

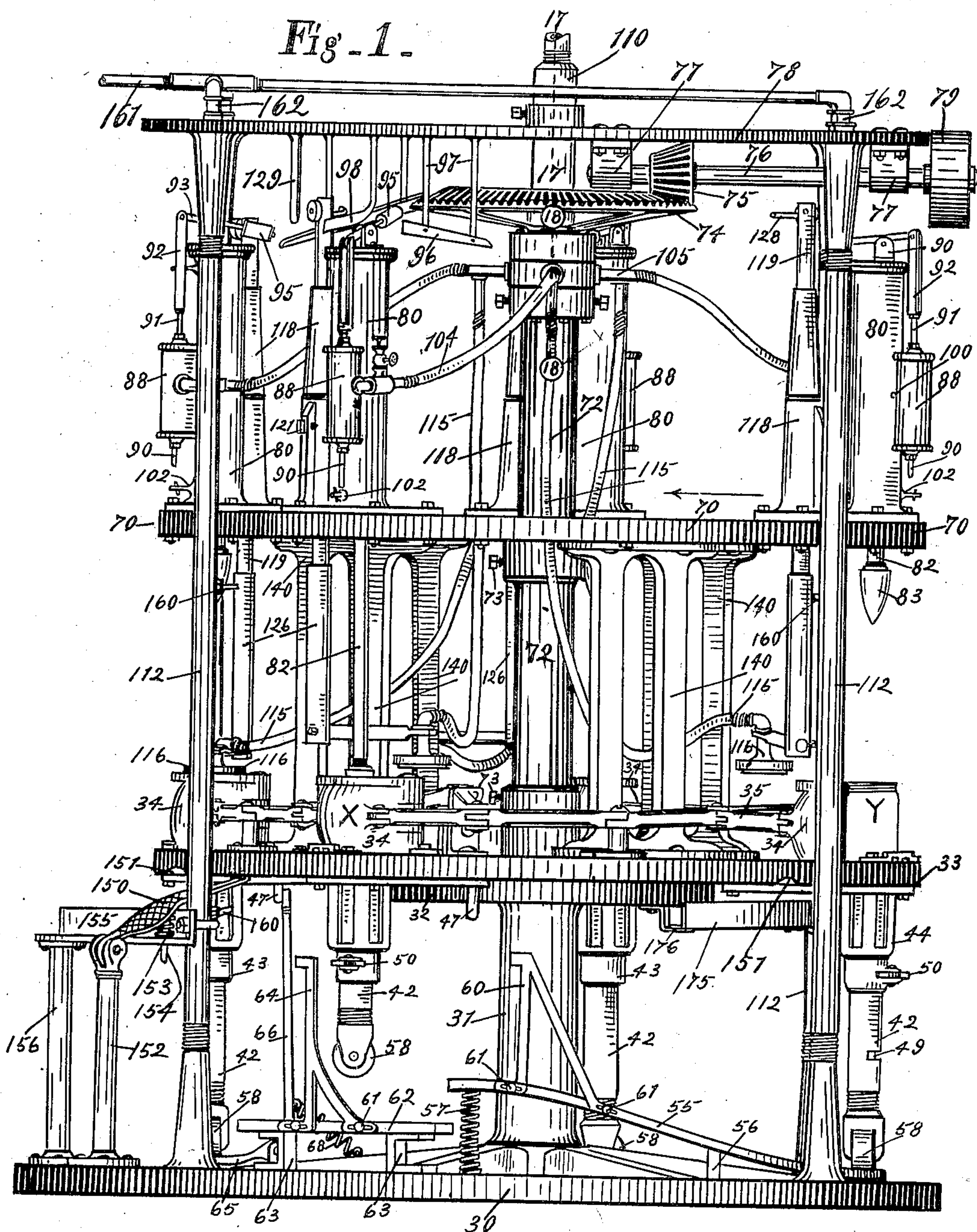
No. 844,942.

PATENTED FEB. 19, 1907.

E. S. HUTTON.  
MACHINE FOR MAKING GLASSWARE.

APPLICATION FILED FEB. 23, 1906.

5 SHEETS—SHEET 1.



Inventor

Edward S. Hutton.

Witness

W. M. Gentle.

N. Allmon.

By

V. H. Lockwood.

Attorney

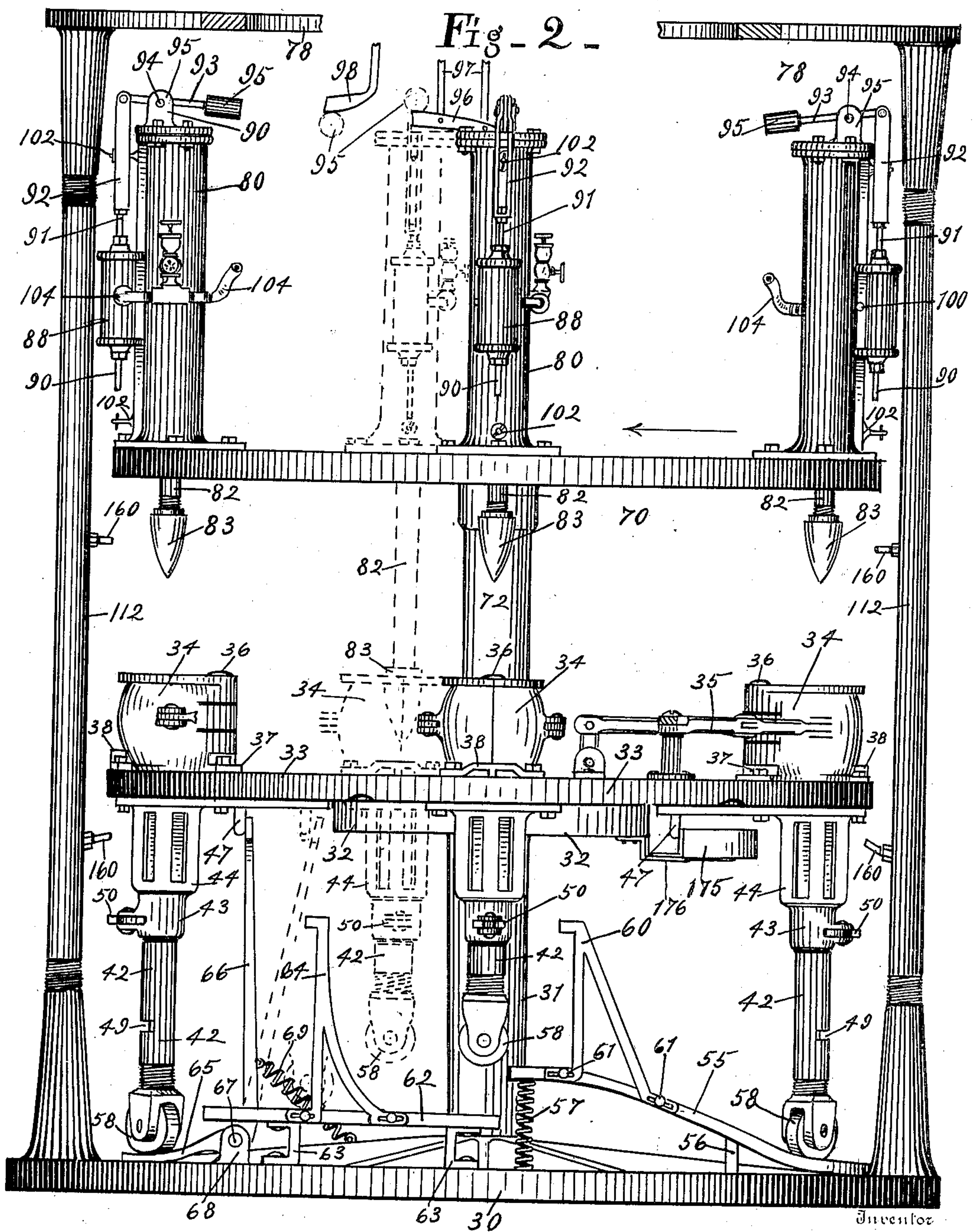
No. 844,942.

PATENTED FEB. 19, 1907.

E. S. HUTTON.  
MACHINE FOR MAKING GLASSWARE.

APPLICATION FILED FEB. 23, 1906.

5 SHEETS—SHEET 2.



Edward S. Hutton.

Witness

W. M. Gentle.

N. Allmon.

By

J. H. Lockwood

Attorney



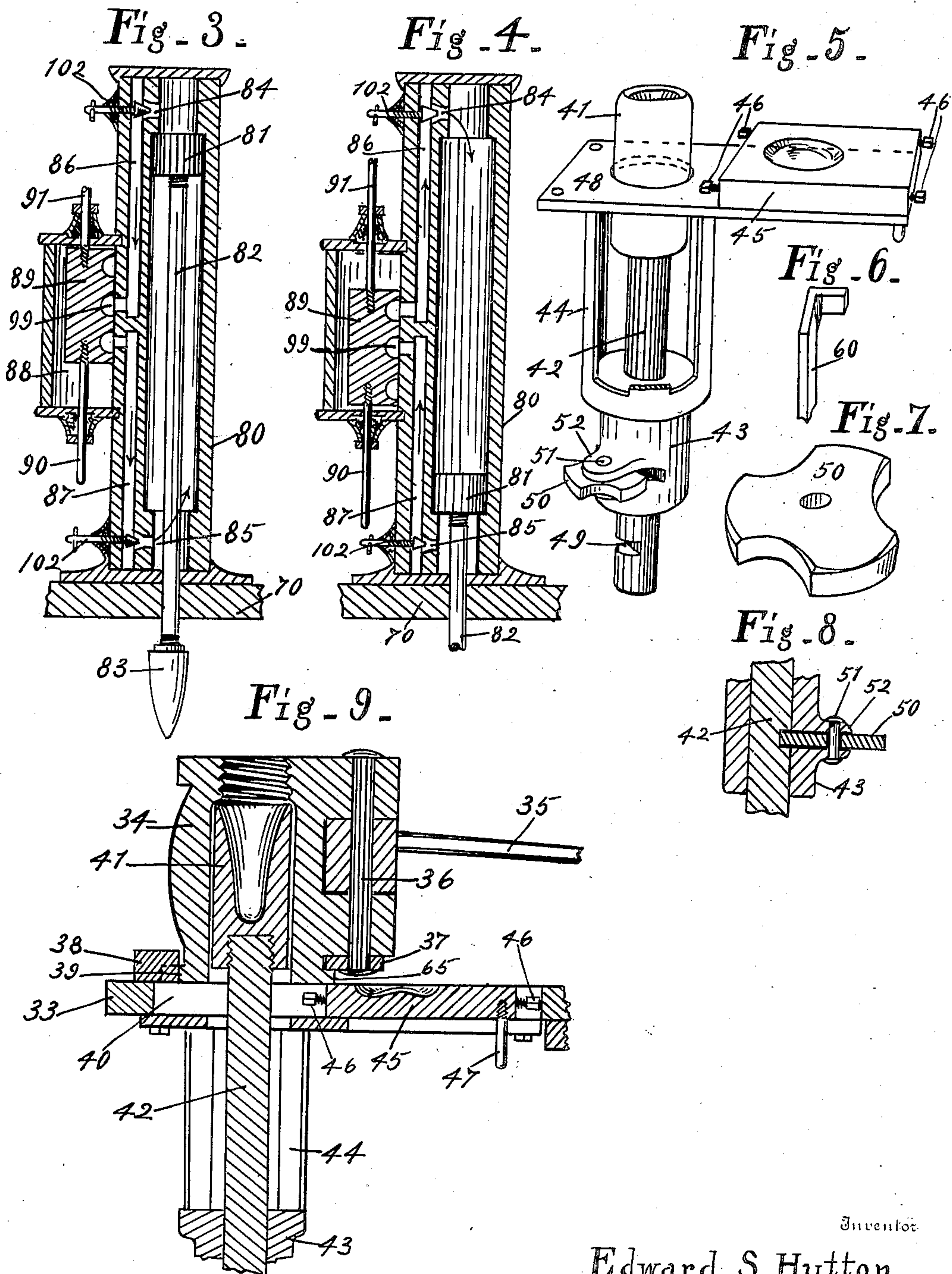
No. 844,942.

PATENTED FEB. 19, 1907.

E. S. HUTTON.  
MACHINE FOR MAKING GLASSWARE.

APPLICATION FILED FEB. 23, 1906.

5 SHEETS—SHEET 3.



Witness  
W. M. Gentle  
N. Allmang

Inventor  
Edward S. Hutton.

By V. H. Fackwood.  
Attorney

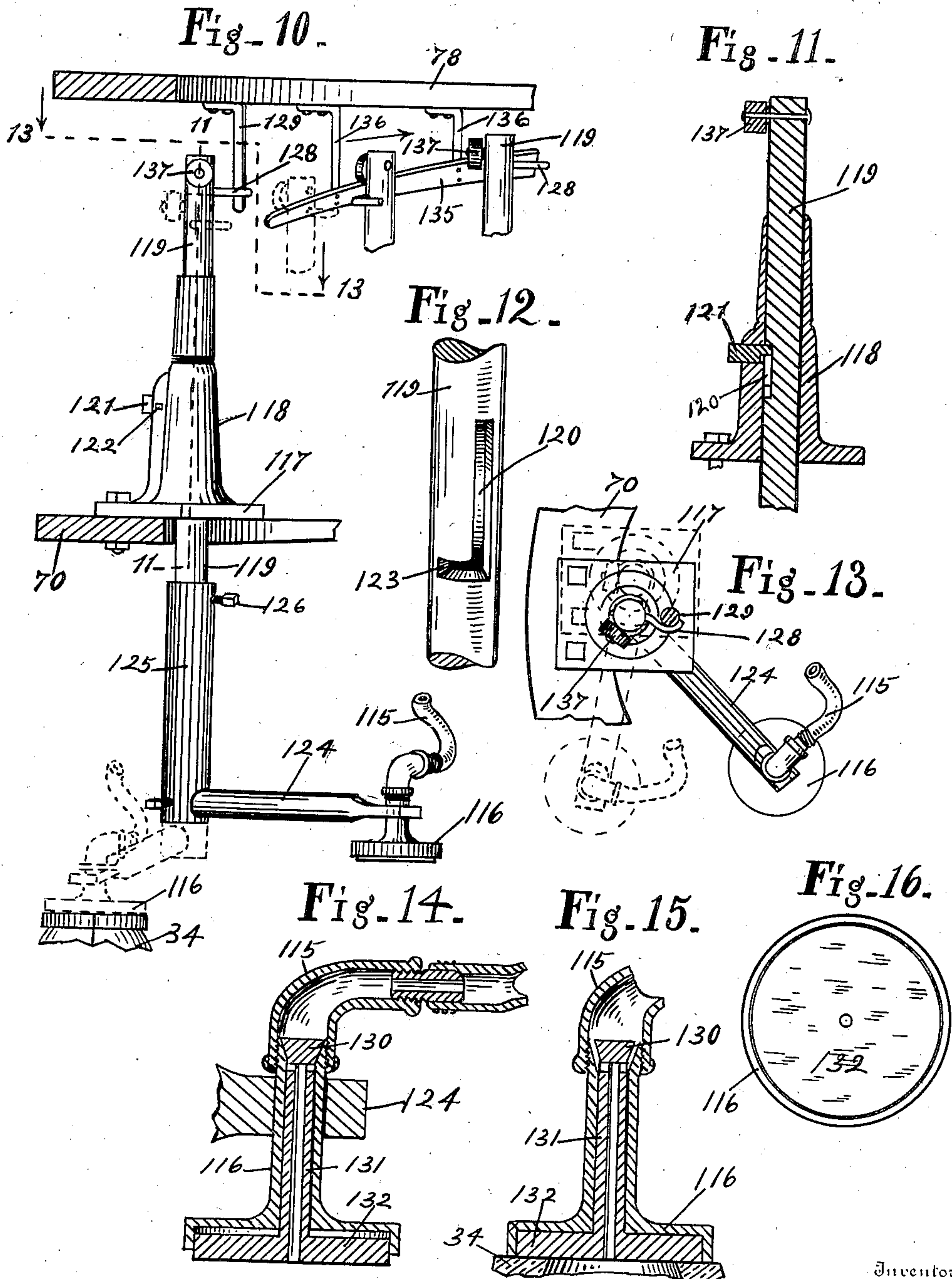
No. 844,942.

PATENTED FEB. 19, 1907.

E. S. HUTTON.  
MACHINE FOR MAKING GLASSWARE.

APPLICATION FILED FEB. 23, 1906.

5 SHEETS—SHEET 4.



Inventor

Edward S. Hutton.

Witness

W. M. Gentile.  
N. Allemong.

By

V. H. Fockwood.  
Attorney



No. 844,942.

PATENTED FEB. 19, 1907.

E. S. HUTTON.  
MACHINE FOR MAKING GLASSWARE.

APPLICATION FILED FEB. 23, 1906.

5 SHEETS—SHEET 5.

Fig. 17.

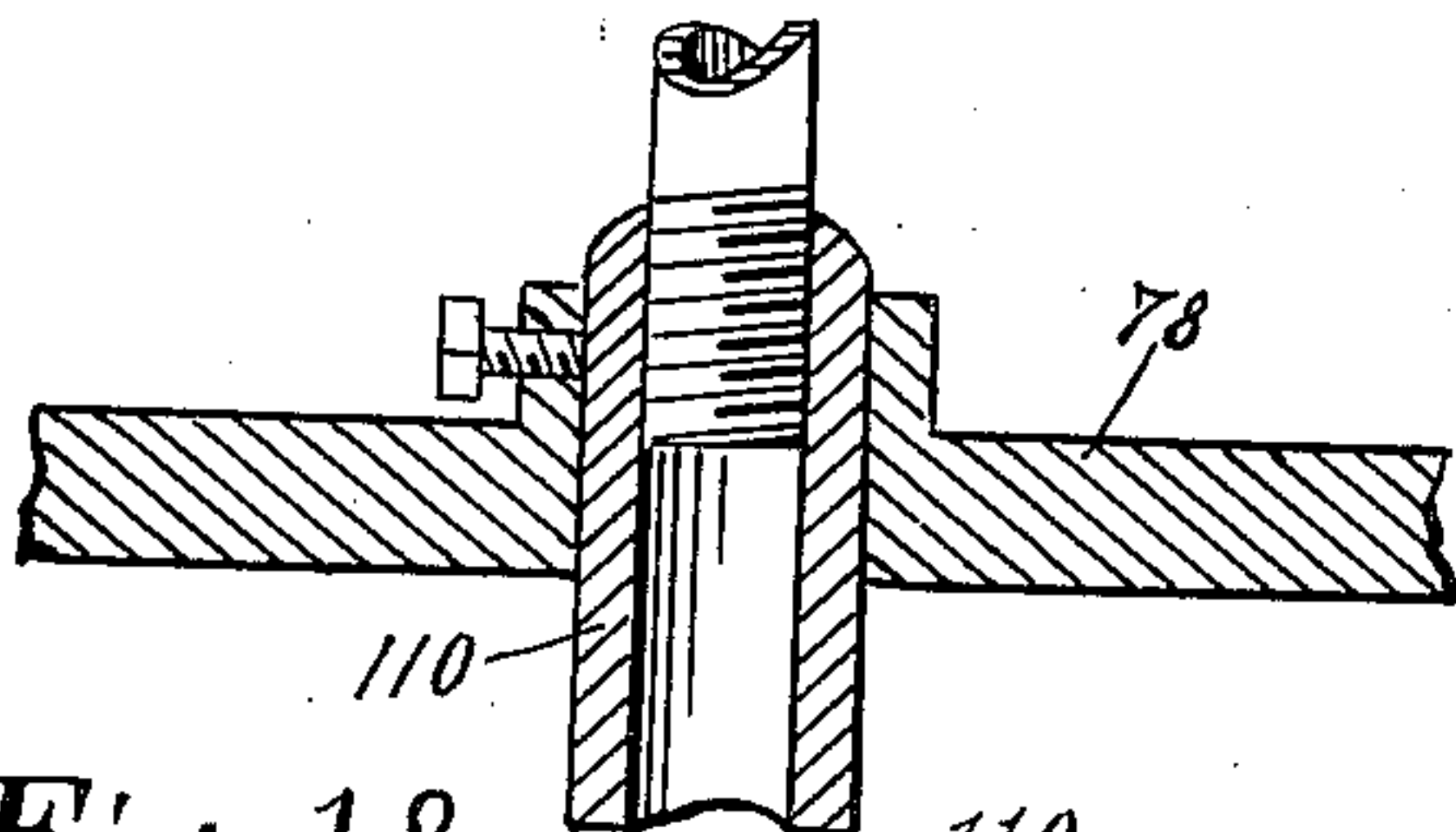


Fig. 18.

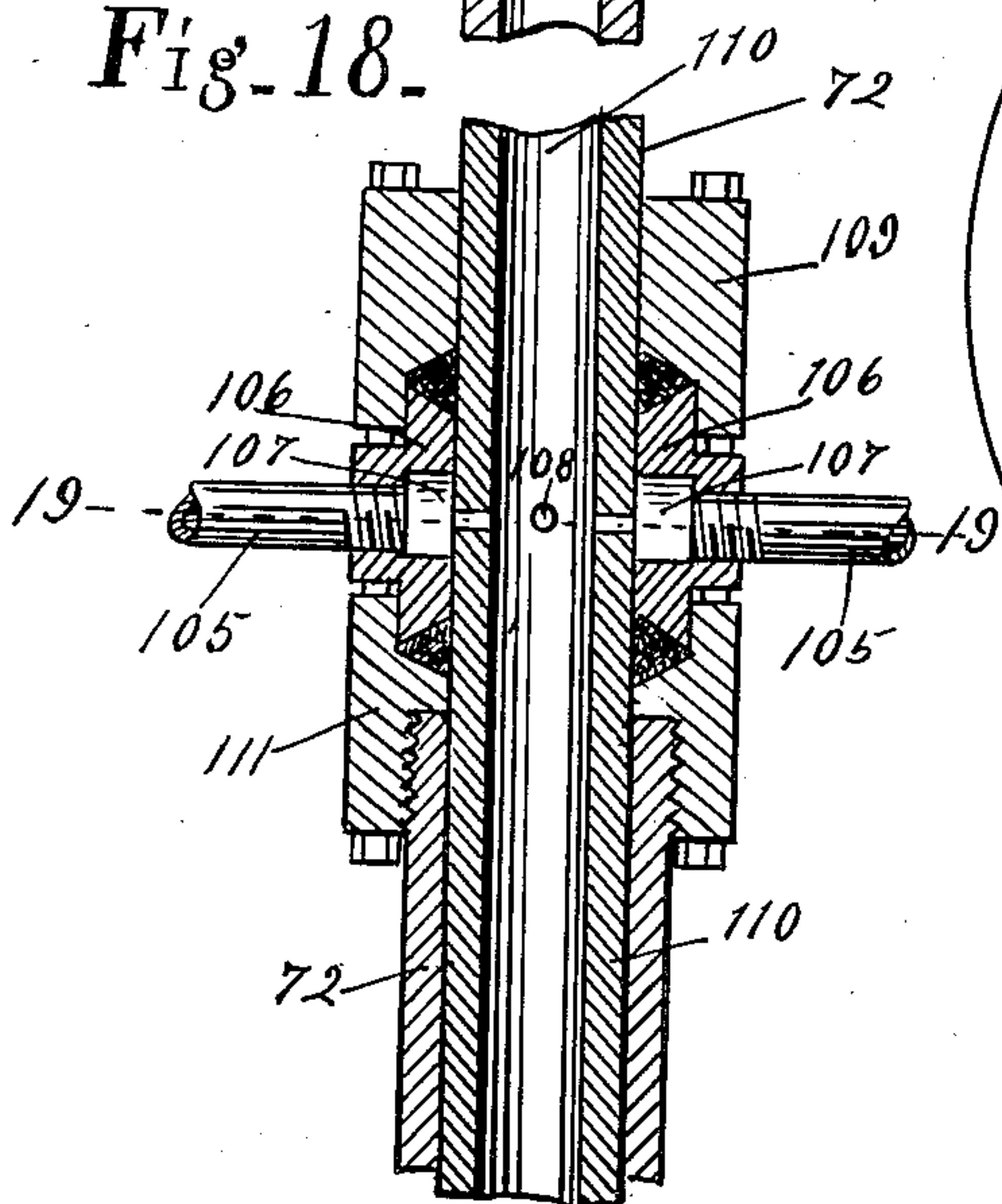


Fig. 19.

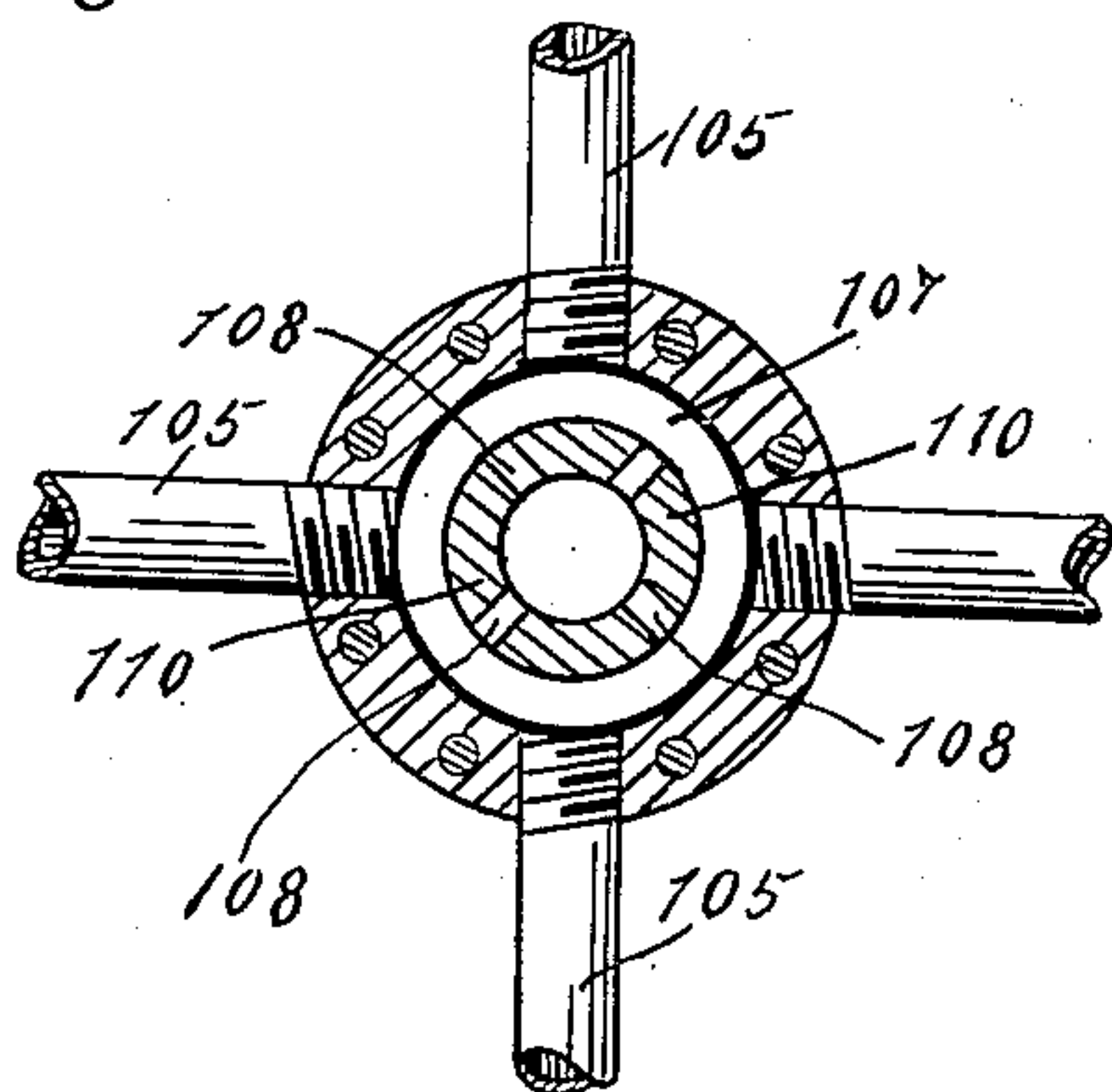


Fig. 20.

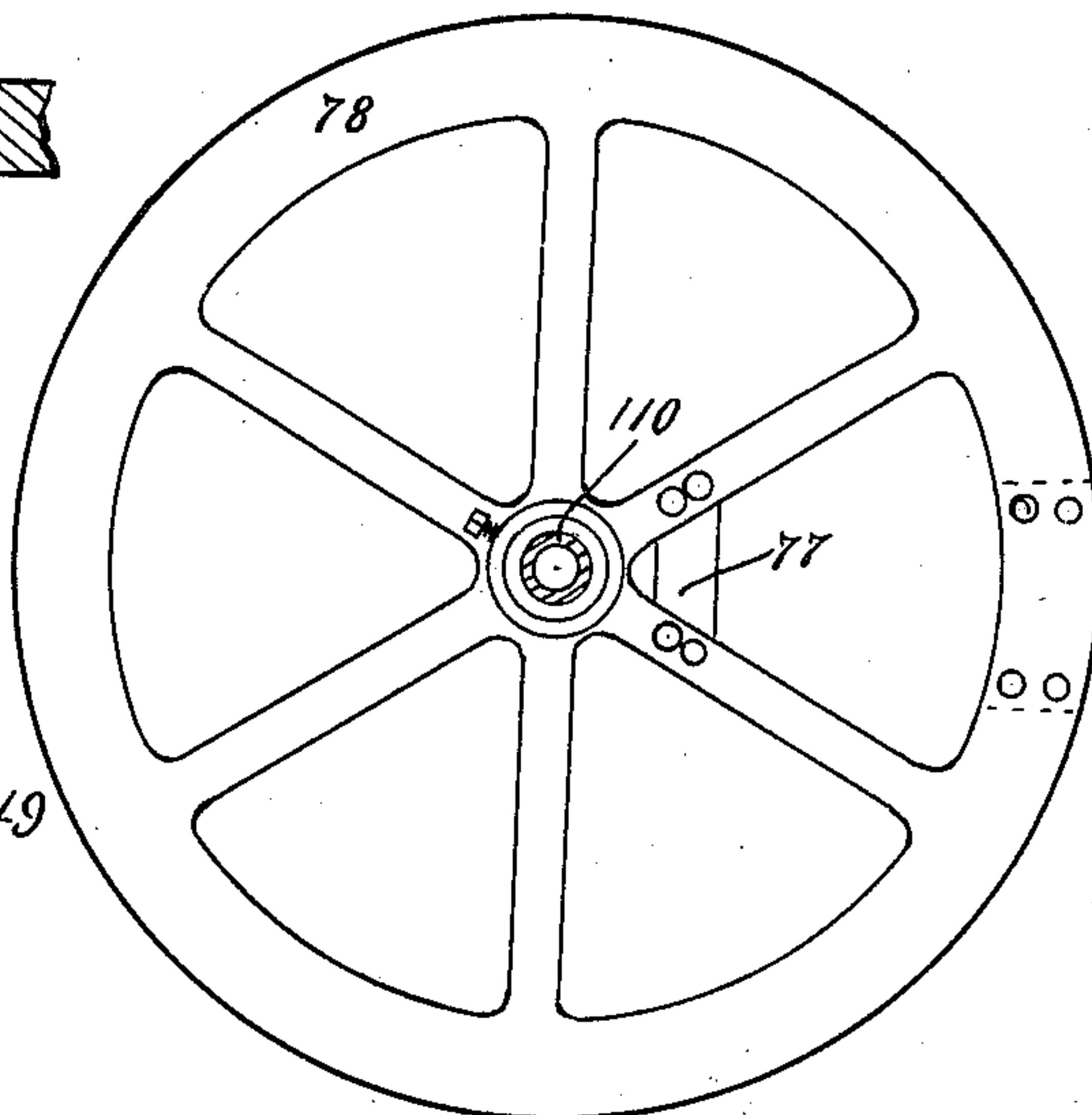
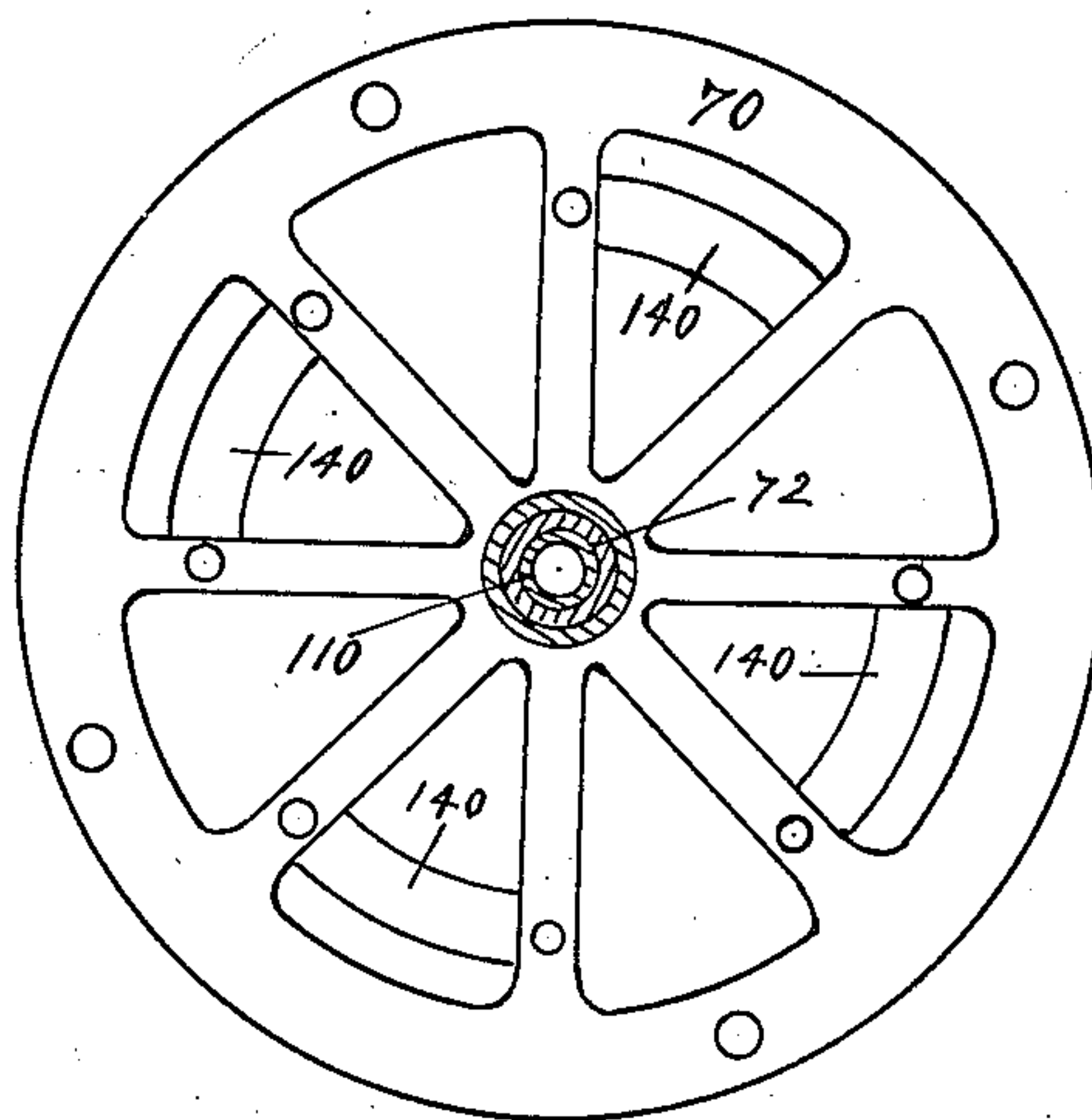


Fig. 21.



Inventor

Edward S. Hutton.

Witness

W. M. Gentle.  
N. Allmoning.

By

W. A. Lockwood.  
Attorney



# UNITED STATES PATENT OFFICE.

EDWARD S. HUTTON, OF LAPEL, INDIANA, ASSIGNOR OF ONE-HALF TO  
ARTHUR WOODWARD, OF LAPEL, INDIANA.

## MACHINE FOR MAKING GLASSWARE.

No. 844,942.

Specification of Letters Patent.

Patented Feb. 19, 1907.

Application filed February 23, 1906. Serial No. 302,659.

*To all whom it may concern:*

Be it known that I, EDWARD S. HUTTON, of Lapel, county of Madison, and State of Indiana, have invented a certain new and useful Machine for Making Glassware; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like letters refer to like parts.

This invention relates to continuously-operative glass-machines.

The object of this invention is to improve the construction and operation of automatic machines for making hollow and pressed glassware—such as fruit-jars, large-mouthed bottles, and the like—where plungers are employed. The molds may be of any suitable form, and any number of molds and plungers may be employed, although only four sets are herein shown, for convenience, and while the machine is, as a rule, run continuously, means is provided herein for stopping it, when desired, at mold-charging positions.

One feature of this invention consists in mounting air-cylinders on a revolving plunger-table and means in connection therewith for operating the plunger and supplying air thereto from a stationary central compressed-air pipe, said mechanism having suitable valves for regulating the operation of the same, that are controlled by means mounted in connection with a stationary frame above.

Another feature of the invention consists in means for operating the blow-head for revolving blow-molds and in supplying air thereto from said central air-tube, and in combining this feature of the invention with that set forth in the above paragraph, and providing a vertically-adjustable frame with suitable means depending therefrom for controlling both the plunger-operating mechanism and the blow-head-operating mechanism.

Another feature consists in the means for mounting and operating false molds in connection with revolving molds, and in providing an air-cooling means adapted to cool said false molds, plungers, and other parts when the machine is stationary, and in providing means for intermittently stopping the revolution of the machine by engaging stop-notches in the mold-table with a pedal or other suitable means.

These and the other features of this invention will be understood from the accompanying drawings and the following description and claims.

Figure 1 is a side elevation of the machine with parts broken away. Fig. 2 is a front elevation of the machine with many parts omitted and some parts broken away, said figure showing especially the molds and plungers and means for mounting and operating the same, the position of a plunger when actuated and its associated parts being shown in dotted lines. Fig. 3 is a central vertical section through the plunger-operating mechanism, showing the plunger elevated. Fig. 4 is the same showing the parts after the plunger has been operated, the plunger and part of the plunger-rod being broken away. Fig. 5 is a perspective view of a false mold and associated parts, the false mold being partially elevated. Fig. 6 is a detail of the upper end of the arm for operating the locking-wheel for locking the false mold in its elevated position. Fig. 7 is a perspective view of said locking-wheel. Fig. 8 is a central vertical section of the lower part of Fig. 5 through the pivot of the locking-wheel, parts being broken away. Fig. 9 is a central vertical section through a mold and its associated parts, parts being broken away. Fig. 10 is a detail of parts of the blowing mechanism, showing means for moving the blow-head into and out of position over a mold, the position over the mold being shown in dotted lines and parts being broken away. Fig. 11 is a vertical central section through a portion of Fig. 10 at a right angle to the line 11 11 of said figure. Fig. 12 is an elevation of the central portion of the shaft shown in Figs. 10 and 11, the same being broken away at its ends and disclosing a key-slot. Fig. 13 is a plan view on the section-line 13 13 of Fig. 10. Fig. 14 is a central vertical section through the compressed-air inlet, showing the valve in its closed position. Fig. 15 is the same with the valve in its open position. Fig. 16 is a bottom view of the parts shown in Fig. 14 looking upward. Fig. 17 is a central vertical section on the line 17 17 of Fig. 1, parts being broken away. Fig. 18 is a similar section on the line 18 18 of the same figure. Fig. 19 is a horizontal section on the line 19 19 of Fig. 18. Fig. 20 is a plan view of the top of



Fig. 1, the central air-pipe being in section. Fig. 21 is a table view of the frame that carries the plunger mechanism.

In the drawings, 30 is a base with a central tubular post 31, having a turn-table base 32 at its upper end, on which a mold-table 33 is rotatably mounted. Upon said table there are suitable molds formed on the sections 34, provided with means 35 for opening and closing the same. The sort of mold and the means for opening and closing it are immaterial to this invention. There is shown, however, a mold for making fruit-jars with screw-tops. The mold-sections are pivoted to a bolt 36, which is secured in the plate 37, fastened to the table 33, and the molds are held down at the front by a bar 38, that engages a projection 39 from the lower part of the mold-sections that extend into the undercut portion in said bar 38. (Shown by dotted lines in Fig. 9.) The molds are mounted over a radial opening 40 in the table, through which a false mold 41 and its stem 42 reciprocate. The stem 42 operates through a guide 43, that is secured by the bars 44 to the under side of the table 33. A mold-bottom 45 reciprocates horizontally in the opening 40 into and out of position under the mold. Said bottom has at each end buffers 46, and a pin 47 extends down from said bottom, whereby it is moved. Said bottom reciprocates on the plate 48, (seen in Fig. 5,) which is fastened to the under side of the table 33, under the slot 40, as seen in Fig. 9. The stem 42 of the false mold 41 has a notch 49 in it, as seen in Fig. 5, which is engaged when the false mold is in its upper position by a horizontally-rotatable locking-wheel 50, mounted on the pin 51, that is in the ears 52 of the guide 43.

As the mold-table 33 is revolved the false molds are elevated by the inclined track 55, (shown in Fig. 2,) formed of spring metal and secured at one end to the base 30 and supported by the post 56 about midway, and under the upper end there is a spring 57. The stem 42 carries a caster 58 at its lower end for traveling on said track. The material of which the track 55 is made permits it to yield slightly in order to provide for the inaccuracies in the construction of the molds and parts. When in its elevated position, the arm 60 engages the locking-wheel 50 and turns it into locking position, as above described, so that said locking-wheel will hold the false mold in its upper position. Said arm 60 is adjustably secured to the track 55 by set-screws 61, extending through slots in the lower parts of the arm. Another track-section 62 is mounted on supports 63, secured to the base in a horizontal position, one end of said track-section 62 being substantially under the elevated end of the section 55. This second track-section 62 is to receive the stem 42 of the false mold when it drops. As the table 33 revolves, the locking-

wheel 50 is engaged by the upper end of the unlocking-arm 64, that is secured to the track 62 in the same manner as the arm 60 is secured to the track 55. The further rotation of the table 33 causes the stem 42 of the false mold to run off the end of the track-section 62 upon the inclined foot 65 of a trip 66, said parts being mounted on a pivot 67 in a bracket 68, secured to the base. The trip 66 is held in the dotted-line position shown in Fig. 2 normally by a spring 69, and it is actuated in the manner just described. Said trip at its upper end engages the pin 47, extending downward from the movable bottom 45, as heretofore explained and as shown in Figs. 1, 2, and 9. In this way the movable bottom is moved from the position shown in Fig. 9 to a position under the mold. After the false mold has descended and after said bottom is thus moved into position the glass is ready to be blown in the mold 34.

Turning now to the plunger mechanism, there is what may be called a "plunger-table" 70 secured to the tubular shaft 72 by set-screws 73 and secured to and spaced from the mold-table 33 by four pairs of brace-bars 140. Said tables are rotated by the tubular shaft 72, to which they are both secured by the set-screws 73. Said shaft 72 is actuated by a bevel-gear 74 at the top and it in turn by a bevel-pinion 75 on a shaft 76, that is mounted in bearings 77, depending from a top frame 78 and driven by a friction-pulley 79. Upon the table 70, as seen in Fig. 2, there are plunger-cylinders 80 secured, which, as shown in Figs. 3 and 4, are provided with pistons 81, plunger-rods 82, with plungers 83 at their lower ends. There is one of these plunger mechanisms over each mold and positioned so the plungers will enter the corresponding molds as they are successively moved downwardly. The downward position of one of these plungers is shown in the left half of Fig. 1 and in dotted lines in Fig. 2 and the upper position on the right-hand side of Fig. 1 and also in Fig. 2. The cylinder 80 has an upper port 84 and a lower port 85, to which compressed air is admitted alternately through air-chambers 86 and 87 from a valve-chest 88 by the slide-valve 89. The valve 89 has a lower guiding-stem 90 and an upper stem 91, which is connected by a pair of bars 92 to a lever 93, fulcrumed at 94 in ears 95 on the upper end of the cylinder 80. The lever 93 carries a wheel 95, that during the revolutions of the table 70 moves over and is elevated by an inclined bar 96, secured to a pair of arms 97, extending down from the top frame 78, as seen in Fig. 1. The bar 96 elevates the wheel 95 and depresses the slide-valve 89 to the position shown in Fig. 4, and during such downward movement of said valve the plunger is driven downward into the mold. This position is shown by dotted lines in Fig. 2 and in Fig. 1



also, although in the latter figure the roller 95 is moved somewhat away from the bar 96. Soon afterward as the table 70 revolves said roller 95 engages an inclined bar 98, that extends downwardly from the top 78, as shown in Fig. 1, and by it said roller is depressed and the slide-valve 89 moved into the position shown in Fig. 3, whereby the plunger 83 is elevated. Thus it is seen that in both positions of the slide-valve 89 the air is exhausted from the cylinder through the exhaust-port 99 in said valve and 100 in the valve-casing, the latter appearing in Fig. 2. The ports 84 and 85 are regulated by the screw-valves 102, which by being screwed manually adjust the dimensions of the ports as desired. Compressed air enters the valve-chest 88 through a tube 104, leading from a short pipe 105, that is screwed into a band 106, surrounding the stationary air-pipe 110, so as to turn thereon. Said band has an annular air-chamber 107 in it, which receives air from pipe 110 through ports or holes 108 in said pipe. The band is held in place by clamping-collars 109 on the ends of the band, with suitable packing between them and the band to prevent the escape of air. The lower clamping-collar 111 is secured on the upper end of a hollow shaft 102. Thus air is continuously supplied from the pipe 110 to the valve-chests of the various plunger-cylinders through the tubes 104. Compressed air is supplied to the pipe 110 from any suitable source, said pipe being stationary and secured to the top frame 78, which is mounted on posts 112, that extend up from the base of the machine.

The blowing mechanism will now be described. A rubber tube 115 leads from each pipe 105 to a blow-head 116, that is adapted to be moved into operative contact with each mold, and thus furnish air under pressure in said mold for blowing the glass. The means for bringing this about is shown in Figs. 10 to 16. A plate 117 is fastened upon the plunger-table 70, as shown in Fig. 10, said plate 117 having a hollow post 118 extending upward therefrom. A shaft 119 is mounted in said post 118, as shown in Fig. 11, it having a groove 120, as seen in that figure and also in Fig. 12, into which a key 121 extends, and that is held in place by the set-screw 122. The main portion of the groove 120 is vertical; but at its lower end it has a horizontal portion forming a shoulder 123, under which the key 121 catches when the shaft 119 is in its elevated position. Said shaft is in its upper position in Fig. 10, and in such position the blow-head 116 is in full-line position, (shown in Fig. 10,) it being carried by an arm 124 from a sleeve 125, that is adjustably mounted on the shaft 119 by a set-screw 126. As the table 70 revolves, a curved pin 128 on the upper end of the shaft 119 engages an arm 129, extending downwardly from the top

frame 78, and thereby the shaft 119 is turned so that the shoulder 123 will move off the key 121, and the vertical portion of the slot 120 will permit the shaft 119 to drop by gravity, and the blow-head 116 will be in the lower 70 and dotted-line position (shown in Fig. 10) and upon the mouth of the mold.

The blow-head, as seen in Figs. 14 to 16, carries a valve 130, with a hollow stem 131 extending upwardly from a valve-plate 132, that fits loosely in the lower part of the blow-head. The stem 131 is long enough to have some play in said blow-head, as shown in Figs. 14 and 15. When the blow-head drops on the mold, as shown in Fig. 15, the plate 132 rests upon the mold, and the blow-head drops down upon said plate, so as to open the valve 130 and admit compressed air from the pipe 115. When said blow-head is elevated, it is automatically closed by the air-pressure. Said blow-head is elevated from the mold by an inclined track 135, secured to the arms 136, extending downward from the top frame 78, as shown in Fig. 10, upon which a roller 137, secured to the upper part of the shaft 119, rides. As the wheel 137 runs on the track 135 the pressure of said track against said wheel, since said wheel is to one side of the vertical axis of the partially-rotatable shaft 119, will cause said shaft to partially rotate from the middle position shown in Fig. 10 to the position shown at the right hand of Fig. 10, so that when the shaft 119 is elevated it will be turned by such lateral pressure of the track 135 sufficiently to cause the shoulder 123 to ride upon the key 121, and during the remainder of the revolution of said shaft it will be held in such upper position until the gravity-pin 128 can engage the arm 129. When this machine is operated by a friction-pulley like 79 or any similar mechanism, it is stopped by the free end of the pedal 150 engaging one of the notches 151 in the under side of the table 33. There are four of these notches, arranged so that the table will be stopped at the point and time of charging each mold. In Fig. 1 the mold marked X has been charged and the machine has just been started, the left-hand notch 151 having moved some distance away from the pedal 150, and during that movement the plunger has operated. The pedal 150 is fulcrumed in the upper end of the post 152, and it is pressed upwardly by a spring 153 around a pin 154, operating through a stand-plate form 155, that is supported on a post 156 and fastened to one of the posts 112.

The operation of the machine is normally constant; but it may be intermittent and be stopped at each fraction of a revolution by the pedal 150 for the charging of the mold. After charging the mold with glass the pedal 150 is depressed, which permits the machine to start and the table 33 to revolve. Immediately thereafter the plunger is actuated by



the bar 96, causing the admission of air to the plunger-cylinder. Immediately the bar 98 at the top causes the reversal of the actuation of the plunger mechanism whereby it is withdrawn from the mold. Then the false mold descends, the stem thereof having moved off the track-section 62. Then the trip 66 is operated by the downward movement of said stem, which slides the mold-bottom 45 into position under the mold. Very soon thereafter the bar 129 pushes the shaft 119 around and causes the blow-head to settle down on the blow-mold, whereupon the valve 130 is opened and the glass blown. Then the wheel 137 travels up on the track 135 (shown in Fig. 10) and at the end of said movement is turned somewhat, so as to turn the blow-head and enable the same to be held in its elevated position. After that the mold is opened and the completed glass jar Y, as shown in Fig. 1 at the right hand, is ready for removal. As constructed the mold is charged and the article pressed by the plunger and blown into final form and cooled during about one-half revolution of the mold-table. After the article is removed the mold has still a half-revolution for cooling. The false mold cools for almost the entire revolution.

The plungers and false molds especially and the other molds are cooled by blasts of air from the nozzles 160, extending from the tubular posts 112. There are four of these posts, near which the molds and plungers are situated while the machine is stopped and the nozzles are directed toward the parts to be cooled. The tubular posts 112 are charged with air from some suitable source of supply through the pipes 161 and 162. The mold-bottom 45 is moved from under the mold by a curved or cam-shaped piece 175, secured to the turn-table plate 32 by the arm 176. As the mold-table revolves the pin 47 from the mold-bottom engages the curved surface of the piece 175 and is thereby moved radially inward, as shown at the right hand of Fig. 2.

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

1. In a machine for making glassware, a centrally-located air-pipe adapted to receive compressed air from any suitable source of supply, a plunger-table mounted so as to revolve about said air-pipe, air-cylinders mounted on said table, a plunger for each air-cylinder, means connected with each air-cylinder for operating its plunger, and means for supplying air from said air-pipe to said revoluble air-cylinders.

2. In a machine for making glassware, a plunger-table, a revolving air-cylinder, a plunger actuated thereby, means for supplying compressed air to the cylinder, a valve for regulating the admission of air thereto, and stationary means for controlling said valve while the cylinder is revolving.

3. In a machine for making glassware, a plunger-table, an air-cylinder thereon, a piston and piston-rod in the cylinder, a plunger on the piston-rod, a valve-chest, a separate passage-way leading from said valve-chest to each end of the cylinder, means for supplying air to said valve-chest, a slide-valve in said valve-chest provided with an inlet-port for each of said passage-ways, a centrally-located exhaust-port for both, a lever mounted in the upper end of the cylinder and connected at one end with said slide-valve, and a stationary means for engaging the other end of said lever as the plunger-table rotates for actuating said lever in an opposite direction.

4. In a machine for making glassware, a revolving mold-table a mold thereon, a plunger-table above the mold-table and rigidly mounted to rotate therewith, a false bottom carried by the mold-table below said mold, an air-cylinder on said plunger-table in vertical alinement over said mold, a piston and piston-rod in said cylinder, a plunger on the rod, a central means for supplying air to said cylinder, a valve for alternately admitting air to the cylinder for actuating the plunger, and means for revolving said mold and plunger tables continuously.

5. In a machine for making glassware, an open-top mold, a blow-head therefor, means carrying said blow-head that is movable laterally into and out of position over said mold and is movable vertically while over said mold, and a valve in said blow-head that is opened by the engagement of the top of the mold with said blow-head.

6. In a machine for making glassware, an open-top mold, a blow-tube leading from a compressed-air supply, a blow-head with which said tube is connected, means for moving said blow-head into position upon said mold and away therefrom, said blow-head having a cylindrical base with an upwardly-extending tubular portion therefrom having a valve-seat at the upper end, a disk in said cylindrical portion of the blow-head provided with a hollow stem extending through the tubular portion of said blow-head with a valve portion on the upper end thereof, the arrangement being such that, when the disk rests upon the mold and the blow-head settles by gravity upon said disk, the valve will be open, and when the blow-head is elevated the valve will close by action of the air.

7. In a machine for making glassware, an open-top mold, a vertically-mounted shaft adapted to partially rotate, an arm extending longitudinally from the lower end of said shaft, a blow-head carried by said arm, a pipe leading from said blow-head to a compressed-air supply, and means for holding said shaft in its upper position until the blow-head has been moved over the mold and then permitting it to drop.

8. In a machine for making glassware, an



open-top mold, a partially-rotatable shaft mounted near the mold provided with a horizontal groove at the lower end of a vertical groove to form a shoulder, an arm extending therefrom, a blow-head in said mold, a pipe leading to said blow-head from a compressed-air supply, a tubular guide for said shaft, a key in said tubular guide extending into said groove, means for elevating and turning the shaft in removing the blow-head from the mold, and means for returning the shaft to move the blow head over the mold so said shaft will move off said key and drop by gravity.

9. In a machine for making glassware, a top frame and two tables one above the other, the two tables being revolvably mounted, a mold carried by the lower table, a tubular guide mounted upon the middle table, a vertical shaft mounted in said tubular guide having a horizontal slot at the lower end of a vertical slot in its surface to form a shoulder, an arm extending from the lower part of said shaft, a blow-head carried on said arm so that when the shaft is partially rotated the blow-head will be moved over the mold, a tube leading from a compressed-air supply to said blow-head, a key in said tubular guide extending loosely into the slot in the shaft, a pulley at the side of said shaft near the upper end, a curved pin extending horizontally therefrom, an arm extending downward from the upper frame into the path of said curved pin as the tables are rotated for turning the blow-head over the mold so that the key will be in the horizontal portion of the slot of said shaft, and an inclined track suspended from said top frame upon which said roller is adapted to run whereby said shaft will be elevated and turned partially at the end of said elevating movement.

10. In a machine for making glassware, a revolving table, a mold below said table, plunger mechanism mounted on said table with a plunger in alinement with said mold, compressed-air mechanism for operating said plunger, a blow-head, means carried by said table for supporting said blow-head, means for actuating said blow-head-supporting means so as to move the blow-head into and out of position on the mold, a compressed-air pipe in line with the axis of said table, and tubes extending from said blow-head and said plunger-actuating mechanism to said air-pipe.

11. In a machine for making glassware, a revolving table, a mold below said table, plunger mechanism mounted on said table with a plunger in alinement with said mold, compressed-air mechanism for operating said plunger, a blow-head, means carried by said table for supporting said blow-head, means for actuating said blow-head-supporting means so as to move the blow-head into and out of position on the mold, a compressed-air tube extending up through the center of

said table with a hole through it, a sleeve on said air-tube with an inner chamber and a hole extending through it registering with the hole in said air-tube, said table mounted upon and rotating with said sleeve, and tubes extending from said sleeve registering with the air passage-way therethrough and leading to the blow-head and plunger-actuating mechanism.

12. In a machine for making glassware, a pair of tables rotatably mounted, means for securing said tables together, a series of molds mounted upon the lower table, a series of plunger-actuating mechanisms mounted on the upper table, the plungers therein being in vertical alinement with said molds, means on which said tables are secured for rotation that is tubular at its upper end and provided with an internal air-chamber with holes leading therefrom, a stationary air-tube extending into said tubular means provided with holes for the exit of air, short pipes extending from said tubular means, tubes running therefrom to the plunger-actuating mechanisms, tubes running to the blow-heads, a horizontal bevel-gear secured to the upper end of said tubular means, a shaft extending outwardly therefrom, and a bevel-gear mounted on said shaft meshing with said horizontal gear for rotating said tables.

13. In a machine for making glassware, a mold-table with stop-notches at intervals on the under side thereof, a plurality of molds mounted thereon, one for each stop-notch, a pulley adapted to be driven frictionally, means for transmitting power from said pulley to rotate said mold-table, and a pedal for engaging said stop-notches in the mold-table for stopping the same for charging the mold.

14. In a machine for making glassware, a mold-table with stop-notches at intervals on the under side thereof, a plurality of molds mounted thereon, one for each stop-notch, a pulley adapted to be driven frictionally, means for transmitting power from said pulley to rotate said mold-table, a pedal for engaging said stop-notches in the mold-table for stopping the same for charging the mold, a workman's table mounted near said mold-table, a post on which said pedal is pivoted at one end, and a spring mounted on said workman's table tending to move said pedal upward.

15. In a machine for making glassware, a stationary base, a rotary mold-table above the base with an opening in it, a mold above said opening, a false mold with a downwardly-extending stem having a notch in it, a guide secured on the under side of the table for holding and guiding said false mold and stem, an upwardly-spring-pressed inclined track on the base for elevating said stem and false mold, and means on the guide for engaging the notch on the stem of the false mold to hold it in its elevated position.



16. In a machine for making glassware, a stationary base, a rotary mold-table above the base with an opening in it, a mold above said opening, a false mold with a downwardly-extending stem having a notch in it, a guide secured on the under side of the table for holding and guiding said false mold and stem, an inclined track on the base for elevating said stem and false mold, means on the guide for engaging the notch on the stem of the false mold to hold it in its elevated position, and an arm secured to said track for engaging and holding said locking means on the guide and actuating it.
17. In a machine for making glassware, a stationary base, a rotary mold-table above the base with an opening in it, a mold above said opening, a false mold with a downwardly-extending stem having a notch in it, a guide secured on the under side of the table for holding and guiding said false mold and stem, an inclined track on the base for elevating said stem and false mold, means on the guide for engaging the notch on the stem of the false mold to hold it in its elevated position, an arm secured to said track for engaging and holding said locking means on the guide and actuating it, and another arm in position to disengage said locking means and permit the false mold to drop.
18. In a machine for making glassware, a stationary base, a rotary table-mold above the base with an opening in it, a mold above said opening, a false mold with a downwardly-extending stem having a notch in it, a guide secured on the under side of the table for holding and guiding said false mold and stem, an inclined track on the base for elevating said stem and false mold, means on the guide for engaging the notch on the stem of the false mold to hold it in its elevated position, an arm secured to said track for engaging and holding said locking means on the guide and actuating it, another arm in position to disengage said locking means and permit the false mold to drop, and a sectional horizontal track for receiving the lower end of said false mold-stem as it drops.
19. In a machine for making glassware, a stationary base, a post extending upward from said base with a horizontal turn-table base-plate on the upper end, a mold-table rotatably mounted on said base-plate with an opening in it, a mold above said opening, a mold-bottom readily slidable in said opening, means connected with the turn-table base-plate for opening said mold-bottom, a false mold and stem, a guide secured to the under side of the table for holding and guiding said false mold and stem in line with a mold above, means connected with the base for elevating said stem and false mold, means in said guide for temporarily holding said false mold and stem in their upper position, and a substantially bell-shaped crank-lever pivoted to said base with one arm adapted to move said mold-bottom in place under the mold and the other arm adapted to receive the lower end of said false mold-stem as it moves and be actuated thereby.
20. In a machine for making glassware, a frame formed of a base and a top with vertically-adjustable intermediate posts connecting them, an air-actuated plunger mechanism, a blowing mechanism, means for supplying compressed air thereto, and means extending down from said upper frame for controlling the operation of said parts, whereby said upper frame may be vertically adjusted to enable said controlling parts to properly perform their work.
21. In a machine for making glassware, a frame formed of a base-plate, a top plate, a tubular post connecting them, mechanism for forming glass articles rotatably mounted within said frame, means for introducing compressed air to said tubular posts, and nozzles extending from said tubular post into proximity with the parts of the machine desired to be cooled.
22. In a machine for making glassware, a frame having a base-plate, top plate, and a vertically-adjustable tubular post connected with them, means for introducing compressed air into said post, plungers, molds and false molds rotatably mounted within said frame, nozzles extending from said tubular post into proximity with said molds and false molds for cooling the same.
- In witness whereof I have hereunto affixed my signature in the presence of the witnesses herein named.
- EDWARD S. HUTTON.
- Witnesses:  
HELEN B. McCORD,  
N. ALLEMONG.