No. 721,141. PATENTED FEB. 24, 1903.

A. K. BRANTNER.

RAILROAD SWITCH.

APPLICATION FILED MAY 14, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

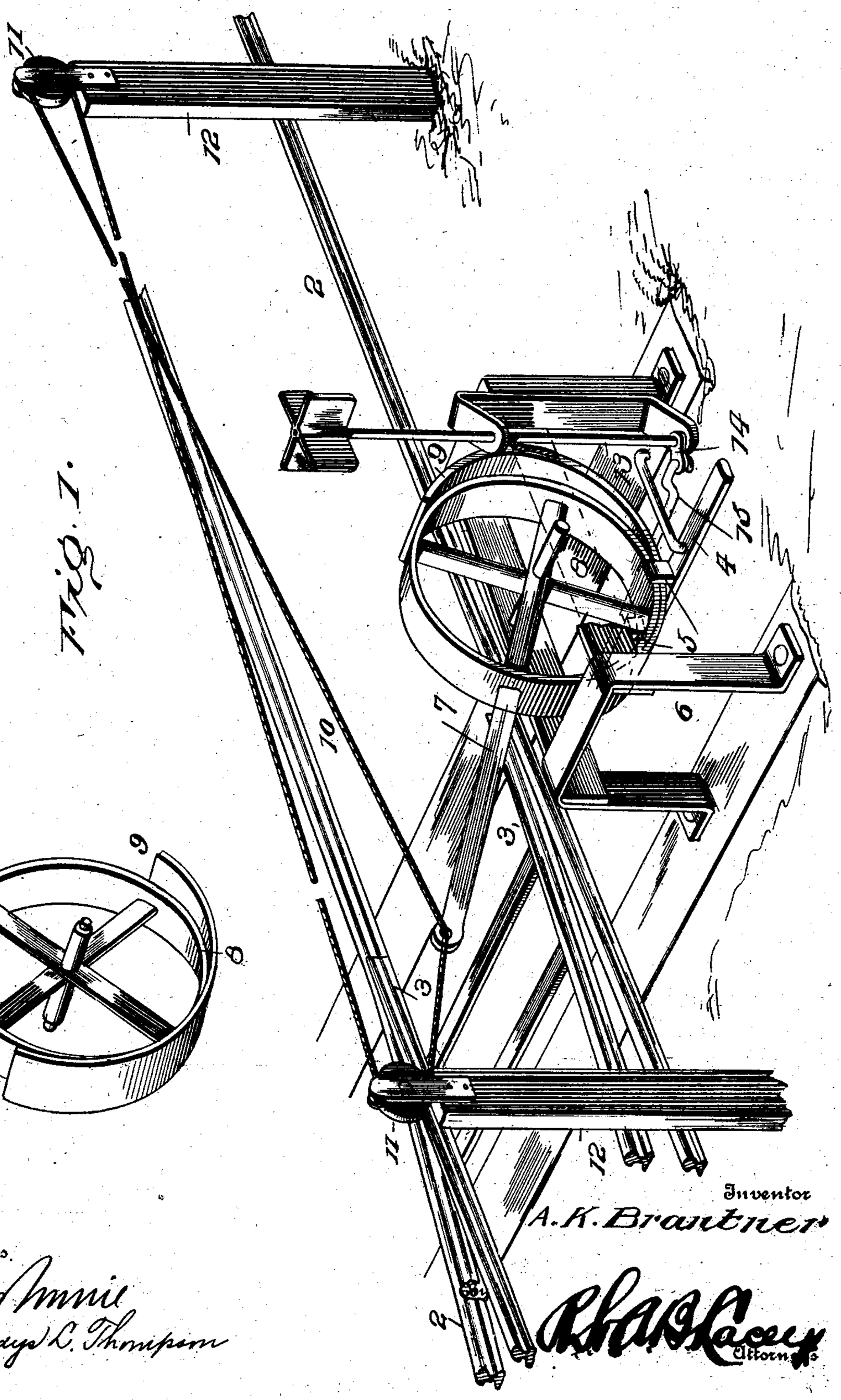

Fig. 1.

Fig. 4.

Witnesses.

Jno. Annie

Gladys C. Thompson

Inventor

A. K. Brantner

Chas. Lacey

Attorney

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NO MODEL. 2 SHEETS—SHEET 2.

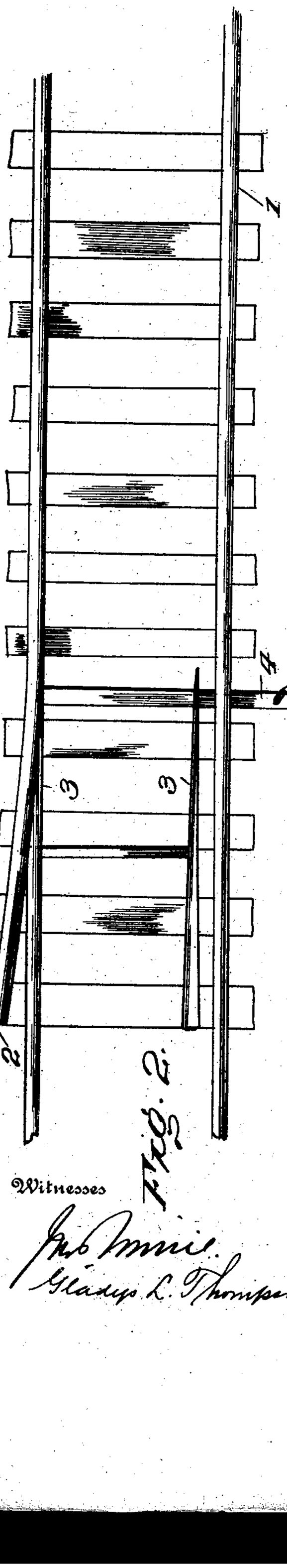

Fig. 2.

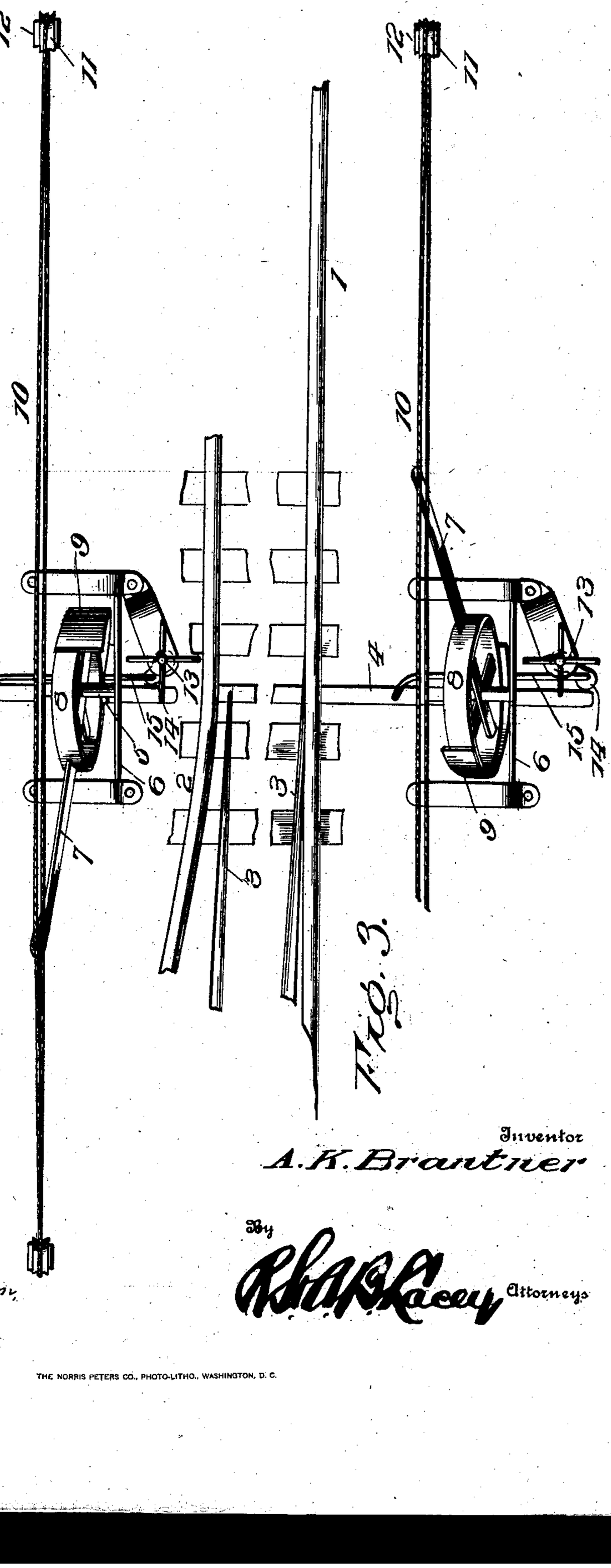

Fig. 3.

Witnesses

Jno. Innis.

Gladys L. Thompson.

Inventor

A. K. Brantner

By R. H. & C. Lacey Attorneys

UNITED STATES PATENT OFFICE.

ASA K. BRANTNER, OF MINGO JUNCTION, OHIO.

RAILROAD-SWITCH.

SPECIFICATION forming part of Letters Patent No. 721,141, dated February 24, 1903.

Application filed May 14, 1902. Serial No. 107,337. (No model.)

To all whom it may concern:

Be it known that I, ASA K. BRANTNER, a citizen of the United States, residing at Mingo Junction, in the county of Jefferson and State of Ohio, 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 provides actuating means whereby the switch may be operated from a moving train by the brakeman or other person designated for this office, the switch-operating mechanism being of such construction as to preclude the movement of the switch by the wheels of the passing train, the switch being locked in either position, this being a vital feature of the invention. Combined with the switch-operating mechanism is a visual signal whereby the brakeman, engineer, or other person upon the train approaching the switch may at a glance determine whether the switch is opened or closed, this being essential in order to enable the switch to be properly positioned for the approaching train.

The invention embodies as a vital feature an actuator having a spiral or inclined portion approximating the thread of a screw and of such relative proportion as to insure a complete throwing of the switch from one position to the other upon a partial rotation or turning of the said actuator.

The improvement further consists of the novel elemental construction and combinations of the parts which hereinafter will be more particularly set forth, illustrated, and finally claimed.

In the accompanying drawings, forming a part of the specification, Figure 1 is a perspective view of a railroad-switch and operating means therefor embodying the invention. Fig. 2 is a plan view showing the switch open to the main line. Fig. 3 is a view similar to Fig. 2, showing the switch closed to the main line. Fig. 4 is a detail perspective view of the switch-operating mechanism on a larger scale.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The switch illustrated is of ordinary construction and comprises the main line 1, siding or branch 2, and the connected switch points 3. The switch rod or bar 4, leading to the switch-stand and adapted to transmit motion to the switch-points for operating the latter, is provided with spaced stops 5 of any construction to admit of successful coöperation with the spiral or inclined portion of the actuator.

The switch-stand 6 may be of any construction and pivotally supports the operating-lever 7, mounted to swing in a plane parallel with the track and provided with the spiral or inclined portion 8, which, in conjunction with said lever, constitutes the actuator. The spiral or inclined portion 8 operates between the spaced stops 5 and imparts longitudinal movement to the rod or bar 4 and a lateral throw to the switch-points connected therewith. The spiral or inclined portion 8 is formed on the arc of a circle concentric with the axis of the operating-lever 7 and connected with the latter in any substantial way, so as to move therewith. As shown, a circular rim or band 9 is attached to the lever 7 in any convenient way, and the spiral or inclined portion 8 may be applied to or form a part thereof. Within the purview of the invention the upper portion of the rim or band 9 may be omitted, the vital feature being the spiral or inclined portion 8, connected for simultaneous movement with the operating-lever, so as to effect a lateral throw of the switch. The spiral or inclined connection with the operating-lever and the rod or bar 4 may be of any construction capable of imparting lateral movement to the switch upon oscillation of the lever 7.

The lever 7 may be operated in any convenient way, and, as shown, an endless cord or strand 10 has a portion connected to the lever 7 and its end portions supported upon pulleys 11 at the upper ends of posts 12, arranged along the track at any determinate distance from the switch-stand. The endless cord or strand 10 extends within convenient reach of the train, so as to be accessible by the brakeman or other person whose duty it is to look after the switch, and when a

train is approaching the switch its speed is slackened and the brakeman or other person reaches out from the train and takes hold of a portion of the cord or strand 10, according as the switch is to be opened or closed, one portion causing movement of the lever 7 in one direction and the other portion impelling movement of the said lever in the opposite direction.

In order that the position of the switch may be readily determined, a signal is provided, the same consisting of a turn-post 13, provided at its upper end with wings colored red and white in the conventional way to indicate danger and safety. A crank-arm 14, extended from the turn-post, has connection with the switch rod or bar 4 by means of a link 15, and when the switch is thrown in one direction the white wings face up and down the track, and when the switch is thrown in the opposite direction the red wings face up and down the track, thereby apprising the engineer, brakeman, or other person as to the position of the switch.

The spiral or inclined portion of the actuator is long and of comparatively slight pitch. Hence lateral stress thereon, no matter how great, can overcome the inertia of the parts and turn the actuator, so as to permit lateral movement of the switch after being positioned. It will thus be seen that the switch-operating mechanism also provides a locking means for the switch and renders the latter secure and safe.

Having thus described the invention, what is claimed as new is—

In combination with a railroad-switch, a lever mounted to swing in a plane about parallel with the track and having a spiral or inclined portion for coöperation with the switch rod or bar, and an endless cord or strand connected with said lever and extended along the track upon opposite sides of the switch-stand to admit of throwing the switch from a train moving either up or down the track, substantially as set forth.

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

ASA K. BRANTNER. [L. S.]

Witnesses:

D. M. GRUBER,

CARL ARMSTRONG.