

No. 607,299.

Patented July 12, 1898.

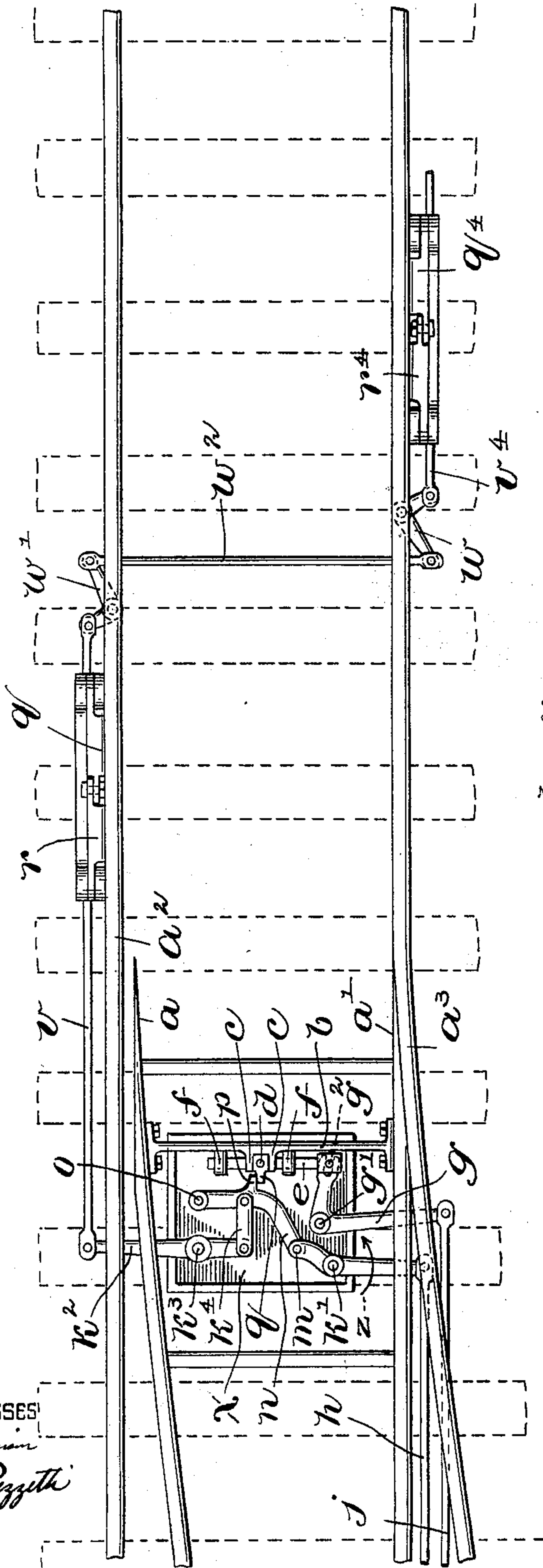
A. THURESSON.

SWITCH OPERATING AND LOCKING MECHANISM.

(Application filed Feb. 7, 1898.)

(No Model.)

FIG. 1-



WITNESSES
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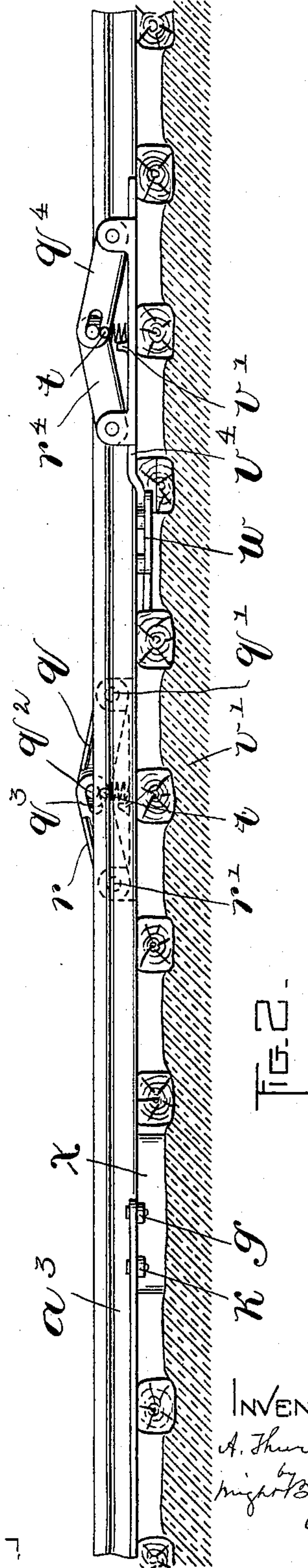


FIG. 2-

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SWITCH OPERATING AND LOCKING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 607,299, dated July 12, 1898.

Application filed February 7, 1898. Serial No. 669,319. (No model.)

To all whom it may concern:

Be it known that I, ANDREW THURESSON, of South Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Switch Operating and Locking Mechanisms, of which the following is a specification.

This invention relates to means for operating a railway-switch and for locking it in either of its positions; and it has for its object to provide a simple and effective locking mechanism adapted to be operated from a distant point, such as a switch-tower, and free from liability to be obstructed by ice and snow.

The invention also has for its object to provide means whereby the switch-locking mechanism may be held in its operative condition by the wheels of an approaching train, so that it (the switch) cannot be unlocked and thrown while the train is moving over it.

The invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this application, Figure 1 represents a plan view of a railway-switch embodying my invention. Fig. 2 represents a side elevation of the same.

The same letters of reference indicate the same parts in both figures.

In the drawings, $a a'$ represent the movable switch-points of a railway-switch, and $a^2 a^3$ the fixed rails. The switch-points $a a'$ are connected by a cross-bar b , which passes through a fixed casing x between the rails, said casing containing devices for imparting motion to the bar b for the purpose of operating the switch and for locking said bar with the switch in either position.

In the embodiment of my invention here shown and chosen for purposes of illustration e represents a slide which is movable in guides $f f$ in the casing x and has a lug d , which projects between ears $c c$, formed on the bar b .

g represents a bell-crank lever which is pivoted at g' to the casing and has one of its arms engaged at g^2 with the slide e . Its other arm projects through a slot in one end of the casing x and is connected by a rod j or other suitable means with a switch-operating lever. (Not shown.) When the lever g is moved by the switch-lever, it imparts an endwise move-

ment to the slide e and through the latter to the bar b and switch-points $a a'$, which can therefore be moved to either position by said lever and slide.

n represents a locking-arm which is pivoted at o within the casing x and has a lug p , arranged to engage a lug q , affixed to the slide e .

k represents a lever pivoted at k' to the casing and having one of its arms connected at m with the locking-arm n . The other arm of the lever k projects through a slot in the casing and is connected by a rod h or otherwise with a locking-lever (not shown) in the switch-tower. When the arm n is in the position shown in Fig. 1, its lug p bears on one side of the lug q on the slide e and prevents movement of said slide and of the switch-points from said position. When the lever k is moved in the direction of the arrow z in Fig. 1, it moves arm n away from slide e and disengages lug p from lug q , so that the slide e and the switch-points are unlocked and can be moved to their other position to connect the main track with the branch track. When the switch-points are in the last-mentioned position, the lug q on the slide e is on the opposite side of the lug p of the locking-lever from the position shown in Fig. 1, so that the switch may be again locked by restoring the locking-arm to its operative position.

It will be seen, therefore, that the operator at the switch-tower can unlock, operate, and again lock the switch by alternately manipulating the levers connected with the rods $j h$, the switch being locked in each position.

The described operating and locking devices are simple and compact and are protected by the casing x against obstruction of ice and snow.

To prevent the unlocking and operation of the switch when a train is in close proximity to and moving over it, I provide the means next described.

k^2 represents a lever pivoted at k^3 within the casing. One of its arms is connected by a link k^4 with the locking-arm n , and its other arm is connected with a rod v , which is movable beside the track-rail a^2 and is provided with a projection v' .

$q r$ represent levers pivoted at $q' r'$ to fixed supports beside the rail a^2 , the said levers be-

ing connected at their meeting ends by a pin q^2 , passing through a slot q^3 in one of the levers, the pin being affixed rigidly to the other lever. The meeting ends of the levers q r are normally raised, so that a lug t on one of said levers is above the projection v' on the rod v . The levers q r are arranged so that the car-wheels running on the rails a^2a^3 will strike and depress their raised ends, and thus cause the lug t to engage the projection v' and prevent endwise movement of the rod v , thus holding said rod, and with it the lever k^2 and locking-arm n , so that the switch cannot be unlocked and moved by the operator until the train has passed over the levers q r . The said levers may be restored to their raised position after the train has passed by any suitable means, the rod v and lever k^2 moving loosely with the locking-arm n when the levers q r are raised.

I prefer to provide a rod v^4 and levers q^4 r^4 at the outer side of the rail a^3 , said rod and levers being duplicates of the rod v and levers q r , but located farther from the switch, so that they will be acted on by wheels behind those acting on the levers q r . The rod v^4 is connected with the rod v by bell-crank levers w w' and a rod w^2 .

Having thus explained the nature of my invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the modes of its use, what I claim, and desire to secure by Letters Patent, is—

1. A switch operating and locking appliance comprising a casing, a bar movable in

the casing and projecting from opposite ends thereof for connection with the switch-points, a slide movable on guides in the casing and engaged with said bar, a slide-operating lever pivoted in the casing, and having one arm engaged with the slide, and another projecting from the casing, and adapted for connection with an operating-lever, a locking-arm pivoted in the casing and having provisions for locking the slide in either of two positions, and a lever pivoted in the casing, and having one arm engaged with the locking-arm, and another projecting from the casing, and adapted for connection with an operating-lever.

2. The combination with the fixed rails and switch-points, of a slide connected with the switch-points, means for imparting movement to the said slide to operate the switch, a locking-arm adapted to lock the slide and switch in either of two positions, means for imparting movement to the locking-arm, and a lever, such as k^2 , connected at one end with the locking-arm, a rod or slide, such as v , connected with the other end of said lever, and provided with a projection v' , and levers q , r arranged to be depressed by car-wheels approaching the switch, and provided with a projection adapted to engage the projection v' , when said levers are depressed.

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

ANDREW THURESSON.

Witnesses:

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A. D. HARRISON.