

(No Model.)

2 Sheets—Sheet 1.

O. F. CONIHE,  
GAS OR VAPOR COCK.

No. 587,428.

Patented Aug. 3, 1897.

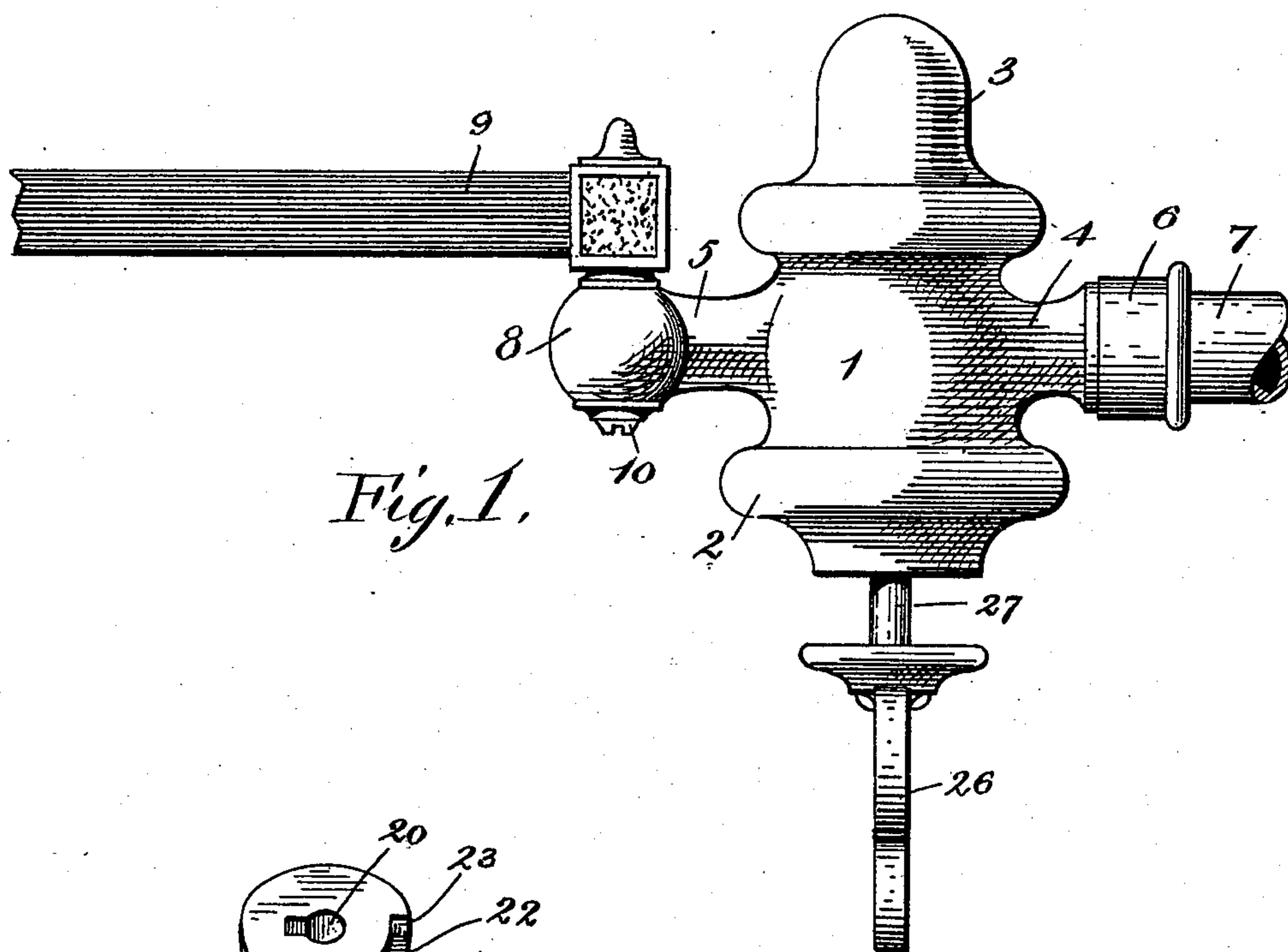


Fig. 1.

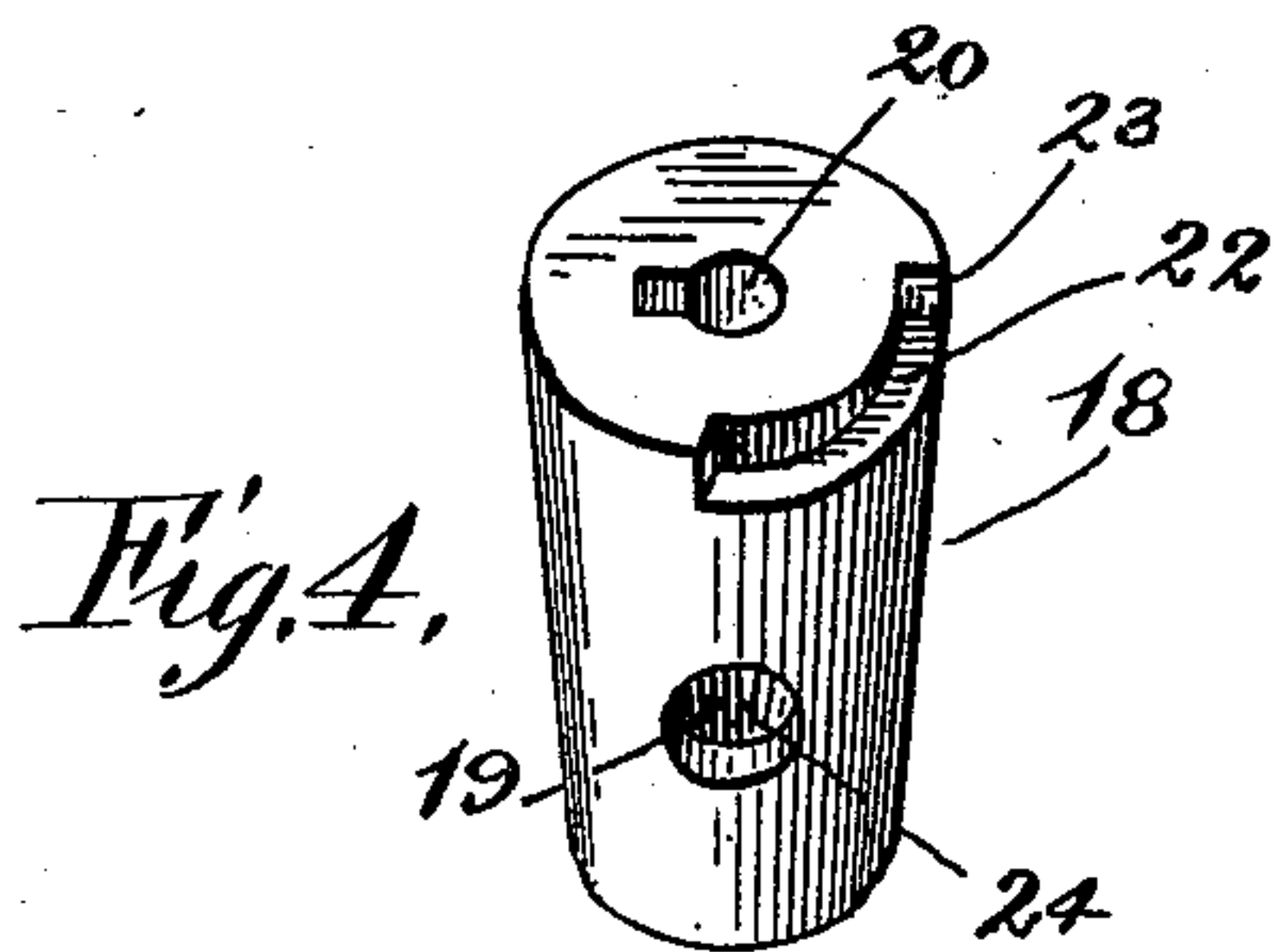


Fig. 4.

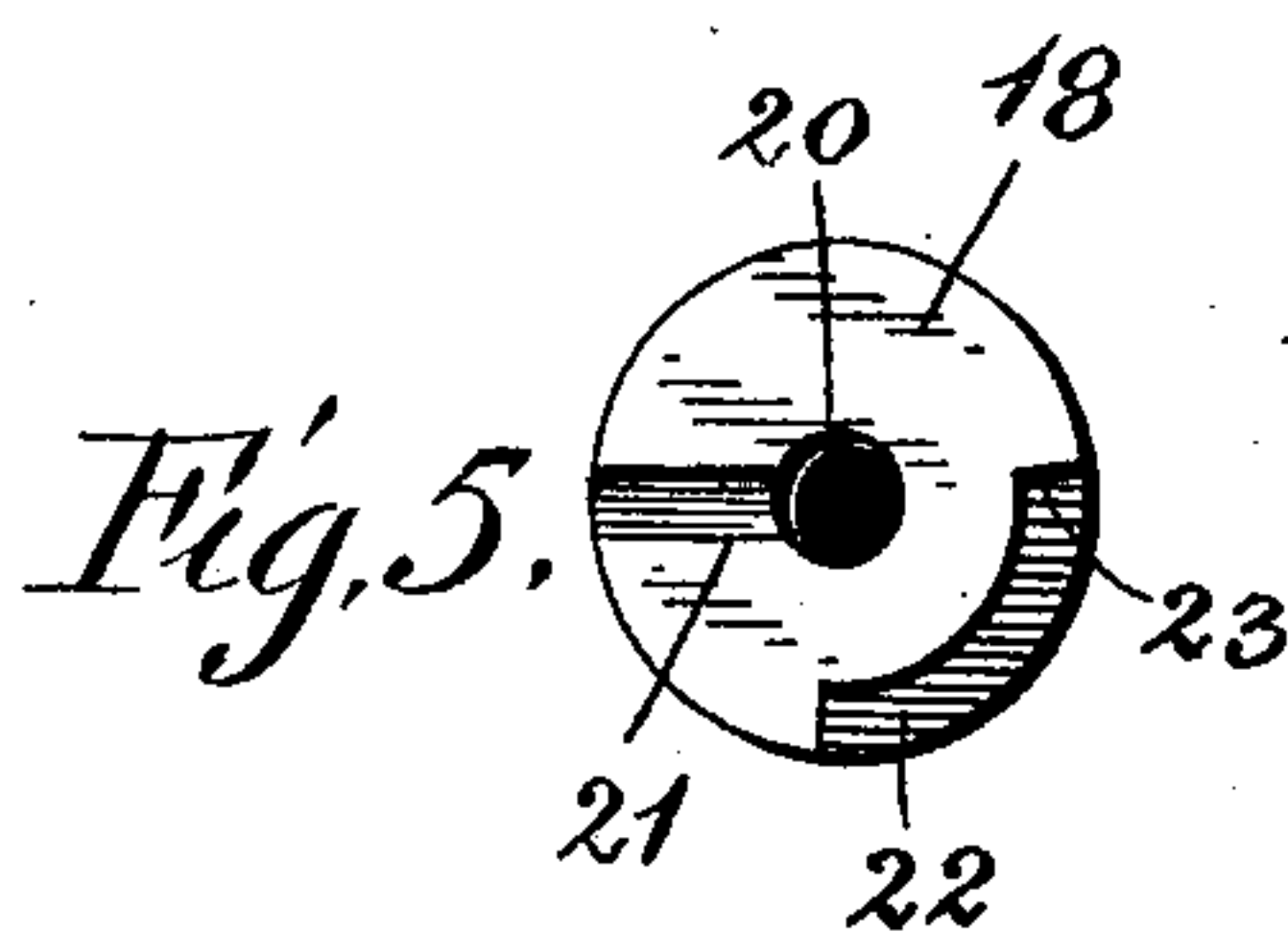


Fig. 5.

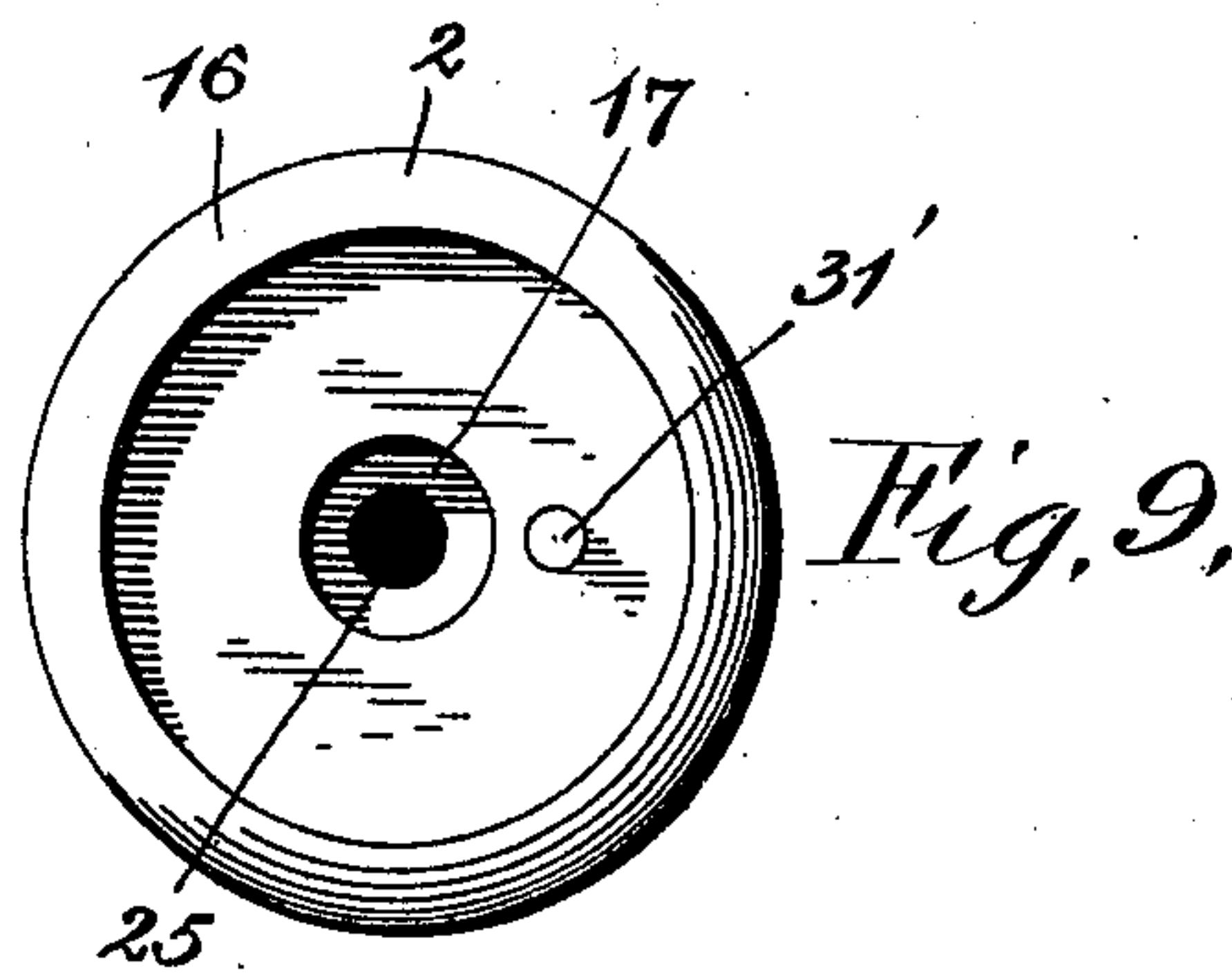


Fig. 9.

WITNESSES

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

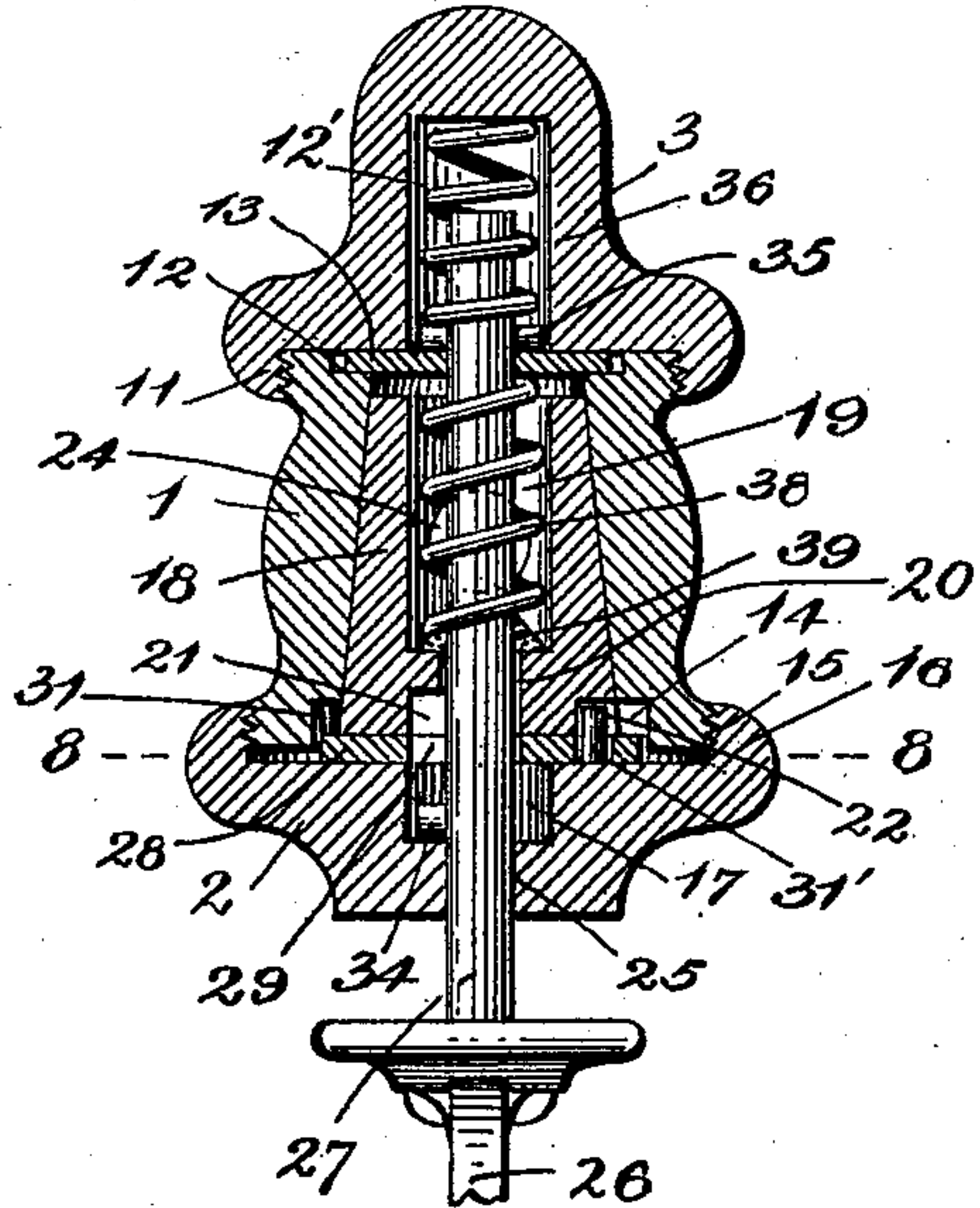


Fig. 3.

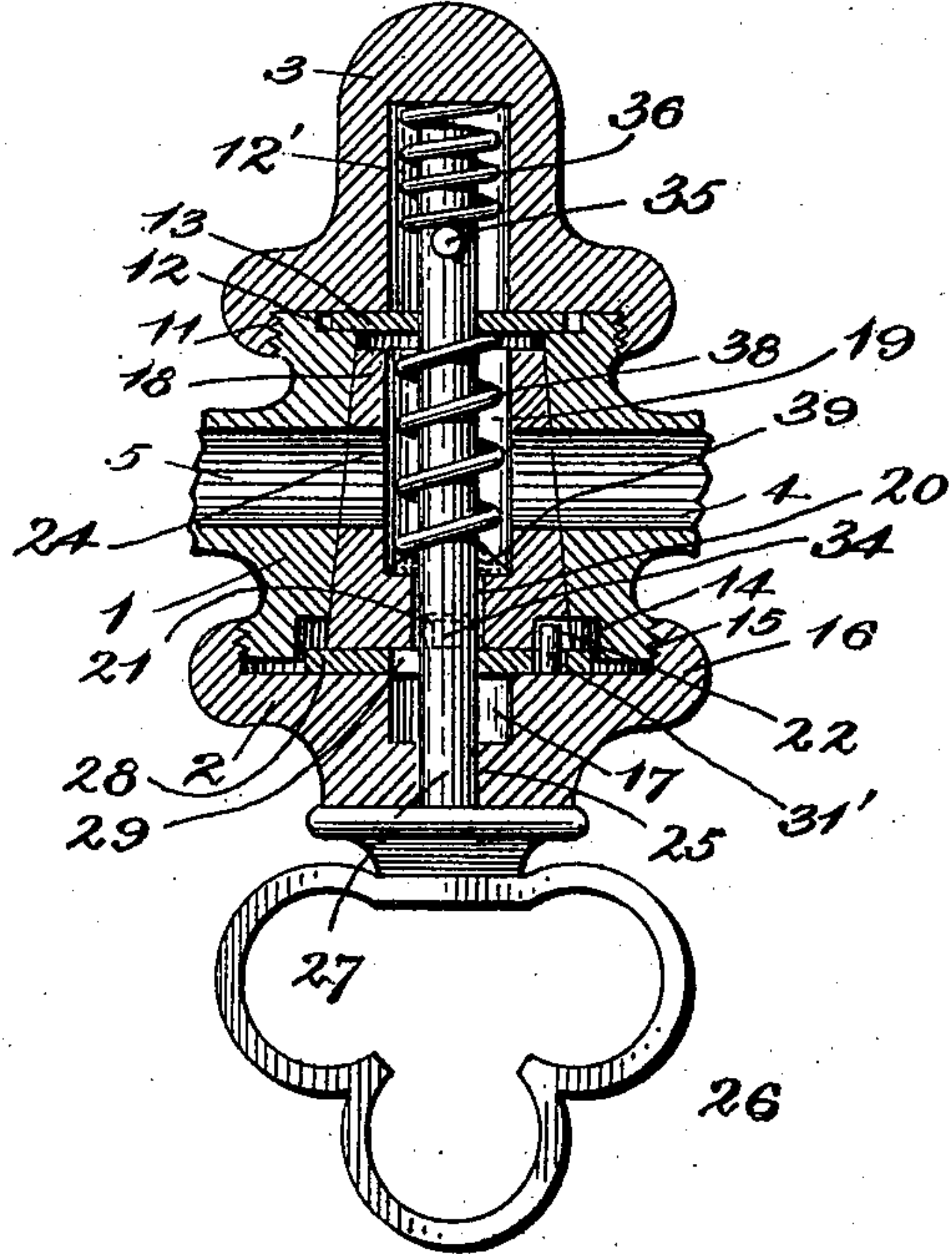


Fig. 6.

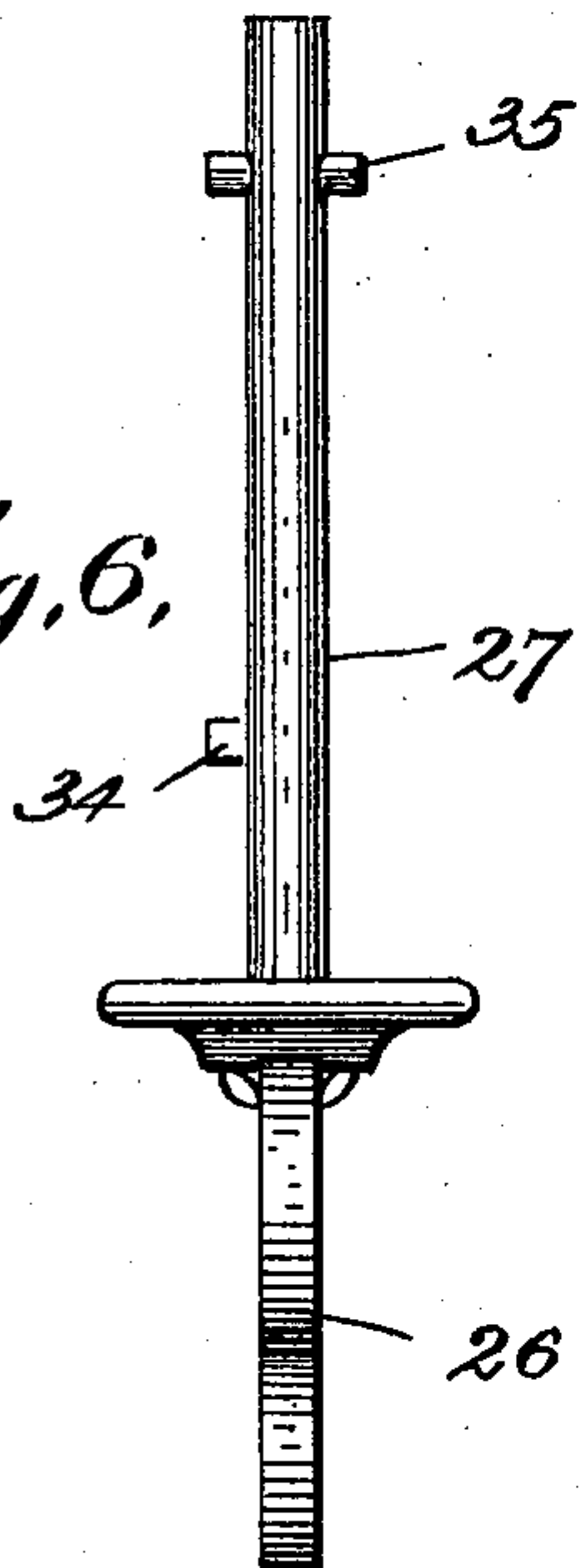


Fig. 7.

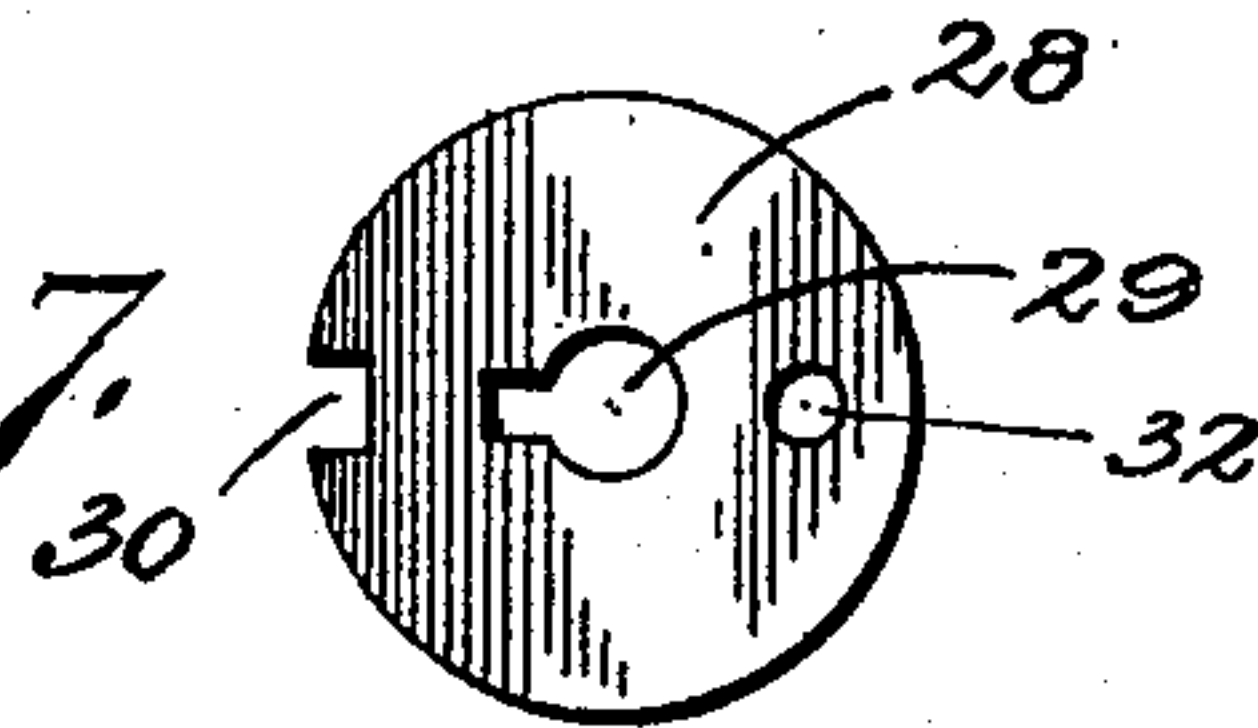
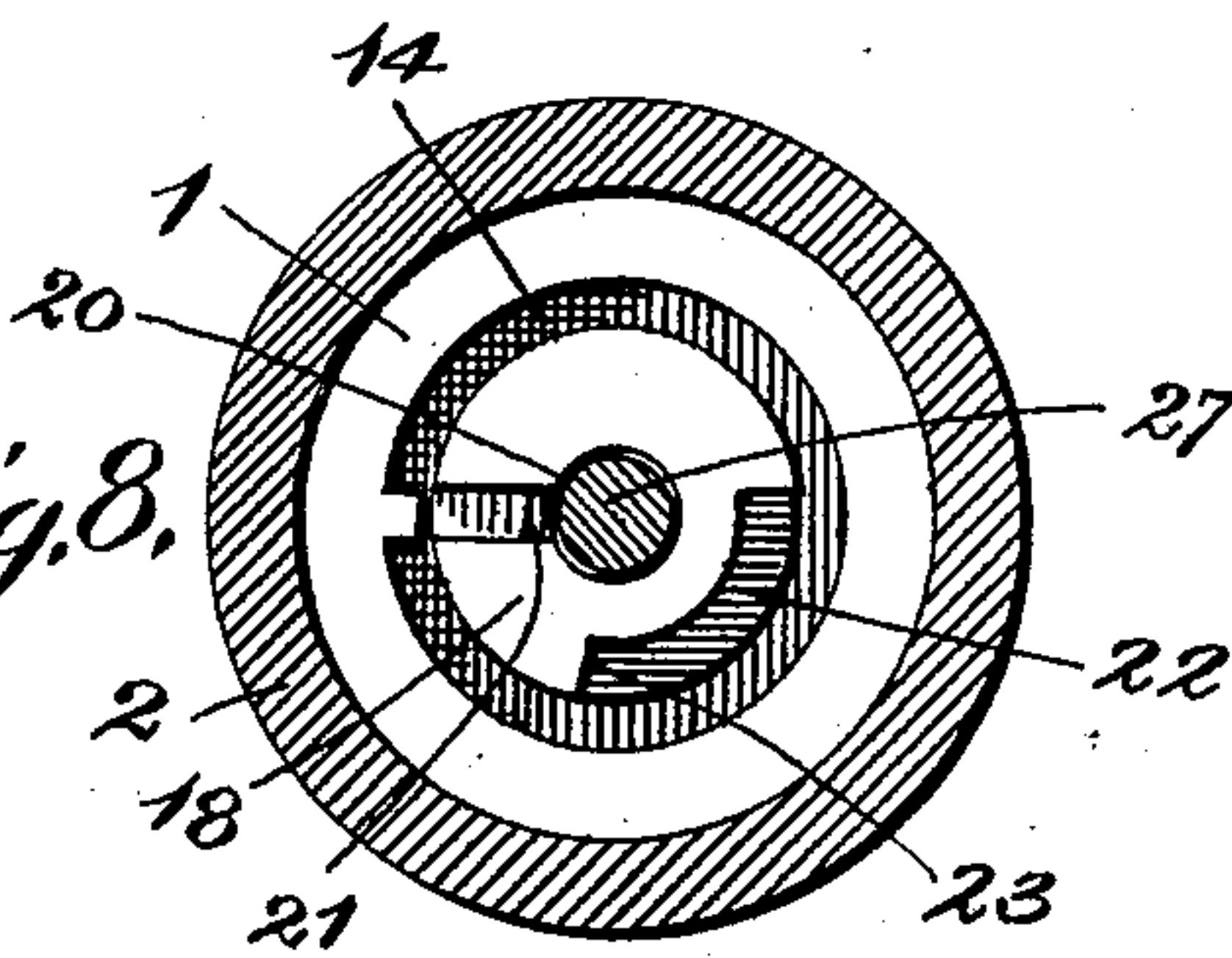


Fig. 8.



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# UNITED STATES PATENT OFFICE.

ORLANDO F. CONIHE, OF BOSTON, MASSACHUSETTS.

## GAS OR VAPOR COCK.

SPECIFICATION forming part of Letters Patent No. 587,428, dated August 3, 1897.

Application filed February 20, 1897. Serial No. 624,486. (No model.)

*To all whom it may concern:*

Be it known that I, ORLANDO F. CONIHE, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Gas or Vapor Cocks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in gas or vapor cocks to regulate the flow of gas or vapor from the gas-supply pipe to the burner, the object being to provide an improved construction which cannot be accidentally turned on to permit the passage of gas therethrough and to dispense with the employment of screws and caps connected with the working parts thereof, so that any possibility of loosening and dropping out of parts is entirely obviated.

To this end my invention consists in certain novel constructions, combinations, and arrangements of parts in a gas-cock, as will be hereinafter more fully described, and specifically set forth in the appended claims.

In the accompanying drawings, Figure 1 is a side view showing a portion of a gas-supply pipe, a burner-bracket, and my improved gas-controlling cock connected therewith. Fig. 2 is a central transverse section of the cock. Fig. 3 is a central longitudinal section thereof. Fig. 4 is a detail perspective view of the controlling cone or plug. Fig. 5 is a bottom plan view of the same. Fig. 6 is a detail view of the key and its detached stem. Fig. 7 is a plan view of the bottom washer. Fig. 8 is a section on line 8 8 of Fig. 2, looking up. Fig. 9 is a plan view of the bottom cap.

Like numerals designate like parts throughout the several views.

The cock-case is constructed of three parts—a central body portion 1, a bottom cap 2, and a top cap 3. The said body portion 1 is provided with two tubular extremities 4 5, opening therefrom, the former having a screw-collar 6, adapted to engage with the end of the gas-supply pipe 7, and the latter being provided with a boss 8, provided with an

opening through which the inner end of the gas-bracket 9 fits, and is secured by a screw 10, engaged therewith. This construction of the body permits the gas or vapor coming through the said supply-pipe to pass to the gas-burner mounted on the bracket. The said body portion 1 of the case may be of any approved exterior shape, and in the present instance is provided with a threaded flange 11, with which the bottom flange of the top cap 3 engages. This top cap 3 is provided with a central chamber 12, terminating in a recess which, together with a recess in the top part of the body portion 1 when the two are connected, forms a space 12, into which a washer 13 fits. The body portion 1 has a cone-shaped or tapering passage therethrough which is in communication with a recess 14 at the bottom of said body portion, and this portion is provided adjacent to said recess with a flange 15, which is threaded to engage the flange portion 16 of the bottom cap 2. This bottom cap is provided with a central socket and passage 17, the purpose of which will be presently described.

A cone-shaped valve-plug 18 fits within the body portion 1 and is provided with a central chamber 19, terminating at the lower end thereof in a contracted passage 20, having a lateral passage 21, opening at the exterior side of the conical plug. The bottom of this cone-valve is provided with a central slot 22, opening at the outer edge thereof, and the wall of the plug at the ends of the slot constitute stop-shoulders 23. This plug is provided with a horizontal outlet-passage 24, which when in line with the two tubular extremities 4 5 of the central body portion 1 permits the gas or vapor to flow from the gas-supply pipe to the burner.

The bottom cap 2 is provided with a passage 25 in communication with its central socket 17, and a key 26 has a stem 27 projecting through said passage and sockets and through the contracted passage and socket in the conical plug and top washer to the chamber of the top cap 3, which the upper end of the said stem occupies.

A washer 28 occupies the space or recess between the central body portion 1 and bottom cap 2, and this washer is provided with a central keyhole-shaped slot 29 and a niche



30 in the rim thereof, which communicates with a stop projection 31 on the interior of the body or shell 1. A second projection or pin 31 extends through an opening 32 in the said washer and occupies the segmental slot 22 of the conical plug 18 and serves to limit the extent of rotary movement of said plug by contact with the said shoulders 23 and also to prevent the washer from turning.

10 The lower end of the stem is provided with a web or bit 34, which normally, when the conical plug is closed to prevent the passage of gas to the burner, occupies the recess 17 of the base-cap; but it is adapted to be passed  
15 up through the keyhole-shaped slot 29 in the washer 28 to engage the groove or lateral passage 21 in the bottom of the conical plug 18, whereby upon turning the key 26, secured to the stem 27, the said plug may be turned  
20 so as to bring its horizontal opening into and out of coincidence with the tubular extremities 4 5 of the top portion 1 in order to permit or shut off the flow of gas from the gas-supply pipe, the extent of movement of the  
25 plug either way being limited by the pin 31 and shoulders 23, as hereinbefore mentioned.

The upper end of the key-stem 27 is provided with a cross-pin 35, extending there-through, and a spiral spring 36 in the cham-  
30 ber of the top cap 3 has position on the stem and bears upon the said pin and against the top of said cap. A spiral spring 38 also surrounds the central portion of the stem in the central socket 19 of the conical plug 18, and  
35 the upper end thereof bears against the top washer 13, while the lower end thereof bears against packing material 39, surrounding the said stem at the base of the said socket 19. These springs 36 and 38 normally tend to  
40 press the key 26 and its stem 27 downwardly, so as to force the web or bit 34 thereon out of engagement with the plug-groove 21 and down into the base-cap recess 17, which position it normally occupies when the plug is  
45 turned to shut off the flow of gas. The packing material 39 surrounding the stem prevents the gas from following the stem and leaking to the exterior at the bottom of the case.

50 After the stem has been forced down by the tension-springs, as described, it may be turned either way, as desired; but the plug-valve will not be opened and no vapor or gas can pass through the cock.

55 It will be seen that in my construction of gas-cock no screws or other small parts, which are liable to be detached and fall out, are employed. By my construction it will also be seen that the key may be turned when the  
60 plug is in position to cut off the gas without affecting the position of said plug, and hence all liability of accidentally turning on the gas is entirely obviated. The plug cannot be turned until the key-stem is forced up to  
65 bring its bit in connection with the plug, as before described.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. In a gas or vapor cock, the combination 70 of a case having inlet and outlet ports, a valve in said case governing the passage of gas or vapor through said ports, a permanent key having a stem provided with means normally arranged below said valve and adapted to be 75 pushed up in contact with the valve for operating the same, means to hold the key up in engagement with the valve when the latter is open, and means for engaging the key-stem to normally hold said key out of engagement 80 with the valve when the latter is closed, substantially as described.

2. In a gas or vapor cock, the combination of a case, a valve in said case controlling the passage of gas therethrough and provided 85 with a slot or groove, a key provided with a stem having a bit or projection normally arranged below said valve and adapted to be pushed up so as to bring its bit into engage- 90 ment with the valve groove or slot in order that said valve may be operated, and a spring engaging the valve-stem to hold it out of engagement with the groove, substantially as described.

3. In a gas or vapor cock, the combination 95 of a case having inlet and outlet ports, an oscillatory valve in said case and provided with a groove or slot, means for limiting the rotary movement of the valve, a key having a stem provided with a bit or projection adapted to 100 engage with said groove or slot to operate the said oscillatory valve, and a spring engaging the key-stem to normally hold said key out of engagement with the valve, substantially as described. 105

4. In a gas or vapor cock, the combination of a case having inlet and outlet ports, a valve in said case provided with a groove in the lower end and a chamber in the center thereof, means to limit the rotary movement of said 110 valve, a key having a stem projecting through the valve into said chamber and provided with a bit adapted to be inserted into the said valve-groove so as to operate said valve, and a spring in said chamber and engaging the 115 key-stem to force the key downward out of engagement with the valve when the latter is closed, substantially as described.

5. In a gas or vapor cock, the combination of a case having inlet and outlet ports, a ro- 120 tary valve in said case provided with a groove in the lower end thereof, a washer or diaphragm between said valve and lower end of the case and provided with a slot, and a key having a stem provided with a bit or projec- 125 tion adapted to be passed up through said slot and engage with the said groove in the valve to operate the latter, and said washer holding the stem in upraised position when the valve is open, substantially as described. 130

6. In a gas or vapor cock, the combination of a case, a cone-shaped valve in said case having a limited upward movement and pro- 135 vided with a passage extending therethrough



and a groove in the bottom thereof, a washer or diaphragm between the lower portion of the case and the plug-valve, and having a keyhole-shaped slot, and a key provided with  
 5 a stem having a bit or projection adapted to be inserted through said slot and engaged with the said groove of the valve whereby said valve may be operated and maintained  
 10 in an open position by the said stem when resting upon the upper surface of the washer, substantially as described.

7. In a gas or vapor cock, the combination of a case having inlet and outlet ports, a cone-shaped plug-valve in said case and provided  
 15 with a central chamber adapted to be brought into coincidence with said ports, and a groove in its lower end, means to limit the rotary movement of said valve, a washer or diaphragm provided with a keyhole-shaped slot  
 20 and located below the base of said valve, a key having a stem provided with a bit or projection adapted to be inserted through said slot and engaged with the said groove in the valve to operate the latter, said key being held  
 25 in operative position when the valve is opened by the washer, and a spring engaging the key-stem to force the key downward when the valve is closed, substantially as described.

8. In a gas or vapor cock, the combination of  
 30 a case having inlet and outlet ports, a cone-shaped valve in said case provided with a central chamber and having a groove in its lower end, a washer or diaphragm provided with a keyhole-shaped slot and located below said  
 35 valve, a key having a stem inserted up through said washer and valve-chamber and provided with a bit or projection adapted to be inserted through said keyhole-shaped slot and engage with the groove in the valve to operate said  
 40 valve, and means for normally pressing the disengaged stem downwardly so as to force its bit to a position below the said washer or diaphragm, substantially as described.

9. In a gas or vapor cock, the combination of  
 45 a case having inlet and outlet ports, a cone-shaped valve located in said case and provided

with a central chamber and having in its bottom a groove and a segmental-shaped slot, a diaphragm or washer provided with a keyhole-shaped slot, and located beneath said valve, 50  
 a key having a stem provided with a bit or projection adapted to be inserted up through said keyhole-shaped slot and engage with the said groove in the valve to operate said valve, a pin projecting into the segmental slot of the 55  
 valve and serving to limit the rotary movement thereof, and means to normally press the disengaged key-stem down so that its bit will have position below the said washer or diaphragm, substantially as described. 60

10. In a gas or vapor cock, the combination of a case having a central portion or body provided with a conical slot or passage, a dome-cap closing the upper end of said body portion and provided with a central chamber, a 65  
 base-cap closing the lower end of said body portion and provided with a chamber and a socket, a conical valve occupying the chamber in said body portion and provided with a groove and a segmental-shaped slot in the bottom thereof, a washer or diaphragm provided 70  
 with a keyhole-shaped slot and having position between said valve and base-cap, a pin projecting from said washer and occupying the segmental slot of the valve to limit the 75  
 rotary movement of said valve, a key having a stem provided with a bit or projection adapted to be passed up through said keyhole-shaped slot and engage with the groove in the valve to operate said valve, and a spring 80  
 to normally force the key-stem down when said stem is not in use so as to bring the bit thereof to a position below the said washer or diaphragm, substantially as described.

In testimony whereof I have signed this 85  
 specification in the presence of two subscribing witnesses.

ORLANDO F. CONIHE.

Witnesses:

KATHARYN C. GEE,  
 MARY A. GEE.