

No. 627,777.

Patented June 27, 1899.

H. H. GORTER.
NOZZLE.

(Application filed Nov. 23, 1898.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

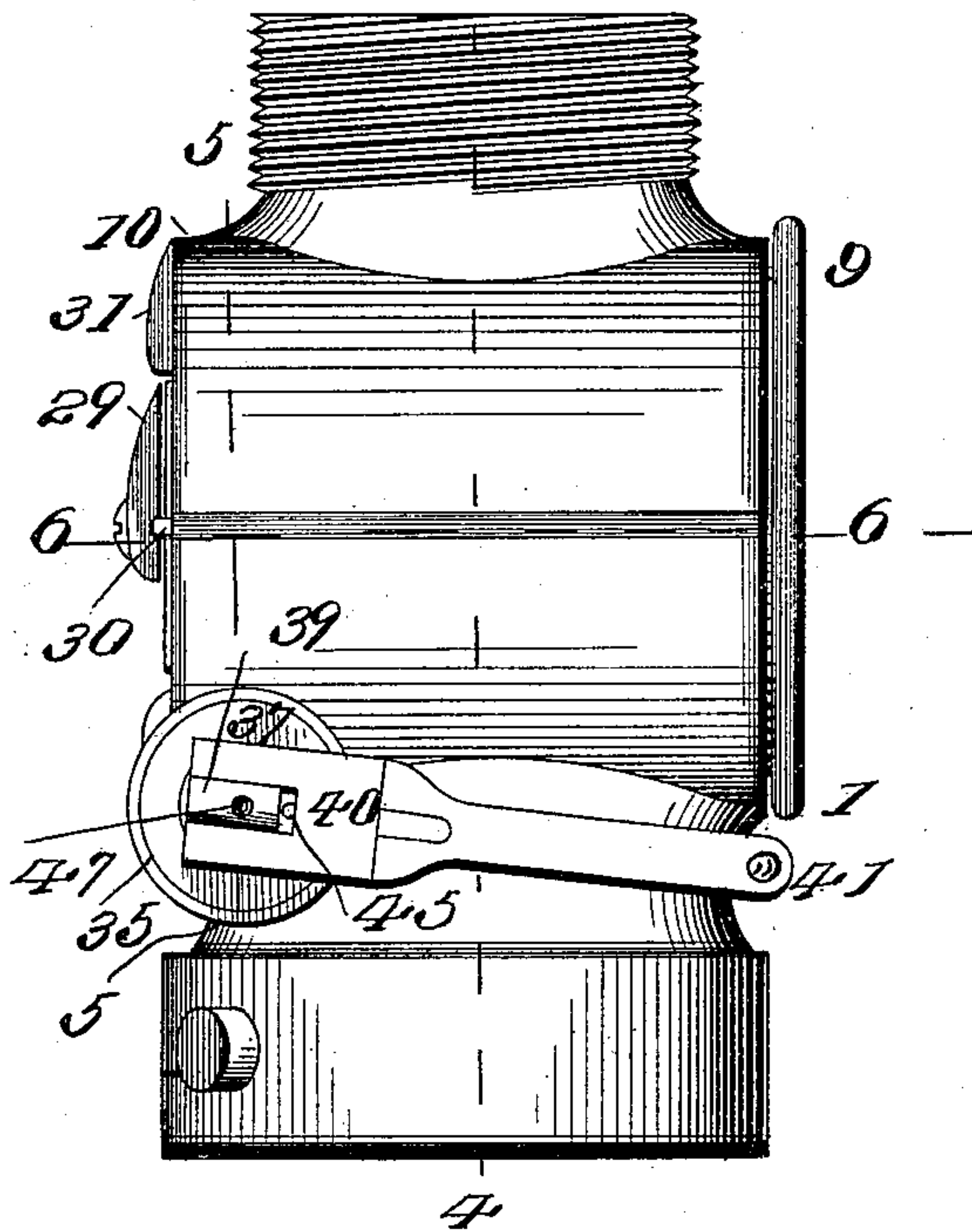


Fig 2.

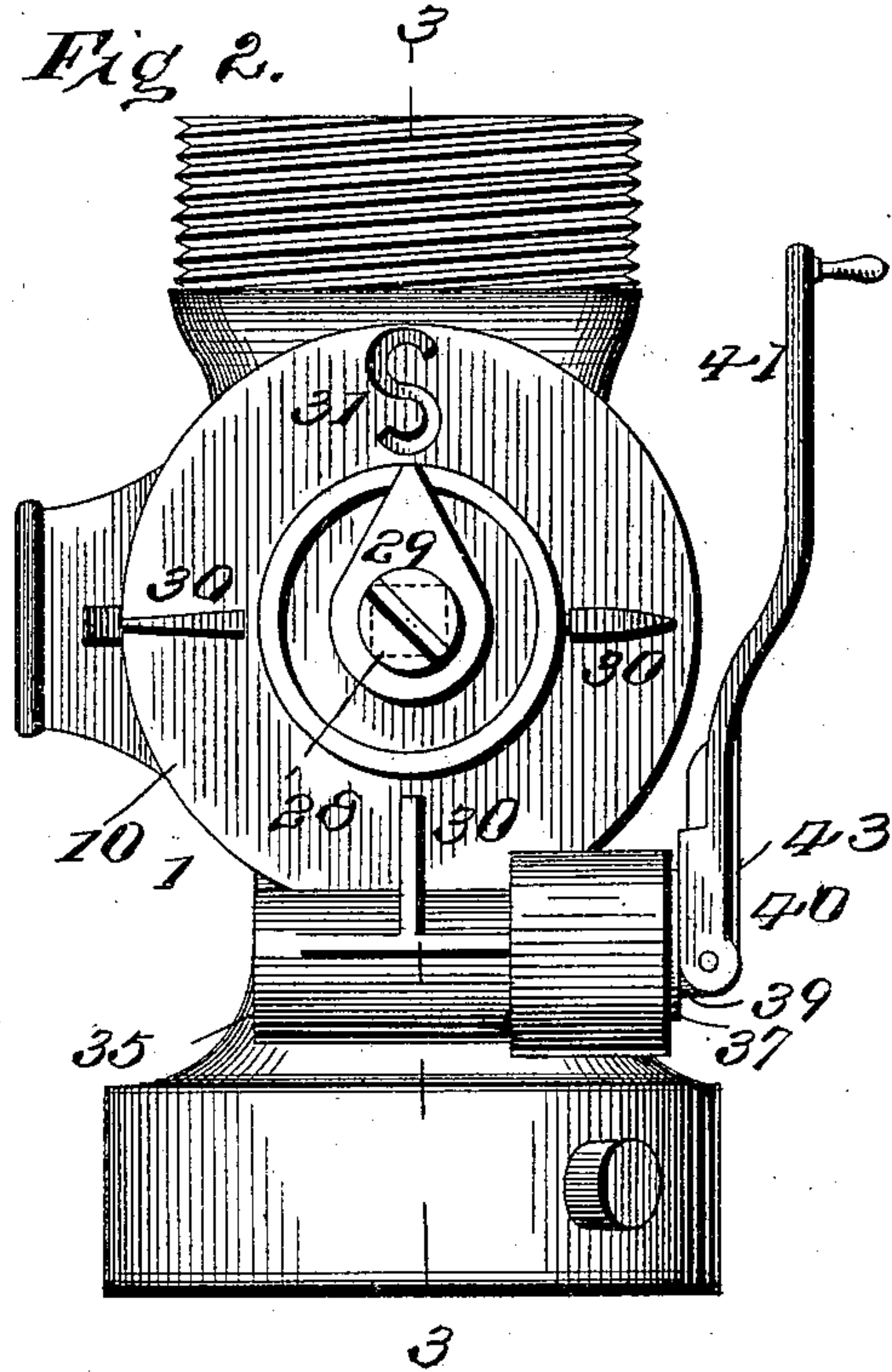
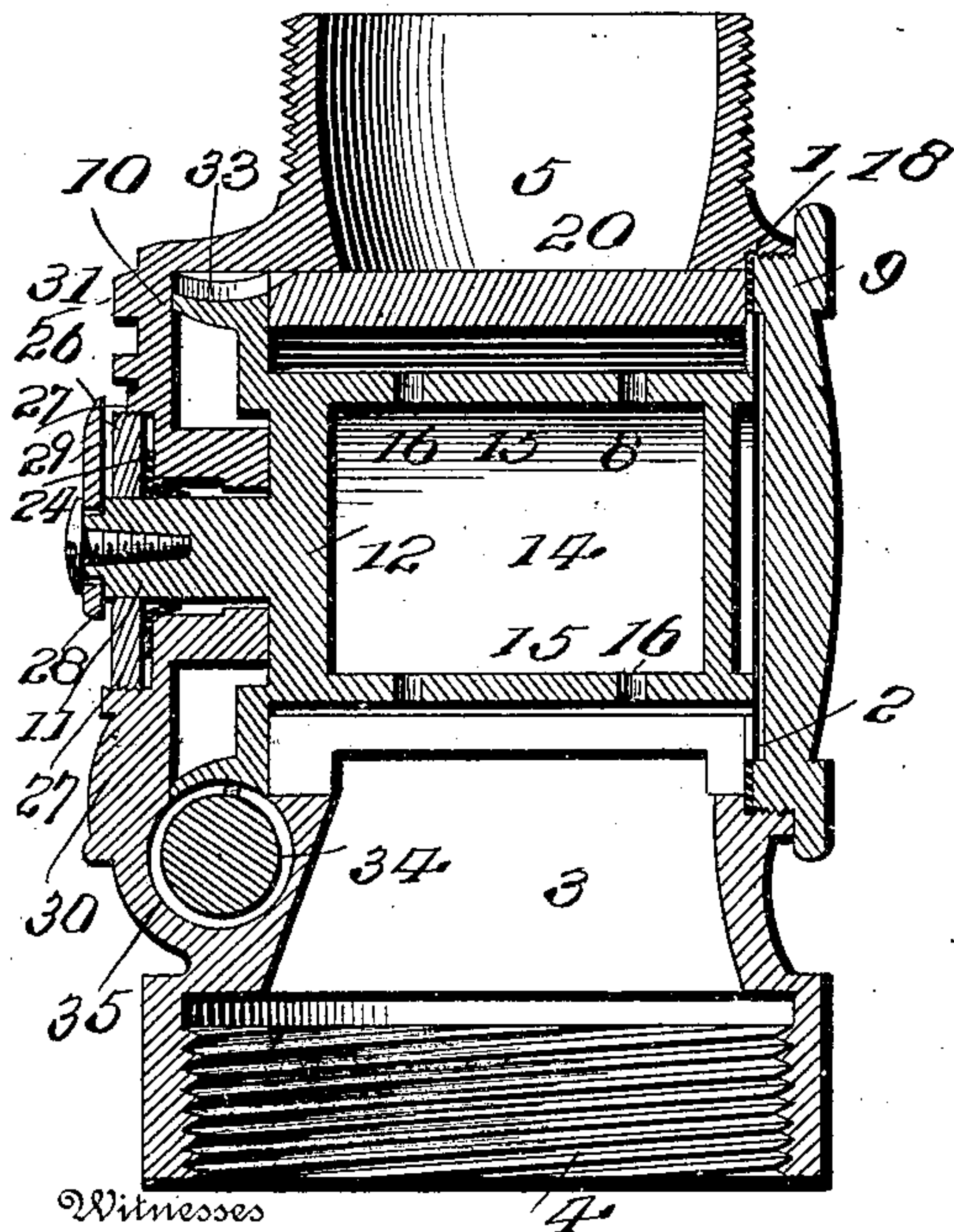


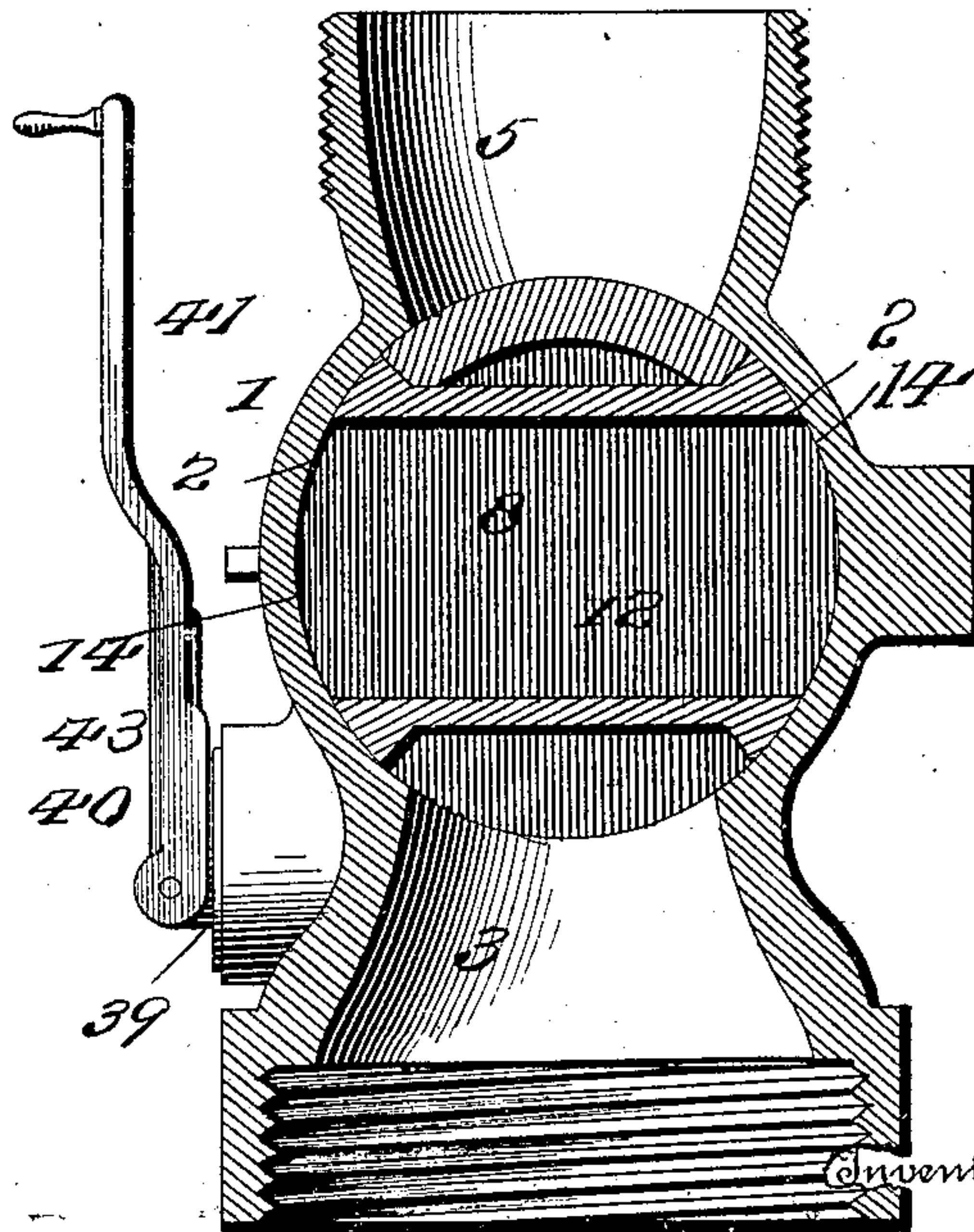
Fig. 3.



Witnesses

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Fig. 4.



Inventor

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By Francis M. Wright
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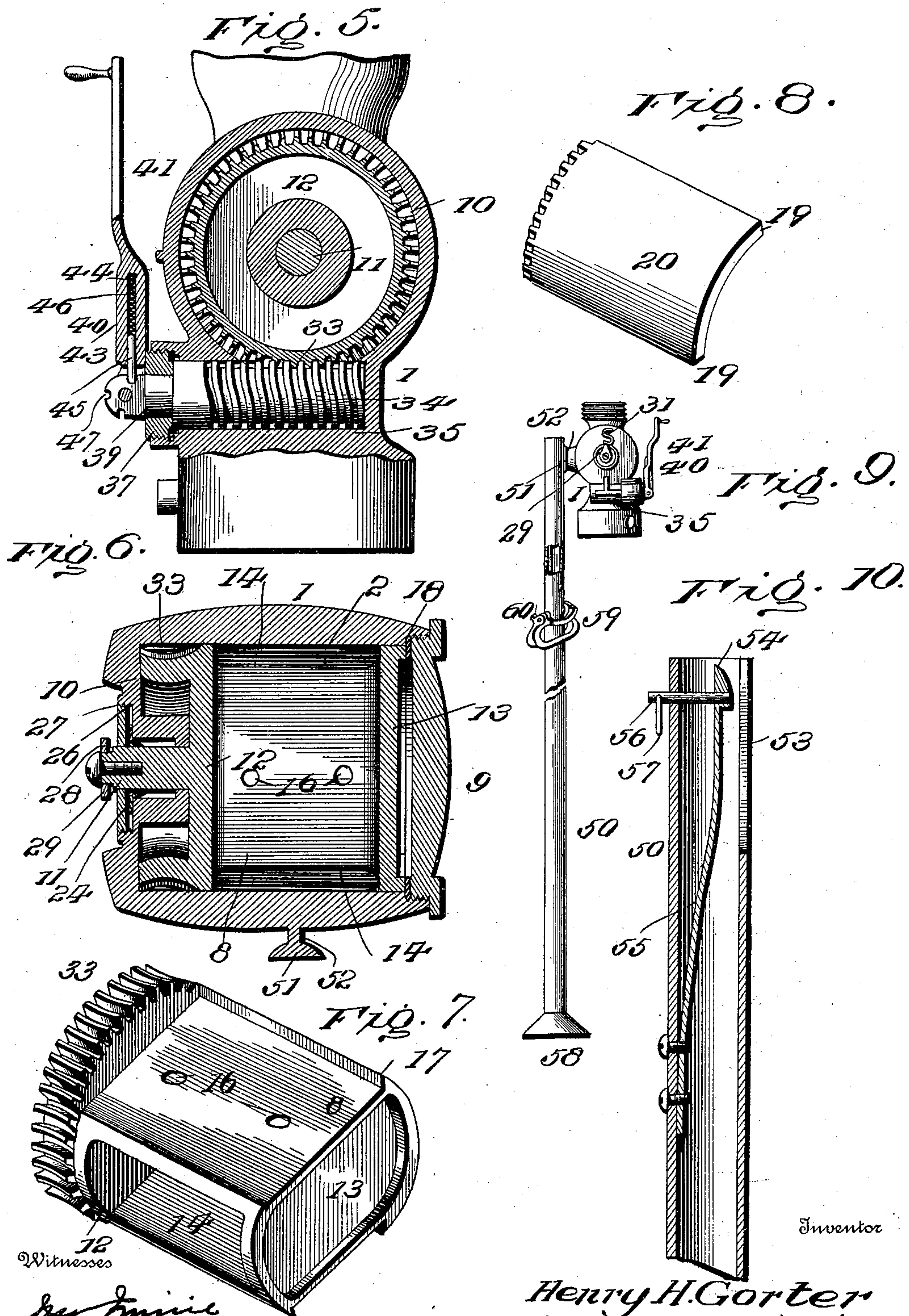
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2 Sheets—Sheet 2.



Witnesses
per *Emile J. Hachman*

Inventor
Henry H. Gorter
by *Francis M. Wright* Attorney.

UNITED STATES PATENT OFFICE.

HENRY H. GORTER, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO MARY E. GORTER, OF SAME PLACE.

NOZZLE.

SPECIFICATION forming part of Letters Patent No. 627,777, dated June 27, 1899.

Application filed November 23, 1898. Serial No. 697,287. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. GORTER, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Nozzles, of which the following is a specification.

My invention relates to improvements in nozzles; and the object of my invention has been to provide a superior apparatus of this character which will enable the water to be easily shut off although under great pressure. The device constructed by me for this purpose is superior in the following respects: First, the working parts are inclosed in a solid casing, so that they cannot be injured, displaced, or jammed by blows, the only exposed one of the working parts being the handle, which is connected loosely to the other working parts, so that any blow on the handle would have no injurious effects on the main working parts; secondly, the construction is a very powerful one and can resist great strain; thirdly, the valve shuts off whichever way the handle may be turned, so that the fireman does not have to think how he should turn the handle to shut off the valve; fourthly, the device is provided with means for indicating by the touch alone the position of the valve; fifthly, the handle for operating the valve, while sufficiently long to give a good leverage, can be turned down into a position in which it will not form any obstruction, as when mounting ladders, and will not itself be liable to injury, and, sixthly, by providing a projection on the nozzle proper I avoid the necessity of strapping or otherwise fastening down the nozzle to the stand, thereby saving time.

In the accompanying drawings, Figure 1 is a top plan view of the nozzle. Fig. 2 is a side elevation of the same. Fig. 3 is a longitudinal section on the line 3 3 of Fig. 2. Fig. 4 is a longitudinal section on the line 4 4 of Fig. 1 as it would appear when the valve-handle has been turned through a quarter-revolution. Fig. 5 is a similar view on the line 5 5 of Fig. 1. Fig. 6 is a transverse section on the line 6 6 of Fig. 1. Fig. 7 is a detail perspective view of the valve. Fig. 8 is a similar view of the valve-plate. Fig. 9 is a side elevation of

the nozzle-stand, and Fig. 10 is a section of the top of the stand.

Referring to the drawings, 1 represents the nozzle-casing, comprising the central cylindrical valve-chamber 2, the conoidal portion 3, leading thereto, the internally-threaded ring 4, into which the end of the hose-section is screwed, and the conoidal portion 5, into which the water emerges from the valve-chamber, said portion being externally threaded to support the nozzle-mouth.

The central chamber 2 may be open at one side to permit the insertion of the valve 8, said side being closed by a cap 9 and washer 18, the opposite side of the casing having a cylindrical depression or sleeve 10 apertured to permit the passage therethrough of a stem 11 on the end 12 of the valve. Said valve 8 is closed at the ends 12 13, open at the two opposite sides 14, and closed at the other two opposite faces 15, except for two apertures 16 in each of the said faces. One of the faces 15 has its upper and lower edges raised or beveled, as shown at 17, to form seats for the correspondingly-beveled edges 19 of the valve-plate 20, and in actual construction and for convenience of assembling the parts it is well to make both of the faces 15 alike fitted to receive the plate, and I have so shown them. It will be understood, however, that the construction necessary to seat the plate need only be applied to one face. The valve-plate 20 is formed of a rectangular portion of a cylinder of substantially the same diameter as that of the valve-chamber, so that as the valve 8 turns the outer surface of said plate fits snugly within said chamber. When the valve is turned a quarter-revolution from its position, as shown in Fig. 4, the water passes freely through the open sides 14 of the valve; but when the valve is turned into the position shown in Fig. 4 the valve-plate is moved slightly from its seat by the pressure on its concave side, due to the water-pressure transmitted through the apertures 16, and is pressed firmly against the casing, as shown in Fig. 3, closing the opening into the portion 5 of the casing. The passage of the stem 11 through the sleeve 10 is made water-tight by means of a cup-leather or washer 24, pressed tight against the face of the casing by means of

the nut 26, screwed into the casing, as shown at 27, and the water behind said washer presses it firmly against said stem. The end of the stem 11 is squared, as indicated by the dotted lines at 28 in Fig. 2, and upon said squared end is mounted a pointer 29, the direction of which indicates the position of the valve. The side of the casing on which said pointer is placed has cast thereon the ridges 30 in three directions at right angles and has also cast thereon at 31 the raised letter "S," to which the pointer 29 extends when the valve is shut. This construction is very useful for indicating to the fireman at night-time the position of the valve by touch alone.

The valve 8 has formed on its end a worm-gear 33, with which meshes a worm 34 in a vertical cylindrical chamber 35 of the casing, secured therein by means of a nut screwed into said casing, as shown at 37. Upon the outstanding end 39 of said worm is pivotally mounted a crank-arm 40, carrying a handle 41. In use said handle is in the position shown in Figs. 2, 4, and 5—that is, directed away from the casing; but when not in use the handle is turned downward over the conical portion 3 of the casing, as shown in Fig. 1. To maintain the arm in either of these two positions or in line with the worm, if desired, the inner end of the arm is enlarged at the center, as shown at 43, to admit of its being bored lengthwise, and in said bore 44 is inserted a bolt 45, pressed outward by a spring 46 into one or the other of the three sockets 47.

The nozzle is constructed to be supported by a tubular stand 50, (shown in Fig. 9,) and for this purpose the casing 1 is formed with a foot 51, having a narrow shank 52 adapted to slide in a slit 53 in the upper end of said stand, in which end is a catch 54, secured on a spring-arm 55 in said stand end and adapted to pass over said foot 51 when in position in said slit, retaining it therein. Said catch may be withdrawn by means of a link 56 and ring 57. The lower end of said stand instead of being pointed, as is common, has an enlarged annular rim or foot 58. This gives a better hold on an ordinary city pavement than a pointed stand, and the hose may be equally well turned in any direction.

Upon the opposite sides of the stand 50 at any convenient height are secured handles 59. Said handles are pivoted on said stem, so that they may be turned down to occupy little space when not in use, and they each have formed integral therewith a semicylindrical shoe 60, adapted to rest against the stand when the handles are extended horizontally for use.

I claim—

1. In a water-gate, the combination of the casing having a waterway therethrough and having the valve and worm chamber axially at right angles to each other, the cylindrical valve in the valve-chamber and concentric therewith, its axis of rotation being at right

angles to the waterway, said valve carrying a worm-gear concentric with the valve and its chamber, and the worm in said worm-chamber meshing with said gear, substantially as described.

2. In a water-gate, the combination of the casing having the valve and worm chambers axially at right angles to each other, the cylindrical valve in the valve-chamber and concentric therewith, said valve carrying a worm-gear entirely around and concentric with the valve and its chamber, and being adapted to rotate continuously in the same direction, and the worm in said worm-chamber meshing with said gear, substantially as described.

3. In a water-gate, the combination of the casing having the cylindrical valve-chamber and the worm-chamber axially at right angles to said chamber, the valve in said chamber carrying a worm-gear, and having a stem passed through the casing and carrying a pointer, the worm in said worm-chamber meshing with the said gear, and the cap closing the open end of the valve-chamber, substantially as described.

4. In a water-gate, the combination of the casing having the cylindrical valve-chamber, the cylindrical valve in said chamber having a stem passed through the casing and carrying a pointer, the cap closing the open end of said chamber, a rotating shaft and handle thereon for operating the valve, and an operative connection between said shaft and valve permitting said shaft to be rotated continuously in the same direction to open and close said valve, substantially as described.

5. In a water-gate, the combination of the casing having the cylindrical valve-chamber and having indicating protuberances on the end of said chamber, and having also the worm-chamber axially at right angles to said valve-chamber, the valve in said chamber carrying a worm-gear, and having a stem passed through the casing and carrying a pointer, the worm in said worm-chamber meshing with the said gear, and the cap closing the open end of the valve-chamber, substantially as described.

6. In a water-gate, the combination of the casing having the cylindrical valve-chamber and the worm-chamber axially at right angles thereto, the valve in said valve-chamber carrying a worm-gear and having a stem passed through the casing and carrying a pointer, the worm in said worm-chamber meshing with said gear, the cap closing the open end of the valve-chamber, the stem in said worm, the arm pivoted on said stem having a spring-actuated stop, and the nut closing said worm-chamber around said stem, substantially as described.

7. In a water-gate, the combination of the casing having the cylindrical valve-chamber and having indicating protuberances on the end of said chamber, and having also the worm-chamber axially at right angles to said valve-chamber, the valve in said chamber carrying a worm-gear, and having a stem passed

through the casing and carrying a pointer, the worm in said worm-chamber meshing with said gear, the cap closing the open end of the valve-chamber, the stem in said worm, the
5 arm pivoted on said stem having a spring-actuated stop, and the nut closing said worm-chamber around said stem, substantially as described.

8. The combination of a valve-casing hav-
10 ing a valve-chamber, a contracted neck leading to said chamber, and a worm-chamber on one side of said neck, of a valve in said valve-chamber carrying a worm-gear, a worm in said
15 worm-chamber meshing with said gear, an arm extending from the end of the worm-stem and having its free end bent outwardly from said stem, said arm being pivoted on an axis

at right angles to said stem, whereby the arm can be turned down to fit snugly upon said contracted neck, substantially as described. 20

9. In a nozzle, a casing having a straight waterway, and a valve interposed in said waterway, and having also a lug on one side thereof, said lug being arranged parallel to said waterway and having an expanded foot 25 for holding the nozzle in a slotted stand, substantially as described.

In witness whereof I have hereunto set my hand in the presence of two subscribing witnesses.

HENRY H. GORTER.

Witnesses:

FRANCIS M. WRIGHT,
CHAS. W. SMYTH.