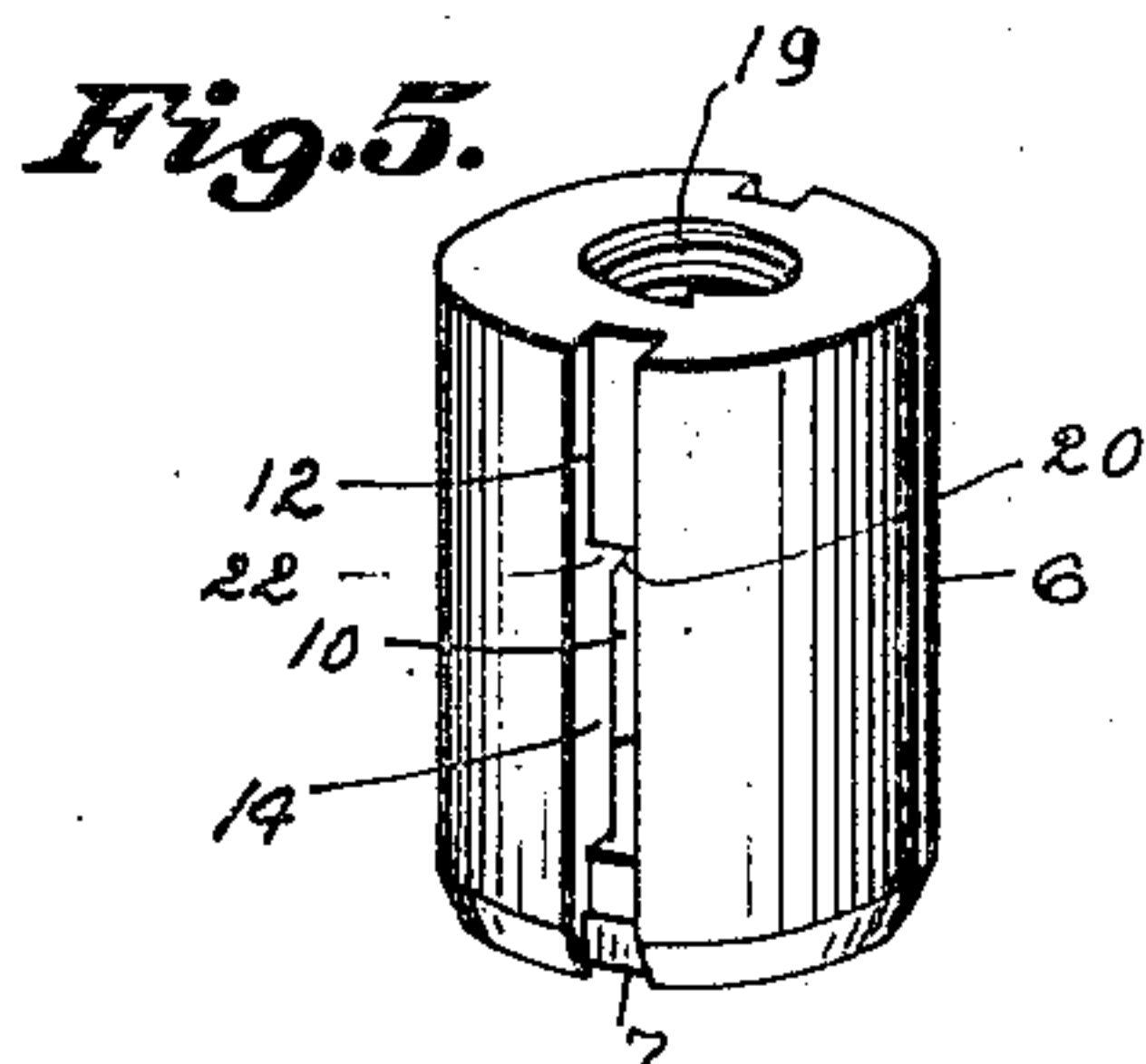
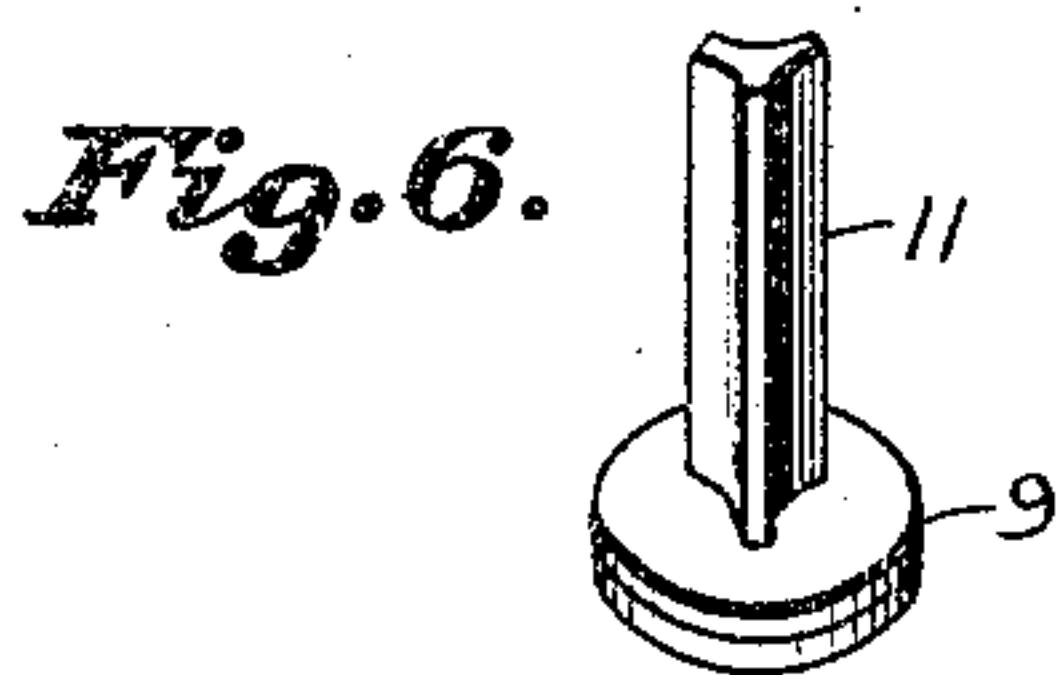
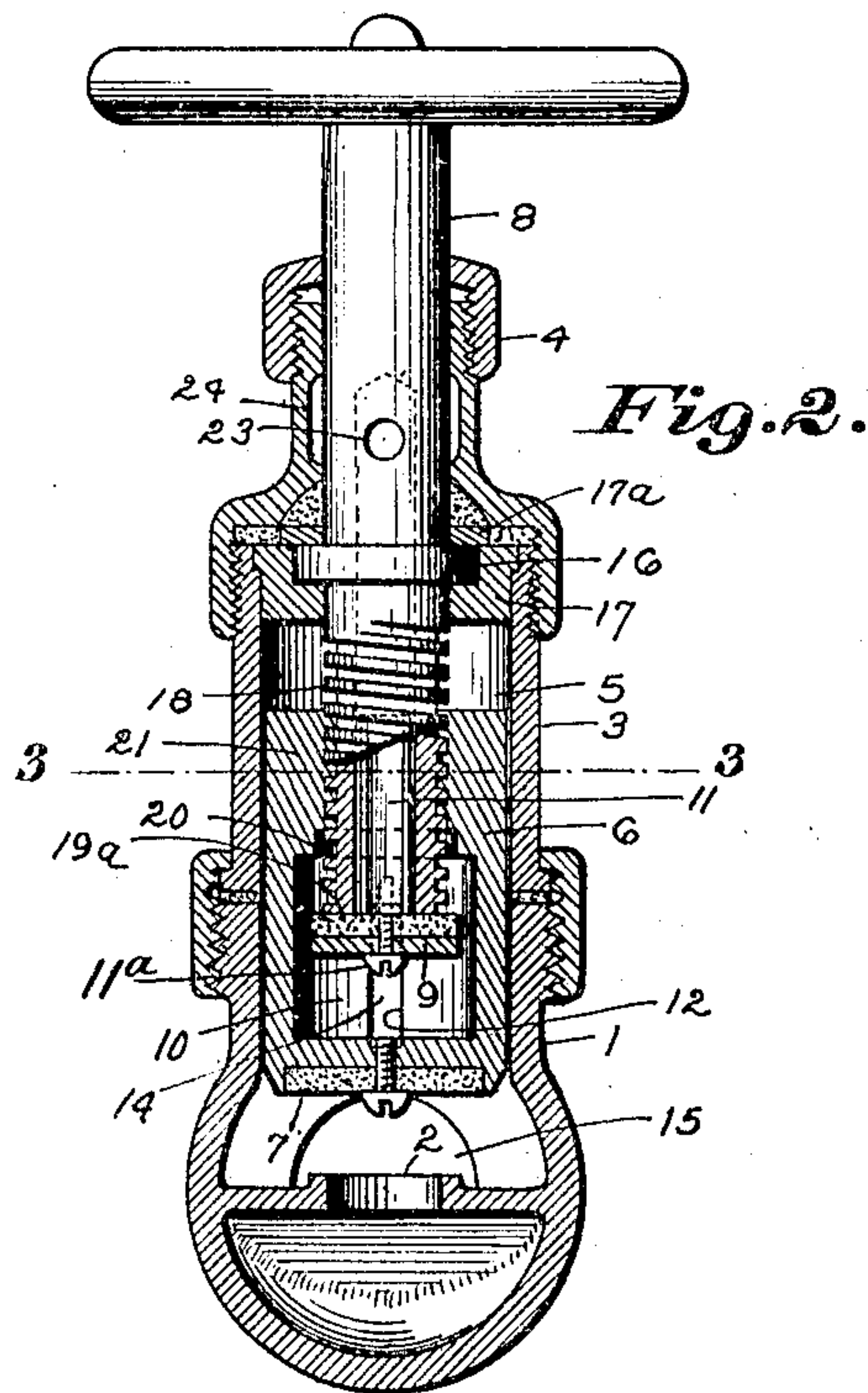
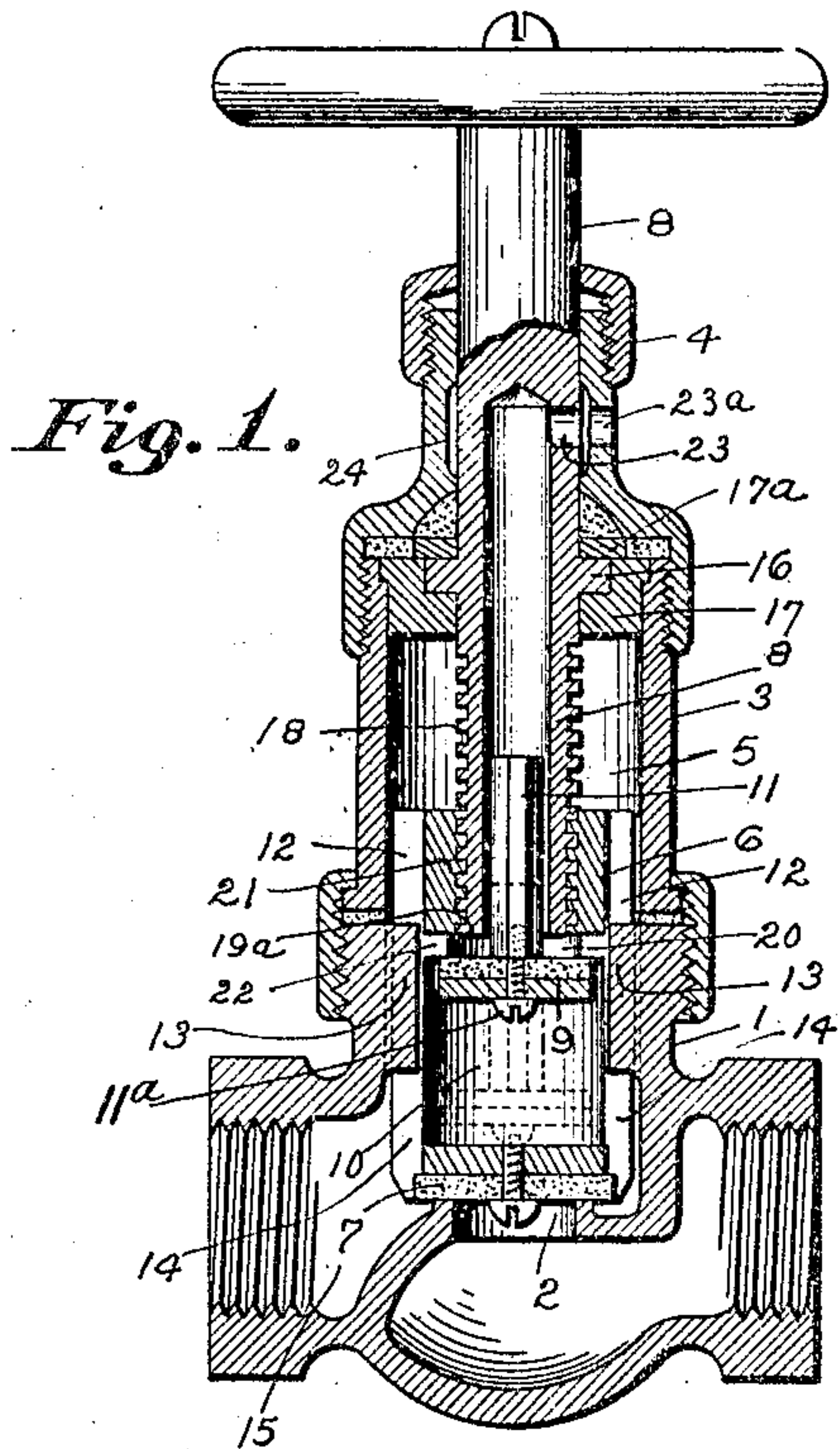


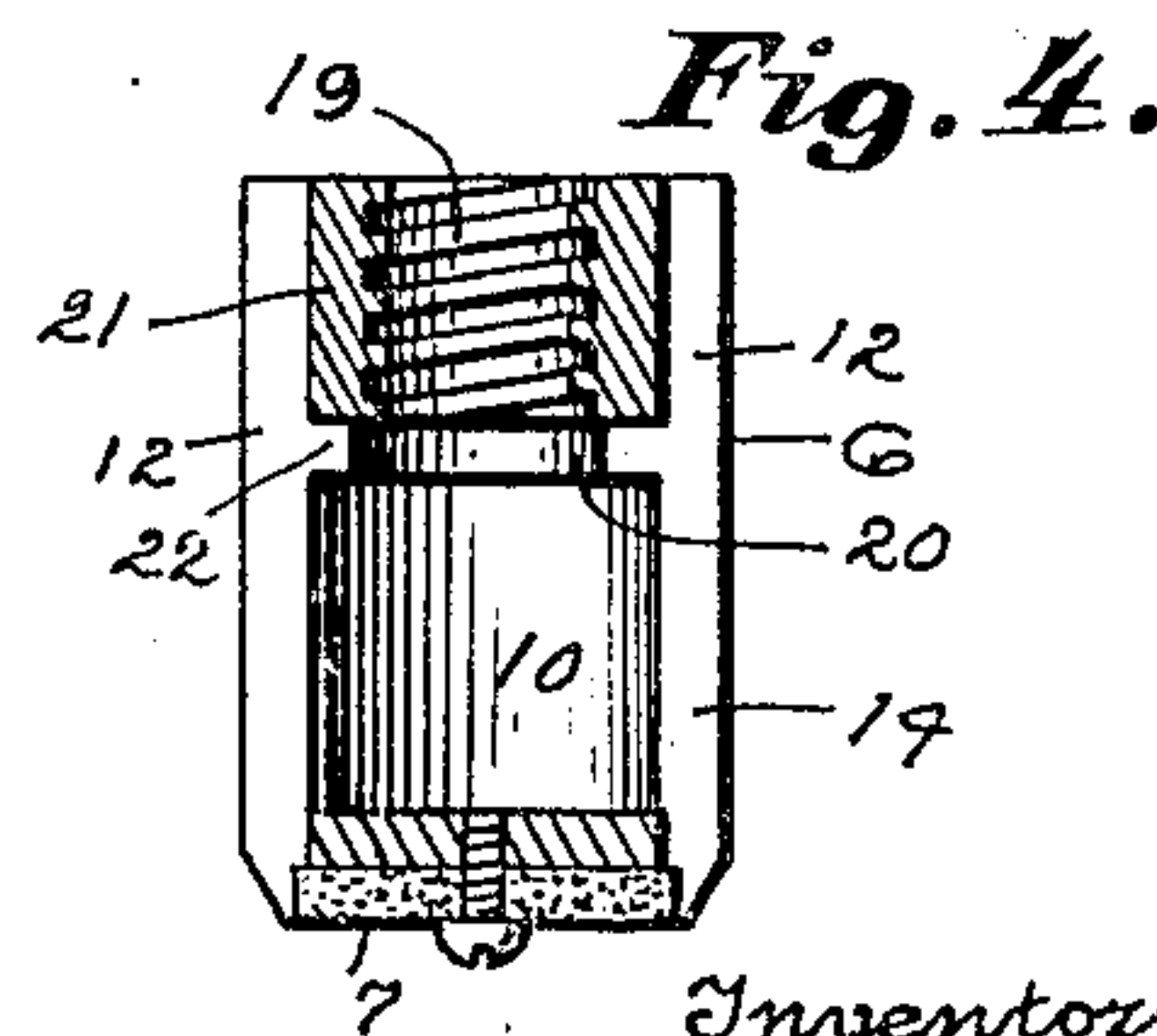
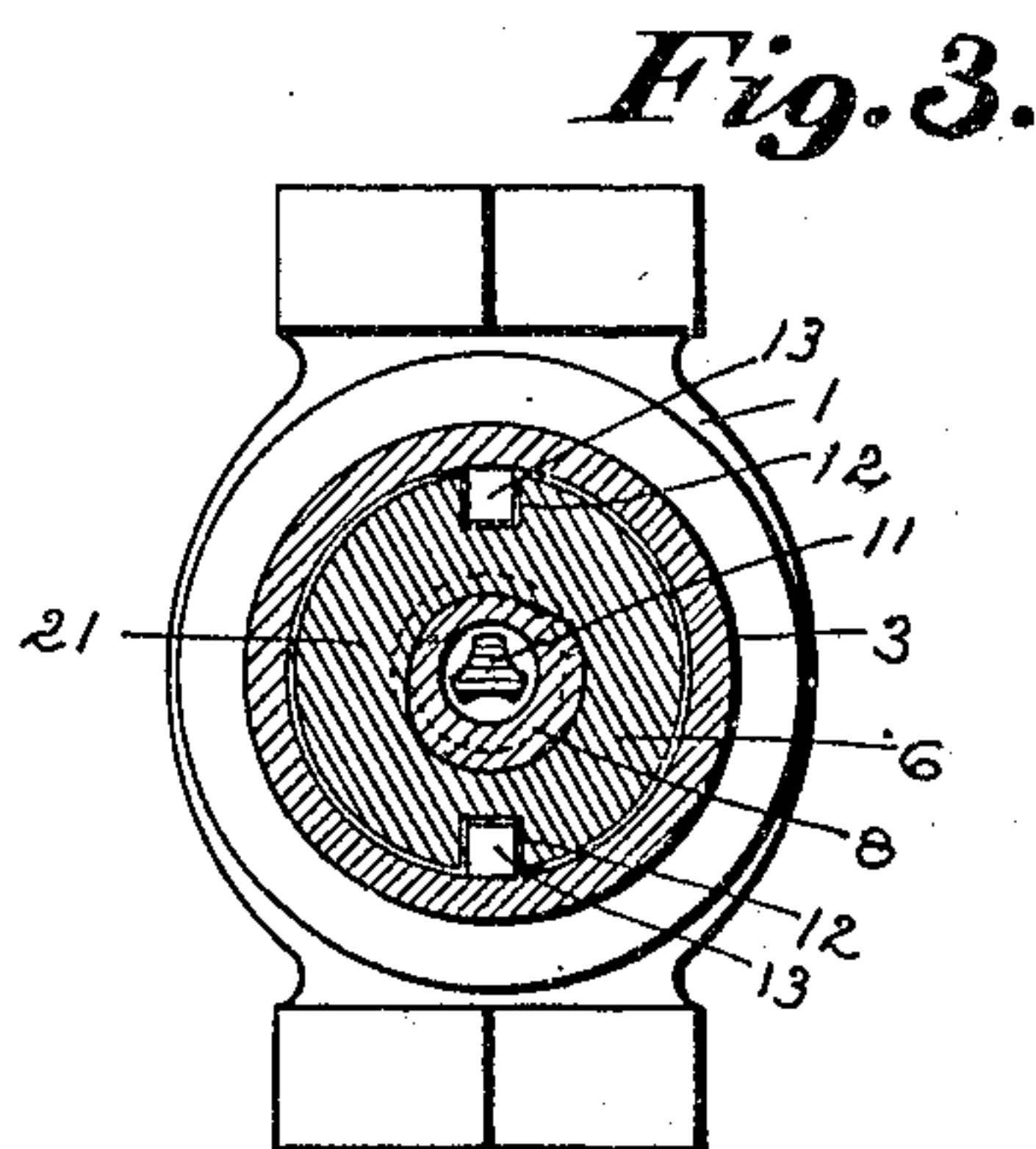
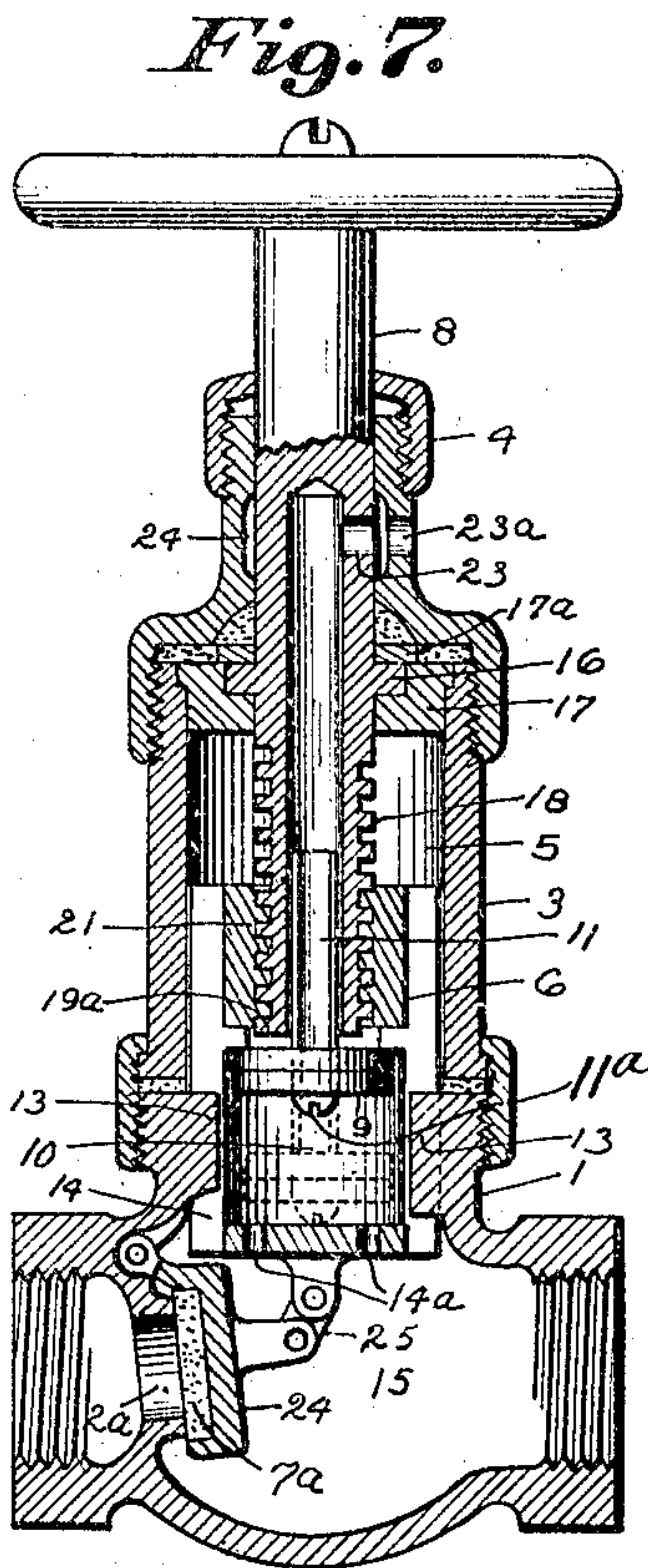
D. C. CHARMOIS.  
 STOP AND WASTE VALVE.  
 APPLICATION FILED JULY 30, 1907.

909,989.

Patented Jan. 19, 1909.



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# UNITED STATES PATENT OFFICE.

DENNIS C. CHARMOIS, OF CANTON, OHIO.

## STOP AND WASTE VALVE.

No. 909,989.

Specification of Letters Patent.

Patented Jan. 19, 1909.

Application filed July 30, 1907. Serial No. 386,177.

*To all whom it may concern:*

Be it known that I, DENNIS C. CHARMOIS, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have invented a new and useful Stop and Waste Valve, of which the following is a specification.

The invention relates to a valve adapted to stop the flow of water or other liquids and fluids in a pipe, and the object of the invention is to permit a free and ready waste of the liquid which has passed through the valve, after the same has been closed. This object is attained by providing a waste-valve in addition to the ordinary stop-valve, and to arrange the same so that the waste-valve is automatically opened at substantially the same time the stop-valve is seated, and conversely, so that the waste-valve is closed at substantially the same time the opening of the stop-valve is begun.

A preferred form for embodying the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section showing the waste-valve as applied to an ordinary globe valve; Fig. 2, a transverse section of the same; Fig. 3, a cross section on line 3—3, Fig. 2; Fig. 4, a detached longitudinal section of the valve-block; Fig. 5, a detached perspective view of the same; Fig. 6, a detached perspective view of the waste-valve showing its guide-stem, and Fig. 7, a longitudinal section showing the waste-valve as applied to a straightway valve.

Similar numerals refer to similar parts throughout the drawings.

Referring to the globe valve illustration, the case 1 having the valve seat 2, is provided with an extension or bonnet 3 and the cover or stuffing box 4, thus forming the preferably cylindric chamber 5 in which the operating parts of the valve are located. The valve-operating parts comprise the hollow valve-block 6, having the stop-valve 7 formed or attached on its inner end, the tubular main-stem 8 having a screw engagement through the outer end of the block, and the waste-valve 9 located in the cavity 10 of the block and having its guide-stem 11 entered in the bore of the main-stem.

The valve-block 6 is preferably cylindric in form and is adapted to operate endwise in the valve-chamber 5. The longitudinal grooves 12 are provided in the sides of the valve-block which are adapted to receive the

corresponding guide ribs 13 formed in the case, so that the valve-block is held against rotation in its endwise movements. The apertures 14 are provided in the lower part of the sides of the block, through which apertures the water can flow from the case-chamber 15 into the cavity 10 of the valve-block. As illustrated, these apertures are in the form of slots opening through the bottom of the lower end of the guide-grooves, but this particular form and location of the apertures is not essential.

The main-stem 8 is provided with the annular flange 16 engaging which are provided suitable packing rings and disks, as 17 and 17<sup>a</sup>, thus permitting a free rotation but preventing an endwise movement of the main-stem. The coarse thread 18 on the inner end of the main-stem is adapted to operate in the conversely threaded aperture 19 in the outer end of the valve-block, whereby the rotation of the stem one way or the other will move the block inward or outward.

The waste-valve 9 is adapted to be seated against the inner end 19 of the main-stem when the same has been turned into the cavity 10 of the block, as shown in Fig. 2, and the shoulder 20 is formed in the block, which shoulder is adapted to stop and unseat the waste-valve when the inner end of the main-stem is screwed outward into the body 21 of the outer end of the block, as shown in Fig. 1; in which relation of the parts water can flow from the cavity of the block through the apertures 22, formed in the stop-shoulder 20, and around the guide-stem 11 of the waste-valve into the bore of the main-stem. The parts are so proportioned that the last turn of the main-stem for seating the stop-valve will serve to unseat the waste-valve. The apertures 23 and 23<sup>a</sup> are provided in the sides of the main-stem and the bonnet-cover respectively, which apertures register with the annular port 24 formed in the cover and permit a free exit of water from the bore of the main-stem.

In the use of the valve, when the stop-valve is opened, as shown in Fig. 2, the waste-valve is firmly seated against the inner end of the main-stem by the pressure of the water in the cavity of the block, thus preventing any flow of water through the bore of the main-stem. When the stop-valve is being closed by rotation of the main-



stem and the consequent inward movement of the valve-block, the stop-shoulder 20 in the block unseats the waste-valve during the last turn of the main stem which serves to seat the stop-valve, as shown in Fig. 1, and in this relation of the parts the water is free to waste from the case-chamber 14 beyond the stop-valve. When the water has wasted from this chamber the waste-valve is free to drop downward to the position shown by broken lines in the same figure in event the operating parts are located on the upper side of the case, as illustrated; but this movement of the waste-valve is not necessary or essential and does not take place when the operating parts are located on the under side of the case. When the stop-valve is opened, the first turn of the main-stem will cause its inner end to protrude inward into the cavity of the block beyond the stop-shoulders, so that the waste-valve is seated thereon by the pressure of the water; and if the valve has dropped downward to the position shown by broken lines in Fig. 1, it is promptly raised against its seat by the suction of the water flowing around it.

The projection 11<sup>a</sup>, which as shown may be the head of the guide-stem screw, is preferably provided on the lower side of the waste valve to hold the body of the waste-valve away from the bottom of the valve-block, and the diameter of the waste-valve is proportioned to the cavity of the valve-block, so that the suction of water passing outward through the cavity will surely close the waste-valve against the end of the main-stem.

The invention is adapted for use in a straightway valve by forming or connecting the gate 24 on the lower end of the valve-block, and when a hinged gate is used as shown in Fig. 7 this connection is made by the link 25.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A stop- and waste-valve comprising a case having a chamber and a valve-seat therein, an endwise-movable block in the case with a cavity therein opening into the case-chamber and having a stop-valve on its inner end adapted to close against the valve-seat, a rotatable tubular-stem journaled in the case and screwed through the outer end of the block, a waste-valve in the block-cavity adapted to seat against the end of the tubular-stem, and a shoulder in the block with an aperture therein and adapted to unseat the waste-valve at the seating of the stop-valve.

2. A stop- and waste-valve comprising a case having a chamber and a valve-seat therein, an endwise-movable block in the case with a cavity therein opening into the case-chamber and having a stop-valve on its inner end adapted to close against the valve-seat, a tubular operative stem extending into the block-cavity, and a waste-valve in the block-cavity adapted to be seated against the end of the stem at the unseating of the stop-valve and to be unseated at the seating of the stop-valve.

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Witnesses:

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