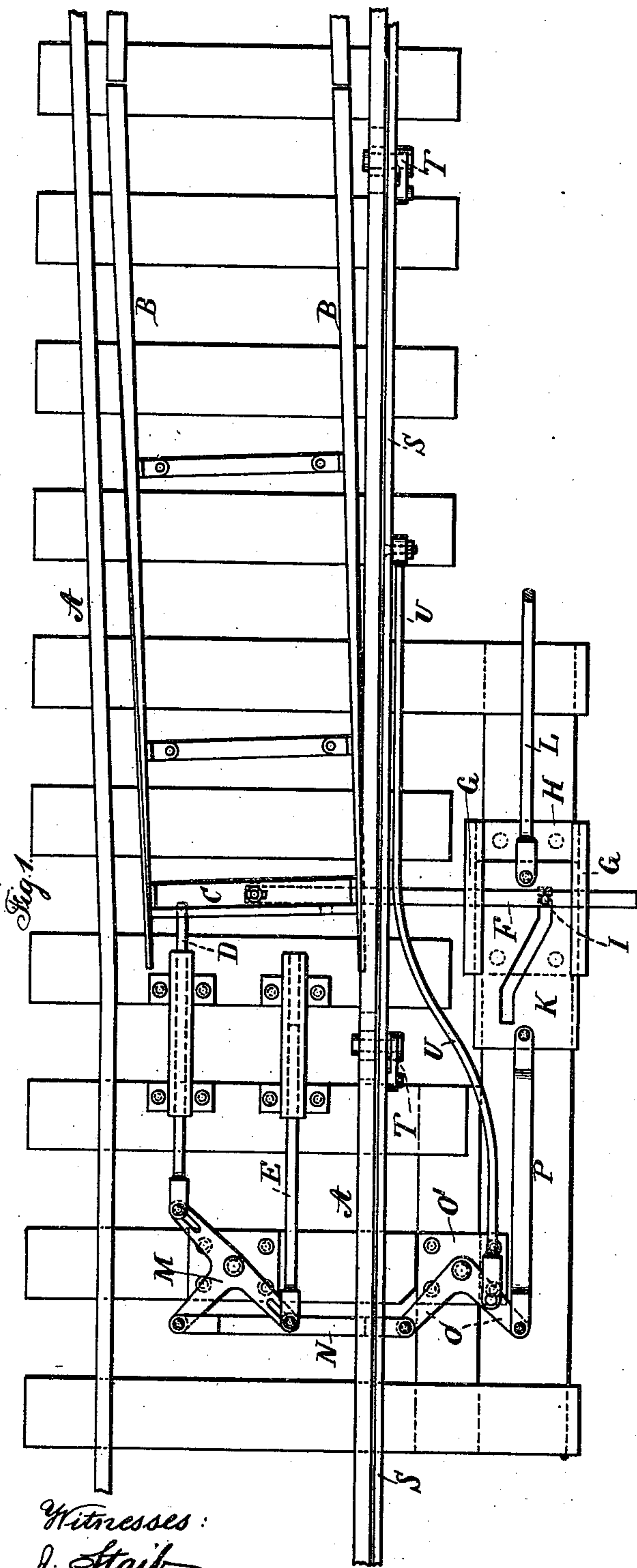


(No Model.)

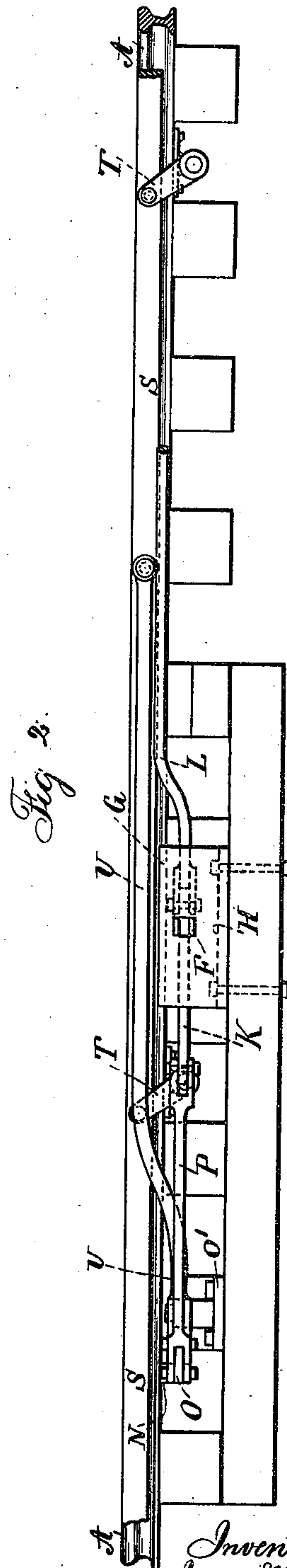
I. MAY & C. & T. SPIKINS.
LOCK AND SWITCH FOR RAILWAYS.

No. 355,545.

Patented Jan. 4, 1887.



Witnesses:
J. Stait
Chas. H. Smith



Inventors:
Isaac May
Charles Spikins
Thomas Spikins
per Lemuel W. Ferrell atty.

UNITED STATES PATENT OFFICE.

ISAAC MAY, OF BROOKLYN, AND CHARLES SPIKINS AND THOMAS SPIKINS,
OF NEW YORK, N. Y.

LOCK AND SWITCH FOR RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 355,545, dated January 4, 1887.

Application filed September 3, 1886. Serial No. 22,586. (No model.)

To all whom it may concern:

Be it known that we, ISAAC MAY, of Brooklyn, in the county of Kings and State of New York, and CHARLES SPIKINS and THOMAS SPIKINS, of the city and State of New York, have invented an Improvement in Locks and Switches for Railways, of which the following is a specification.

In railway-switches devices have been made use of for moving the switch-rails, and then for locking the parts in position; but these devices are complicated and liable to become obstructed.

In our improvement we make use of a sliding cam-plate having a diagonal slot with parallel end portions, and this plate is moved by a connection to the switch-lever, and between the cam-plate and the switch-rails there is a connecting-bar by which such switch-rails receive a direct motion, and there are locking-bolts connected by levers and links to the cam-plate, so that the respective bolts are projected or retracted after the switch-bars have been moved, and these bolts hold the switch firmly in position, and we combine with the cam-plate and bolts a guard-rail that is elevated whenever the switch is moved, so that this guard-rail prevents the switch being moved should there be cars upon the switch.

In the drawings, Figure 1 is a plan view of our improvements, and Fig. 2 is an elevation at one side of the switch.

The main track-bars A and the movable switch-rails B are of any desired character. We have represented the switch-rails B of the character usually known as the "point-switch," the rails having tapering ends; but such rails may be square-ended, as in the common switch.

C is the locking-bar connecting the switch-rails, and having holes into which the bolts D E pass, and there is a bar, F, pivoted at one end to the locking-bar C, and sliding at the other end through the guide-flanges G upon the stationary plate H, that is bolted to the cross-ties.

Between the guide-flanges G the cam-plate K is received, and this cam-plate is moved by a rod, L, extending to the switch-lever. The cam-plate K is made with a slot, the middle portion of which is diagonal and the end portions of which are parallel, and in this slot the

pin I of the bar F is received, and the shape of the slot in the plate K is such that the diagonal portion gives the proper motion to the switch itself, and the parallel end portions of the slot serve to hold the switch after being moved, and at the same time they allow the necessary end motion to be given to the cam-plate both before and after the switch has been moved for withdrawing and projecting the bolts.

The bolts D and E are fitted to slide in suitable supports, and they are connected to the lever M, that has three arms, the third arm of the lever receiving a link, N, to the bent lever O, that is pivoted upon a plate, O', fastened to one of the cross-ties, and there is a link, P, connecting the lever O to the cam K, so that when this cam K is moved the bolts D and E will also be moved; but the positions of the bolts and their supports are such that one bolt is withdrawn before the switch is moved, then such switch is moved, and after that the other bolt is projected into place and made use of in locking the switch; and it will be understood that, although the bolts continue to move during the whole of the movement given the plate K, the bolts are withdrawn and reinserted only during a fraction of the movement—namely, while the pin I is in the parallel end portions of the slot in the cam-plate; hence the bolts pass into or are withdrawn from the lock-bar during the time that the switch-bars and the parts connected with them are quiescent.

The guard-rail S is at the outside of one of the rails A, and it is connected thereto by the links T, so that when the guard-rail is moved endwise and the links T assume a vertical position the guard-rail will be above the track, but when the guard-rail has been moved endwise, so that the links occupy inclined positions, the guard-rail will be below the top of the track; hence this guard-rail cannot receive end motion while a train is upon the track, because the lifting action of the links T is prevented by the wheels above the guard-rail, and we make use of a link, U, between the guard-rail and the bent lever O, which link and lever give to the guard-rail its end motion; hence, in addition to preventing the switch being moved when there is a train upon the track.

the guard-rail insures the full movement of the parts, because a passing train will depress the guard-rail, and by the link U insure the proper movement in all the other parts of the switch should they not have been fully moved.

5 We do not claim a diagonally-slotted plate for moving and holding the switch, nor a bolt passing into a bar projecting outside the track.

We claim as our invention—

10 The combination, with the track-rails and switch-rails, of the stationary plate H, with flanges G, and the slotted cam-plate K at one side of the track, the diagonal slot in said cam-plate having parallel end portions, a bar passing across the cam-plate and through the

flanges of the plate H and connected to the locking-bar of the switch, two bolts sliding lengthwise of the track and adapted to enter holes in the locking-bar, a three-armed lever, M, connected to the bolts, and the link N, bent 20 lever O, and link P, connecting the lever M to the plate K, substantially as set forth.

Signed by us this 30th day of August, 1886.

ISAAC MAY.
CHARLES SPIKINS.
THOMAS SPIKINS.

Witnesses:

GEO. T. PINCKNEY,
WILLIAM G. MOTT.