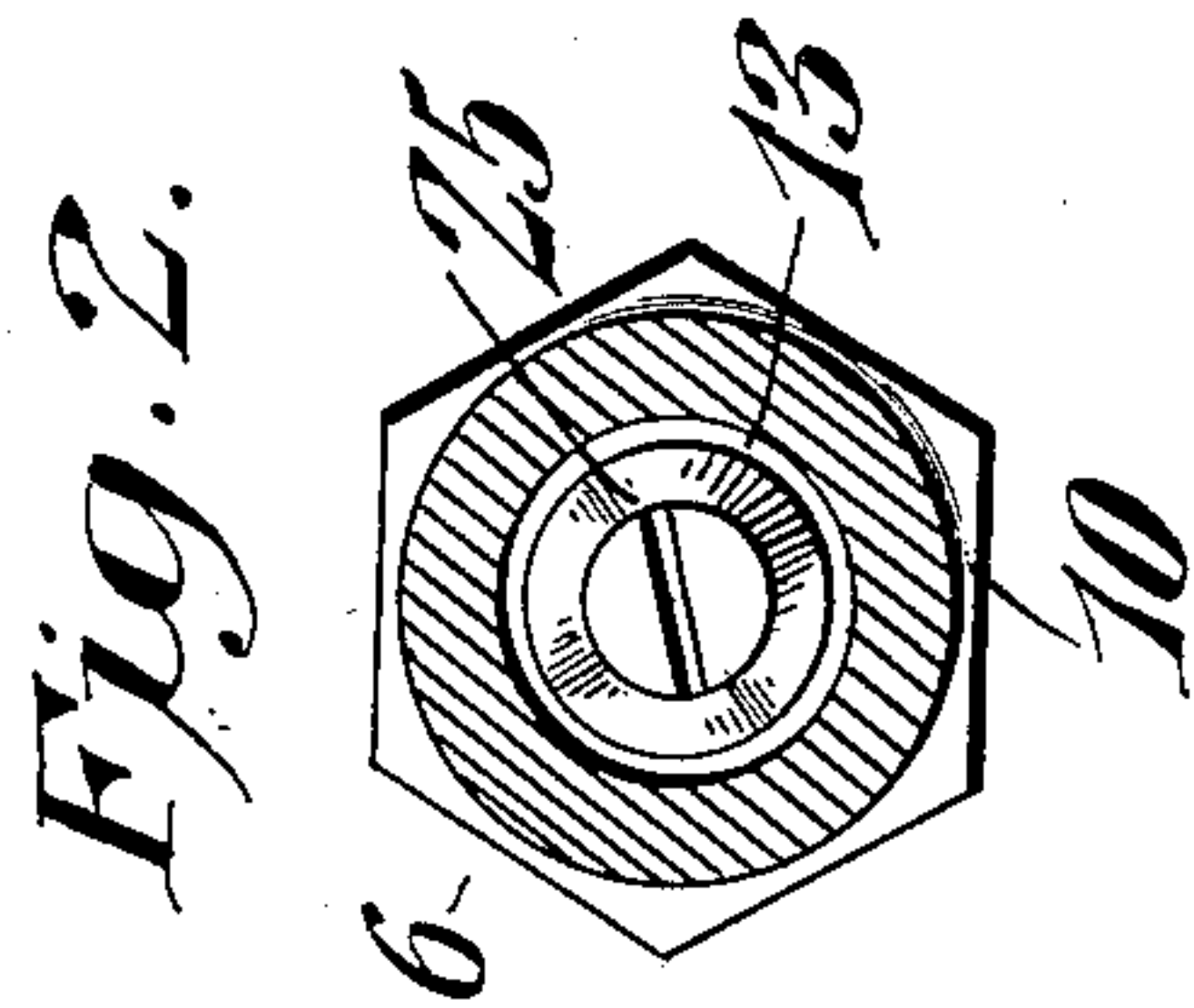
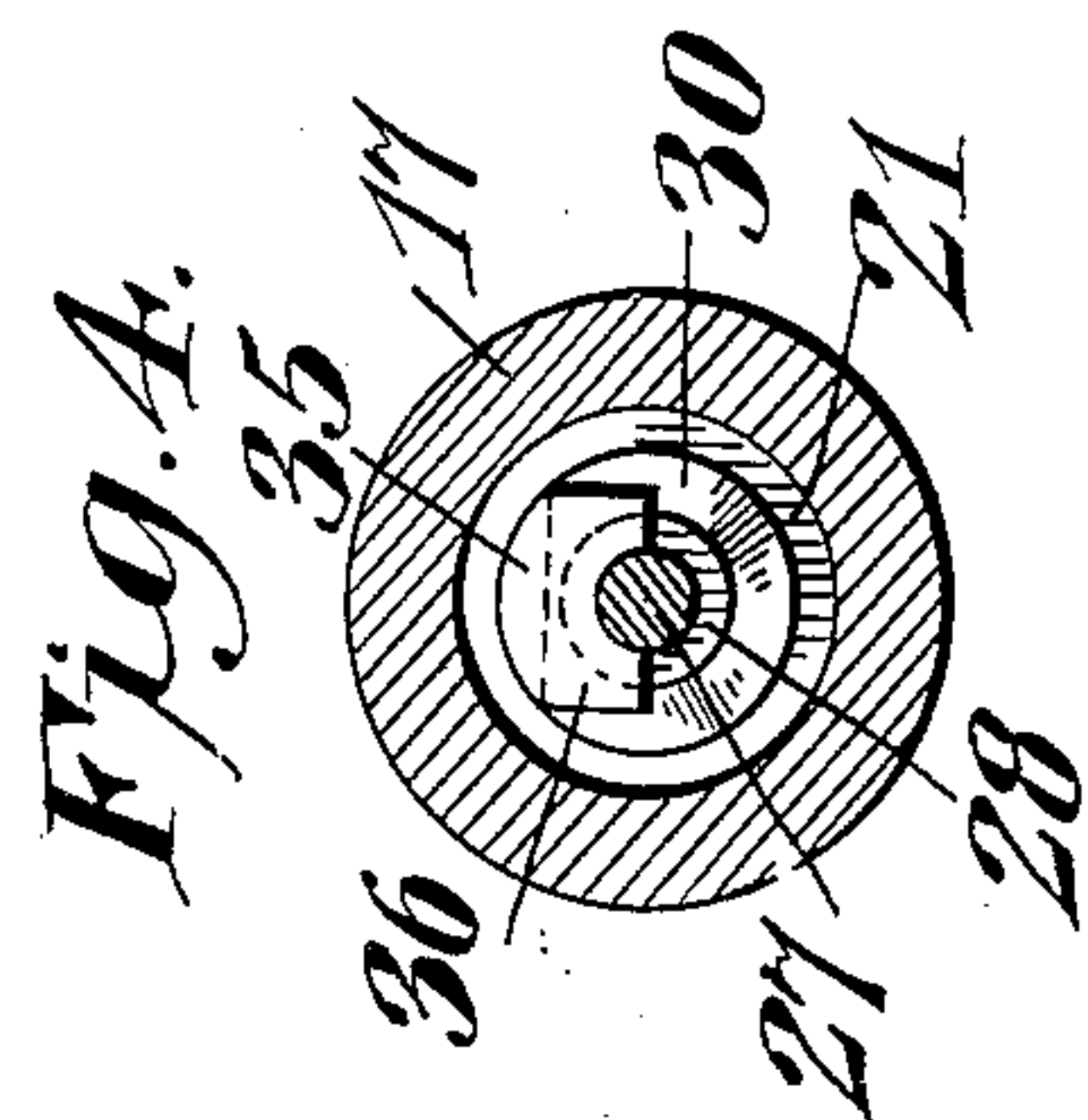
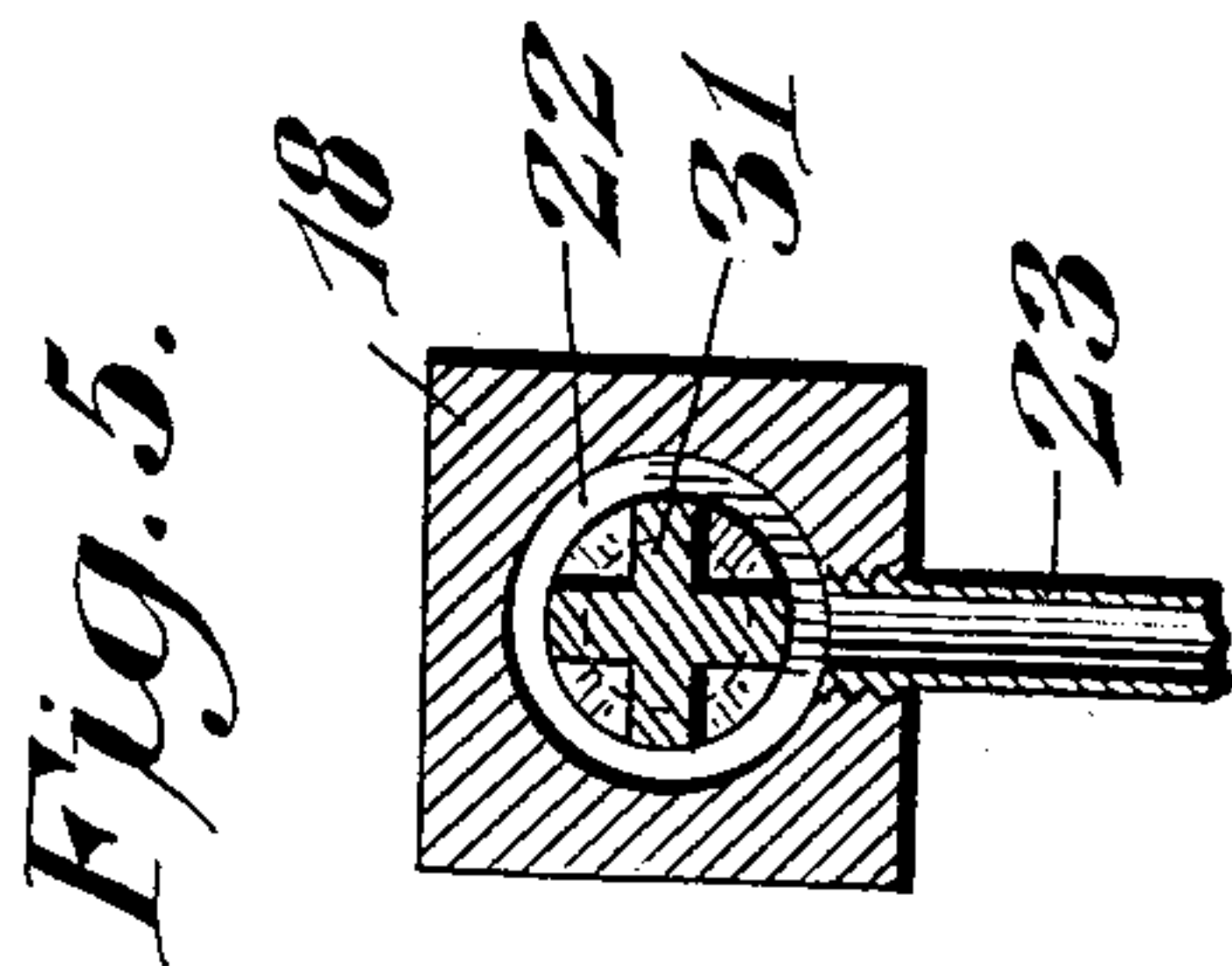
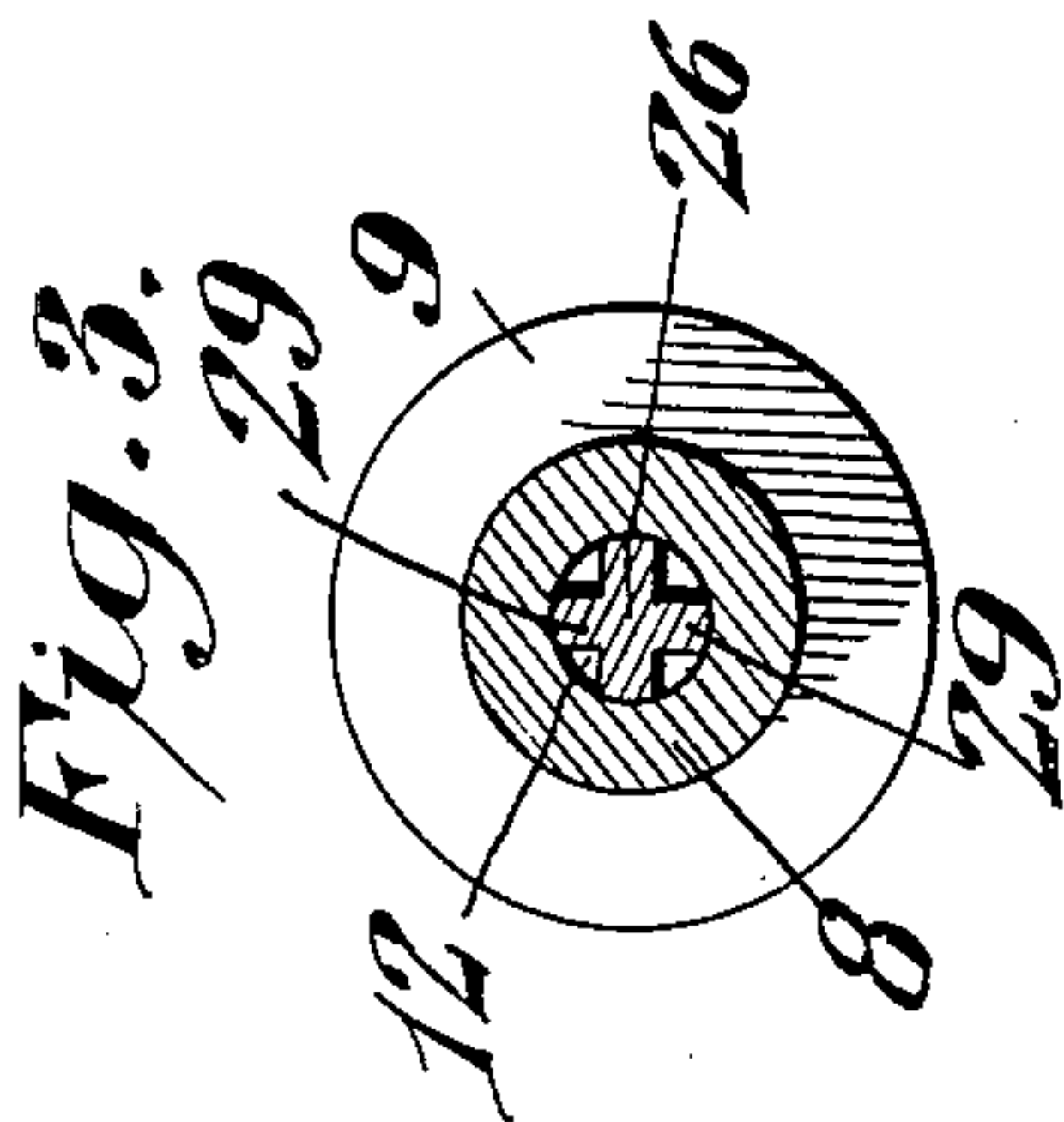
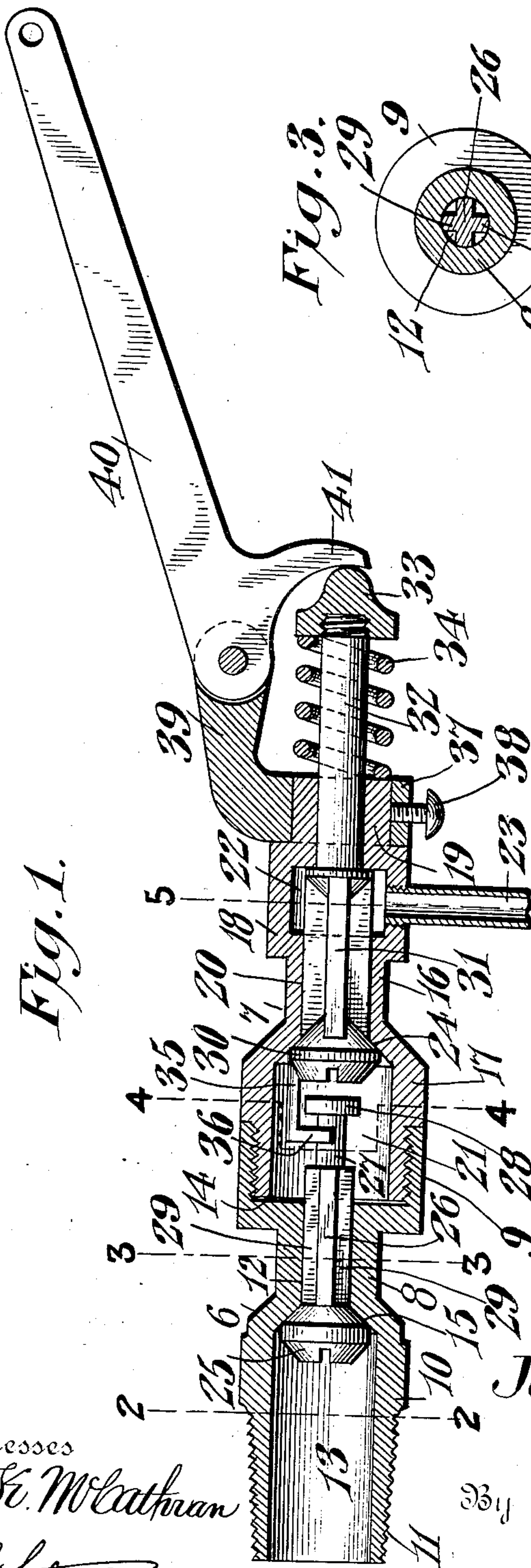


912,604.

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GAGE COCK.  
APPLICATION FILED OCT. 20, 1908.

Patented Feb. 16, 1909.



Witnesses  
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# UNITED STATES PATENT OFFICE.

JOSEPH OLSSON, OF MILWAUKEE, WISCONSIN.

## GAGE-COCK.

No. 912,604.

Specification of Letters Patent.

Patented Feb. 16, 1909.

Application filed October 20, 1908. Serial No. 458,699.

*To all whom it may concern:*

Be it known that I, JOSEPH OLSSON, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a new and useful Gage-Cock, of which the following is a specification.

Considerable difficulty is experienced with the ordinary gage cock having a single valve for the reason that the water soon cuts the same, thus causing leakage and in this connection, it is a well known fact that the cutting action occurs upon the initial opening of the valve.

The primary object of the invention is to provide a novel double valve structure, in which one valve relieves the pressure against the other so that said other can be opened without being subjected to the cutting action referred to, thus greatly prolonging the life of the cock, and eliminating to a material degree the danger of leakage, the valves moreover being so constructed that one constitutes both the opening and closing means for the other in case the latter sticks, thus making said movements positive and not dependent wholly upon the steam pressure against the valves.

The preferred form of construction is illustrated in the accompanying drawings, wherein:—

Figure 1 is a longitudinal sectional view through the gage cock. Figs. 2, 3, 4 and 5 are sectional views respectively on the lines 2—2, 3—3, 4—4 and 5—5 of Fig. 1.

Similar reference numerals designate corresponding parts in all the figures of the drawings.

In the embodiment illustrated, a casing is employed, comprising an inner section 6 and an outer section 7. The inner section consists of an intermediate contracted neck 8 having an enlarged head at its outer end, and a tapered plug 10 at its inner end, the latter being exteriorly threaded, as shown at 11 in order that it may be screwed into a boiler. The neck 8 has a central longitudinal bore 12 therethrough, which communicates at its inner end with a socket 13 formed in the plug and at its outer end with a socket 14 formed in the head 9. A valve seat 15 is produced at the juncture of the bore 12 with the socket 13, or in other words at the inner end of the neck 8.

The outer section consists of an intermediate contracted neck 16 carrying at its

inner end an enlarged head 17 that is exteriorly threaded, and is screwed into the head 9 of the inner section. The outer end of the neck is provided with another head 18 terminating in a boss 19. The neck 16 has a central longitudinal bore 20, the inner end of which communicates with a chamber 21 formed in the head 17, while the outer end communicates with another chamber 22 formed in the head 18. From the chamber 22 extends a discharge pipe 23. Another valve seat 24 is formed in the outer end of the chamber 21.

A valve 25, located and operating wholly in the socket 13, coöperates with the valve seat 15 of the inner casing section, and has a stem 26 projecting through the bore 12 into the chamber 21, the outer end of said stem having a reduced portion 27, and a head 28, the inner face of which constitutes an annular shoulder. The portion 26 of the stem is provided with a series of longitudinal channels 29. Another valve 30, operating in the chamber 21, coöperates with the valve seat 24 and has a channeled stem 31 extending through the bore 20. This stem 31 has an outer section 32 of less diameter than the inner portion, and said section or portion 32 extends through the boss 19, and projects beyond the end of the casing where it is provided with a head 33. A coiled spring 34, surrounding the portion 32 and bearing against the head 33 and the end of the boss 19, serves to normally hold the valve 30 in its closed position. The valve 30 furthermore has an inwardly extending hook 35, the bill 36 of which is slidable along the reduced portion 27 of the valve stem 26, behind the head 28, which it is adapted to engage under certain conditions as hereinafter explained. A collar 37 is rotatably mounted on the boss 19, and is held in its adjusted position by a set screw 38. This collar has an outstanding arm 39 on which is fulcrumed an actuating lever 40 provided with an offset arm 41 that bears against the head 33.

It will be evident that with this construction, the pressure is constantly against the inner valve 25, and the outer valve 30 is thus relieved from the same. Upon the operation of the lever 40, the outer valve 30 is unseated, but there is no material pressure against the same. Consequently this valve is not subjected to the wearing or cutting action of the water. The outer valve in its opening movement strikes the head 28 of the



inner valve stem 26, and consequently unseats said inner valve. The steam or water can then flow freely through the casing into the discharge pipe 23. When the lever 40 is released, the inner valve 25 will normally seat itself and the outer valve will be closed by the spring 34. If, however, the inner valve should stick, it will be evident that the hook 36 engaging the head or shoulder 28, will start the valve on its return movement and thus insure its closing action. This type of gage cock therefore has many advantages over that in which a single valve is employed, and if the outer valve structure needs repair or renewal, it can be readily detached by unscrewing the outer casing section from the inner section without disturbing the inner valve.

From the foregoing, it is thought that the construction, operation and many advantages of the herein described invention will be apparent to those skilled in the art, without further description, and it will be understood that various changes in the size, shape, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

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

1. A gage cock comprising a casing formed of an inner and an outer section, the inner section comprising an intermediate contracted neck having an enlarged plug at one end and an enlarged head at the other end, said neck having a central bore and the head and plug being respectively provided with sockets of greater diameter than the bore, a valve seat formed at the juncture of the bore of the neck and the socket in the plug, a valve cooperating with the seat, said valve having a stem projecting through the bore, the outer casing section being threaded into the socket of the inner section head, a valve

operating in the outer section independent of but constituting actuating means for moving the inner valve longitudinally to open or close the same, and means for operating said outer valve.

2. A gage cock comprising a casing, an inner valve located therein, an outer valve located in the casing normally out of contact with but adapted in its movement to abut against the inner valve and open the latter, and a connection between the valves that permits their relative movements and effects the closing movement of one of the valves on the corresponding movement of the other.

3. A gage cock, comprising a casing, an inner valve located therein, an outer valve located in the casing and abutting against the inner valve to open the same, one of the valves having a shoulder and a hook carried by the other valve and engaging over the shoulder.

4. A gage cock comprising a casing, inner and outer sections, each section having a valve seat, an inner valve cooperating with the valve of the inner section and having a projecting stem provided with a rounded head forming a shoulder, an outer valve having a stem projecting from the casing, means engaging the projecting end of the stem for operating the valve, said outer valve abutting against the head of the inner valve stem, to open the inner valve when the outer valve is opened, and a hook carried by said outer valve and engaging behind the head of the inner valve stem to effect the outward movement of the inner valve upon a corresponding movement of the outer valve.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JOSEPH OLSSON.

Witnesses:

W. B. REA,  
CLARENCE THORESEN.