

No. 672,825.

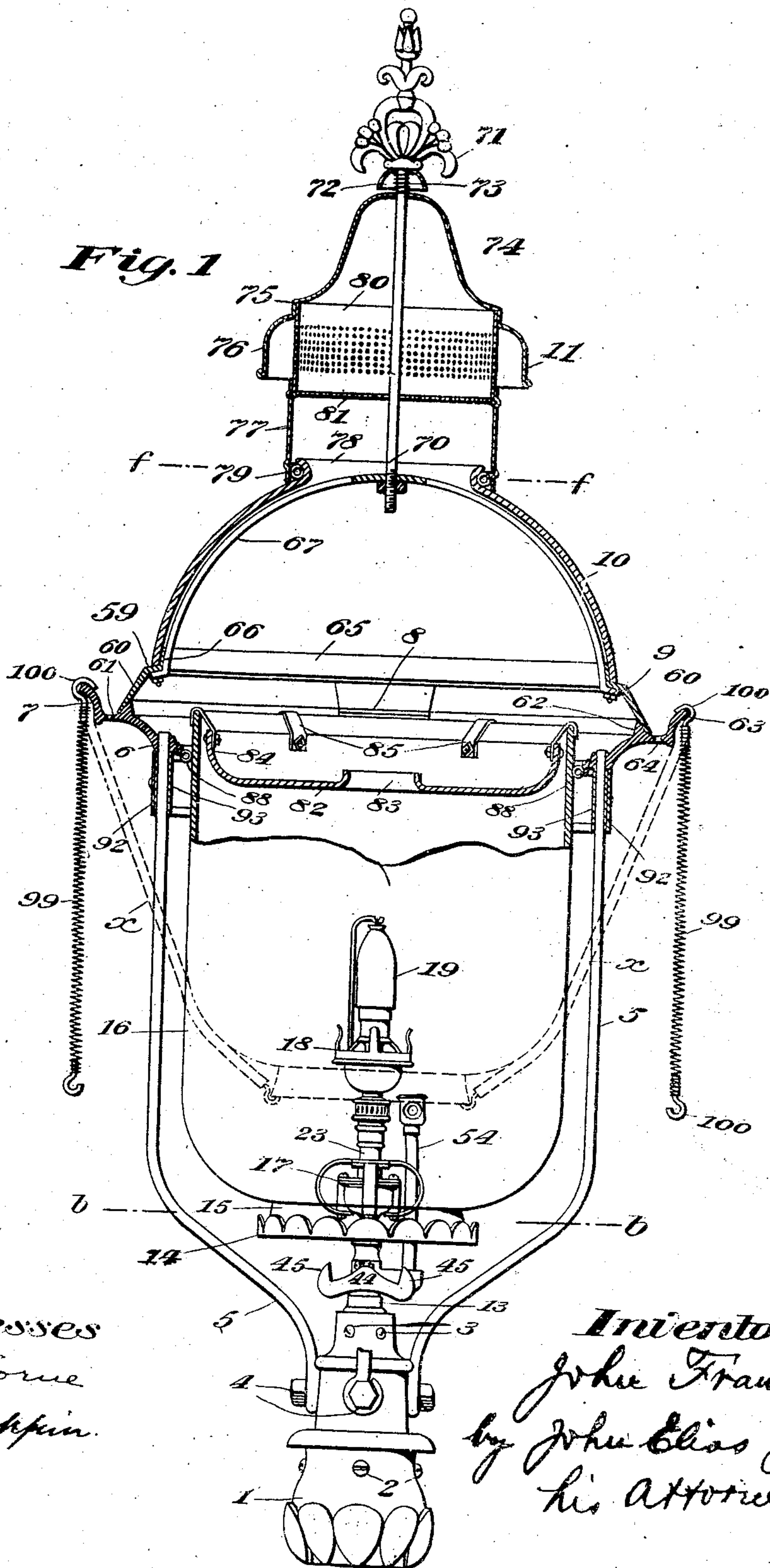
J. FRANKLIN.
GAS LAMP.

Patented Apr. 23, 1901.

(No Model.)

(Application filed Oct. 22, 1900.)

4 Sheets—Sheet 1.



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4 Sheets—Sheet 2.

Fig. 2g

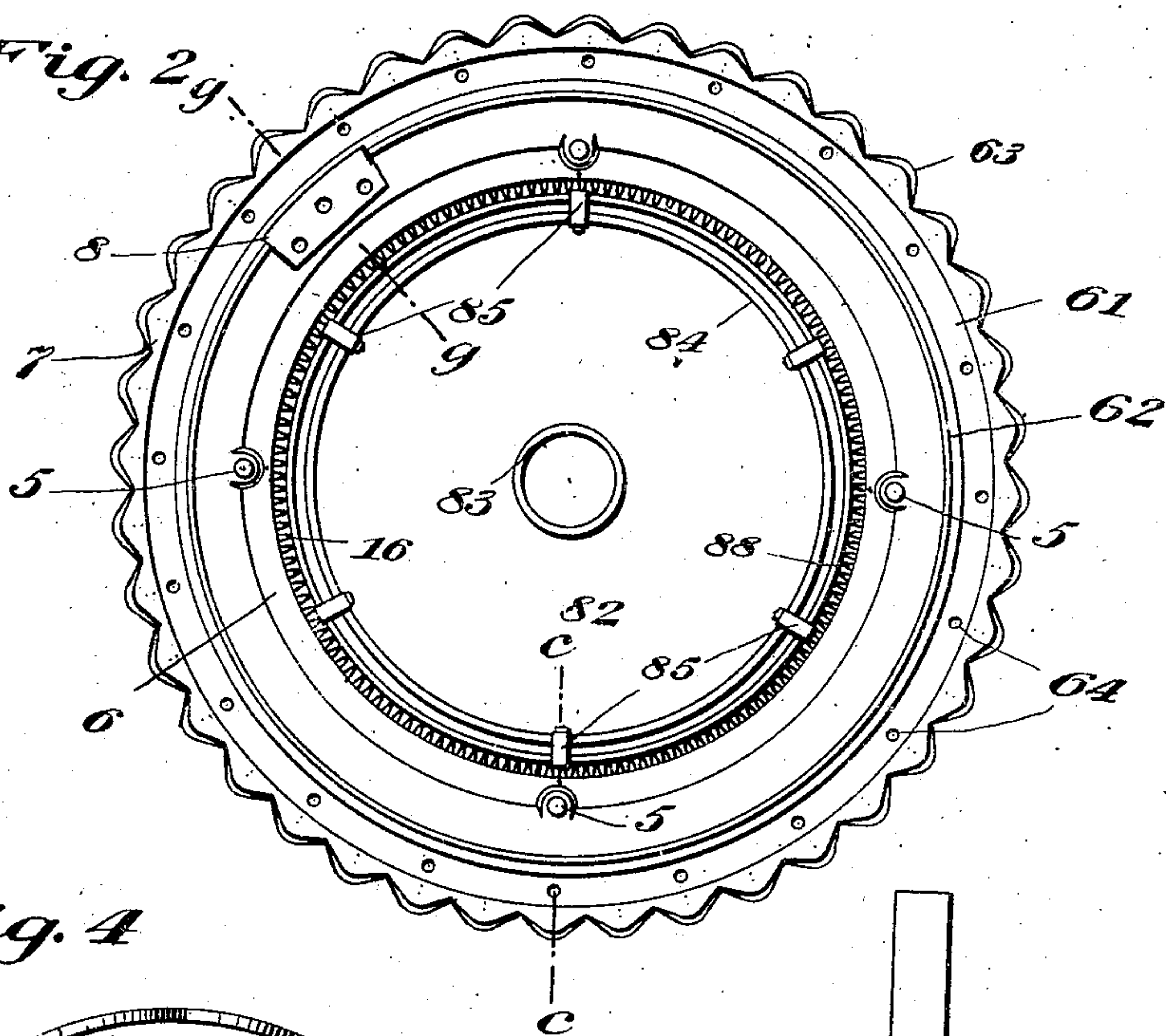


Fig. 4

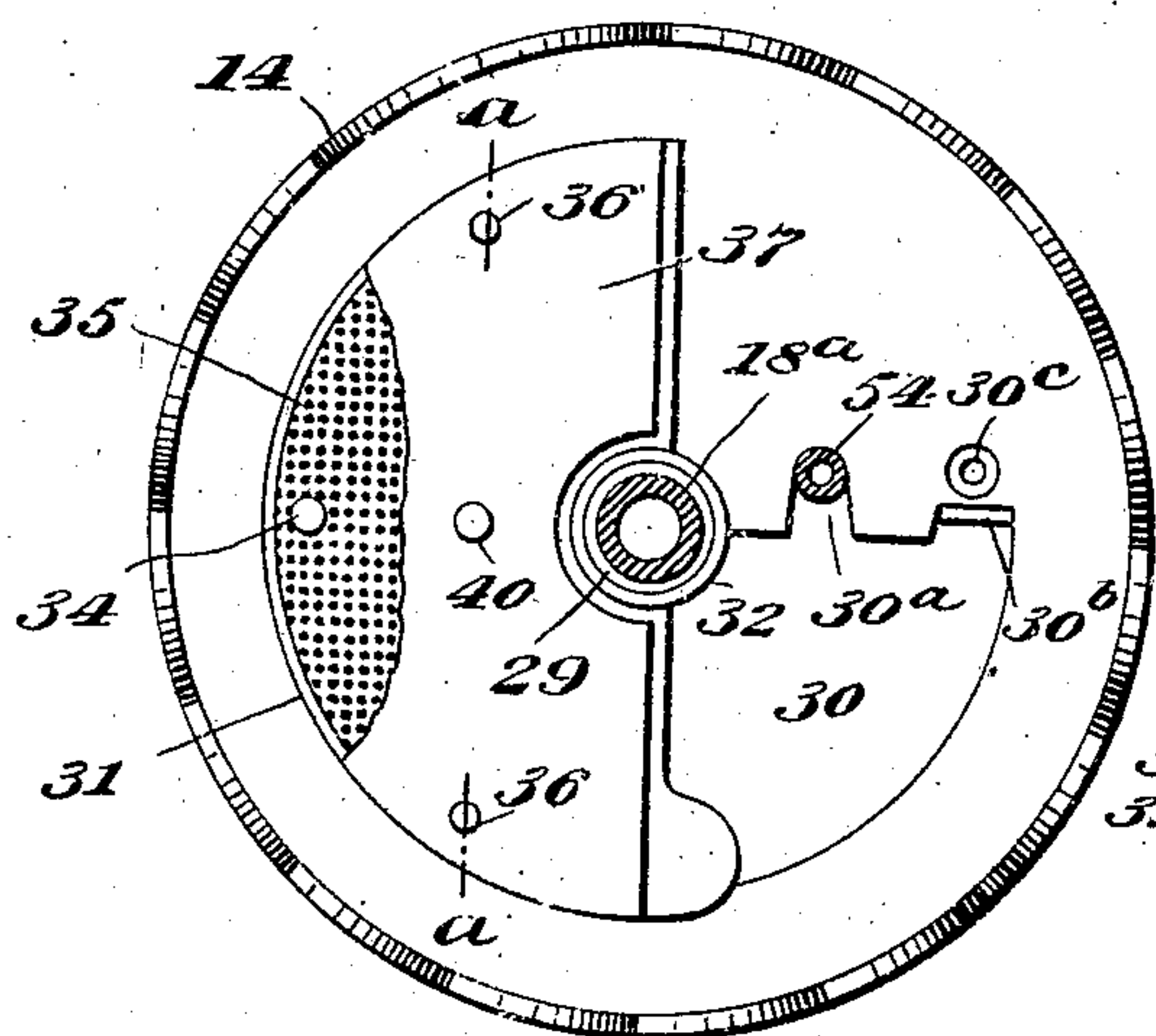


Fig. 5

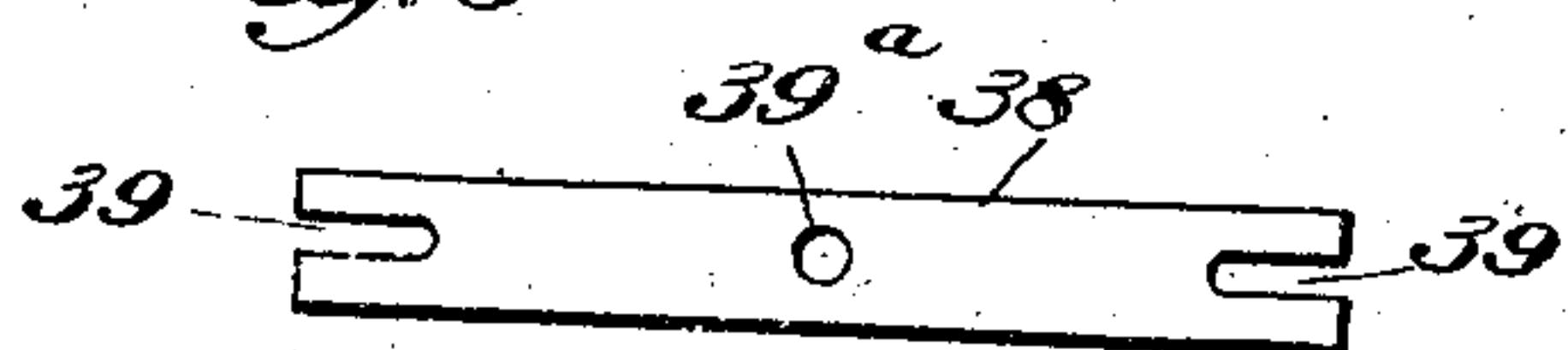
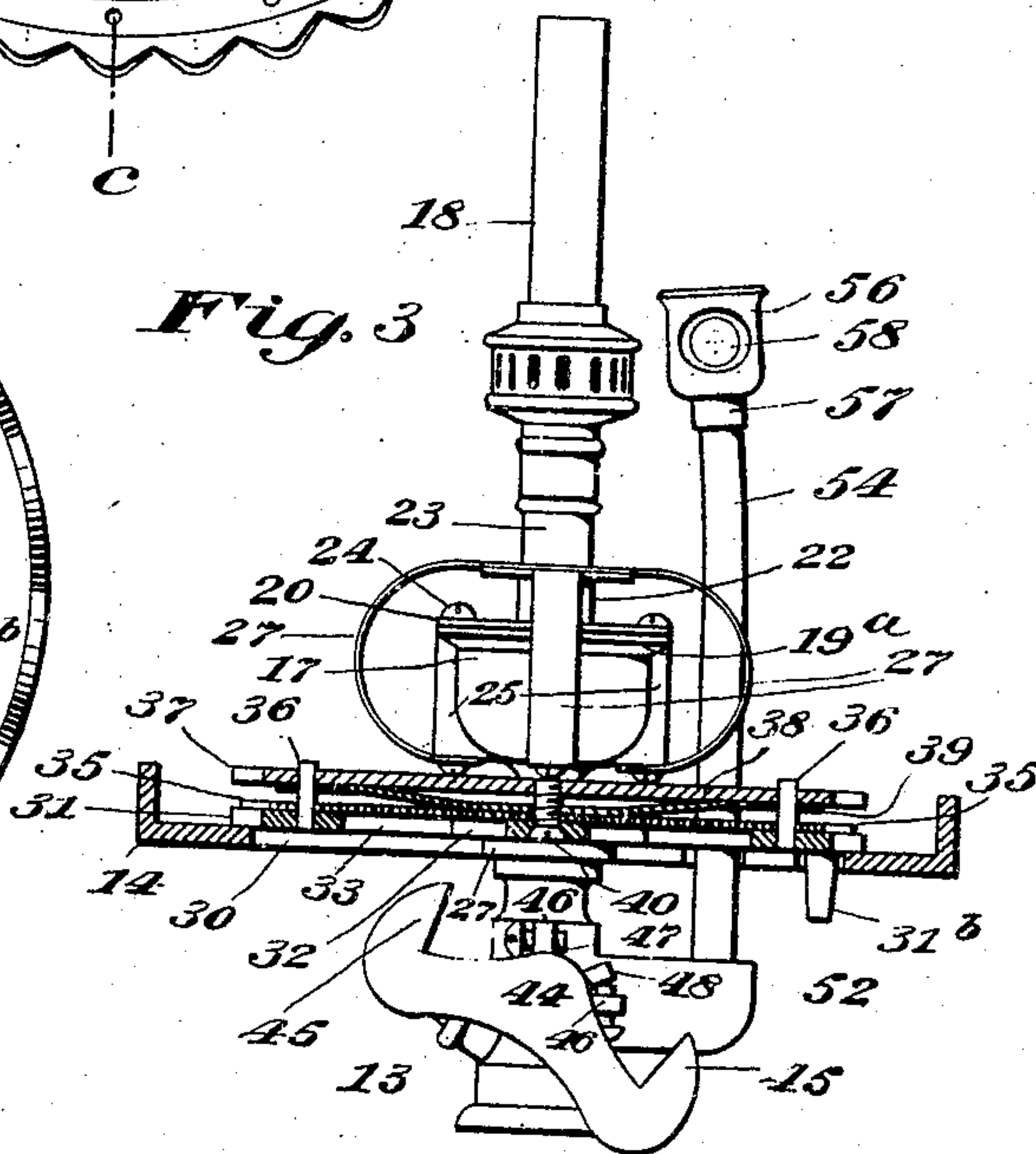


Fig. 3



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4 Sheets—Sheet 3.

Fig. 6

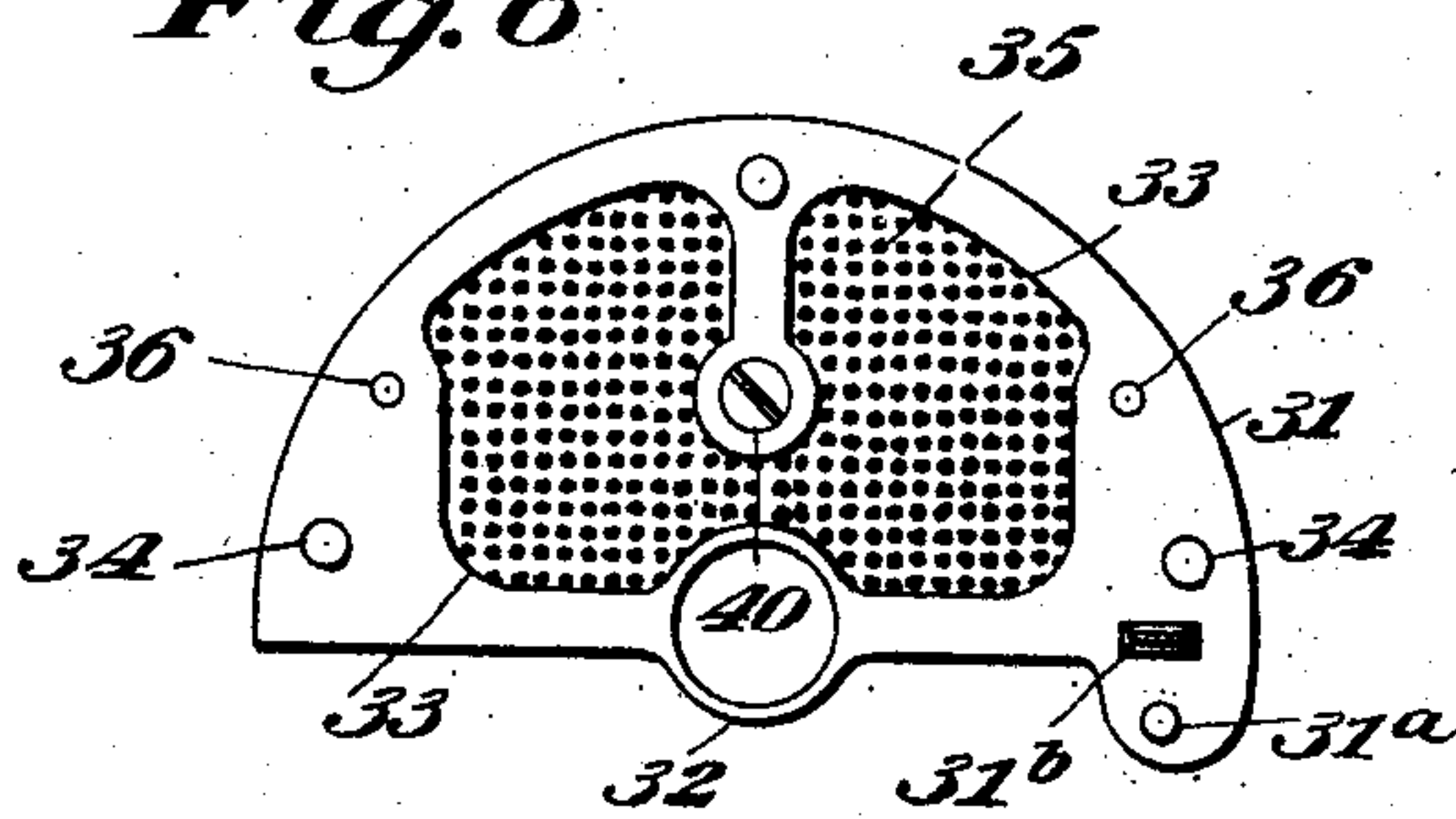


Fig. 9

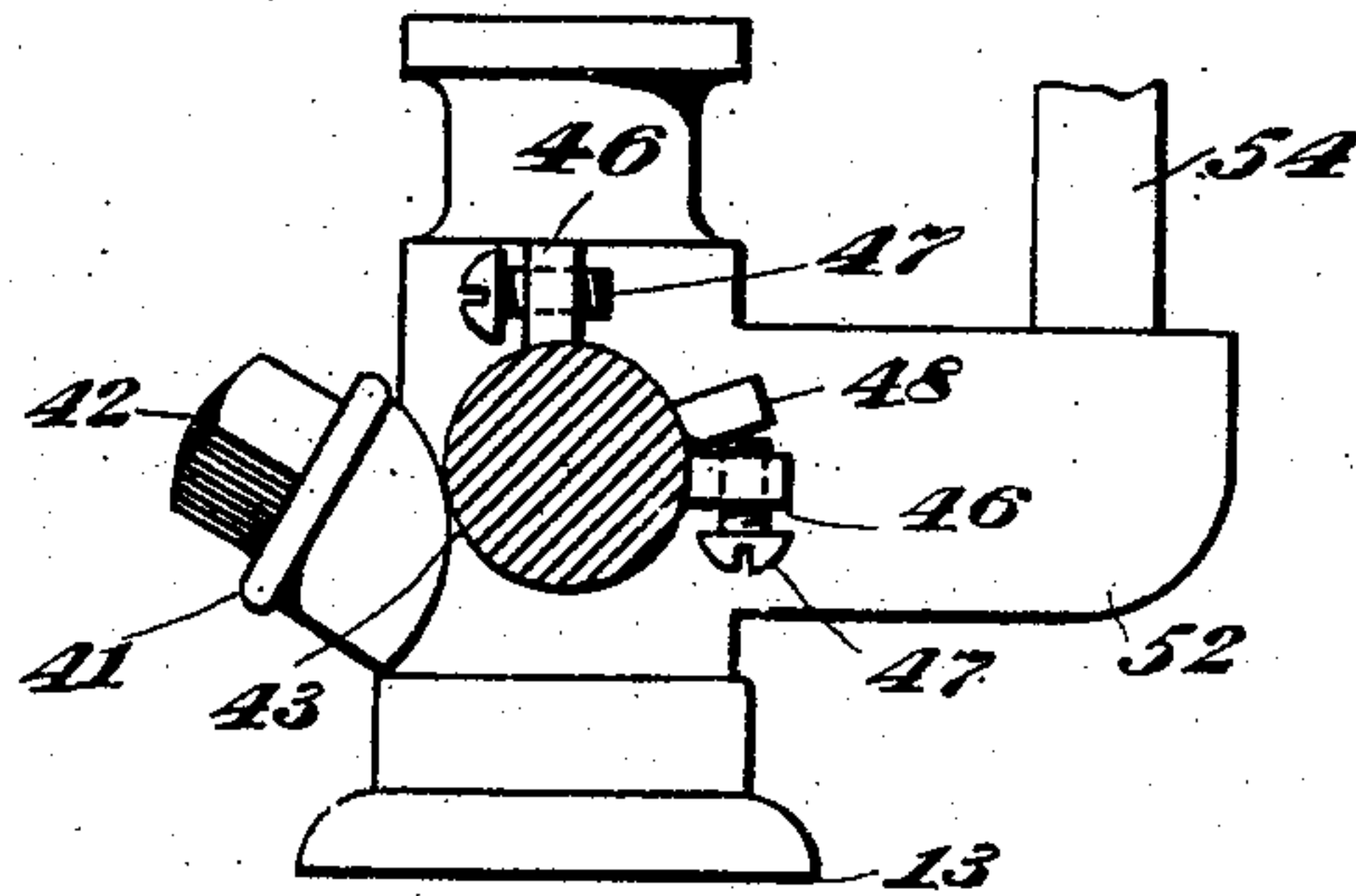


Fig. 7

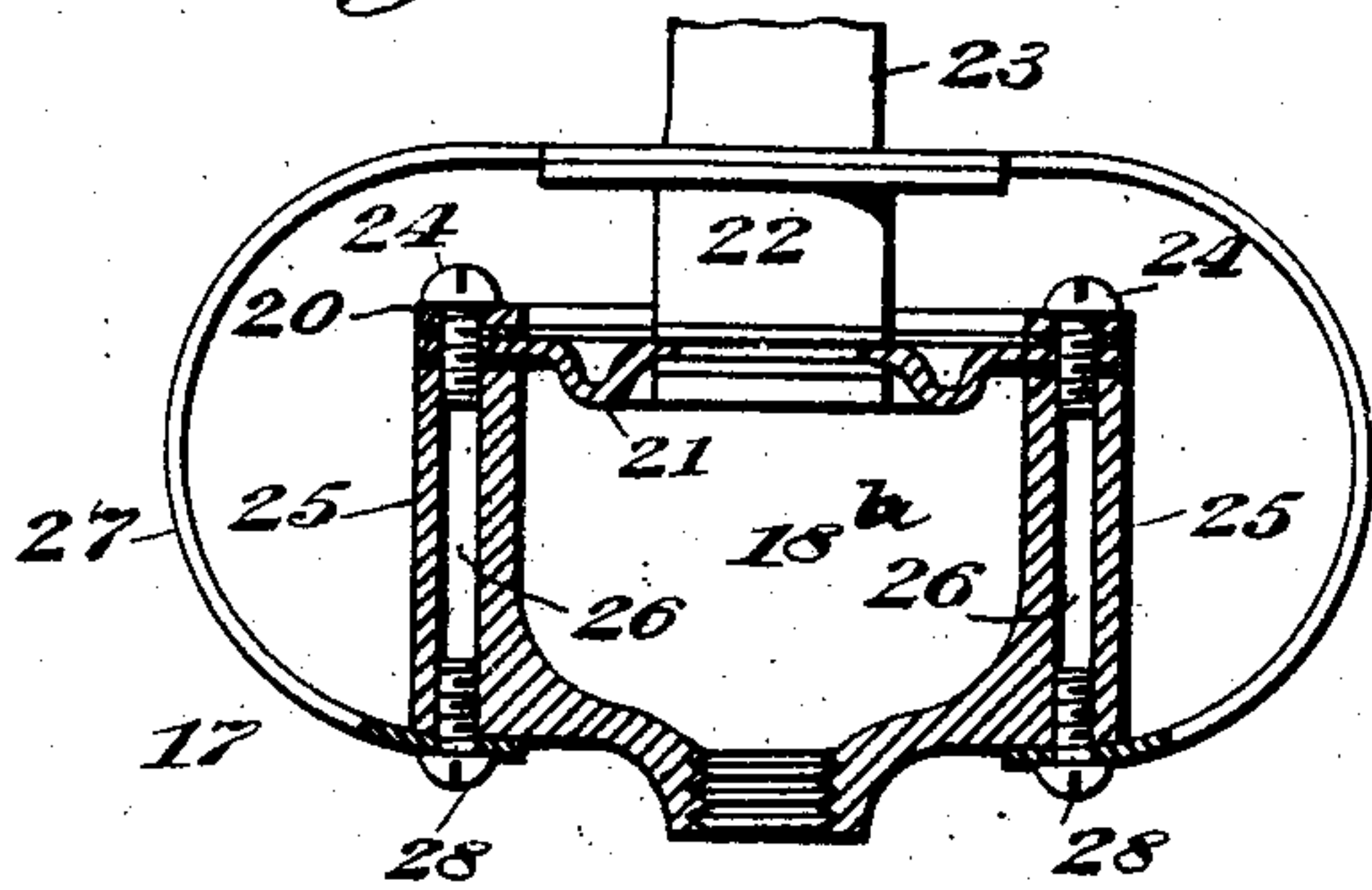


Fig. 10

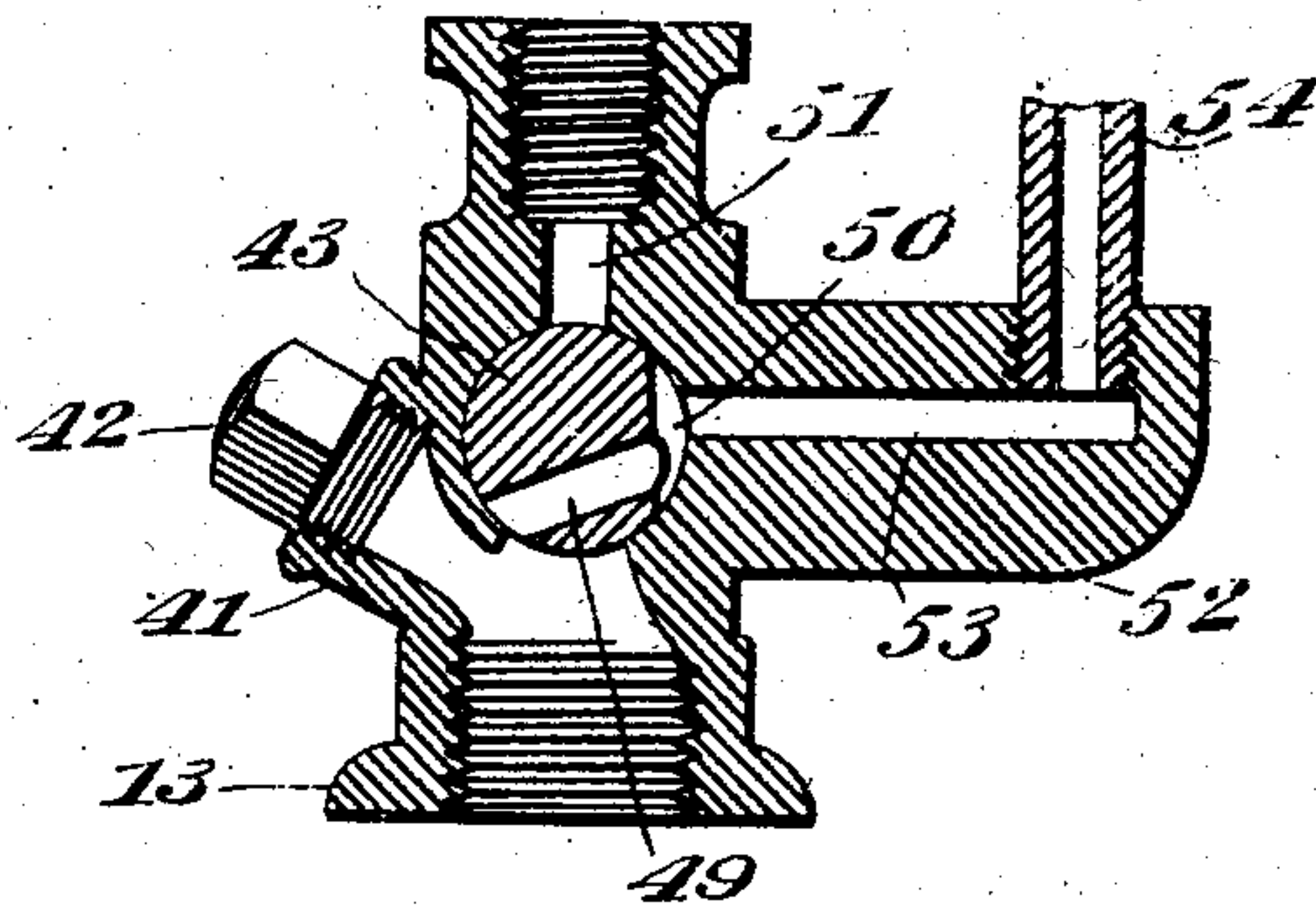


Fig. 8

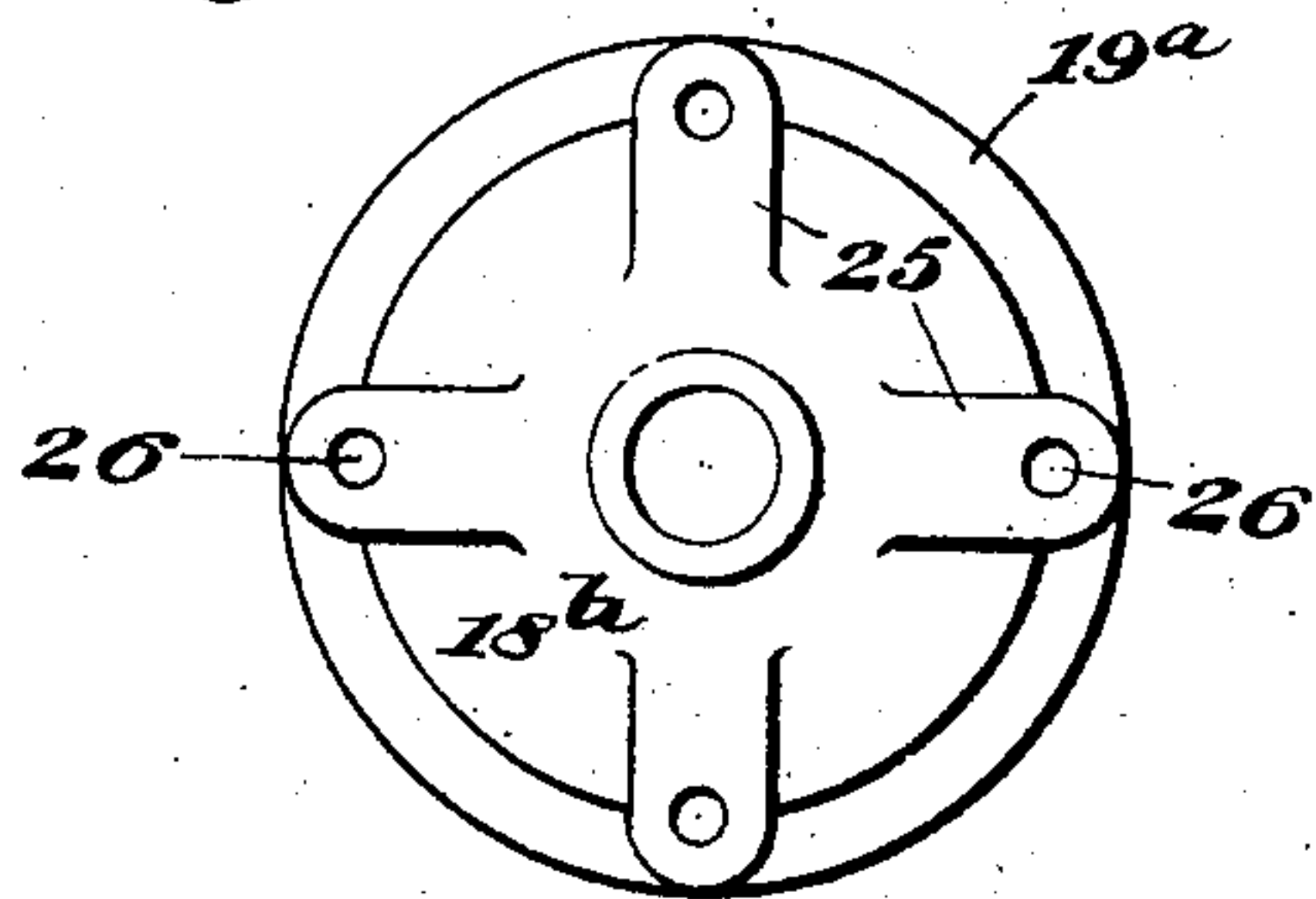


Fig. 11

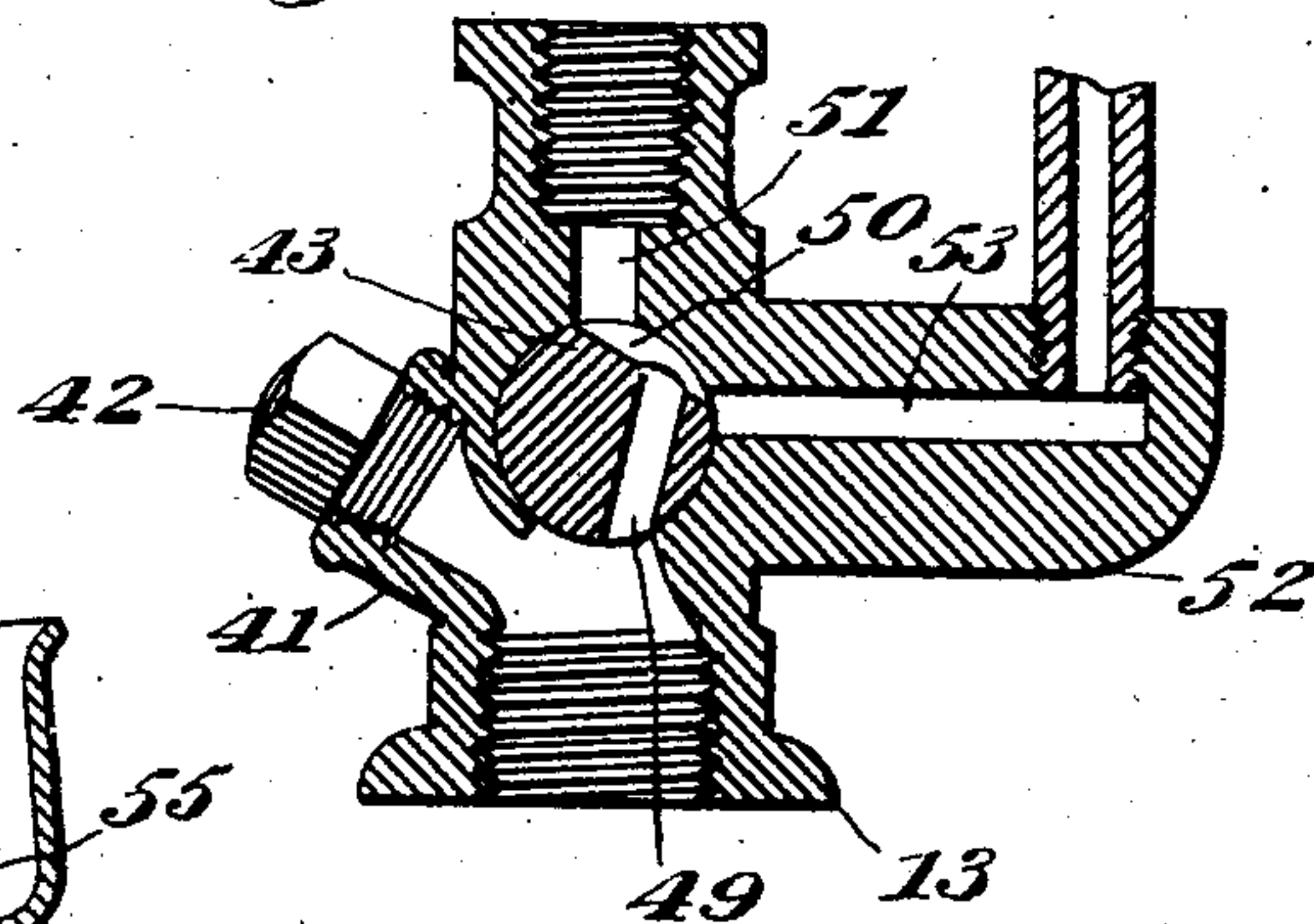
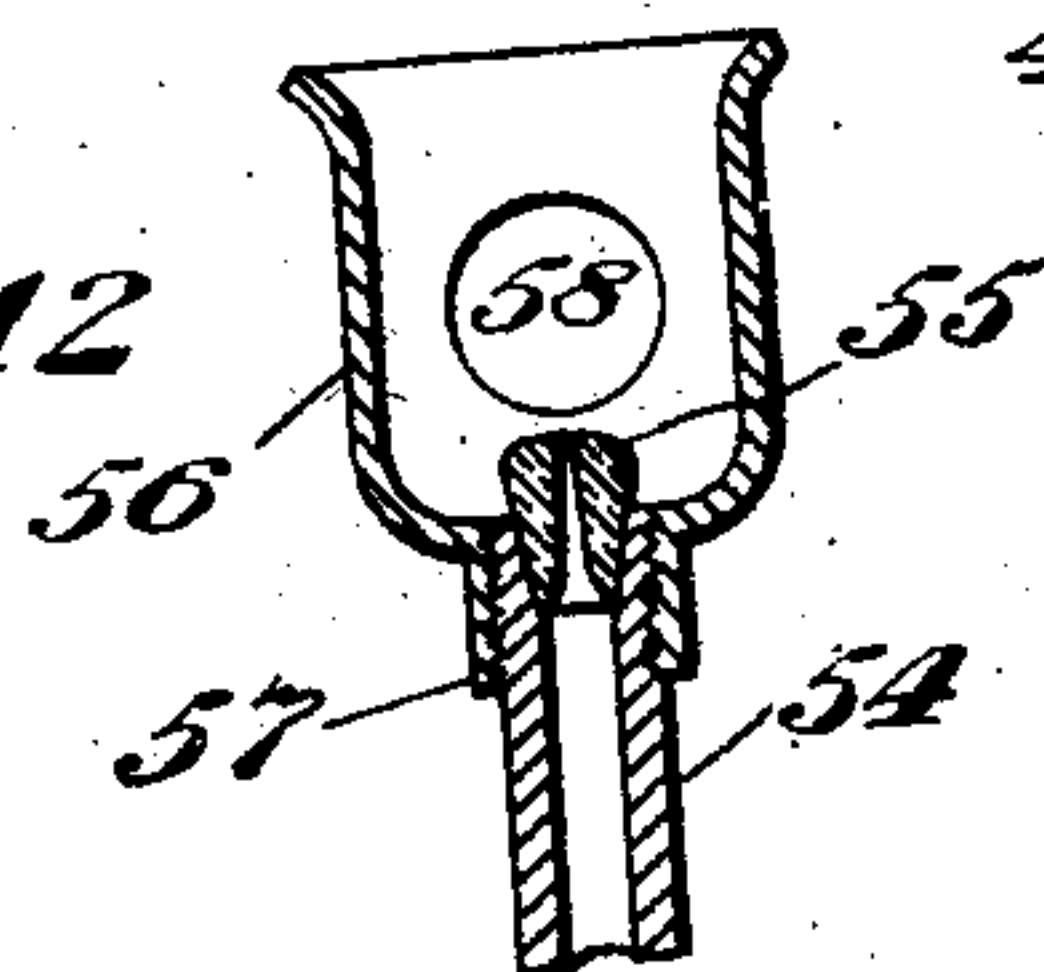


Fig. 12



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4 Sheets—Sheet 4.

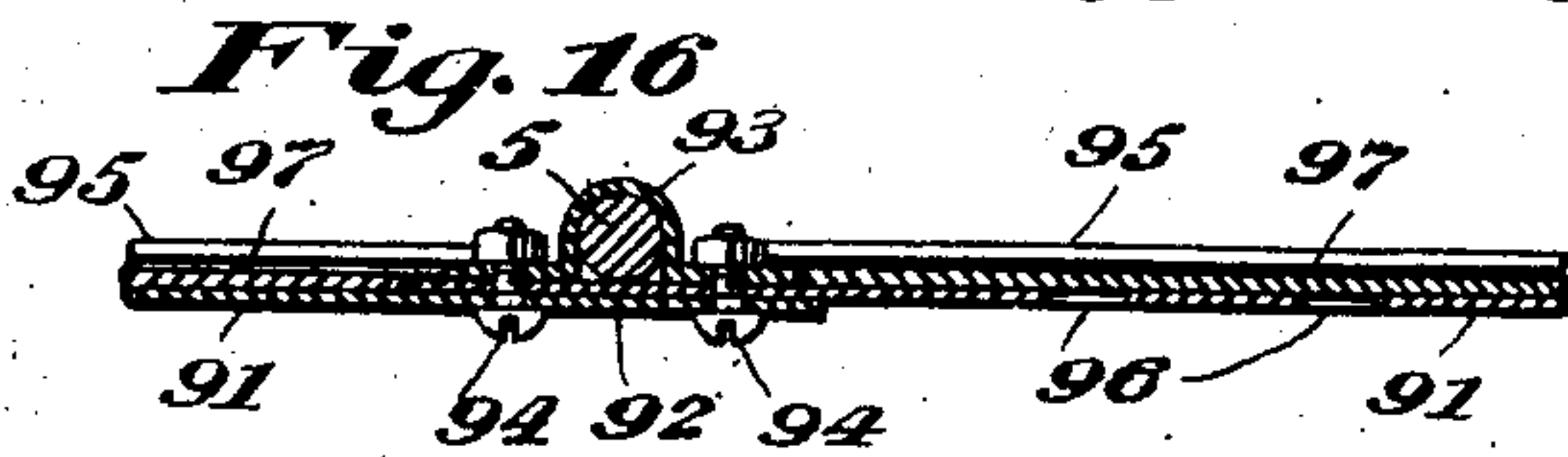
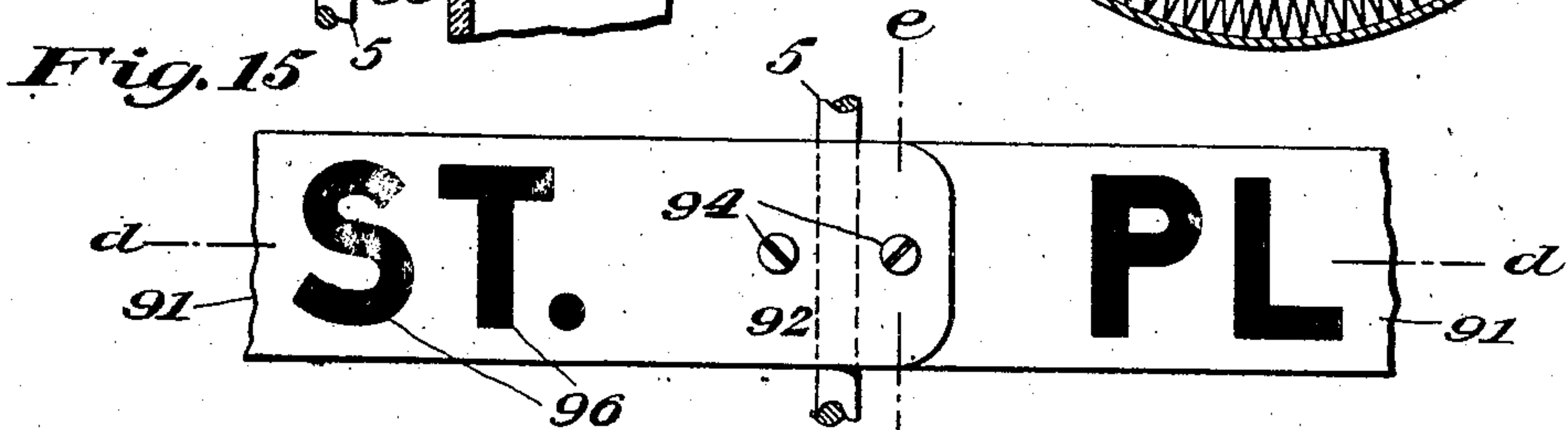
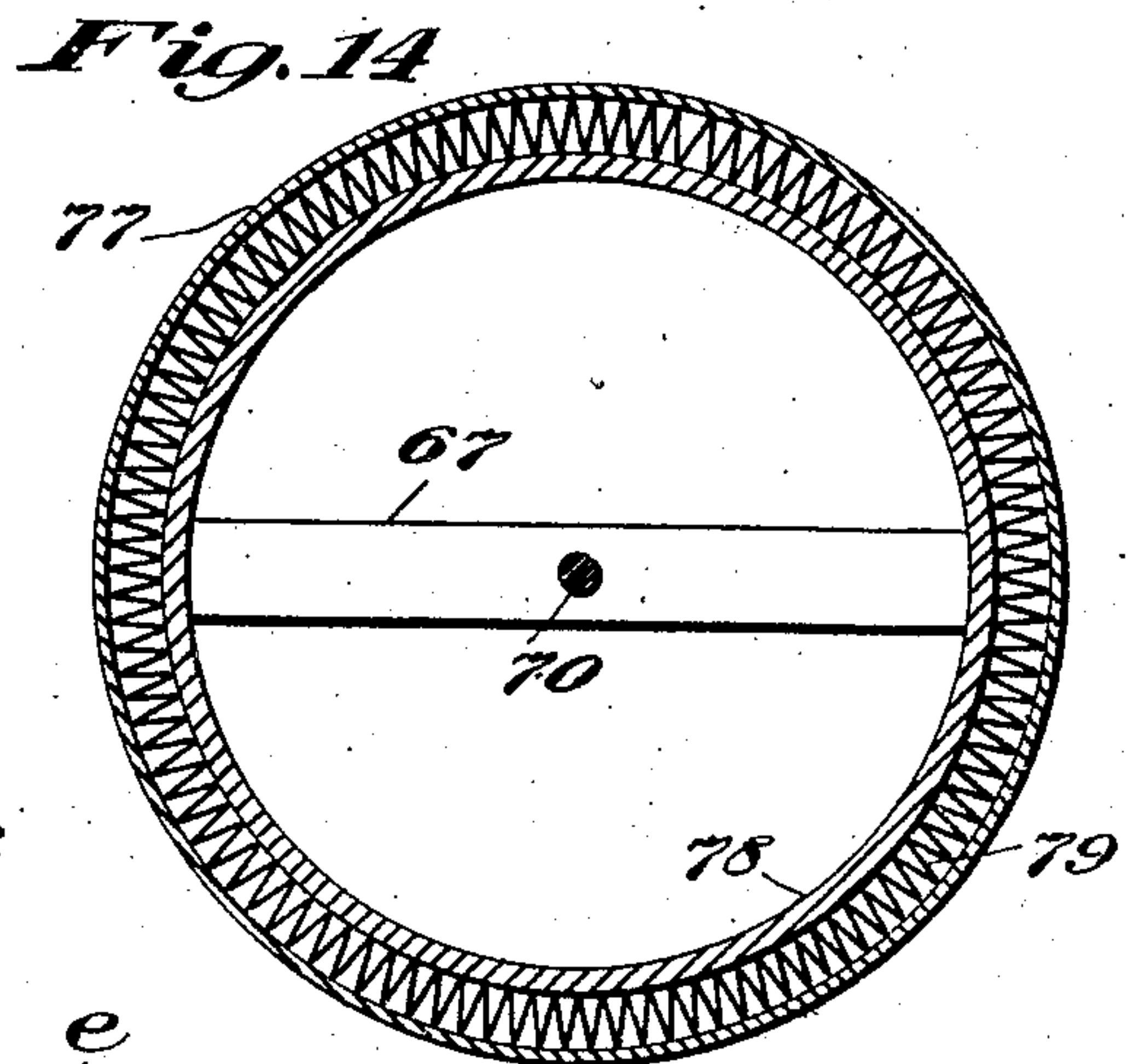
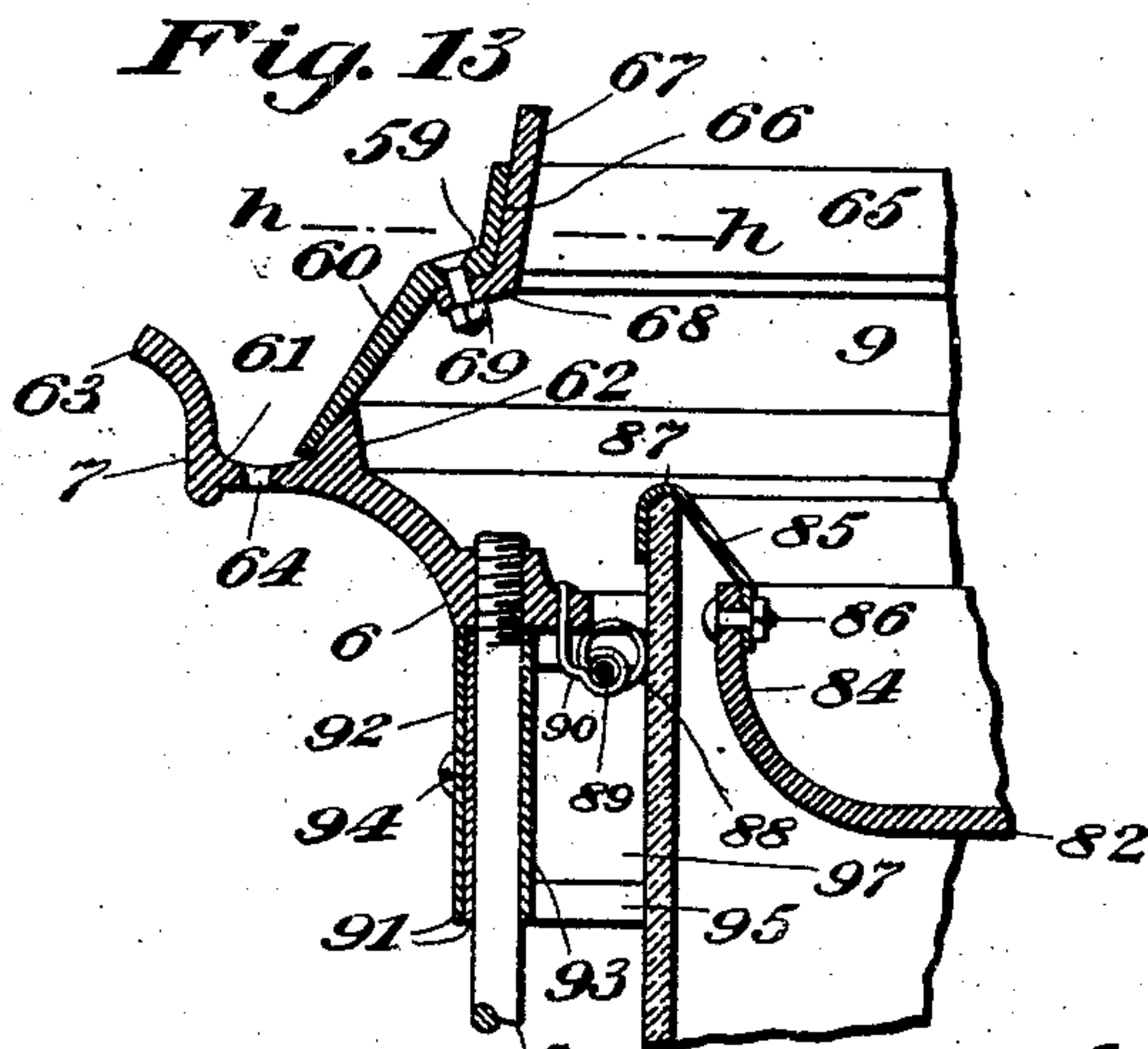


Fig. 18

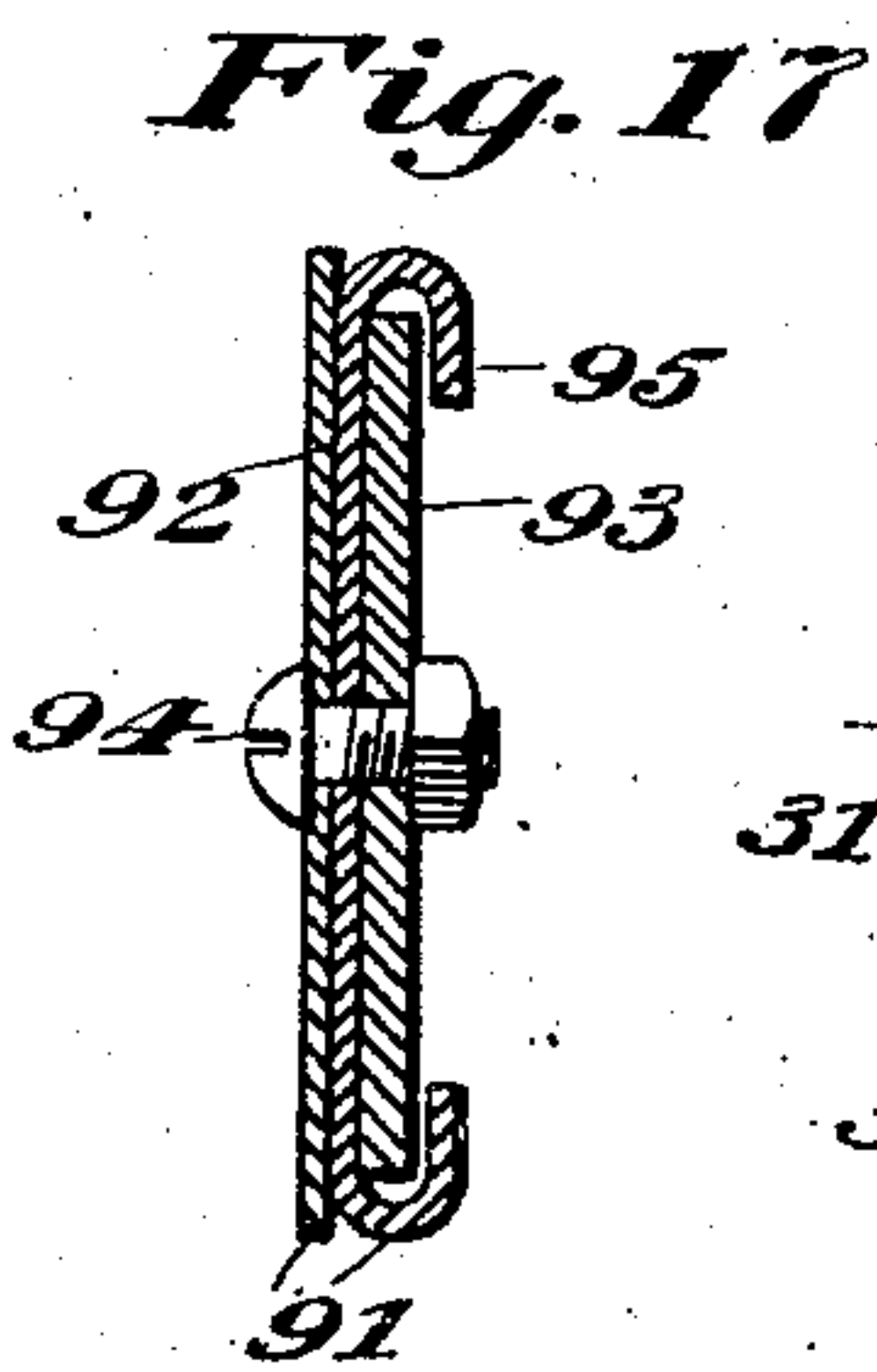
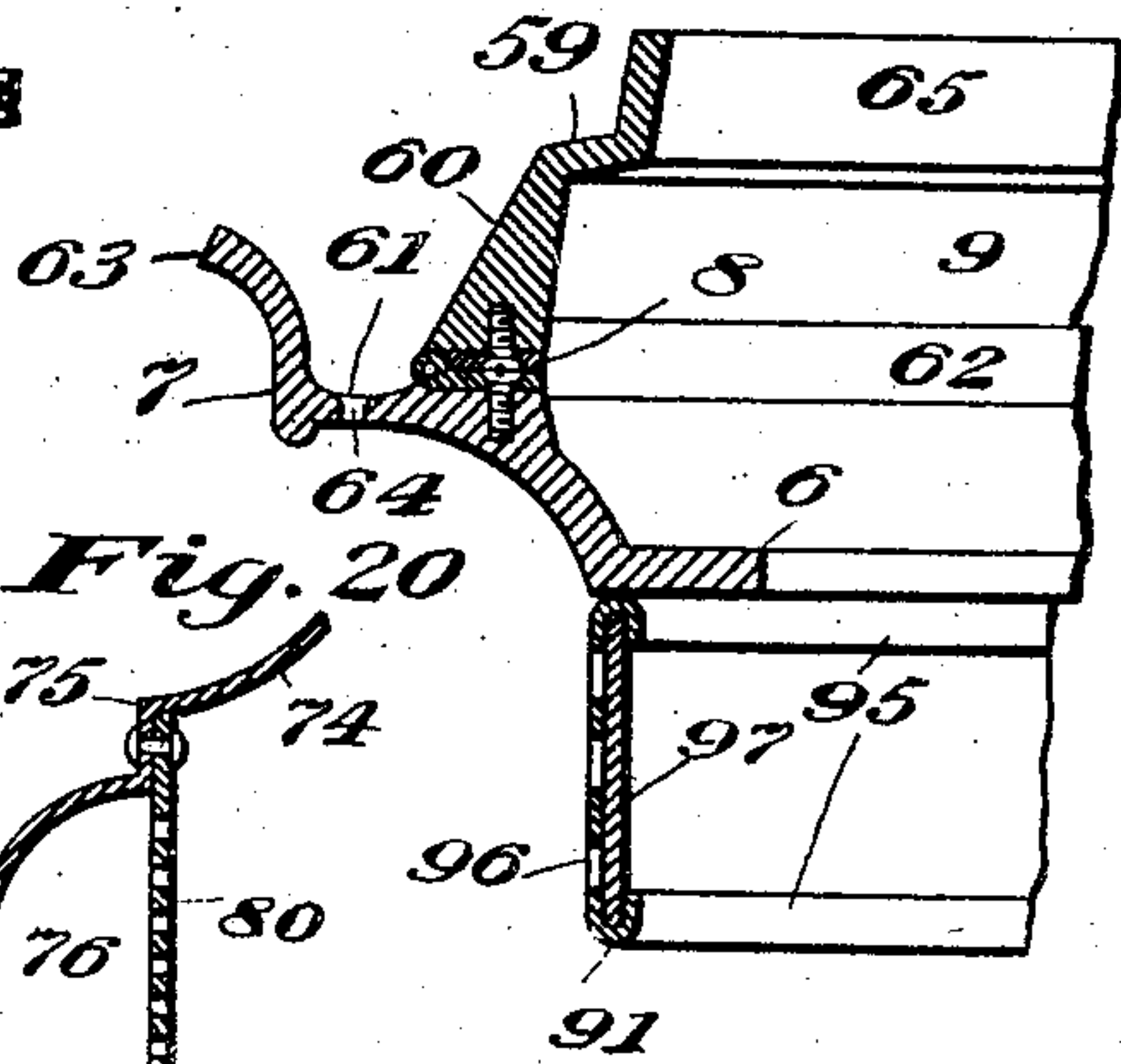


Fig. 19



Fig. 20

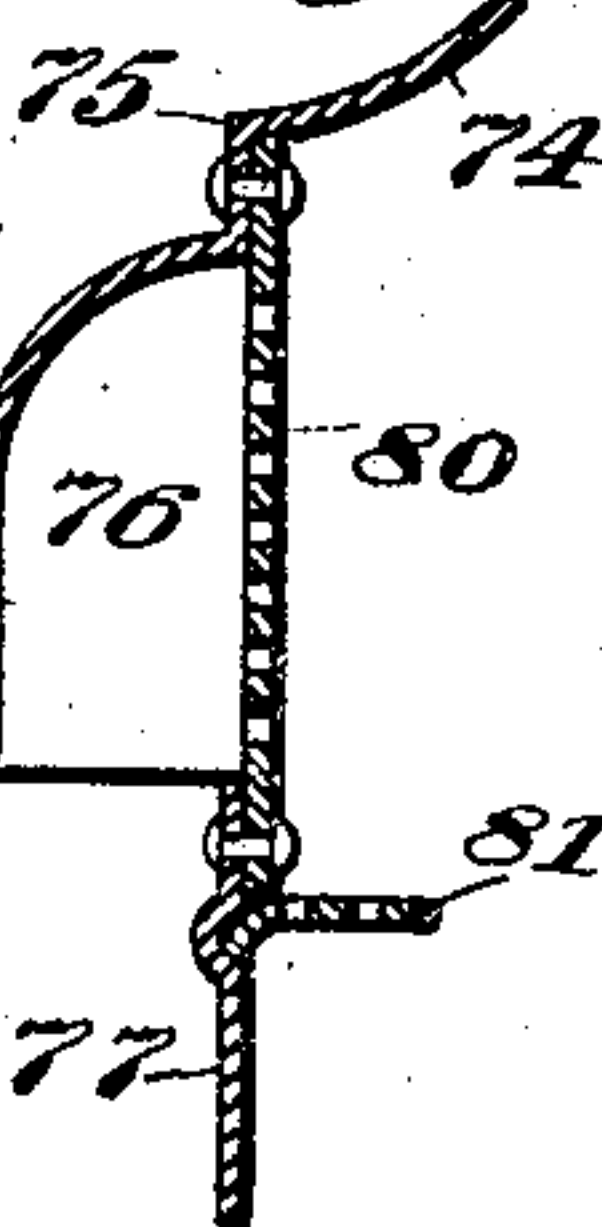
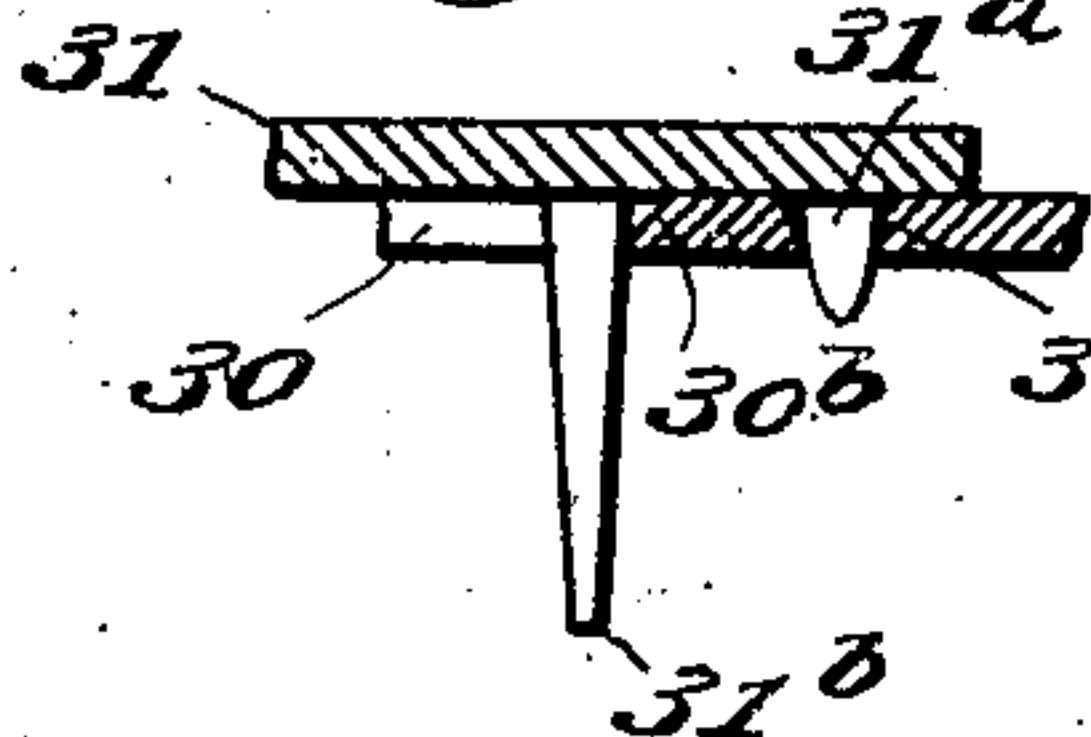


Fig. 21



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UNITED STATES PATENT OFFICE.

BEST AVAILABLE COPY

JOHN FRANKLIN, OF NORWOOD, OHIO.

GAS-LAMP.

SPECIFICATION forming part of Letters Patent No. 672,825, dated April 23, 1901.

Application filed October 22, 1900. Serial No. 33,837 (No model.)

To all whom it may concern:

Be it known that I, JOHN FRANKLIN, a citizen of the United States of America, and a resident of Norwood, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Gas-Lamps, of which the following is a specification.

This invention relates to certain improvements in that class of gas-lamps which are especially designed for use in street or outdoor lighting; and the object of the invention is to provide a lamp of this character of a simple and inexpensive nature and of an improved construction, rendering the device stronger, more durable, and better adapted for cleaning, lighting, and repair.

The invention consists in certain novel features of the construction, combination, and arrangement of the several parts of the improved lamp whereby certain important advantages are attained and the device is made simpler, cheaper, and otherwise better adapted and more convenient for use, all as will be hereinafter fully set forth.

The novel features of the invention will be carefully defined in the claims.

In the accompanying drawings, which serve to illustrate my invention, Figure 1 is a sectional elevation of the improved lamp; and Fig. 2 is a plan view of the same, the hinged dome and hood being removed to show the interior of the device. Fig. 3 is an enlarged fragmentary sectional view taken through the wind-guard in the plane indicated by line *a a* in Fig. 4 and showing the antivibratory lamp-support and the gas-cock in elevation. Fig. 4 is an enlarged sectional view taken in the plane indicated by the line *b b* in Fig. 1 and showing the wind-guard in plan. Fig. 5 is a detached detail view showing the spring for upholding the regulator-plate of the wind-guard. Fig. 6 is an under side view showing the wind-guard detached. Fig. 7 is an enlarged sectional view showing the antivibratory burner-support detached. Fig. 8 is an under side view showing the cup-shaped body of said support. Fig. 9 is a view showing the adjustable stops for limiting the opening and closing movements of the gas-cock. Fig. 10 is an axial section taken through said gas-cock and showing the gas-passages in the cock-plug, said plug being in the position in

which it stands when the gas is cut off from the main burner. Fig. 11 is a view similar to Fig. 10, but showing the position of the cock-plug when the gas is turned onto the main burner. Fig. 12 is a sectional view taken through the auxiliary burner or pilot-light. Fig. 13 is an enlarged sectional view taken in the plane indicated by line *c c* in Fig. 2 and showing the means for closing the space between the globe and the crown of the lamp. Fig. 14 is an enlarged sectional view taken in the plane indicated by the line *f f* in Fig. 1 and showing the means for holding the dome and hood in relation. Fig. 15 is a fragmentary view showing the street-sign carried on the improved lamp, and Fig. 16 is a sectional view taken through said street-sign in the plane indicated by the line *d d* in Fig. 15. Fig. 17 is an enlarged vertical section taken through the street-sign in the plane indicated by the line *e e* in Fig. 15. Fig. 18 is a sectional view similar to Fig. 13, but taken through the hinge which connects the dome to the crown of the lamp, the plane of the section being indicated by the line *g g* in Fig. 2. Fig. 19 is an enlarged sectional detail view taken through the frame which carries the dome in the plane indicated by the line *h h* in Fig. 13. Fig. 20 is an enlarged sectional detail view taken vertically through the hood and showing the detailed construction thereof. Fig. 21 is an enlarged fragmentary sectional view showing the catch for holding the wind-guard in closed position.

In the views, 1 indicates the base of the lamp, having screws 2 for attachment to the upper end of a post or other support and provided at its upper part with other screws 3 for holding the gas-pipe in proper relation within the base for connection with the burner. The base 1 also has bolts 4, by means of which the lower ends of the supporting-arms 5 of the lamp are connected thereto. The arms or supports 5 are usually four in number, and they extend up above the top of the base and are spread apart, as clearly shown in Fig. 1, to afford space between them for the reception of the lamp-globe. The upper ends of said supports 5 are threaded for engagement with the crown 6, which is of annular form and has a raised outer rim 7, to which is connected, by a hinge 8, the frame 9,

whereon is supported the dome 10. Above the dome 10 is supported by suitable means a hood or canopy 11.

The hinge 8 employed for connecting the annular frame 9 with the crown 6 is, as clearly shown in Fig. 18, a butt-hinge secured by screws to the respective parts 9 and 6, which are cut away and thickened at the hinge-point for this purpose.

13 indicates the gas-cock, located just above the base 1 of the lamp, and 14 represents a globe support or gallery held above the cock 13 and on which is rested the contracted lower edge or neck 15 of the glass globe 16, the upper end of said globe being held within the annular crown 6.

17 indicates an antivibratory support for the lamp-burner, and 18 represents the burner supported thereon and provided with an incandescent mantle 19. The antivibratory support 17, as herein shown, is supported above the gas-cock 13 upon a short pipe-section 18^a (see Fig. 4) of just sufficient length to pass through the globe-support 14 and afford connection between the cock and support 17, the said lamp-support having a cup-shaped body 18^b into which said pipe-section screws. The body 18^b is provided with a projecting flange 19^a around its upper part, on which is held, by means of a washer or annulus 20, a flexible gas-tight diaphragm 21, the central part of which has a gas-tight connection with a plug 22, extended down from the burner-fitting 23. The body, as seen in Figs. 7 and 8, has at suitable points projecting lugs 25, formed with vertical openings 26, the upper ends of which receive screws 24 for holding the washer or annulus 20 in place, while the lower ends receive other screws 28, by means of which spring-arms 27 are connected at their lower ends to the lower part of the body, the upper ends of said springs being secured to the burner-fitting 23. The springs are divergent and serve to sustain the burner-fitting and burner carried thereon above the body of the support, while the diaphragm itself maintains a gas-tight connection between the burner-fitting and the body 18^b, while permitting free vibration of the burner-fitting relative to said body.

The globe-support 14 has a central opening for the passage of the pipe-section 18^a, and surrounding said opening the support is formed with an annular raised bearing 29. The support is also formed with a semicircular air-inlet opening 30, adapted for the passage of a torch for use in lighting the burner. This opening is adapted to be covered by a wind-guard formed of a semicircular metal frame 31, as seen in Fig. 6, said frame having a bearing part 32 to receive and turn on the annular bearing 29 of the support 14. The frame 31 is of greater radius than the opening 30, so that the edges of said frame rest on the support outside the opening to accommodate the wind-guard for turning movement upon the support concentrically with

respect to the pipe-section 18^a to cover or uncover the opening 30. The frame 31 is cut out, as seen at 33, at its central part, and over it is held a foraminous plate 35, secured by rivets 34 or the like and adapted for the passage of sufficient air to support combustion at the lamp-burner, but designed to offer enough resistance to the entry of gusts of air or wind to prevent the lamp from flickering or being blown out. The frame 31 is provided at opposite sides with upwardly-extended guide-pins 36, whereon is guided for movement toward and away from the plate 35 a regulator-plate 37, of flat metal, adapted when adjusted nearer to or farther from said perforated plate 35 to regulate the entry of air into the globe, so as to permit of adjusting the wind-guard to different locations where it is necessary to regulate the device to provide for more or less exposed positions. A spring 38 is arranged between the plates 35 and 37, being bent up and notched, as seen at 39, at its ends for engagement with the guide-pins 36, by which it is held in place and having a central opening 39^a, through which passes a screw 40, the head of which, as shown in Figs. 3 and 6, is held to turn on the frame 31, while the threaded part of the screw has engagement with the regulator-plate 37. Thus it will be seen that when the screw 40 is turned the plate 37 will be adjusted toward or from the perforated plate 35, so as to regulate the supply of air to the burner. The head of screw 40 is countersunk flush with the under side of the frame 31, so that while the screw may be turned from the under side of the frame, yet no impediment is offered to the free movement of the wind-guard upon the globe-support 14.

To hold the wind-guard in closed position when the opening 30 in the globe-support 14 is covered, I provide the frame 31 with a projecting part adapted to extend over the top of the support at one side of the opening when the guard is in closed position, as shown in Fig. 21. This projecting part is provided with a downwardly-extended pin 31^a, adapted to take into a recess or opening 30^c in the wind-guard adjacent to the opening 30. The wind-guard has a handle 31^b, extended down from the frame 31 and by means of which it may be conveniently moved, and in order to permit the pin 31^a to automatically enter the recess in the support when the wind-guard is moved into closed position I make the edge of opening 30 adjacent to said recess 30^c beveled or inclined. When the catch-pin is engaged with its recess, it is necessary to slightly lift the wind-guard in order to disengage said pin and permit of opening the guard. The proportion of the parts is such that the regulator-plate 37 normally is upheld by its spring 38 against the under side of the antivibratory burner-support, so that the catch-pin is thereby held securely engaged with its recess, except the wind-guard be lifted in order to uncover the opening 30.

The cock 13 has a casing the lower end of which is adapted for connection with the gas-pipe at the lamp-base 1, and said casing has at one side a slushing-opening 41, closed by a plug 42.

43 indicates the cock-plug, having at its end a lever 44, the ends of which are formed into hooks 45, adapted to be engaged by a projection from the lighter's torch, so as to permit of readily operating the cock to turn on or cut off the gas.

On the casing are lugs 46, suitably spaced apart and provided with screws 47, the tips of which are adapted to be engaged by a pin or projection 48 on the plug in such a way as to limit the movement of said plug for turning on or cutting off the gas, and said screws being capable of adjustment permit the movements of the cock to be very conveniently regulated.

Within the casing the plug 43 has a gas-passage 49 formed through it, one end of said passage being expanded or made oval, as shown at 50. The smaller end of the passage 49 is adapted for communication with the passage leading from the pipe at the lamp-base 1, while the larger end 50 of said passage is adapted for communication with two gasways in the casing—namely, the passage 51, leading to the main burner 18, and the passage 53, formed in an arm 52, extended from one side of the casing and carrying the auxiliary burner or pilot-light tube 54, the bore of which is in communication with the passage 53. The passage 49 has its smaller end always in communication with the gas-supply; but when the gas is turned off from the main burner, the plug being then in the position shown in Figs. 9 and 10, the passage 49 is very nearly closed at its smaller end, so that but a very slight volume of gas may pass through it, and by a proper adjustment of the corresponding stop or screw 47 the plug may, if desired, be still further turned, so as to completely close the smaller end of passage 49 and entirely cut off the flow of gas through the same. In this position of the cock-plug the larger end 50 of passage 49 is in communication with the passage 53 for the pilot-light, so that a small supply of gas may flow thereto to keep the pilot-light burning when the main burner is extinguished. When the plug is turned to supply gas to the main burner, the first operation is to fully open the smaller end of the passage 49, so as to allow a greater supply of gas to flow through the said passage, and this increased supply goes to the pilot-light, so as to cause the same to flame up and burn with a jet of sufficient length to ignite the gas which later is supplied to the main burner. The further movement of the cock-plug serves to bring the expanded end 50 of passage 49 into communication with passage 51, leading to the main burner, and at the same time to gradually reduce the supply of gas to the pilot-light until, when the plug shall have assumed the

position shown in Fig. 11, the pin 48 being then in engagement with the upper stop or screw 47, a very small part of the expanded end 50 of passage 49 is in communication with the passage 53, leading to the pilot-light, and the light thereat is consequently turned down very low. Also by proper adjustment of the corresponding screw 47 the gas may then be turned off altogether from the pilot-light, if desired.

The pilot-light tube 54 extends up through the globe-support 14, which has a notch 30 at one side of opening 30 for this purpose, and said pilot-light is at one side of the main burner. Said tube has at its upper end, as seen in Figs. 3 and 12, a gas-tip 55, inclosed in a shield 56, having at its lower end a nipple 57, threaded on the tube 54 and provided in its side with a glazed opening 58. The shield 56 protects the minute jet which ordinarily burns at the pilot-light tip from being blown out, and the glazed opening permits the lighter to readily see whether the pilot-light is burning or not.

The ring-shaped frame 9 for the dome 10, which latter is usually made from glass or porcelain, is formed with an annular ledge or shoulder 59, on which the lower edge of said dome rests, and below said ledge or shoulder the outer face of the frame 9 is made slanting or sloping downward and outward, as shown at 60, the lower edge of said slanting part being arranged to fit in an annular groove or chamber 61, formed in the upper face of the crown 6 and forming a drip-chamber to receive water running off the dome. Inside said slanting part 60 the crown has a raised annular bead or flange 62 to prevent the water in said chamber 61 from running down inside the crown, and in the bottom of said chamber 61 are formed openings 64, extended through to the under side of the crown and through which the water collecting in the drip-chamber may freely escape. The outer edge of the crown outside the drip-chamber is formed with a raised ornamentation or wall 63.

Inside the ledge or shoulder 59 the frame 9 is formed with a raised annular wall or flange 65 to prevent the entry of water at the joint with the dome 10 and also to center the dome on the frame, and at opposite points said wall 65 is recessed on its inner face, as shown at 66, in Figs. 13 and 19, to receive a curved stirrup 67, the lower ends of which are bent out inside the frame beneath the shoulder 59, as shown at 68, and are held by bolts 69 to said frame. The central part of stirrup 67 is bent upward, as seen in Fig. 1, inside the dome, and serves to receive the threaded lower end of a tie-rod 70, extended axially in and through the top of the hood 11 and provided at its upper end with an ornamental enlargement 71, below which is a shell 72, in which is housed a spiral spring 73, held on rod 70 and having bearing on the top of hood 11 to hold the hood pressed elastically on the dome 10, said spring serving to compensate for ex-

pansion and contraction, and thus prevent cracking of the dome or loosening of the parts.

The hood 71 has a bell-shaped upper part 74, the lower portion of which has a circular seat 75, in which is held by rivets or the like, as shown in Fig. 20, the upper edge of a band 80, of perforated sheet metal, the lower edge of which is riveted inside the lower cylindrical part 77 of the hood, which latter part rests at its lower edge upon the dome 10. Below the seat 75 the bell-shaped upper part of the hood is flared out to form a cowl 76 to protect the openings in the band 80 from rain or wind, and inside the hood, below the band 80, is held a perforated metal plate 81, the edges of which are held in a groove swaged in the walls of the hood. To center the hood upon the dome and hold these parts in proper relation, the upper part of the dome inside the hood is formed with an undercut annular seat or channel 78, wherein is held a spiral spring or equivalent packing 79, (see Figs. 1 and 14,) which fits snugly against the inner face of the lower part 77 of the hood and also affords compensation for expansion and contraction.

82 indicates a deflector at the upper part of the globe 16, said deflector having a central opening 83 for the upward passage of products of combustion and having raised edge walls 84, to which are held, by bolts 86 or equivalent means, flexible clips 85, which are extended upward and outward and have their ends bent in hook form, as shown at 87, so as to adapt them for engagement with the upper edge of the globe 16, from which the deflector is supported. The clips 85 being flexible are made to readily accommodate themselves to slight inequalities in the diameters of the globes. A packing, also in the form of a spiral spring 88, is interposed between the inner edge of the crown 6 and the outer face of the globe 16 to accommodate irregularities in the sizes of globes and also to afford an effectual guard to prevent insects from creeping into the lamp. The spring 88, as shown in Fig. 13, is held on a metal strip or wire 89, which is bent in circular form and arranged within the wire coil and supported at suitable intervals on wires or arms 90, extended down from the crown 6.

In connection with the improved gas-lamp I employ a street-sign formed in sections 91, having lapped end portions 92 arranged outside the crown-supports 5 and secured to said supports by means of clips 93, as shown in Figs. 1, 13, 15, 16, and 17, bolts 94 being employed for connecting said lapped end portions to the clip. There is a bolt 94 at each side of the support 5, and each bolt is passed through both lapped ends 92, as shown in Figs. 16 and 17. Each section 91 has at its upper and lower edges and on its inner side channels 95, in which is held a strip 97, preferably of colored and transparent material—such as celluloid, for example—and the sections 91 are cut out, as shown at 96, to produce letters form-

ing the street-sign, which is seen through the celluloid strip 97 in colored characters. The channels 95 are extended along the lapped ends 92 of sections 91, so as to take over the ends of the clips 93, as shown in Fig. 17, whereby it will be seen that the sections are locked to the clips and are prevented from falling downward even when the screws or bolts 94 are removed, and can only be disengaged from the clips by bending or springing the sections out so as to withdraw the channeled edges thereof by longitudinal movement from engagement with the said clips.

The construction of the improved lamp with the dome 10 permits of lifting the globe 16 high enough without opening or swinging back the hinged dome-frame 9 to permit of adjusting or repairing the burner or of replacing the mantle thereof, and in order to hold the globe in place when thus lifted I provide connections 99, preferably in the form of coiled-wire springs, as shown in Fig. 1, having hooks 100 at their ends, the hooks at the upper ends of the connections being engaged with the raised edge wall 63 of the crown and those of the lower ends of the connections being adapted for engagement with the lower edge of the globe-neck 15 when the globe is in raised position, as shown at 2 in Fig. 1.

From the above description of my improvements it will be seen that the improved gas-lamp is of a very simple and inexpensive nature and is of a construction such as to more especially adapt it for street or outdoor lighting, since it requires but little trouble to light the main burner and is capable of being readily repaired and cleaned. Also since the pilot-light is constructed to burn at all times it is evident that a very material degree of protection is afforded to the frail incandescent mantle, it being unnecessary, ordinarily, for the lamp-lighter to even open the globe in order to light the lamp, so that the lighter is prevented from shaking or jarring the burner and mantle by accidental contact of a torch.

It will also be obvious from the above description that the device is capable of some modification without material departure from the principles and spirit of the invention, and for this reason I do not wish to be understood as limiting myself to the precise form and arrangement of the several parts herein set forth, nor do I wish to limit myself to the embodiment of all of the several features of improvement in the one lamp, since it is evident that one or more of the improved features may be omitted without materially detracting from the advantages attendant on the employment of the remaining features.

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

1. In a cock for gas-lamps and the like, the combination of a casing having three gas-passages, and a cock-plug formed with a gas-pas-

sage one end of which is arranged for communication with one gas-passage of the casing at all times and the other end of which is arranged for communication at all times with another of the gas-passages of the casing and, when the plug is turned, is adapted to be moved to afford communication with the third gas-passage of the casing, substantially as set forth.

2. In a cock for gas-lamps and the like, the combination of a casing having three gas-passages, and a cock-plug having a gas-passage one end of which is adapted for communication with one gas-passage of the casing at all times but is arranged, when the cock-plug is moved in one direction, to be partly closed to said passage of the casing and, when the plug is moved in an opposite direction, to be put in full communication with said gas-passage of the casing, the other end of said gas-passage in the cock-plug being arranged for communication at all times with another of the gas-passages of the casing and, when the plug is turned, being adapted to be moved to afford communication with the third gas-passage of the casing, substantially as set forth.

3. The combination of a cock comprising a casing having three gas-passages and a cock-plug formed with a gas-passage one end of which is arranged for communication with one gas-passage of the casing at all times and the other end of which is arranged for alternate communication with one and both of the other gas-passages of the casing, a globe and main and auxiliary gas-burners inclosed within said globe, substantially as set forth.

4. In a gas-lamp, the combination of a globe-support having an air-inlet opening, a regulator-plate arranged across said opening and means to move said plate toward and away from said inlet-opening to regulate the entry of air thereat, substantially as set forth.

5. In a gas-lamp, the combination of a globe-support having an air-inlet opening, a regulator-plate arranged across said opening and a screw held on the globe-support and engaged with said regulator-plate for regulating the entry of air into the globe, substantially as set forth.

6. In a gas-lamp, the combination of a globe-support having an air-inlet opening, guide-pins, a regulator-plate arranged across said opening and movable on said guide-pins toward and away from said inlet-opening to regulate the entry of air thereat, and a screw held on the globe-support and engaged with said regulator-plate, substantially as set forth.

7. In a gas-lamp, the combination of a globe-support having an air-inlet opening, a regulator-plate arranged across said opening and movable toward and away from said globe-support to regulate the entry of air at said opening, a spring engaged with said plate to press the same normally in one direction and a screw held on the globe-support and engaged with the said plate for moving the same

in an opposite direction, substantially as set forth.

8. In a gas-lamp the combination of a globe-support having an air-inlet opening, a perforated wind-guard mounted for sliding movement across said air-inlet opening of the globe-support and a regulator-plate having means for moving it toward and away from said wind-guard to regulate the passage of air through the perforations thereof, substantially as set forth.

9. In a lamp, the combination of a globe-support having an air-inlet opening, a perforated wind-guard mounted for movement across said air-inlet opening of the globe-support, and a regulator-plate carried on the wind-guard and adjustable toward and away from the same to regulate the passage of air through the perforations of the wind-guard, substantially as set forth.

10. In a lamp the combination of a pipe-section, a globe-support through which the pipe-section is passed and which is provided with an air-inlet opening, a perforated wind-guard having a bearing around said pipe-section and arranged for sliding movement concentrically with relation to said pipe-section to close the air-inlet opening, a regulator-plate carried on the wind-guard and movable toward and from the same to regulate the passage of air through the perforations thereof, and a screw held by the wind-guard and engaged with the regulator-plate for moving the same, substantially as set forth.

11. In a lamp, the combination of a pipe-section, a globe-support through which said pipe-section is passed and which is provided with an air-inlet opening, a perforated wind-guard having a bearing around said pipe-section and arranged for sliding movement concentrically with relation to said pipe-section to cover the air-inlet opening, a regulator-plate carried on the wind-guard and movable toward and from the same to regulate the passage of air through the perforations of the wind-guard, a spring for pressing said regulator-plate in one direction and a screw held by the wind-guard and engaged with the regulator-plate for moving the same in an opposite direction, substantially as set forth.

12. In a lamp, the combination of a pipe-section, a globe-support through which said pipe-section is passed and which is provided with an air-inlet opening, a laterally-enlarged part carried on the pipe-section above the globe-support, a perforated wind-guard having a bearing around said pipe-section and arranged for sliding movement concentrically with relation to said pipe-section to close the air-inlet opening, a regulator-plate carried on the wind-guard and movable toward and from the same to regulate the passage of air through the perforations of the wind-guard, said plate when moved upward being adapted for engagement under the laterally-enlarged part above the globe-support, a spring for pressing said regulator-plate upward, a screw

for adjusting said plate, and a catch-pin carried by the wind-guard and arranged for engagement with the globe-support for holding the wind-guard in closed position, substantially as set forth.

13. An antivibratory support for gas-lamps and the like comprising a body adapted for connection with a gas-pipe and formed at its sides with parallel vertical projections, a burner-fitting, spring-arms, extended from the burner-fitting downward and having their lower ends secured underneath the projections of said body, and a flexible seal extended between the body and the burner-fitting and secured to the body by screws passed into the upper ends of said projections, substantially as set forth.

14. In a lamp, the combination of a burner, a crown, a globe inclosing the burner and movable with relation to the crown and means extended down from the crown and adapted for engagement with the globe to hold the globe in place when in raised position, substantially as set forth.

15. In a lamp, the combination of a burner, a crown, a globe inclosing the burner and movable with relation to the crown and means for holding the globe in raised position, said means comprising flexible connections, the upper ends of which are attached to the crown and the lower ends of which have hooks for engagement with the lower part of the globe, substantially as set forth.

16. In a lamp, the combination of a burner, a globe inclosing the same, a crown inclosing the upper part of the globe and a part held on the crown and arranged for movement across the space between the globe and crown to prevent the entry of insects into the lamp, substantially as set forth.

17. In a lamp, the combination of a burner, a globe-support, a globe inclosing the burner, a crown inclosing the upper part of the globe and a flexible packing extended across the space between the crown and globe to prevent the entry of insects into the lamp, substantially as set forth.

18. In a lamp, the combination of a burner, a globe inclosing the same, a crown inclosing the upper part of the globe and means for closing the space between the globe and crown to prevent the entry of insects into the lamp, said means comprising a spiral spring encircling the upper part of the globe, substantially as set forth.

19. In a lamp, the combination of a burner, a globe inclosing the same, a crown inclosing the upper part of the globe, a spiral spring encircling the upper part of the globe and arranged to extend across the space between the globe and the crown, a strip passed through said spiral spring and means for supporting said strip from the crown, substantially as set forth.

20. In a lamp, the combination of a burner, a globe inclosing the same, a crown inclosing the upper part of the globe, and a portion

having at one side hinged connection with the crown, and extended across the top of the lamp, the crown having an elevated part on its upper face and outside of which the hinged portion is arranged to fit when rested on the crown, to prevent the entry of water into the lamp, substantially as set forth.

21. In a lamp, the combination of a burner, a globe inclosing the same, a crown inclosing the upper part of the globe and formed with an annular drip-chamber in its upper part and having openings for the discharge of water from said drip-chamber and a portion having at one side hinged connection with the crown and extended across the top of the lamp and having its edge portions arranged in said drip-chamber to prevent the entry of water into the lamp, substantially as set forth.

22. In a lamp, the combination of a burner, a globe inclosing the same, a dome arranged above the globe, a hood rested on the dome and a connection between the dome and hood and located within the lamp, substantially as set forth.

23. In a lamp, the combination of a burner, a globe inclosing the same, a dome arranged above the globe, a hood rested on the dome and a flexible packing between said dome and hood, substantially as set forth.

24. In a lamp, the combination of a burner, a globe inclosing the same, a dome arranged above the globe, a hood rested on the dome, a connection between the dome and hood and a spiral spring encircling the dome and having bearing inside the hood to hold the hood and dome in relation, substantially as set forth.

25. In a lamp the combination of a burner, a globe inclosing the same, an annular frame above the globe, a dome rested on the frame, a stirrup having its ends connected to opposite sides of the frame and having its central part bent upwardly within the dome, a hood rested on the dome, and means, engaged with said stirrup for holding the hood in place upon the dome, substantially as set forth.

26. In a lamp, the combination of a burner, a globe inclosing the same, an annular frame at the upper part of the globe, a dome rested on said frame, a stirrup having its ends connected to opposite sides of the frame and having its central part bent up within the dome, a hood rested on the dome, and a tie-rod connected to the upper part of the hood and having engagement with the stirrup for holding the hood in place upon the dome, substantially as set forth.

27. In a lamp, the combination of a burner, a globe inclosing the same, a dome arranged above the globe, and an elastic connection between the dome and hood for holding the hood in place upon the dome, substantially as set forth.

28. In a lamp the combination of a burner, a globe inclosing the same, a dome at the upper part of the globe, a hood rested on the

dome, a tie-rod connected at its upper part to the hood and extended down and having at its lower end connection with the dome to hold the hood in place thereon, and a spring held on said tie-rod and arranged to compensate for expansion of the parts, substantially as set forth.

29. In a lamp, the combination of a globe-support having an unbroken edge portion adapted to support the lower edge of a globe and provided inside said edge portion with an air-inlet opening, and a wind-guard having perforations and arranged for sliding movement across the air-inlet opening of the globe-support and having its edges extended beyond said opening and adapted to be supported upon the globe-support, one of said edges of the wind-guard being thus supported on the unbroken edge portion of the globe-support outside of the air-inlet opening, substantially as set forth.

30. In a lamp, the combination of a globe-support having an air-inlet opening, a wind-guard movable on the globe-support and adapted to cover said air-inlet opening and a regulator-plate having means for moving it toward and away from the wind-guard to regulate the passage of air through said wind-guard, substantially as set forth.

31. In a lamp, the combination of a burner, a globe inclosing the same, a crown inclosing the upper part of the globe and having an elevated part on its upper face, an annular frame hinged on the crown and having a lower edge portion adapted to extend down over and outside of the elevated part of the crown and provided at its upper part with a raised annular flange, a dome having its lower edge arranged to fit down over and outside the raised flange of the frame and means for hold-

ing the dome upon the frame, substantially as set forth.

32. In a lamp, the combination of a burner, a globe inclosing the same, a frame, a dome above the globe and rested on said frame, and means, comprising devices arranged inside the dome, for holding the dome in place upon the frame, substantially as set forth.

33. In a lamp, the combination of a burner, a globe inclosing the same, a frame, a dome above the globe and rested on the frame, a part arranged above and adapted for engagement with the upper portion of the dome, and means for connecting said part to the frame to hold the dome in place upon the frame, substantially as set forth.

34. In a lamp, the combination of a burner, a globe inclosing the same, a frame, a dome above the globe and rested on the frame, a stirrup secured to and extended across the frame and having a central portion bent upward in the dome, a part arranged above and adapted for engagement with the upper portion of the dome and a connection between said part and said stirrup to hold the dome in place upon the frame, substantially as set forth.

35. In a lamp, the combination of a burner, a globe-support, a globe, a part encircling the upper part of the globe and a flexible packing extended across the space between said encircling part and the globe to prevent the entry of insects into the lamp, substantially as set forth.

Signed at Cincinnati, Ohio, this 18th day of October, 1900.

JOHN FRANKLIN.

Witnesses:

JOHN ELIAS JONES,
J. D. THORNE.