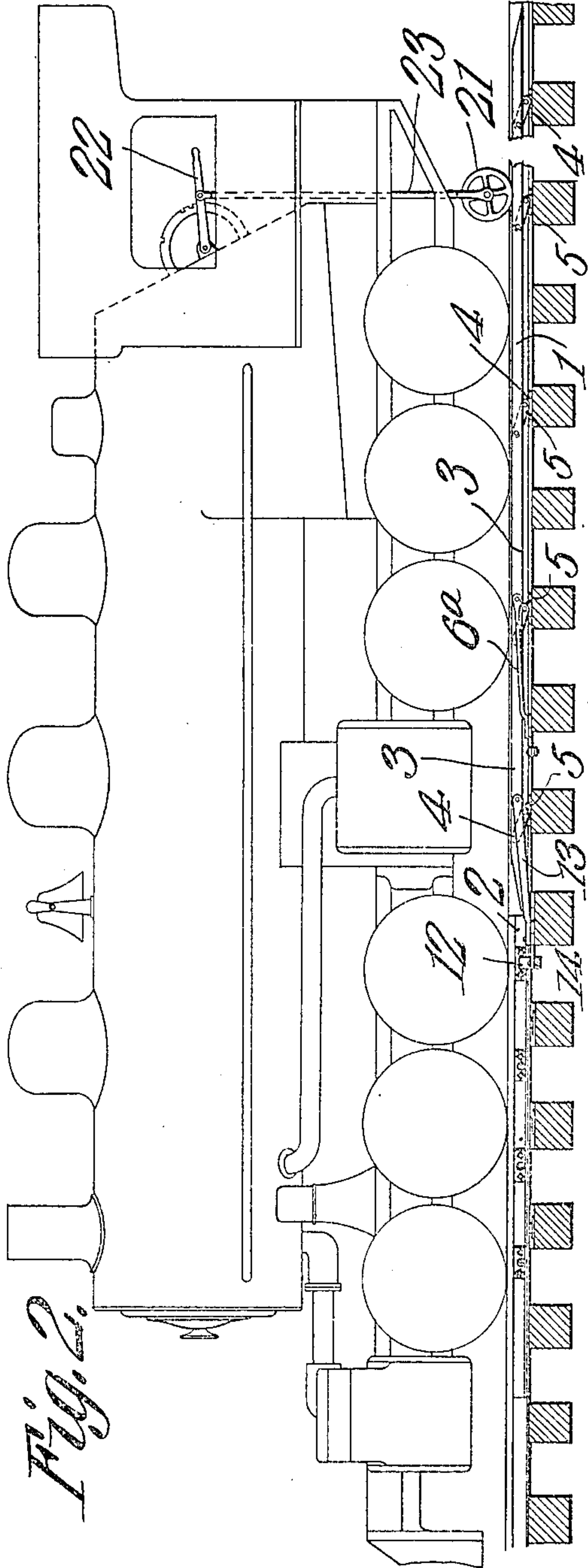
2 SHEETS—SHEET 2

927,564.



Witnesses

E. F. Stewart
O. Daniels



Inventor

August A. Long.


 Cashmore
 Attorneys

UNITED STATES PATENT OFFICE.

AUGUST A. LONG, OF CARTHAGE, MISSOURI.

RAILROAD-SWITCH.

No. 927,564.

Specification of Letters Patent.

Patented July 13, 1909.

Application filed February 29, 1908. Serial No. 418,500.

To all whom it may concern:

Be it known that I, AUGUST A. LONG, a citizen of the United States, residing at Carthage, in the county of Jasper and State of Missouri, have invented a new and useful Railroad-Switch, of which the following is a specification.

My invention relates to certain improvements in railway switches, and has for its object to provide for the actuation of the switch rails from the engine cab, also, by manual manipulation of the same.

It, also, further provides for the display of a signal in actuation of said switch rails from the main line to the siding, and, also, for automatically locking the switch rails in effective position by the wheels of the engine and for carrying out the aforesaid purposes in a simple, effective and expeditious manner.

Further advantages and objects of the invention will appear from the subjoined description and accompanying illustration as the nature of the invention will be more fully disclosed.

Said invention consists of certain instrumentalities or features, substantially as will be hereinafter more fully disclosed and pointed out by the claims.

In the accompanying drawing, illustrating the preferred embodiment of my invention, Figure 1 is a general plan view of the main line and switch rails of an ordinary railway track, showing the application of my invention thereto. Fig. 2 is a side elevation, more particularly showing the application of the device for actuation from the engine cab. Fig. 3 is an enlarged broken perspective view illustrating certain features of the invention. Fig. 4 is a sectional elevation disclosing more particularly that part of the invention embracing the signal or flag employed when actuating the switch rails.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

In the construction illustrated the invention is shown applied to a switch lying to the left of the main line and it is to be understood that in such cases where the switch is to be on the opposite side, the locking mechanism will be shifted accordingly.

The main line rails 1, extend in the usual manner, and interposed between the said rails is the siding or switch rail 2, as

shown in Fig. 1, the switch point 2, is set to keep the main line 1, open, and it will be further observed this will be the normal position of the said switch point due to the fact that the same is held in this position by means of a spring 2^a; the latter operates to hold the switch point as illustrated in Fig. 1 by means of a rod one end of which is connected to the web and adjacent the terminal of the switch point 2, while the other end passes through the webs of the farthest main rail and switch rail, and projects beyond the outer face of the latter terminating in an enlarged head. The spring 2^a encircles this projecting portion, the terminals of said spring engaging with the enlarged head and outer face of the rail web.

In order that the foregoing switch mechanism may be operated without the necessity of the engine man or other train men leaving their respective stations on the train, a suitable mechanism is employed, and designed to be operated from the engine cab. By referring now to Fig. 1, it will be observed that the rail ties immediately in advance of the switch point 2, are centrally provided with brackets 5. Each of these brackets is provided with a vertical arm to which is pivotally connected one end of a link 4. An operating rod 3, is of a length sufficient to extend from a point immediately in advance of the switch point, to the farthest bracket therefrom. This rod is provided with openings adapted to register with similar openings formed in the free ends of the links 4, and into which are fitted suitable pins by means of which pivotal connection is established.

The switch point 2, and farthest switch rail 1, are connected by means of a suitable tie bar 12, the opposed ends of which are disposed beneath the lower face of each rail, and suitably secured thereto. Connection is established between the tie bar 12, and operating bar 3, through the medium of a bell crank lever 14, pivotally secured to the rail tie upon which rests the terminal of the switch point 2; one arm of this bell crank lever is pivotally connected to the middle portion of the tie bar 12, while the opposite arm is pivotally connected to one end of a link 13, the opposite end of which is pivotally secured to the operating rod 3. The length of the link 13, is greater than the length of the links 4, and the construction is such that when the parts are in the position illustrated

in Fig. 1, the upper edge of the operating bar 3, will be in a plane with the upper edges of the main rails, while the supporting links 4, will be slightly inclined from the vertical, and extend toward the switch point 2. Thus it can be seen when vertical pressure is applied to the operating bar the latter will move downwardly and forwardly with the links 4, at the same time the link 13, will also move in the same direction causing the bell crank to turn on its pivot and move the switch point to operative position, or opposite that illustrated in Fig. 1. In order that the switch point may be held in this position a suitable locking means is employed, and in the present instance is shown to consist of a metallic bar 6, substantially rectangular in cross section and slightly less in width than the width of the web of the main rail 1. This locking bar is pivotally mounted on the inner face of one of the main rails by means of crank arms 7, the upper ends of which are pivotally connected to the locking bar, and their lower ends pivoted to the inner face of the rail web. The length of these crank arms is considerably less than the width of the web, and the construction is such that when the locking bar 6, is supported in place and out of engagement with the switch point, these arms will incline from the vertical and extend in a direction away from the switch point 2, so that when the bar is actuated to move in a direction toward the switch point, the arc of the circle described by the crank arms will lie beneath the upper edge of the rail web. Thus it can be seen as the cranks oscillate from right to left in order to lock and open the switch, there will be ample room for the locking bar to rise without danger of binding against the lower face of the rail head. Connection is established between the operating bar 3, and locking bar 6, by means of a link 9, disposed between the main rails and adjacent the switch point 2. This link is provided at either end with a bell crank 8 and 10, disposed between the locking bar 6, and operating bar 3 these bell cranks are pivotally supported by one of the ties and are operatively connected to the operating bar 3, and locking bar 6, by means of links 6^a and 11. Thus it can be seen when the operating bar 3, is depressed and the switch point moved in the required direction as already described, similar movement will be transmitted through the links and cranks 7, causing them to assume a position at right angles to that illustrated in Fig. 3 of the drawings, so that when the wheels of the cars of the train pass over the bar 6, the return of the switch to closed position will be permitted.

By referring now to Fig. 1, it will be seen that one end of the tie bar 12, is connected by a link 15, projecting beyond the outer face of the main rail, to a rod 16, the oppo-

site end of which is connected to one end of a crank 18, the latter being provided at its opposite end with a vertical rod or shaft 17, suitably supported in a frame or stand 17^a disposed to one side of the track. The upper end of the vertical rod 17, is provided with a signal 17^a, and secured to the intermediate portion of the rod is one end of an arm provided at its opposite end with a pivoted lever 19; this lever is adapted for engagement with a rack 20, which is carried at the upper end of the frame or stand 17^a. With this construction it is obvious that the switch may be manually operated by the lever 19, as will be readily understood. In order that the switch may be operated from the engine cab, without the necessity of turning the lever 19, as before described, it is designed that the said cab shall be fitted with a suitable hand lever 22, having connected thereto one end of a rod 23, the opposite end of which is provided with a wheel or shoe 21, adapted to engage or bear upon the operating bar 3. Thus it can be seen when the lever 22 is operated to bring the shoe 21 into engagement with the operating bar, the latter will be depressed and the switch point 2 shifted as already described. From the foregoing it can be readily understood that when the switch is shifted to the position opposite to that illustrated in Fig. 1, the crank 7 will swing over, carrying the bar 6 to position for engagement by the wheels of the cars of the train, the mechanism being in this manner locked until the entire train has passed the switch, when the spring 2^a will return the parts to their normal positions. It will be further observed when the switch is operated the signal 17^b will be turned to the rod 16, to show danger; if it is desired that the switch should remain in this position even after the entire train has passed the same can be accomplished by bringing the lever 19, into engagement with the rack 20.

What is claimed is:—

1. In switch mechanism, in combination with a switch point, an operating bar arranged to be depressed by a train-carried means, connection between the operating bar and the switch point whereby the said point will be shifted upon depression of the bar, and a wheel engaged bar having connection with the operating bar of such nature that it will be moved to position to be held depressed by the wheels of the train upon depression of the operating bar.

2. In an automatic switch, the combination with a main and siding rails, switch points movable between said rails and a tie bar connected to the switch points, of a plurality of links pivotally supported between said main rails, and an operating rod pivotally supported by said links, a pivotal connection between said operating rod and said

links, adapted to move said tie bar and switch points when said operating bar is depressed.

5 3. In an automatic switch, the combination with the main and siding rails, switch points movable between said rails and a tie bar connected to the switch points, of a plurality of brackets interposed between
10 to said brackets, an operating bar pivotally secured to said links and having pivotal connection with said tie bar, and serving to operate the latter to shift said switch points, and means adapted to be held depressed by
15 the wheels of a train for locking said switch points in shifted position.

4. In switch mechanism, in combination with a switch point, an operating bar arranged to be depressed by a train-carried
20 means, connection between the said bar and the switch point whereby the said point will be shifted upon depression of the bar, a bar arranged in proximity to one of the
25 rails of the track the said bar having connection with the operating bar whereby

upon depression of the latter, the former will be moved to position to be held depressed by the wheels of the train whereby to prevent return of the operating bar to normal position.

5. In switch mechanism, in combination with a switch point, an operating bar arranged to be depressed by a train-carried means, connection between the said bar and the switch point whereby, upon depression
35 of the said bar, the switch point will be moved in one direction, wheel engaged means, and connection between the operating bar and the said means whereby, upon depression of the bar to move the switch
40 point, the said means will be moved to position to be held by the wheels against return to normal position.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature
45 in the presence of two witnesses.

AUGUST A. LONG.

Witnesses:

CHAS. INGRAM,
FREDERICK H. PIERCY.