

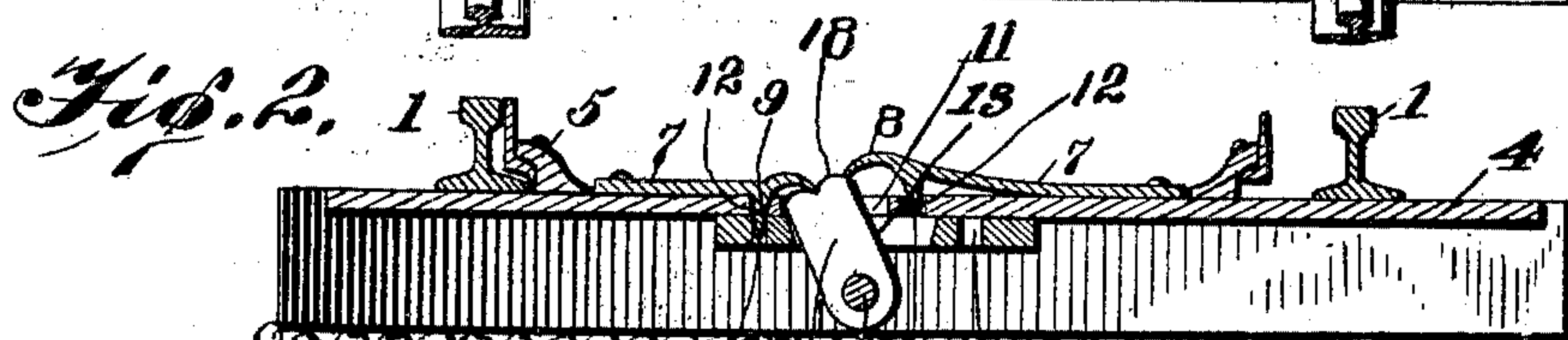
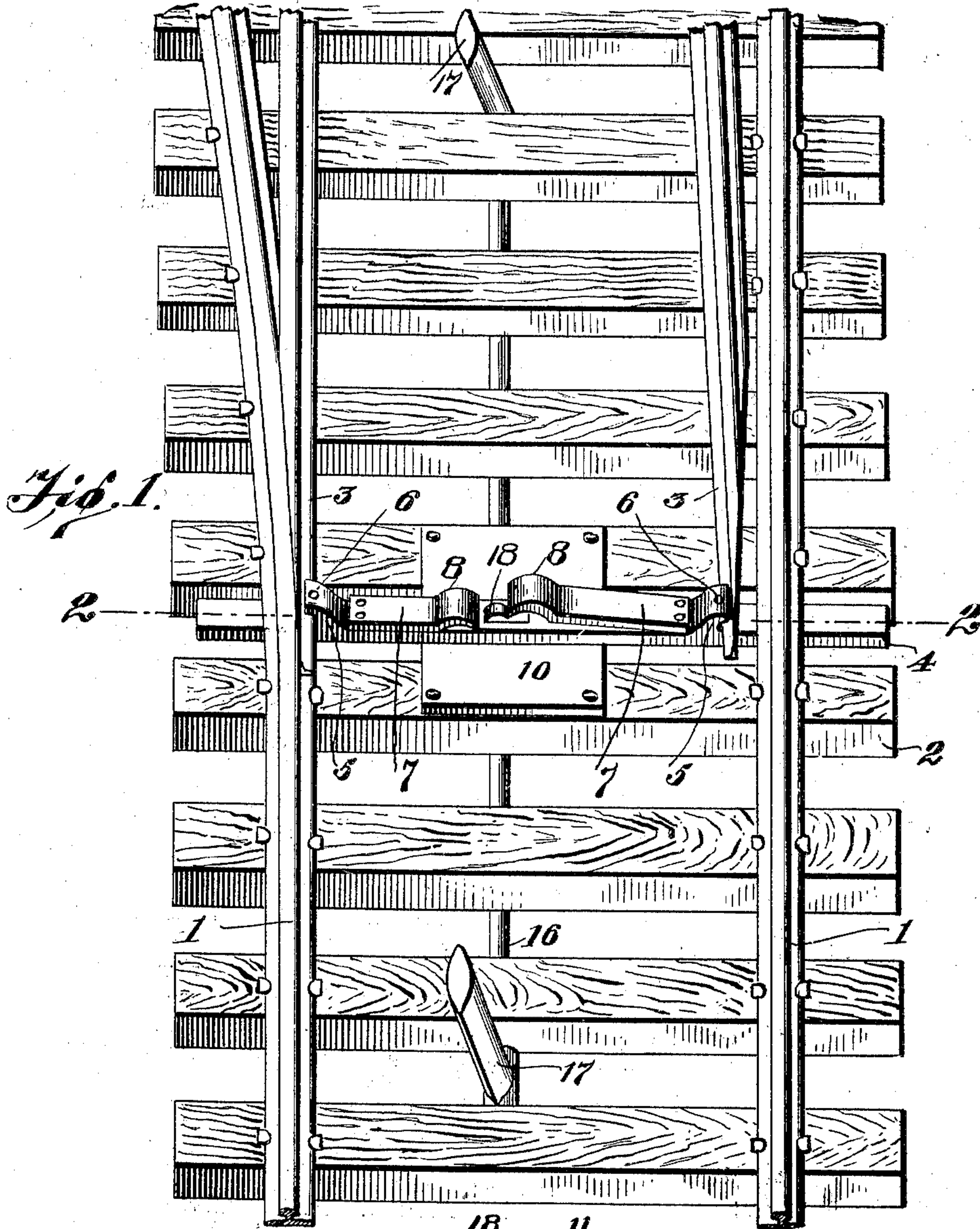
O. B. SNOW.  
AUTOMATIC SWITCH.

APPLICATION FILED JAN. 24, 1910.

967,256.

Patented Aug. 16, 1910

2 SHEETS—SHEET 1.



Witnesses

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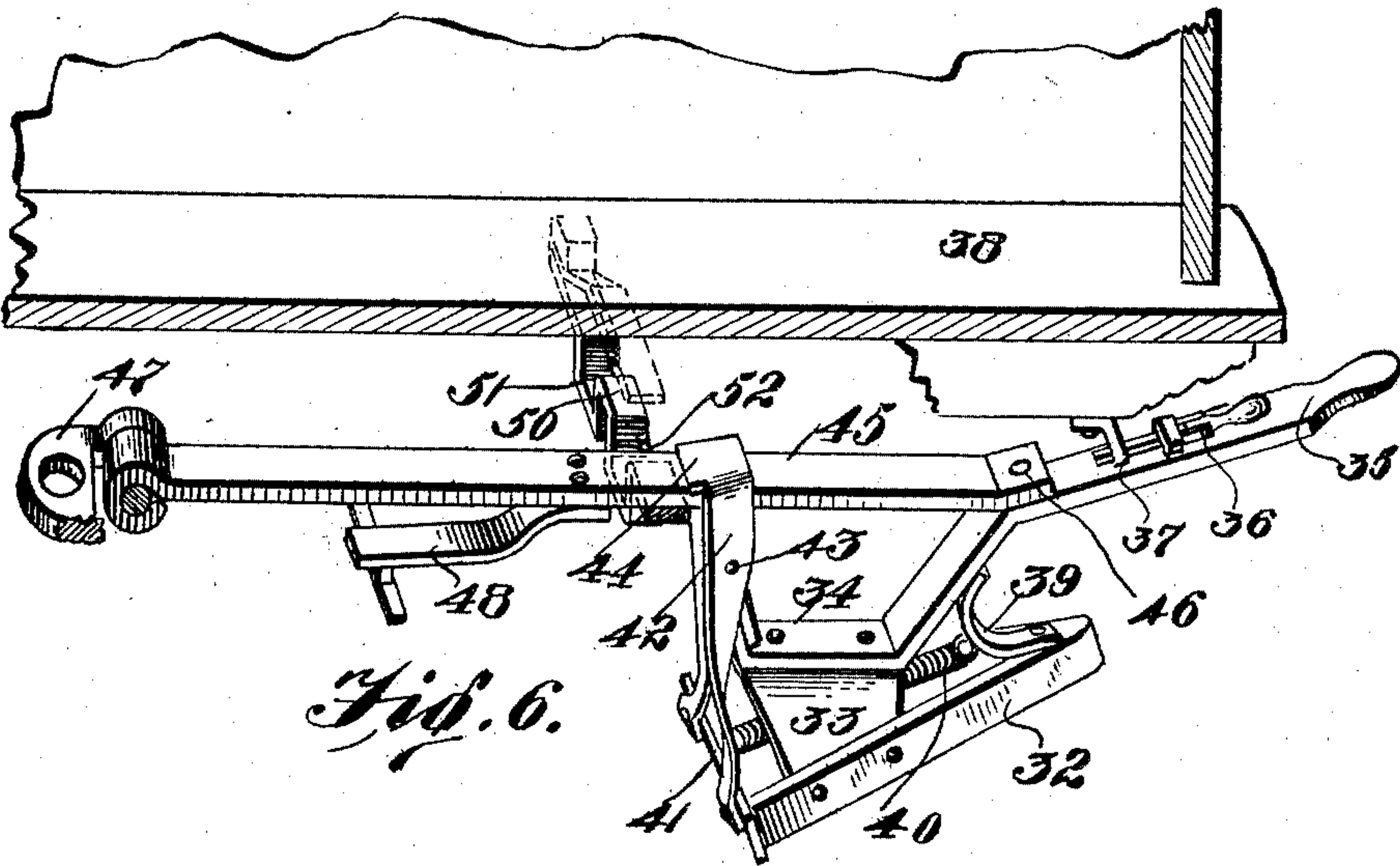
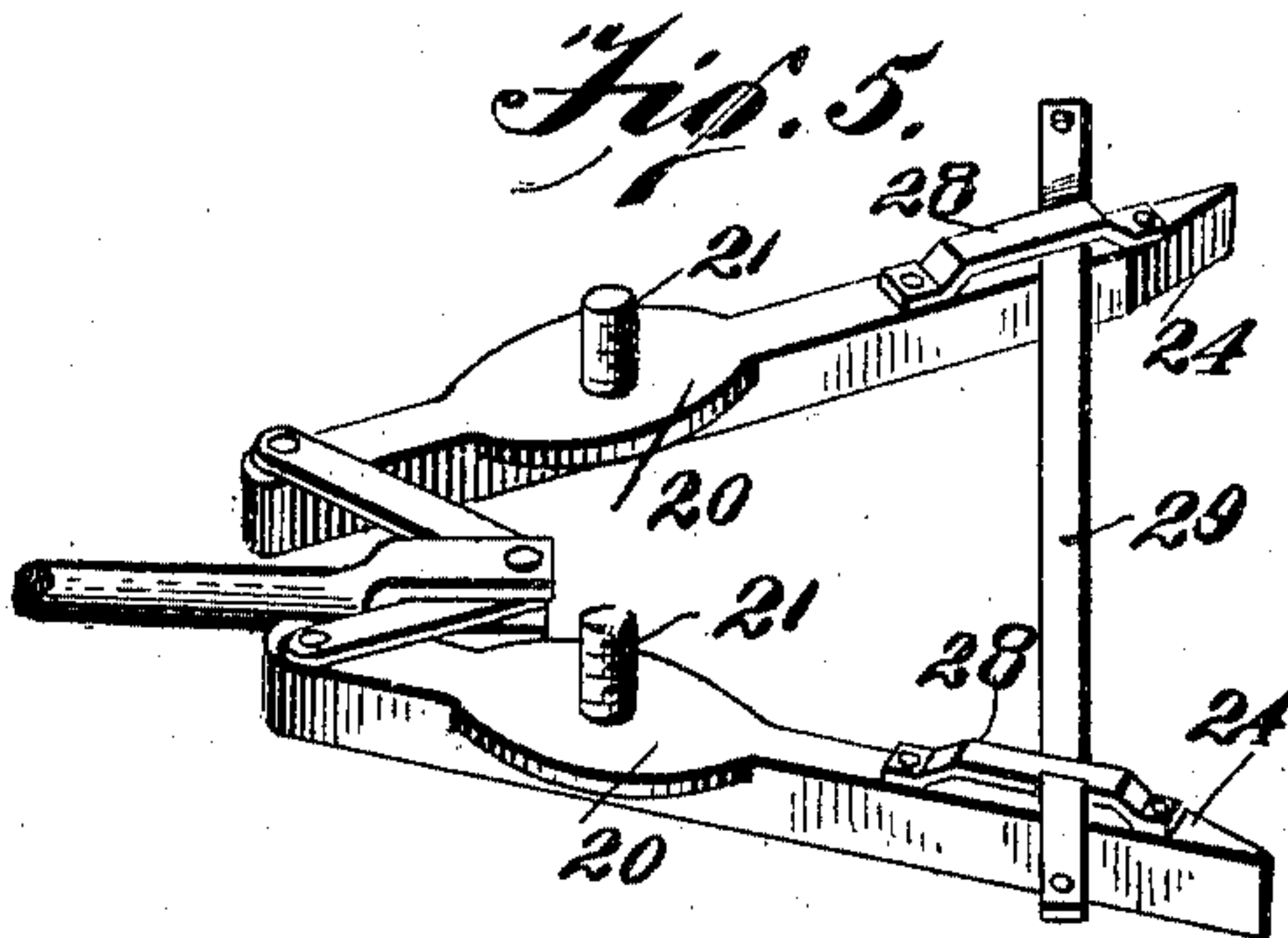
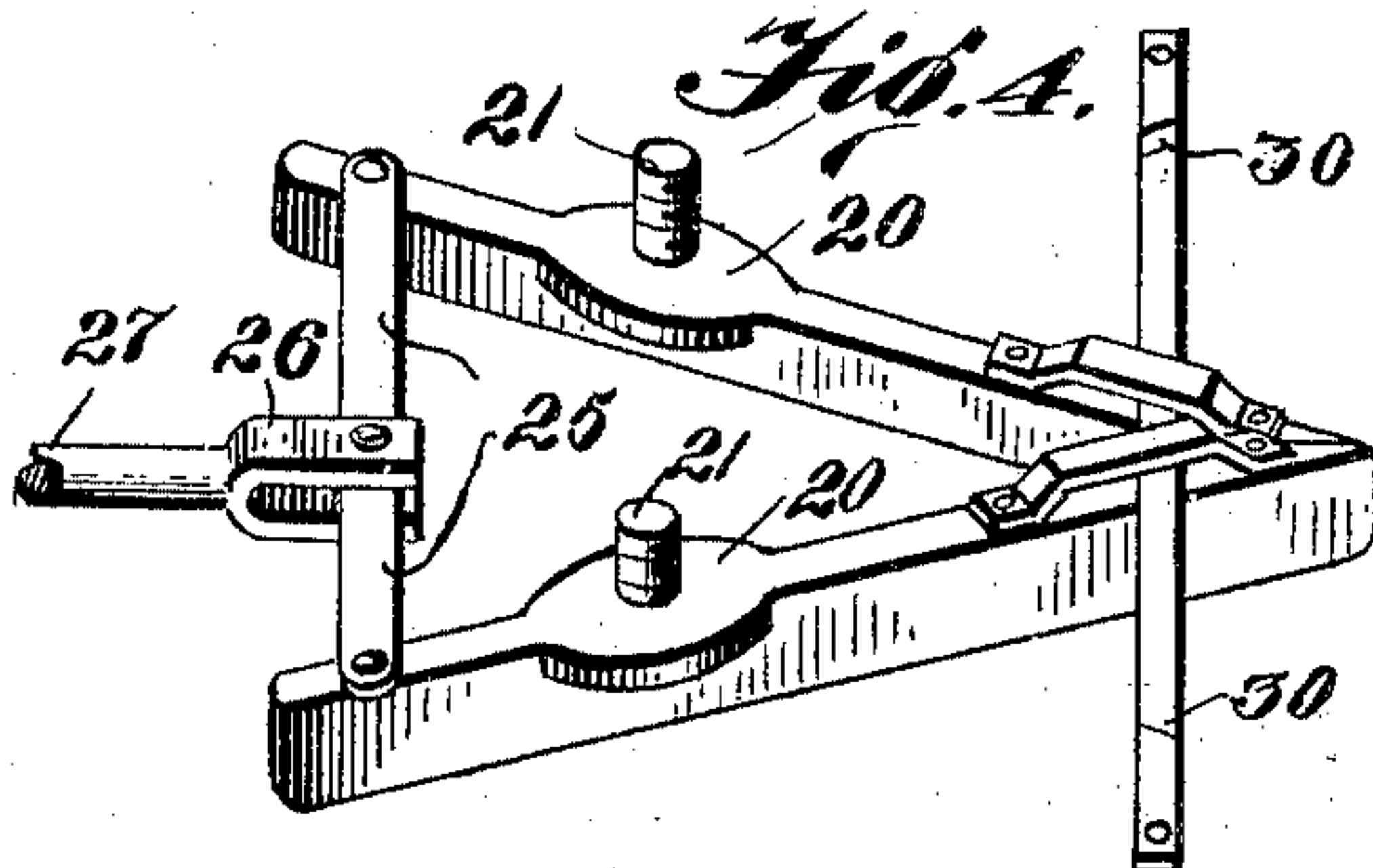
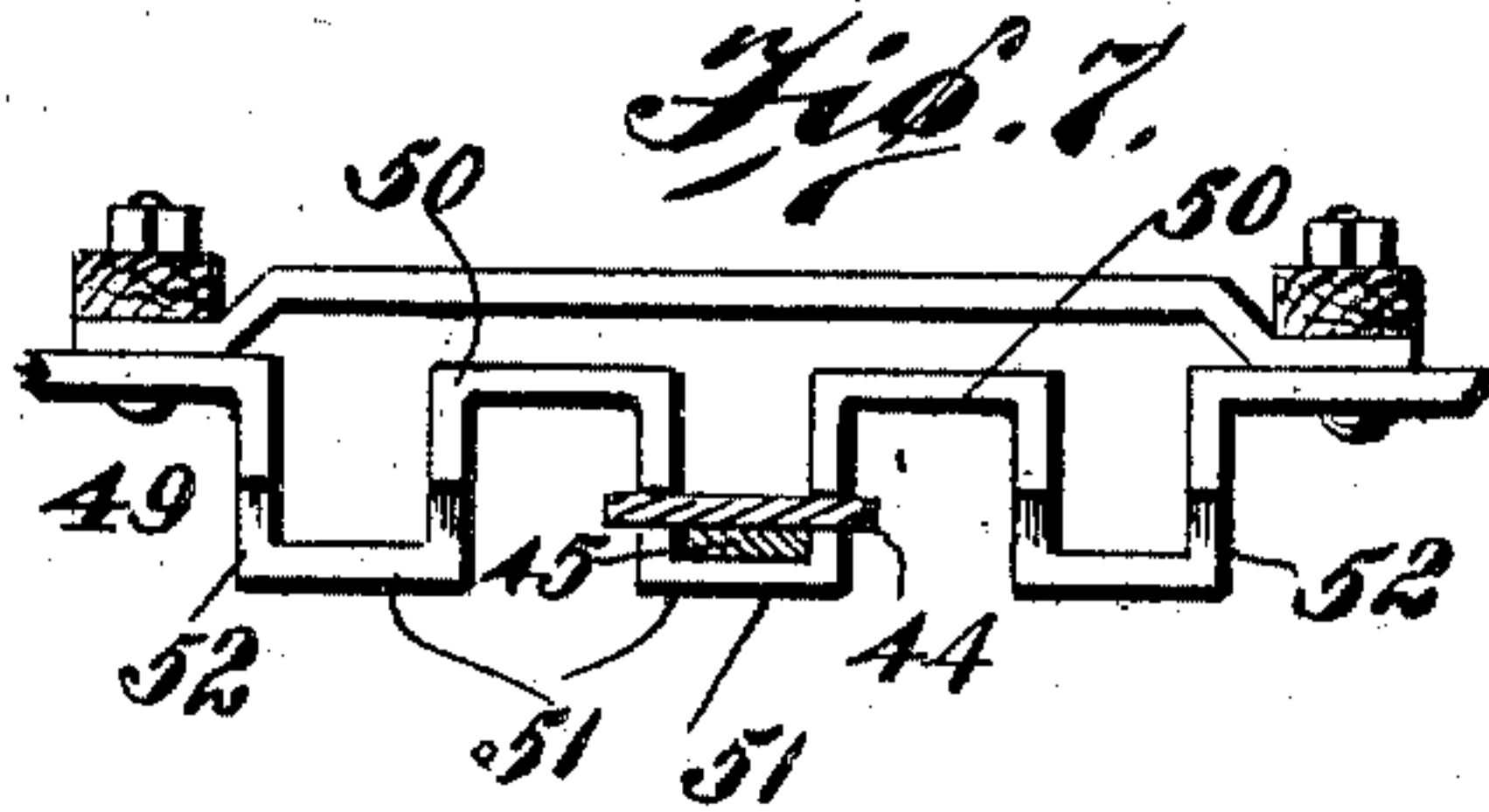
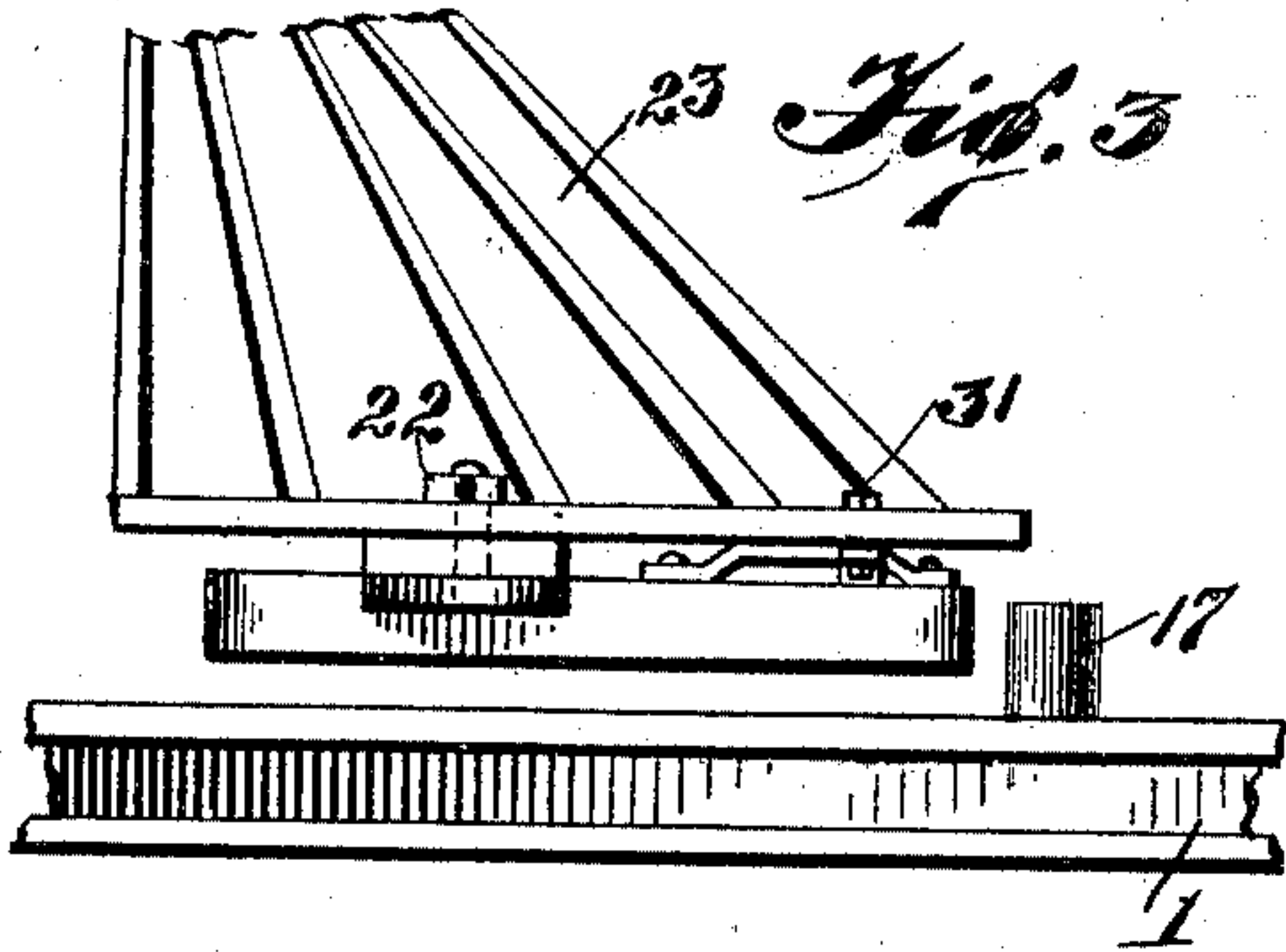
AUTOMATIC SWITCH.

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2 SHEETS—SHEET 2.



Inventor

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Witnesses

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# UNITED STATES PATENT OFFICE.

ORRIE B. SNOW, OF MOUNTAIN TOP, ARKANSAS.

## AUTOMATIC SWITCH.

967,256.

Specification of Letters Patent.

Patented Aug. 16, 1910.

Application filed January 24, 1910. Serial No. 539,727.

*To all whom it may concern:*

Be it known that I, ORRIE B. SNOW, a citizen of the United States, residing at Mountain Top, in the county of Franklin and State of Arkansas, have invented new and useful Improvements in Automatic Switches, of which the following is a specification.

My invention relates to improvements in railway switches, and the objects thereof are to provide a device of this character which is entirely automatic in its operation; to provide a switch which may be actuated to open or closed position by coöperative mechanism carried by a locomotive, street railway car, or similar rolling stock, said mechanism be readily controllable by the engineer, or other person in charge of the car, to devise means for operating the switch regardless of which direction the train might be traveling; and to furnish means which positively locks the switch simultaneous with its movement to open or closed position.

To the accomplishment of the recited objects, the preferred embodiment of my invention resides in that construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and embraced within the scope of the appended claims.

In said drawings:—Figure 1 is a perspective view of the switch and its appurtenances. Fig. 2 is a transverse sectional view taken along lines 2—2 of Fig. 1. Fig. 3 is an elevation of the switch throwing mechanism secured to the cow-catcher of a locomotive. Fig. 4 is a perspective view of the switch actuating device detached, and adjusted for closing the switch. Fig. 5 is a similar view of the switch actuating device adjusted for opening the switch. Fig. 6 is a perspective view of the portion of the rear of a car broken away illustrating the application of a modified form of switch actuating mechanism, and Fig. 7 is a side elevation of the support for said mechanism.

Similar reference characters indicate corresponding parts throughout the several views.

Referring more particularly to the drawings for a detail description of my invention, the numeral 1 designates the main rails, 2 the ties, and 3 the points of the switch.

Arranged in parallelism and interadjacent with a pair of the ties 2, is a switch-bar 4, which is equipped with integral shoulders 5 at its proximal ends, the said shoulders receiving and being fastened, as at 6, to the points 3. Superposed, and lying in the direction of the length of the switch-bar 4, is a pair of opposed leaf-springs 7 having inner curvilinear terminals 8 and substantially inverted cone-shaped depending lugs 9. The switch-bar 4 is supported by, and slidable on, a plate 10 rigidly secured transversely of the ties 2, and the switch-bar has a central opening 11 and smaller openings 12 on opposite sides of the latter, these openings corresponding with the openings 13 and 14 of the plate 10. The medial openings 11 and 13 are adapted to receive the block 15 carried by the shaft 16, which is disposed transversely of the ties and has terminal vertical projections 17, the upper end of said block having a pair of curved extensions 18.

As shown in Fig. 1 of the drawings, the switch is closed, and the lug 9 lies in the aligned openings 12 and 14, thereby establishing a positive lock for the switch-bar relative the plate 10. It will also be noted that the curvilinear terminal of one leaf-spring engages the block at a point intermediate the extensions 18, while the other is held in a raised position by the companion extension 18, and that the opposite lug 9 is commensurately elevated and its coöperating openings 12 and 14 are relatively staggered or disaligned. Now, when the block 15 is oscillated to the right, by mechanism to be presently described, the said block elevates the leaf-spring located to the left so that the same assumes a similar position to that previously occupied by the opposed leaf-spring, thus disengaging the lug 9 from the plate 10, and permitting said block to force the switch-bar, in its path of movement to the right until the openings 12 and 14 are in registration and the lug 9 drops therein to lock the switch, as the latter is opened.

In Figs. 3 and 4, and 5 of the drawings I have illustrated a device adapted to be attached to the cow-catcher of a locomotive for operating the improved switch. This device or shoe comprises a pair of bars with upper flattened bearing portions



having vertical screw-threaded studs 21 which are secured by nuts 22 to the lower flange of the cow-catcher 23 to allow of a limited movement in a horizontal plane.

5 The forward terminals of said bars are beveled, as at 24, and the rear terminals are connected by the links 25, which are in turn pivotally secured to the bifurcated end 26 of the rod 27. As exhibited in Fig. 4, the

10 beveled terminals 24 of the bars lie contiguous so as to present the general conformation of a triangle, and this relation is maintained by the distended links 25, and is imparted through the medium of the rod

15 27 terminating in a lever connection (not shown) readily accessible to the engineer. When thus adjusted, the shoe is utilized to close the switch, the point formed by the

20 junction of the two bars serving to contact with, and oscillate outwardly one of the vertical extensions 17, according to the direction of travel of the locomotive. When it is desired to open the switch, the engineer

25 forces the rod 27 forward and thereby spreads the terminals of the bars, as will be found upon inspection of Fig. 5. To preserve this adjustment of the bars I employ a keeper, as 28, the same being mounted on the outer proximal end of each bar,

30 and a transversely disposed bar 29 provided with a notch 30 adjacent each end and fastened to the cow-catcher by bolts 31, the keepers, obviously, engaging the notches. When the beveled portion of either of the

35 bars impinges against one of the extensions 17, the latter is deflected along the inner face of the bar, whereupon the switch is opened.

Frequently it is found desirable to operate the switch from the rear of a moving

40 car, and in such cases I make use of the shoe and appurtenances shown in Figs. 6 and 7. In this instance, the shoe consists of a bar 32 connected by the breast-piece 33 having

45 a substantially U-shaped angular member 34 secured centrally thereof. The front portion of the member 34 terminates in a handle 35, which is provided on its upper face with a latch 36 for engagement with the catch 37

50 depending from the beam of the car 38. A brace 39 is fixed to the forward part of the shoe and serves as a connecting point for one end of a strong coil spring 40, the other

55 end thereof being secured to the transverse bar 41, the ends of which protrude slightly beyond the terminals of the bar 32. This bar 41 carries an upwardly projecting yoke 42, pivoted at 43, and having an extension, as at 44, at which point it straddles the bar

60 45, the latter having its forward end connected to the member 34 at 46, and its rear end connected to the car by the knuckle 47 to permit of movement in both horizontal and vertical planes. Intermediate the ends

65 of the bar 45 is a spring 48, the function of

which will be presently explained. Supporting the bar 45 and arranged transversely of the car, is a metallic strip 49 bent so as to form alternate upwardly and downwardly

70 projecting angular portions 50 and 51, respectively, the portions 51 being rabbeted to present notches 52.

In practice, the latch 36 is disconnected from the catch 37 and the bar 45 lowered

75 into one of the angular portions 51, whereupon the extension 44 is interlocked with one of the notches 52. When the shoe strikes the vertical extension 17, the latter will ride along one of the outer faces thereof until

80 it contacts with the protruded end of the bar 41, thereby oscillating the yoke 42, and disengaging the lip 44 from one of said angular portions. The spring 48 will then be free to exert sufficient pressure to force

85 the bar 45 upwardly from one of the angular portions 51 to a point on top of the angular portions 50. Preferably, three of the angular portions 51 are constructed in order that the bar 45 can be adjusted to open and

90 close both left and right hand switches.

I am aware that changes in the form and proportion of parts and details of construction of the devices herein shown and described as an embodiment of my invention

95 can be made without departing from the spirit of or sacrificing the benefits of my improvements, and I therefore reserve the right to make such changes and alterations in the form and proportion of parts as fairly

100 fall within the scope of my invention.

What is claimed, is:—

1. In a device for moving and locking railway points, the combination of a switch-bar, a support for said switch-bar, said

105 switch-bar and support each having a pair of openings, one of the openings in the switch-bar adapted to be alined with an opening in the support, while the other openings are disalined, a pair of opposed

110 yieldable members fixed to said switch-bar, the adjacent terminals of each of said members being provided with a lug and a curved portion, one of said lugs being designed to enter the alined openings, and the other

115 maintained in disengaged relation, and a block adapted to engage the curved portions of said members for moving the switch-bar to reverse the relation of said openings and lugs.

120

2. In a device for moving and locking railway points, the combination of a switch-bar, a support for said switch-bar, the switch-bar and support lying in superposed

125 relation and each having a major opening and a pair of smaller openings, one of the smaller openings in the switch-bar adapted to be alined with a smaller opening in the support while the other smaller openings are

130 disalined, a pair of locking members carried

by the switch-bar, one of said members being  
designed to enter the alined openings, and  
the other maintained in disengaged relation,  
and a block extending through said major  
5 openings for moving the switch-bar to re-  
verse the relation of said smaller openings  
and locking members.

In testimony whereof I have hereunto set  
my hand in presence of two subscribing wit-  
nesses.

ORRIE B. SNOW.

Witnesses:

G. H. RICE,  
C. A. SNOW.