

No. 685,200.

Patented Oct. 22, 1901.

E. E. BURKE.

SAFETY SWITCH LOCK FOR STREET RAILWAYS.

(Application filed Aug. 7, 1901.)

(No Model.)

3 Sheets—Sheet 1.

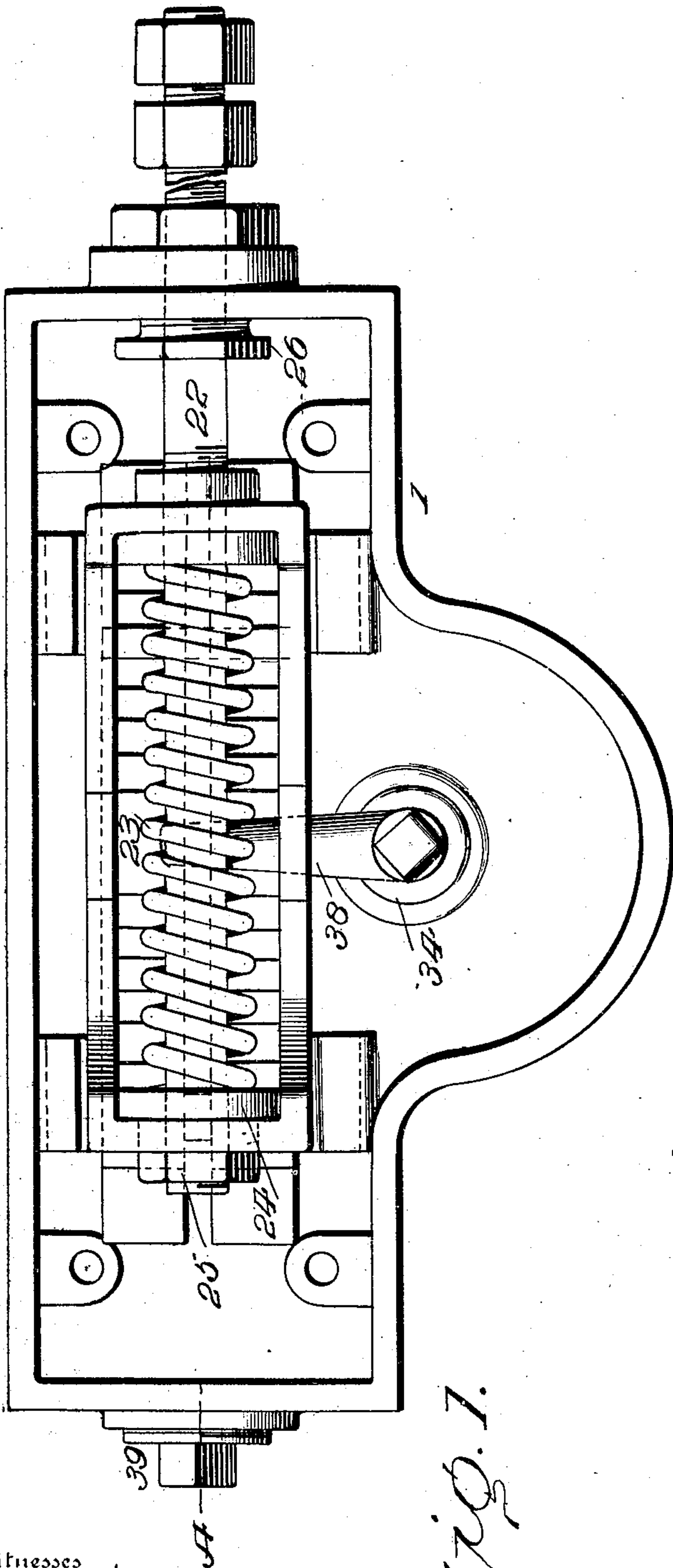


FIG. 1.

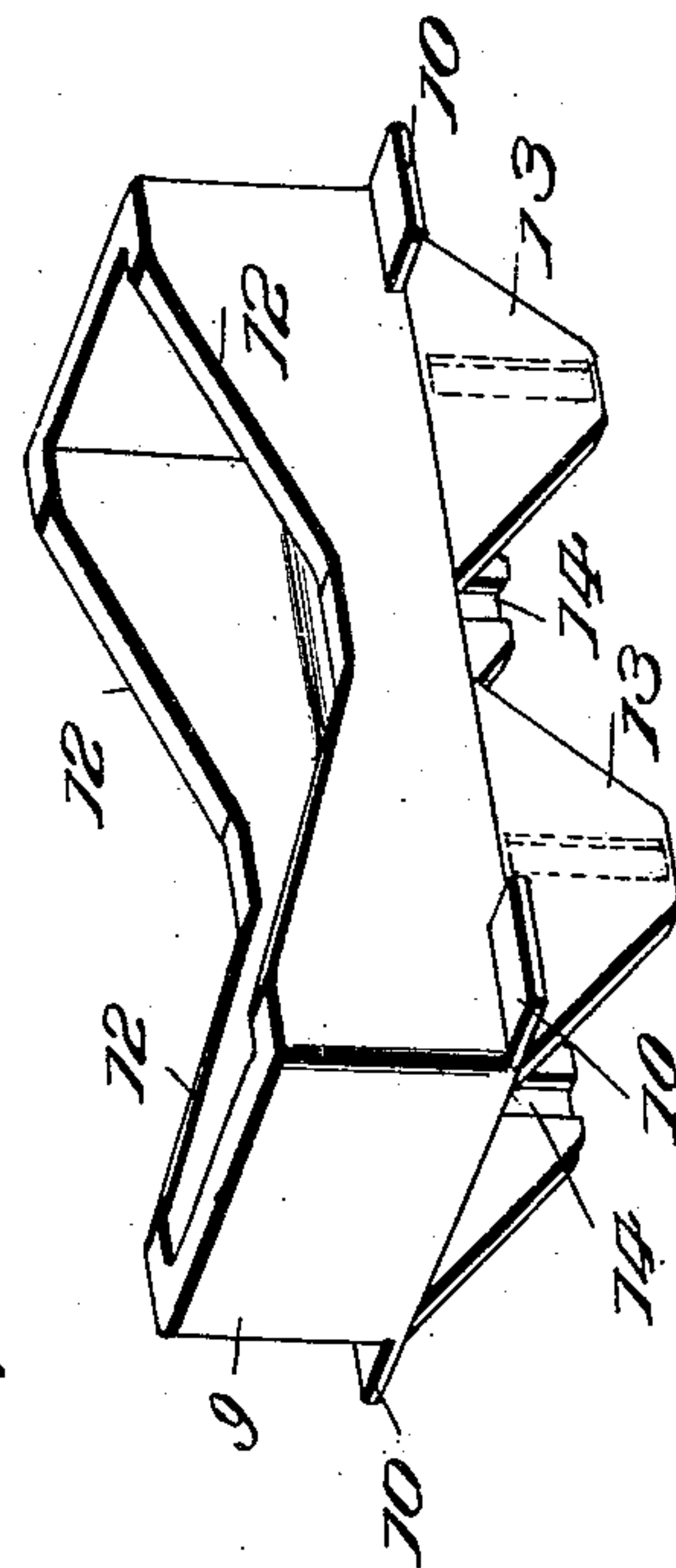


FIG. 6.

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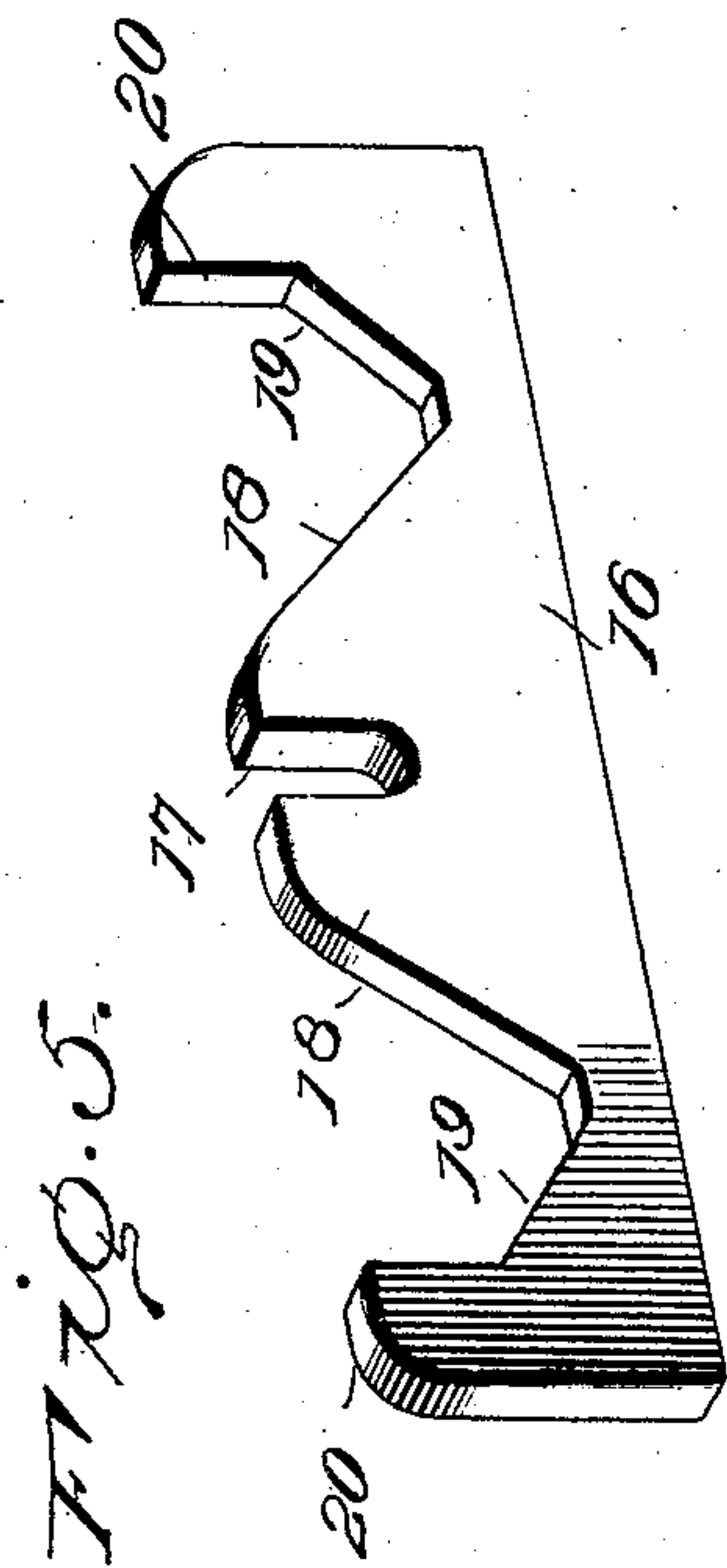
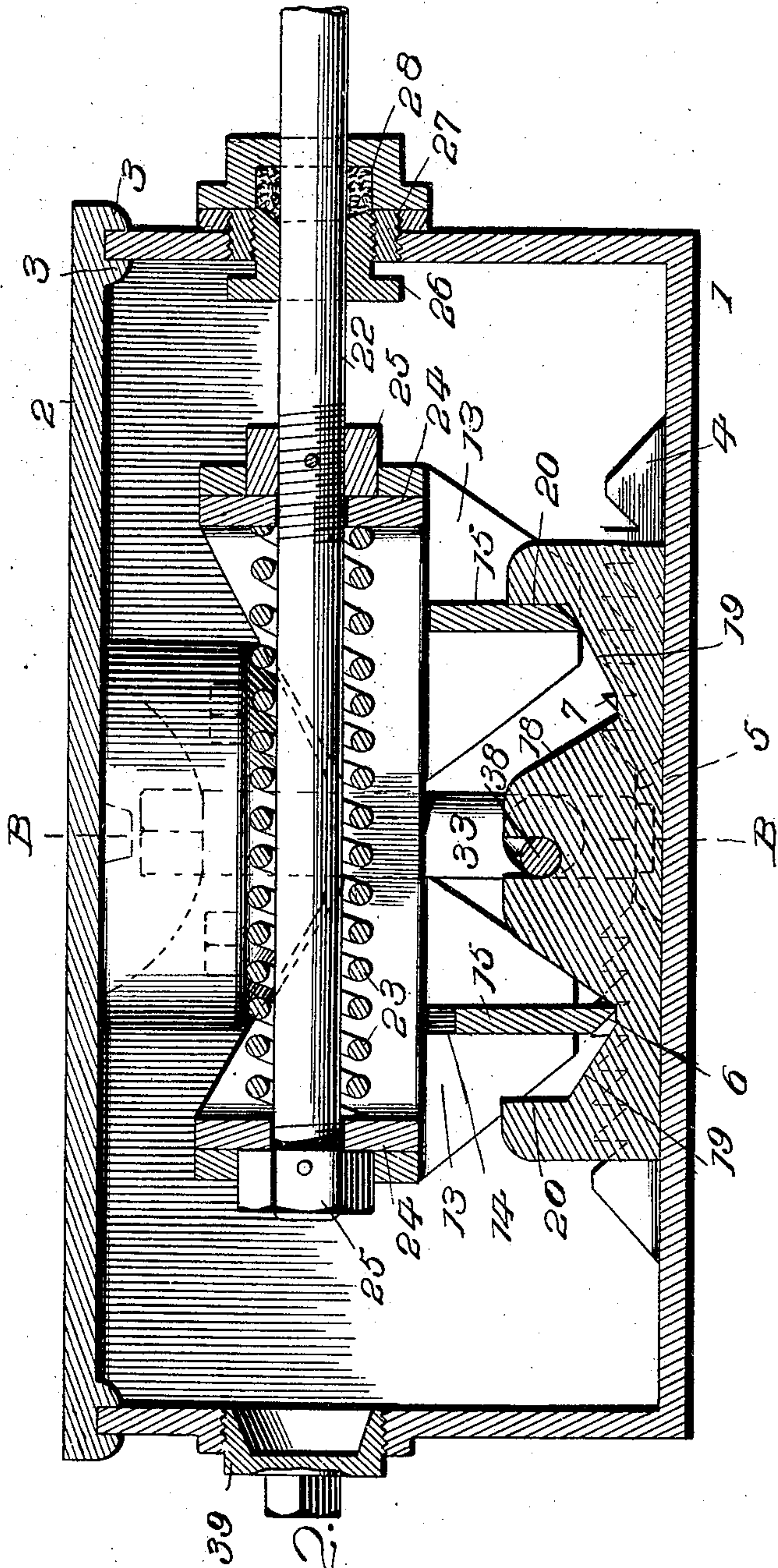
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3 Sheets—Sheet 2.



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Fig. 2.

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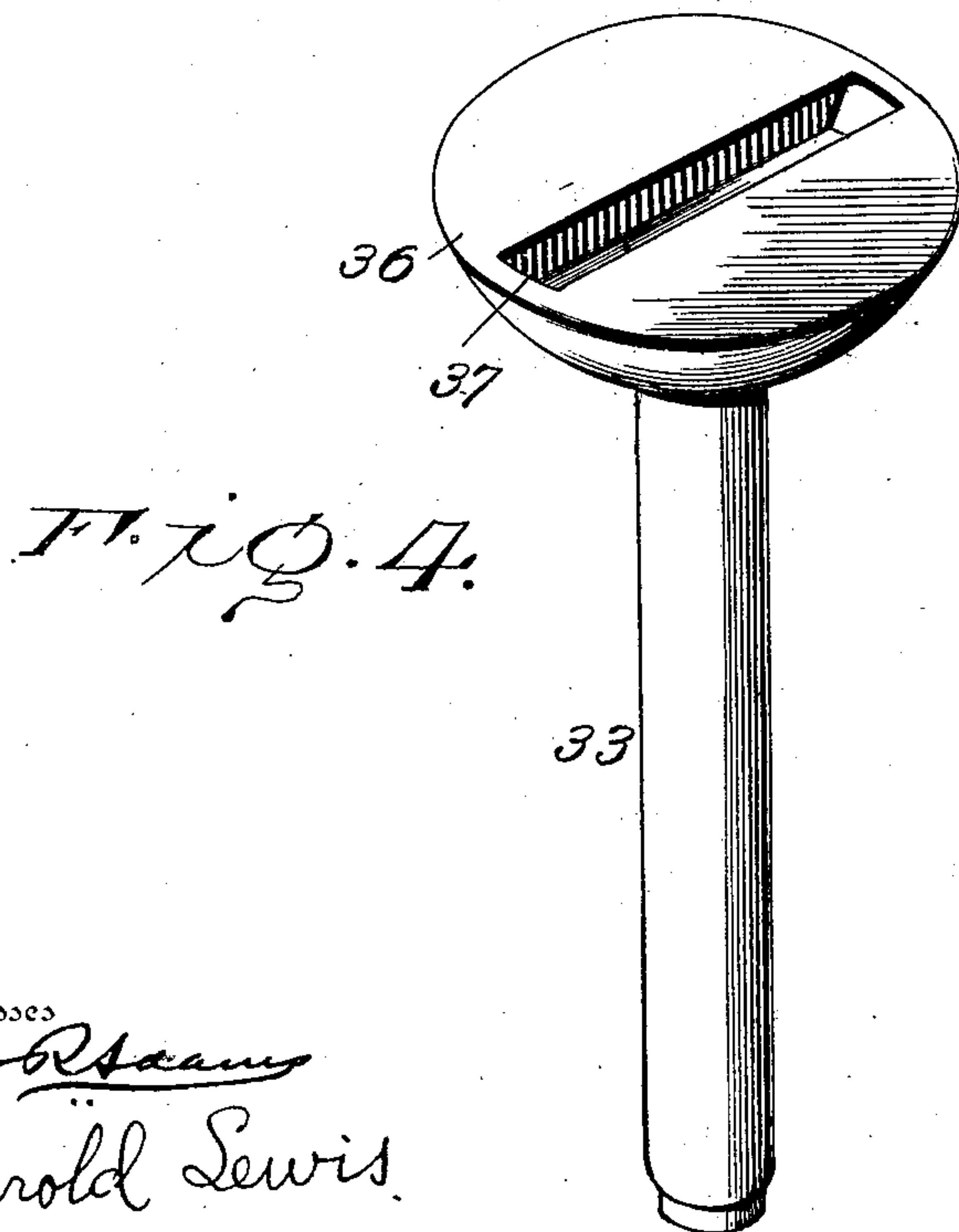
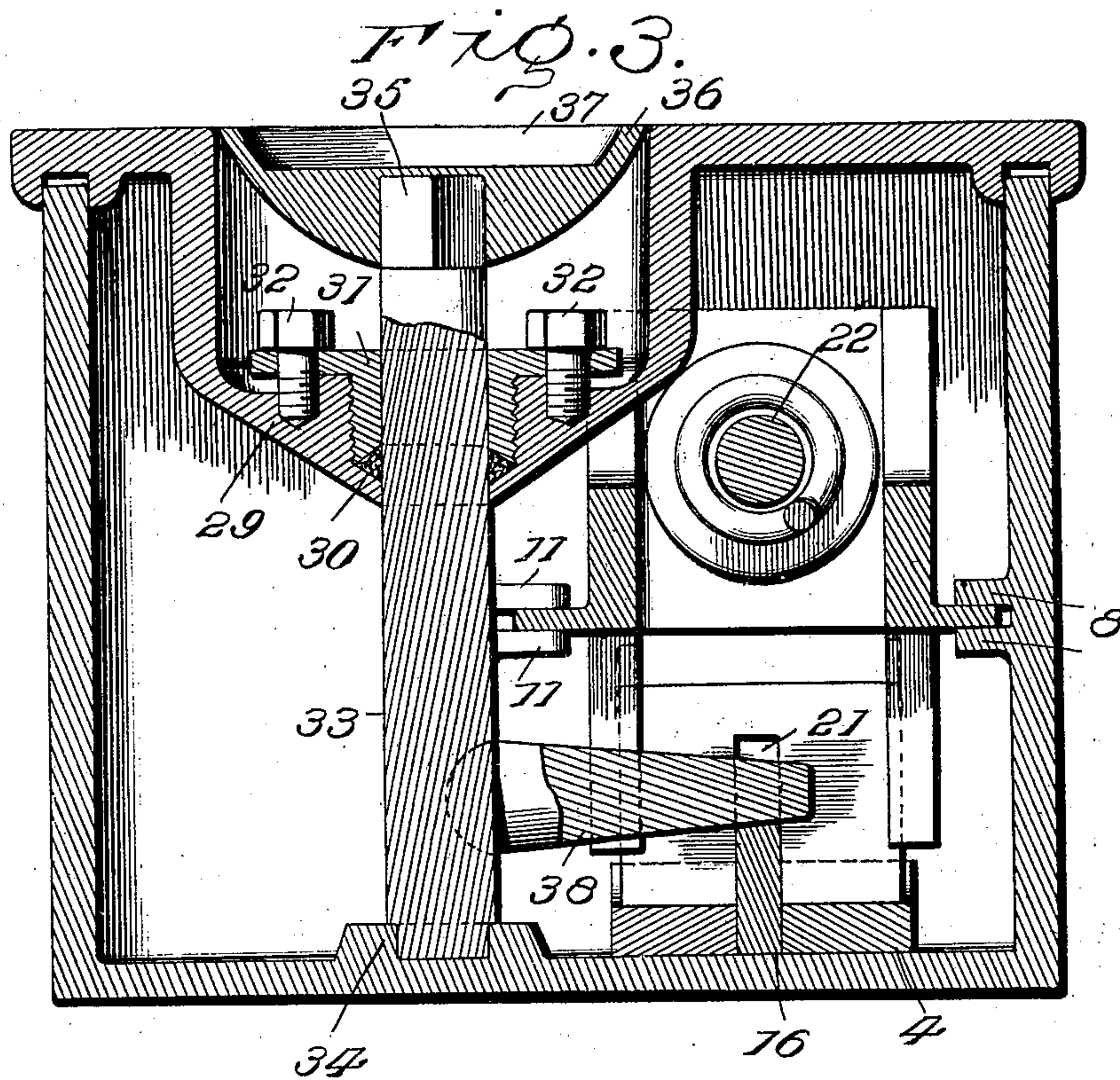
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3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

EDWARD E. BURKE, OF ANDERSON, INDIANA.

SAFETY-SWITCH LOCK FOR STREET-RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 685,200, dated October 22, 1901.

Application filed August 7, 1901. Serial No. 71,269. (No model.)

To all whom it may concern:

Be it known that I, EDWARD E. BURKE, a citizen of the United States, residing at Anderson, in the county of Madison, State of Indiana, have invented a new and useful Improvement in Safety-Switch Locks for Street-Railways, of which the following is a specification.

In the drawings, Figure 1 is a top plan view of my invention. Fig. 2 is a vertical section on the line A A, Fig. 1, parts being in elevation. Fig. 3 is a vertical transverse section on the line B B, Fig. 2. Fig. 4 is a detail perspective view of the shifting cap and shaft. Fig. 5 is a perspective view of the slide. Fig. 6 is a similar view of the shifting frame.

1 represents a suitable water-tight box of approved shape and material provided with a cover 2, having depending parallel lugs 3 around the edge thereof, whereby a groove is formed on the under face of the cover, in which the top edges of the box fit water-tight, as clearly shown in Fig. 2.

4 is a ratchet-bar secured in the bottom of the box, to one side of the center thereof, the center of said bar, as at 5, being made plain for teeth, while the teeth 6 and 7 on each end of the bar, respectively, are oppositely disposed with reference to each other, as clearly shown in Fig. 2. 8 represents parallel lugs integral with one side of the box 1.

9 is a slide-shifting frame provided with projecting lugs 10, adapted to slide in the groove formed by the lugs 8. Lugs 11 form another groove, into which two of the projecting lugs 10 of the shifting frame slide. Opposite side walls 12 of the shifting frame are inclined downwardly, as clearly shown in Fig. 6. 13 represents depending brackets integral with the shifting frame in line with the side wheels thereof, and 14 represents vertical grooves formed in the inner face of the said depending brackets 13.

15 represents pawls loosely provided within the vertically-disposed grooves 14, in which said pawls are adapted to freely move in a vertical plane. It will be noted that the pawls are oppositely disposed in order that they may engage oppositely-disposed teeth 6 and 7 in the rack-bar 4.

16 is a slide provided with the central de-

pression-groove 17, on each side of which is formed an incline 18.

19 represents cam-faces, and 20 represents stops at the end of the slide-bar, extending upwardly from the said cam-faces 19. It will be noted that the slide-bar 16 is mounted in a groove formed in the bottom of the rack-bar 4 and that the pawls 15 are each provided with a slot 21, within which the slide-bar moves. (See Fig. 3.)

Each end-wall wheel of the shifting frame 9 is provided with an opening in which the shifting rod 22 is slidably mounted.

23 is a spring coiled around said shifting rod 22, the ends of which are seated against blocks 24, secured against the end wheels of the shifting frame 9, as shown in Fig. 2.

25 represents collars or nuts secured around the shaft 22.

26 is a gland secured in the stuffing-box 27, and 28 is the packing secured within said stuffing-box around the shaft 22.

29 is a depression formed in the top tube of box 1, in the bottom of which is formed a stuffing-box 30, provided with the usual gland 31 and locking-screws 32. 33 is a shaft passing from the said stuffing-box 30, the lower end of which is seated in the bearings formed in the lug 34 on the bottom of the box 1. The upper end of said shaft 33 is secured, as at 35, upon which is secured a cap 36, having an elongated groove 37 formed in the top thereof, as clearly shown in Figs. 3 and 4.

38 is a tongue secured at right angles to the shaft 33, the end of said tongue projecting within the groove 17, formed in the top of the slide-bar 16, as clearly shown in Figs. 2 and 3.

39 is a plug secured in one of the end wheels of the box 1, that may be removed and the stuffing-box 27 inserted whenever it is desired to reverse the connecting or shift rod 22, as will be readily understood by those skilled in the art.

The operation is as follows: A suitable lever (not shown) is inserted in the groove 37 of the cap 36, whereby the shaft 33 is revolved in its bearings, and the shifting tongue 38 is thereby thrown to one side or the other, whereupon the slide-bar 16 is moved toward one end of the box 1, whereupon one of the cams 19 engages the pawl 15, mounted on it, thereby raising the said pawl 15 from engagement

with one set of teeth on the rack-bar 4, and continued movement of the shaft-bar 38 will cause the cam-face on the other end of the shift-bar to pass from beneath the other
 5 pawl 15, whereupon said pawl is free to engage the teeth on one end of the rack-bar 4, and continued turning of shaft 33 will carry the shifting frame 9, by reason of the engagement of one of the pawls 15, against the stop
 10 20 on the slide-bar, whereby compression is placed upon the spring 23, which results in the movement of the shift-rod 22 and the switch-tongue, with which it is engaged. Should there be an obstruction whereby the
 15 switch-tongue is prevented from moving, the parts will nevertheless operate as just described, and as soon as the obstruction is removed the tension of the compressed spring will project the shift-rod 22, thereby seating
 20 the switch.

What I claim, and desire to secure by Letters Patent, is—

1. In a railway-switch, a shifting frame to which a shifting rod is connected, pawls
 25 loosely mounted in said frame, and a rack-bar with which said pawls are adapted to engage in combination with a sliding bar adapted to operate said pawls and a shaft for operating said sliding bar.

30 2. In a railway-switch, a shifting frame, to

which a shifting rod is connected, pawls loosely mounted in said frame and a rack-bar with which said pawls are adapted to engage, in combination with a sliding bar, cams formed on said sliding bar for operating said
 35 pawls, and a shaft having engagement with and operating said sliding bar.

3. In a railway-switch, a shifting frame, to which a shifting rod is connected oppositely-disposed pawls loosely mounted in said frame,
 40 and a rack-bar having oppositely-disposed teeth on each end, in combination with a sliding bar, cams formed on said bar adapted to engage said pawls, and a shaft connected with and operating said switching-bar.
 45

4. In a railway-switch, a shifting frame, to which a shifting rod is connected, grooved lugs depending from said frame, oppositely-disposed pawls slidably mounted in said
 50 grooves, and a rack-bar having teeth on each end oppositely disposed, in combination with a sliding bar, cams formed on said bar adapted to engage and operate said pawls and stops formed on the ends of the bar, and an operating-shaft connected to said sliding bar.

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Witnesses:

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