

S. LOCHOWICZ.
 SWITCH POINT THROWING MECHANISM.
 APPLICATION FILED JULY 26, 1909.

962,771.

Patented June 28, 1910.

2 SHEETS—SHEET 1.

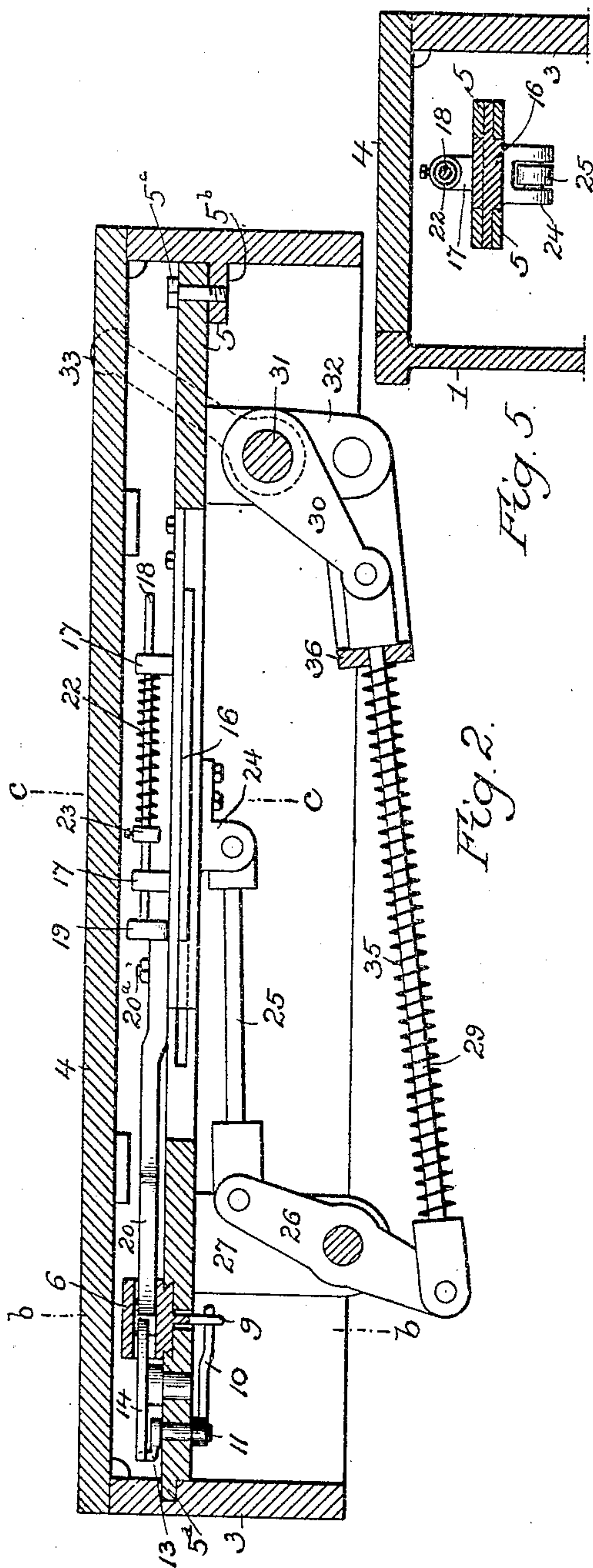
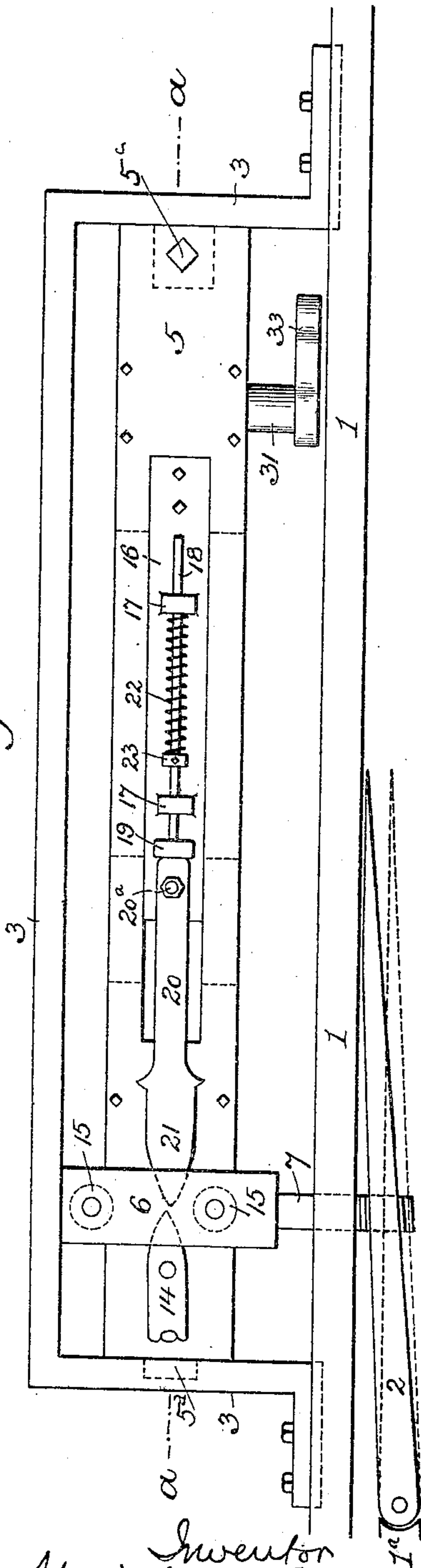


Fig. 1.



Witnesses
 Harry L. Smith
 Kate A. Beadle

Inventor
 Stanislaus Lochowicz
 by his Attorneys
 Smith & Major

S. LOCHOWICZ.
 SWITCH POINT THROWING MECHANISM.
 APPLICATION FILED JULY 26, 1909.

962,771.

Patented June 28, 1910.

2 SHEETS—SHEET 2.

Fig. 3.

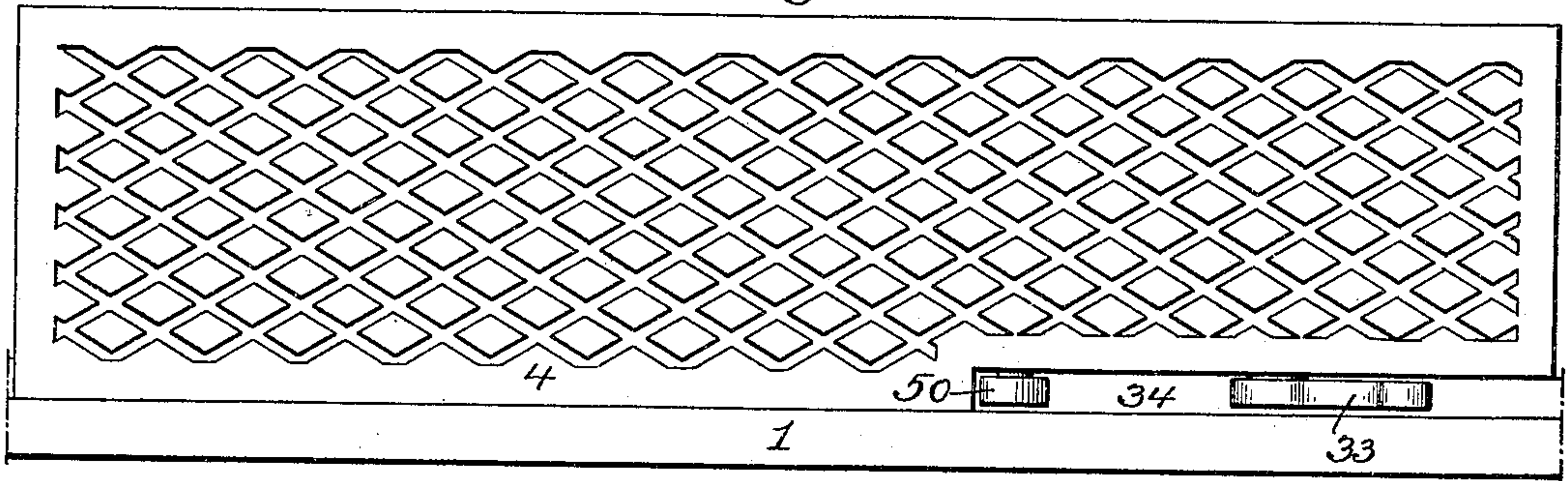


Fig. 6.

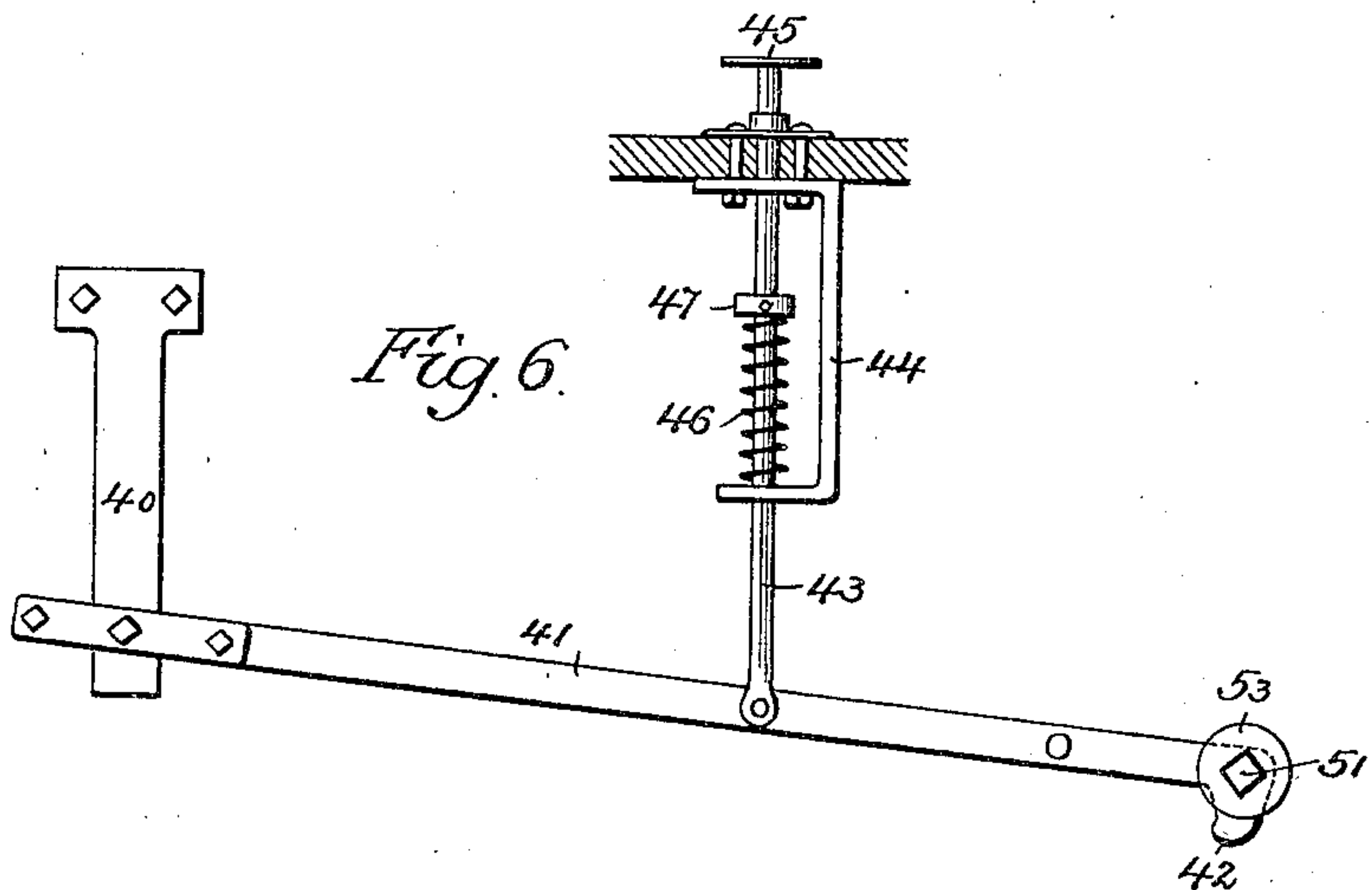


Fig. 4.

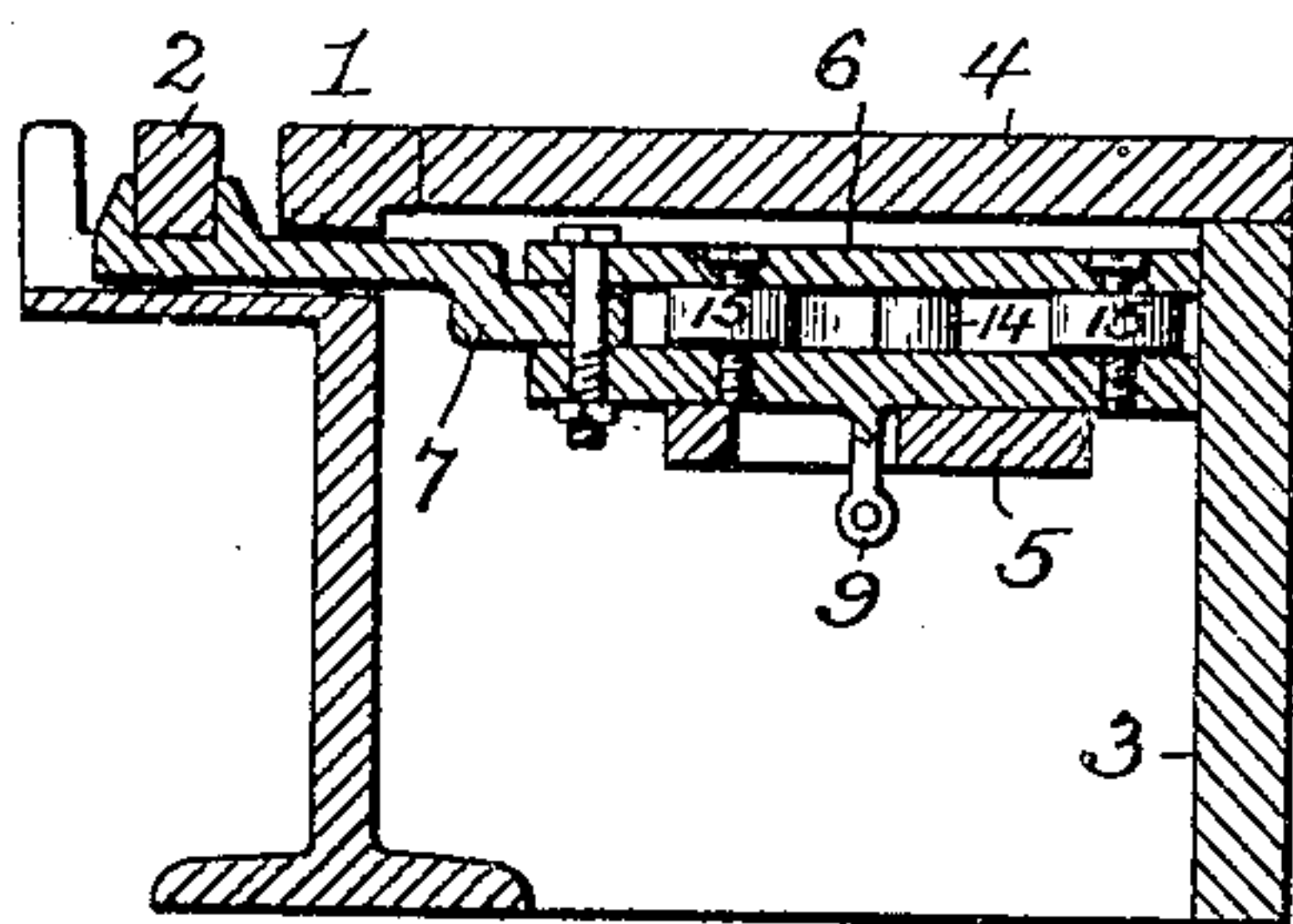


Fig. 9.

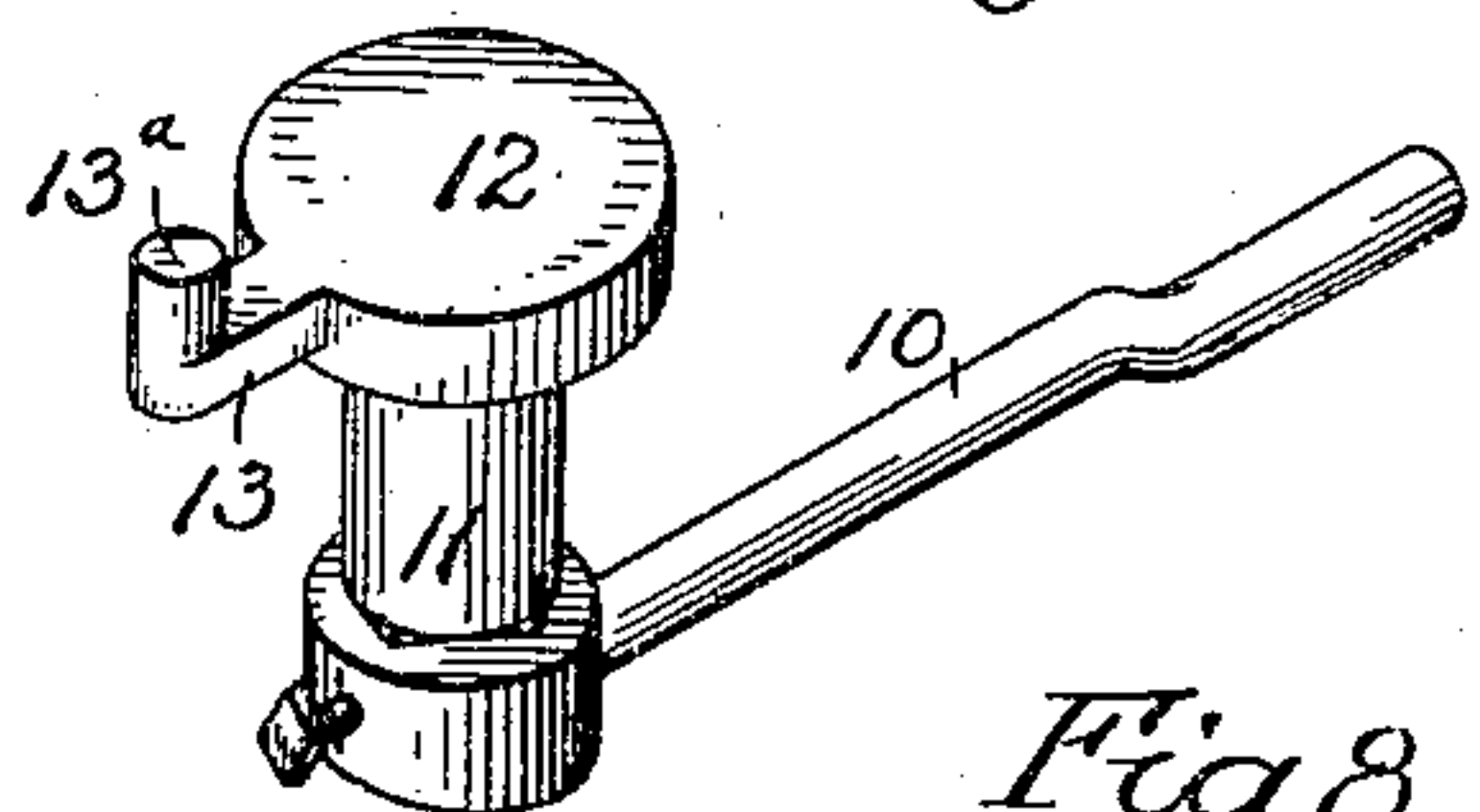


Fig. 8.

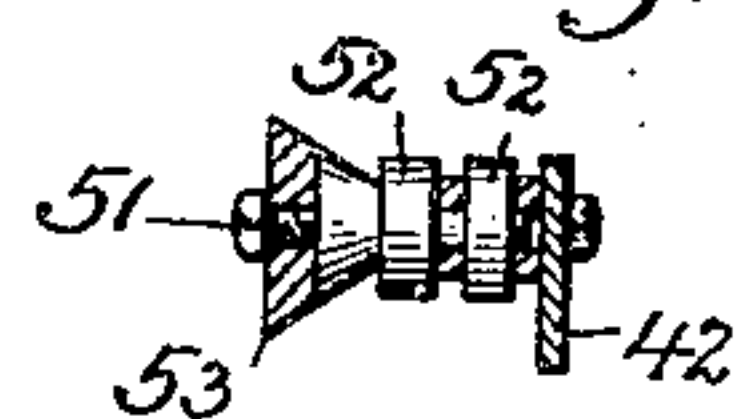
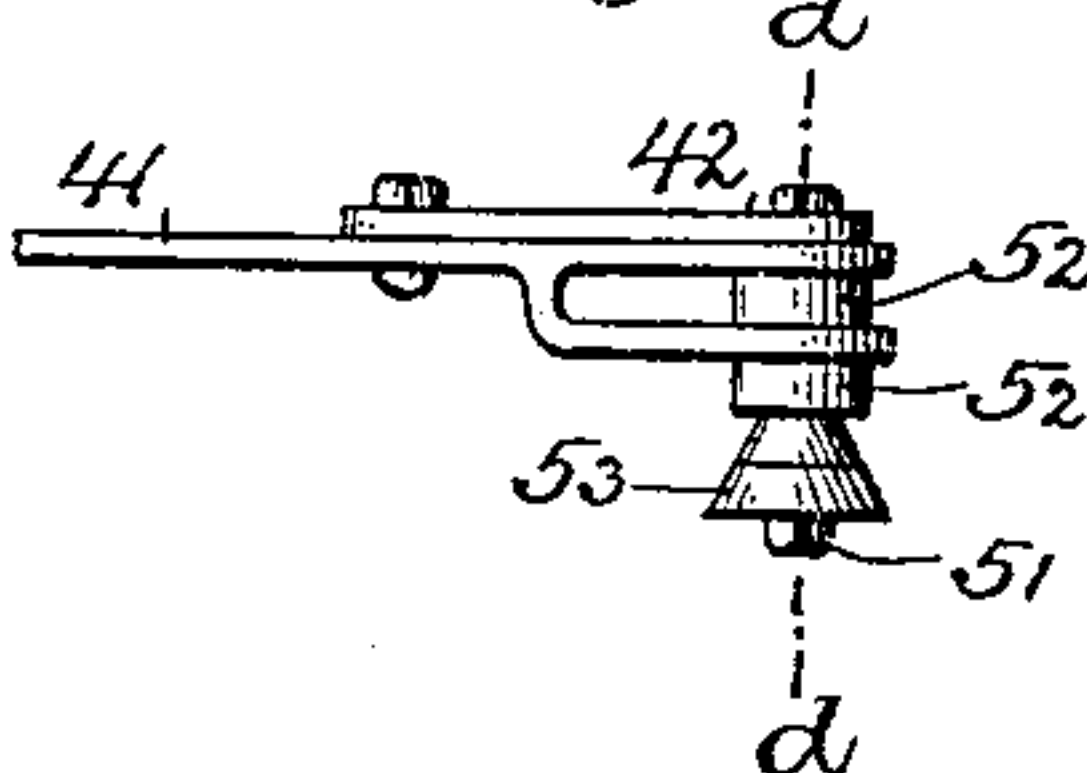


Fig. 7.



Witnesses
 Harry L. Smith
 Kate A. Beadle

Inventor
 Stanislaus Lochowicz
 by his Attorneys
 Smith & Poyer

UNITED STATES PATENT OFFICE.

STANISLAUS LOCHOWICZ, OF CAMDEN, NEW JERSEY, ASSIGNOR OF ONE-FOURTH TO
WALTER DZIATKIEWICZ, OF CAMDEN, NEW JERSEY.

SWITCH-POINT-THROWING MECHANISM.

962,771.

Specification of Letters Patent. **Patented June 28, 1910.**

Application filed July 26, 1909. Serial No. 509,616.

To all whom it may concern:

Be it known that I, STANISLAUS LOCHOWICZ, a citizen of the United States, residing in Camden, county of Camden, New Jersey, have invented certain Improvements in Switch-Point-Throwing Mechanism, of which the following is a specification.

The object of my invention is to provide simple and efficient means whereby a switch point normally set in one position can be readily thrown to the other position by proper adjustment of an actuating device on the car which is approaching the switch.

In the accompanying drawings Figure 1 is a top or plan view of my improved switch point thrower, with the cap or cover plate removed therefrom; Fig. 2 is a view, partly in side elevation and partly in longitudinal section, on the line *a—*a**, Fig. 1, and showing the cover plate in position; Fig. 3 is a top or plan view of the device with the cover plate in position thereon; Fig. 4 is a vertical transverse section on the line *b—*b**, Fig. 2; Fig. 5 is a vertical transverse section on the line *c—*c**, Fig. 2; Fig. 6 is a view partly in elevation and partly in longitudinal section, of the operating device with which the car is provided; Fig. 7 is a top or plan view of the rear end of said device; Fig. 8 is a transverse section on the line *d—*d**, Fig. 7, and Fig. 9 is a perspective view of one of the elements of the device.

In the drawings, 1 represents part of one of the rails of the main track and 2 the pivoted switch point, which, when in the position shown by full lines in Fig. 1, directs the wheels of the car onto the rail 1^a of the siding or turnout, and when, in the position shown by dotted lines in Fig. 1, permits said wheels to continue their travel along the main track.

Suitably secured to one side of the rail 1 is a box or casing 3 which is provided with a removable cover 4 and has secured within it, some distance below the top, a longitudinal plate 5 which supports the operative mechanism of the device. In order that this plate and the mechanism carried thereby may be readily removed from the casing, it is provided at one end with one or more lugs 5^a, which enter slots in the casing 3, the latter having at its opposite end a lug or shelf 5^b upon which the plate 5 rests and to which it may be secured by a bolt 5^c. Upon this plate

5 is mounted, in any suitable manner, a transversely guided slide 6, the means employed for effecting such guidance, in the present instance, being a dovetailed rib on the under side of the slide adapted to a similarly dovetailed groove formed in the supporting plate 5. Either pivotally or rigidly attached to the slide 6 is a projecting arm 7 which passes through a suitable slot in the rail 1 and has, at its outer end, jaws for engaging the switch point 2, whereby transverse movement of the slide 6 will be accompanied by corresponding swinging movement of the switch point.

Depending from the slide 6 is a finger 9 having an opening for the reception of an arm 10 which is secured to the squared lower end of a short vertical rock shaft 11, the latter being adapted to turn freely in a suitable bearing in the supporting plate 5 and having, at its upper end, a head 12 with projecting crank 13, the pin 13^a of said crank being adapted to a recess in the outer end of a switch finger 14 which is pivoted on the plate 5 and projects, at its inner end, into a recess or slot in the slide 6, as shown in Fig. 2. Extending across this recess in the slide 6 and located one on each side of the switch finger 14, are a pair of fixed studs 15, suitably mounted on the slide.

The central portion of the supporting plate 5 is slotted for the reception and guidance of a longitudinally sliding plate 16, which has upwardly projecting lugs 17 for the longitudinal guidance of a rod 18, the forward end of said rod having a head 19 which bears against the flat rear end of a bar 20, the latter being pivotally mounted upon the sliding plate 16 by means of a pin or bolt 20^a being provided with a spear-pointed head 21, a coiled spring 22 surrounding the rod 18 and being interposed between the rear lug 17 and a collar 23 on said rod, as shown in Figs. 1 and 2.

Secured to the underside of the sliding plate 16 is a lug 24 to which is pivotally connected the rear end of a link 25, the forward end of the latter having pivotal connection with one arm of a lever 26, which is pivotally mounted upon a lug or hanger 27 depending from the plate 5, as shown in Fig. 2. Pivotally connected to the other arm of the lever 26 is the forward end of a link 29, whose rear end is pivotally connected to an

arm 30 on a rock shaft 31, the latter being mounted so as to be free to turn in bearings in a depending hanger 32 on the plate 5 and being furnished, near one end, with another
5 projecting arm 33, which is free to play in a slot 34 in the top plate 4, as shown in Fig. 3.

A coiled spring 35 surrounds the link 29 and is interposed between a shoulder at the forward end of said link and a yoke 36
10 which is pivotally mounted upon the lower end of the hanger 32. The action of this spring, therefore, tends to retain the parts in the position shown in Figs. 1 and 2, that is to say with the sliding plate 16 at the rear
15 end of its travel, the arm 33 inclined rearwardly, the spear head 21 of the bar 20 occupying a position in the recess of the slide 6 just behind the rear end or point of the switch finger 14, and the bar 20 being main-
20 tained in line longitudinally with the sliding plate 16, by reason of the pressure of the head 19 of the spring-pressed rod 18 upon the flattened rear end of said bar.

Pivotally mounted upon a depending
25 hanger 40, or other suitable support on the under side of the platform or other portion of the car, is an arm 41, having, at its rear end, a depending hook 42, said arm being connected to a vertical rod 43 which is free
30 to move vertically in bearings in a depending hanger 44 on the car platform and is provided, at its upper end, with a tread-plate 45, a coiled spring 46 surrounding the rod 43, and being interposed between the
35 lower bearing of the hanger 44 and a collar 47 on the rod, as shown in Fig. 6, so as to have a constant tendency to raise said rod and consequently the arm 41 to which it is connected. When the arm is thus lifted, its
40 hooked rear end 42 is above the level of the top plate 4 and consequently the car will pursue its forward course without any action upon the point-throwing mechanism. If, however, the motorman or other person
45 in charge of the car, depresses the tread-plate 45, the hooked rear end 42 of the arm 41 will engage the upper end of the arm 33 on the rock shaft 31 and will move said arm forwardly, thereby retracting the arm 30 on
50 the rock shaft and operating the lever 26 so as to draw forwardly the sliding plate 16 and the parts carried thereby. This will cause the spear-pointed head 21 of the bar 20 to pass between one side of the switch
55 finger 14 and the adjacent stud 15, thus moving the slide 6 in one direction or the other, depending upon the position of the switch finger 14 at the time, corresponding movement being thereby imparted to the switch
60 point 2, so as to move it from one position to the other.

Supposing that the switch point is in contact with the main rail 1, as shown by full
65 lines in Fig. 1, the spear head 21 will pass between the outer side of the switch finger

14 and the outermost stud 15 and the slide block 6 will be moved outwardly, or toward the rail 1, and will consequently move the switch point away from said rail or to the position shown by dotted lines, and thus clear
70 the main track for the passage of the car. If, on the other hand, the switch point 2 is, in the first instance, adjusted to the position shown by dotted lines in Fig. 1, the spear head 21 will, when it is thrust forward, pass
75 between the inner face of the switch finger 14 and the inner stud 15, and will move the slide 6 inwardly and consequently effect movement of the switch rail from the position shown by dotted lines to that shown by
80 full lines and thus direct the car from the main track onto the siding.

Proper adjustment of the switch finger 14, corresponding with either a closed or open position of the switch point 2, is deter-
85 mined by the connection between the slide 6 and said switch finger. If the slide 6 is in its innermost position as shown in Fig. 1, the point of the switch finger 14 will occupy a position on the inside of the spear point
90 21, and, if the slide 6 is in its outer position, the point of the switch finger will occupy a position on the outer side of said spear point 21, thereby insuring the proper throwing of the switch point 2, whatever may be its ad-
95 justed position when the car is approaching the same.

After each operation, the operating parts connected to the sliding plate 16 are with-
100 drawn to their normal position, as shown in Figs. 1 and 2, by the recoil of the spring 35 as soon as the arm 33 has passed from under control of the hooked end of the arm 41 on the car, consequently the switch point 2
105 always remains in the position to which it has last been adjusted by a passing car but can be readily shifted from one position to the other by an approaching car.

In order to permit the hooked end of the arm 41 on the car to rise freely from the
110 slot 34 of the cover plate 4, I preferably provide the forward end of the said slot with an anti-friction roller 50, with which said hooked end of the arm 41 comes into contact as it approaches the forward end of the slot,
115 and in order to laterally and horizontally guide the hooked end of the arm 41 in its forward movement, I preferably provide the rear end of said arm with a rod or bolt 51 projecting from the arm over the rail 1,
120 this bolt being provided with one or more anti-friction rollers 52 for riding upon the top of the rail 1 and with a beveled roller 53 at its outer end for engaging the inner face of the rail tread and thereby determining
125 the proper lateral relation of the arm 41 thereto.

The action upon the rear end of the bar 20 of the head 19 of the spring-pressed rod 18 permits the lateral deflection of the spear-
130

point 21, after its contact with the switch finger 14 and until it comes into contact with the proper stud 15, and thereafter while it is moving the slide 6 in the proper direction, the rod 20 being restored to its normal central position as the sliding plate 16 is retracted after the lateral movement of the slide 6 and switch point 2 has been effected.

I claim:

10 1. A switch point-throwing device in which are combined the switch point, a slide connected thereto, opposite bearings on said slide, a swinging switch finger located between said bearings, and an actuating bar interposed between said switch finger and one or the other of the bearings on the slide to move the latter.

20 2. A switch point-throwing device in which are combined the switch point, a slide connected thereto, opposite bearings on said slide, a swinging switch finger located between said bearings, an actuating bar interposed between said switch finger and one or the other of the bearings on the slide to move the latter, and a connection between the slide and switch finger whereby the movement of the slide is caused to swing the switch finger.

30 3. A switch point-throwing device in which are combined the switch point, a slide connected thereto, opposite bearings on said slide, a swinging switch finger located between said bearings, an actuating bar interposed between said switch finger and one or the other of the bearings on the slide to move the latter, and a connection between the slide and switch finger, said connection comprising a projection on the slide and a rock shaft having an arm engaging said projection and a crank engaging the switch finger.

40 4. A switch point-throwing device in which are combined the switch point, a connection thereto, a bar for moving the same in one direction or the other, a slide to which said bar is pivoted, and a spring pressed rod having a head bearing upon the rear end of

said bar and tending to maintain the same in line with the slide.

5. A switch point-throwing device in which are combined the switch point, a sliding plate carrying mechanism for operating said switch point, a rock shaft having two arms, one for contact with an operating device on the approaching car, a lever having one arm connected to said sliding plate, and a link connecting the other arm of said lever to the second arm of the rock shaft, a swinging yoke through which said link passes, and a spring surrounding said link and interposed between a bearing thereon and said swinging yoke.

6. A switch point-throwing device in which are combined the switch point, throwing mechanism therefor having as an element a swinging arm, an arm mounted upon the car and serving by contact with said swinging arm to move the switch point from one position to another, means for raising and lowering the arm on the car, and a beveled roller carried by said arm and serving by engagement with the track rail to adjust and retain the arm in its proper lateral position in respect thereto.

7. A switch-point-throwing device in which are combined the switch point, throwing mechanism therefor having as an element a swinging arm, an arm mounted upon the car and serving by contact with said swinging arm to move the switch point from one position to another, means for raising and lowering the arm on the car, means carried by said arm and serving by contact with the track rail to limit the descent of the arm and a beveled roller which engages the rail and adjusts and maintains the arm in proper lateral relation thereto.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

STANISLAUS LOCHOWICZ.

Witnesses:

HAMILTON D. TURNER,
KATE A. BEADLE.