

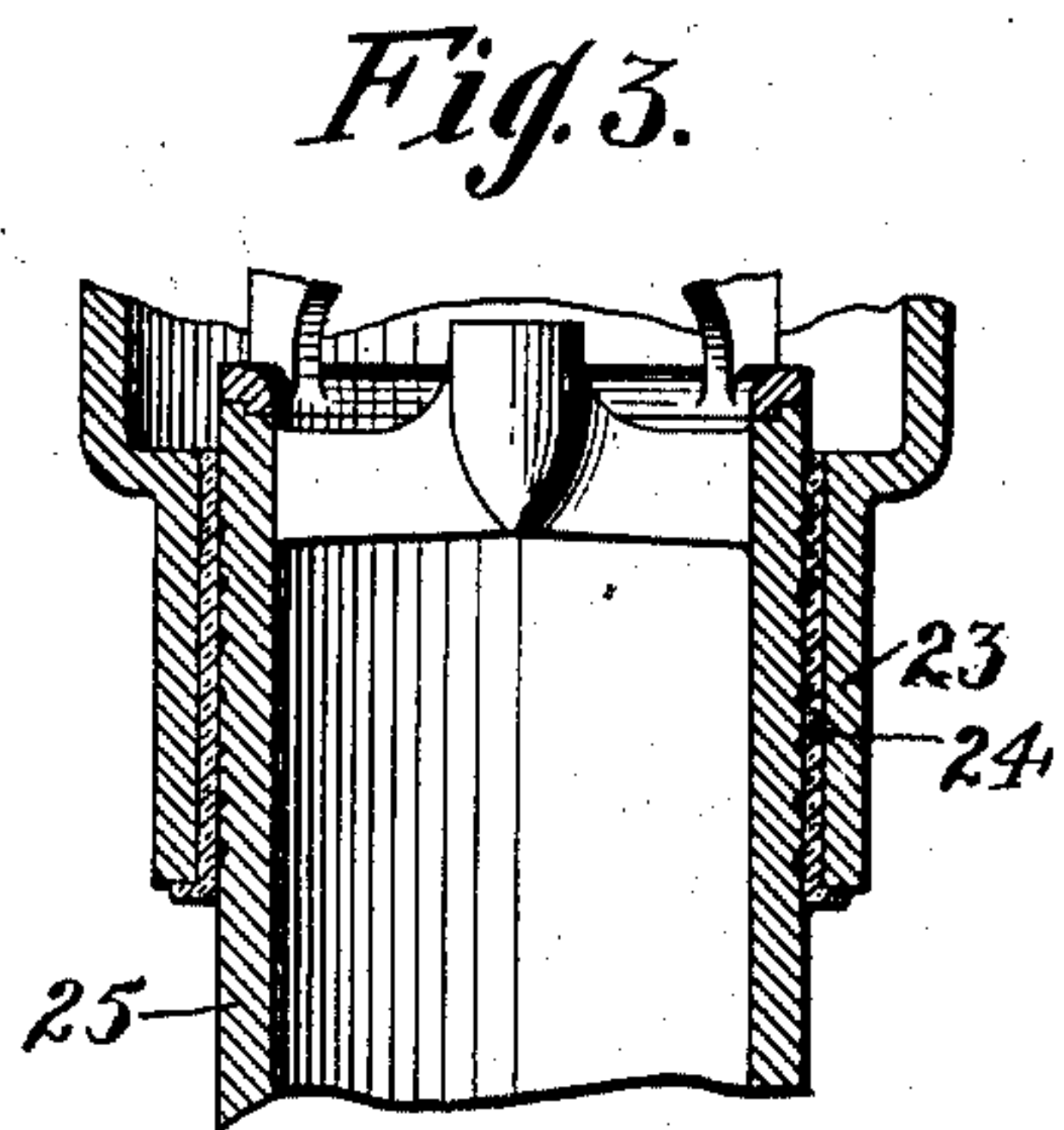
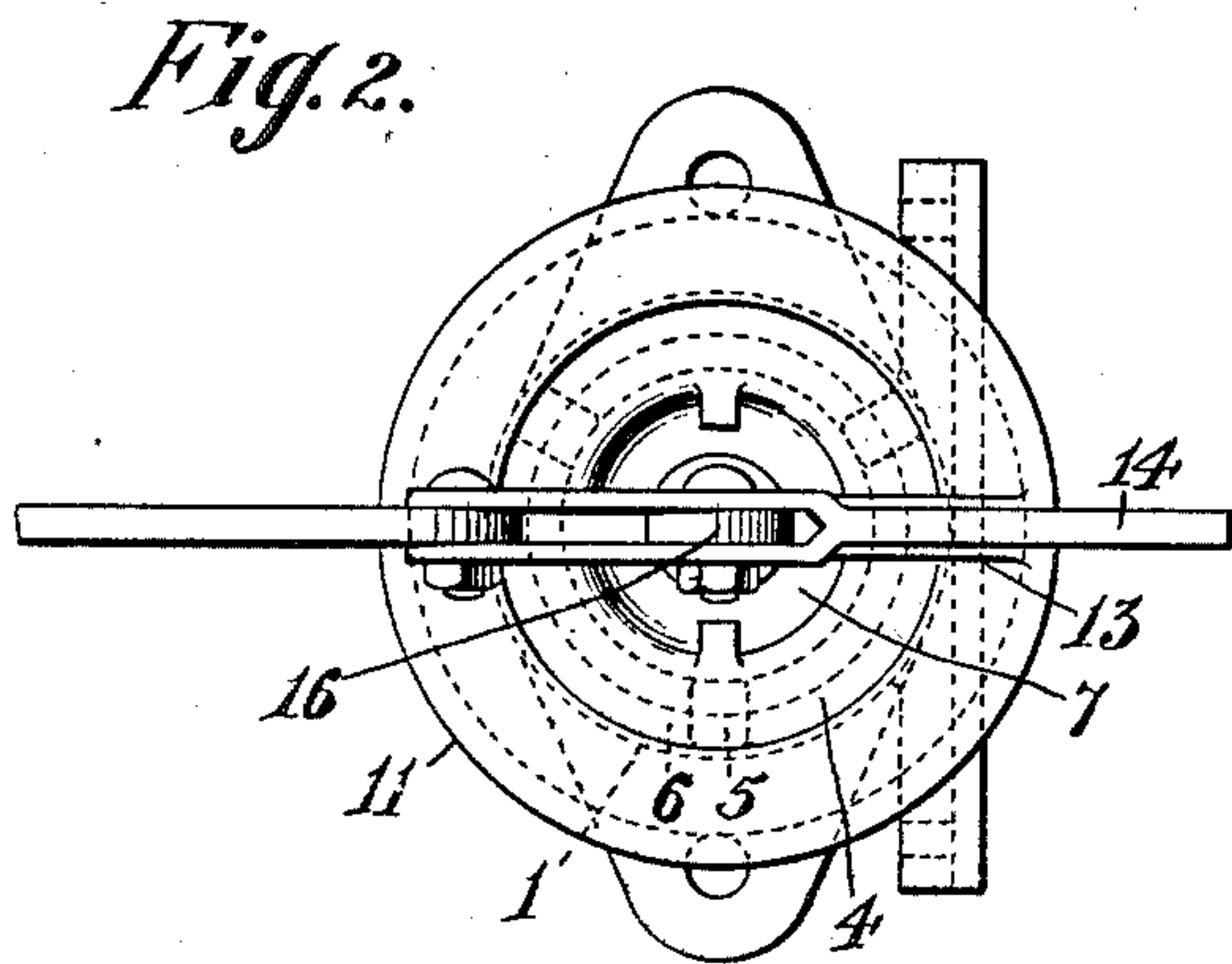
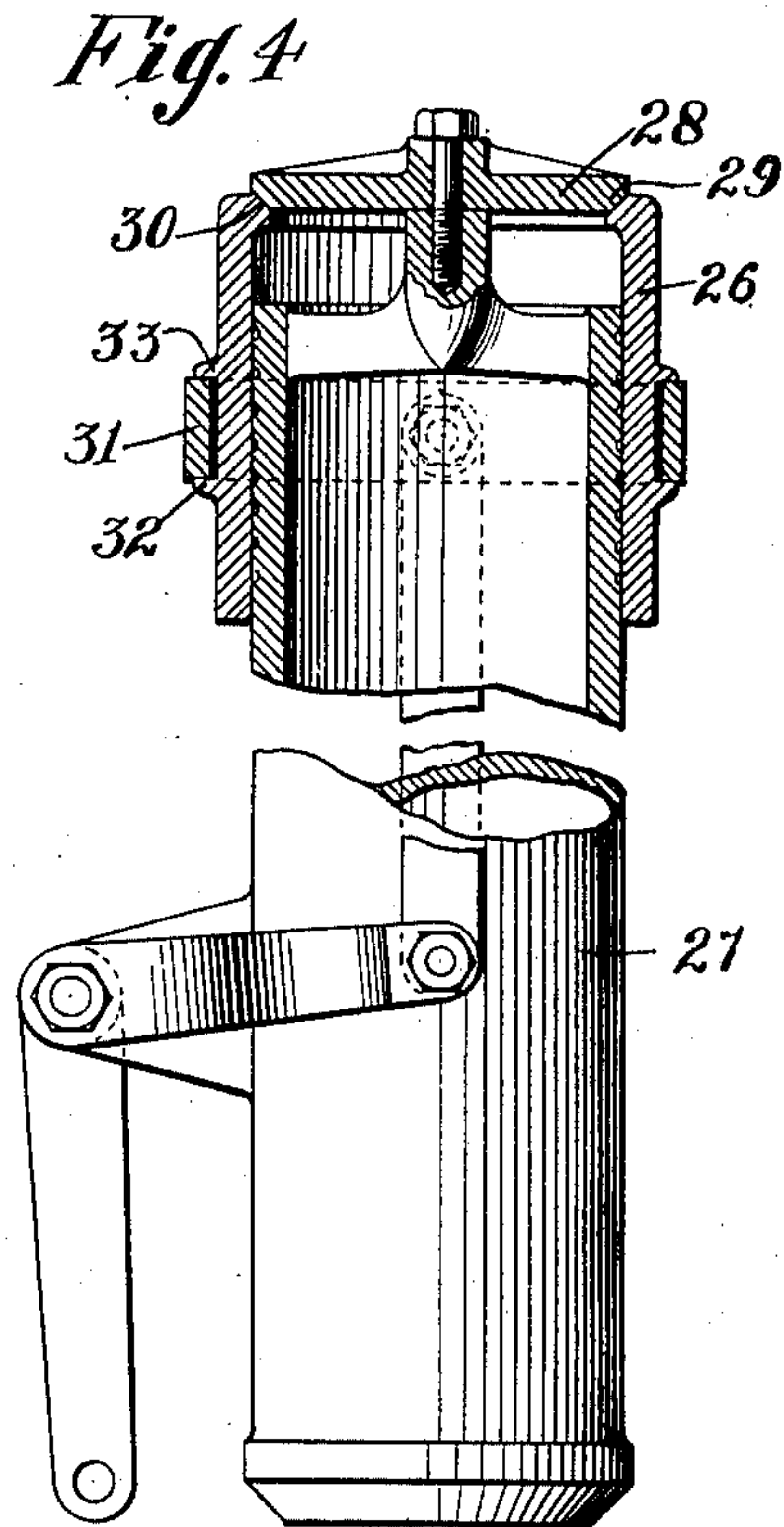
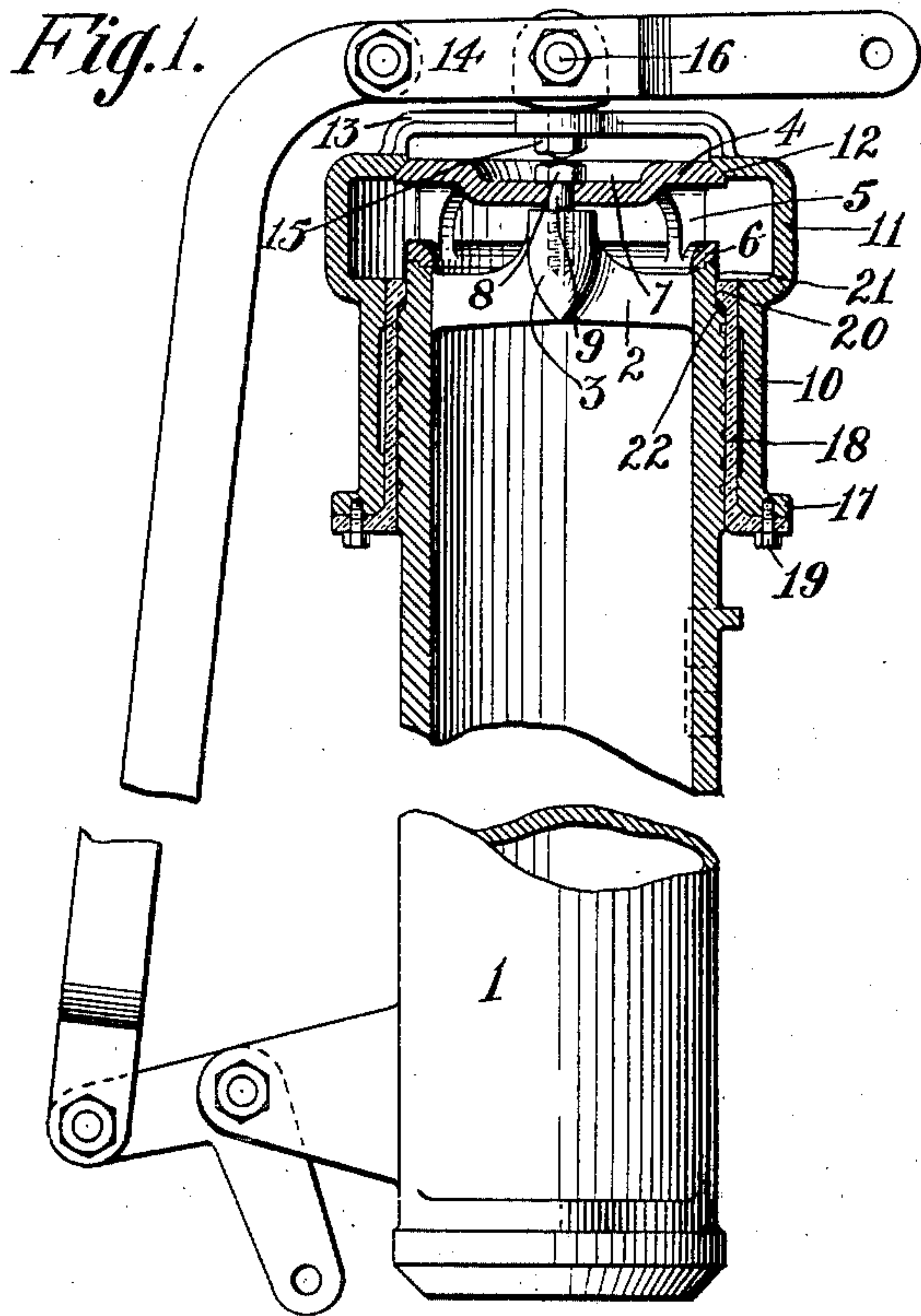
No. 737,706.

PATENTED SEPT. 1, 1903.

J. S. CHAMBERS.
THROTTLE VALVE.

APPLICATION FILED DEC. 1, 1902.

NO MODEL.



Witnesses:

F. G. Hackenberg.

George Barry Jr.

Inventor:

John S. Chambers
by attorneys
Morgan & Sheward

UNITED STATES PATENT OFFICE.

JOHN S. CHAMBERS, OF WILMINGTON, NORTH CAROLINA.

THROTTLE-VALVE.

SPECIFICATION forming part of Letters Patent No. 737,706, dated September 1, 1903.

Application filed December 1, 1902. Serial No. 133,437. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. CHAMBERS, a citizen of the United States, and a resident of Wilmington, in the county of New Han-

over and State of North Carolina, have invented a new and useful Throttle-Valve for Locomotives and Steam-Engines Generally, of which the following is a specification.

My invention relates to throttle-valves for locomotives and steam-engines generally or wherever pressure-valves are required, the object being to provide a simple single-part balanced valve utilizing the stand-pipe as a guide and support.

In the accompanying drawings, Figure 1 is a vertical sectional view of the valve, showing it in its position on the stand-pipe, the latter being represented in elevation, partly in section. Fig. 2 is a top plan view of the same. Fig. 3 represents a partial sectional view, showing a modified form of bushing; and Fig. 4 is a view in elevation, partly in section, showing the valve arranged to move downwardly away from its seat.

Referring to Figs. 1 and 2, the stand-pipe is denoted by 1. At its top it is provided on its interior with a bridge or spider 2, the central hub 3 of which has a screw-hole tapped therein for the purpose of securing the valve-seat in position on the top of the pipe.

The valve-seat is denoted by 4. It is spaced from the top of the stand-pipe by means of depending legs 5, which connect at their lower ends with an annular rim 6, fitted to seat on the top of the stand-pipe 1, preferably by rabbeting the two contacting surfaces.

The valve-seat 4 is of disk form and preferably has its central portion 7 depressed to receive the head 8 of a bolt 9, which passes through its center and screws into the hole in the hub 3 of the bridge or spider 2 to hold the seat firmly to the top of the stand-pipe. The object of depressing the central portion of the valve-seat is to bring the bolt-head 8 below the general surface of the disk to save space.

The valve has a barrel or cylindrical shaped stock 10, calculated to fit or conform to the exterior of the stand-pipe 1, and at its stock or between the stock and its seating-face it is enlarged, as at 11, to leave a free space for the passage of steam around the periphery of the valve-seat into the stand-pipe. At its

upper end the valve is provided with an annular seating-face 12, adapted to rest on the periphery of the valve-seat when the valve is closed.

The open top of the valve within the annular seating-face 12 is bridged by a yoke 13, through which the valve is connected with the operating-lever 14 by a bolt 15, having a rocking connection at 16 with the operating-lever.

The stock 10 of the valve has its lower end provided with an outwardly-turned flange 17, to which the lower bridged end of a bushing 18 is connected by screws 19. The bushing 18 extends upwardly within the stocked end of the valve, and its upper end is provided with an inwardly-extending flange 20, the face of which fits snugly against a reduced portion 21 at the extreme upper end of the stand-pipe 1, the lower edge of the flange 20 on the bushing resting when the valve is closed in proximity to an annular shoulder 22 on the exterior of the stand-pipe.

In operation the valve is opened by lifting the operating-lever and sliding the valve upwardly along the top of the stand-pipe, the latter having its outer face fitted to receive the bushing 18, which slides, together with the valve itself, along the surface of the stand-pipe. The valve is balanced to the last degree of efficiency because of the upward and downward pressures of the steam, respectively, on its under and upper surfaces, which are at all times exposed to the steam within the steam chamber or space.

The stand-pipe 1 may be a section made to take the place of the ordinary pipe-section on which the valve is commonly located and may be secured in its position by any well-known or approved means. It forms a stable support for the valve, a guide for the reciprocating movement of the valve, and at the same time serves its functions as a stand-pipe for conducting the steam from the boiler.

I find it desirable to make the valve-seat 4, its legs 5, and the annular base 6 of one single casting, thus saving parts and cost.

In the form shown in Fig. 3 the stock 23 of the valve is not provided with an outwardly-projecting flange at its lower end. The bushing 24 is not double-flanged and the stand-pipe 25 is not reduced at its extreme upper

end, as represented in Fig. 1. In other respects the valve is formed and operates in a manner similar to that already described.

In the form represented in Fig. 4 the valve
 5 consists of a cylindrical tube 26, fitted to the top of the stand-pipe 27 to slide thereon upwardly into engagement with the seat 28, the contact-face 29 of which is directed downwardly instead of upwardly, as in Fig. 1,
 10 while the contact-face 30 of the valve is directed upwardly instead of downwardly, as in Fig. 1. In this structure the valve does not require an enlarged portion, such as shown at 11 in the first instance, as it moves downwardly away from its seat, leaving a free space
 15 for the steam to pass between the valve and its seat into the stand-pipe. In this structure the valve is operated by means of an annular strap 31, seated on a ledge 32, projecting outwardly from the wall of the valve, the said strap 31 being locked against upward movement relatively to the valve by means
 20 of a suitable stop consisting in the present instance of a ledge 33, projecting from the wall of the valve in proximity to the upper edge of the strap. This form has the advantage of being more compact than that represented in Fig. 1 and may be used where it is
 25 desirable to place the valve-seat very near the top of the steam space or chamber.

It is obvious that changes might be resorted to in the form, construction, and arrangement of the several parts without departing from the spirit and scope of my invention. Hence
 35 I do not wish to limit myself strictly to the structure herein set forth; but

What I claim is—

1. The combination with a stand-pipe having a valve-seat provided at its top, of a valve
 40 having a sliding engagement with the exterior of the stand-pipe toward and away from its seat.

2. The combination with a stand-pipe provided with a valve-seat spaced from its top

and fixed thereto, of a valve having a sliding
 engagement with the exterior of the stand-pipe toward and away from the seat.

3. The combination with a stand-pipe provided with a bridge fixed therein, of a valve-seat secured to the hub of the bridge and
 50 spaced from the top of the stand-pipe and a valve fitted to slide on the stand-pipe toward and away from its seat.

4. The combination with a stand-pipe, of a valve-seat comprising a disk, connected
 55 with an annular base by legs, means for locking the valve-seat to the stand-pipe and a valve constructed to slide on the stand-pipe toward and away from the disk.

5. The combination with the stand-pipe and
 60 a valve-seat spaced from its top and secured to the stand-pipe, of a balanced valve comprising a stock adapted to embrace the stand-pipe, an enlarged portion in proximity to its seating-face and a yoke for attaching the
 65 valve to the operating-lever.

6. The combination with a stand-pipe having its extreme upper end reduced and a valve-seat secured thereto, of a valve arranged to slide on the stand-pipe toward and
 70 away from its seat, the said valve being provided with an upwardly-turned flange at its base and a bushing interposed between the stock of the valve and the stand-pipe, the said bushing being provided with an outwardly-turned flange at its base and an inwardly-projected flange at its top, the latter constructed to engage the reduced portion at
 75 the top of the stand-pipe.

In testimony that I claim the foregoing as
 80 my invention I have signed my name, in presence of two witnesses, this 13th day of November, 1902.

JOHN S. CHAMBERS.

Witnesses:

C. M. BUTLER,
 J. C. ANGEL.