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PATENTED APR. 9, 1907.

R. G. FERGUSON.

VALVE.

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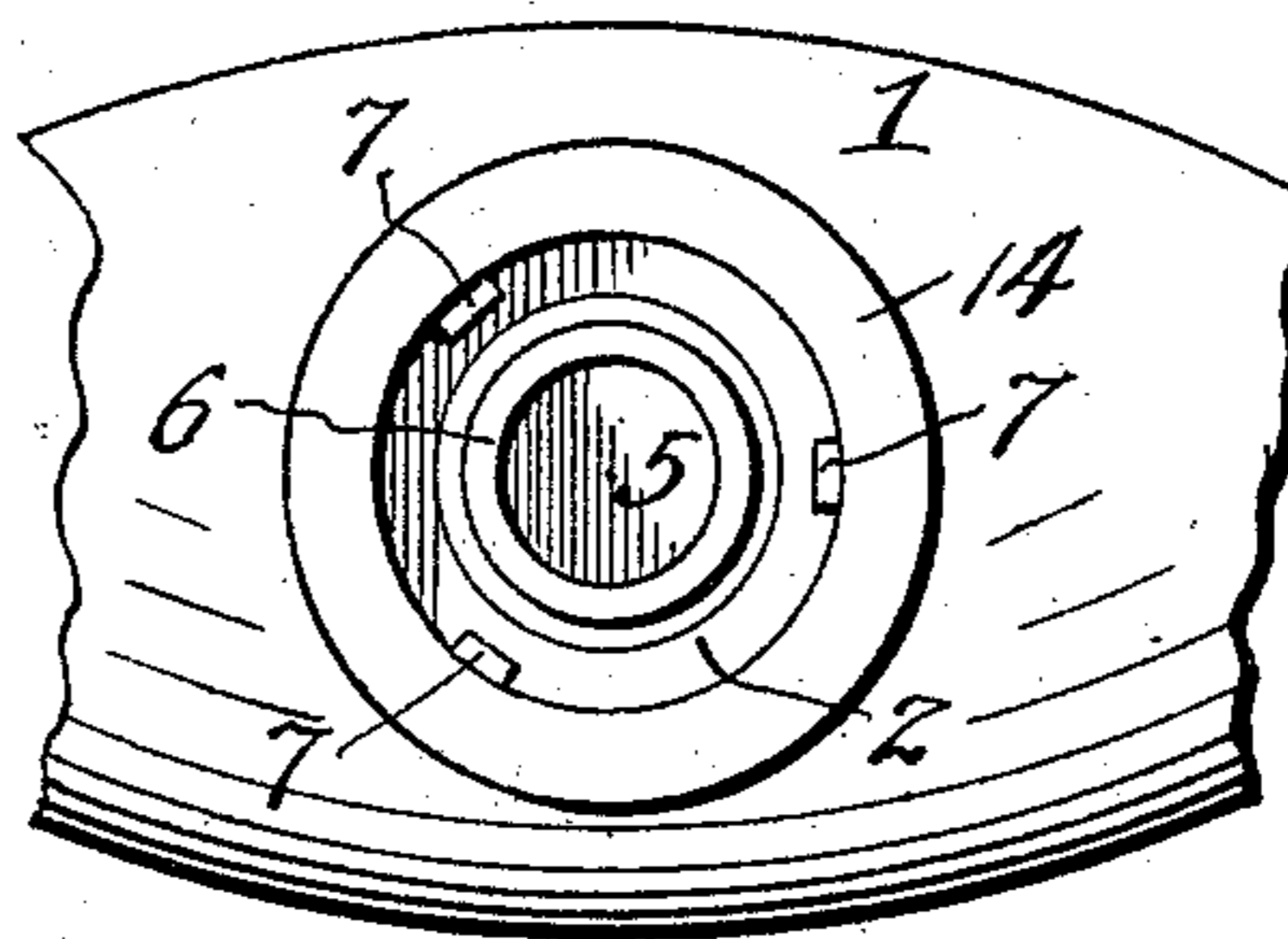
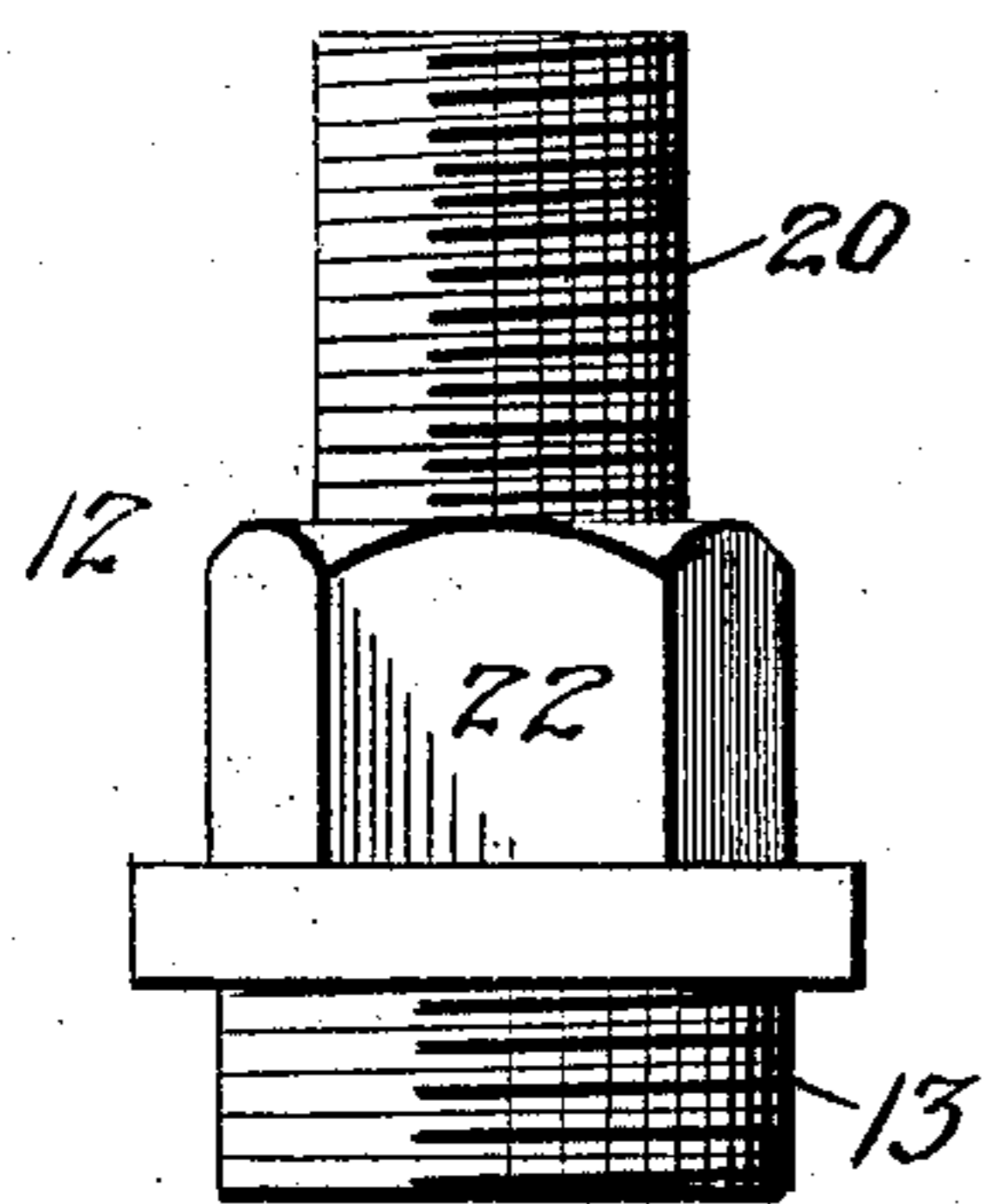
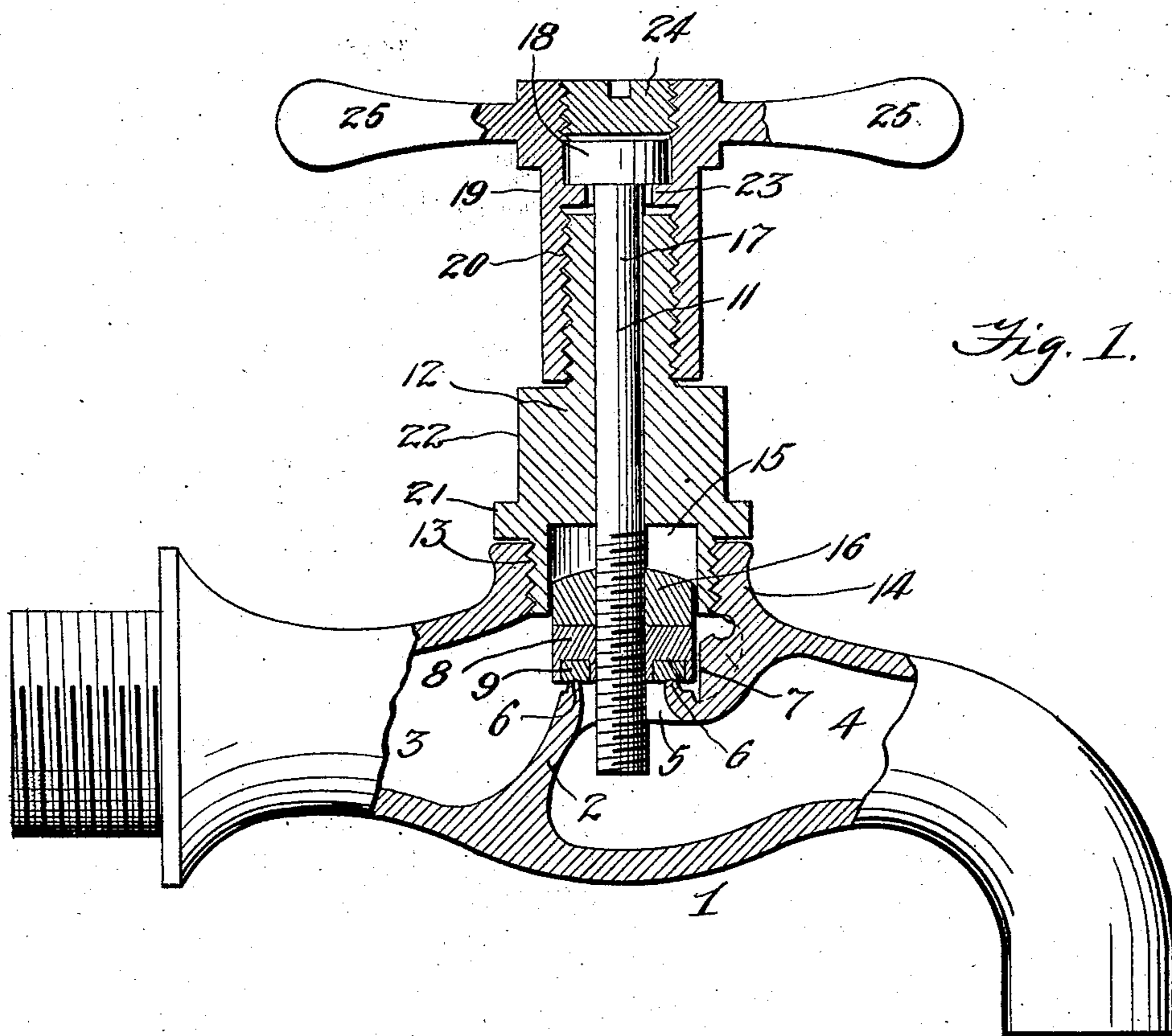


Fig. 3.

Fig. 2.

Witnesses  
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# UNITED STATES PATENT OFFICE.

ROBERT GEORGE FERGUSON, OF LAKEWOOD, NEW JERSEY.

## VALVE.

No. 849,989.

Specification of Letters Patent.

Patented April 9, 1907.

Application filed March 12, 1906. Serial No. 305,616.

*To all whom it may concern:*

Be it known that I, ROBERT GEORGE FERGUSON, a citizen of the United States, residing at Lakewood, in the county of Ocean and State of New Jersey, have invented certain new and useful Improvements in Valves; 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.

My invention relates to improvements in valves; and it consists of certain novel features of construction, combination, and arrangement of devices hereinafter described and claimed.

The object of the invention is to provide a valve for steam and water faucets and the like in which there will be no escape or loss of steam, water, or other fluid and in which no packing will be required around the operating-stem of the valve.

The above and other objects, which will appear as the nature of my invention is better understood, are accomplished by means of the construction illustrated in the accompanying drawings, in which—

Figure 1 is a vertical sectional view through my improved valve, here shown as mounted in a faucet. Fig. 2 is a top plan view of a portion of the casing with the guide plug or cap between the valve and its stem removed, and Fig. 3 is a side elevation of the cap or plug of the valve-casing which forms a guide for the stem.

Referring to the drawings by numeral, 1 denotes the casing of my improved valve, which casing may be in the form of a faucet or spigot, as shown, or of any other form and construction having the passage there-through for steam, water, or other liquids or fluids. As shown, the casing 1 has a partition 2 between its inlet 3 and outlet 4, and in said partition is an opening 5, which is surrounded by an annular valve-seat 6. Also formed within the casing 1 are vertical ribs 7, which guide the valve proper, 8, toward and from the seat 6. This valve 8 is in the form of a circular disk, having its bottom provided with an annular channel or groove to receive a packing material 9, which engages the seat 6 and effects a tight joint. This valve disk or plate 8 is adjustably mounted upon the lower screw-threaded end 10 of a valve-stem 11, which is adapted to rotate and slide in a guide plug or cap 12. The latter is of tubular form and has its large lower end exter-

nally screw-threaded, as at 13, to engage similar screw-threads formed in the open top 14 of the casing 1, and in the said lower screw-threaded end of the cap or plug 12 is formed a circular recess 15, which receives and guides a stop-collar 16, provided upon the valve-stem 11. This stem 11 extends through a concentric bore or opening 17 in the cap or plug 12 and has at its upper end a head 18, which is swiveled in an operating sleeve or handpiece 19. This sleeve 19 has its lower end internally screw-threaded to engage the external screw-threads 20, formed upon the reduced upper end of the cap or plug 12. The intermediate portion of the latter between the screw-threads 13 and 20 is formed with an annular stop-flange 21 and a polygonal-shaped portion 22, the latter being adapted to receive a wrench for applying and removing the cap or plug to and from the valve-casing. The swiveled connection between the operating sleeve or handpiece 19 and the circular head 18 of the stem 11 is preferably effected by forming in the bore of the said sleeve an annular shoulder 23 to engage the under side of the head 18 and providing a screw-threaded plug 24 in the top of said sleeve to retain the head 18 therein. The exterior of the operating-sleeve 19 may be of any form to permit it to be conveniently grasped by the hand and rotated; but as shown it is formed with oppositely-projecting arms 25 for this purpose.

The operation and advantage of the invention will be readily seen. By rotating the handpiece or sleeve 19 it may be moved up and down upon the upper screw-threaded end of the cap or plug 12 to carry the valve-stem 11 with it and raise or lower the valve 8 from or to its seat 6 to open or close the passage through the casing 1. This construction dispenses with the necessity of a packing around the valve-stem and at the same time provides a device which will be entirely fluid-tight, since no steam or water can escape through its threaded connections. By mounting the valve upon its stem, as shown, it may be readily adjusted to vary the operation of the device and to compensate for wear of the parts. It is of simple, strong, and durable construction, and may be manufactured at comparatively small cost.

While I have shown and described the preferred embodiment of my invention, I desire it understood that I do not limit myself to

the exact showing set forth, since various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention, as defined by the appended claim.

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

10 A device of the character described comprising a casing having an annular valve-seat therein, a cap or plug secured in said casing and disposed concentrically with said valve-seat, said cap or casing having a con-  
15 centric bore, a concentric guide-recess at its inner end and a screw-threaded reduced portion at its outer end, an operating-sleeve or handpiece engaged with said screw-threaded portion, and formed at its upper end with

a screw-threaded opening and an annular 20 shoulder therein, a valve-stem slidable in the bore of said cap or plug and having a head at its outer end to engage said annular shoulder, a screw-plug in the upper end of said sleeve for retaining the head of the valve- 25 stem therein, a stop upon said valve-stem slidable in the guide-recess in said cap or plug, and a valve upon the screw-threaded inner end of said stem to coact with said valve-seat, substantially as described. 30

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

ROBERT GEORGE FERGUSON.

Witnesses:

H. J. TERWILLIGER,  
W. J. HARRISON.