No. 833,939. PATENTED OCT. 23, 1906.

W. T. RIDER.

STRAIGHTWAY VALVE.

APPLICATION FILED MAR. 10, 1905.

Fig. 5.

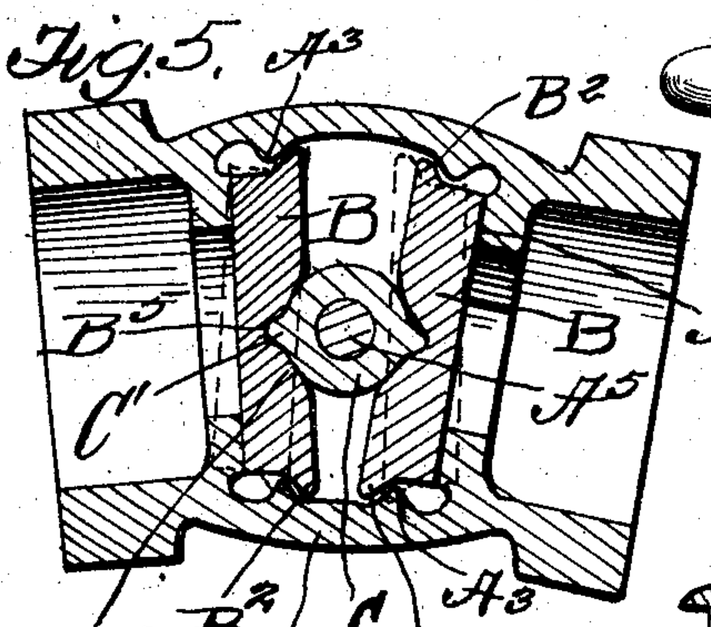


Fig. 1.

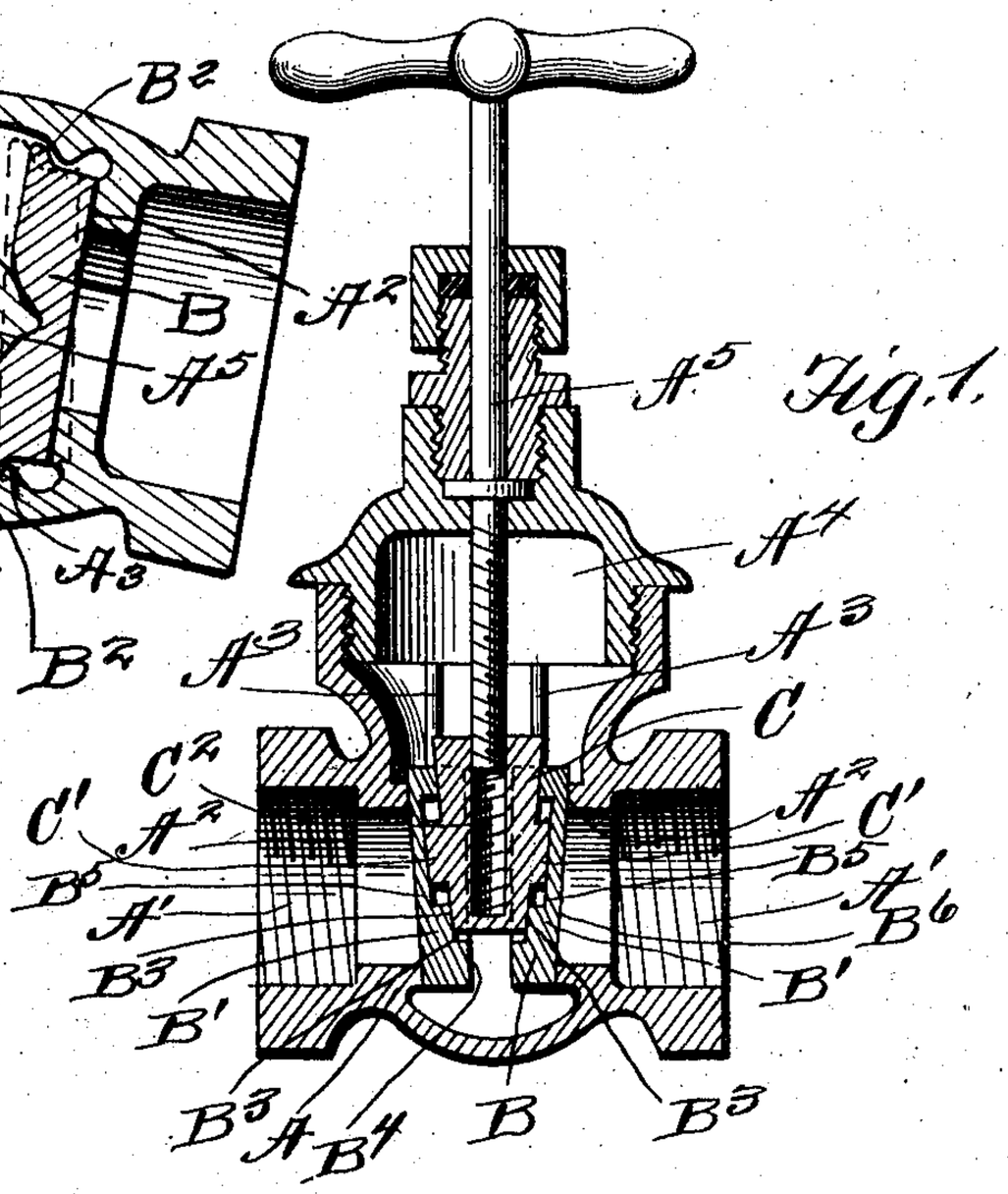


Fig. 2.

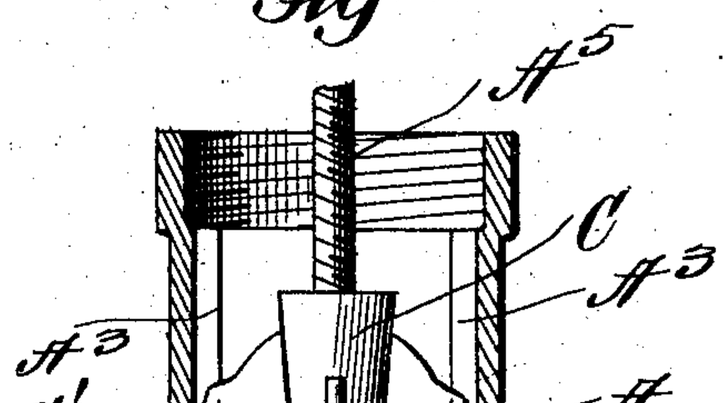


Fig. 3.

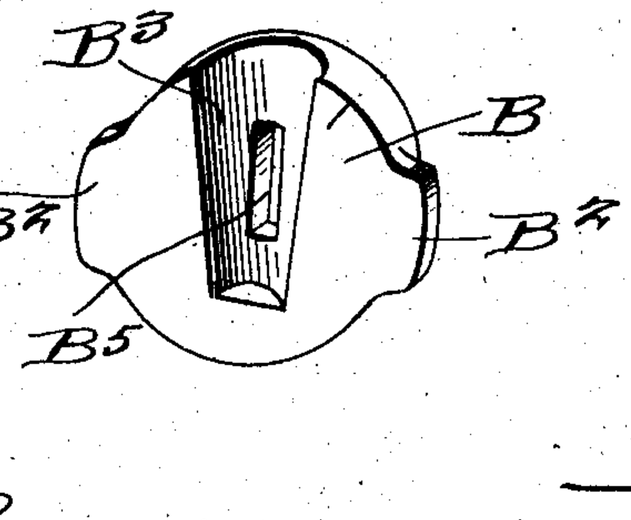
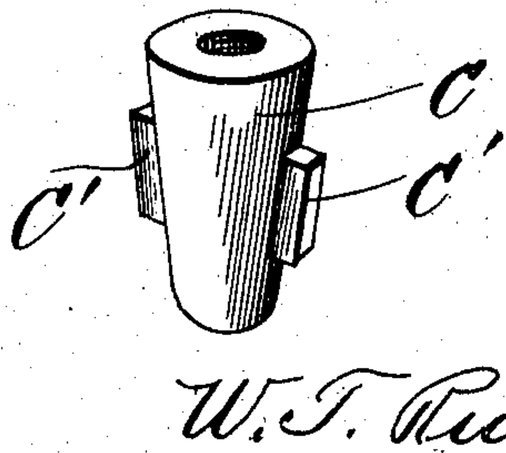


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM T. RIDER, OF COXSACKIE, NEW YORK.

STRAIGHTWAY VALVE.

No. 833,939. Specification of Letters Patent. Patented Oct. 23, 1906.

Application filed March 10, 1905. Serial No. 249,424.

To all whom it may concern:

Be it known that I, WILLIAM T. RIDER, a citizen of the United States, residing at Coxsackie, in the county of Greene and State of New York, have invented certain new and useful Improvements in Straightway 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in valves; and the object of the invention is to produce an adjusting means for a valve in which the adjusting-nut hangs free upon a valve-stem and in which the nut will always remain in line with the lugs upon valve-disks and free to act with the disk at any time, while the latter find their proper seating-places in any positions, thereby producing a means whereby the disk valves may be tightly seated even in the event of the distortion of the seats incident to any strain which may come upon the valve-casing. Heretofore it has been common in the art in making valves of this nature to provide combined nuts and rockers which fit into pockets upon the extreme circle of the disk, and when with a stem-nut the parts are placed together a top and a bottom adjustment is afforded, but no side adjustment. The rockers of this style of valves are apt to slip from their pockets between the disks, and it is to obviate this trouble and to dispense with the rocker combinations in straightway gate valves that I produce my novel valve and means for adjusting the same. In the present invention the adjustment is direct from the center of the disks by the lugs on the adjusting-nut coming in contact with the bottoms of slots in the disks, which are on a center line with the lugs on the nut, which practically is the only positive adjusting-point.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a sectional view through my improved valve and casing. Fig. 2 is a sectional view showing parts in elevation. Fig. 3 is an enlarged perspective view of one of the valve-disks, and Fig. 4 is an enlarged perspective view of the valve-nut. Fig. 5 is a sectional view showing the manner in which the valve-disks automatically adjust themselves to distorted seats.

Reference now being had to the details of the drawings by letter, A designates a valve-casing having threaded portions for connection with pipes and valve-seats A^2 about the marginal edges of openings leading from the central chambered portion of the casing to the openings to which pipes are adapted to be connected. Said valve-seats are at inclinations to each other, and A^4 designates a cap having threaded connection with the casing and provided with a suitable plug through which the stem A^5 passes.

C designates a conical-shaped adjusting-nut having a threaded hole therein for the reception of the threaded portion of the stem A^5. Elongated lugs C′ project from said valve-nut C at positions diametrically opposite and are adapted to engage the slots B^5, formed in the concaved surfaces of the disk valves B. Said disk valves B are flat upon their outer surfaces and each is provided with lugs B^2 at positions diametrically opposite, which lugs coöperate with the parallel ribs A^3, formed upon the inner surfaces of the casing to guide the disk valves when being inserted within the casing. Each of said disk valves has a concaved recessed portion B^3, one end of which is closed and the other end opening through the edge of the valve. It will be noted that the shapes of the recesses in said disk valves conform to the shape of said adjusting-nuts, and that the lugs C′ are allowed to have a slight play in the recesses B^5, and that when the two disk valves are adjusted in position within the casing in the manner shown in Fig. 1 of the drawings a suitable space intervenes between the two valves, thereby allowing a slight axial rocking movement to the valves in order that both valves may be seated tightly in the event of the two seats being distorted, which distortion will frequently be caused by the screwing of the pipe connections to the valve-casing. Were it not for this axial rocking of the valve-disks in order that the valves may conform to the seats it has been found that it is impossible to avoid leaking of valves of this nature.

From the foregoing it will be observed that by the provision of a valve made in accordance with my invention all springs, stem-nuts, and rockers are dispensed with and the various parts are interchangeable and a short valve is afforded and one which

will afford a practical and absolutely-tight gate-valve with a perfect adjustment upon any strain that may be brought to bear upon the body or casing of the valve. I have also found that by the provision of the features of my invention the valve-disks will not bind in any way, as when seated they are free from the ribs upon the casing, and the valves will relieve themselves from the faces in the body at once under pressure, which is not the case with the ordinary construction of gate-valves.

What I claim is—

In combination with a valve-casing having inclined valve-seats and guide-ribs upon the inner surface thereof, disk valves, the outer faces of which are inclined and their inner faces recessed, the inner end of each recess being closed and each recess provided with an elongated slot, lugs projecting from the opposite edges of each disk valve with the inner faces of said lugs flush with the inner face of each disk, a conical adjusting-nut provided with a stem and having elongated lugs running lengthwise of the nut and adapted to engage said slots, the inner movement of said nut adapted to bear against the ends of the recesses in said disk valves, the latter being placed apart and adapted to have an axial rocking movement, whereby their outer faces may adjust themselves to the valve-seats if distorted or otherwise, as set forth.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

WILLIAM T. RIDER.

Witnesses:

FREDERICK LYONS,

ROSCOE C. HALLOCK.