

No. 749,910.

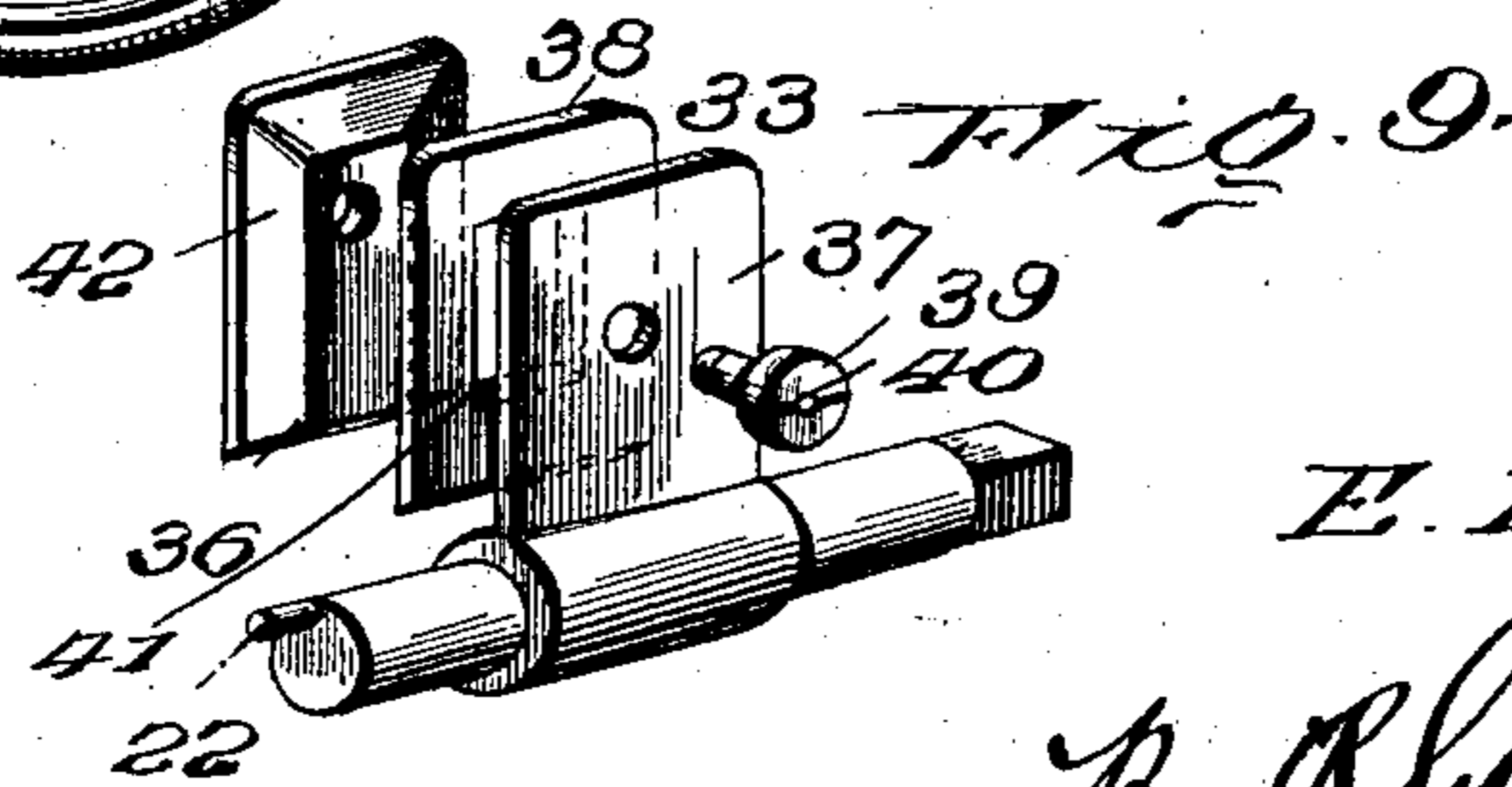
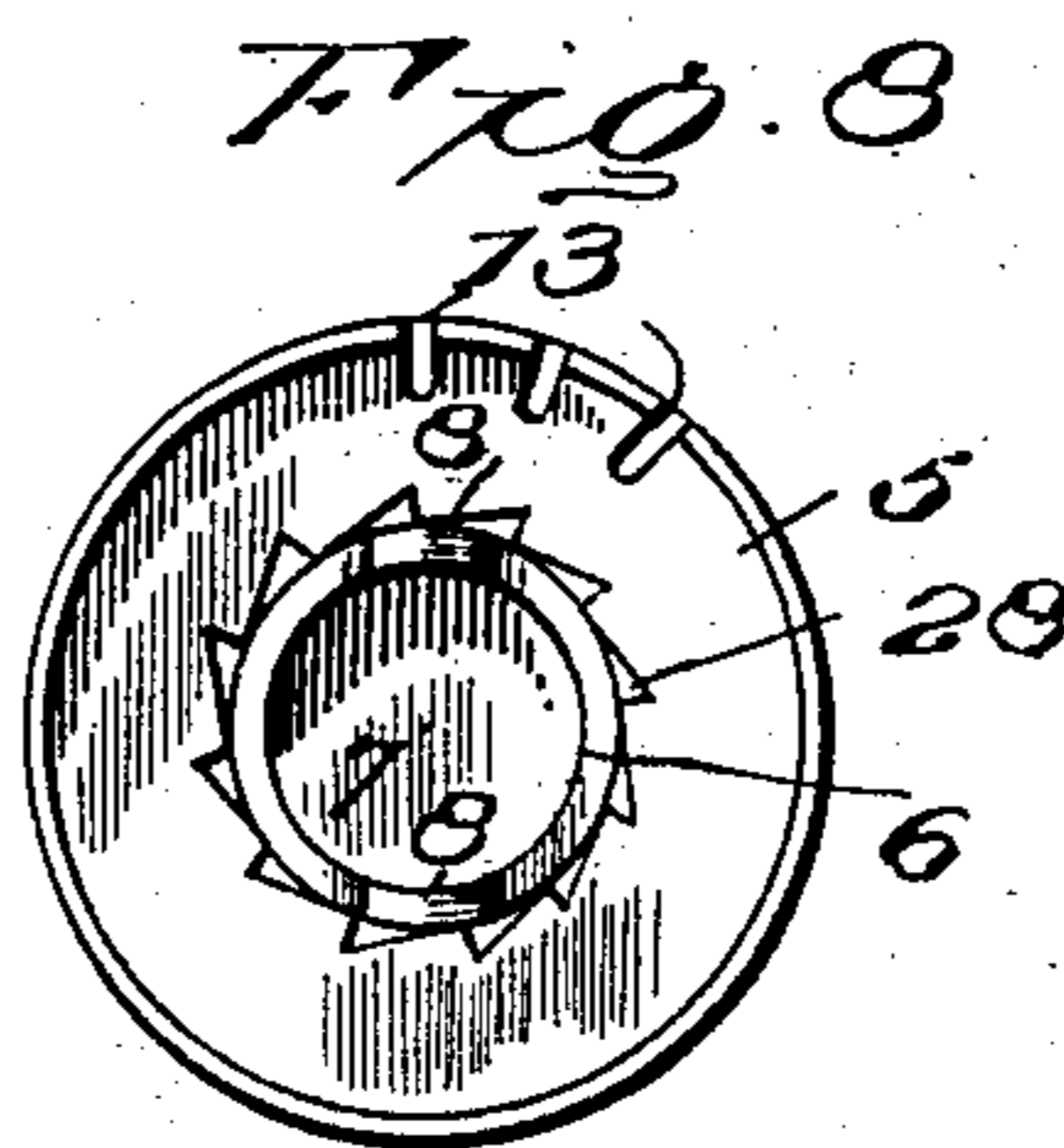
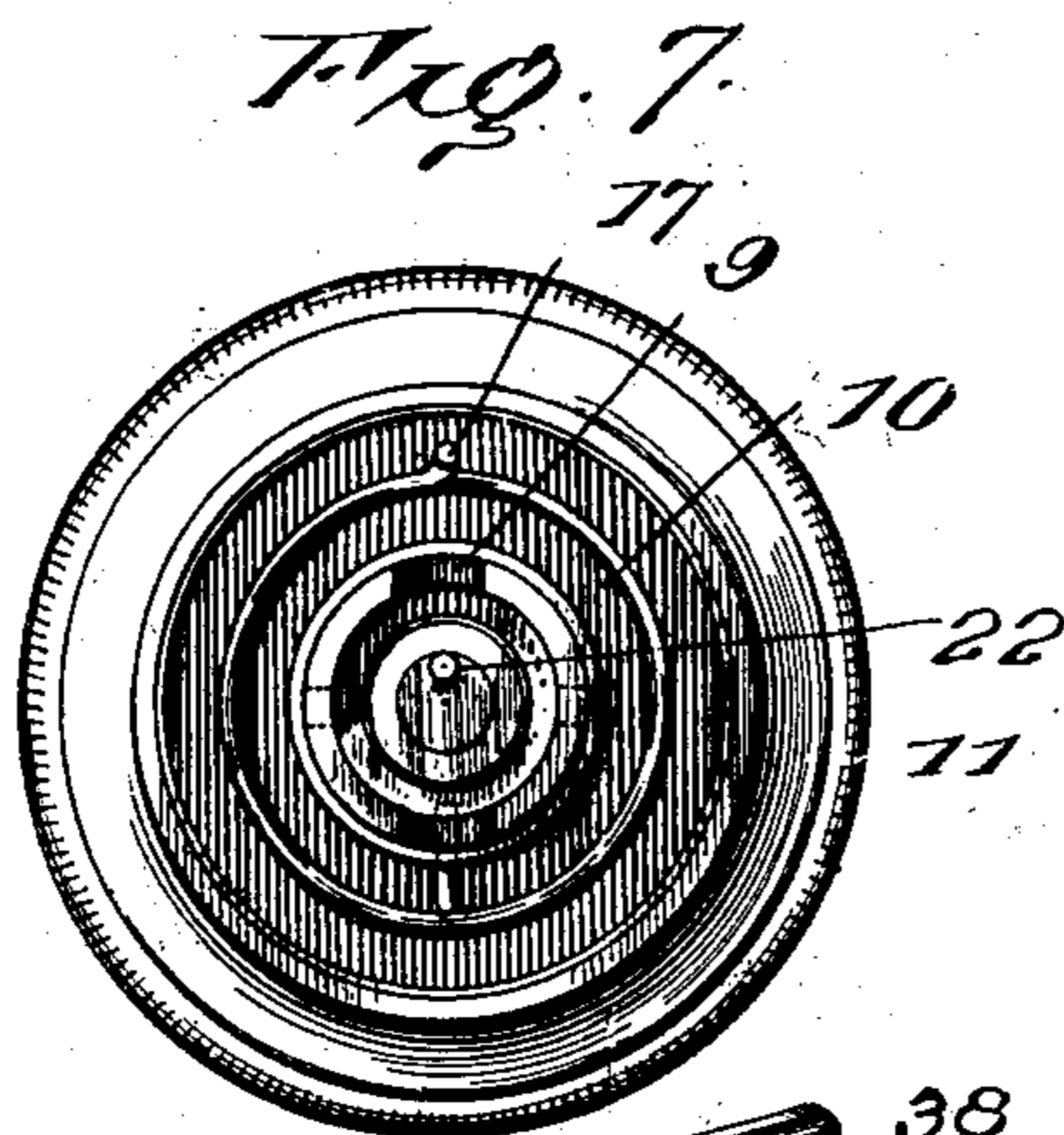
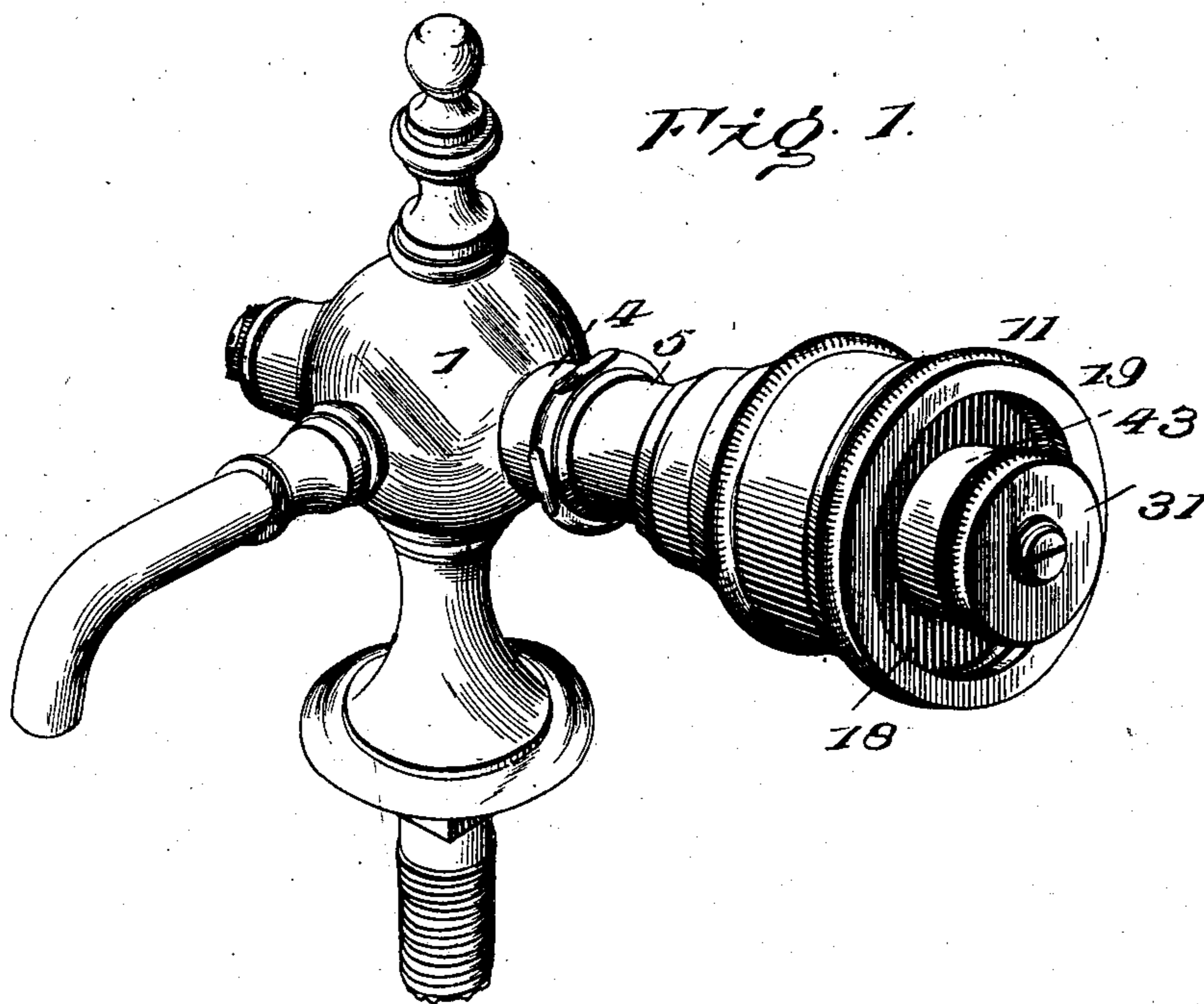
PATENTED JAN. 19, 1904.

E. L. WALTER.  
REGULABLE SELF CLOSING FAUCET.

APPLICATION FILED APR. 8, 1903.

NO MODEL.

4 SHEETS—SHEET 1.



Witnesses

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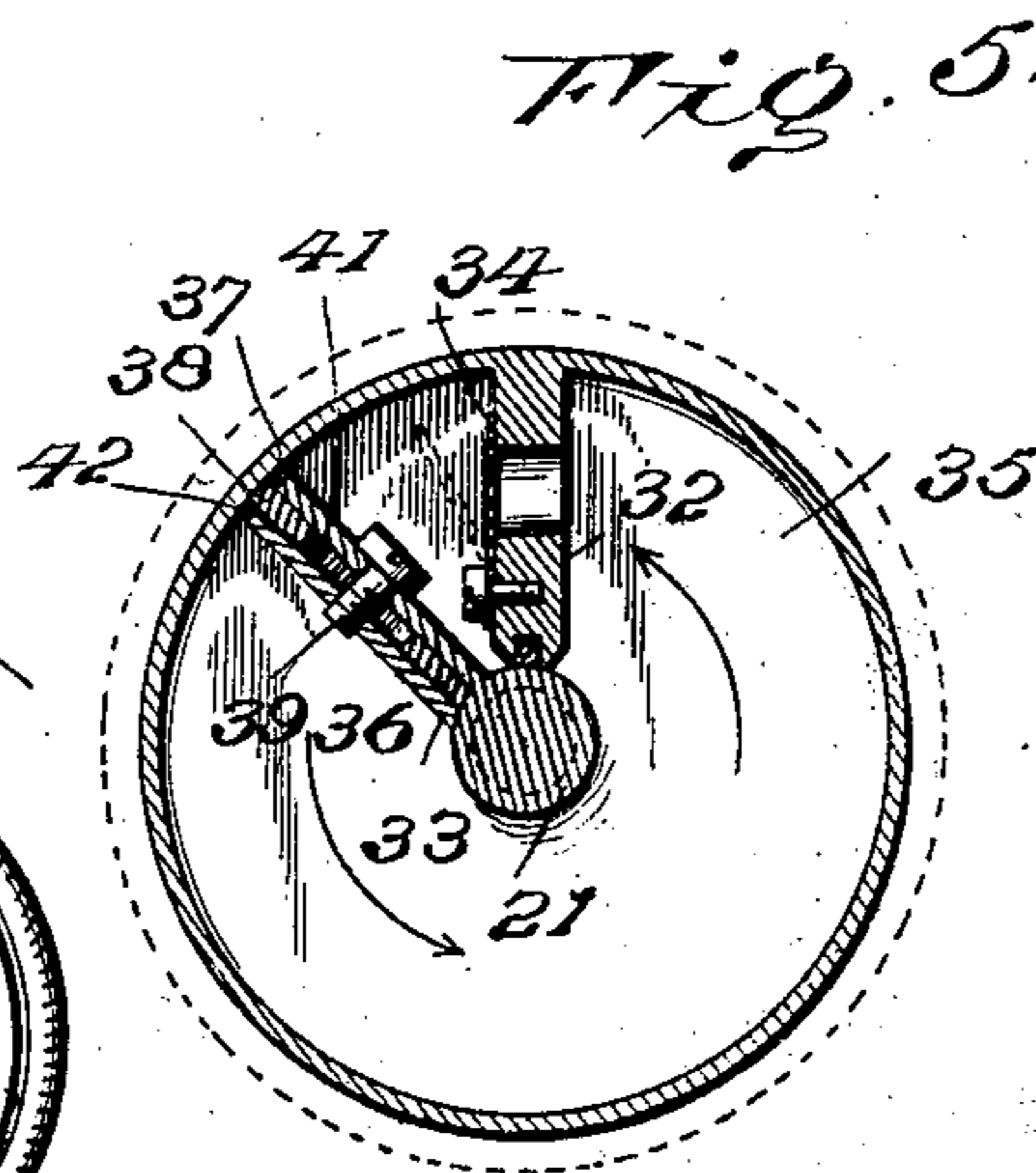
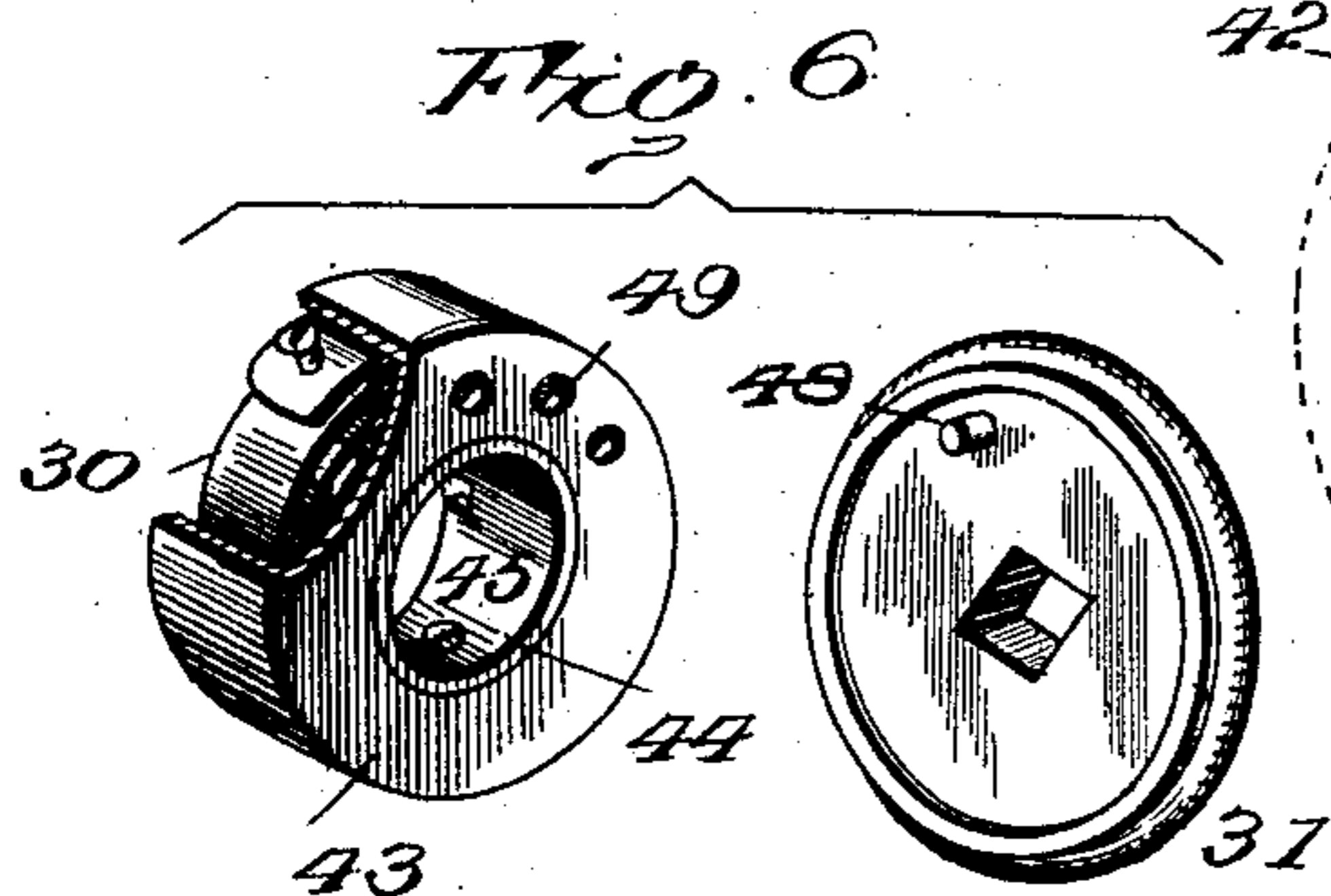
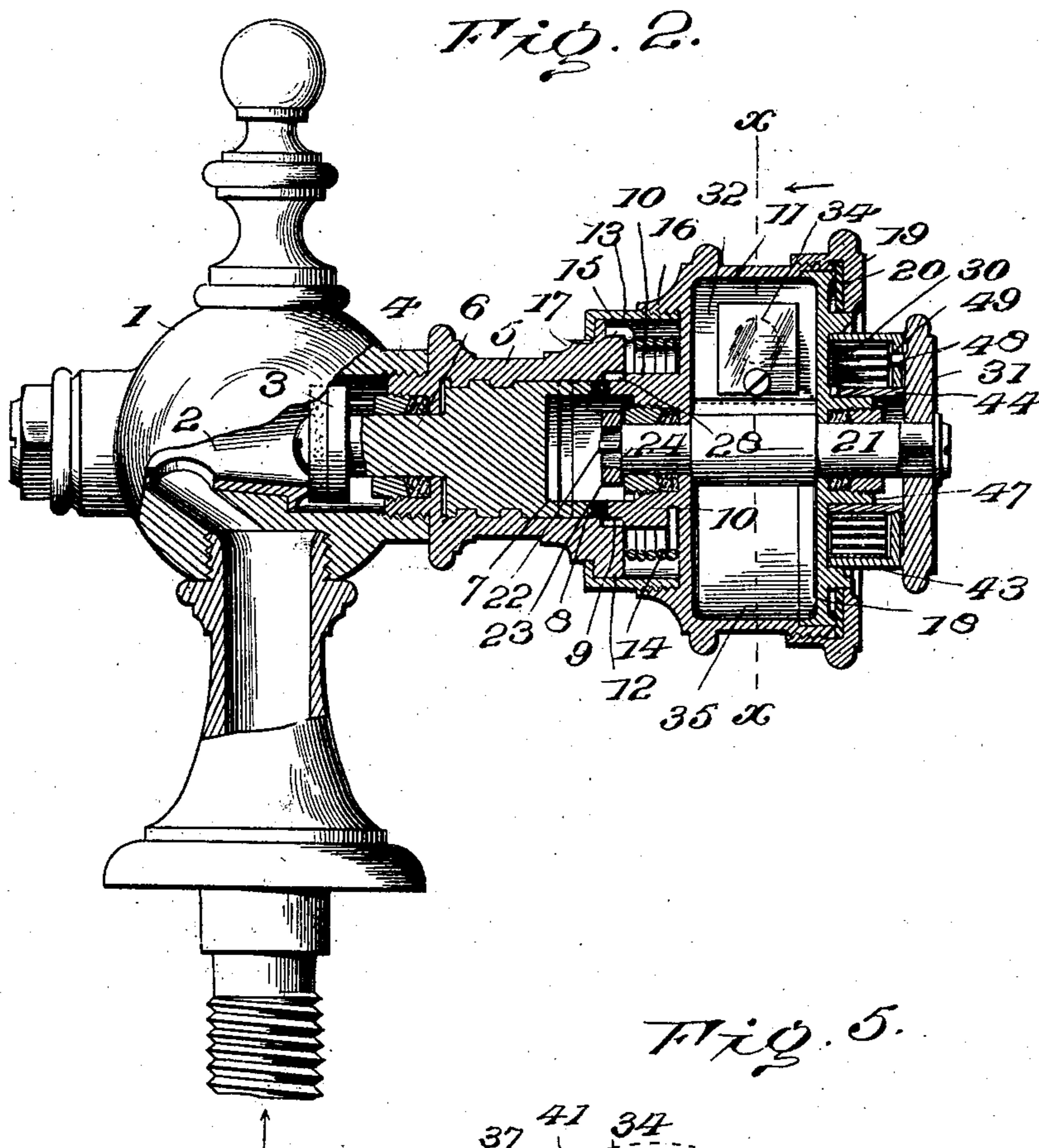
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4 SHEETS—SHEET 2.



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4 SHEETS—SHEET 3.

Fig. 3.

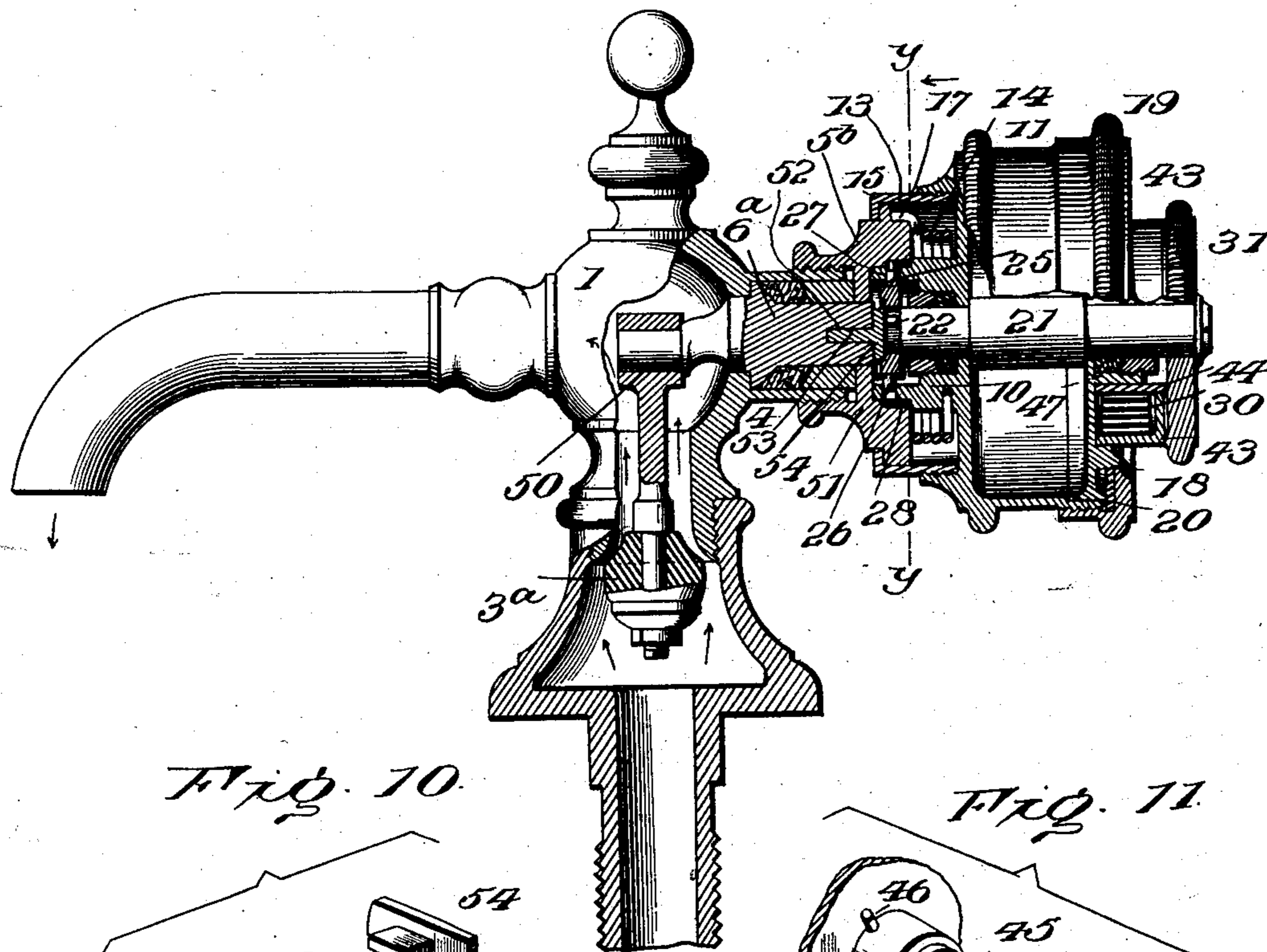


Fig. 10.

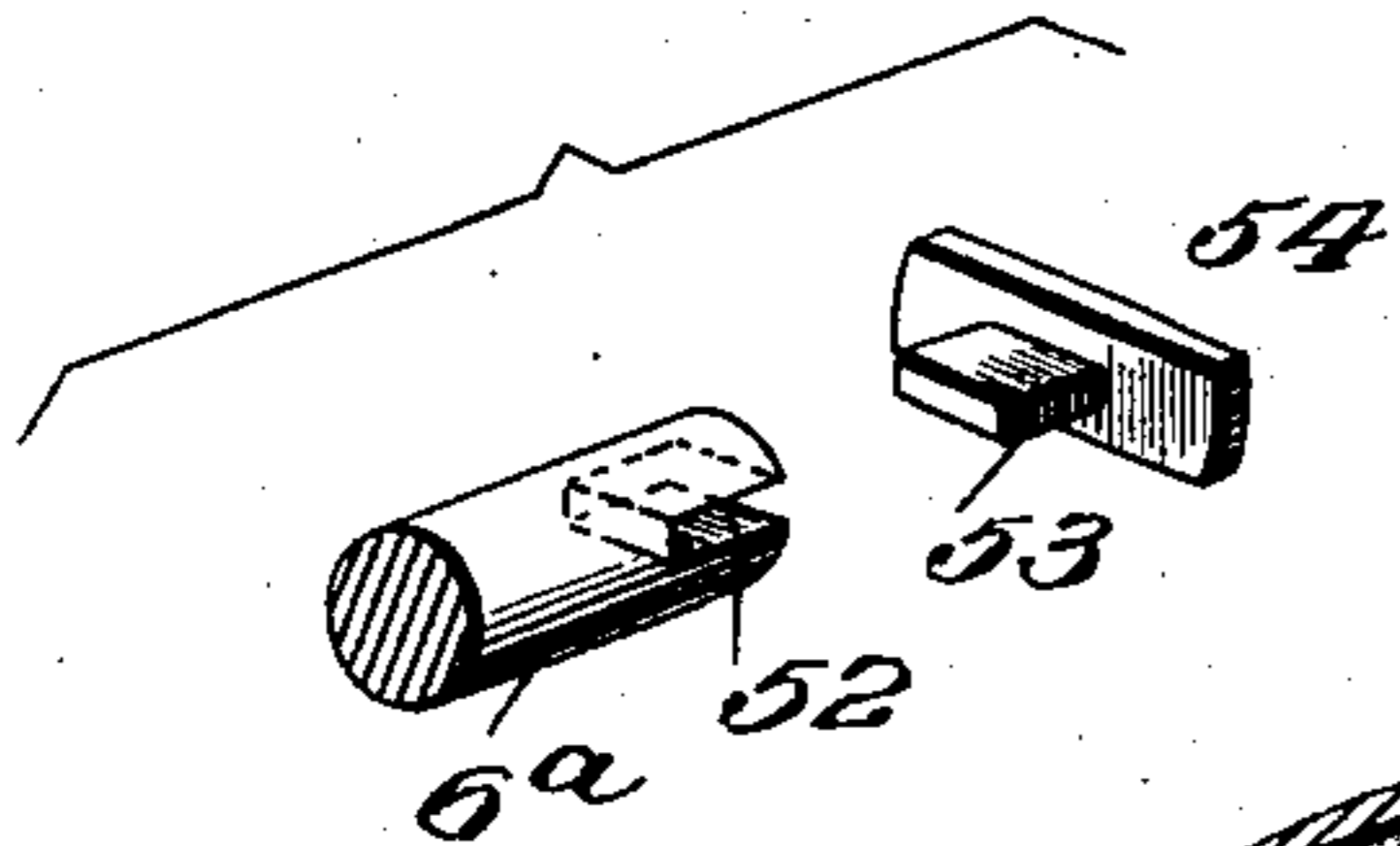


Fig. 11.

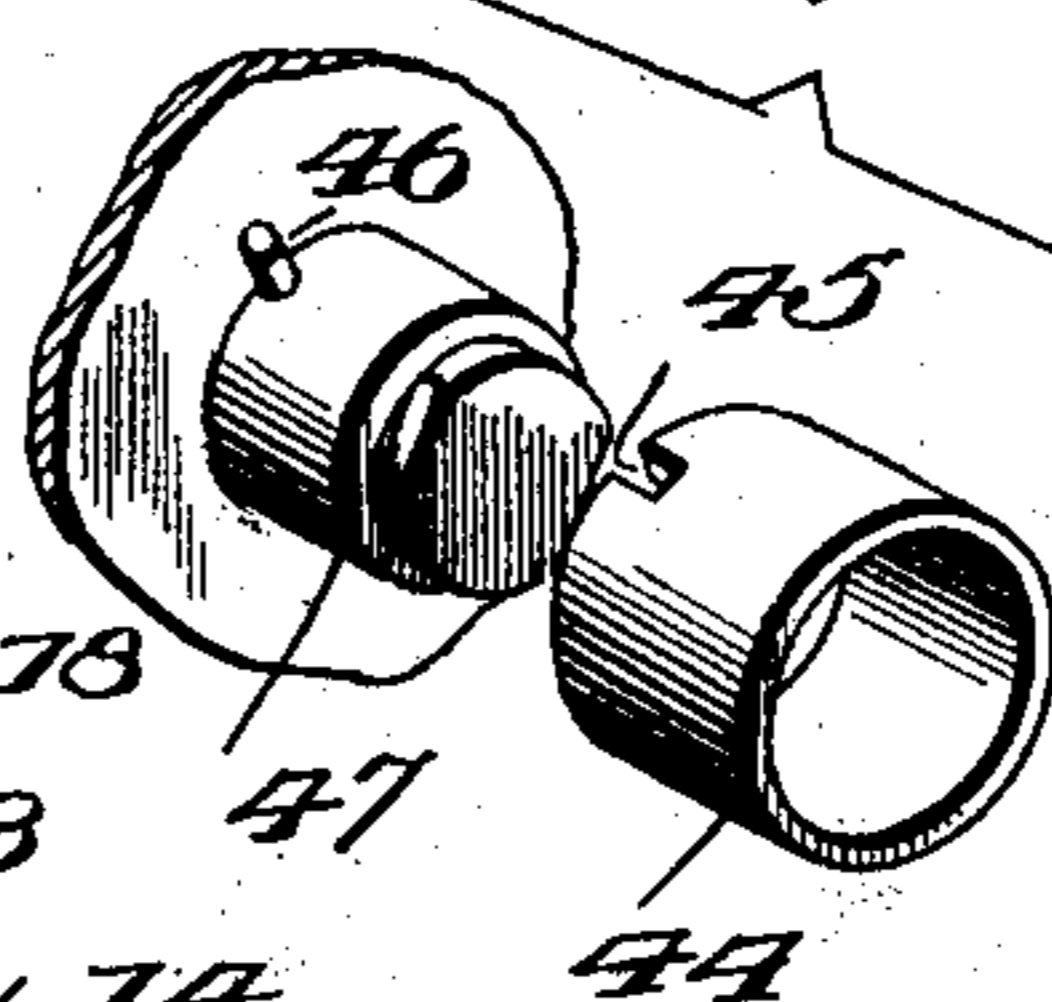
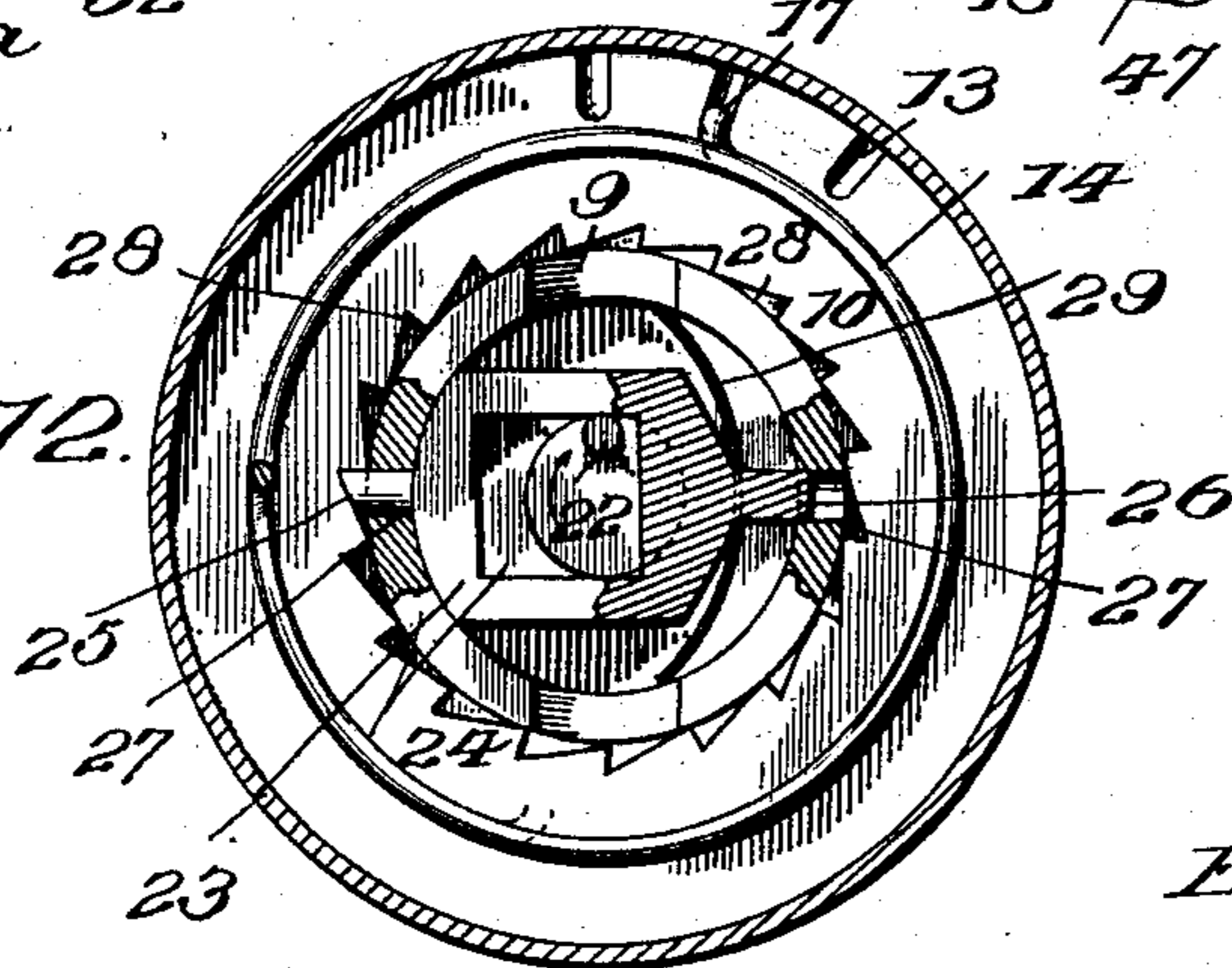


Fig. 12.



Witnesses

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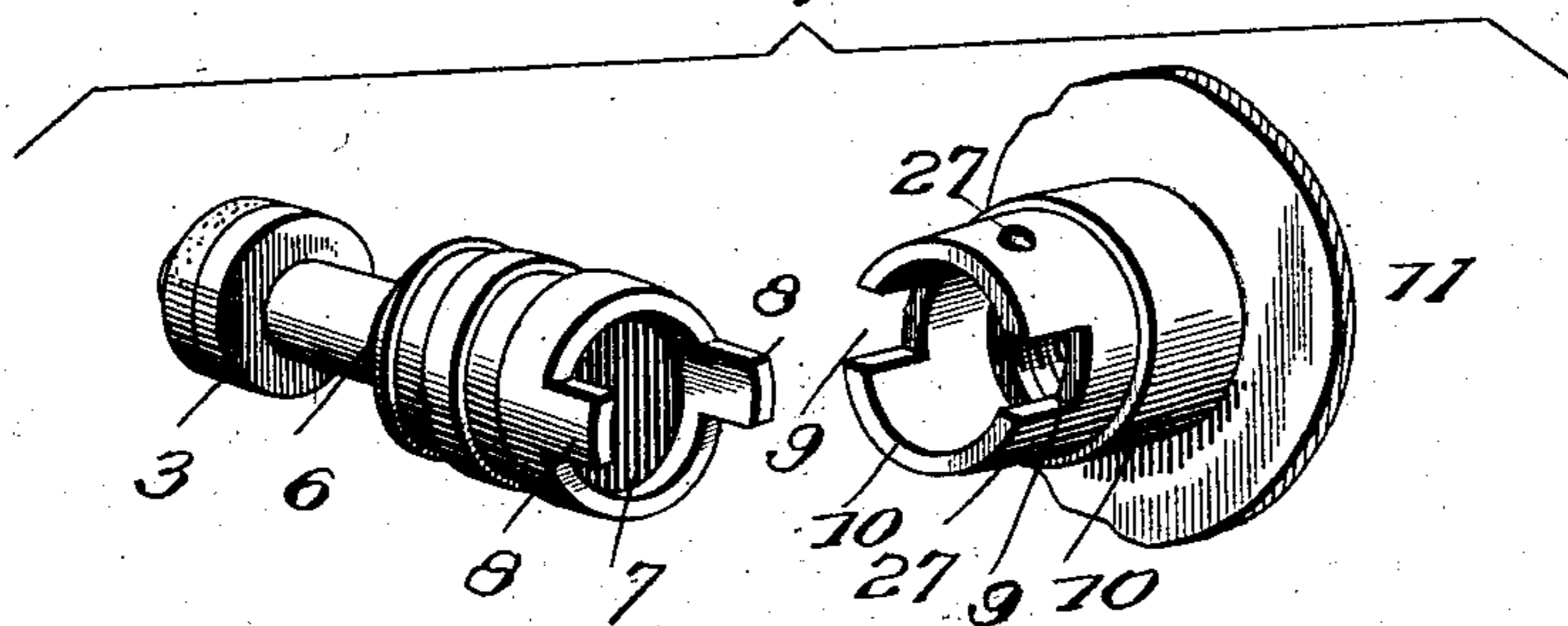
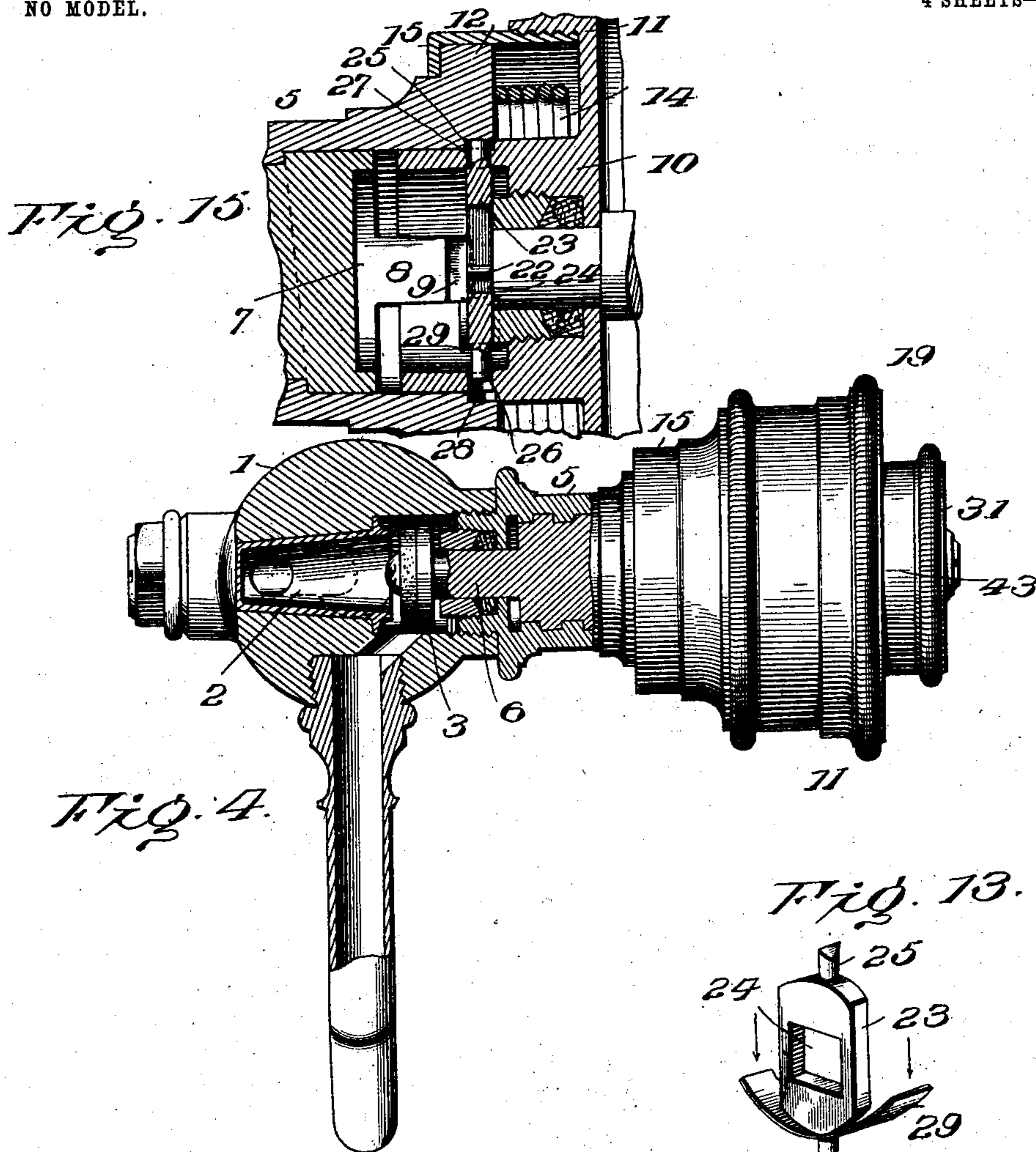
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NO MODEL.

4 SHEETS—SHEET 4.



Inventor

E. L. Walter

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Attorneys

# UNITED STATES PATENT OFFICE.

EDWIN L. WALTER, OF SCRANTON, PENNSYLVANIA.

## REGULABLE SELF-CLOSING FAUCET.

**SPECIFICATION** forming part of Letters Patent No. 749,910, dated January 19, 1904.

Application filed April 8, 1903. Serial No. 151,658. (No model.)

*To all whom it may concern:*

Be it known that I, EDWIN L. WALTER, a citizen of the United States, residing at Scranton, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in Regulable Self-Closing Faucets, of which the following is a specification.

Faucets and like water-fixtures as commonly constructed for automatic closing require to be held open when drawing water therefrom, hence are inconvenient and prolific of much vexation and annoyance at times, especially when one chooses to wash the face or hands in a running stream and desires to have both hands free.

This invention combines with a cock, faucet, or like device of any pattern, make, or design, a time-lock mechanism of peculiar construction and relative arrangement of parts for holding the valve mechanism open the requisite extent for a predetermined interval of time, as a minute or any fractional part thereof.

A vital feature of the invention is the combination of parts which are so disposed as not to interfere with the ordinary use of the fixture and which will admit of a stream of water of any size within the capacity of the faucet being had by opening same more or less, the time-lock holding the valve mechanism open at the required point for the given period.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a basin-faucet embodying the invention. Fig. 2 is a front view, a portion of the body being broken away and the stem being in longitudinal section. Fig. 3 is a side elevation of a different type of faucet, showing the invention applied thereto, part being broken away to show the

relative arrangement of the parts. Fig. 4 is a top plan view, the valve portion and inner end of the stem being in section. Fig. 5 is a section of the handle or grip on the line X X of Fig. 2. Fig. 6 is a perspective view of the barrel containing the spring for operating the time-lock and the cap for said barrel, the parts being separated. Fig. 7 is an inner end view of the handle or grip detached from the faucet. Fig. 8 is a view of the outer end of the sleeve portion of the stem provided with the ratchet-teeth and in which the valve-stem is mounted. Fig. 9 is a perspective view of the post provided with the wing or piston which operates in the space of the handle or grip, the parts of the piston being separated. Fig. 10 is a perspective view of the outer end of the stem provided at its inner end with the crank for operating the valve shown in Fig. 3 and the coupling cooperating therewith, the stem and coupling being separated. Fig. 11 is a perspective view of the inner sleeve forming the barrel for the spring of the time-lock and the gland forming the stuffing-box of the cap closing the outer end of the handle or grip, the parts being separated. Fig. 12 is a section on the line Y Y of Fig. 3 on a larger scale. Fig. 13 is a perspective view of the dog and spring cooperating therewith for holding the valve mechanism of the faucet or fixture open the predetermined time. Fig. 14 is a perspective view of the valve-stem and sleeve portion of the handle or grip cooperating therewith, the parts being separated. Fig. 15 is a longitudinal section of the intermediate portion of the stem of the faucet, showing the parts on a larger scale.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The invention is adapted to be applied to any type of faucet or fixture for controlling the outflow of liquid having valve mechanism adapted to be operated by a rotary grip or handle.

In accordance with this invention the time-lock mechanism is combined with the valve mechanism of the faucet or like fixture so as

not to interfere with the ordinary use thereof, but which when required will hold the faucet open a short time to admit of utilizing a running stream, the latter being automatically shut off when the interval of time has lapsed.

The faucet illustrated is of the type commonly employed for washstands, Figs. 2 and 4 illustrating the valve-stem threaded into its sleeve and operable by means of a threaded joint, whereas Fig. 3 shows the valve-stem connected to a crank provided at the inner end of a stem journaled in the sleeve. The valve-operating mechanism and the time-lock coöperating therewith are substantially the same in both forms of faucet illustrated. Hence a detailed description of one will apply to both, the specific differences being noted to avoid indefiniteness and uncertainty of structure and operation.

As shown in Figs. 2 and 4, the body 1 of the faucet is provided with a hollow plug 2, having a valve-seat at its inner end, against which valve 3 closes, and provided at its outer end with an extension constructed to receive a tool to admit of turning said plug for shutting off communication through the faucet, thereby admitting of the valve-stem being removed either to pack valve 3 or for other purpose. The valve-body 1 is provided with a coupling end 4, to which sleeve 5 is joined by means of the screw-thread connection. Valve-stem 6 is rotatably mounted in sleeve 5 and passes through a stuffing-box at the inner end of said sleeve, same preventing moisture reaching the closing-spring and lock mechanism. Valve-stem 6 is enlarged at its outer end and connected with sleeve 5 by means of a thread, whereby turning of the valve-stem will effect seating or unseating of valve 3. A recess 7 is formed at the outer end of valve-stem 6, and lugs 8 project therefrom to enter notches 9 at the inner end of tubular extension 10 at the inner end of handle or grip 11. The parts 8 and 9 cause the handle or grip and valve-stem 6 to rotate in unison, and since the handle turns in a given plane and part 6 has a combined rotary and longitudinal movement the elements 8 and 9 receive a limited longitudinal play to admit of the seating and unseating of valve 3 when operating handle or grip 11. The sleeve 5 is provided at its outer end with an outer flange 12, in which is formed a series of notches 13 to admit of varying the tension of spring 14, by means of which valve 3 is automatically seated and the faucet closed. A union 15 connects handle or grip 11 with sleeve 5, its outer end being threaded into an annular extension 16 of part 11 and its inner end having an inner flange to engage the shoulder formed by flange 12. A space is formed between the tubular extension 10 and annular extension 16, in which closing-spring 14 is located, one end of said spring being engaged with part 10 and the opposite end bent, as

shown at 17, to enter one of the series of notches 13 of flange 12.

The handle or grip 11 is hollow, and its outer end is closed by means of a cap-plate 18, fitted in a rabbet thereof and held in place by means of clamp-ring 19, threaded to the outer portion of the handle or grip. A packing-ring 20 is interposed between clamp-ring 19 and parts 11 and 18 to insure the formation of a tight joint. A post 21 is journaled centrally of the handle or grip and passes therethrough, being mounted near its ends in cap-plate 18 and the inner wall of part 11, the end portion of the post passing through stuffing-boxes applied to the walls of the handle or grip, so as to preclude the escape of any liquid or fluid medium contained within the handle. The inner end of post 21 is provided with pin 22, having an eccentric arrangement and adapted to coöperate with a dog 23 for throwing the latter out of action and releasing the valve mechanism and permitting same to automatically close under tension of spring 14. The dog 23 is slidably mounted in the space formed between tubular extension 10 and valve-stem 6 and is provided with an approximately rectangular opening 24, into which pin 22 projects. Extensions 25 and 26 project from opposite ends of dog 23 and pass through opening 27, formed in tubular extension 10 at diametrically opposite points and which serve to direct the dog in its reciprocating movements and insure rotation thereof with handle or grip 11. The extension 25 is beveled at its outer end and is adapted to project beyond the outer side of tubular extension 10 and engage with one of a series of ratchet-teeth 28, formed in the inner wall of sleeve 5 at its outer end. A spring 29 serves to hold the beveled end of extension 25 projected so as to engage with teeth 28 and hold the valve mechanism of the faucet or like fixture open when it is required to obtain a running stream. Normally dog 23 is held out of engagement with teeth 28 by the action of spring 30, forming a part of the time-lock mechanism. Spring 29 is light and preferably of bow form and is held in place by extension 26, passing through an opening thereof. The tension of spring 30 is superior to that of spring 29 to admit of the latter being normally compressed by the former. The post 21 is rotatable independently of the handle or grip 11 and is operable by means of cap-plate 31, secured to the outer end of post 21 and connected therewith for simultaneous rotation. The outer end of post 21 is made square, as indicated most clearly in Fig. 9, and cap-plate 31 is provided with a corresponding square opening. Hence when plate 31 is fitted to the outer squared end of post 21 the two will turn in unison.

The vital feature of the time-lock mechanism resides in valved partition 32 and piston 33, the former being secured to the handle or

grip 11 and the latter attached to post 21. The opening formed in partition 32 is normally closed by flap-valve 34, which is adapted to open when piston 33 moves upon turning  
 5 post 21, so as to carry pin 22 out of contact with the inner wall of opening 24 to permit dog 23 to be thrown outward by spring 29 to cause extension 25 to engage with teeth 28 and hold the valve open when turning handle  
 10 or grip 11 to withdraw water or other liquid from the faucet. The opening closed by valve 34 is of a size to admit of ready passage of the liquid or fluid contained within space 35 of handle or grip 11 when turning post 21 to  
 15 move piston 33 away from partition 32. The inner edge of partition 32 is packed to make a tight joint with the central portion of post 21, which is slightly larger than the end portions, thereby providing shoulders to engage  
 20 with the inner walls of the handle or grip to prevent endwise play of the post. The piston 33 is composed of plates or leaves 36 and 37 and an interposed packing 38. The leaf or plate 37 forms a part of or is rigidly at-  
 25 tached to post 21, and plate or leaf 36 is secured thereto by means of clamp-screw 39, the latter having a minute opening 40 for the passage of the liquid or fluid therethrough upon the return stroke of piston 33 under the action  
 30 of spring 30. The packing 38 is preferably a strip of cork, although any suitable material may be employed. A rectangular opening 41 is formed in the center of packing 38, and the edge portions of leaf or plate 36 are beveled  
 35 upon the inner side, as shown at 42, to admit of compressing packing 38 and forcing same outward upon tightening clamp-screw 39 to draw plates 36 and 37 closer together, thereby providing for taking up wear and insuring the  
 40 formation of a tight joint between the piston and the walls of space or chamber 35, containing the liquid or fluid forming the resisting medium to retard the return of piston 33 to a normal position.  
 45 The spring 30, cooperating with post 21, is located within barrel 43 and is secured at one end to said barrel and at its opposite end to sleeve 44, located within said barrel and concentric therewith. Sleeve 44 is provided with  
 50 notch 45, adapted to engage with pin 46, extended laterally from the gland 47, forming the stuffing-box applied to the outer side of cap-plate 18. By this means the inner end of spring 30 is connected to the handle or grip  
 55 11. The cap-plate 31 is provided with a pin 48 upon its inner side adapted to enter one of a series of openings 49 formed in the outer end of barrel 43, thereby forming a connection between post 21 and the outer end of  
 60 spring 30. The tension of spring 30 may be regulated by moving barrel 43 so as to bring any one of the openings 49 into position to receive pin 48. It is to be understood that barrel 43 can be turned independently of cap-

plates 18 and 31. Hence spring 30 may be  
 65 wound more or less to admit of varying its tension.

In the construction shown in Fig. 3 the valve 3<sup>a</sup> is adapted to close upward, its stem being loosely connected to crank 50 at the in-  
 70 ner end of stem 6<sup>a</sup>, rotatably mounted in extension 4 and inner flange 51 of coupling-sleeve 5<sup>b</sup>. The outer end of stem 6<sup>a</sup> is notched, as shown at 52, to receive lug 53 of coupling-  
 75 bar 54, mounted in tubular extension 10 of the handpiece.

The parts being assembled substantially as set forth, the faucet is opened in the accustomed way by grasping the handpiece or grip 11 and turning same against the tension of  
 80 spring 14, whereby the valve mechanism is actuated to unseat the valve. Upon releasing the hold upon part 11 spring 14, regaining itself, seats the valve and shuts off the flow of water or other liquid in the manner well un-  
 85 derstood. When it is required to utilize the time-lock mechanism for holding the valve unseated and the faucet or like fixture open, the cap-plate or like part 31 is turned so as to rotate post 21 and carry pin 22 away from  
 90 the inner wall of opening 24, thereby releasing dog 23 and permitting spring 29 to project the catch extension 25 so as to engage with teeth 28. When the dog is released and the handpiece 11 is turned, catch extension  
 95 25 rides upon teeth 28 and engages with one of said teeth and holds the faucet open until dog 23 is released from teeth 28 by contact of pin 22 with inner wall of opening 24. When the plate or part 31 is turned and post  
 100 21 correspondingly turned, piston 33 is carried away from valved partition 32, valve 34 opening to permit the liquid or other resisting medium to pass freely into the space formed between parts 32 and 33. When part  
 105 31 is released, it is caused to turn in an opposite direction by spring 30, valve 34 closing and the liquid contained between parts 32 and 33 passing slowly through the minute opening 40 in clamp-screw 39. The length of time  
 110 the faucet may be permitted to run may be varied by turning part 31 through a greater or less arc. The maximum limit of time is dependent upon the capacity of chamber 35 and diameter of opening 40, as will be readily  
 115 comprehended. The valve controlling the outflow of water or other liquid from the faucet or fixture may be opened to a greater or less extent, according to the degree of movement of the handpiece, so as to secure a stream  
 120 of water of desired size. The time-lock mechanism will hold the valve unseated at the required point for the desired interval of time according to the movement of part 31.

The generic features of the invention, such  
 125 as combining with the self-closing valve mechanism a lock for holding the valve open against the action of the self-closing means and an

automatic time mechanism operable independent of the valve mechanism or the fluid passing therethrough for releasing the lock to permit instant closure of the valve, are not claimed herein, since they form the basis of a patent issued to me June 23, 1903, No. 731,639, for a like invention.

Having thus described the invention, what is claimed as new is—

1. In a faucet or like fixture, and in combination with the valve mechanism and chambered handpiece operatively connected therewith, a spring connected with said handpiece and normally tending to hold the valve seated and the faucet closed, a spring-actuated post, a ratchet mechanism controlled by said post and adapted to hold the handpiece against the tension of the valve-closing spring when said handpiece is turned to any desired point to open the faucet, a valved partition fixed with reference to the chamber of said handpiece, and a piston movable with the said post and provided with a minute opening to retard the return of the piston to a normal position, substantially as set forth.

2. In a faucet or like fixture, and in combination with the valve mechanism, a chambered handpiece, interlocking means between said handpiece and valve mechanism, and a spring for normally holding the valve seated and the faucet closed, a ratchet mechanism for holding the faucet open, a spring-actuated post having an eccentric extension for coöperation with the ratchet mechanism to throw same out of action, a fixed valved partition located within the chamber of the handpiece, and a piston connected with the aforementioned post to turn therewith and provided with a minute opening, substantially as specified.

3. In a faucet or like fixture, the combination of the body provided with a tubular portion having ratchet-teeth, a stem mounted in said tubular portion and adapted to effect seating or unseating of the valve, a chambered handpiece rotatably connected with said tubular portion and having a tubular extension adapted to make interlocking connection with the aforesaid stem, a spring-actuated dog mounted in the tubular extension of the handpiece and adapted to engage with any one of the aforementioned ratchet-teeth to hold the valve unseated, a closing-spring for holding the valve seated, a spring-actuated post mounted in the handpiece to turn therewith and independently thereof and having an eccentric extension to hold the dog out of engagement with the ratchet-teeth, and retarding means coöperating with said post consisting of a valved partition and a piston having a minute opening, said piston and partition being applied to and coöperating with the spring-actuated post and chambered handpiece, substantially as described.

4. In a faucet or like fixture, the combination

of the valve mechanism, chambered handpiece and closing-spring, a ratchet mechanism for holding the valve unseated against the tension of the closing-spring, a post having an eccentric portion for throwing the ratchet mechanism out of action, a retarding mechanism coöperating with said post and operating in the chamber of the handpiece and consisting of a piston having a minute opening and a valved partition, a plate attached to the outer end of said post and forming a grip for the hand, and a spring between the chambered handpiece and the plate or grip to effect a return of the post to a normal position, substantially as set forth.

5. In a faucet or like fixture, the combination of the valve mechanism, chambered handpiece and closing-spring, a ratchet mechanism for holding the valve unseated against the tension of the closing-spring, a post having an eccentric portion for throwing the ratchet mechanism out of action, a retarding mechanism coöperating with said post and operating in the chamber of the handpiece and consisting of a piston having a minute opening and a valved partition, a plate attached to the outer end of said post and forming a grip for the hand, a spring having one end connected to the chambered handpiece, and means for adjustably connecting the opposite end of the spring to the said plate or grip, substantially as set forth.

6. In a faucet, the combination of the valve mechanism, and a chambered handpiece having a tubular extension in interlocking connection with the valve-operating stem, a dog applied to said tubular extension, ratchet-teeth exterior to said tubular extension and connected with the body portion of the faucet, a post journaled in the walls of the chambered handpiece and having an eccentric portion for throwing the dog out of action, the walls of the chambered handpiece being provided with stuffing-boxes to make a tight joint with the post, a retarding mechanism coöperating with the handpiece and post and located within the chambered handpiece and consisting of a valved partition and a piston having a minute opening, a spring exterior to the handpiece and connected at one end thereto, and a plate forming a grip connected to the outer end of said post and having connection with the opposite end of the spring coöperating with the post, substantially as set forth.

7. In combination, a faucet or like fixture provided with a tubular extension, a valve-operating stem passed through said extension, a stuffing-box near the inner end of said valve-operating stem, a chambered handpiece rotatably connected with the said tubular extension, a closing-spring for coöperation with the handpiece, to normally seat the valve and close the faucet, a ratchet mechanism for holding the valve open against the tension of the clos-

ing-spring, a spring-actuated post journaled  
in the walls of the chambered handpiece and  
having an eccentric portion for holding the  
ratchet mechanism out of action, stuffing-  
5 boxes applied to the walls of the chambered  
handpiece and receiving the end portions of  
said post, and a retarding mechanism coöper-  
ating with said post and comprising a valved

partition and a piston provided with a minute  
opening, substantially as described. 10

In testimony whereof I affix my signature  
in presence of two witnesses.

EDWIN L. WALTER. [L. s.]

Witnesses:

GLADYS L. THOMPSON,  
IVAN HEIDEMAN.