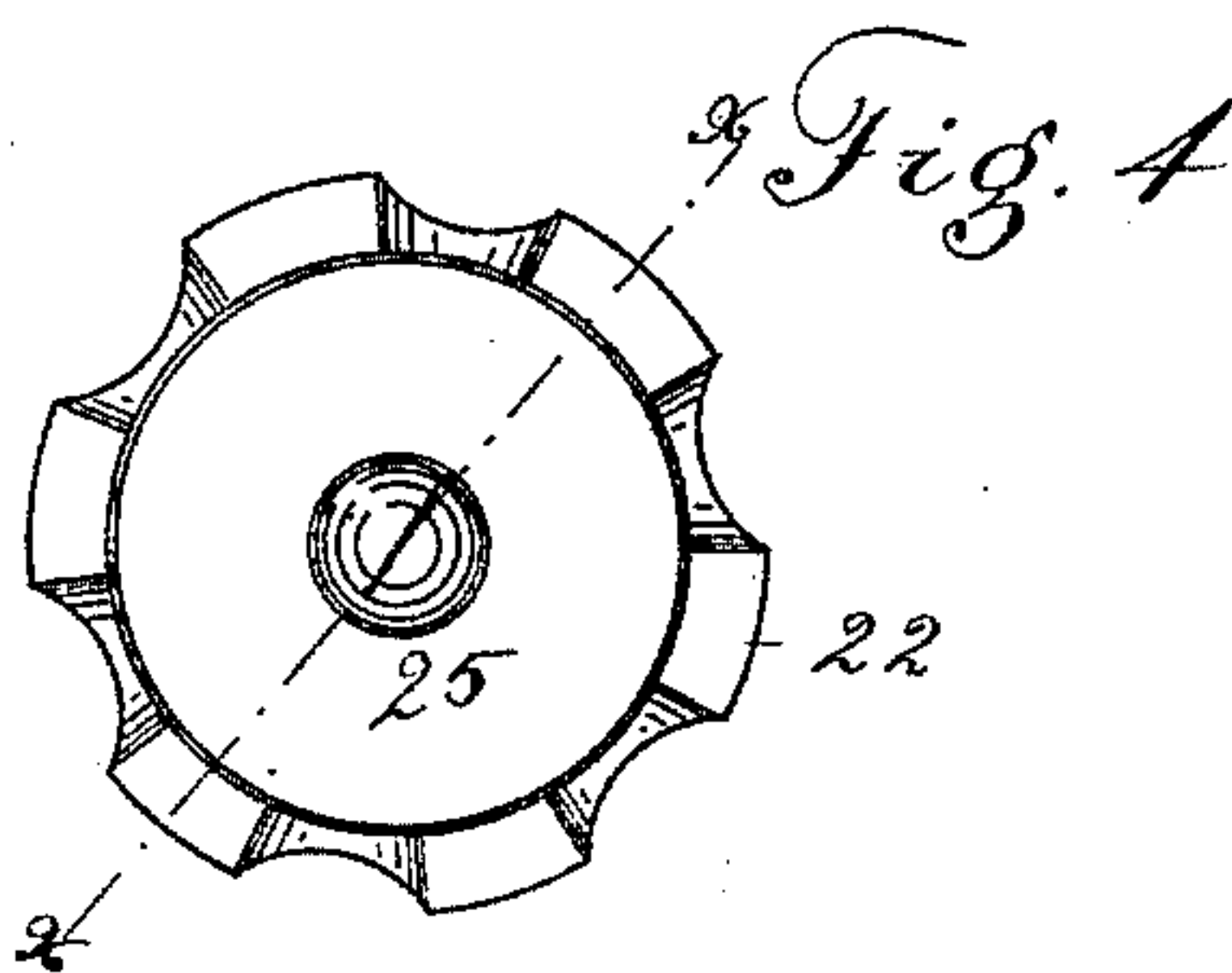
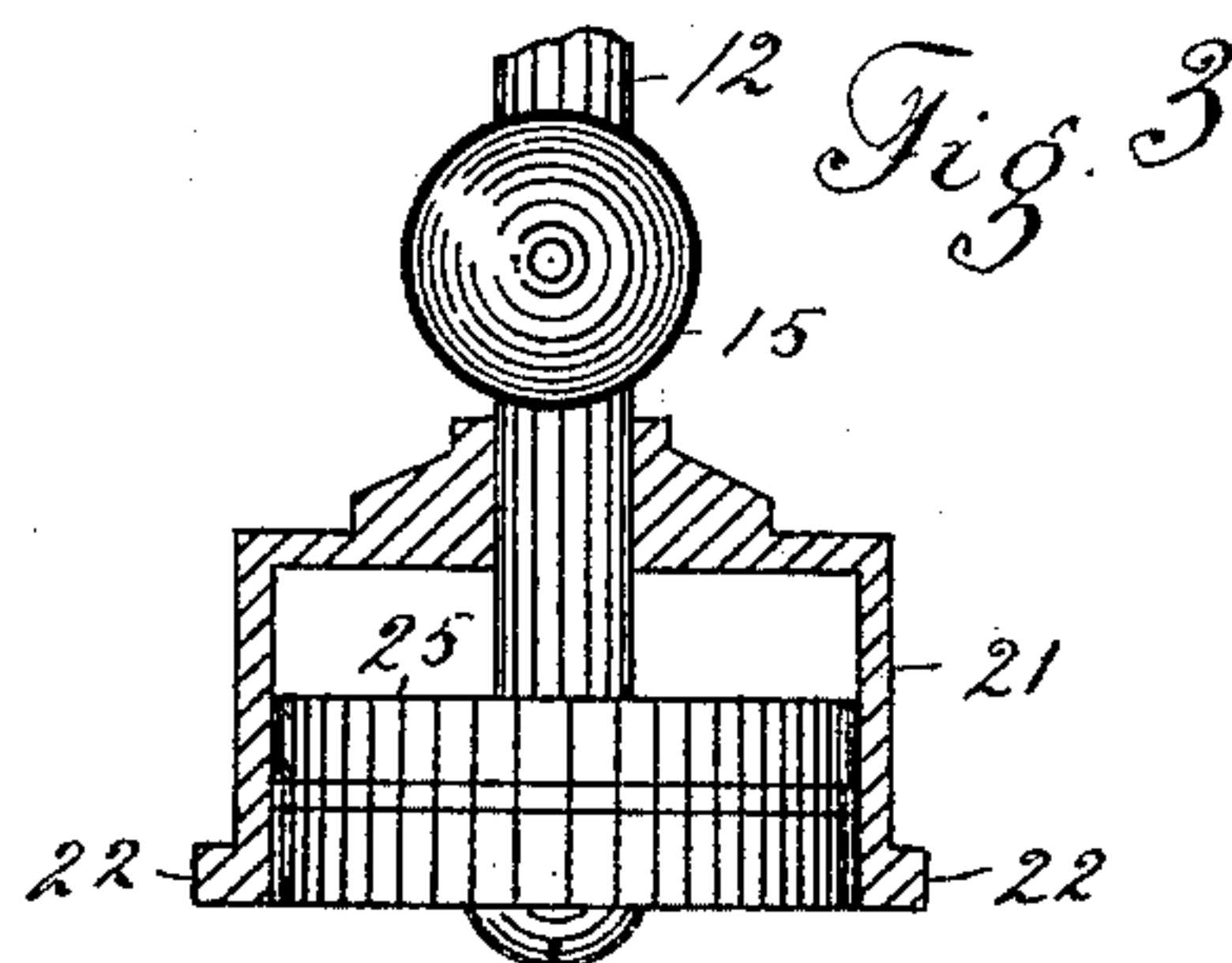
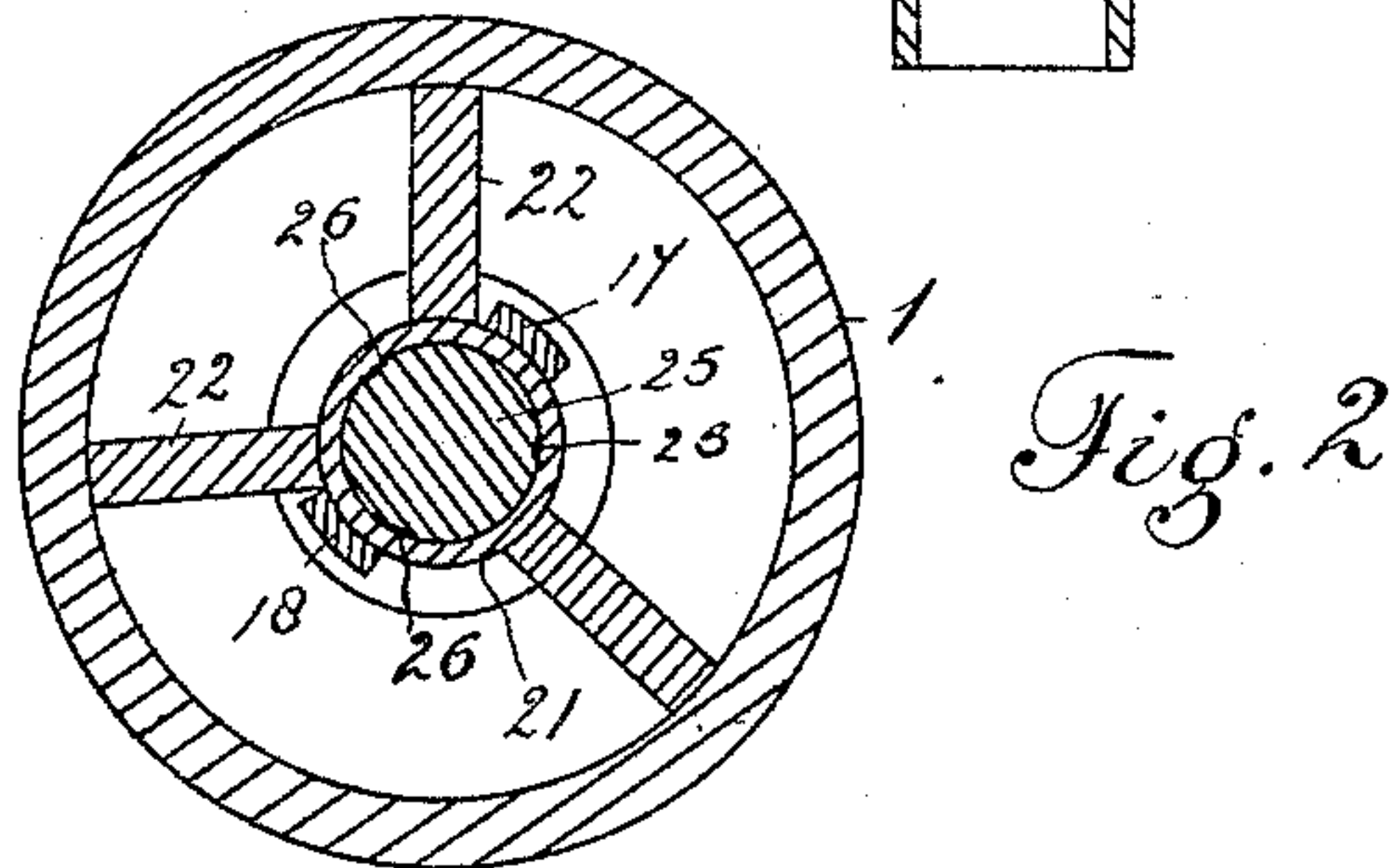
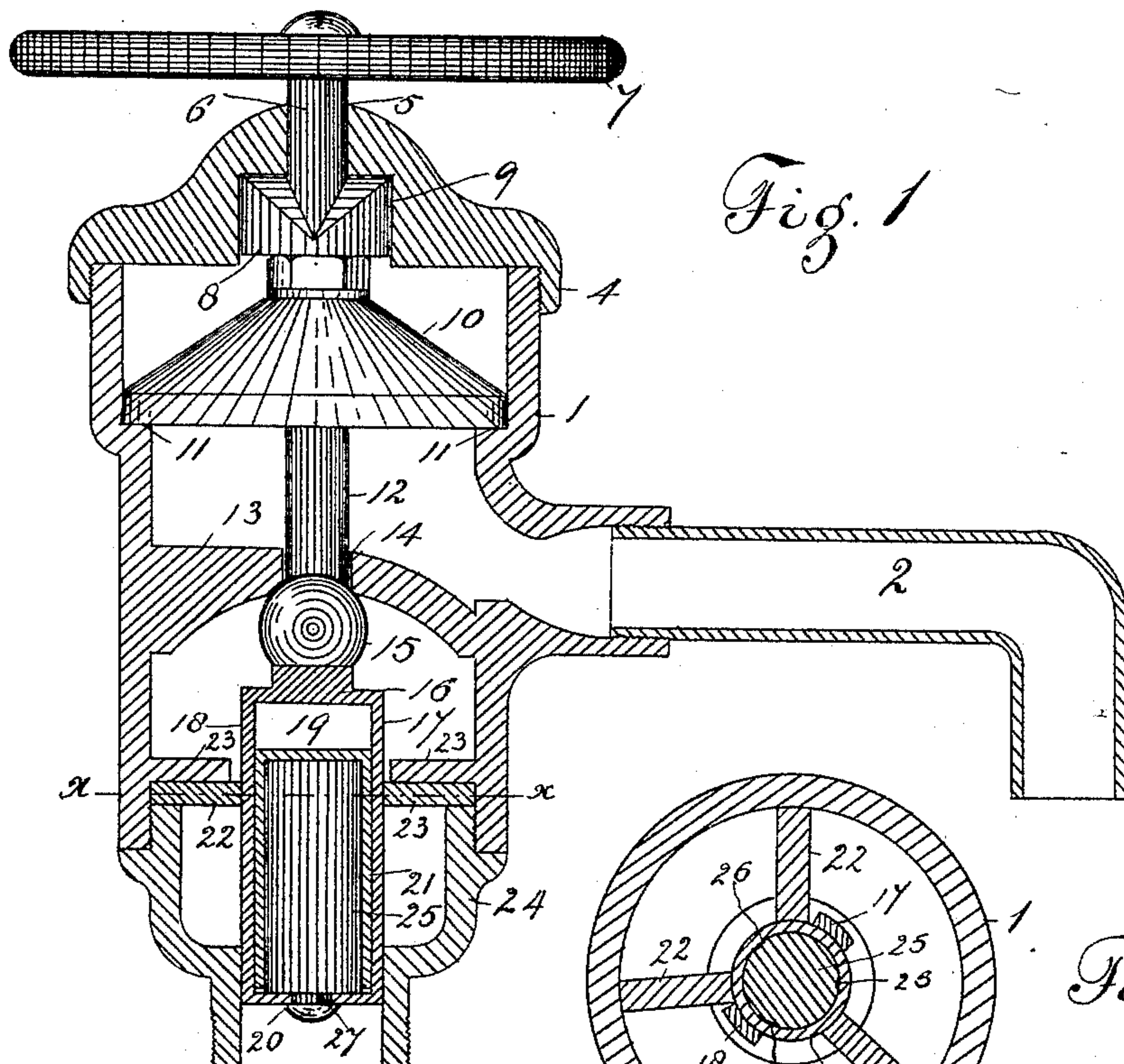


Patented Nov. 11, 1890.



**WITNESSES:**

WITNESSES:  
John Weston  
Wm. M. Connell

INVENTOR

INVENTOR  
Asa W. Straight  
BY *A. J. D. Zuehl*

**ATTORNEY.**



# UNITED STATES PATENT OFFICE.

ASA W. STRAIGHT, OF DENVER, COLORADO, ASSIGNOR OF ONE-THIRD TO  
HENRY W. WILSON, OF SAME PLACE.

## SELF-CLOSING FAUCET.

SPECIFICATION forming part of Letters Patent No. 440,581, dated November 11, 1890.

Application filed May 20, 1890. Serial No. 352,566. (No model.)

*To all whom it may concern:*

Be it known that I, ASA W. STRAIGHT, a citizen of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Self-Closing Faucets; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in self-closing faucets; and the object of my invention is to produce a faucet of the class stated which shall be so constructed that it may be easily operated and with the application of but little force, and which shall when released from the opened position return quickly and easily to its closed position, the device being provided with a suitable means of forming a cushion, and thus preventing it from closing with a jar.

To these ends my invention consists of the features and arrangements more particularly hereinafter described and claimed.

In the accompanying drawings is illustrated an embodiment of my invention, wherein—  
Figure 1 is a vertical longitudinal section of a faucet provided with my improvement. Fig. 2 is a transverse section taken on the line *x x*, Fig. 1. Fig. 3 is a vertical section of a modified form of my improvement on line *x x*, Fig. 4. Fig. 4 is an underneath view of the same.

Referring now to these views, the reference-numeral 1 designates a suitable casing as of the ordinary faucet. This casing is provided with a suitable spout 2, and is closed at one extremity with a screw-cap 4 through an aperture 5, in which cap projects a valve-stem 6, provided with a suitable wheel or handle 7 at one extremity and a pair of oppositely-disposed inclined cams 8 secured to the opposite extremity thereof, said cams being adapted to fit against a corresponding pair of oppositely-disposed inclined cams 9, secured to or made integral with the inner side of cap 4. From the drawings it will be seen in Fig. 1 that the arrangement of these two pairs of

oppositely-disposed inclined cams is such that by turning valve-stem 6 in either direction a downward motion is imparted thereto by virtue of the construction of said cams.

The lower or inner end of valve-stem 6 rests upon or contacts with one extremity of a valve-stem 12, secured to which is a suitable elastic or resilient diaphragm 10, which is supported in casing 1 by an interiorly-projecting circumferential rib or shoulder 11, said stem extending longitudinally through the faucet and being provided at its opposite extremity with a mechanism more particularly hereinafter set forth.

Just below the spout 2, or between said spout and the supply of water, is a partition or interiorly-projecting circumferential flange 13, provided with an aperture 14 in its center, through which valve-stem 12 passes, said aperture being large enough to permit the water a free and easy passage therethrough around said valve-stem. A suitable valve 15 is secured to valve-stem 12, and so adjusted that when diaphragm 10 is in its normal position said valve shall fit securely against flange 13 and effectually close aperture 14. It will be observed that this valve is held in its closed position both by the force of the water pressing thereagainst and by the elastic tension of diaphragm 10, and that flange or partition 13 is formed into a suitable valve-seat therefor.

Rigidly secured to the extremity of stem 12 which is opposite the diaphragm 10 is a piece 16, provided with two arms 17 and 18 so shaped as to inclose a rectangular space 19—that is, arms 17 and 18, extending from piece 16 at right angles on each side thereof, are each turned at right angles in two places, so as to inclose the space 19, as aforesaid, the extremities of said arms being so fashioned or of such length as to leave a space between them.

21 is a suitable cylindrical chamber adapted to fit within rectangular space 19, and is provided with arms 22, projecting outwardly therefrom, or, instead of arms, 22 may be a flange notched or broken so as to give free passage to water therearound into the faucet. These arms 22, or this broken or serrated flange, are adapted to rest upon an interiorly-



projecting circumferential rib or shoulder 23, and are held in position by the part of the casing 24 screwed into casing 1, so that the arms or flange is securely held in place in the casing. A suitable piston 25 is adapted to slide in cylindrical chamber 21, and is provided with a suitable crease or groove 26, extending lengthwise therewith and adapted to allow water to flow in or enter the chamber 21 when said piston is withdrawn, yet being small enough to prevent its instant or ready escape therefrom. The outer extremity of this piston is provided with a suitable neck 27, adapted to fit in space 20, the extremities of arms 17 and 18 projecting into said neck or crease, and thus so securing said piston that it is forced to move in either direction with arms 17 and 18 as diaphragm 10 is compressed or released from pressure. It will thus be seen that when handle 7 is turned cams 8 force down the diaphragm 10, which in turn pushes stem 12 and opens the aperture 14, and at the same time draws piston 25 partially out of cylindrical chamber 21 and permits the entrance of water therein *via* crease 26 or around the piston, which may fit loosely within its chamber. It will also be readily seen that this water will form a cushion behind the piston in the chamber and prevent the valve from closing with a jar, as would be the case if ample provision were not thus made.

In the modified form shown in Fig. 3 it will be seen that instead of the arms 17 and 18 inclosing the rectangular space 19 valve-stem 12 extends through an aperture in the closed end of the cylindrical chamber 21, so that piston 25 is pushed by valve-stem 12, instead of being pulled by arms 17 and 18 on the compression of diaphragm 10, said cylindrical chamber being provided with arms or flange 22, provided with notches to permit the free and easy access of water therearound.

Having thus described my invention, what I claim is—

1. In a faucet, the combination, with a suitable casing, a valve-stem, and a valve, of a stationary chamber 21, closed at one end and secured within the casing, but separate

and distinct therefrom, a piston connected with the stem and adapted to slide within the chamber, suitable means connected with the valve-stem for opening the valve and at the same time partially withdrawing the piston from its chamber, and an inlet for the water around the piston to a position back of or above the piston within the closed extremity of the chamber, whereby a cushion is formed against the sudden closing of the piston, substantially as described, and for purpose set forth.

2. In a faucet, the combination, with a casing and a valve-stem provided with a suitable valve, of a removable chamber 21, secured within the casing, a piston 25, so fashioned as to permit the water to enter the chamber when it is partially withdrawn, the valve-stem being provided with a forked extremity, within which the piston is retained and grasped, the piston being provided with a suitable neck for this purpose, and suitable means connected with the valve-stem 12 for simultaneously opening the valve and partially withdrawing the piston from its chamber, substantially as described, and for the purpose set forth.

3. In a faucet, the combination, with the casing, of a stem having a valve centrally located thereon, provided at its upper extremity with a resilient diaphragm and terminating at its opposite extremity in a fork, a removable chamber 21, secured within the casing, a piston adapted to slide therein and fashioned to permit water to enter the chamber when the piston is partially withdrawn, the piston being so connected with the forked extremity of the valve-stem as to move therewith, and suitable means connected with the valve-stem for simultaneously opening the valve and partially withdrawing the piston from its chamber, substantially as described, and for the purpose set forth.

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

ASA W. STRAIGHT.

Witnesses:

G. J. ROLLANDET,  
WM. MCCONNELL.