

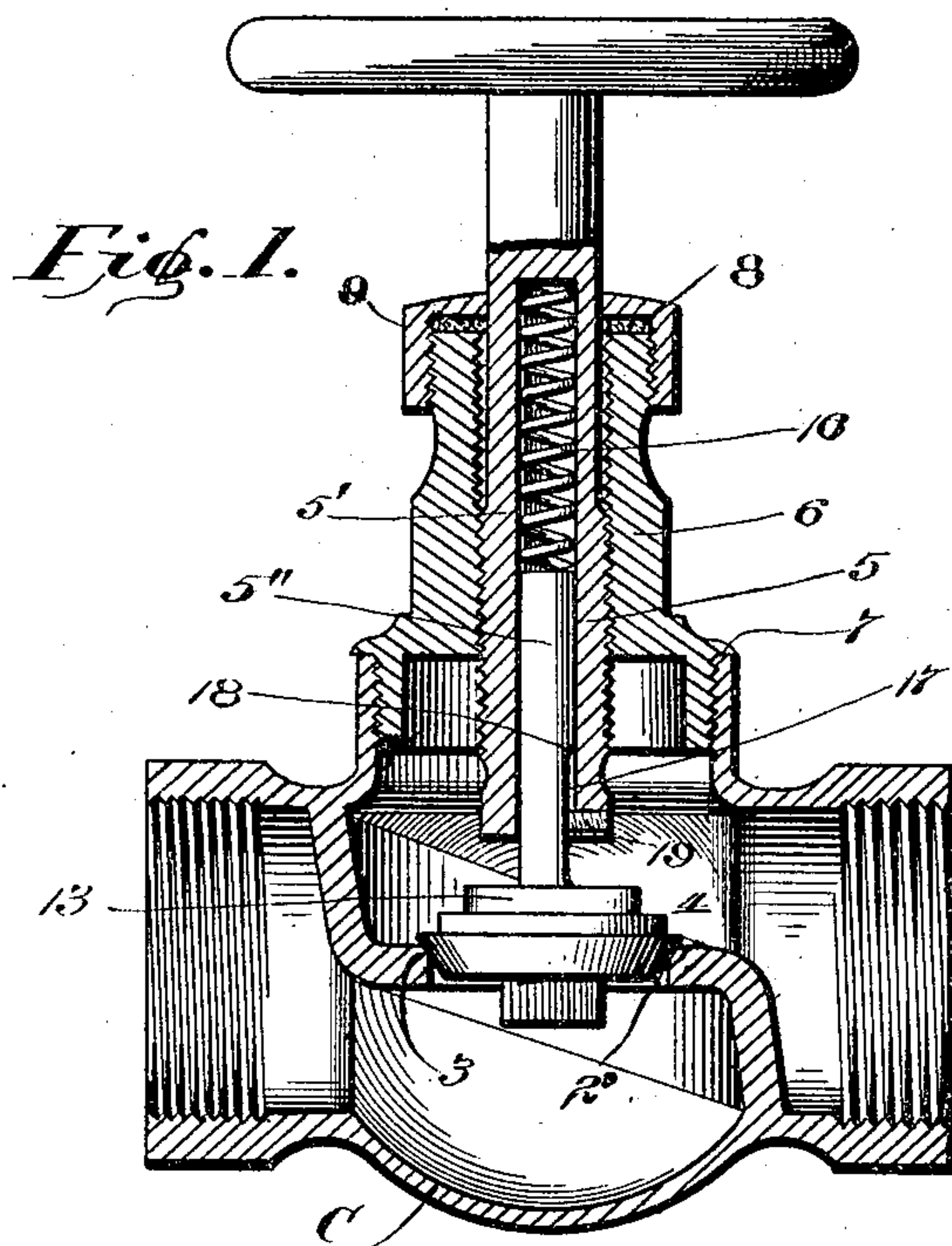
No. 630,949.

Patented Aug. 15, 1899.

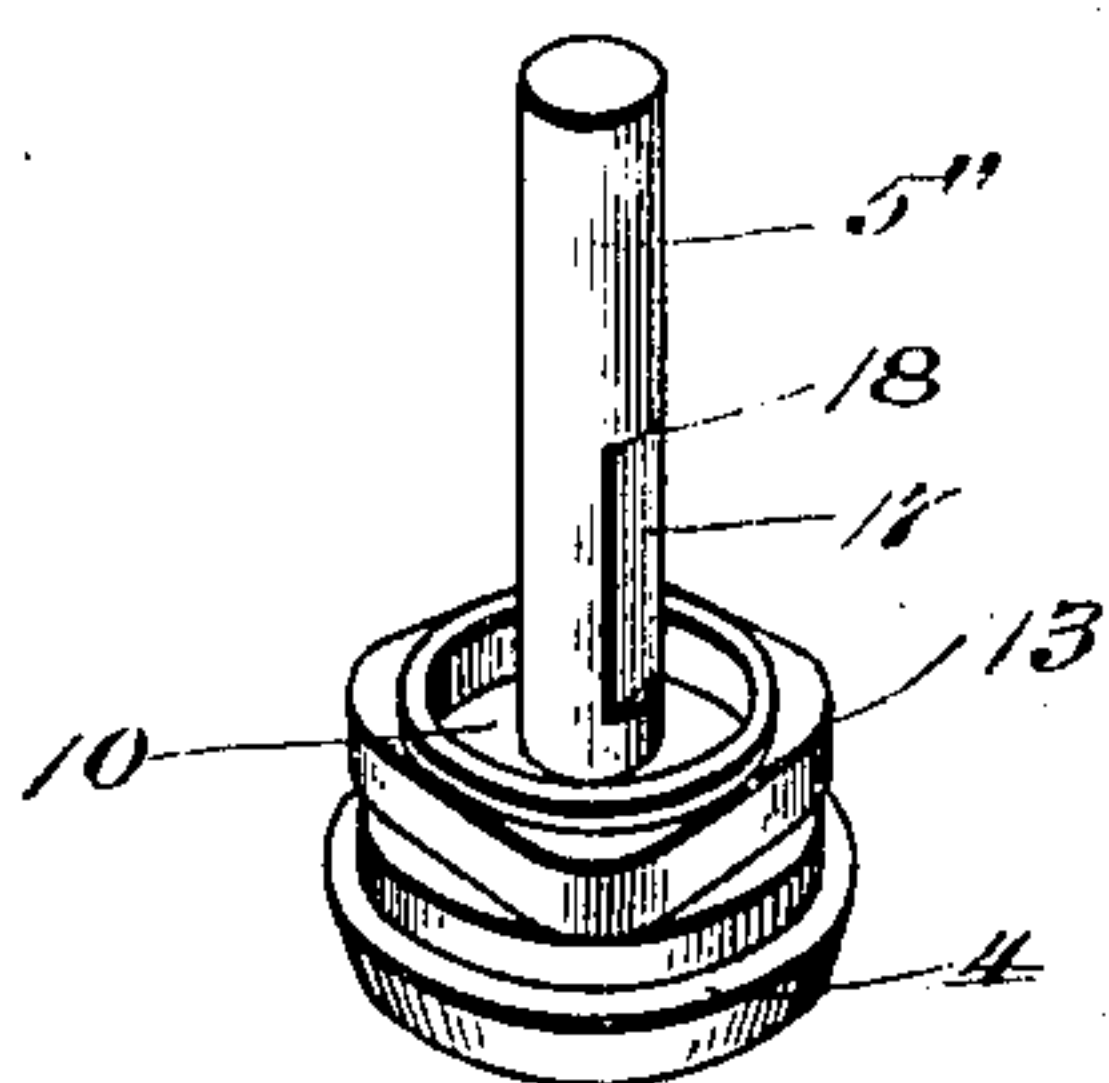
J. THUMMEL.  
VALVE.

(Application filed Apr. 17, 1899.)

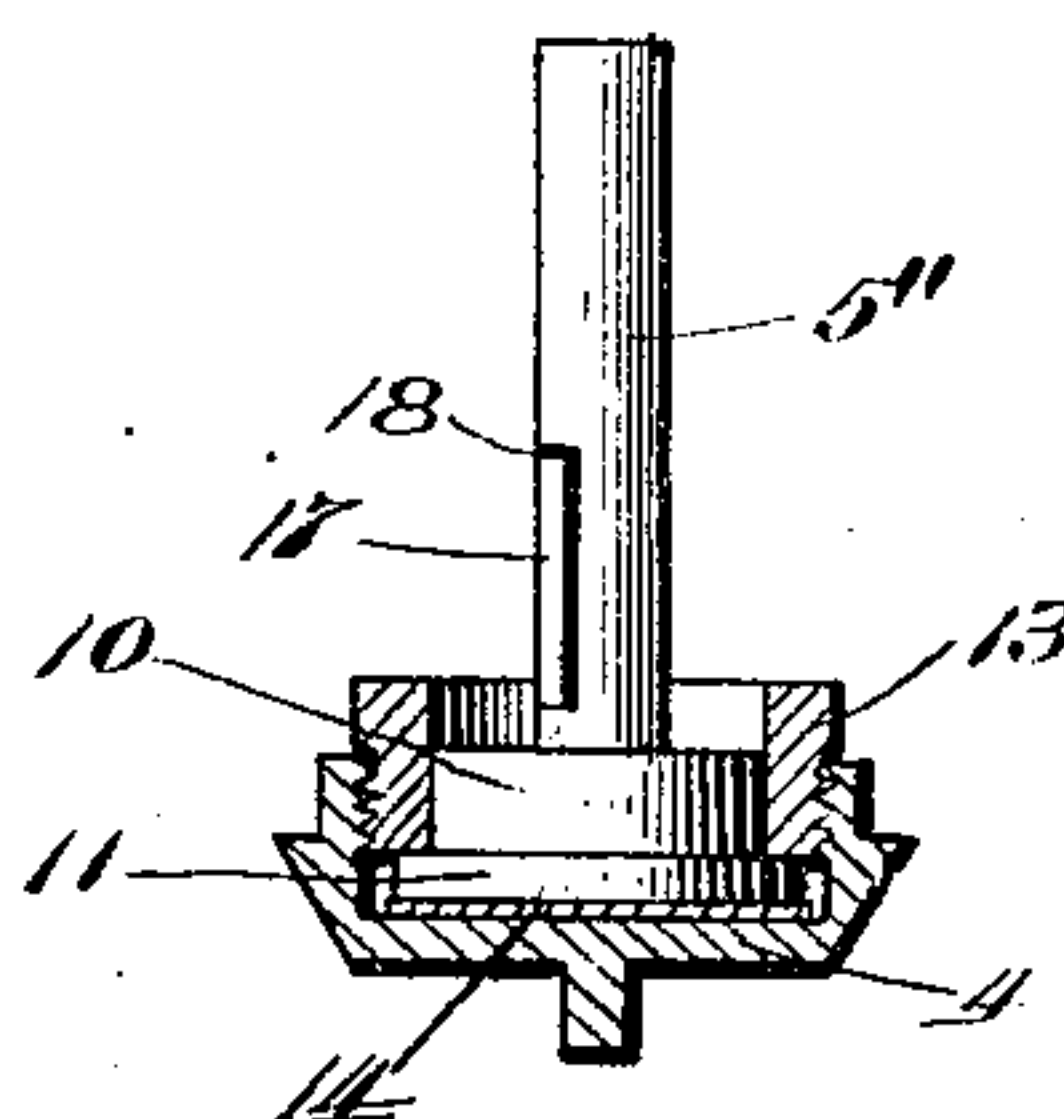
(No Model.)



*Fig. 2.*



*Fig. 3.*



Witnesses  
Clarence N. Walker.  
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John Thummel, Inventor.  
By his Attorneys

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# UNITED STATES PATENT OFFICE.

JOHN THUMMEL, OF FORT WORTH, TEXAS.

## VALVE.

SPECIFICATION forming part of Letters Patent No. 630,949, dated August 15, 1899.

Application filed April 17, 1899. Serial No. 713,344. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN THUMMEL, a citizen of the United States, residing at Fort Worth, in the county of Tarrant and State of Texas, have invented a new and useful Valve, of which the following is a specification.

This invention relates to valves; and it is adapted for connection with pipes or conduits for conducting water, steam, or other fluids; and the object of the invention is to provide a simple and efficient appliance of this character possessing the functions of both a globe and a check valve; and it is adapted to advantageously control the flow of liquid no matter what position its casing may occupy.

With these ends in view the invention consists in the novel combination of elements and in the construction and arrangement of parts, which will be hereinafter fully described and claimed.

To enable others to understand the invention, I have illustrated the preferred embodiment thereof in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a vertical sectional view of a combination globe and check valve embodying the improvements contemplated by the present invention. Fig. 2 is a detail in perspective of the lower section of the valve-stem and the swiveled valve carried thereby. Fig. 3 is an enlarged detail sectional view showing the connection between the valve-disk and its stem.

Like characters denote like and corresponding parts in each of the several figures of the drawings.

In feeding boilers the piping wherein the water is raised to any great height ordinarily requires a check-valve and a globe-valve, which are usually placed near each other, and it is always necessary to have a special valve to suit the pipe to which it is applied, as a vertical check-valve will not work on a horizontal pipe, and vice versa. My valve, however, will work in any position, either vertical, horizontal, or inclined, on account of the spring hereinafter described, which forces it back to its seat, and the pressure of the valve can be regulated by turning the hand-wheel constituting a part of the mechanism to allow any quantity of water to pass by the valve.

An ordinary check-valve only allows the water to pass by the valve one way; but the construction of the improved valve is such that when the valve is lifted from its seat the water can pass either way.

The device includes in its construction a casing or body which is denoted by C and which is usually formed by casting and which is divided into two chambers or compartments by the wall or partition of irregular shape and which is provided with the usual port 2', having the tapered valve-seat 3, against which the correspondingly-shaped lower surface of the valve-disk 4 is adapted to fit.

The valve-stem is denoted by 5, and it consists of two sections 5' and 5'', the lower section being slidably fitted within the upper or tubular section. The valve-stem projects through the nut 6 and is provided with an externally-threaded surface adapted to engage the corresponding threads upon the interior of the nut, and the latter is provided near its lower end with exterior threads adapted to engage in the threaded opening in the upper side of the valve-casing, and said nut has an annular shoulder 7 along its lower portion which is flat upon its under side and which is adapted to engage the flat upper face of the casing when the nut is properly seated.

The upper end of the upper section 5' is of somewhat reduced diameter, and the packing 8 is placed around the same and inside the upper end of the nut 6, and is also wound around said stem above the nut and is disposed within a second nut 9, which is in threaded engagement with the upper end of the main nut 6, and the packing serves its usual function.

The lower section 5'' of the valve-stem terminates in a disk or head 10, provided at its lower edge with the peripheral annular shoulder 11, adapted to receive thereon a ring-securing nut 13, loosely embracing the said disk or head 10. The exterior threads of the ring-securing nut 13 engage the interiorly-threaded socket of the valve-disk 4, which socket also receives therein the disk or head 10, between which and the bottom of the valve-disk socket is interposed a washer-plate 14. The construction described affords a very secure connection between the valve-disk and its stem, while said connection makes a swivel-joint between the valve-stem and the valve-



disk, which insures the proper seating of the valve under all conditions.

The valve-stem is provided with the usual wheel by which it can be turned for the purpose of holding the valve-disk 3 toward and from its seat to regulate the flow of the fluid through the casing C.

The hollow of the upper section of the valve-casing incloses the coiled spring 16, which bears against the lower section, whereby the tapered valve-disk is held against its seat with a yielding pressure, so as to slightly give or receive with any variations in the force of the liquid acting against the same. It will be remembered that the two sections of the valve-stem are connected by a sliding fit, and the lower one has a cut-away portion 17, producing a shoulder 18, and the screw 19 is carried by the upper section and projects through the same, and its inner end is located in proximity to the flat face formed by cutting away, whereby the lower section is permitted to have a certain amount of yielding movement relatively to its companion. When the disk is against its seat and when the hand-wheel is turned to the left, the screw 19 will engage the shoulder 18, and will thereby lift the valve-disk 4, and the motion of the wheel is comparatively slight to effect the operation. The valve-disk has a depending squared lug 20 to receive a wrench by which it can be disconnected from the ring-securing nut 13.

Changes in the form, proportion, size, and the minor details of construction within the scope of the appended claims may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what I claim is—

1. In a valve, the combination with a casing provided with a wall having a tapered port, of a nut fitted to said casing, a stem passing through the nut and in threaded engagement therewith and equipped with a handle, said stem consisting of two sections, the lower of which is slidable in the other, and said lower

section having a shoulder on one portion, an inwardly-projecting screw on the upper section adapted to engage said shoulder on the lower section, a disk on the lower section having an annular flange, an annular nut having the opening therein of less diameter than the said annular flange and adapted to have its edge bear against the latter, a tapered valve-disk into which the disk on the lower section is adapted to extend and removably connected to the said latter nut, and a coiled spring in the hollow of the upper section bearing against the lower section.

2. In a valve, the combination with a casing provided with a wall having a tapered port, of a nut fitted to said casing, a stem passing through the nut and in threaded engagement therewith and equipped with a handle, the said stem consisting of an outer tubular section and an inner section slidable in the said tubular section, the outer section having one portion thereof cut away longitudinally to provide an outer shoulder, a screw extending diametrically into the inner end of the outer section of the stem and movably engaging the cut-away portion of the inner stem-section, a spring contained in the outer stem-section and bearing against the inner stem-section, and a disk on the inner terminal of the inner stem-section having an annular flange and surrounded in part by a nut bearing against the said annular flange, and to which is also removably secured a tapered valve-disk, whereby the sectional stem can be adjusted through the medium of the screw-threads on the relative parts a period of time before the screw engages the shoulder on the inner stem-section.

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

JOHN THUMMEL.

Witnesses:

H. BRAUN,  
CARL SCHILDER.