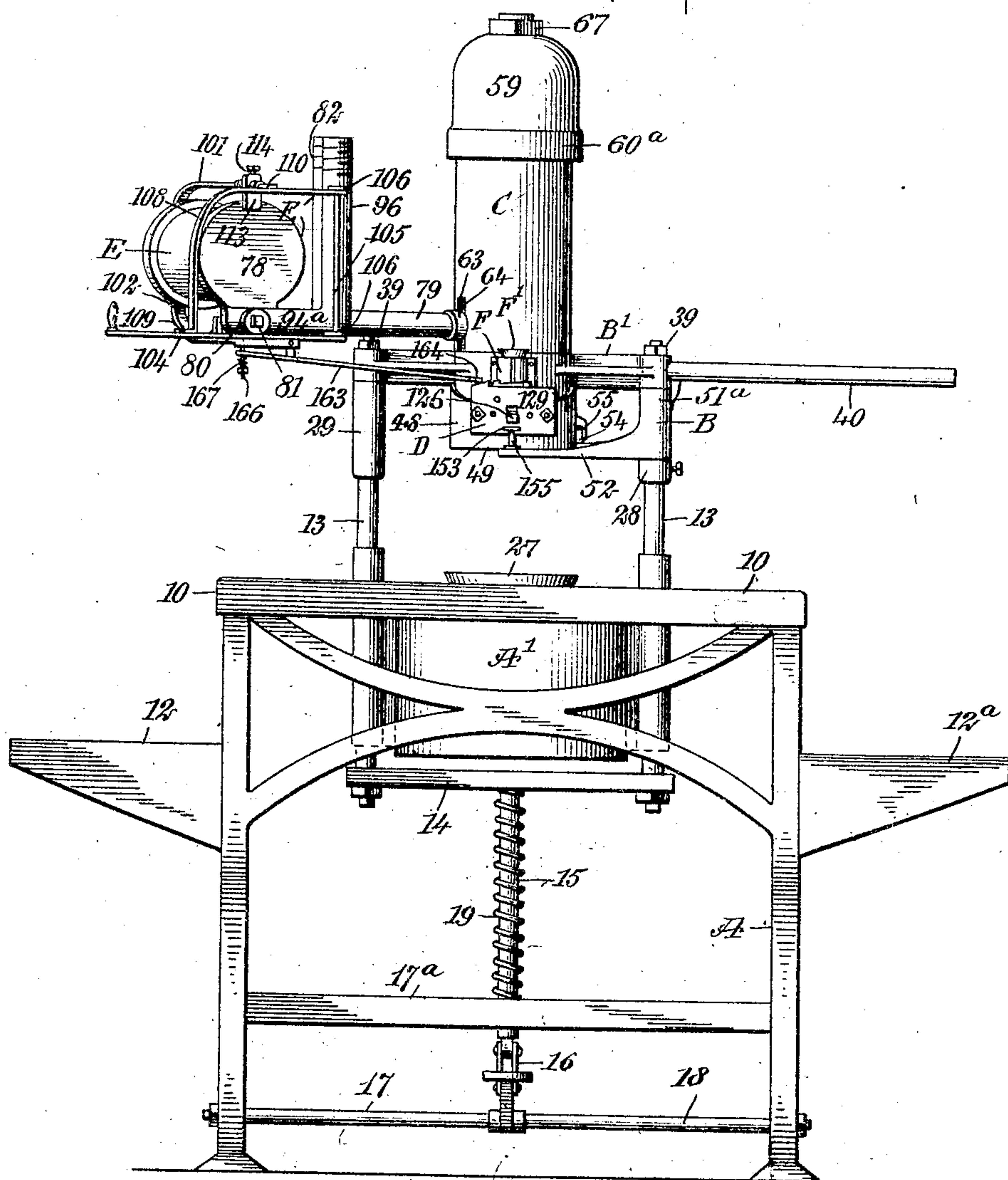


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FIG-1.



WITNESSES

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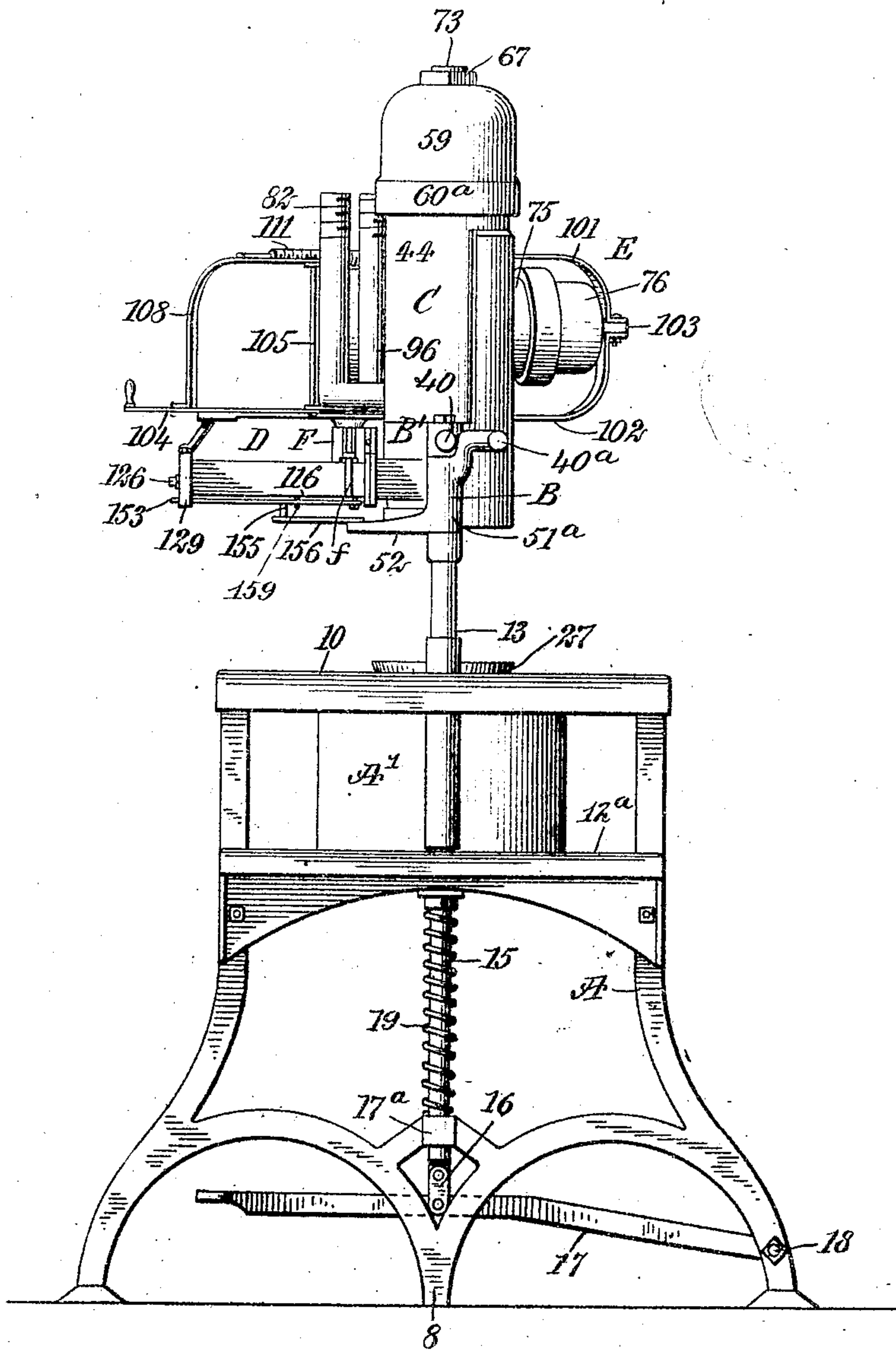
ATTORNEYS

L. LITTY.
FILLING AND CROWNING MACHINE.
APPLICATION FILED JULY 3, 1908.

951,736.

Patented Mar. 8, 1910.
6 SHEETS—SHEET 2.

Fig. 2.



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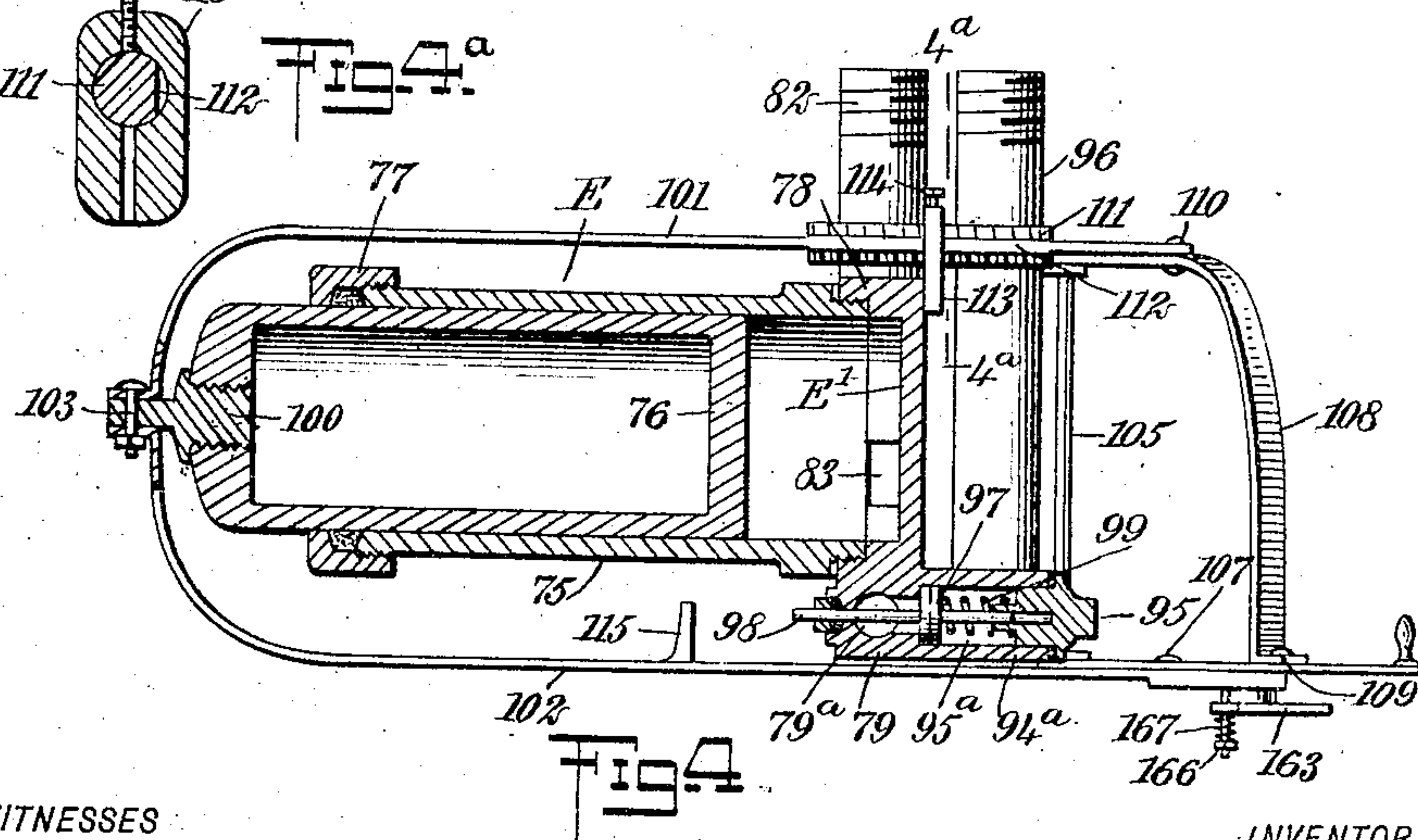
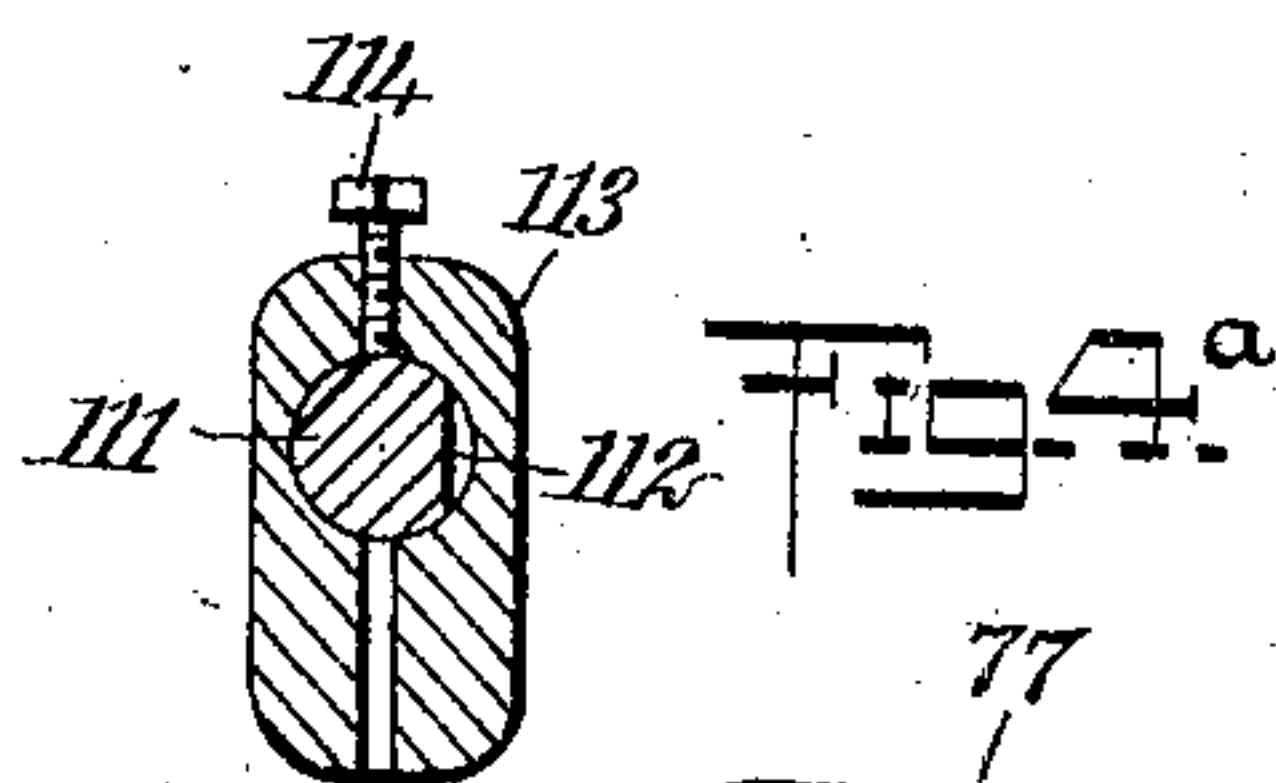
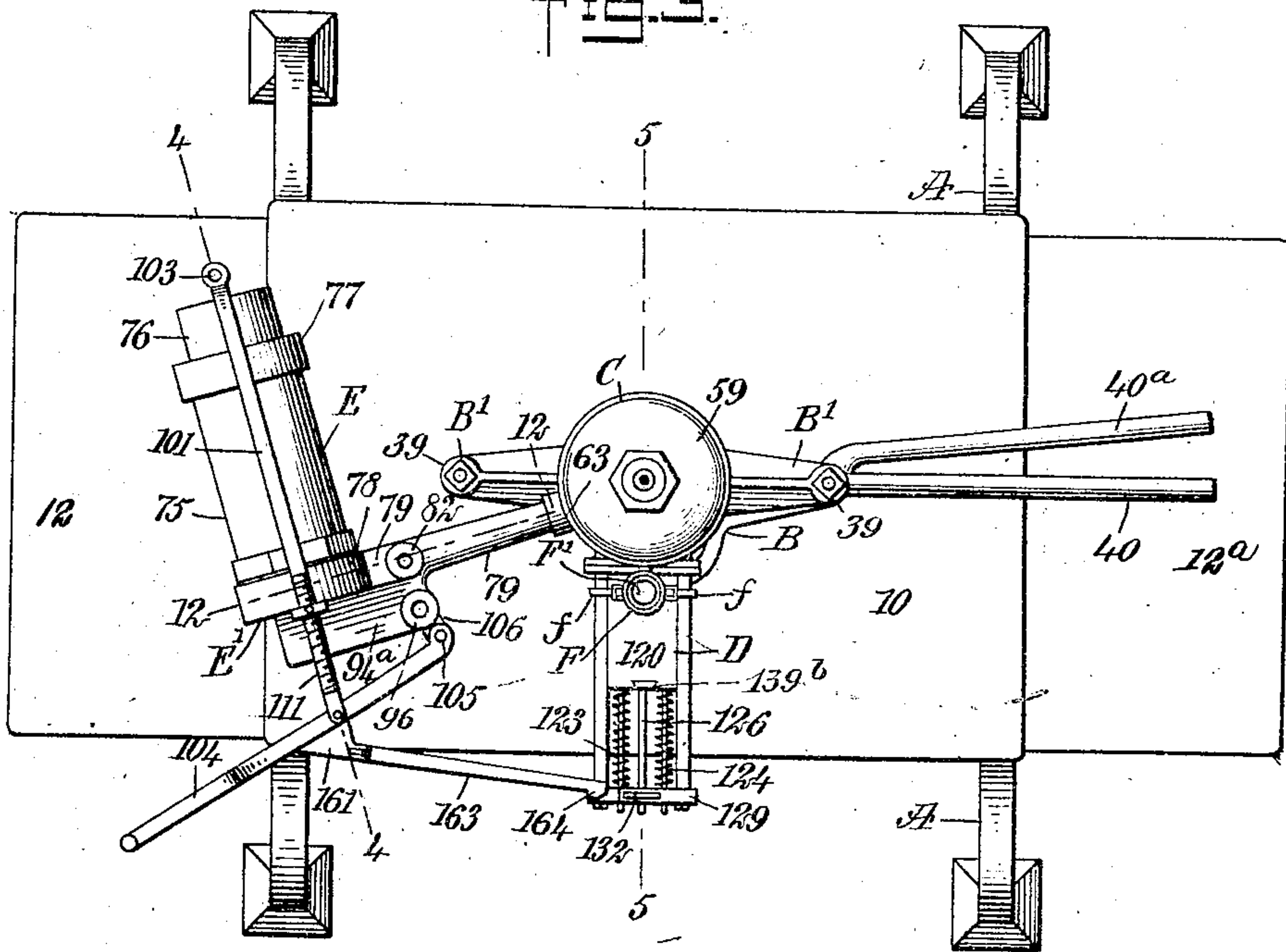
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Fig. 3.



WITNESSES

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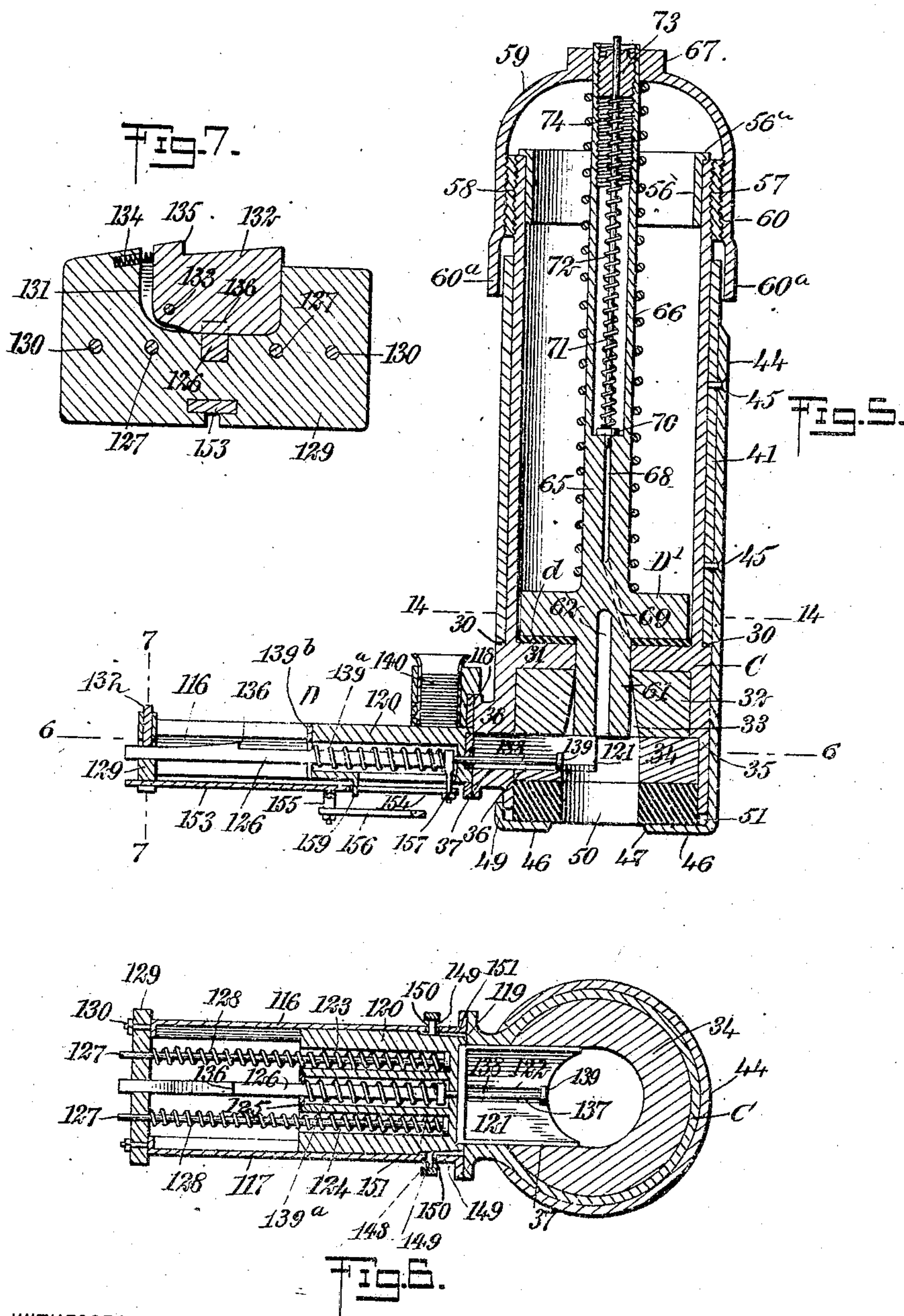
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Patented Mar. 8, 1910

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WITNESSES

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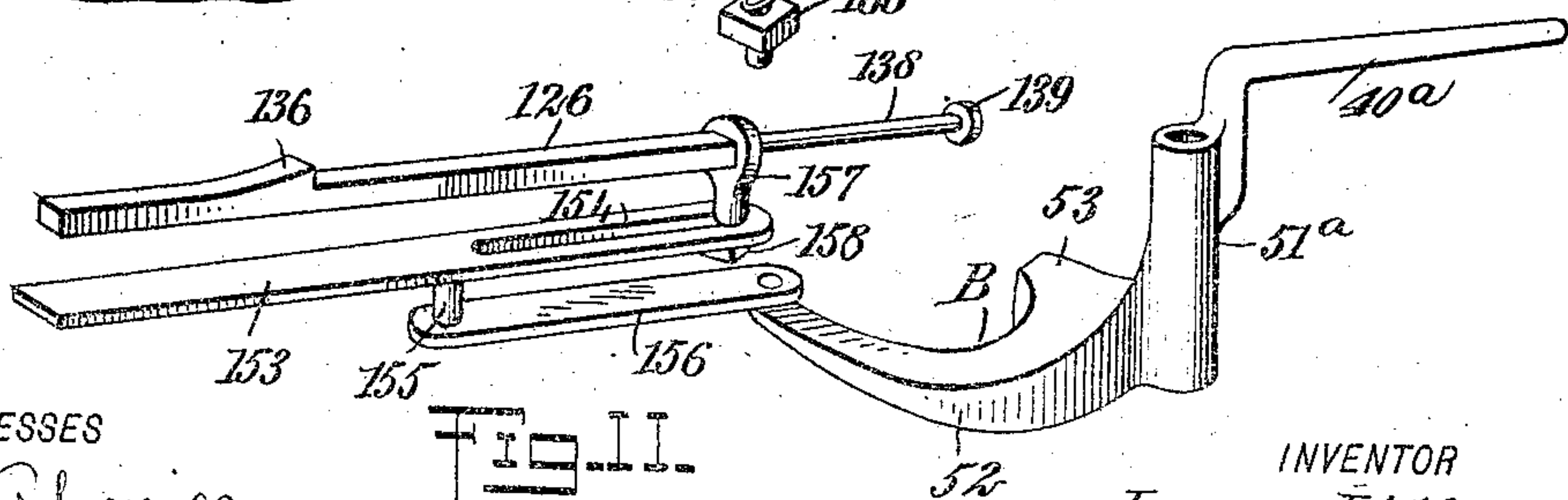
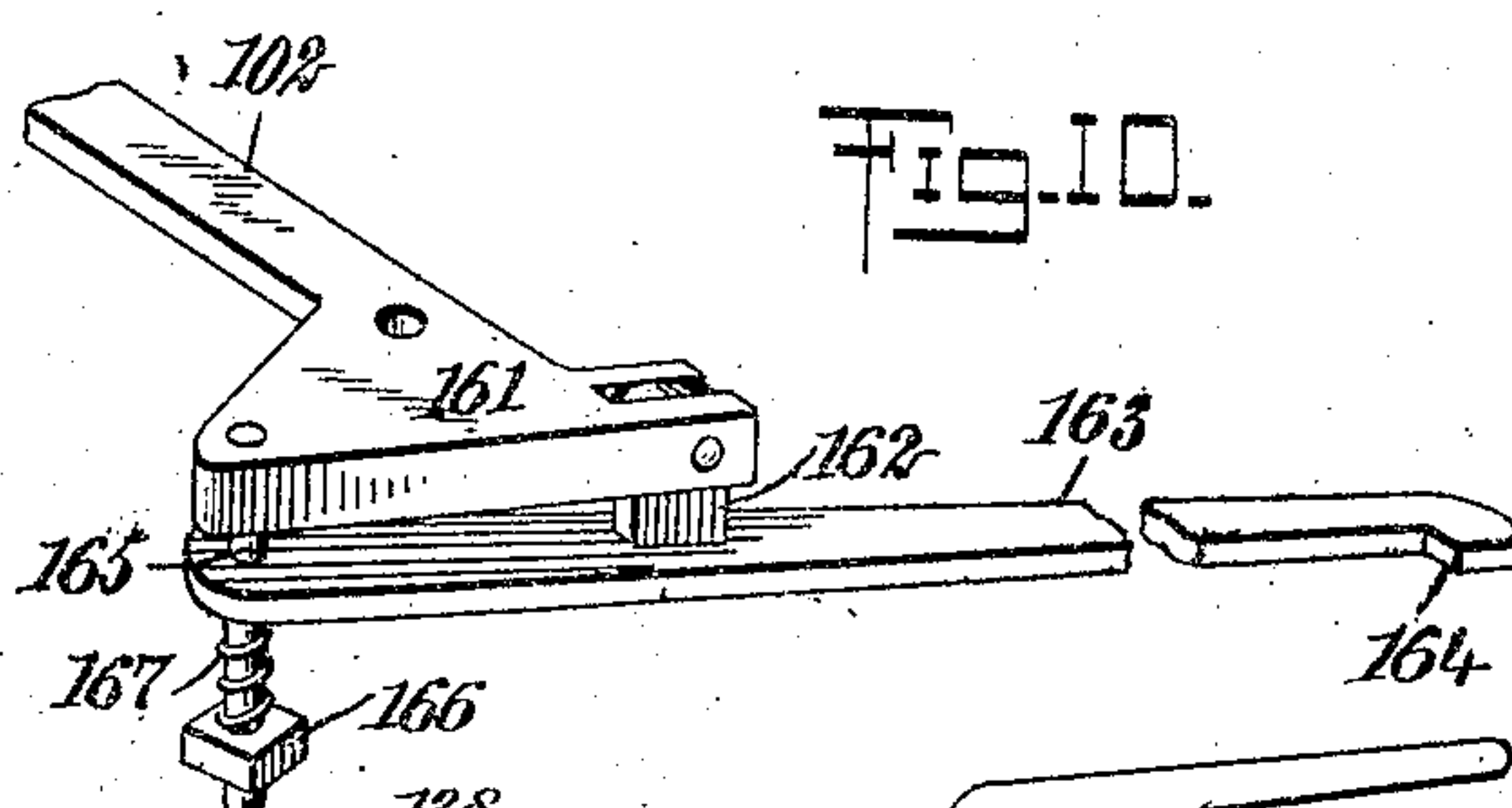
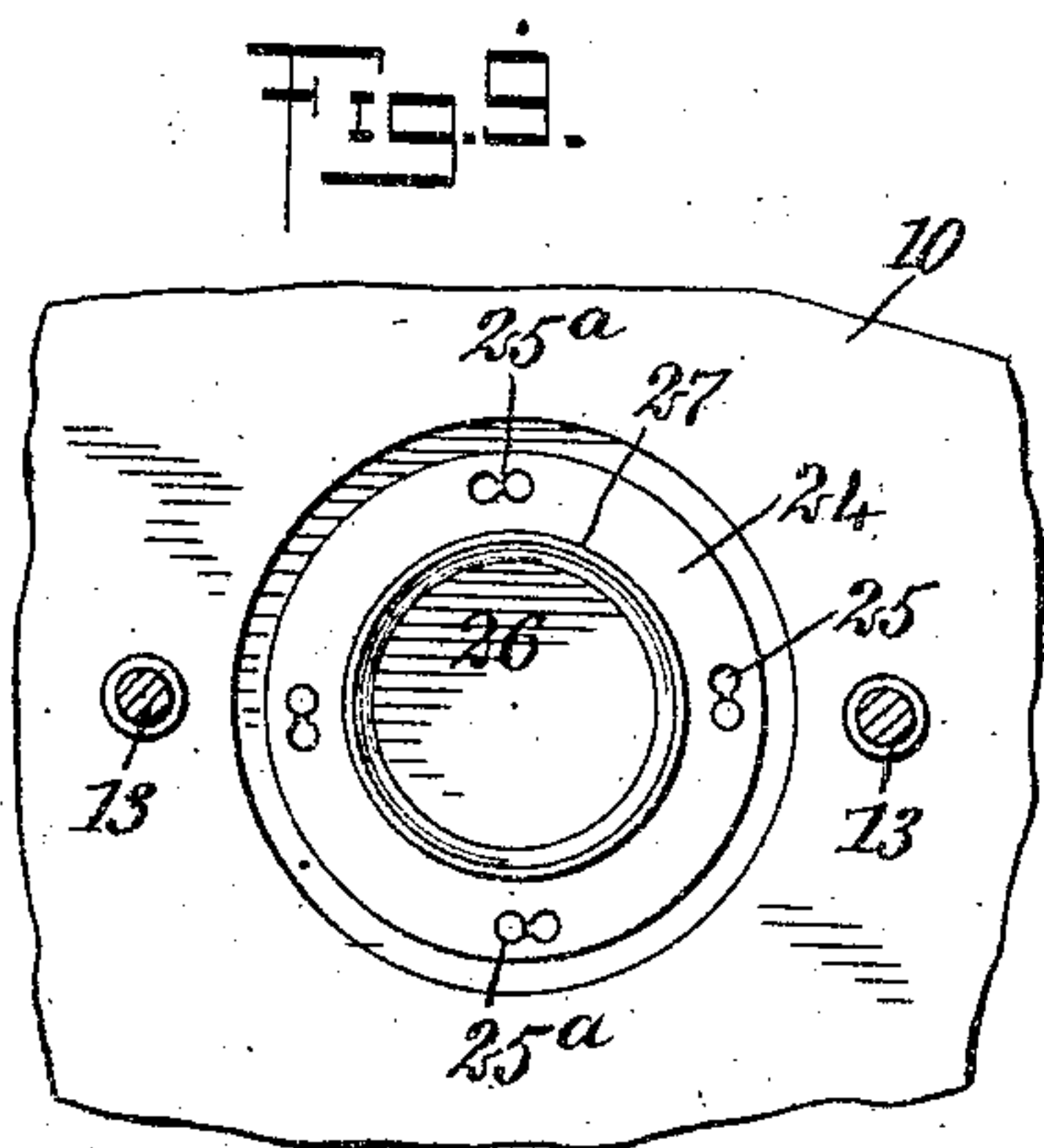
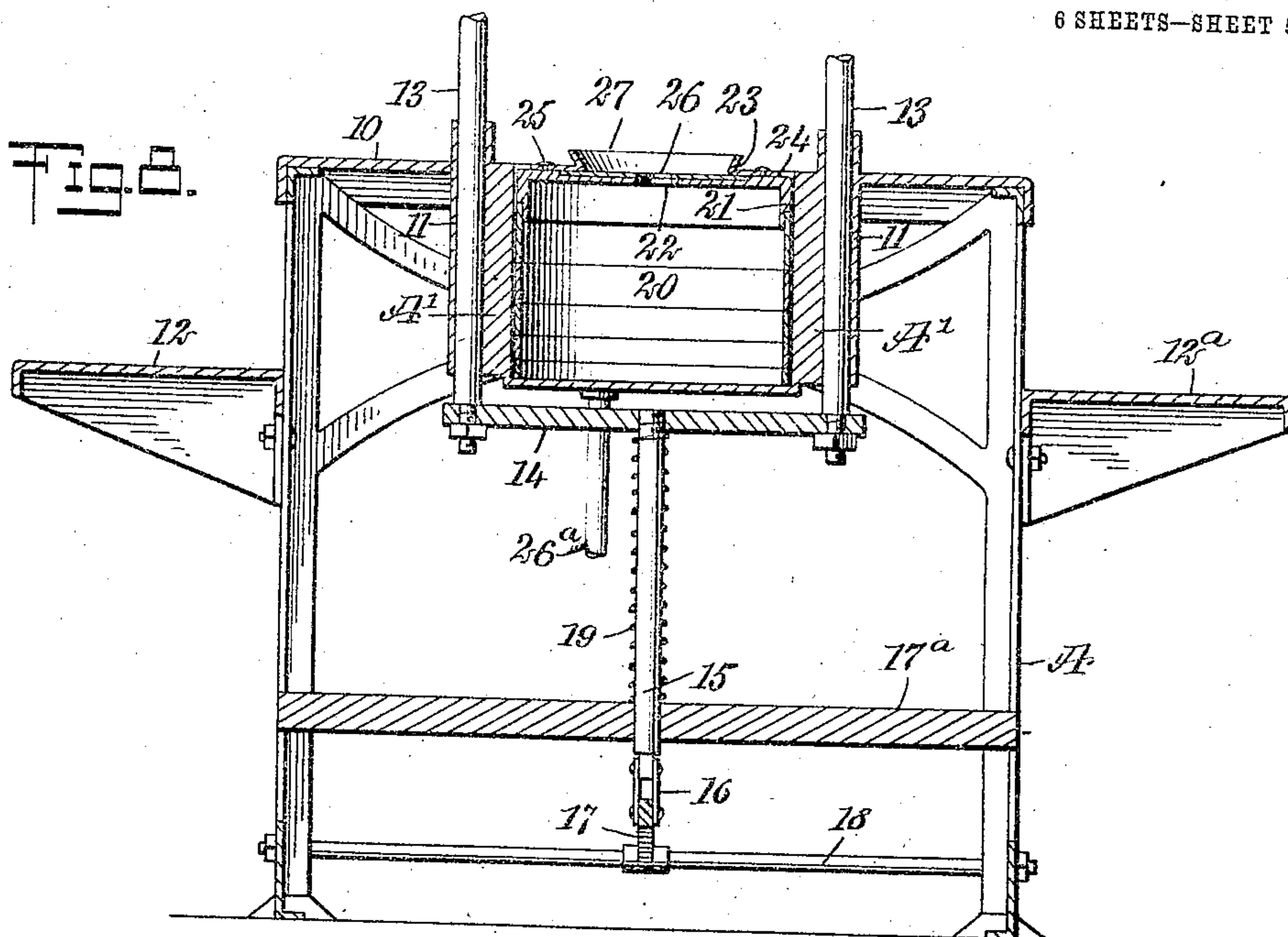
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6 SHEETS—SHEET 5.



WITNESSES

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Fig. 11.

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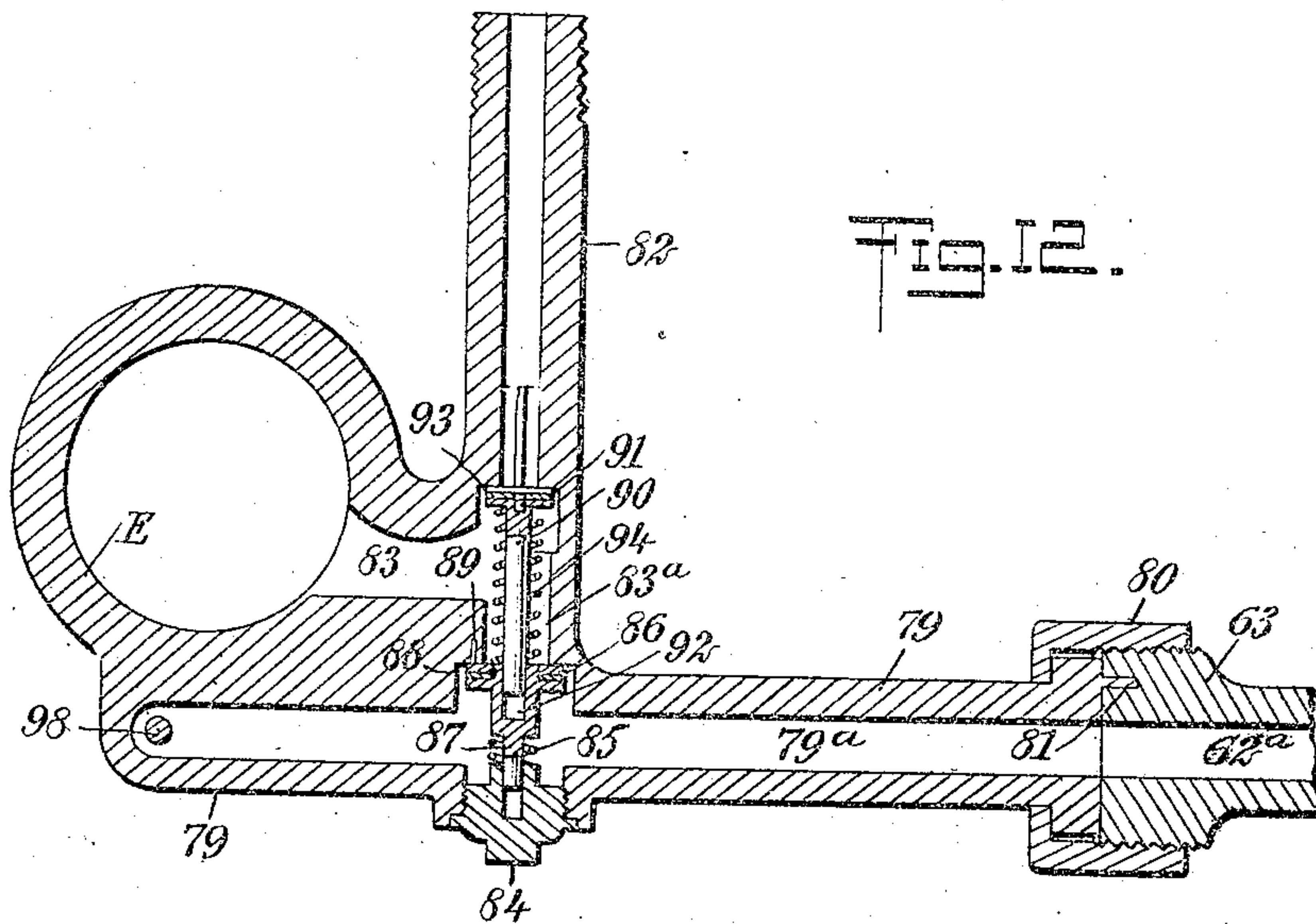


Fig. 12.

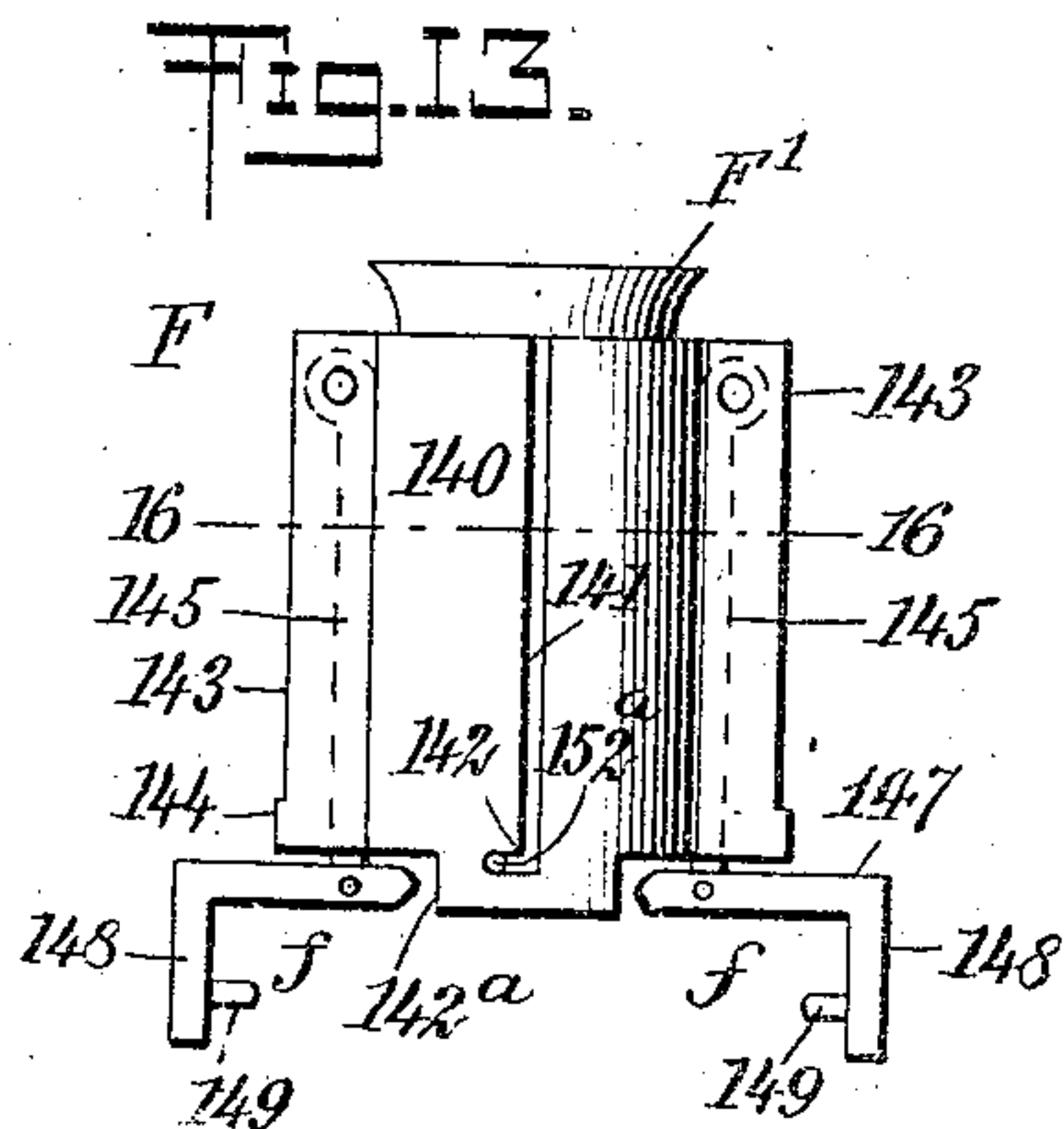


Fig. 13.

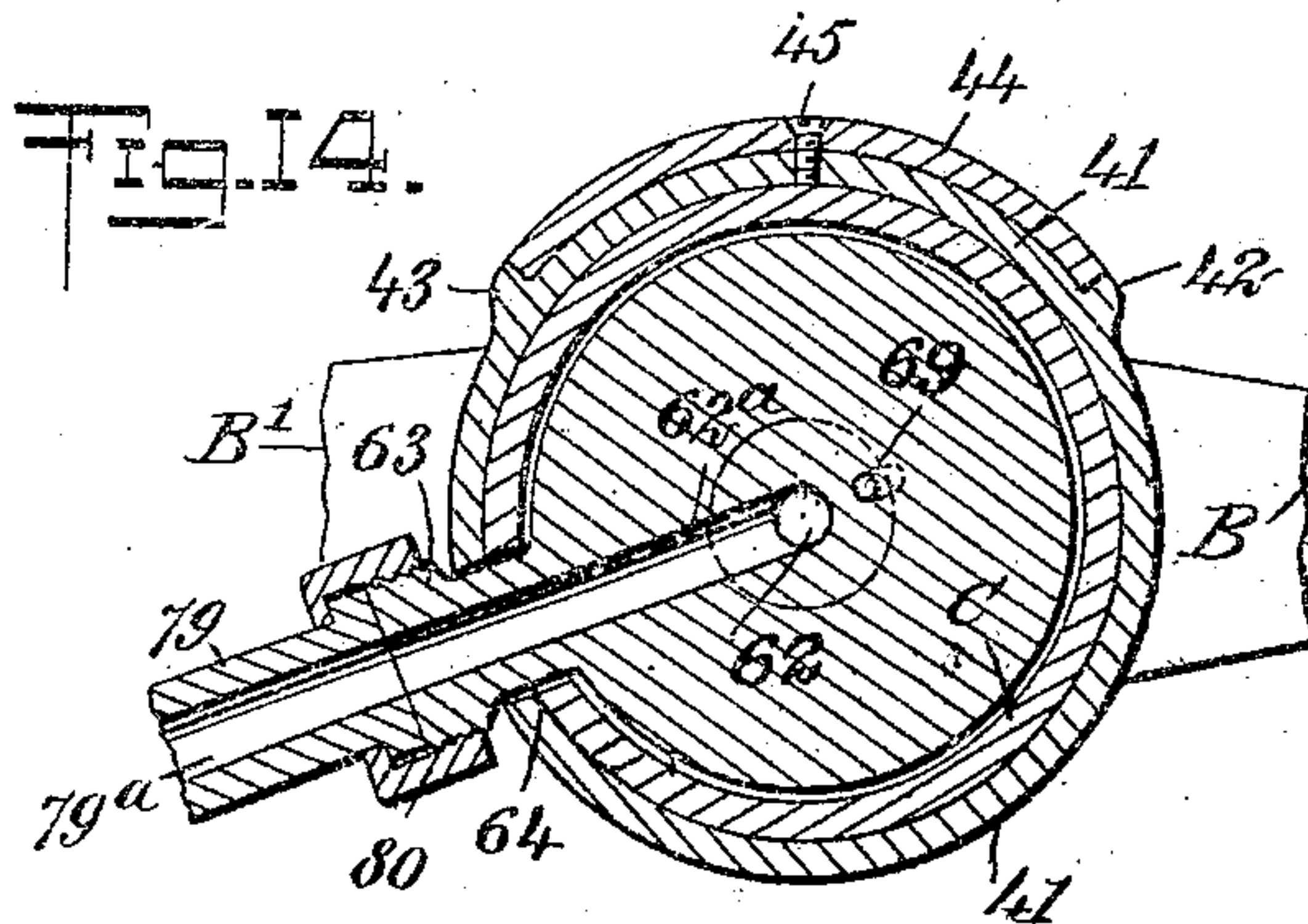


Fig. 14.

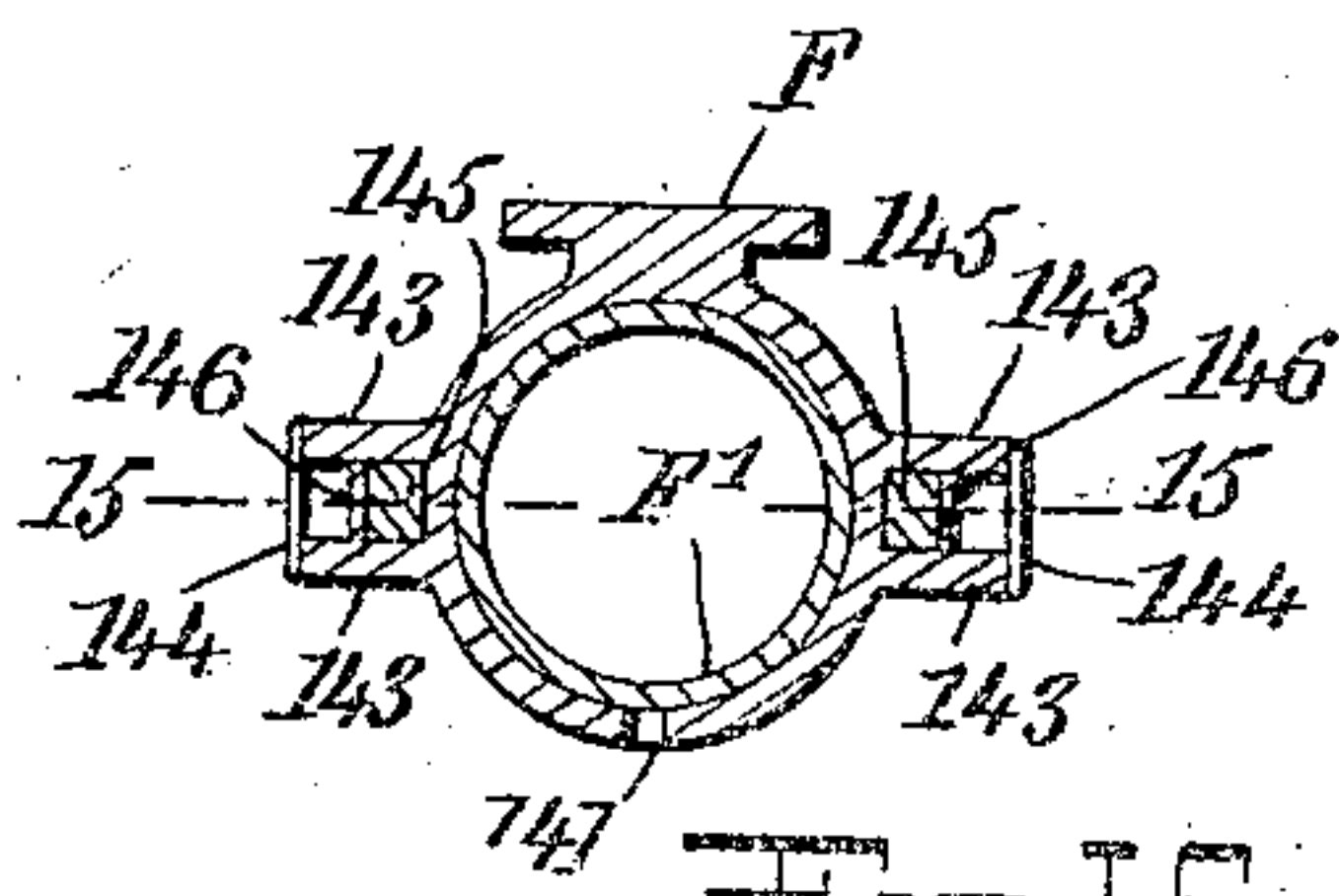


Fig. 16.

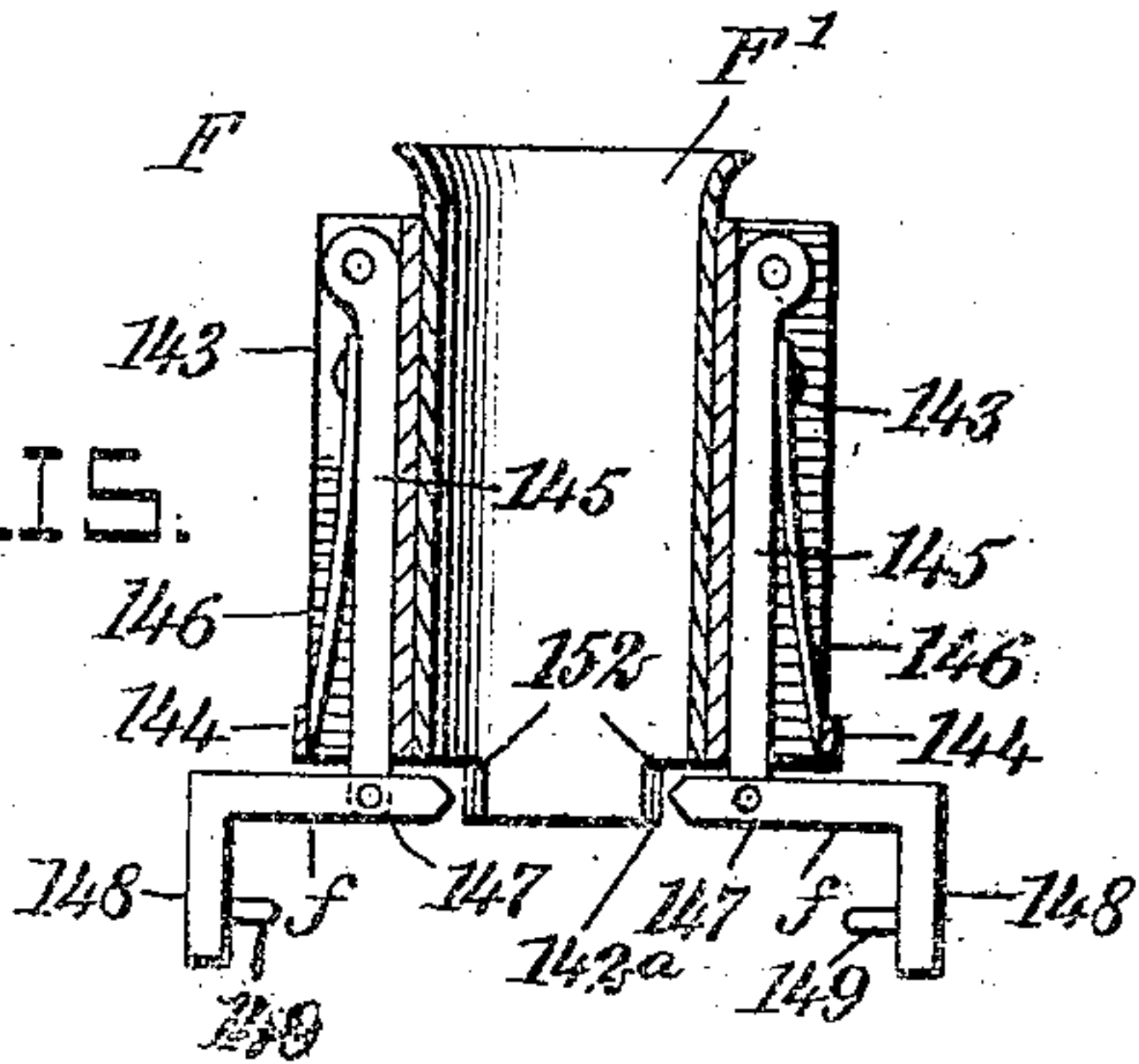


Fig. 15.

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UNITED STATES PATENT OFFICE.

LUCAS LITTY, OF BATON ROUGE, LOUISIANA.

FILLING AND CROWNING MACHINE.

951,736.

Specification of Letters Patent.

Patented Mar. 8, 1910.

Application filed July 3, 1908. Serial No. 441,775.

To all whom it may concern:

Be it known that I, LUCAS LITTY, a citizen of the United States, and a resident of Baton Rouge, in the parish of East Baton Rouge and State of Louisiana, have invented a new and Improved Filling and Crowning Machine, of which the following is a full, clear, and exact description.

The purpose of the invention is to provide a bottling machine that can be adjusted to receive bottles of different heights, and wherein by the operation of hand and foot levers or their equivalents, a charging cylinder can be brought into air-tight engagement with the bottle to be filled, and a gaged quantity of carbonated syrup or liquid of any description be delivered to the discharging cylinder and from thence to the bottle or other receptacle placed to receive it, and wherein further in the continuous operation of the machine, and while the bottle is being filled, a cap is placed in position to be carried over the mouth of the bottle, and when the bottle has received its complement of material the cap is carried over the mouth of the bottle and is crimped or clamped to the neck.

It is also a purpose of the invention to construct a machine of the character described, that will require comparatively few parts in its construction, and which parts are of such nature as not to readily get out of order.

The invention consists in the novel construction and combination of the several parts as will be hereinafter fully set forth and pointed out in the claims.

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 front elevation of the improved machine; Fig. 2 is a side elevation of the same; Fig. 3 is a plan view thereof; Fig. 4 is a longitudinal section through the syrup gage, on the line 4—4 of Fig. 3; Fig. 4^a is a detail section taken practically on the line 4^a—4^a of Fig. 4; Fig. 5 is a vertical section through the charging and capping cylinder, the section being taken practically on the line 5—5 of Fig. 3; Fig. 6 is a section taken practically on the line 6—6 of Fig. 5; Fig. 7 is an enlarged vertical transverse section through the cap fitting mechanism, taken practically on the line 7—7 of

Fig. 5; Fig. 8 is a vertical section through the base portion of the machine and the well; Fig. 9 is a detail plan view of the top of the table where the bottle supporting well is located, and a section through the operating rods for the capping and charging cylinder; Fig. 10 is a detail perspective view of a portion of the device for operating the cap delivering mechanism at a period in the operation of the liquid delivering mechanism; Fig. 11 is a detail perspective view of the lever arm for lifting a portion of the charging and capping cylinder when the neck of the bottle is received therein, and a mechanism for the delivery of a blank cap in position to be carried over the mouth of a bottle; Fig. 12 is a vertical section through the syrup gage and its connections with the charging cylinder, the section being taken practically on the line 12—12 of Fig. 3; Fig. 13 is a side elevation of the receptacle for holding the blanks for the caps; Fig. 14 is a transverse section taken practically on the line 14—14 of Fig. 5; Fig. 15 is a vertical section through the cap receptacle taken substantially on the line 15—15 of Fig. 16; and Fig. 16 is a transverse section through the cap receptacle taken practically on the line 16—16 of Fig. 13.

A represents a skeleton pedestal upon which the machine proper is mounted. This pedestal is provided with a table 10 formed at its upper portion and secured thereto in any suitable or approved manner, and at the central portion of the said table, as is illustrated best in Figs. 8 and 9, a downwardly extending well A' is formed of circular construction, and in opposing sides of the said well A', vertical openings 11 are produced (see Fig. 8), and at opposite sides of the said pedestal A, shelves 12 and 12^a are located, adapted, one for example, to receive the bottles to be filled, and the other the bottles that have been filled. Rods 13 move freely in the aforesaid openings 11 in the well A, as is clearly shown in Fig. 8, and these rods at their lower ends are connected by a cross bar 14, and this cross bar 14 has attached thereto a downwardly extending rod 15 that is connected by a link 16 at its lower end, or by other means, with a foot lever 17, the connection being between the center and the forward end of the said foot lever, and the said foot lever is pivoted at its rear end upon a rod 18 that preferably extends from side to side of the pedestal, as is illustrated in

Figs. 1 and 8. A spring 19 is coiled around the aforesaid rod 15, having bearing against the under face of the cross bar 14 and against a cross bar 17^a that extends from side to side of the pedestal at its central portion, as is shown in Fig. 8.

The well A' is adapted to receive a series of rings 20 that are placed one upon the other, and the rings 20 are of such diameter that they engage with the inner side face of the said well, as is shown in Fig. 8, and an annular downwardly flanged cap plate 21 is located upon the uppermost ring, being provided with an opening 22 in its center leading into the said well, and in a recess on the upper face of the cap plate 21, a washer 23 is located, of rubber or leather, and a ring 24 is removably attached to the upper face of the cap plate 21, which upper ring 24, which is the receiving ring for the base or bottom of the bottle to be filled, is provided with a centrally located annular flange 27 that is flared outward and in the said upper ring at its center an opening 26 is made adapted to register with the opening 22 in the cap plate 21, as is also shown in Fig. 8. These upper bottle receiving plates 24 are made removable in order that the receiving rings may be changed according to the character and the diameter of the bottle to be filled. Any approved fastening device 25 may be employed for securing the bottle receiving rings upon the cap plate 21 carried by the well, but ordinarily the said bottle receiving ring 24 is provided with connected openings 25^a, as is shown in Fig. 9, to receive headed pins extended up from the cap plate 21; but set screws may be employed for the purpose if so desired. The object in providing the series of rings 20, is to increase or decrease the distance between the cap plate 21 and the bottom of the well, so as to accommodate the machine to bottles of different lengths and heights. Any liquid that may flow down the side of a bottle that is being filled, will pass into the well through the registering openings 22 and 26, and will find its way from the well through a suitable outlet pipe 26^a leading wherever desired.

On the right-hand movable rod 13 between that portion which extends above the table and the top, a collar 28 is preferably adjustably secured, and a second collar 29 is similarly attached to the left-hand or opposing rod 13, as is shown in Fig. 1, the collar 29 extending nearest to the upper end of the rod to which it is attached. A shifting lever B is mounted to turn upon the right-hand rod 13, having bearing against the collar 28, as is shown in Fig. 1, and a cross head B' receives the upper end portions of the said rods 13, one end of the cross head resting upon the collar 29 and the other upon the upper end of the lever B, as is also shown in Fig. 1. This cross head is attached to and

carries at its central portion a charging and capping cylinder C. This charging and capping cylinder C is reduced in diameter from a point near its lower end to its upper end, thereby producing an exterior shoulder 30, as is illustrated in Fig. 5, and is provided at its shouldered portion with an interior partition 31 having a central opening produced therein, and below this partition 31, a ring die 32 is fitted into said cylinder, the opening 33 in which die is conical, being widest at its bottom, and usually has its wall corrugated, but said wall may be plain.

A ring 34 is located beneath the die 32, tending mainly to support said die, and the said ring 34 fits at its upper face against an interior shoulder 35 produced in the aforesaid cylinder C, as is also shown in Fig. 5. This packing ring 34, as it may be termed, is provided at its forward portion with a slot or opening 36 that is preferably rectangular in general formation, and said opening connects with a correspondingly shaped opening 37 in the front lower portion of the cylinder C, which latter opening 37 is surrounded by a suitable sleeve or collar 38 whereby to effect a connection between the charging and capping cylinder C, and a cap distributing mechanism to be hereinafter described. The cross head B' is held in place on the rods 13 by means of suitable nuts 39, as is best shown in Fig. 1. It will thus be observed that when the foot lever or treadle 18 is pressed downward, the cylinder C is carried in the same direction. The cross head B' is provided with a handle 40 rigid therewith and preferably horizontally extending outward from its right-hand end.

A loose jacket 41 is provided for the exterior of the cylinder C, which jacket at its lower end rests upon the shoulder 30, and the said jacket extends up nearly to the upper end of said cylinder, as is shown in Fig. 5, and on this jacket at each side of the rear central portion, longitudinal ribs 42 and 43 are formed, as is illustrated in Fig. 14, and between these ribs and bearing against the said jacket, a segmental member 44 is located, as is shown in Figs. 2 and 14, and likewise in Fig. 5, and this member 44, which may be termed a compressing member, is secured to the jacket 41 by screws 45, or their equivalents, and this compressing member 44 is annular at the lower portion of the cylinder and is provided with a bottom portion 46 in the form of an inwardly extending ring-like flange, as is shown in Fig. 5, the opening 47 in the bottom 46 of the said compressing member 44 being of larger diameter than the greatest diameter of the opening 33 in the die 32.

In forming the lower annular portion of the compressing member 44, it is carried from the back around to the sides, as is shown in Fig. 1, at 48, and the forward por-

tion of the annular section of the compressing member 44 is quite narrow, as is illustrated at 49 in Figs. 1 and 5. The bottom section 46 of the compressing member 44 is adapted to receive a gasket 50 preferably made of rubber, and this gasket 50 rests between the bottom 46 and the under face of the ring 34, as is illustrated in Fig. 5. A space 51 is provided between the lower edge of the cylinder C and the bottom 46 of the compressing member 44, and when the cylinder C is carried downward to bring the opening in the gasket 50 around the neck of the bottle at its mouth, preparatory to filling, the lever B is brought into action to force the compressing member 44, and the sleeve 41 to which it is attached, upward so as to bring the gasket 50 under compression and cause it to close around the neck in an air-tight manner. The member accomplishing this result is illustrated in detail in Fig. 11, and consists of a tubular body portion 51^a that is mounted on the right-hand operating rod 13, and a foot 52 is curved forwardly and in direction of the left-hand side of the machine. This foot 52 is provided where it connects with the body 51^a with a rearwardly extending projection 53 whose upper face is upwardly and rearwardly inclined. The lever B has a handle 40^a attached to its body portion 51^a and the handle 40^a extends outward adjacent to the handle 40 that is rigid with the cross head B', as is illustrated in Fig. 3, so that by pressing the handle 40^a in respect to the handle 40 the shifting lever B is operated. In connection with this lever B, a downwardly extending arm 55, shown in Fig. 1, is attached to the circular lower portion of the compressing member 44 carried by the cylinder C, and between said arm and said member a roller 54 is mounted to revolve, and as the lever B is moved forward this roller travels up the inclined face of the projection or extension 53 from the foot of said lever and causes the said compressing member 44 to be elevated relatively to the cylinder, as the cylinder itself is lowered to such extent as to bring the gasket 50 under quite severe compression.

A reinforcing band 56 is provided for the upper interior portion of the cylinder C, having an outwardly extending flange 56^a bearing upon the upper edge of the cylinder. The exterior of the said cylinder C at its upper end portion is provided with a thread 57, and an exteriorly and interiorly threaded sleeve 58 is located at the threaded portion 57 of the said cylinder, as is shown in Fig. 5, and the upper end of the cylinder is closed by an adjustable bell top 59 having an interior thread 60 adapted for engagement with the exteriorly threaded surface of the sleeve 58, whereby the said bell top may be adjusted upward and downward on

the cylinder. The lower end 60^a of the said bell top 59 is of sufficient diameter to clear the outer face of the sleeve 41 loosely mounted on the cylinder. A piston D' is mounted to slide in the said cylinder to and from the partition 31 as is also shown in Fig. 5. The said piston D' rests upon a suitable packing or gasket *d*. This gasket *d* has an opening in its center and through this opening a downwardly extending member 61 is carried from the central portion of the piston D' through the opening in the partition 31 and likewise into the opening 33 of the die 32. This member 61 of the piston D' is circular in cross section and is provided with an opening 62 that extends from its lower end into the said piston and through the said piston, as is shown at 62^a in Fig. 14, out to the end of a tubular extension 63 from the piston, which tubular extension 63 is free for vertical movement in an opening 64 produced in the cylinder and in the jacket or sleeve 41 surrounding it, as is also shown in Fig. 1.

The piston D' is provided with a stem 65, the upper portion 66 whereof is tubular, and this stem extends up and out through a polygonal projection 67 at the upper central portion of the bell top 59 of the cylinder. An air vent 68 is longitudinally produced in the lower or solid portion of the piston rod or stem 65, and this vent 68 meets a second vent 69 that extends diagonally down through the piston D' to its lower member 61, as is shown in dotted lines in Fig. 5, so that when the cylinder moves downward for the purpose of filling a bottle, the air in the cylinder will find an escape through the ports 68 and 69 into the tubular portion 66 of the piston rod and out therefrom at the upper portion of the bell top 59. But in order to prevent air from finding its way into the said vents 68 and 69, a valve 70 is properly seated over the upper end of the vent 68 in the lower portion of the tubular section 66 of the piston rod, as is shown in Fig. 5, and the stem 71 of this valve 70 extends up loosely through a plug 73 that is screwed into the upper end of the said tubular section of the piston rod, as is also shown in Fig. 5, so as to place under more or less compression a spring 72 that encircles the said valve stem 71. The valve stem 71 passes so loosely through the plug 73 as to permit the escape of any air that may be in the tubular section of the piston. A spring 74 is made to encircle the rod of the piston D', and the said spring has bearing on said piston and against the upper portion of the bell top 59, thus when the piston D' is forced upward it will place the spring under tension and when pressure on the piston is relieved the spring 74 will return the piston to its normal position. In the operation of this portion of the device the bottle is placed

upon the receiving plate 24 located over the well A' and within the flange 27 of the said plate then by pressing down upon the foot lever 18 the cylinder C is carried downward until the mouth portion of the bottle has been received within the elastic gasket 50, then the handle 40^a is brought toward handle 40, causing the said gasket to close around the neck of the bottle in an air-tight manner, as has been stated. A supply of liquid, carbonated or otherwise, is then turned on from the receptacle to be next described, and the supply of liquid enters the passages 62 and 62^a and is delivered to the interior of the bottle, since the bottle at that time will be practically in engagement with the lower end of the lower extension from the piston. During this portion of the operation the mechanism D, also to be hereinafter more particularly described, is brought into operation to bring a blank cap in position to be forced over the mouth of the bottle. When the bottle has been filled, the supply of liquid is cut off and the blank placed in the aforesaid position will be carried over the mouth of the bottle, whereupon by pressing farther down on the foot lever or treadle 17, the cylinder is carried farther downward and the lower end of the lower extension 61 of the piston D' will then bear upon the top of the blank, holding it in place, and the cylinder continuing its downward course will cause the opening 33 in the die 32 to pass over the edge of the blank and crimp or bind the said edge to the neck of the bottle at the mouth.

The syrup gage is designated in its entirety as E, and this portion of the device is adapted to gage the amount of syrup that is to be mixed with the carbonated water that is to be supplied to the cylinder C. This syrup gage consists of a cylinder 75, open at both of its ends, and in which a piston 76, preferably hollow, is mounted to slide, and the said piston 76 extends out beyond the outer end of the said cylinder, which outer end of the cylinder carries a suitable gland 77 for said piston. The inner end of the cylinder 75 is closed by a casting E'. This casting consists of a head 78 that is screwed upon the cylinder and is provided with a suitable gasket so as to guard against the possibility of leakage. Integral with the said head 78, and at its bottom portion, a delivery member or tube 79 is formed, and the interior 79^a of this delivery tube or member 79 is adapted to register with the channel 62^a that has communication with the channel 62 that extends down through the plunger or piston D' in the cylinder C, and the lower extension 61 of the said plunger or piston. The connection is usually made between these two parts in the manner shown in Fig. 12, wherein a union 80 is employed and one or more pins 81 are made to extend

from the said tube 79, entering suitable recesses in the pipe or sleeve 63, as is also shown in Fig. 12, so as to hold the cylinder 75 and parts carried thereby, perfectly steady, so as to obviate the necessity of extra support therefor extending from the table 10 of the base A.

Between the cylinder 75 and the cylinder C, a pipe 82 is carried upward from the connecting pipe or tube 79, and this upwardly extending pipe 82 is connected in any suitable or approved manner with any source of syrup supply. A port 83 connects the interior of the cylinder 75, between its head 78 and the piston 76, with the said syrup supply tube 82, as is also illustrated in Fig. 12. This port 83 is connected by a branch 83^a, with the bore 79^a of the supply tube 79, as is also shown in Fig. 12. Preferably a threaded opening is made in the supply tube 79 below the branch port 83^a, which opening is closed by a plug 84, said plug being employed to permit the introduction of a valve 86, which valve is provided with a suitable stem 85 that is mounted for sliding movement in the said plug 84, and the valve 86 is held in engagement with a seat 88 produced in the said branch port 83 by means of a suitable spring 87, and a pin 89 is shown carried up from the valve 86, adapted to enter a suitable opening in the valve seat, whereby to guide the said valve in its movement. The valve 86 is provided with a central recess that receives the valve stem 90 of the valve 91, that is located in the syrup supply tube 82 adjacent to where the port 83 connects therewith, as is shown in Fig. 12, the recess in the valve 86 being designated as 92. The valve 91 is normally held against a seat 93 formed in the interior of the said syrup supply tube 83 by means of a spring 94 coiled around its stem 90. Thus normally each valve is seated. When the valve 91 is open, syrup is supplied to the cylinder 75, and when the valve 86 is open, the contents of the cylinder can find its way to the delivery pipe 79.

Where the delivery tube 79 connects with the head 78 of the casting E', a hollow extension 94^a is provided, the extension being in direction of the front of the machine, and is parallel with the said delivery tube 79, as is best shown in Figs. 3 and 4. The chamber 95^a of the said extension 94^a is provided with an opening closed by a plug 95, the said opening being located in the said extension at a point which is practically on a line with the central forward portion of the cylinder 75, as is shown in Fig. 1, and at what may be termed the rear end of the said extension 94^a from the front of the said casing E', a pipe 96 is carried upward, preferably parallel with the pipe 82, and this pipe 96 is adapted to be connected with any source of liquid supply, usually a supply of carbonated

liquid. The chamber 95^a in the extension 94^a is in communication with the bore or interior 79^a of the supply or delivery pipe 79, but such communication is normally cut off by a valve 97, which valve is provided with a suitable stem 98 extending beyond both sides of it, one end having play in the plug 95, the other end being made to cross the interior portion of the supply or delivery pipe 97 and to extend out a suitable distance beneath the cylinder 75, as is shown in Fig. 4, and a spring 99 is coiled around the said valve stem 98 between the plug 95 and the valve 97, and this spring 99 normally holds the said valve seated. Usually a plug 100 is located at the outer end of the piston 76, as is shown in Fig. 4, and the said plug has an outward extension to which the inner ends of two straps 101, 102 are secured by means of a bolt 103, or its equivalent, one strap 101 being carried over the top of the cylinder 75 and the other strap 102 below the said cylinder, as is also best shown in Fig. 4.

A lever 104 is pivoted at its inner end at the bottom portion of an upright rod 105 that is secured to lugs 106 extending from the extension 94^a and from the liquid delivery pipe 96, as is illustrated in Fig. 1. This lever 104 is pivotally attached at 107 to the forward end of the lower strap 102 between the outer end of the said lever and its pivot point, and an arched strap 108 is secured to the said lever 104 and is carried upward and rearward and is pivoted to the said rod 105, thus completing the pivotal support for the said lever, the point of attachment of the said strap to the said lever being designated as 109 in Fig. 4. This arched strap 108 is attached at its upper, straight portion at 110, to the forward or outer end of the upper strap 101 that extends from the cylinder 75, as is also shown in Fig. 4. This upper strap 101 is provided adjacent to its outer end with a threaded section 111, having a flat face 112 upon which flat face a scale is produced, and an indicating nut 113 suitably threaded, is located on the threaded annular portion 111 of the said strap 101, as is shown in Fig. 4^a, being held in adjusted position by a suitable set screw 114, or its equivalent.

The scale on the flat surface 112 is a scale in ounces, and fractions thereof, and according to the adjustment of the nut 113 on the strap 101 will be regulated the amount of syrup that is to enter the cylinder 75. Thus when the lever 104 is carried outward or to the left, the piston 76 is carried outward into the said cylinder, and creates a vacuum, which will draw down the valve 91 and permit the syrup to enter the said cylinder and the extent of space that the syrup can occupy in the cylinder will be determined by the striking of the said nut 113 against the

head 78 of the cylinder, as is shown in Fig. 4. At this time communication between the cylinder and the delivery tube 79 will be cut off, but when the lever 104 is carried inward and forward the syrup in the cylinder 75 will be pressed out into the port 83, closing the valve 91 and at the same time the valve 86 under the pressure of the returning piston will be opened and the syrup will flow into the delivery tube 79 and find its way to the cylinder 75. Just before the syrup has been entirely forced from the cylinder 75, a projection 115 on the lower strap 102, or the strap beneath the cylinder and connecting with the piston will have engaged the outwardly extending end of the valve stem 98, and will have forced the valve 97 inward, unseating the stem, thus admitting the carbonated water from the chamber 95^a to the delivery tube 97, where it will mingle with the syrup and the sweetened, carbonated liquid will then pass to the cylinder C and will be supplied as has been stated to the bottle or other receptacle placed to receive it.

The crowning or capping mechanism D is best shown in Figs. 5, 6, and 7, and its construction is as follows: Opposing slideways 116 and 117 connected at their inner ends by a head 118 are attached to the cylinder C at the sleeve or collar 38, and the said head 118 connecting the said slideways is provided with an opening 119 corresponding in shape and dimensions to the opening 36 produced in the collar 34 located below the die 32 in said cylinder C, as is particularly shown in Figs. 5 and 6. A block 120 is mounted for movement in the slideways 116 and 117 and this block 120 has a tray 121 secured to its inner face, the said tray being adapted normally to extend into the said opening 36 in the said member 34 of the cylinder C, and the said tray 121 has its inner end rendered segmental so as to conform to the arc of the circular opening in the said ring member 34, as is illustrated in Fig. 6. This tray 121 is provided with a central, longitudinal channel 122, as is also best shown in Fig. 6, which channel is for a purpose to be hereinafter described. The sliding block 120 is provided with three longitudinal chambers, the two outer being designated as 123 and 124, and the central or intermediate as 125. The outer chambers 123 and 124 are open at their outer ends, but the intermediate chamber 125 has but a small opening at its outer end fashioned to receive and permit of the sliding of a plunger rod 126. Rods 127 extend into the said chambers 123 and 124 of the sliding block 120, and these rods 127 are surrounded by coiled springs 128 that have bearing against the inner wall of the said chambers 123 and 124, or against the heads of the rods 127 located at the inner ends, the said cham-

bers and the outer ends of the springs 128 having bearing against a cross bar 129 that connects the slideways 116 and 117 at their outer ends, and the rods 127 pass out through said cross bar. The said cross bar 129 is secured to the slideways by means of bolts 130, or their equivalents, as is illustrated in Figs. 6 and 7. In the upper portion of the said cross bar 129, a recess 131 is produced, as is illustrated in Fig. 7, and in this recess 131 a keeper 132 is located, being pivoted at its lower portion adjacent to one end, as is illustrated at 133 in said Fig. 7, and the said keeper 132 is held in its seat and is prevented against accidental rocking by means of springs 134 having bearing against the cross bar 129 and against the pivoted end portion of said keeper, and the said keeper 132 is also provided at its upper portion where the spring 134 engages with an upwardly extending lip 135. The plunger 126 is provided with a head 136 and this head is adapted as the plunger rod is moved outward, for locking engagement with the keeper 132, as is indicated by dotted lines in Fig. 7. The plunger rod 126 is preferably rectangular in cross section until it reaches the inner end portion of central chamber 125 in the sliding block 120, where the portion 138 of the said plunger rod is made round in cross section, terminating in a head 139; and in the operative position of the plunger rod 126 the circular or inner portion of said rod rests in the channel 122 produced in the tray 121, as is illustrated in Fig. 6. A spring 139^a is coiled around that portion of the plunger rod 126 that is contained in the aforesaid chamber 125 of the block 120, and this spring 139^a when the latch head 136 of the said rod is released from the keeper 132, carries the said rod to the said normal position illustrated in Fig. 6. In order to hold the spring 139^a in place on the plunger 126 in the block 120, I employ a dove-tailed block 139^b seating in a correspondingly shaped recess in the block 120 (see Figs. 3, 5 and 6).

A casting F (see Figs. 1 to 3, and 13 to 16) is located over the inner end portion of the sliding block 120 when said block is in its inner or normal position, the said casting F being secured to the cylinder C in any suitable or approved manner, and this casting F is adapted to contain a receptacle F' in which the blanks, crowns, or caps 140 are placed. This casting F is provided at one of its sides with a slot 141 extending from its top nearly to the bottom, and at the lower end of the slot 141 a horizontal extension 142 is provided, and the bottom portion of the casting is cut away, or is provided with recesses 142^a at opposite sides, as is illustrated in Fig. 13. At the recessed sides of the casting F, vertical and parallel ears 143 are formed, preferably integral with said

casting, and opposing ears are connected at their lower ends by a strap 144, as is illustrated best in Fig. 16. A link 145 is located in each space between the opposing ears 143, the said links being suitably pivoted at their upper ends, and these links normally extend vertically downward in engagement with the outer face of the casting, as is illustrated in Fig. 16, being held in such position by springs 146 that are attached to the upper portion of the links 145 and have bearing at their lower ends against the strap 144, as is particularly illustrated in Fig. 15. At the lower end of each link 145 an angular retaining arm *f* is pivotally attached. Each of these arms consists of a horizontal member 147, the inner end whereof is more or less pointed, and the said horizontal members are pivoted to the links 145 at a point between their centers and their inner ends, and each angular retaining arm *f* further consists of a downwardly extending member 148, and from the downwardly extending member of each of said retaining arms a pin 149 is made to project inwardly, the two pins being in horizontal alinement, as is illustrated in Fig. 15. These pins 149 enter openings or apertures 150 in the slideways 116 and 117 and engage with inclined side walls 151 produced at the inner end portion of the sliding block 120, the inclination being in direction of the cylinder C, and inward, as is shown in Fig. 6. The inner ends of the horizontal members of the retaining arms *f* enter the recesses 142^a at the bottom portion of the casting F when the block 120 is carried outward, the pins 149 traveling upon the inclined faces 150 of the said block due to the fact that the springs 146 are under compression.

The receptacle F' is provided with recesses 152 in opposite sides of its lower end, corresponding to the recesses 142^a, and the receptacle F' is also provided with a pin 152^a which when the receptacle is placed in the casting F is made to enter the vertical slot 141, and then the receptacle is turned so as to bring the pin 152^a in the horizontal member of said slot, thus locking the receptacle in the casting, and when the said sliding block 120 is moved outward the plunger rod 126 travels with it and is caught and retained by the keeper 132, and as soon as the block 120 has passed from beneath the receptacle containing the crowns, one of said crowns will have been released by reason of the arms *f* being moved inwardly between the bottom crown and the superposed one and such released crown will drop into the tray 121. The block 120 is released immediately upon the delivery of a crown to the tray and returns to its normal position, bringing the tray with its crown to its normal position within the cylinder, and the crown will be in position to be pushed over

the mouth of the bottle or other receptacle by the inner head 139 of the plunger rod 126, when said head is released from the keeper 132 and returns to its normal position.

A slide 153 in the form of a plate, is located beneath the plunger rod 126, as is particularly shown in Fig. 11, and the outer end of this slide passes loosely out through the cross bar 129 connected with the slideways 116 and 117. This slide 153 is provided at its inner end with a longitudinal slot 154, and the slide 153 at a point in advance of the slot 154 is connected by a suitable bolt or fixed pin 155 with a horizontal arm 156, that is pivotally attached to the free end of the foot of the shifting lever B, as is also shown in Fig. 11, and a bolt 157 or its equivalent, is secured to the plunger rod 126, preferably where its rectangular portion connects with its circular portion, as is shown in Fig. 11, and this bolt 157 passes loosely down through the slot 154, being provided at its lower end with a nut or head 158, so that when the lever B is rocked in the direction to carry its foot 52 outward, the slide 153 will be carried outward and will carry with it the bolt 157 and consequently the plunger rod 126, and such outward movement will be continued until the latch head 136 of the plunger rod 126 has been engaged by the keeper 132. Just before such an engagement a lip 159 that extends down from the bottom of the sliding block 120 through the slot 154 will have been engaged by the bolt 157, and the block 120 will be carried outward, placing its springs under tension, and this outward movement of the parts just named is accomplished by bringing the handles 40 and 40^a together. The pivoted handle, or that connected with the lever B, is then carried outward to restore the lever to its normal position, and immediately the block 120 will be returned to its normal position, the tray carried by the block, as has been stated, during the rearward movement of the block having received a blank crown.

An angular extension 161 is provided at the pivot point of the lever 104, operating the piston 76 of the syrup gage E, which extension is a part of the lower strap 102. This angular extension 161 at what may be termed its base, is pivotally connected with a post 162 that extends up from a trip arm 163 having a head 164 at its free end, which head is adapted for movement on the upper edge portion of the cross bar 129 connecting the slideways for the crown depositing mechanism, and the said head 164 is adapted for engagement with the lip 135 extending from the keeper 132, and when the said lever 104 is carried outward, the said head engaging with the said lip will shift the keeper 132 and thus release the plunger rod 126 from its locked position, permitting its

spring to act and return it to its normal position, whereupon the head 139 at the inner end of the said plunger rod will strike against the crown in the said tray 121 and will force the crown over the mouth of the bottle, whereupon the cylinder is carried farther downward as has been described, causing the die 32 to clamp the crown around the mouth of the bottle. The trip arm 162 is held down to an engagement with the said cross bar 129 by passing a pin 165 down through the point of the angular extension 161, through a suitable opening in the outer end of the said arm 163, as is shown in Fig. 10, and placing a nut 166 on the lower end of the said pin 165 below the said arm 163, and coiling a spring 167 around the said pin, having bearing on said nut and against said arm.

In the operation of the machine, the handles 40 and 40^a are grasped and drawn together, whereupon the lever B is actuated to carry the plunger rod 126 to locking engagement with the keeper 132, and the block 120 backward for the delivery of a crown to the tray 121. This permits the retaining arms *f* to engage and sustain the column of crowns in the receptacle *F'*. The handle 40^a is then returned and the block 120 carries the crown received in its tray into the charging cylinder C. The foot lever is now pressed down, lowering the charging cylinder C until the neck of the bottle is within the elastic gasket 50 with the rim thereof about flush with the upper surface of said gasket, then the handle 40^a is again pressed toward the fixed handle 40 to operate the shifting lever B, but at this operation the lever B will have no effect upon the plunger rod 126 or the sliding block 120. However, as said lever B is thus operated, the roller 54 on the outer partial shell 44 will be engaged by the inclined surface 53 of its foot member 52, and said shell or jacket 44 and attached sleeve 41 will be forced upward, causing the bottom flange 46 of the outer segmental shell or jacket 44 to compress the elastic gasket 50 and produce an air-tight seal at the neck of the bottle.

Either after, but preferably before the operation of the charging cylinder C, the lever 104 of the syrup gage is thrown back, the nut 113 having been set, and the syrup enters and fills the space in the syrup cylinder 75 between the head 78 and the piston 76. When the charging cylinder C is brought down over the bottle the air escapes therefrom through the passages 68 and 69 and tubular section 66 of the piston rod 65, to the outside atmosphere; next the lever 104 of the syrup gage is carried forward and the syrup, together with the carbonated fluid, is delivered to the charging cylinder C in the manner that has been described, and is conducted to the bottle. When the

bottle has been filled, the lever 104 of the syrup gage E is again carried rearward so that the cylinder 75 can be again charged, whereupon the head 164 of the trip arm 163, which will have passed over the lip 135 of the keeper 132, will have drawn the lip outward and raised the keeper, thus freeing the plunger rod 126. This rod is then immediately returned to its normal position by its spring 139^a and will force the crown from the tray 121 into place over the neck of the bottle. At this time quick and weighty pressure is brought to bear upon the foot lever 17, which carries the cylinder C farther downward and brings the lower piston extension 61 to an engagement with the crown, holding it in place, and the die 32 is drawn down also to an engagement with the edge of the crown, crimping or locking the crown to the mouth of the bottle. Upon relieving the foot lever 18 from pressure, and drawing the handle 40^a back, the spring 19 will raise the charging cylinder and parts carried thereby, which combination may be termed a table head, and at this time the spring 74 will act to force the bottle from said charging cylinder.

The foregoing operation is repeated in filling each bottle; the necessary movements following one another rapidly so that the operation of filling and capping or crowning can be expeditiously carried forward.

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

1. In a bottling and capping machine, a pedestal or base, a well formed therein, a series of removable members in said well fitted to lie one on the other, a cap member surmounting the said first-named members, and an upwardly extending flange at the cap member, within which the bottle to be filled is placed.

2. In a bottling and capping machine, a pedestal or base, a well formed therein, a series of removable ring members located within the said well, resting one on the other, a removable cap member for the ring member, provided with an opening therein, and a bottle receiving member removably attached to the cap member, being provided with an opening adapted to register with that of the cap member, and a flange around said opening.

3. In a bottling and capping machine, a support for a bottle, a charging cylinder movable to and from the said support, a syrup gage connected with the said charging cylinder, a capping or crowning die operatively located within said cylinder, means for raising and lowering the cylinder, mechanism for feeding blank crowns to the said cylinder and for forcing the said crowns over the bottles when filled, and a device for operating the syrup gage, which device acts

to bring about the final movement of the said capping mechanism.

4. In a bottling and capping machine, a charging cylinder provided with a piston having an air vent and a filling opening extending from the exterior of the cylinder down through the said piston, a die carried by the said cylinder at its lower portion, an elastic gasket located beneath the said die and separated therefrom, adapted to receive the neck of the bottle to be filled, and means for placing the said gasket under compression when the cylinder is placed in filling position.

5. In a bottling and capping machine, a charging cylinder provided with a piston having an air vent and an opening extending from the exterior of the cylinder down through the said piston at its center, a die carried by the said cylinder at its lower portion, an elastic gasket located beneath the said die and separated therefrom, adapted to receive the neck of the bottle to be filled, and means for placing the said gasket under compression when the cylinder is placed in filling position, a mechanism for feeding blank crowns to the said cylinder, which mechanism consists of a support, a block mounted to slide in the said support, a plunger rod operating through the said block, and a receptacle for blank crowns located above the sliding block, the lowermost crown in said receptacle being released at the outward movement of the said sliding block.

6. In a bottling and capping machine, the combination with a base, means for supporting a bottle carried by the base, a cylinder located above the said base, and spring-controlled means for raising and lowering the cylinder relatively to the bottle support, of a spring-controlled piston mounted in the said cylinder provided with an air vent and with an inlet for liquid, which inlet extends down through a lower projection from the said piston, the stem of the said piston being provided with an air vent in communication with the outside atmosphere, a valve for the said air vent, a die located in the lower portion of the cylinder around the lower extension from the piston, a compressible gasket adapted to surround the neck of the bottle located below the said die, means for feeding a blank crown to the said cylinder over the said gasket, and means for simultaneously compressing the said gasket and operating a portion of the said crown delivering mechanism.

7. In a bottling and capping machine, the combination with a charging cylinder, of a crown delivering mechanism for said cylinder and in communication therewith, which crown delivering mechanism consists of opposing slideways carried by the cylinder, a spring-controlled block mounted for movement in the said slideways, a spring-con-

trolled plunger rod operating through said block independent thereof, a latch for the said plunger rod, a releasing device for the latch, means for operating the said block independently of the said plunger rod, and a receptacle for blank crowns located above the said sliding block, the lowermost crown being released by the outward movement of the said block.

8. In a bottling and capping machine, the combination with a charging cylinder, of a crown delivering mechanism for said cylinder and in communication therewith, which crown delivering mechanism consists of opposing slideways carried by the cylinder, a spring-controlled block mounted for movement in the said slideways, a spring-controlled plunger rod operating through said block independent thereof, a latch for the said plunger rod, a releasing device for the latch, means for operating the said block independently of the said plunger rod, and a receptacle for blank crowns located above the said sliding block, the lowermost crown being released by the outward movement of the said block, means for temporarily holding the crowns in position in the receptacle, and means for releasing the said retaining means by the outward movement of the said block.

9. In a bottling and capping machine, the combination with a charging cylinder, of a crown delivering mechanism for said cylinder and in communication therewith, which crown delivering mechanism consists of opposing slideways carried by the cylinder, a spring-controlled block mounted for movement in the said slideways, a spring-controlled plunger rod operating through said block independent thereof, a latch for the said plunger rod, a releasing device for the latch, means for operating the said block independently of the said plunger rod, and a receptacle for blank crowns located above the said sliding block, the lowermost crown being released by the outward movement of the said block, means for temporarily holding the crowns in position in the receptacle, means for releasing the said retaining means by the outward movement of the said block, and a tray connected with the sliding block adapted to extend normally within the said cylinder, which tray receives a blank crown from the said receptacle when the block is carried rearward, the plunger rod subsequently acting to carry the said deposited crown over the mouth of the bottle.

10. In a crown delivering mechanism for bottling and capping machines, opposing slideways, a spring-controlled block mounted to slide in said slideways, a spring-controlled plunger rod operating through said block independent thereof, a latch for the plunger rod, means for releasing the latch, and means common to both the block and

the plunger rod for carrying them to an outward position, a receptacle for blank crowns located over the said block, a retaining device for the said crowns, and means for releasing the retaining device from the said crowns when the said block is moved in one direction, the retaining devices for the crowns automatically returning to their normal position at the return of the said block.

11. In a crown delivering mechanism for bottling and capping machines, a casing having opposing longitudinal ears at opposing sides, spring-controlled arms pivoted between said ears, angular retaining arms carried by the spring-controlled arms, the said retaining arms being located beneath the said casing and extending into recesses at the bottom of the casing, a receptacle for crowns fitted to the said casing, the receptacle and the casing being open at top and bottom, and means for locking the receptacle in said casing.

12. In a bottling and capping machine, the combination of a charging device having a passage extending therethrough for delivering liquid to the bottle, a gasket for engagement with the mouth of the bottle, means for placing said gasket under compression when the charging device is in filling position, and means for feeding blank crowns to said device, said means including a slidable block, a plunger rod operating through said block, and a receptacle for blank crowns mounted above the sliding block, the lowermost crown in said receptacle being released at the outward movement of the sliding block.

13. In combination, means for delivering a liquid to a bottle to be filled, and mechanism for feeding blank crowns thereto, said mechanism comprising a support, a block mounted to slide in said support, a plunger rod operating through said block, and a receptacle for blank crowns located above the sliding block, the lowermost crown in said receptacle being released at the outward movement of said sliding block.

14. In combination, means for delivering a liquid to a bottle to be filled, and mechanism for feeding blank crowns thereto, said mechanism comprising a support, a block mounted to slide in said support, a plunger rod operating through said block, and a receptacle for blank crowns located above the sliding block, the lowermost crown in said receptacle being released at the outward movement of said sliding block, said liquid-delivering means including a die for securing said blank crowns to the bottle.

15. In combination, a charging device, a crown-delivering mechanism therefor, including a slideway, a block mounted for movement thereon, a plunger rod operated through said block, a latch for said plunger

rod, a releasing device for said latch, and means for operating said block independently of said plunger rod.

16. A device of the class described, having a crown-delivering mechanism including a slidable block, a plunger rod operating through said block, a latch for said plunger rod, a releasing device for the latch, means for releasing said block independently of said plunger rod, a receptacle for blank crowns located above said block, the lowermost crown being released with the

outward movement of said block, and a tray connected with said block and receiving crowns from said receptacle, the plunger rod acting to carry said deposited crowns from said tray to the mouth of the bottle. 15

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

LUCAS LITTY.

Witnesses:

H. L. SHEPPERS,
THOS. M. LIGON.