

No. 709,590.

Patented Sept. 23, 1902.

P. F. WERNER.
TROLLEY TRACK SWITCH.
(Application filed Apr. 7, 1902.)

(No Model.)

2 Sheets—Sheet 1.

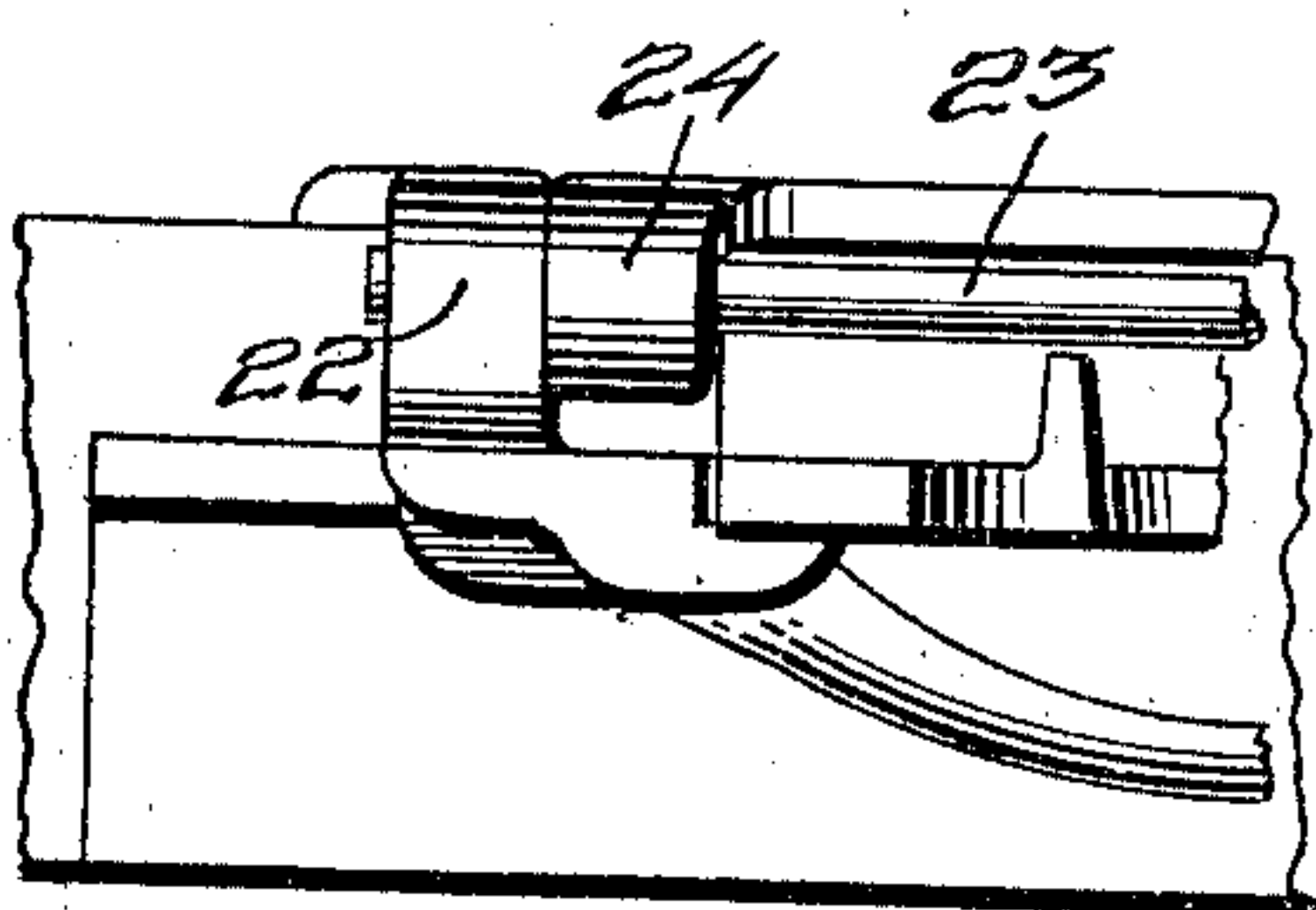
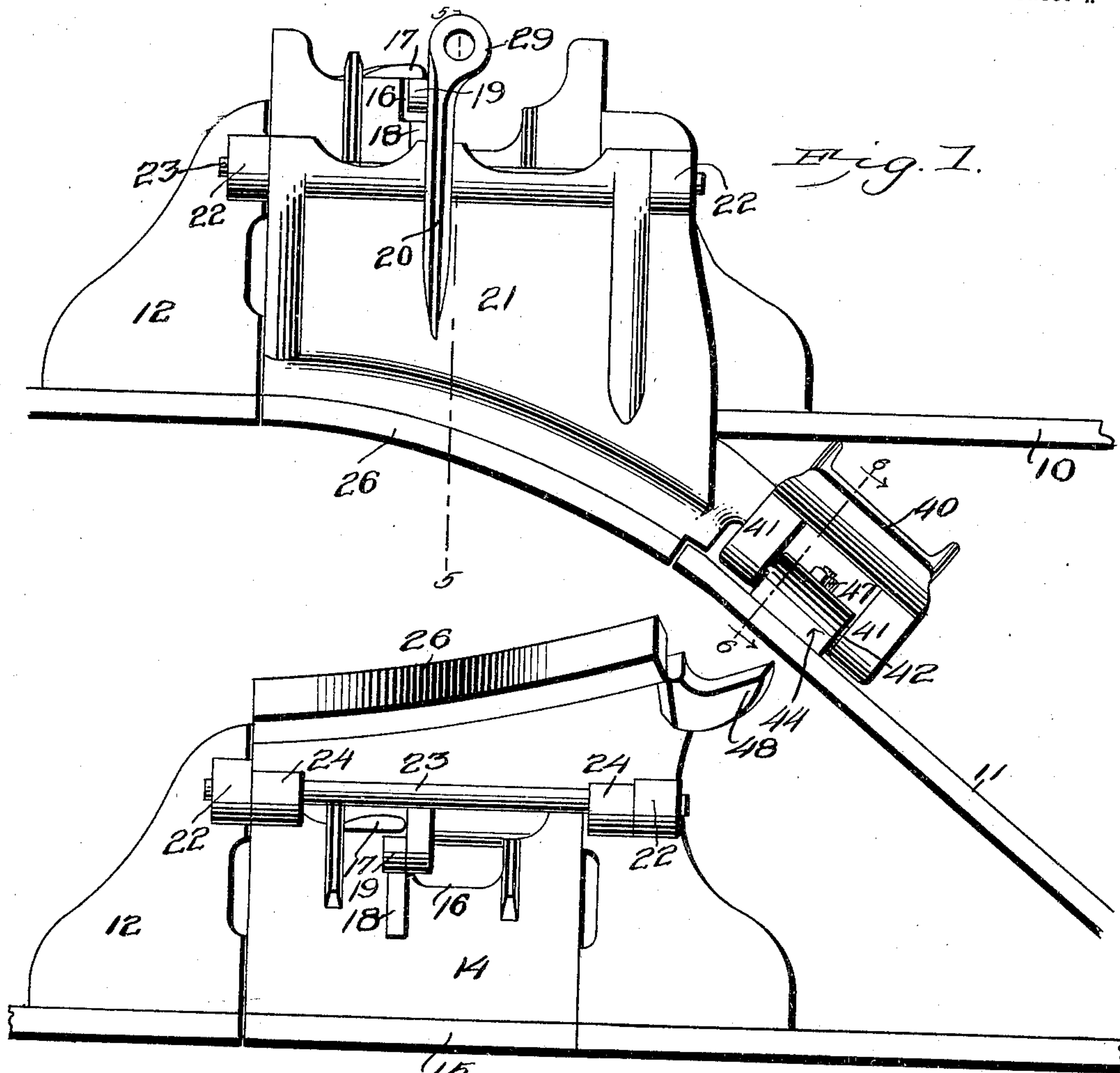
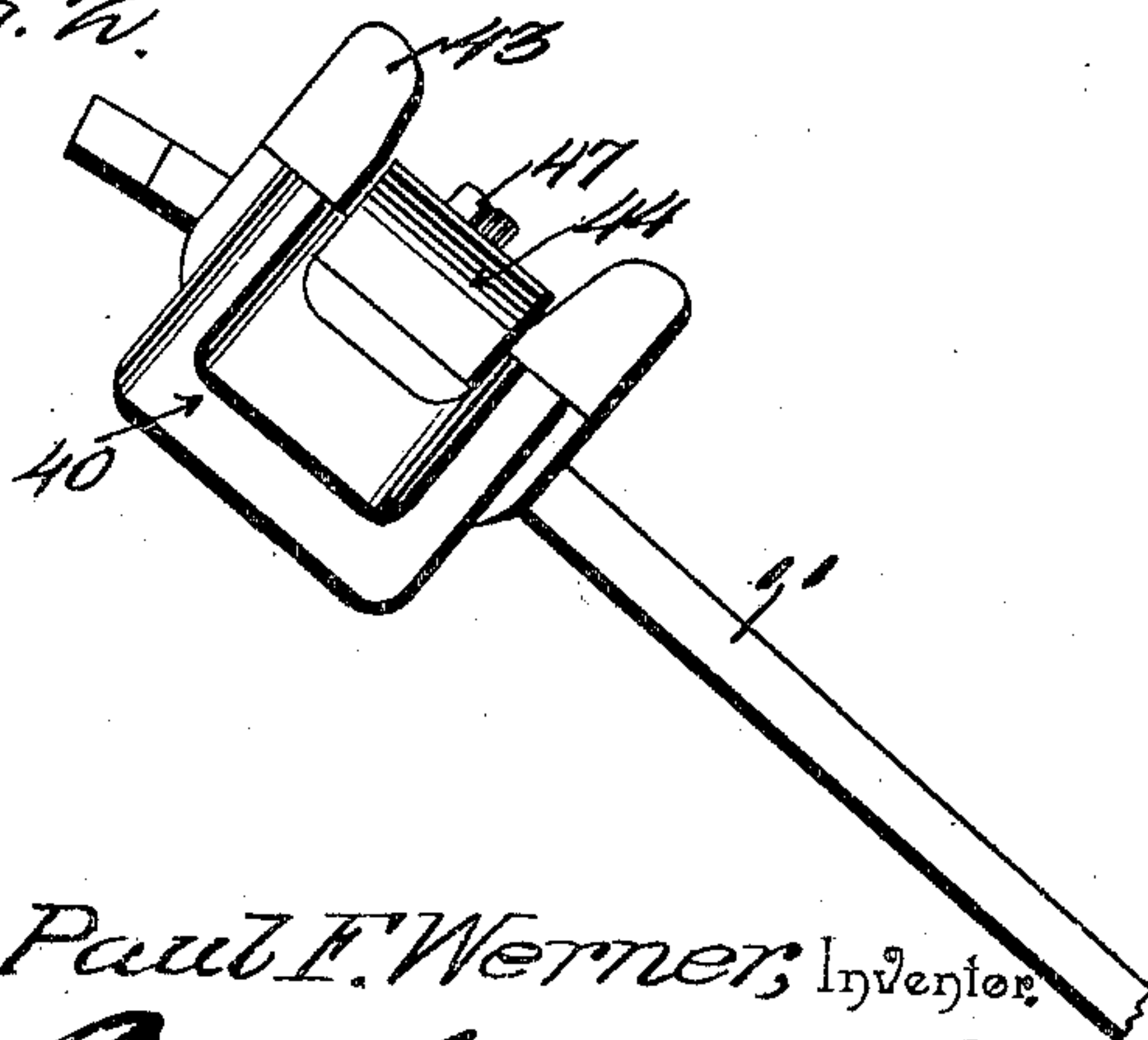


Fig. 3.



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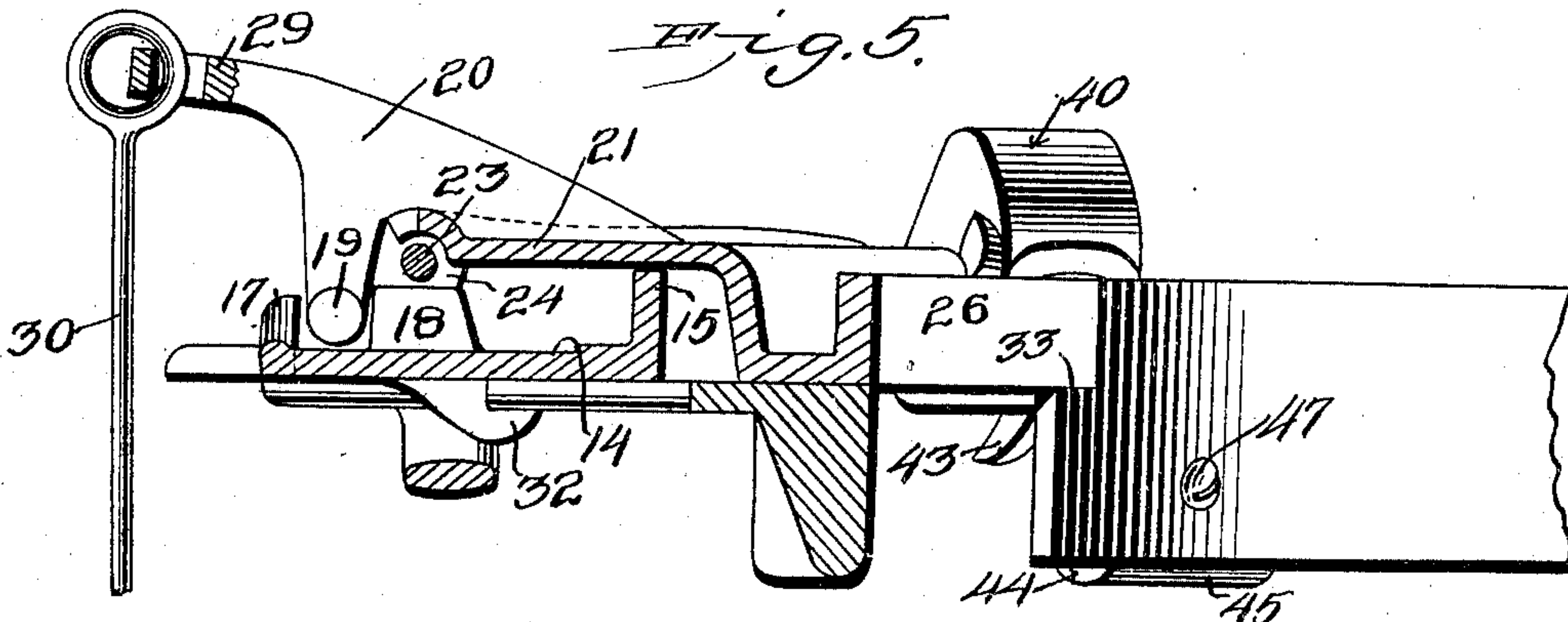
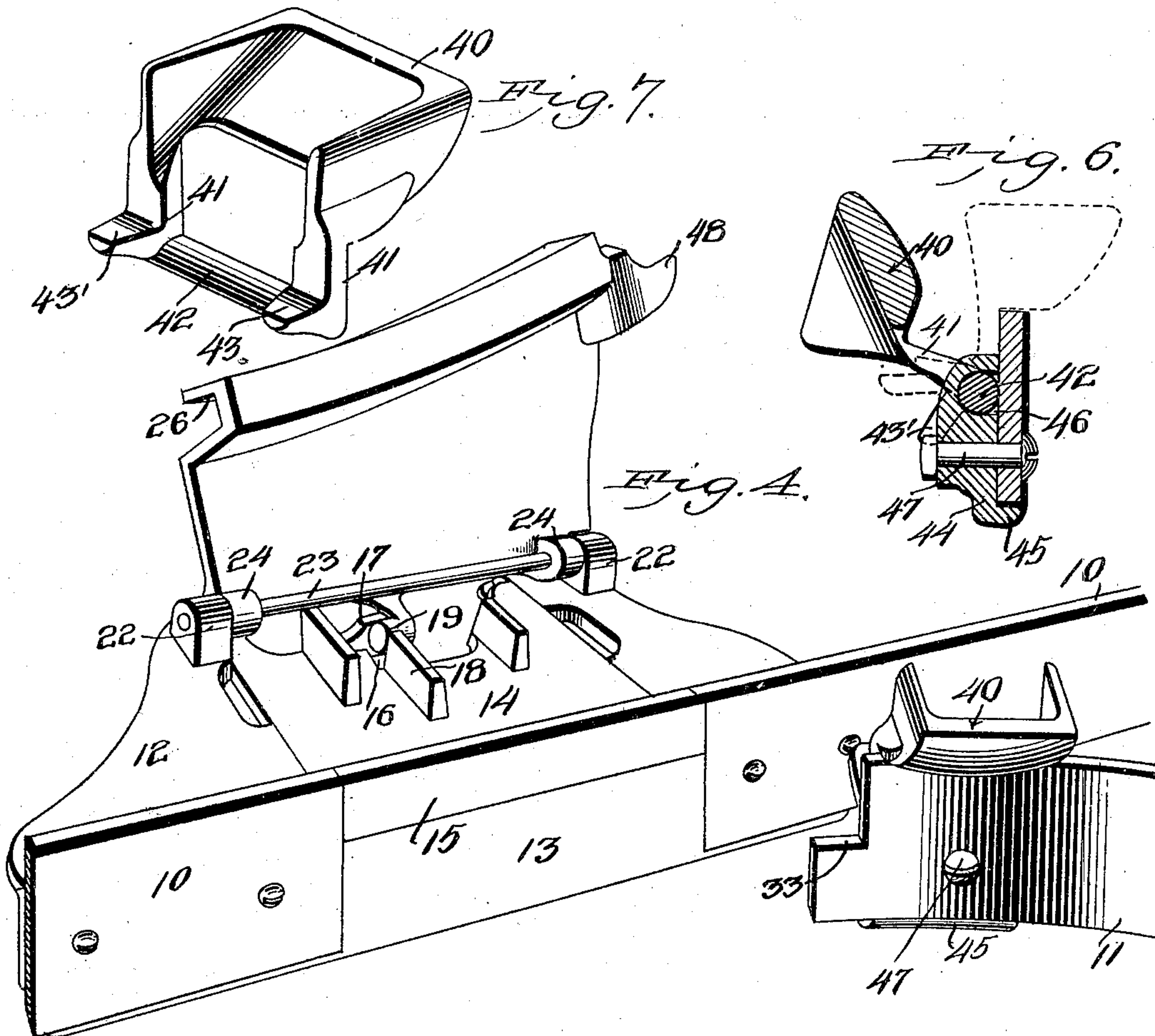
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

PAUL F. WERNER, OF WILLIMANSETT, MASSACHUSETTS.

TROLLEY-TRACK SWITCH.

SPECIFICATION forming part of Letters Patent No. 709,590, dated September 23, 1902.

Application filed April 7, 1902. Serial No. 101,784. (No model.)

To all whom it may concern:

Be it known that I, PAUL F. WERNER, a citizen of the United States, residing at Willimansett, in the county of Hampden and State of Massachusetts, have invented a new and useful Trolley-Track Switch, of which the following is a specification.

The invention relates to certain improvements in switches for overhead trolley-tracks, and has for one of its objects to provide an improved and readily-operated form of switch which may be placed at the intersection of two tracks and adjusted to form an uninterrupted support for the trolley-wheel on either track.

A still further object of the invention is to provide an automatic lock for closing the end of the open track to prevent a trolley-wheel from running off the end of the track.

With these and other objects in view the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims.

In the drawings, Figure 1 is a plan view illustrating the intersection of a main and a branch track and showing the application thereto of a switch and locking device constructed in accordance with my invention, the switch being adjusted to connect the main and branch tracks. Fig. 2 is a view similar to Fig. 1, illustrating the switch adjusted to preserve the continuity of the main track and showing the automatic lock in operative position. Fig. 3 is detail view of a portion of the structure shown in Fig. 1. Fig. 4 is a perspective view of the switch with the parts in the position shown in Fig. 2. Fig. 5 is a transverse sectional elevation of the device on the line 5 5 of Fig. 1. Fig. 6 is a sectional elevation through the automatic branch-track lock on the line 6 6 of Fig. 1. Fig. 7 is detail perspective view of the locking-block.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The switch may be placed at the intersection of tracks arranged on curved or straight lines, or a combination of both, and in the drawings 10 designates what may be termed a "main-line" rail and 11 a "branch-line"

rail, the switch being adjustable to preserve the continuity of the main line or to connect the main line with the branch line.

To the rear face of the separated ends of the main-line rail is secured a bracket 12, the outer face 13 of which is in the same plane with the outer face of the rail-sections 10. The central portion of the upper face of the bracket is recessed to form guides for the reception of a support 14, having at its outer edge a rail-section 15, which may be moved into alinement with the rail-sections 10, as illustrated in Figs. 2 and 4, forming a continuous main-line rail for the support of the trolley-wheel. The inner portion of the slide is provided with a slot 16, and on the upper surface of said slide are two lugs 17 and 18, having walls coincident with those of the slot 16, the lugs and walls of the slot forming contact-faces adapted to be engaged by a pin or antifriction-roller 19, carried by an arm 20, depending from the branch-track portion 21 of the switch.

At suitable points on the bracket 12 are arranged a pair of lugs 22, adapted for the reception of a pivot-pin 23, which extends through lugs 24, projecting from the lower face of the member 21. On the outer edge of the member 21 is a rail-section 26, which may be moved into the position illustrated in Figs. 1 and 5 to connect the main and branch line tracks. The pivoted track member 21 is provided with an operating-arm 29, which may be connected to a depending rod 30, the vertical movement of such rod by the operator causing a pivotal movement of the member 21 and a reciprocating movement of the slide 14, one or other of the members being moved to operative position to preserve the continuity of the main line or to connect the branch line with said main line. In the operation of this portion of the mechanism a downward movement of the rod 30 when the parts are in the position illustrated in Figs. 1 and 5 will immediately move the branch-track member 21 on its pivot-pin 23 to the position shown in Figs. 2 and 4. During the upward swinging movement of the member 21 the pin or antifriction-roller 19 engages the rear face of lug 18 and causes an inward movement of the slide 14, the track portion 15 being moved into alinement with the main-

track sections 10 and being maintained in proper position by the engagement of a lug 32, carried by the slide, with the under face of the bracket 12. The bracket 12 not only serves to hold the track from upward movement, but prevents excessive movement of the slide, the pivoted member 21, which is moved beyond the vertical plane of the pivot 23, being thus prevented from falling rearwardly under the influence of gravity.

The upper surface of the portion 13 of the bracket forms a rigid support for the rail 15 and sustains the weight of the traveling trolley, and in order to provide a similar support for the outer portion of the pivoted track member the branch-rail section 11 has its lower portion projected for a short distance beyond the end of the upper surface of the rail, forming a shoulder 33, on which the outer edge of the branch-track member may rest.

When the rail 15 is in operative position and the main-line track is continuous, the end of the branch-line track 11 is disconnected, and in order to prevent a trolley traveling on the branch track from running off at the end of the branch line I employ an automatic locking-block 40, which is moved over the top of the branch-line rail each time the member 21 is elevated and is automatically moved to the position clear of the track when the branch-line member 21 is moved to the position shown in Figs. 1 and 5.

The locking-block 40, which may be of any desired shape, is provided with a pair of downwardly-extended arms 41, connected by a bar 42, and provided with a rearwardly-extended lug 43, although in order to avoid the necessity of manufacturing two forms of locking-blocks for application to a branch track at each side of the switch the block is preferably made with an additional lug 43', which may be placed in operative position when used in connection with a switch in different position. As a convenient means of supporting the locking-block I employ a plate 44, having an outwardly-projecting lip 45 extending under the base of the rail and provided at its upper end with a recess 46 for the reception of the pivot-bar 42. This plate may be held in position by a single bolt and nut 47, the projecting lip 45 preventing any turning movement of the plate on the bolt.

The operative lug 43 and arm 41 are engaged by a projecting finger 48, extending from one end of the pivoted switch member 21, the first movement of the pivoted member 21 when the parts are in the position shown in Fig. 1 causing the engagement of the finger with the arm 41 and the turning of the locking-block on its pivot-bar to the position shown in Fig. 2, effectually blocking the track 11 and serving as a stop for any trolley which may be traveled thereon. On the downward movement of the pivoted track member 21 the finger 48 will engage the lug 43 and cause the block to move to the position shown in Figs. 2 and 6, the branch line being cleared

and at the same time placed in communication with the main line 10.

While the construction herein described, and illustrated in the accompanying drawings, is the preferred form of the device, it is obvious that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of my invention.

Having thus described my invention, what I claim is—

1. The combination of the interrupted main-line and branch-line tracks, a bracket secured to the spaced sections of the main-line track and having its outer face flush with the surface of the track, a guideway formed in the upper surface of the bracket, a reciprocating slide guided therein and having a track-section movable into and out of alinement with the spaced sections of the main-line track, a pair of spaced lugs carried by said slide, a pivoted branch-line member also having a track-section, a pin carried by the branch-line member and held in constant engagement with said lugs to transmit the movement of the branch-line member to the slide, said branch-line member when in open position having its center of gravity to the rear of the supporting-pivot and serving through the pin and lugs to hold the slide in proper position, substantially as specified.

2. The combination of the interrupted main-line and branch-line tracks, a bracket connected to the sections of the main-line track and having its upper surface recessed to form a guide, a slide disposed in the recessed portion and guided thereby, said slide having a track-section movable into and out of alinement with the sections of the main-line track, a depending recessed lug carried by said slide to prevent excessive outward movement thereof and to hold said slide from vertical movement, a pair of spaced lugs carried by the slide, a pivoted branch-line member also having a track-section, and a pin carried by the branch-line member and engaging between the lugs to thereby assist in holding the slide in proper position and to prevent excessive rearward movement of the branch-line member.

3. The combination of the main-line and branch-line tracks, switch members having track-sections for preserving the continuity of the main line, or for connecting the main line and branch line, a pivotally-mounted locking-block carried by the branch-line track, an operating-arm and lug forming part of said block, and a projecting finger carried by one of the switch members and adapted to operatively engage said arms and lug to effect the movement of the locking-block to operative or inoperative position.

4. In a device of the class specified, the combination of the track, a pivot-plate fitted to one face thereof and provided with a projecting lip extending under and embracing the

edge of the track, a securing means passing through the plate and track and serving in connection with the lip to hold said plate in proper position, there being a pivot-recess
5 formed partly by the plate and partly by the rear face of the track, a locking-block pivoted in said recess, and means for automatically moving said block to operative and inoperative positions.

10 5. In a device of the class specified, the combination with the track, of a plate secured thereto, a block pivotally connected to the plate and adapted to be moved across the top of the rail, an operating-arm 41 and a lug 43
15 disposed at an angle to each other and form-

ing a part of the block, and a pivoted switch-track member having a projecting finger for operative engagement with the arm to move the block to operative position, said finger being adapted to engage the lug when the 20 switch-track member is moved in the opposite direction to move said locking-block to inoperative position.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in 25 the presence of two witnesses.

PAUL F. WERNER.

Witnesses:

JAS. C. FRINGELIN,
M. J. GRIFFIN.