

No. 702,192.

Patented June 10, 1902.

V. FORTI.

GAS LIGHTING OR EXTINGUISHING DEVICE.

(Application filed Oct. 24, 1900.)

(No Model.)

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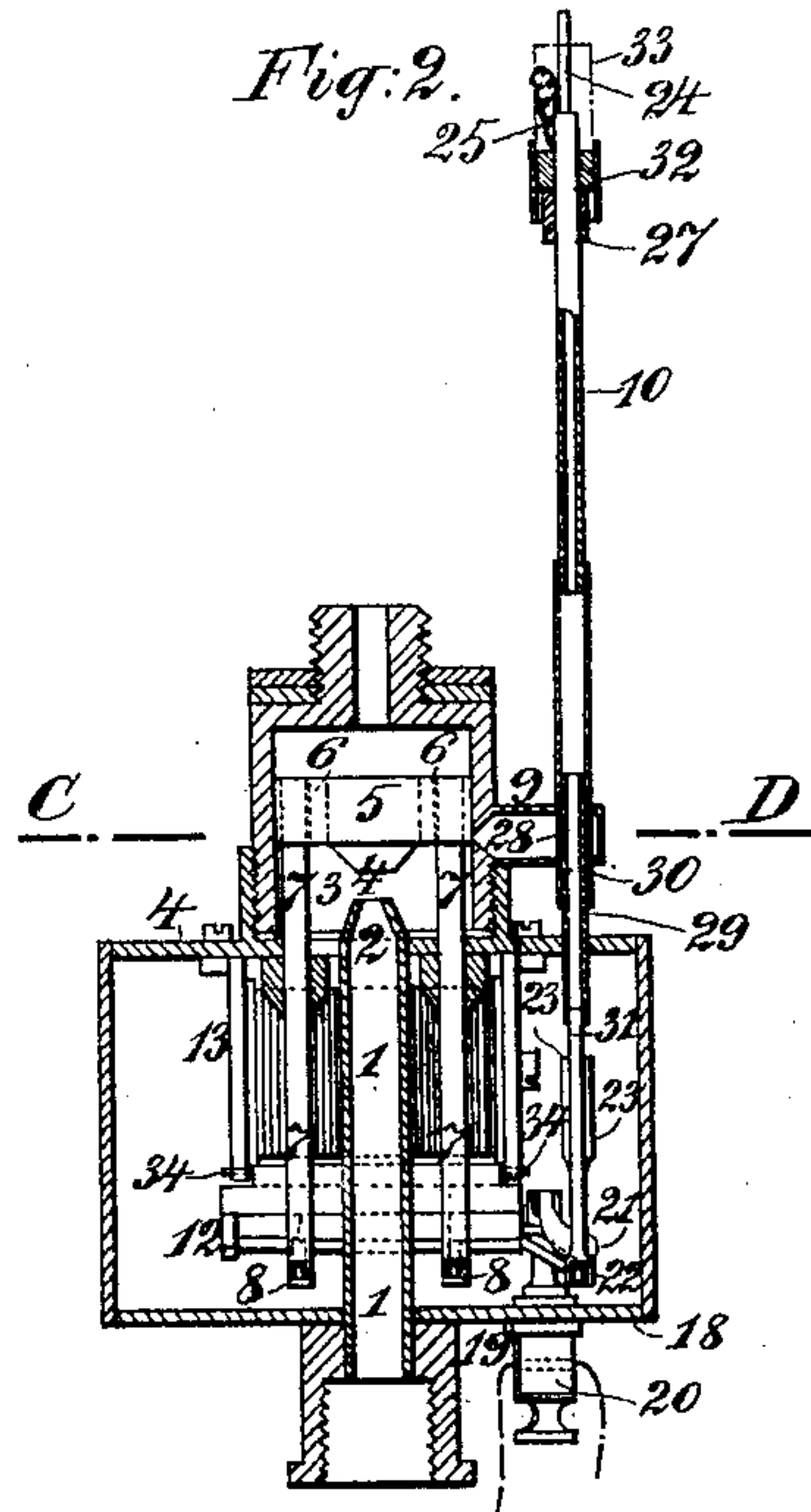
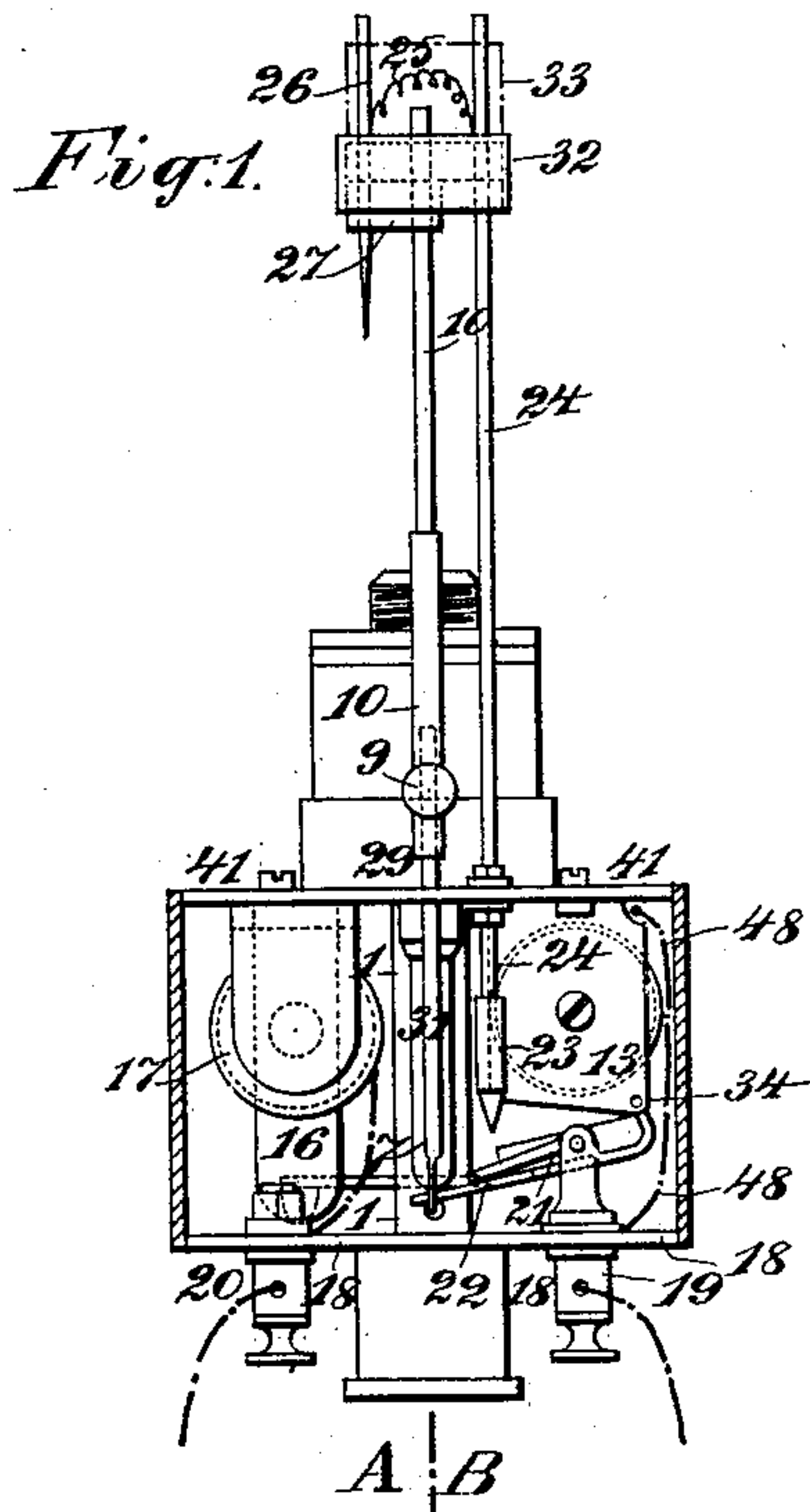


Fig. 4.

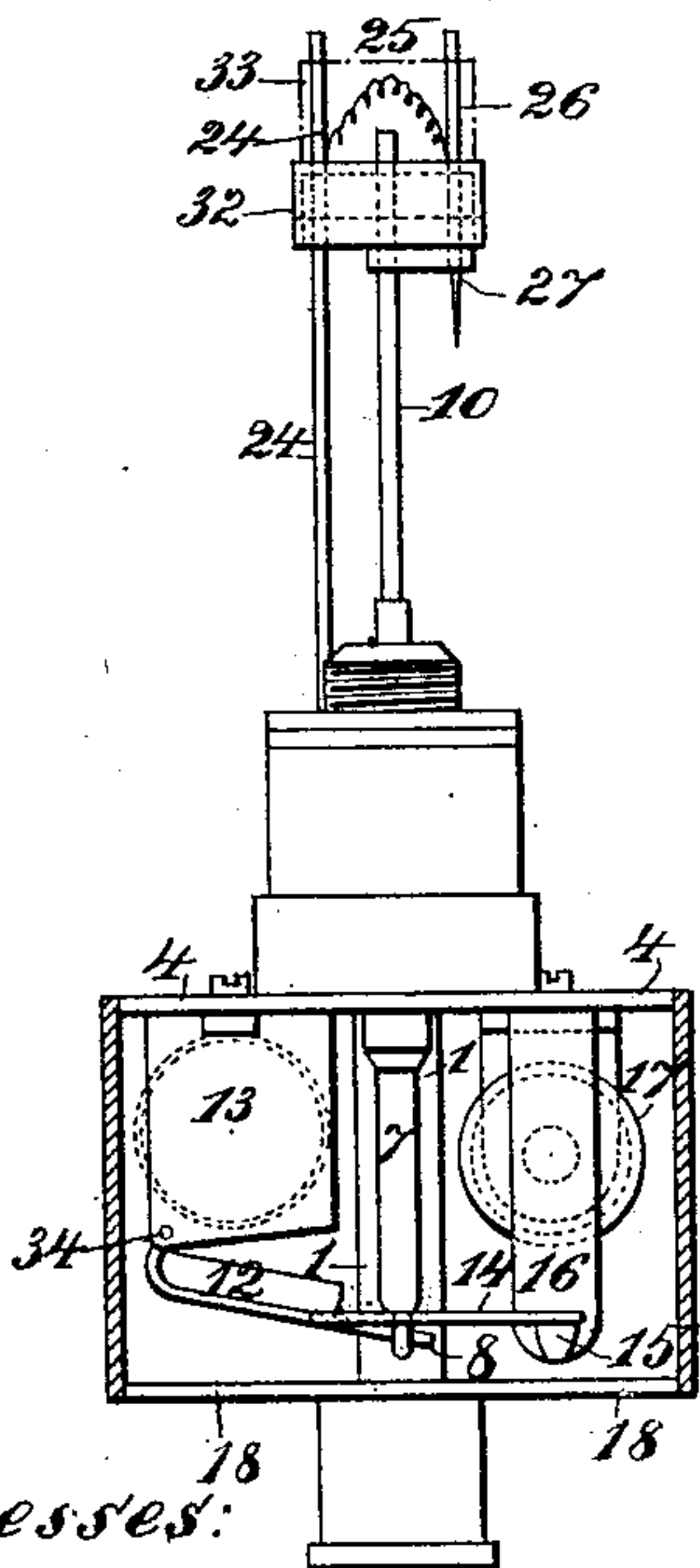
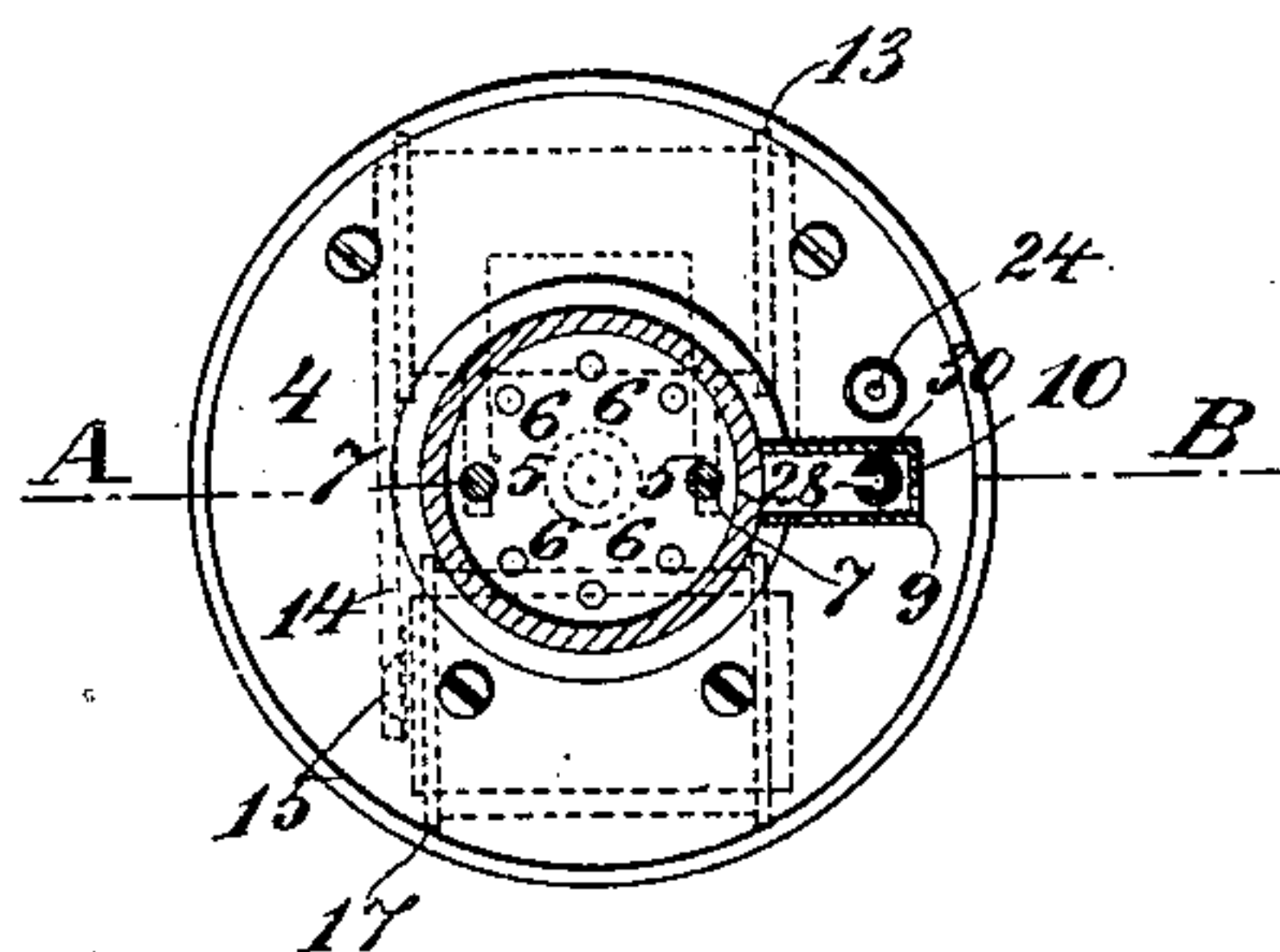


Fig. 3.



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2 Sheets—Sheet 2.

Fig. 5.

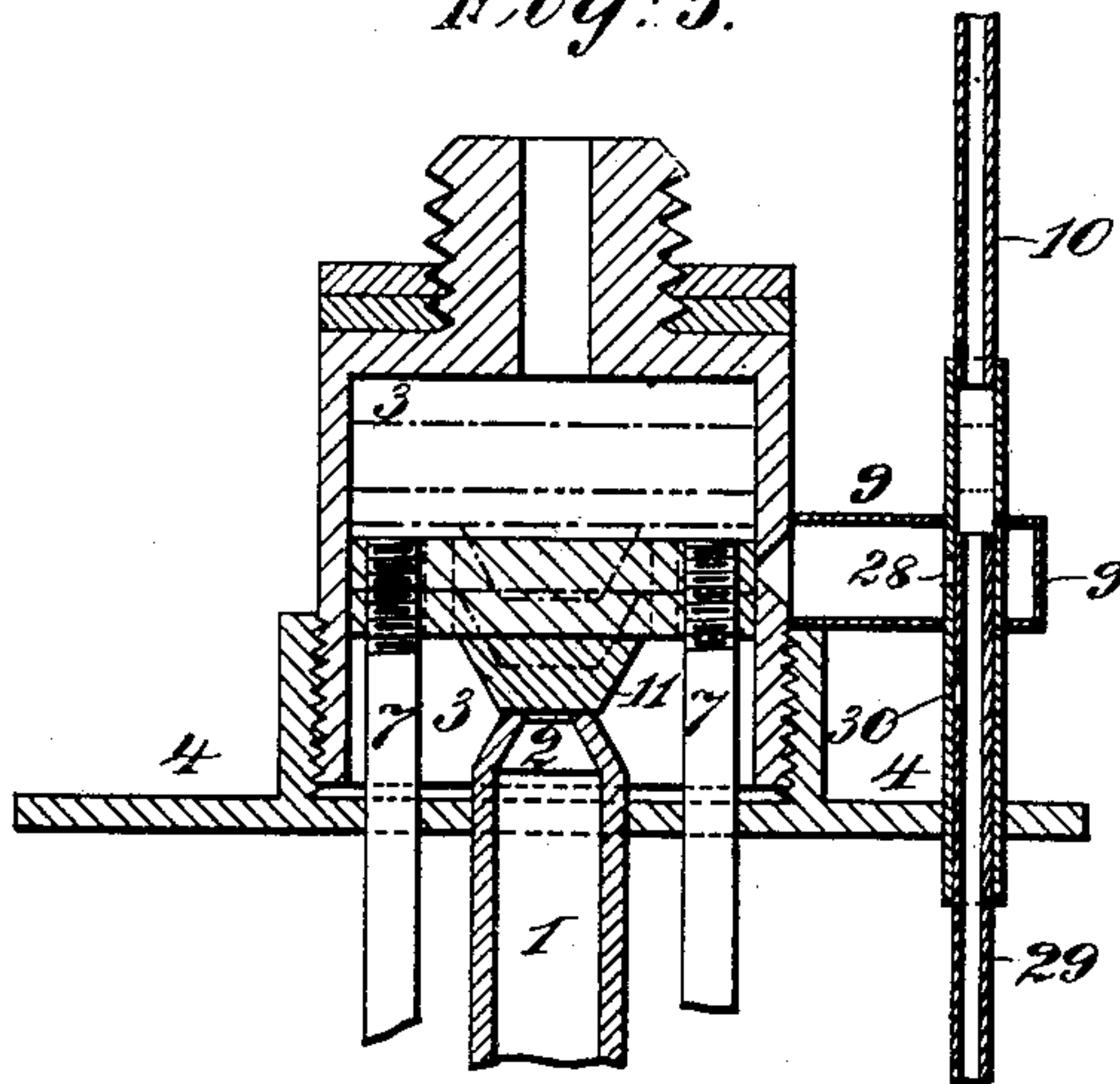


Fig. 6.

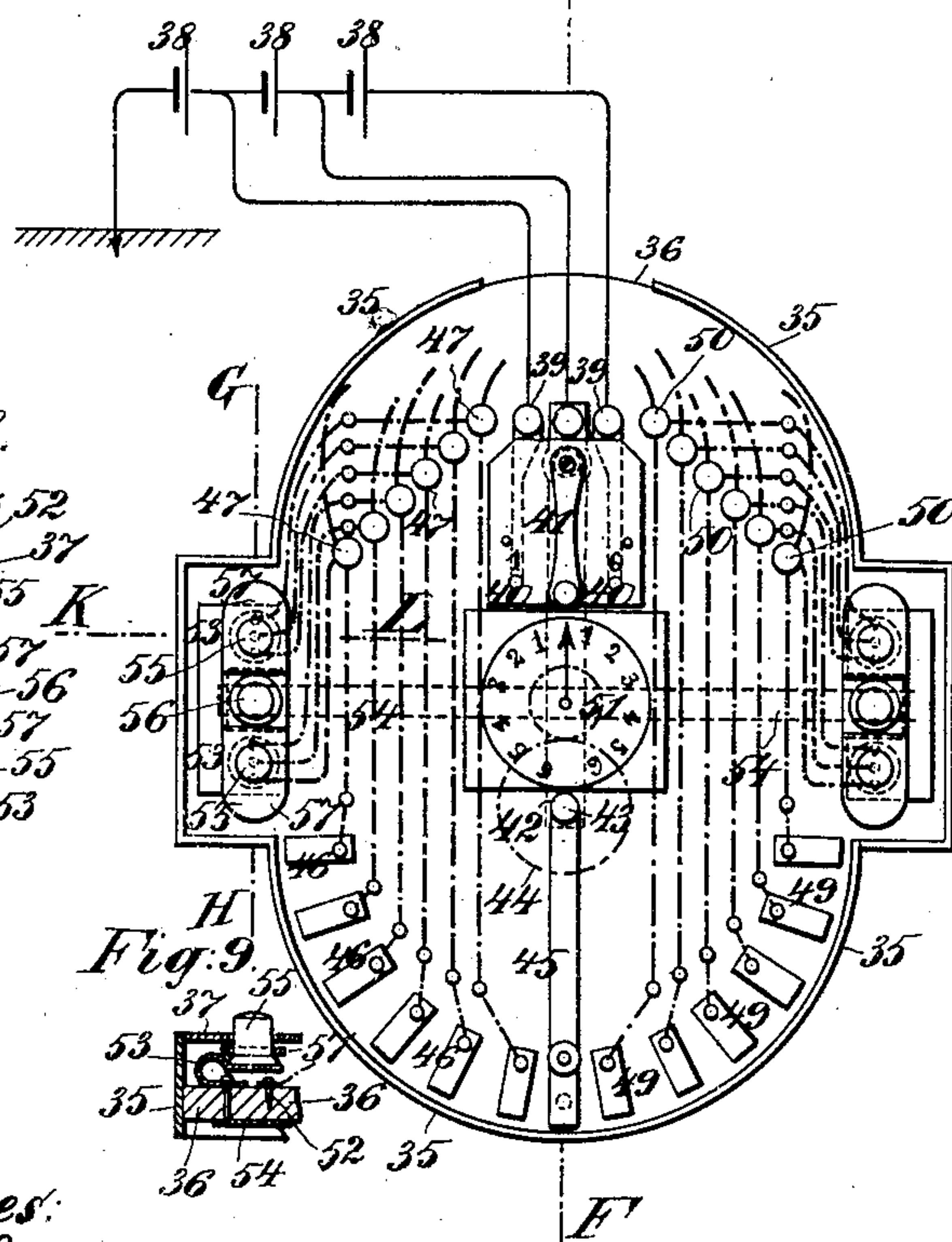


Fig. 8.

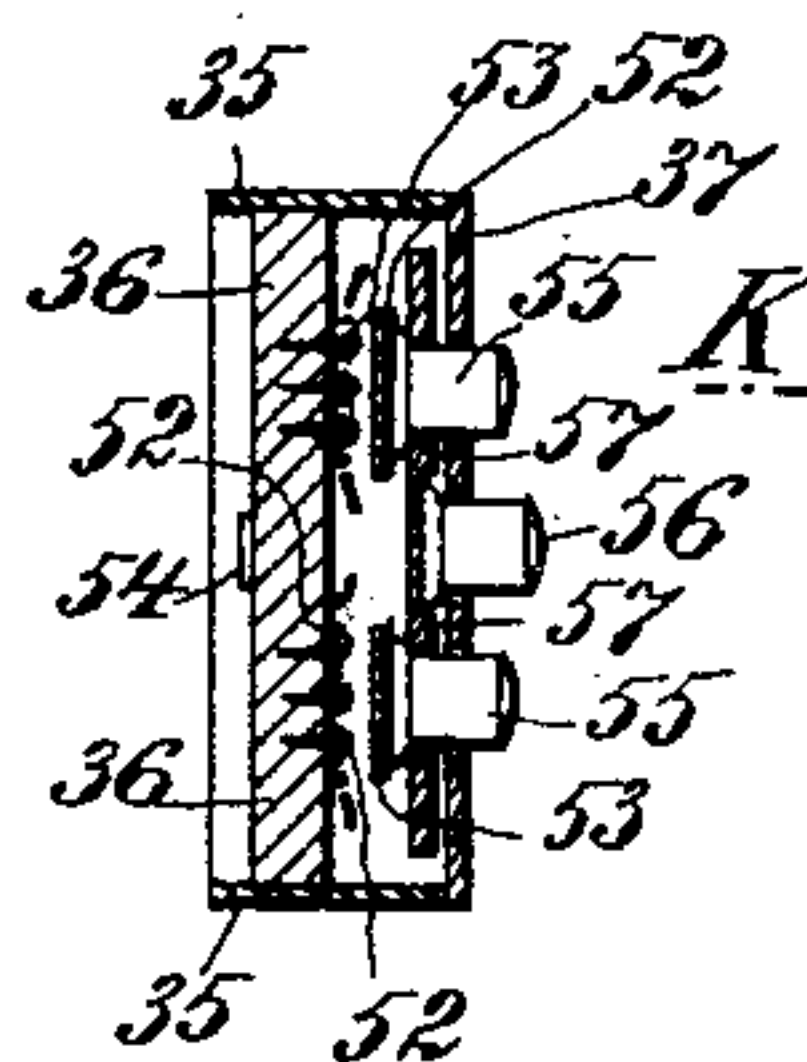


Fig. 9.

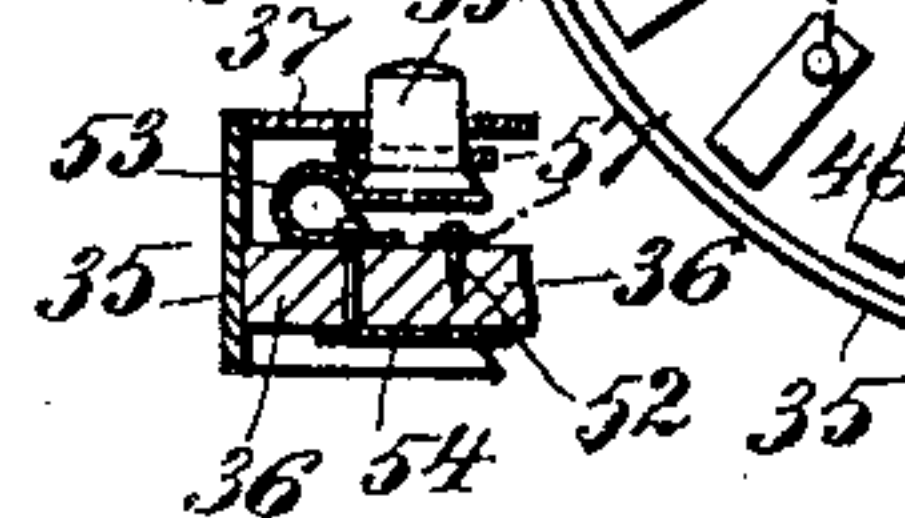
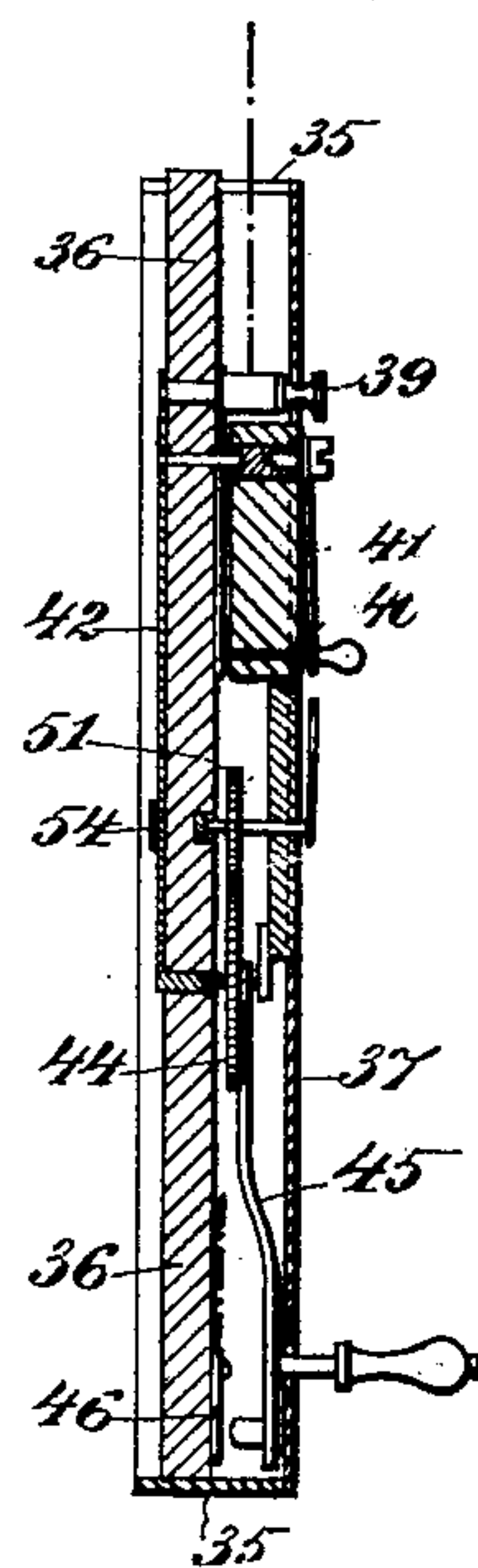


Fig. 7.



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UNITED STATES PATENT OFFICE.

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GAS LIGHTING OR EXTINGUISHING DEVICE.

SPECIFICATION forming part of Letters Patent No. 702,192, dated June 10, 1902.

Application filed October 24, 1900. Serial No. 34,134. (No model.)

To all whom it may concern:

Be it known that I, VICTOR FORTI, a citizen of the French Republic, residing in Paris, France, have invented certain Improvements in Gas Lighting or Extinguishing Devices, of which the following is a specification.

This invention relates to means for lighting and extinguishing gas-burners at a distance through the medium of electricity.

10 In the accompanying drawings, which serve to illustrate an embodiment of the invention, Figure 1 is an elevation. Fig. 2 is a vertical section on line A B of Figs. 1 and 3. Fig. 3 is a horizontal section on line C D of Fig. 2. 15 Fig. 4 is an elevation of the opposite side to that seen in Fig. 1. Fig. 5 is a sectional detail, on a larger scale than the principal views, showing the device for distributing the gas to the igniter. Fig. 6 is a diagrammatic view, 20 on a relatively small scale, of a distributor or manipulator for several lighting devices. Figs. 7, 8, and 9 are sections taken, respectively, at lines E F, G H, and K L of Fig. 6.

The igniting and extinguishing device comprises in general a casing adapted to be 25 screwed onto a gas-bracket and having at its top a suitable nipple to receive the burner. The gas flows up through a pipe to a chamber connecting with said nipple and through 30 a piston or slide valve to the latter. This slide-valve controls the admission of gas by a lateral port to the small igniting-jet, and it also carries a valve for closing the main gas-pipe, and thus cutting off the supply of gas 35 to the burner. In the casing are two electromagnets, one controlling the admission of gas to the igniter and the other controlling the closing of the valve which cuts off the supply of gas to the burner. The gas is supplied to 40 the burner through an upright pipe 1, having a contracted mouth 2. The delivery end of the pipe 1 extends up into a chamber 3 in a nipple-base secured to a plate 4. In the chamber 3 is a piston-valve 5, having in it 45 gas-apertures 6, Fig. 3, and provided with guide-rods 7, which play through the plate 4. In the side wall of the chamber 3 is a small aperture which opens into a tube 9, secured to said wall and forming a chamber through 50 which extends an upright igniting-tube 10, having in it a small port or opening 28 within the chamber in the tube 9. On the piston 5

is a valve 11, so placed as to hermetically close the mouth of the pipe 1 when the piston 5 descends far enough. The rods 7 extend down 55 and are coupled to an armature 12 of an electromagnet 13, said armature being hinged at 34. The magnet 13 may attract the armature 12 and acting through the rods 7 lift the piston 5 and valve 11. Attached to the armature 12, 60 at one side, is a rod 14, which may be supported at one point in the movement of the armature 12 on a lug 15 on the spring-armature 16 of another electromagnet 17. As herein shown, the two electromagnets 13 and 65 17 are supported under the top plate 4 of the casing and have their axes disposed parallel and their pole-pieces at right angles. Beneath the electromagnets 13 and 17 is the bottom plate 18 of the casing, on which are 70 mounted two binding-posts 19 and 20. The post 19 has hinged to its upper end a metal strip 21, which is lifted by a pin 22 on the armature 12. This strip 21 is designed to establish electrical contact with a tip 23, adjust- 75 ably mounted on an upright rod 24. This rod 24 extends up through the plate 4 and at its upper extremity carries a platinum wire 25, which extends over the upper end of the tube 10. The other extremity of the wire 25 80 is connected to a rod 26, mounted in a metal plate 27, secured to the tube 10. This tube is metal and forms a part of the return-conductor of the circuit. As before stated, there is a small aperture or port 28 in the wall of 85 the tube 10, and inside of this tube, which is shown in Fig. 5 as enlarged at this point, plays telescopically a tube 29, having in its side wall a port 30. The tube 29 terminates below in a rod 31, having an eye, with which is 90 engaged the end of the pin 22, before mentioned. The metal plate 27 is insulated from a frame 32, which forms a support for a short mica-protecting screen or chimney 33.

The current comes to the binding-posts 19 95 and 20 through wires from the manipulator, whereby the gas-burners are lighted and extinguished. This manipulator is illustrated in Figs. 6, 7, 8, and 9. This apparatus, as here shown, is adapted for sending the cur- 100 rent into six igniting devices or into any or all of them. This manipulator comprises a case 35, the bottom of which, 36, is of wood or other insulating material. The case has a

cover 37. Three cells 38, connected in series, are branched on wires leading to binding-posts 39 of the manipulator. These binding-posts extend to contact-knobs 40, and on the latter may be made to bear the free end of a switch-lever 41. By shifting said lever 41 to one or the other of the knobs 40 the current from one, two, or three cells of the battery can be caused to act in order to suitably supply one, two, three, or four or even five or six of the igniting devices. The pivot-pin of the switch 41 is connected by a metal strip 42 to the arbor 43 of a pinion 44, provided with a switch-lever 45. To effect ignition, the switch-lever 45 is brought over one of six contact-plates 46, which is connected to the binding-post 47, to which are attached the wires leading to the binding-post 19 of the igniting device. The current is therefore sent into the igniting device which belongs to the particular plate 46 on which the switch-lever 45 is pressed. The current from the battery flows from the latter to a binding-post 39, thence to a knob 40, thence to the switch-lever 41, thence to and through the strip 42, arbor 43, and pinion 44 to the switch-lever 45, thence to a plate 46, thence to a binding-post 47, thence to the binding-post 19 of the igniting apparatus. At this apparatus the current flows from the post 19 to the electromagnet 13 by a wire 48. The excitation of the magnet 13 attracts its armature 12, which in rising elevates the piston 5 and valve 11, thereby opening the mouth of the gas-supply pipe 1 and also the port leading from the chamber 3 to the tube 9. This permits the gas entering the chamber 3 to pass through the apertures 6 in the piston 5 to the burner and also to the tube 9, and thence to the igniter through the aperture 28 and tube 10. At the same time the pin 22 lifts the rod 31, and this latter lifts the tube 29, so as to put the port 30 therein into register with the port 28 in the tube 10, and this permits the gas to flow to the tube 10, as above stated. It may be noted here that in rising (see dotted lines in Fig. 5) the piston 5 uncovers the port leading from the chamber 3 to the tube 9, the said piston and also the tube 29 acting as slide-valves. In rising the armature 12 elevates the strip 21, and thus establishes contact with the tip 23, so that the current flows from the post 19 to and through the strip 21 and tip 23 to the rod 24, thence through the platinum wire 25 to the pin 26, thence by the plate 27 to the tube 10, and thence returns, being grounded in the casing. This current heats the platinum wire hot enough to ignite the gas issuing from the upper end of the igniting-tube 10, and this ignites the gas at the burner. If now the current be broken at the switch-lever 45 of the manipulator, the armature 12 of the magnet 13 will fall by gravity; but the armature will be arrested at the proper point in its descent by the rod 14 catching on the lug 15 on the spring-armature 16 of the magnet 17. This

permits the piston 5 to descend far enough to close the port leading from the chamber 3 to the tube 9 without permitting the valve 11 to close the gas-supply pipe 1. At the same time the tube 29 descends in the tube 10 and closes the port 28 in the latter. Thus the supply of gas to the igniting-tube 10 is absolutely cut off.

To extinguish the ignited gas at the burner, the switch-lever 45 is moved (toward the right in Fig. 6) so as to be put in contact with one of the contacts 49, which are connected with the binding-posts 50. The switch-lever 45 being depressed into contact with the contact 49, the current flows to the binding-post 20 of the igniting device at the burner and thence through the electromagnet 17. The armature 16 of this magnet is attracted and the supporting-lug 15 thereon is withdrawn from under the rod 14. This permits the armature 12 to fall to the limit of its drop and the valve 11 to descend and cuts off the supply of gas to the burner.

In order to indicate to which igniting device the current is being sent, either for igniting or extinguishing, the pinion 44, connected to and turning with the switch-lever 45, is made to gear with a pinion 51, the arbor of which carries a hand which moves over a dial, as seen in Figs. 6 and 7. This is a simple form of visual indicator and will require no special description.

The manipulator is adapted for simultaneously igniting or extinguishing the gas at the three first, the three last, or all of the burners. To this end the binding-posts 47 are connected electrically to six contacts 52, united in two groups of three each, and over each group is a spring-metal strip 53, which is connected by a transverse strip 54 with the conductor 42. Over each strip 53 is a push-button 55, and one of these buttons is pressed in order to close the circuit simultaneously through the first three or last three of the igniting devices. The third button 56 permits of pressing down a strip 57, which engages the two buttons 55, so that both of the last-named buttons are depressed simultaneously and the circuit thus closed through the six igniting devices of the series.

For extinguishing the burners devices substantially the same as that just described and seen in Figs. 8 and 9 are employed. These are located at the right-hand side of the manipulator and will not, obviously, require particular description.

The valve 11 may be of lead, so as to be weighty enough to close the gas-supply pipe, and the piston 5 may be of any kind adapted to the purpose.

Having thus described my invention, I claim—

In a gas-igniting device, the combination with an igniting-tube, of a cylindrical casing having a nipple at its top to receive the burner, an inlet at the bottom for gas to both the

burner and the igniter, and a lateral outlet-
port leading gas to the igniting-tube, an aper-
tured piston in said casing between the burner
and gas-inlet, said piston being adapted to
5 close the lateral port for supplying the igniter,
a valve on the under side of the piston for
closing the gas-inlet, an electromagnet and
its armature, the latter coupled to said piston
for opening the gas-ports, and means for send-
10 ing a current of electricity through said mag-

net and the igniting-wire simultaneously, sub-
stantially as set forth.

In witness whereof I have hereunto signed
my name in the presence of two subscribing
witnesses.

VICTOR FORTI.

Witnesses:

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JULES ARMENGAUD, Jeune.