

916,941.

G. E. BERRY.  
 SWITCH POINT THROWING MECHANISM.  
 APPLICATION FILED AUG. 26, 1908.

Patented Mar. 30, 1909.  
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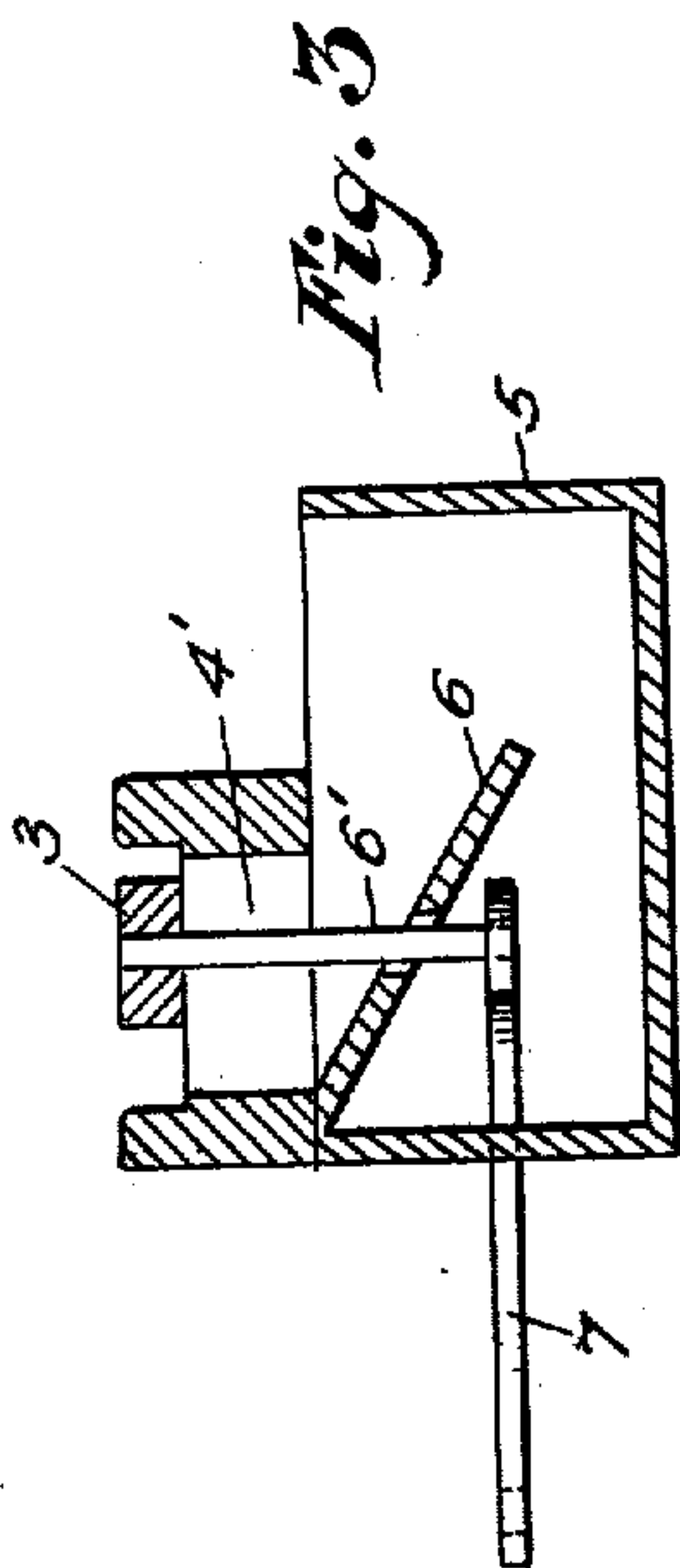


Fig. 3

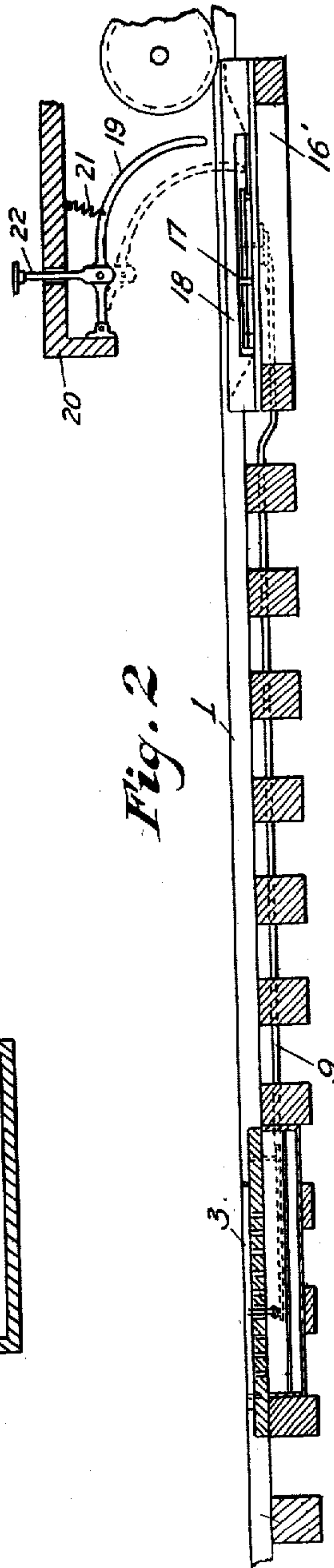
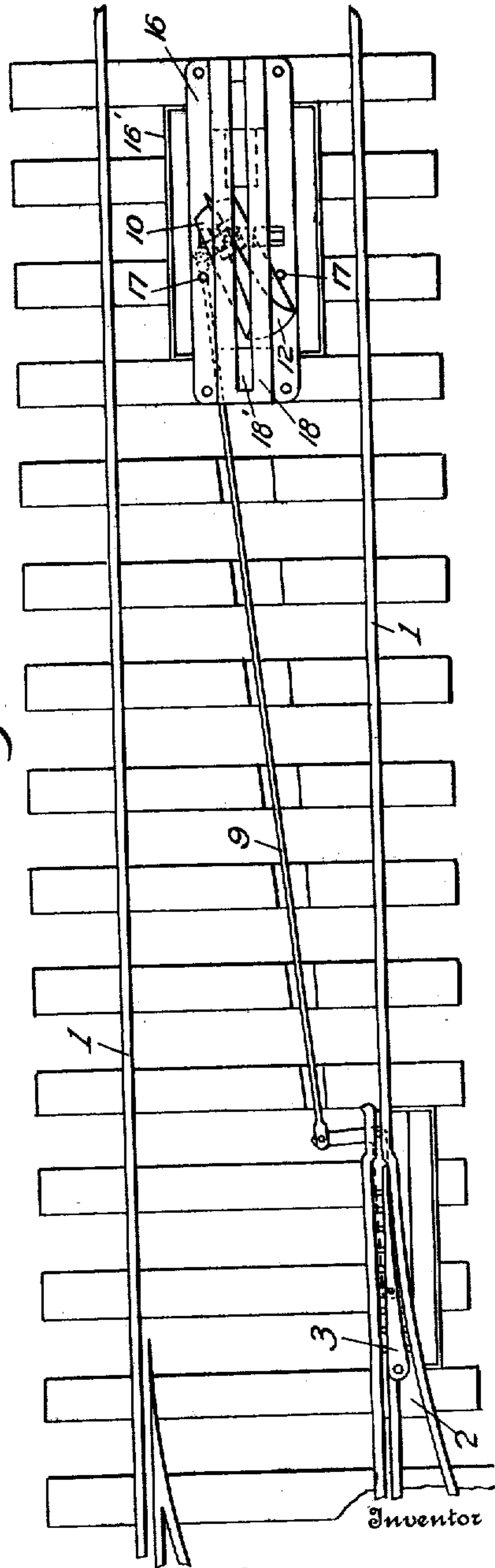


Fig. 2

Fig. 1



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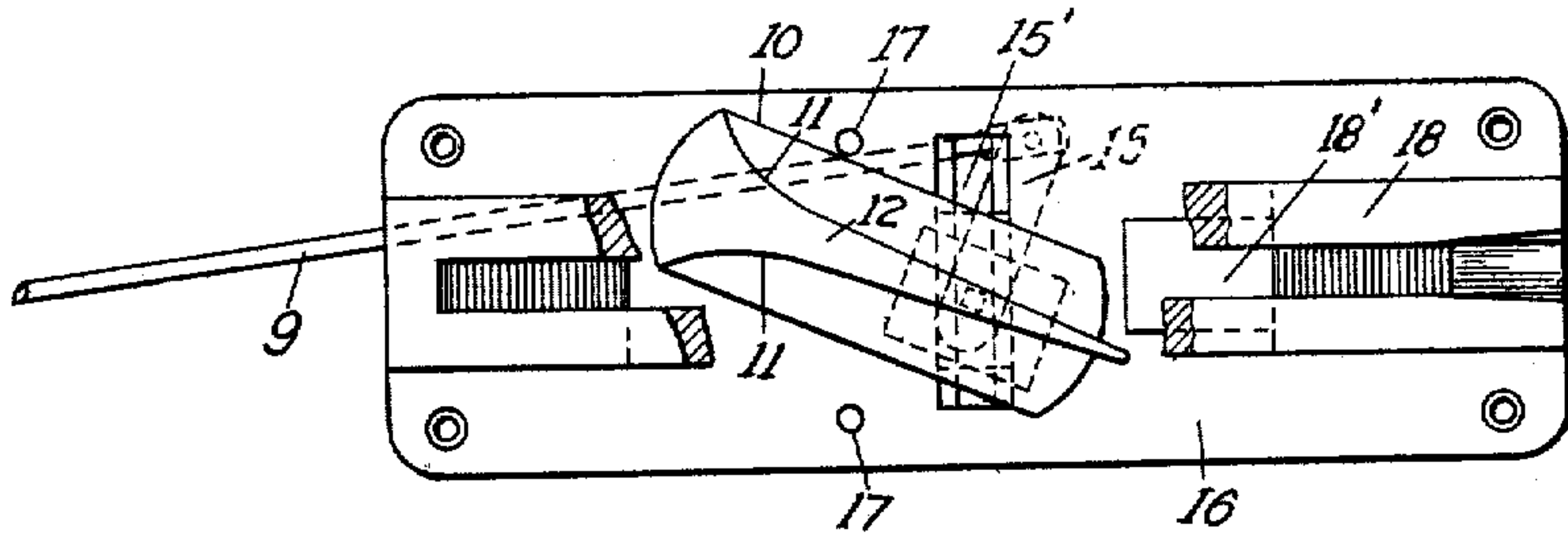
Adams & Brooks  
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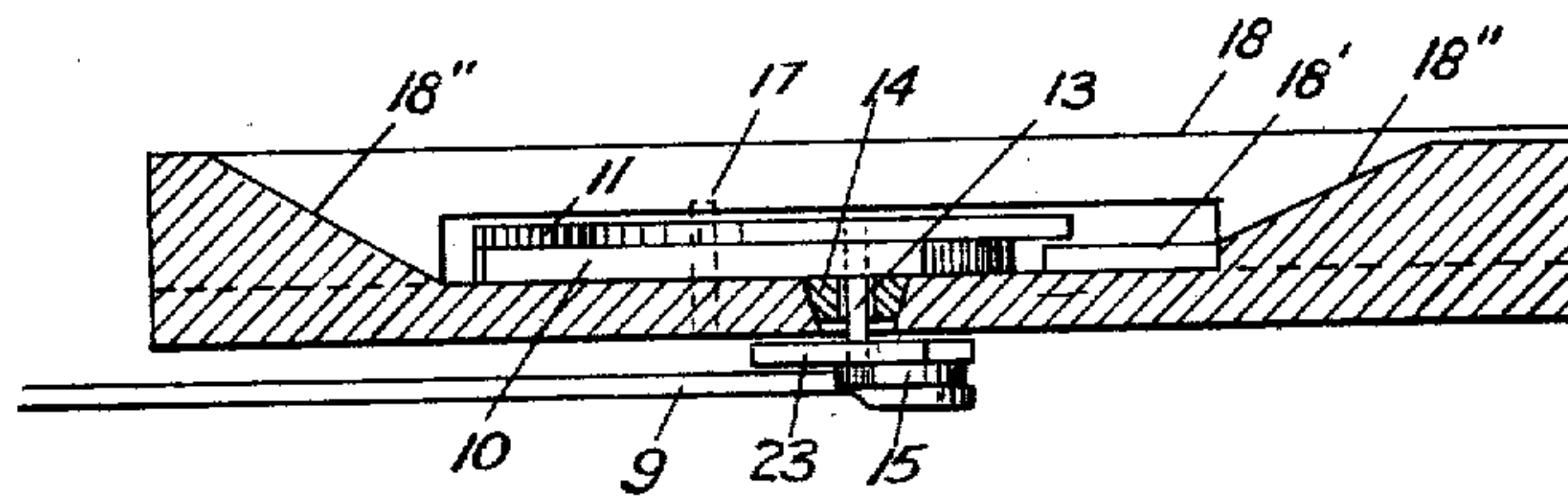
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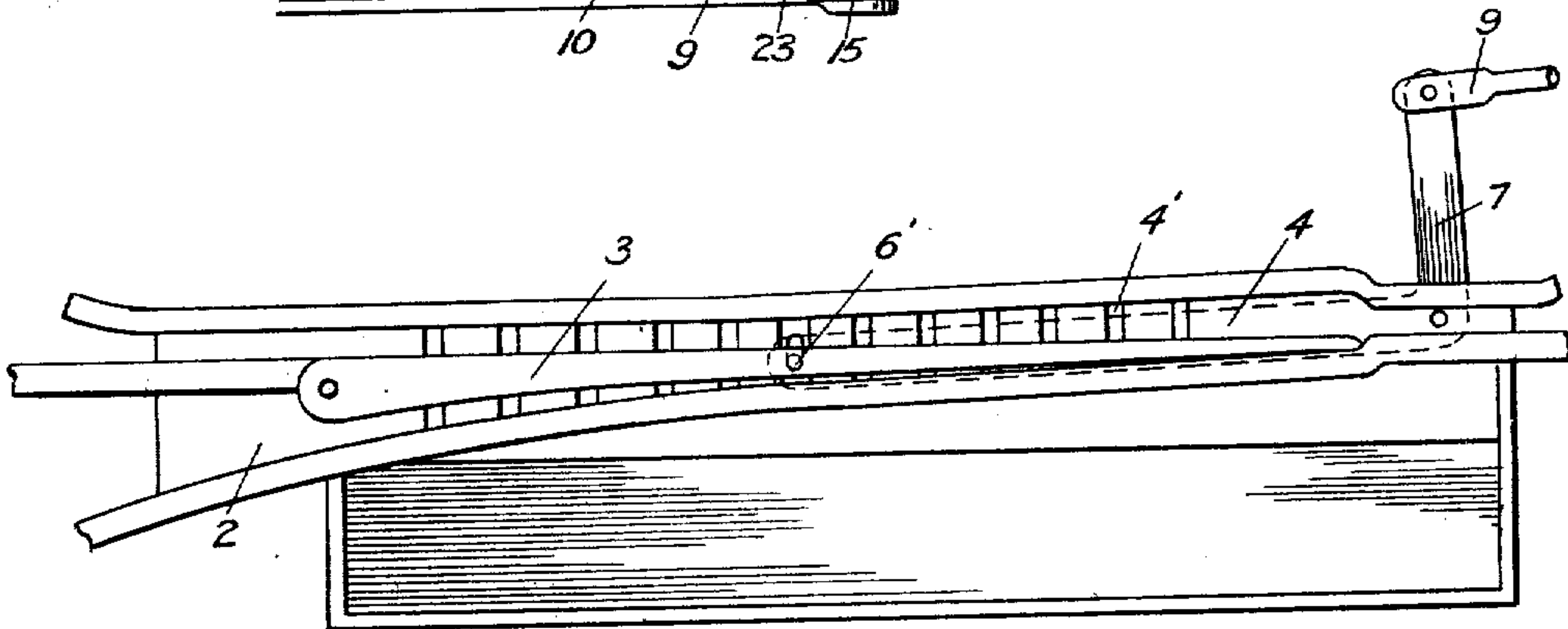
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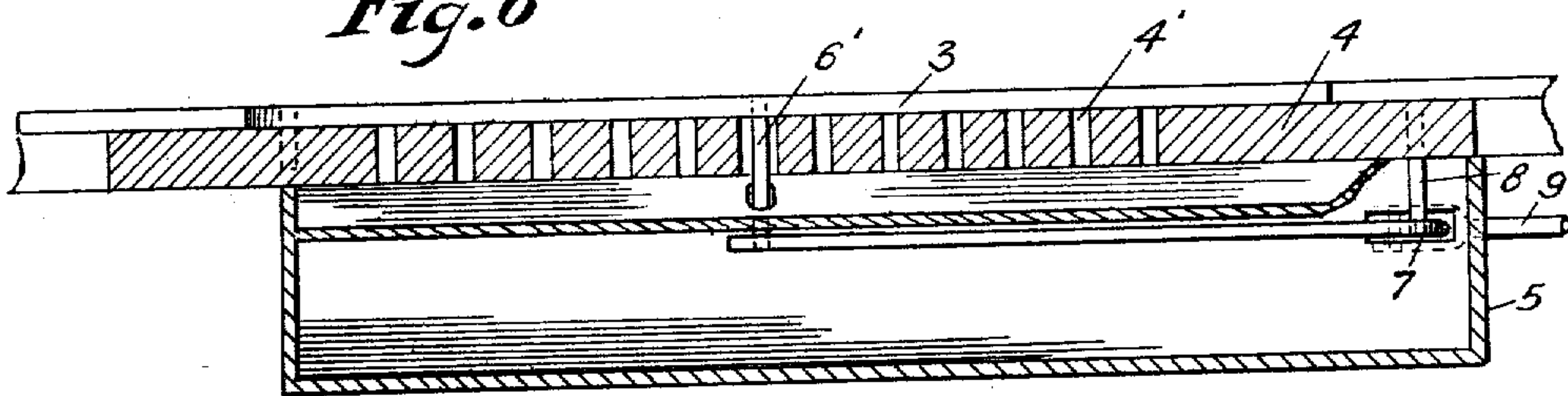
*Fig. 4*



*Fig. 5*



*Fig. 6*



*Fig. 7*

Inventor

Geo. E. Berry.

Witnesses

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# UNITED STATES PATENT OFFICE.

GEORGE E. BERRY, OF SEATTLE, WASHINGTON, ASSIGNOR OF ONE-HALF TO HORACE F. COMPTON, OF SEATTLE, WASHINGTON.

## SWITCH-POINT-THROWING MECHANISM.

No. 916,941.

Specification of Letters Patent.

Patented March 30, 1909.

Application filed August 26, 1908. Serial No. 450,380.

*To all whom it may concern:*

Be it known that I, GEORGE E. BERRY, a citizen of the United States of America, and a resident of the city of Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Switch-Point-Throwing Mechanism, of which the following is a specification.

My invention consists of an improved switch point throwing mechanism of the type controlled by a device on the car, and the primary object thereof is to provide a comparatively simple construction which can be operated while the car is in motion to either open or close the switch.

Other objects will be set forth as the description progresses and those features of construction and combinations of parts, in which my invention resides, succinctly defined in the appended claims.

Referring now to the accompanying drawings, in which like numerals of reference indicate like parts throughout the several views: Figure 1 is a plan view of a section of track provided with a switch to which point throwing mechanism constructed according to my invention, is connected. Fig. 2 is a longitudinal section view with parts shown in elevation. Fig. 3 is a cross sectional view taken through the switch. Fig. 4 is a plan view on enlarged scale of the device which is arranged in a road bed between the rails and controlled by a device on a car, a portion of the guide being broken away. Fig. 5 is a longitudinal sectional view thereof. Fig. 6 is a plan view of the switch and the adjacent parts associated therewith, and Fig. 7 is a longitudinal sectional view thereof.

Reference numeral 1 indicates the rails of an ordinary railway track, 2 a suitable turnout and 3 a switch point, pivoted for swinging on a base plate 4 which is formed with openings 4' through which dirt or other foreign substances which would interfere with the proper throwing of the switch point, will fall.

Reference numeral 5 indicates a box arranged beneath base plate 4, in which an inclined plate 6 is positioned to catch the substances falling through the openings 4' and deliver such materials to the outer portion of the box where it can be readily removed in any desired manner.

Fixed to switch point 3 is a depending

pin 6', the same projecting through a slot in plate 6 and engaging in a suitably elongated aperture formed in one end portion of the bell crank lever 7 which is pivoted at 8 for swinging. A link 9, pivotally connected with the other end of lever 7, extends to mechanism of novel construction arranged preferably between the rails of the track, to transmit power to said lever whereby shifting of the switch point can be effected. This mechanism comprises a lever member 10, in the form of a plate provided with cam surfaces 11, which diverge toward the switch point, the same as now considered, being formed by the side edges of a raised portion 12 on the upper face of said plate. Member 10 is provided at one end portion with a fixed depending pin 13 which projects through a carrier 14 so as to be free to rotate therein, and on its lower end portion said pin is provided with an outwardly projecting arm 15 to which link 9 is pivoted. While carrier 14 can be otherwise supported for sliding, I have illustrated the same as being mounted in a transverse slot 15' whose side walls converge in a downward direction, said slot being formed in a plate 16 on which lever member 10 is slidably engaged. Plate 16 is preferably secured in position over a box 16' arranged in the road bed as illustrated in Figs. 1 and 2.

Fixed to the upper face of plate 16 at the opposite sides of lever member 10, are pins 17, the same being arranged to engage the adjacent sides of said member intermediate the ends thereof so as to form fulcrum means therefor, as will be more fully set forth hereinafter. Arranged over lever member 10 is a guide 18, provided with a slot 18', having inclined end walls 18'' adapted to be engaged by the arm 19 carried by the car 20, upon entering and passing from said slot. Arm 19 is pivotally supported on the car, as illustrated in Fig. 2 and normally held in elevated position by a spring 21. Connected with arm 19 is a stem 22 which projects through the platform of the car within easy reach of the motorman or other attendant on the car. Now in operation, lever member 10 is normally arranged diagonally of guide 18 (see Fig. 1), with its cam surfaces 11 extending across the slot 18' thereof so that arm 19 upon being lowered into said slot 18' will engage one of the cam surfaces, this depending on the set of the lever member 10, and



first move said member laterally until it engages a pin 17, then swing it on said pin to effect a partial rotation of pin 13, which upon being rotated operates bell crank lever 7 through the medium of arm 15 and link 9 to throw the switch point. In being swung, lever member 10 is moved to a relatively reverse diagonal position (see Figs. 1 and 4), carrier 14 moving with the adjacent end portion of said member to support the same beneath the slot 18' of the guide.

Reference numeral 23 indicates suitable means in the form of a plate, which is arranged on pin 13 beneath plate 16 to prevent member 10 from rising from said plate 16, as will be readily understood.

In view of the foregoing it will be observed that member 10 in being operated to throw the switch point in set for operation by an arm 19 carried by the next car to throw the switch point in the reverse direction. Sufficient play is allowed between the various points of connection so that carrier 14 in shifting laterally does not have its movement transmitted to the bell crank lever 7.

The device carried by the car can be of any suitable construction but it will be noted that by providing member 10 with the diverging cam surfaces 11 which are related to guide slot 18', as previously described, a single arm or equivalent member carried by the car can be employed and operated in the same manner for throwing the switch point to either open or closed positions.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States of America, is:

1. In a railway switch, in combination with the switch point, a means connected to said switch point to throw the same, and means supporting said first means for sliding bodily and swinging laterally of the track, said first means being formed with diverging cam surfaces adapted to be alternately engaged by a device on a car for effecting movement of said means in relatively reverse directions.

2. In a railway switch, in combination with the switch point, a means connected to said switch point to throw the same, a guide extending over said means, and means supporting said first means for sliding and for swinging laterally of said guide, said first means being formed with diverging cam surfaces arranged to extend beneath said guide to be alternately engaged by a device on a car.

3. In a railway switch, in combination with the switch point, means for throwing

the same comprising a lever member arranged to be engaged and operated by a device on the car, means supporting said lever member for lateral sliding and swinging, and means normally spaced from said lever member on which the same is fulcrumed after it has been slid laterally.

4. In a railway switch, in combination with the switch point, means for throwing the same in opposite directions comprising a lever member formed with diverging cam surfaces, arranged to be alternately engaged by a device on the car, means supporting said lever member for lateral sliding and for swinging, and means arranged on opposite sides of said lever member for fulcruming the same after it has been slid laterally.

5. In a railway switch, in combination with the switch point, means for throwing the same in opposite directions comprising a lever member formed with diverging cam surfaces adapted to be alternately engaged by a device on the car, carrier means supported for sliding, means pivotally supporting said lever member on said carrier means, and means arranged on opposite sides of said lever member for fulcruming the same.

6. In a railway switch, in combination with the switch point, means for throwing the same in opposite directions comprising a guide for guiding an operating device carried by the car, a lever member arranged beneath said guide and formed with diverging cam surfaces adapted to be alternately engaged by the device on the car, and means supporting said lever member for movement to reverse diagonal positions relatively to said guide.

7. In a railway switch, in combination with the switch point, means for throwing the same in opposite directions comprising a guide for guiding an operating device carried by the car, a lever member formed with diverging cam surfaces adapted to be alternately engaged by the device on the car, means slidably supported for movement laterally of said guide, a pin on said guide lever journaled in said last means, an arm fixed on the lower end portion of said pin, means arranged on opposite sides of said lever member to fulcrum the same, and connecting means between said last named arm and said switch point.

Signed at Seattle, Washington, this 15th day of August, 1908.

GEORGE E. BERRY.

Witnesses:

STEPHEN A. BROOKS,  
HERCHMER JOHNSTON.