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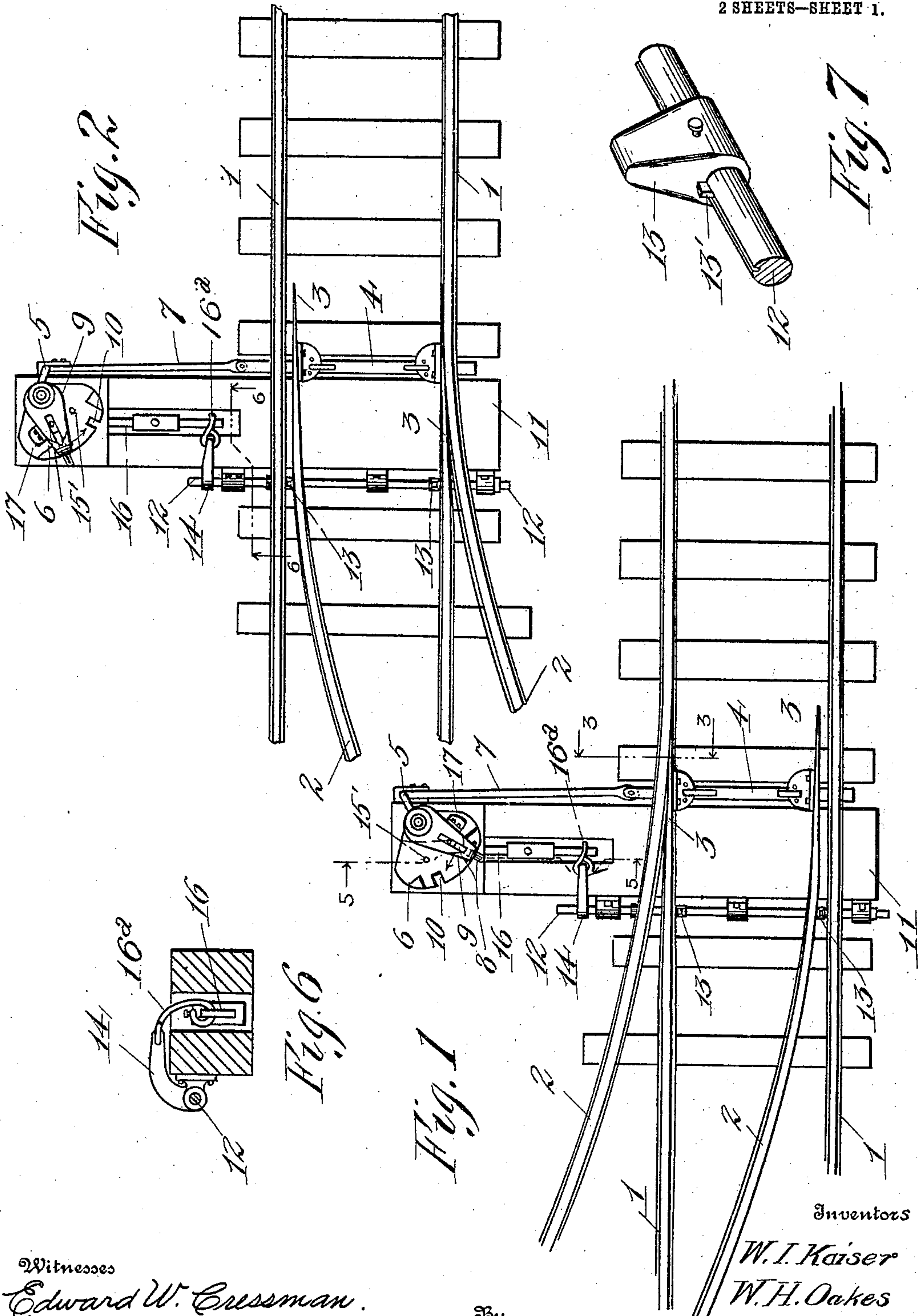
PATENTED MAR. 26, 1907.

W. I. KAISER & W. H. OAKES.

SWITCH POINT LOCK.

APPLICATION FILED JAN. 11, 1906.

2 SHEETS—SHEET 1.



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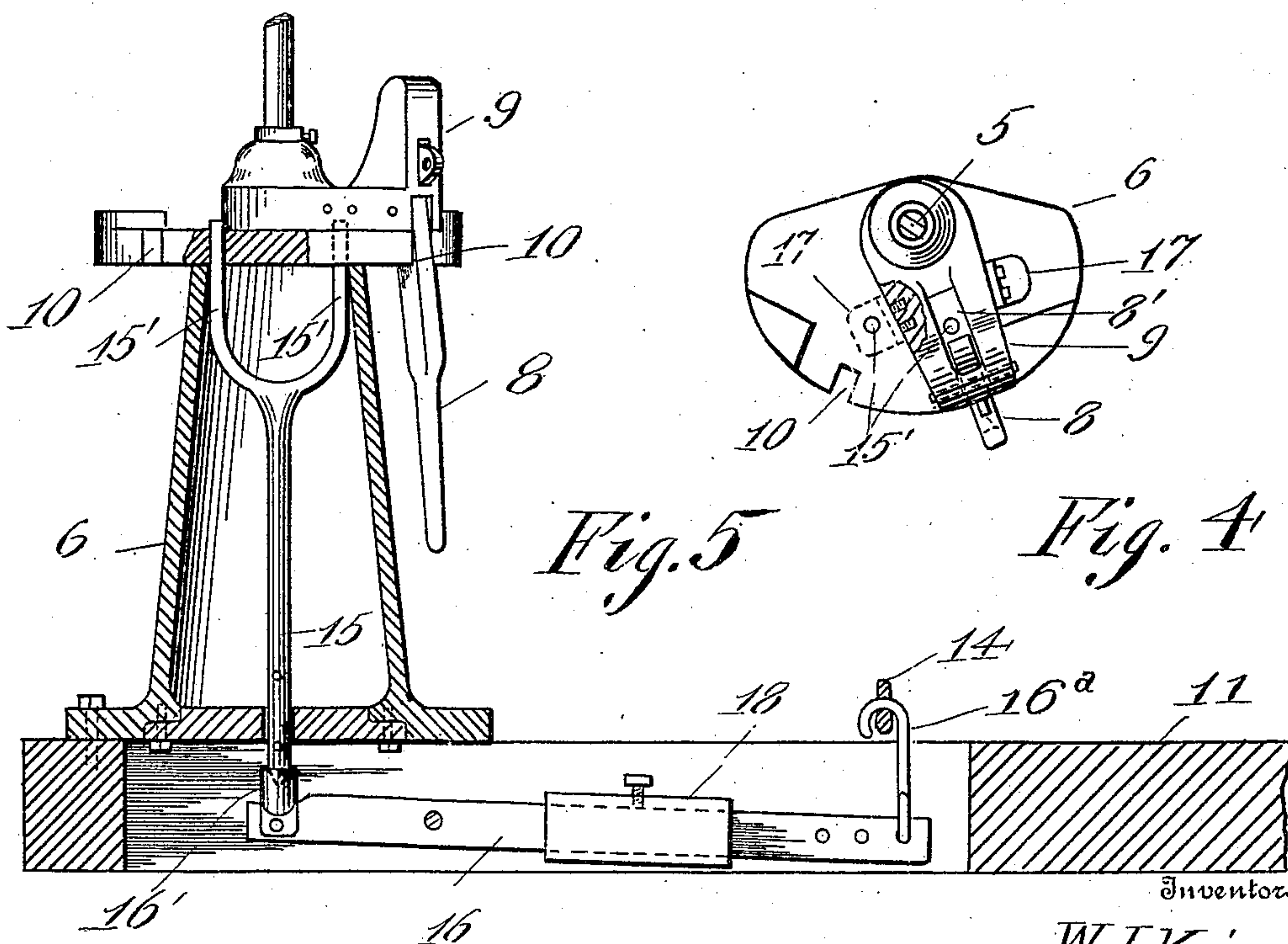
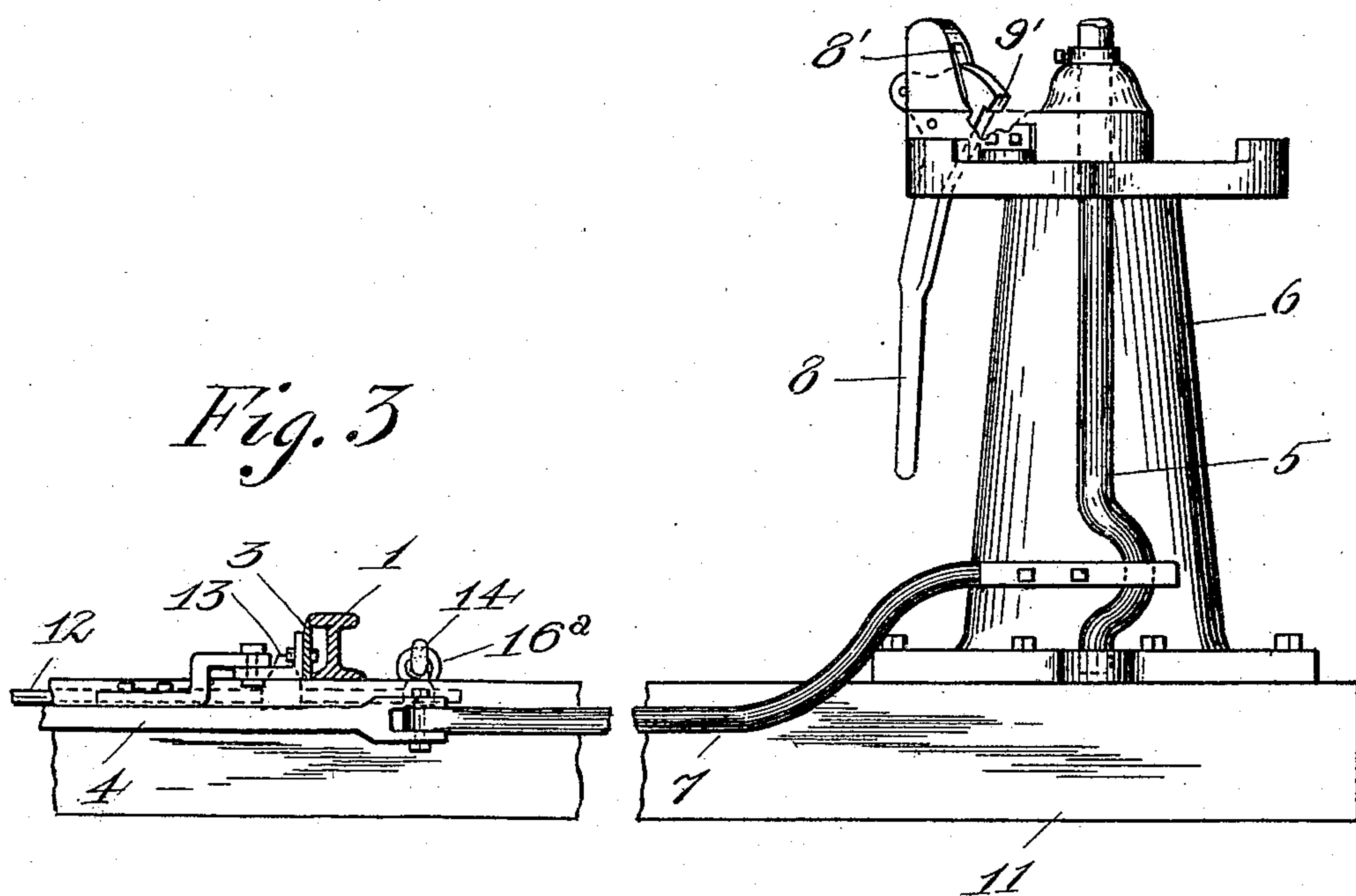
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# UNITED STATES PATENT OFFICE.

WILLIAM I. KAISER, OF SEATTLE, AND WILLIAM H. OAKES, OF  
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## SWITCH-POINT LOCK.

No. 848,247.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed January 11, 1906. Serial No. 295,653.

*To all whom it may concern:*

Be it known that we, WILLIAM I. KAISER and WILLIAM H. OAKES, citizens of the United States, and residents, respectively, of Seattle, in the county of King and State of Washington, and of Georgetown, in the county of King and State of Washington, have invented new and useful Improvements in Switch-Point Locks, of which the following is a specification.

Our invention relates to improvements in switch-point locks, and has for its primary object the provision of an improved and simplified construction.

With the above and other objects in view, to be referred to in the following description, the invention consists of the construction, parts, arrangement, and combinations of parts, hereinafter described, and succinctly defined in the appended claims.

Referring to the accompanying drawings, Figure 1 is a view in top plan of a railway-switch and the switch-point lock mechanism therefor constructed in accordance with our invention. Fig. 2 is a view similar to Fig. 1, but showing the switch leading to the opposite side of the main track and having the switch-point lock and controlling means therefor set accordingly. Fig. 3 is a section taken on line 3 3 of Fig. 1. Fig. 4 is a detail view in top plan of the switch-stand. Fig. 5 is a section taken on line 5 5 of Fig. 1. Fig. 6 is a section taken on line 6 6 of Fig. 2, and Fig. 7 is a detail view.

Reference-numerals 1 and 2 indicate the rails of the main and branch tracks, respectively, and 3 indicates the switch tongues or points. These tongues or points are connected by a suitable tie-rod, as 4, whose one end portion projects beyond the adjacent rail 1 and is connected to suitable mechanism which shifts the same for swinging the switch-points. This mechanism can be of any suitable construction, that shown consisting of the usual crank-shaft 5, which is journaled in a stand 6, a draw-bar 7, pivotally connected to the crank of said shaft 5, and the tie-rod 4, and a lever or handle, as 8, which is pivoted in slot 8', formed in the outer portion of a horizontal arm 9, fixed to the shaft 5. The top of the stand 6 is provided with the usual spaced-apart notches 10, into which the handle 8 is received when the

switch-points are thrown in position for the main line and branch, respectively. In conjunction with this mechanism just described we provide improved mechanism for locking the switch-points in their normal position, and the description of this will now be proceeded with.

Reference-numeral 11 indicates a head-block arranged beneath the rails 1 and switch-points 3, and journaled in suitable bearings secured to this head-block, preferably to one of the side faces thereof, is a rock-shaft 12, and this shaft carries switch-point-locking means, said means, as clearly shown in the drawings, consisting of lugs 13, which are adjustably secured, as by a key 13' and set-screw, (see Fig. 7,) and spaced apart, so as to when swung upwardly hold one switch-point against its rail 1 and hold the other switch-point spaced from the other rail. (See Fig. 1.)

Reference-numeral 16 designates a lever which has its inner end portion connected by a link 16<sup>a</sup> to an arm 14, fixed on said rock-shaft, and the inner end portion of said lever is normally held lowered by a weight, as 18, whereby to hold the lock-lugs 13 elevated to lock the switch-points.

This switch-point lock mechanism is controlled by a rod 15, which is vertically slidable in the stand 6, and a part or lug 17, which is removably secured to one side edge of arm 9. The removable part or lug 17 is provided to hold the rod 15 lowered when arm 9 has been moved from its normal position to set the switch-points for the branch track, and said lug is reversible—that is, it is adapted to be secured to either side edge of the arm 9, as will be more fully referred to in the following.

Rod 15 is connected to the outer portion of lever 16 and has its upper end portion forked to provide a pair of fingers 15', both of which normally project above the top of the stand through openings provided therein, which openings are disposed in radial lines intersecting the point of swing of said arm 9 and the respective notches 10. By this arrangement of these openings the slot 8' in arm 9 will register with one opening when at each limit of its movement, and when said rod is elevated receive one of the fingers thereof, which finger will lie directly in the path of



movement of nose 9', formed on the adjacent end portion of handle 8. Therefore nose 9' when the lower end portion of the handle is swung upwardly engages the underlying finger and forces it down, consequently lowering rod 15 and swinging upwardly the weighted end portion of lever 16, whereby the switch-points are released, the rock-shaft in this operation being rotated approximately a quarter of a revolution, so as to lower the lock-lugs beneath the path of travel of the switch-points.

We provide the reversible lug 17 and forked rod so as to adapt our invention to both right and left hand switches, with the switch-stand arranged at the same side of the main track in each instance.

Now the operation of our improved switch-point lock mechanism when employed in conjunction with a right-hand switch and the switch-point-throwing mechanism thereof, as shown in Fig. 1, is as follows: Handle 8 is swung upwardly until the nose 9' has sufficiently depressed the underlying finger 15' to allow the arm 9 to move over the top thereof, which operation, as heretofore described, effecting the unlocking of the switch-points, and then arm 9 is swung in the direction of the arrow, Fig. 1, whereby the switch-points are set for the branch track. Handle 8 is now lowered and engaged in the other notch 10 of the stand 6 to avoid accidental displacement of the switch-points. When the arm 9 is in this position, it has moved from over the first finger 15', which formerly projected into its slot, and the other finger now being directly beneath said slot of the arm said rod would be allowed to elevate at the wrong setting of the switch-points were it not for the lug 17, which has moved over that finger 15' now at one side of arm 9, and consequently holds the same from upward movement.

When it is desired to employ our improvement in conjunction with a left-hand switch, (see Fig. 2,) the arm 9 is moved so that the handle 8 will engage in the farther notch of the stand, and this will be its normal position, or that position which insures the setting of the switch-points for an open main track, and lug or part 17 is removed from that side edge of the arm to which it is secured, as shown in Fig. 1, and secured to the other side edge thereof. Also lock-lugs 13 are shifted so that their positions relatively to the switch-points will be reversed, that lug nearest the stand being moved between the adjacent rail of the main track and switch-point and the other lug positioned so as to engage the inner side face of the switch-point. Therefore with the parts thus arranged the operation of shifting the switch-points and locking them will be identical with that heretofore described in conjunction with the

right-hand switch, with the exception of the reverse action of arm 9.

The connection between rod 15 and lever 16 is preferably made through the medium of a member 16', pivoted to said lever and having its upper portion formed with a socket which freely receives the lower end portion of said rod. By this construction should the switch-stand be torn from the head-block, carrying with it rod 15, the switch lock mechanism will be undisturbed.

The lock-lugs are approximately wedge shape and have their side and end faces connected by curved portions, (see Fig. 7,) which construction permits of their being more freely moved into and out of engagement with the switch-points, and in the event of the switch-points not being thrown to their limits of movement the lugs will, in moving upwardly, by reason of their inclined or cam end faces engaging the switch-points force the same and firmly hold them to their proper positions.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent of the United States of America, is—

1. In combination with a switch-point, means for securing the same from movement, mechanism related to said securing means for operation thereof including a slidable member provided with a plurality of fingers, and means for engagement with one or another of said fingers to effect sliding of said member, whereby said mechanism will be operated.

2. The combination with a switch-point, means normally yieldingly held in position for securing said point from movement, and mechanism for shifting said point, of means connected with said securing means for controlling the operation thereof and operatively related to said mechanism for releasing the switch-point, said last means including a part which is adjustable relatively to different positions of said shifting mechanism for holding the securing means when the shifting mechanism is at one or another of said positions.

3. The combination of a switch-point, means for securing the same from movement, means connected with the securing means for operating the same including a slidable member provided with a plurality of fingers, and mechanism for shifting the switch-point including means for engaging a finger to lower said member when the switch-point-shifting mechanism is in any one of its set positions.

4. The combination with the switch-points, and the mechanism for shifting the same, including a swing-arm, of means for securing the switch-points from movement, and mechanism for controlling said means



including a slidable member, and means carried by said arm for securing said member from movement, said last means being adjustable for holding said member when said arm is in one or another of its positions.

5 5. The combination with the switch-points, and the mechanism for shifting the same including a swing-arm, of means normally securing the switch-points from movement, and mechanism for controlling said means including a slidable member provided with a plurality of fingers projecting into the path of movement of said swing-arm, means for sliding said member, and means carried  
10 by said arm and being adjustable relatively to the different positions thereof for engaging one finger or another for holding said rod from movement.

20 6. The combination with the switch-points, and the mechanism for throwing the same including an arm which is shiftable for opening and closing said switch-points, means securing said switch-points from movement a rod mounted for movement and  
25 being operatively connected to said means, a plurality of fingers connected with said rod and projecting into the path of movement of said arm, means for sliding said rod, and adjustable means on said arm for engaging  
30 said fingers and thereby holding said rod when said arm is in one or another of its positions.

35 7. The combination with the switch-points, and the mechanism for throwing the same including an arm which is shiftable for

opening and closing said switch-points, means engaging and thereby locking the switch-points from movement, a lever having an end portion weighted for normally holding said means in locking position, a rod  
40 connected to the unweighted end portion of said lever and having its upper end portion provided with fingers lying in the path of movement of said arm, means for lowering  
45 said rod, and means for holding said rod depressed, said means being adjustable so as to engage one finger or another.

8. The combination with the switch-points, and the mechanism for shifting the same including a swing-arm, of means for  
50 normally locking the switch-points, and mechanism for controlling said means including a slidable member provided with a plurality of spaced-apart fingers normally projecting into the path of movement of said  
55 arm, a lever on said arm for engaging a finger and thereby lowering said member when said arm is in any one of its set positions, and a means on said arm for engaging the fingers and holding said member lowered, said last  
60 means being adjustable so as to be capable of being set at either side of the arm.

Signed at Seattle, Washington, this 27th day of December, 1905.

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Witnesses:

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