

No. 616,723.

Patented Dec. 27, 1898.

A. G. McCAUSLAND.

CANDY MACHINE.

(Application filed July 8, 1897.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 2.

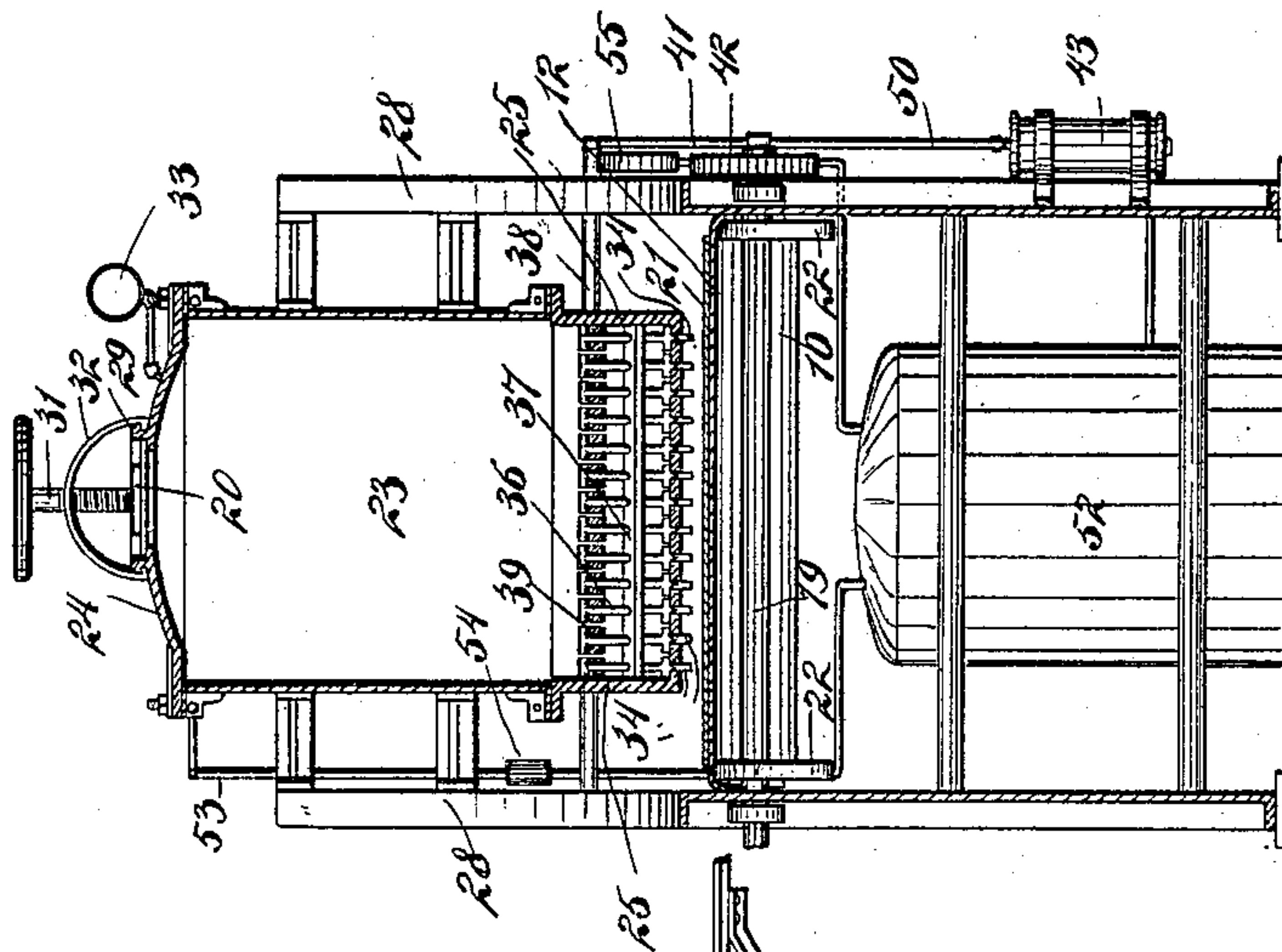


Fig. 1.

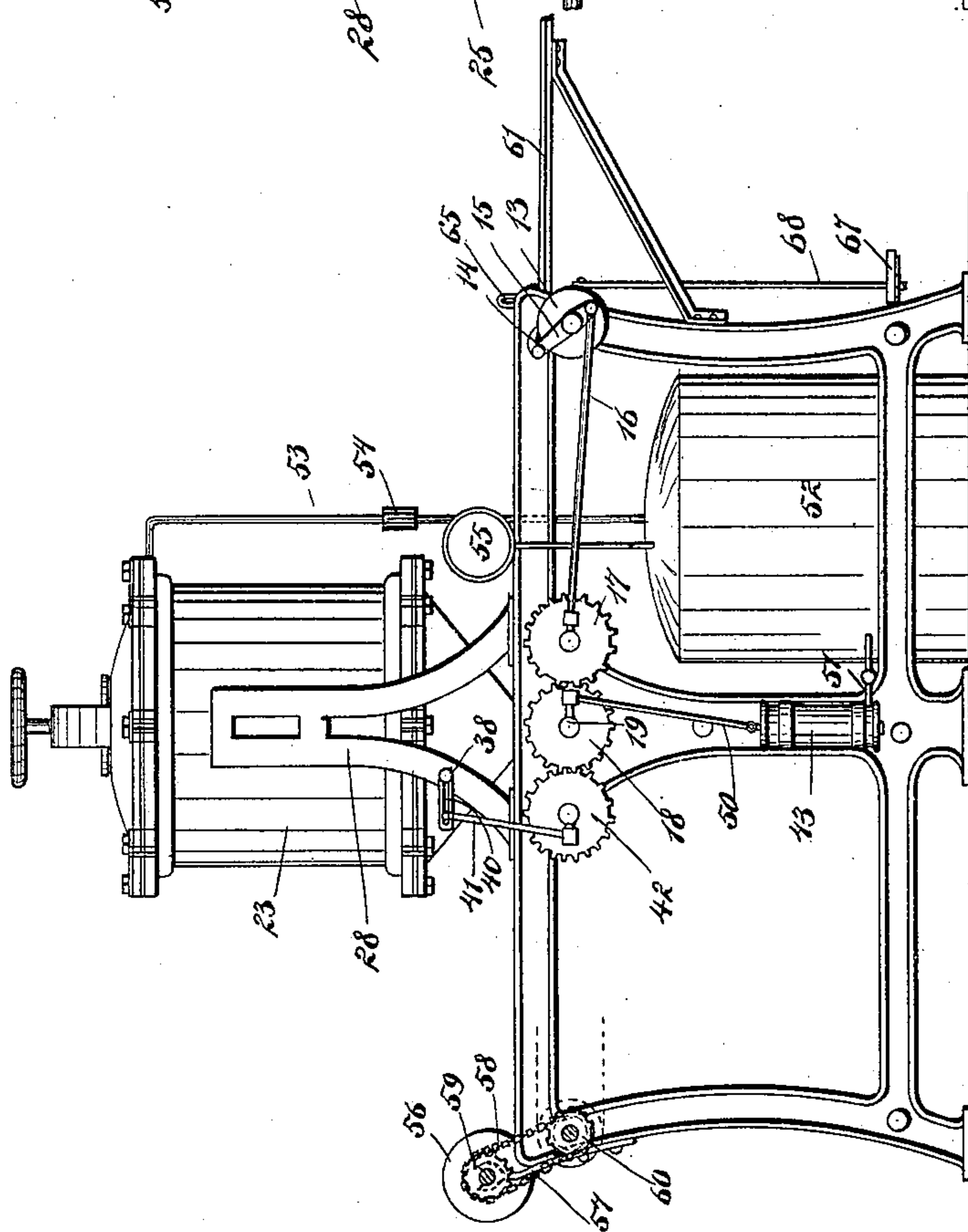


Fig. 11.

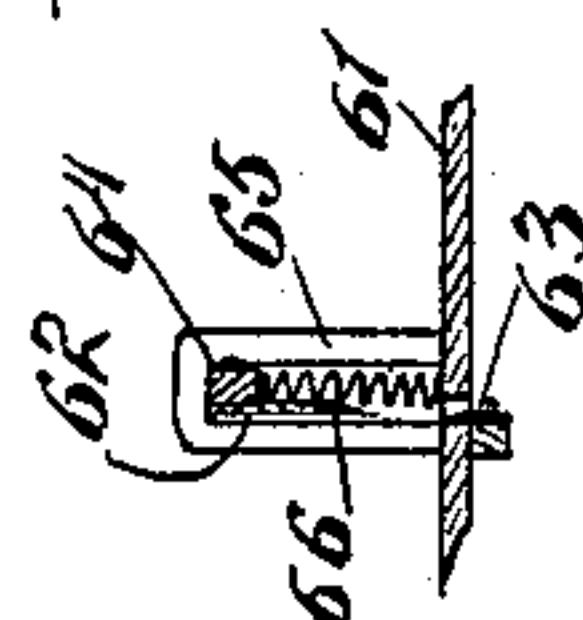
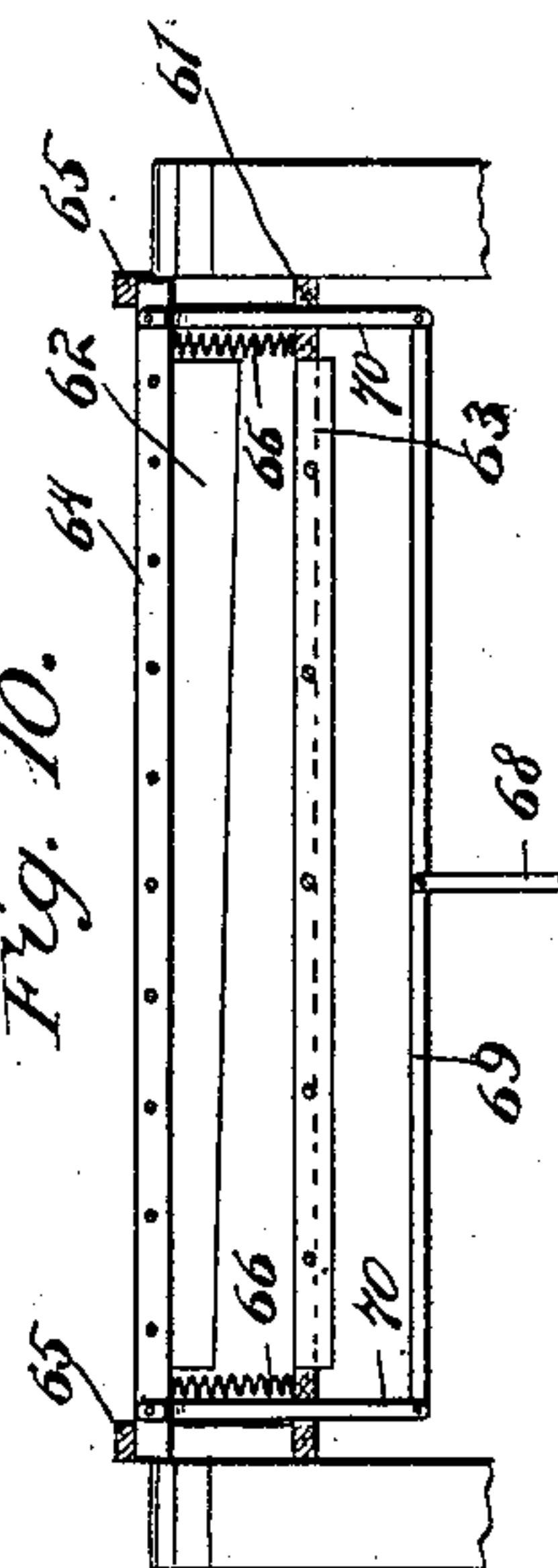


Fig. 10.



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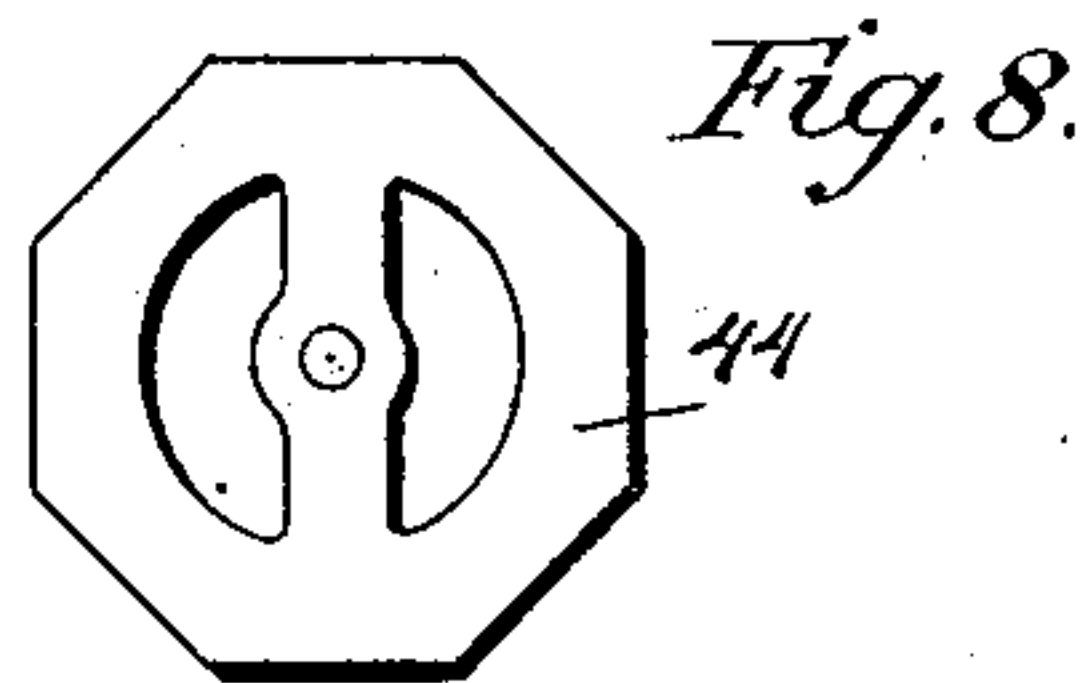
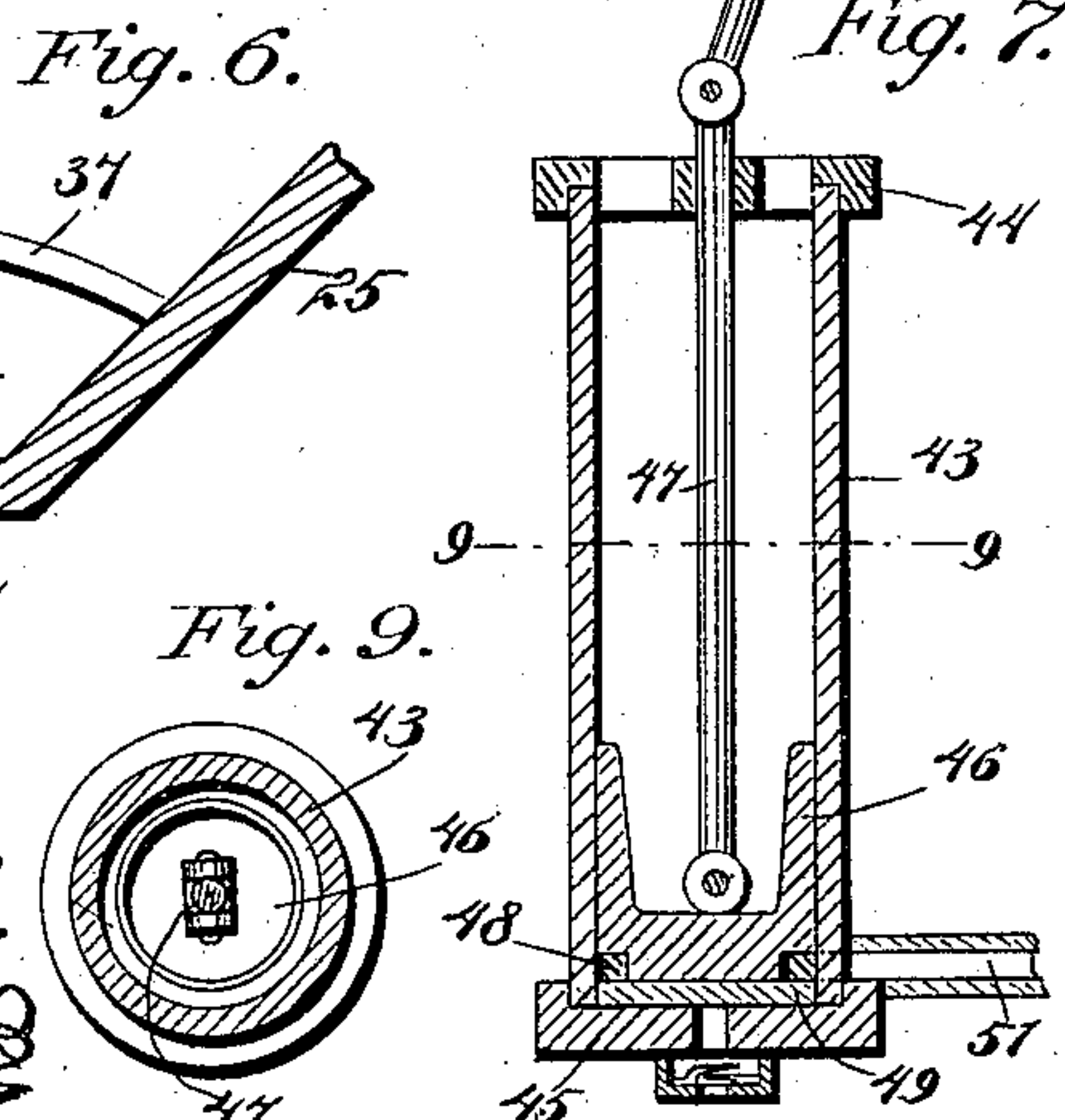
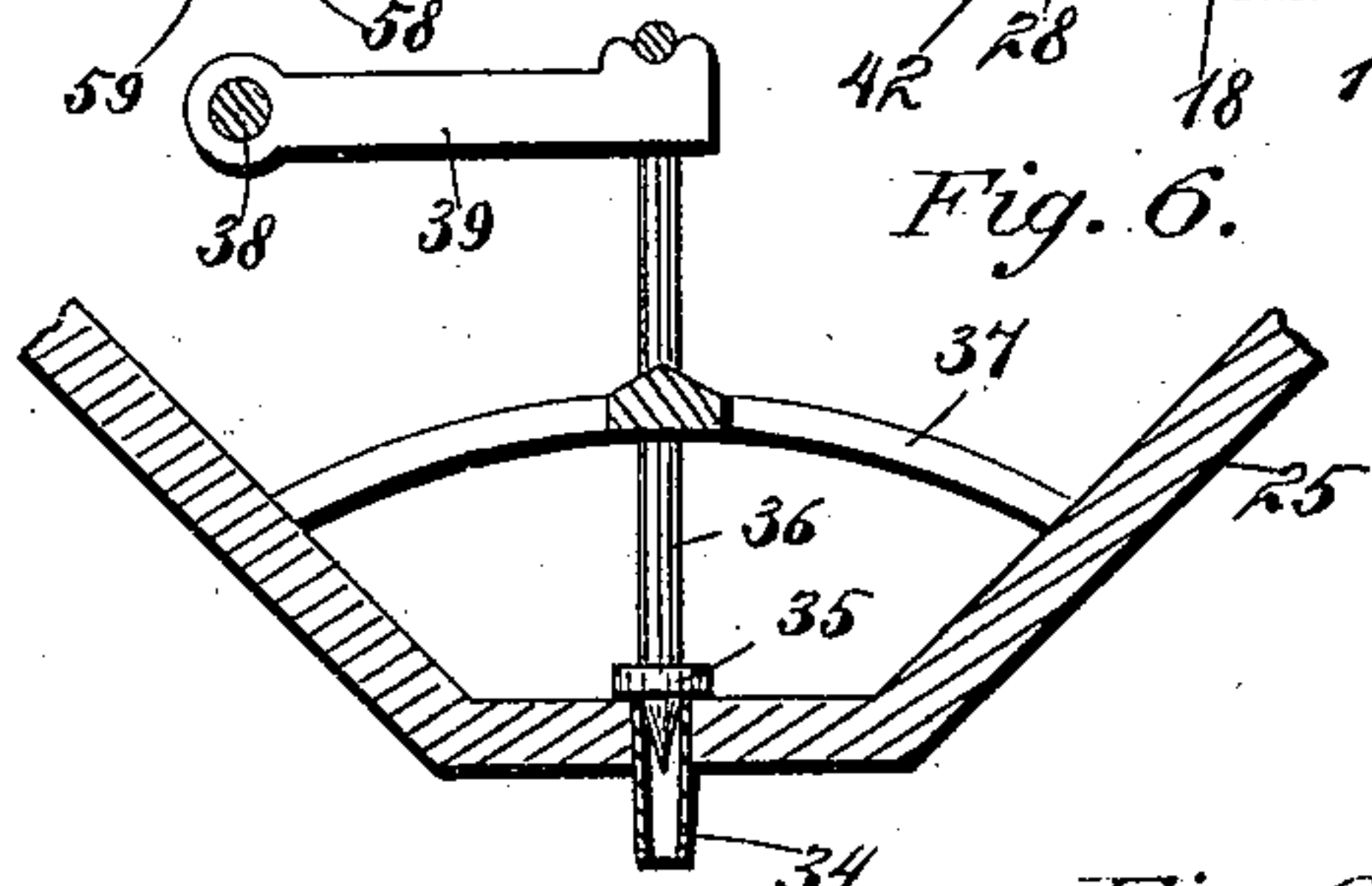
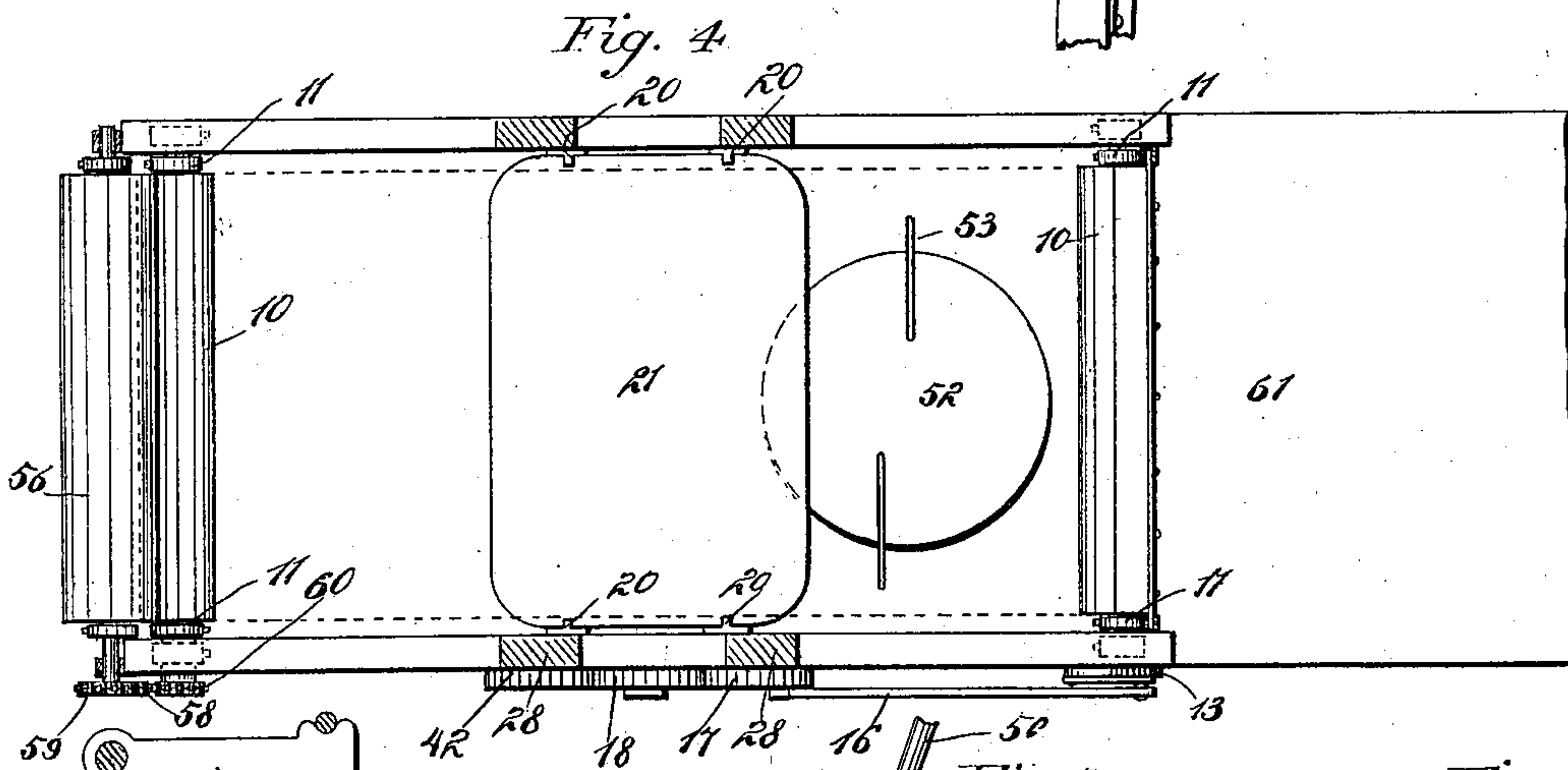
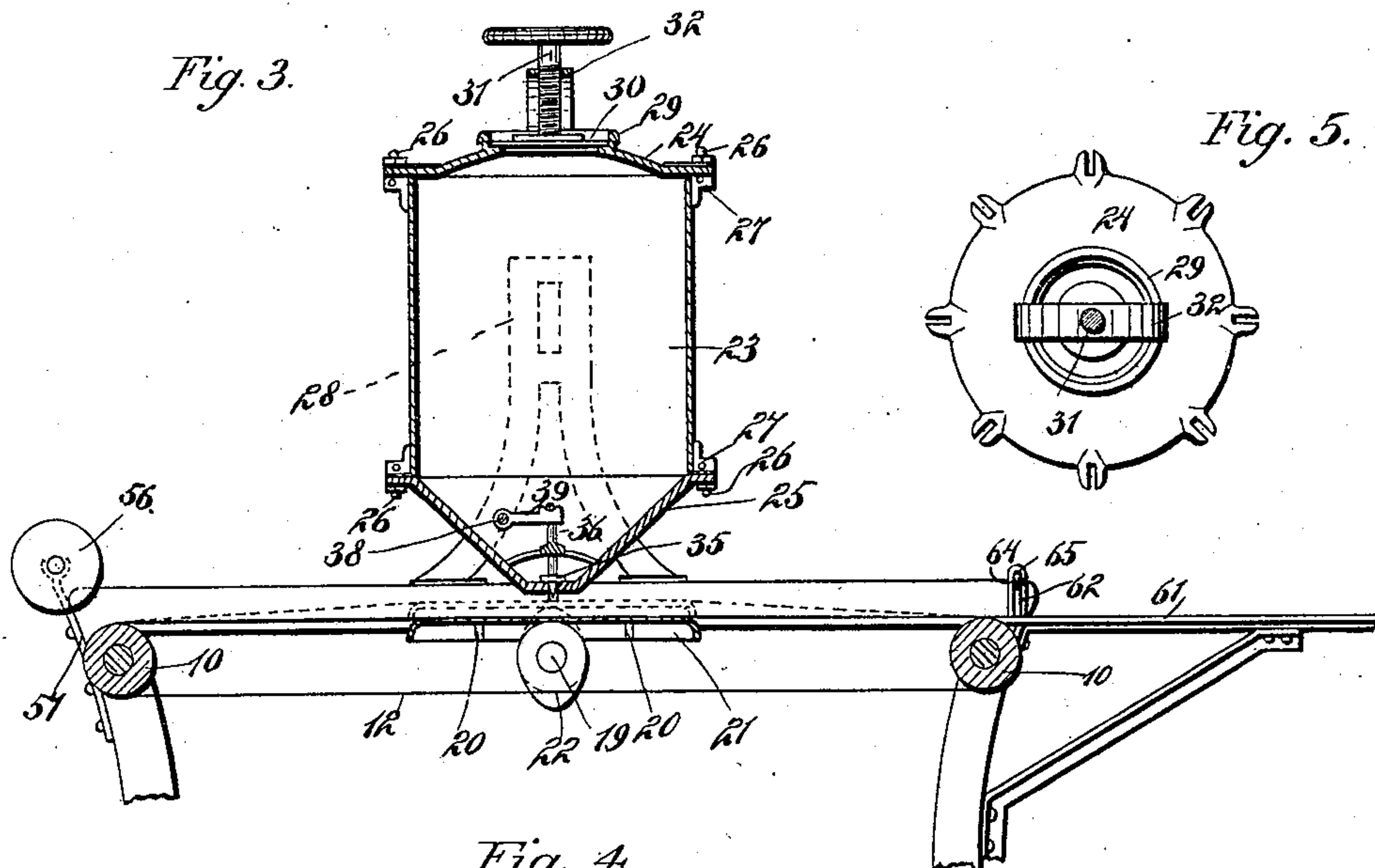
A. G. McCAUSLAND.

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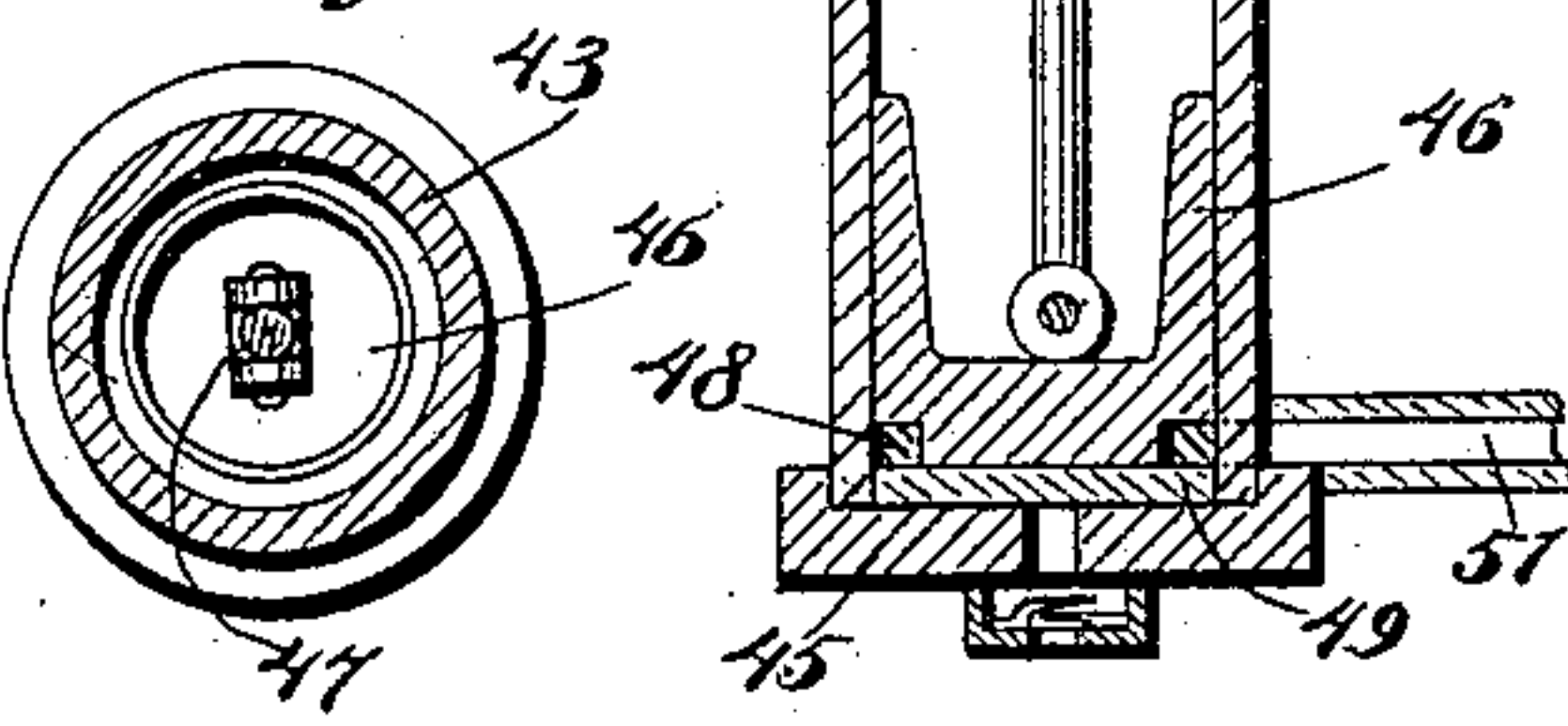
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

ALEXANDER G. MCCAUSLAND, OF BRANTFORD, CANADA, ASSIGNOR, BY
DIRECT AND MESNE ASSIGNMENTS, TO ARTHUR AMES, OF SAME PLACE.

CANDY-MACHINE.

SPECIFICATION forming part of Letters Patent No. 616,723, dated December 27, 1898.

Application filed July 8, 1897. Serial No. 643,815. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER G. MCCAUSLAND, of Brantford, in the Province of Ontario and Dominion of Canada, have invented certain new and useful Improvements in Candy-Machines, of which the following is a full, clear, and exact description.

This invention is a machine for delivering plastic candy-stock in drops upon a web of paper whereon the stock is dried for the market.

This specification is the disclosure of one form of my invention, while the claims define the actual scope of the conception.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the invention. Fig. 2 is a cross-section thereof, taken vertically through the stock-reservoir. Fig. 3 is a longitudinal section of the invention with parts omitted. Fig. 4 is a plan view of the invention, also with parts omitted. Fig. 5 is a plan view of the stock-receptacle. Fig. 6 is an enlarged section showing one of the valve devices therefor. Fig. 7 is an enlarged section of the air-pump. Fig. 8 is a plan view of the upper head of the cylinder of the air-pump. Fig. 9 is a cross-section of the cylinder on the line 9 9 of Fig. 7, looking downward from the line of section. Fig. 10 is a section taken transversely of the machine to show the paper-severing knives, and Fig. 11 is a cross-section of said knives.

The frame of the apparatus is rectangular and carries at each end a transverse roller 10, said rollers being adjustably held on their shafts by means of collars 11, attached to the shafts at the ends of the rollers. Over the rollers 10 a belt 12 runs. Fixed to the shaft of one of the rollers 10 is a ratchet-disk 13, with which a pawl 14 coacts, the pawl being carried by an arm 15, swinging on the shaft of the ratchet-disk and operated by a link 16, having cranked connection with a spur-gear 17. The spur-gear 17 is mounted loosely on a stub-shaft held on the frame of the apparatus and gears with a driving spur-gear 18, held on the primary-movement shaft 19, which passes transversely through the frame

at the middle thereof. By these means the rollers 10 are driven intermittently and the belt 12 made to travel horizontally between the side portions of the frame.

Sliding between vertically - extending guides 20, held by the sides of the frame, is a table 21, located beneath the upper run of the belt 12 and approximately at the center of the frame. The shaft 19 passes beneath the table 21 and carries two cams 22. As the shaft 19 revolves the cams 22 act simultaneously on the table 21 to raise and lower the same in its guides 20, as indicated by the dotted lines in Fig. 3. This causes a regular rise and fall of the upper run of the belt 12, and the operation of the parts is so timed that as the belt rises the candy-stock will be deposited upon the belt in a manner to be hereinafter described.

The candy-stock is held in a reservoir 23, formed with cylindrical sides, joined to heads 24 and 25 by means of bolts 26, passing between lugs on the heads 24 and 25 and into annular bands 27, attached to the sides of the reservoir. The reservoir is held rigidly midway of the frame and above the same by means of trusses 28, rising from the sides of the frame and rigidly secured thereto. The top head 24 of the reservoir has a central opening surrounded by a flange 29, having an annular groove formed in its outer face. The opening in the head 24 is normally closed by a plate 30, held down by a hand-screw 31, working in a yoke 32, the ends of which engage in the groove of the flange 29. The reservoir 23 also has a pressure-gage 33, indicating the amount of pressure in the reservoir. The head 25 tapers downward on the principle of a funnel and has a transversely-elongated lower extremity provided with a series of transversely-alined outlet-tubes 34, each of which is normally closed by a valve 35, which valves are attached to stems 36, located within the reservoir and guided by a frame 37, secured in the head 25. A rock-shaft 38 runs transversely through the head 25 and carries a series of arms 39, respectively connected with the valve-stems 36. One end of the shaft 38 projects beyond the corresponding truss 28 and carries a crank-arm 40, to which a link 41 is adjustably connected, said link

having a cranked connection with a spur-gear 42, mounted on a spur-shaft carried by the frame and meshing with the driving-spur 18. By these means the arms 39 are raised
 5 upward to simultaneously lift the valves 35, whereupon the stock within the reservoir 23 may be expelled through the tubes 34.

The candy-stock is forced from the reservoir by air-pressure continually maintained
 10 within the reservoir. This pressure is produced by a pump shown in detail in Fig. 7 and consisting in a cylinder 43 with an open upper head 44 and a valved lower head 45. Moving within the cylinder 43 is a piston 46,
 15 having a rod 47 pivotally connected therewith. The lower edge of the piston 46 has a rabbit-groove containing a suitable packing-ring 48, held rigidly in place by a plate 49, bolted or otherwise rigidly secured to the
 20 lower face of the piston 46. The piston-rod 47 is pivoted to a link 50, that runs upward and has cranked connection with the gear-wheel 18. By these means the piston 46 is reciprocated within the cylinder 43 and air
 25 compressed within said cylinder. The air from the cylinder 43 passes through a check-valved pipe 51 to a container or trap 52, that is rested on the floor beneath the frame of the apparatus. From the container or trap 52 a
 30 pipe 53 passes upward to the upper portion of the reservoir 23. The pipe 53 has a reducing-valve 54, by which the air is made to enter the reservoir 23 under pressure reduced over that which characterizes the presence of
 35 air in the container or trap 52. A pressure-gage 55 is in connection with the container or trap 52, whereby to indicate the pressure therein. By this construction I am able upon
 40 the rising of the valves 35 to simultaneously force through the tubes 34 a number of globules of candy-stock.

The candy-stock forced from the reservoir 23 will be deposited upon a web of paper unwound from a roll 56. The roll 56 is supported transversely at one end of the frame
 45 by means of brackets 57. The roll 56 is driven by means of a sprocket-chain 58, running over a sprocket-wheel 59, connected with the roll, and over a sprocket-wheel 60, attached to the shaft of the adjacent roller
 50 10. At the end of the frame opposite to the roller 56 an extension-table 61 is held rigidly in line with the normal position of the upper run of the belt 12. The inner edge of the table 61 bears snugly against the adjacent roller
 55 10, as illustrated best in Fig. 3. The web of paper from the roll 56 passes over the belt 12 and over the extension-table 61. The paper

is cut in desired sizes by means of two blades 62 and 63. The blade 63 is carried rigidly
 60 by the table 61 and is seated in a transverse slot formed in said table. The blade 62 is carried by a back bar 64, that runs above and parallel with the blade 63 and has its ends
 65 respectively sliding in vertical guides 65. Expansive springs 66 press the bar 64 upward; but the bar 64 and its attached blade may be periodically drawn down by a treadle
 70 67, operated through the medium of a rod 68, that runs upward to a horizontal bar 69, the ends of which are in turn connected by links
 75 70 with the ends of the bar 64. By these means an attendant standing at the treadle 67 may cut the paper into sheets of any desired size, so that the paper, with the candy-
 80 stock thereon, may be taken away to a convenient place for the drying of the stock and so that the paper may, if desired, serve as a means for holding the candy-stock when the
 85 same is shipped for the market.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination with a frame, of a drive-shaft, a cam on the drive-shaft, a table raised
 85 and lowered by the cam and held by the frame, a reservoir above the table and having a plurality of outlets, valves controlling the outlets, a rock-shaft mounted in the reservoir, means in connection with the rock-
 90 shaft by which the valves may be operated, a gear-wheel fixed to the drive-shaft, a second gear-wheel meshing with the first gear-wheel, a connection between the second gear-wheel and the rock-shaft to operate the lat-
 95 ter, a pump driven from the first-named gear-wheel, a container charged from the pump and delivering to the reservoir, a belt-carrying roller mounted in the frame, a third gear-wheel meshing with the first-named
 100 gear-wheel, and a connection between the third gear-wheel and the belt-carrying roller by which the roller is driven.

2. In a candy-machine, the combination with a frame, of a reservoir, a valve in the
 105 reservoir, means for periodically operating said valve, an air-pump, gearing operating the air-pump in unison with the said means for operating the valve, and a container charged by the air-pump and having com-
 110 munication with the reservoir, whereby to maintain fluid-pressure within the reservoir.

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Witnesses:

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