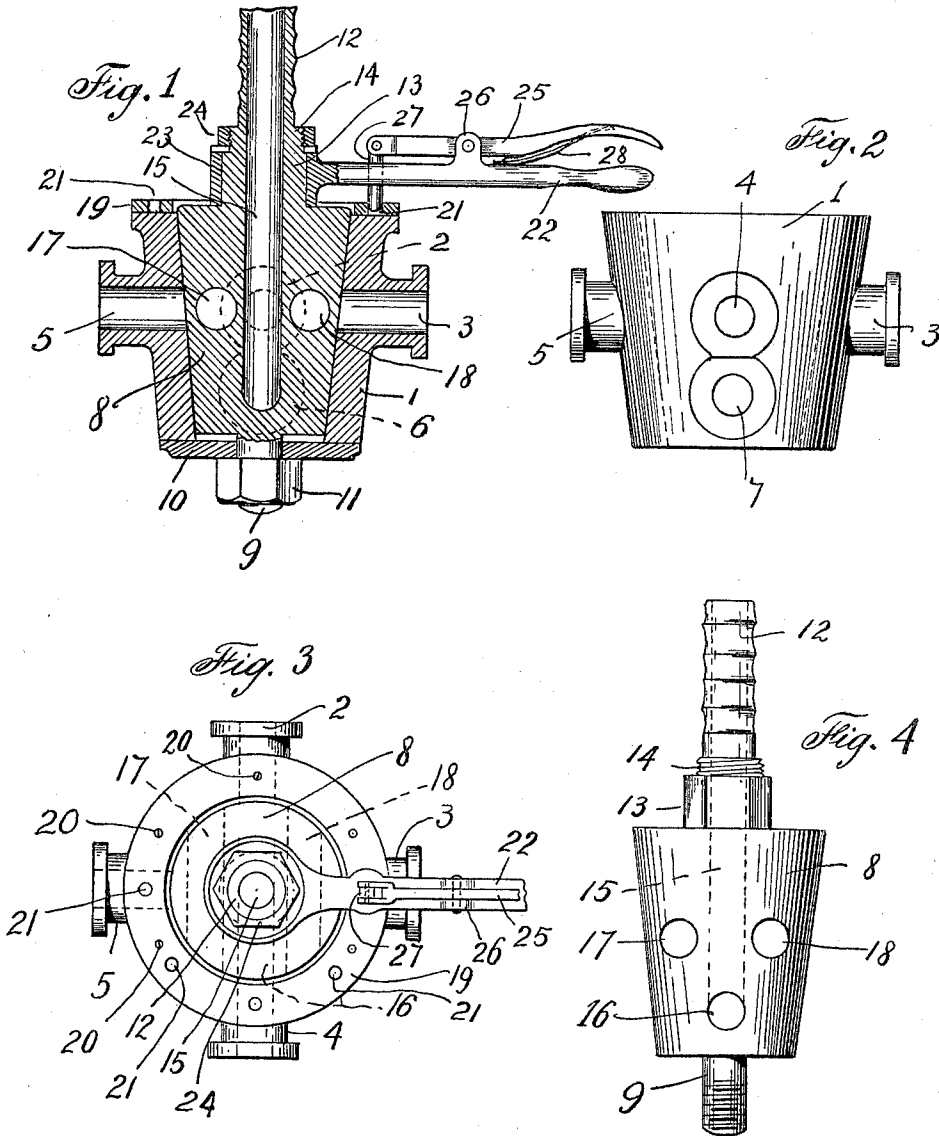


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VALVE.

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1,032,649.

Patented July 16, 1912.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

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## VALVE.

1,032,649.

Specification of Letters Patent.

Patented July 16, 1912.

Application filed July 5, 1911. Serial No. 636,946.

*To all whom it may concern:*

Be it known that I, JOHN G. BIENIEK, a citizen of the United States, and residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Valves, of which the following is a complete specification.

The main objects of this invention are to provide an improved valve adapted to control the passage of two or more fluids; to provide a valve of cheap and simple construction adapted to be easily assembled; to provide a six-way valve having part of its ways adapted to be connected in pairs and a part adapted for independent operation; and to provide a valve which is easy of operation and not liable to get out of repair.

A specific embodiment of the invention is illustrated in the accompanying drawings, in which:

Figure 1 is a central vertical section of the valve closure in position to afford communication through one of the lower ports. Fig. 2 is a side elevation of the valve casing. Fig. 3 is a top plan view of the valve. Fig. 4 is a side elevation of the valve closure.

In the construction shown, the valve casing 1, which may be formed of any suitable material, tapers from its top downwardly, and is provided in its sides with four ports 2, 3, 4 and 5, arranged approximately 90 degrees apart, and in the same plane transversely of the closure, and with ports 6 and 7 which open from opposite sides of the casing beneath the ports 2 and 4 in a plane parallel with the former plane.

The inner surface of the casing is ground and a rotative tapered closure is ground to fit closely in said casing and does not extend quite to the bottom of the casing, as shown more clearly in Fig. 1. Projecting downwardly from the lower end of the closure, axially thereof, is a threaded stud 9, and an apertured bottom plate 10 for the casing fits over said stud and bears against the bottom of the casing. A nut 11 has threaded connection on the stud and holds said plate tightly against the casing.

Extending upwardly from the top of the closure, and axially thereof, is the stem 12 which has an angular portion 13 adjacent to the closure, above which is a threaded portion 14, while the remaining portion of the stem is corrugated to afford attachment for a rubber hose.

The closure and stem are provided with

an axial bore 15 which extends from the upper end of the stem to near the bottom of the closure and then extends laterally as at 16 and opens through the side of the closure. Passages 17 and 18 extend transversely through the closure parallel with the part 16 of the bore 15, and situated one on either side of said bore. The portion 16 of the bore 15 is so positioned as to be brought into register with the lower ports 6 and 7 separately, and the passages 17 and 18 are so positioned as to be brought into register with the ports 2, 3, 4 and 5, and connect said ports in pairs. A locking ring 19 is rigidly but adjustably secured on the top of the casing 1 by means of pins or screws 20, and is provided with locking apertures 21 spaced suitable distances apart circumferentially thereof. An operating lever 22 has a head 23 with an angular aperture therethrough adapted to receive the angular portion 13 of the stem 12, and is secured thereon by means of a nut 24 on the threaded portion 14 of the stem. A locking lever 25 is pivoted in lugs 26, and on the inner end of the locking lever is pivoted a locking pin 27 which extends downwardly through a suitable aperture in the lever 22 and is adapted to engage in the apertures 21 and hold the closure in adjusted position. A spring 28 is secured at one end to the lever 22 outwardly from the lugs 26 and bears at its other end beneath the outer end of the lever 25.

The operation of the construction shown is as follows: When the closure is in the position shown in Figs. 1 and 3, the bore 15—16 communicates with the port 7, and when the closure is turned 180 degrees from that position said bore will communicate with the port 6. In both of these positions of the closure the passages 17 and 18 are out of communication with the ports 2, 3, 4, and 5. If the closure be turned clockwise approximately 45 degrees from its position shown in Fig. 3, the bore 16 is turned out of communication with the port 7, and the passages 17 and 18 are respectively brought into communication with the ports 2—5 and 3—4. If the closure be turned approximately 90 degrees farther the passage 17 is brought into communication with the ports 2—3 and the passage 18 is brought into communication with the ports 4—5. In any of those positions the locking pin 27 will lock the closure firmly in place. Should the valve be so positioned that it is im-

possible to turn the closure the desired distance the locking ring may be adjusted to a position on the casing which will permit the desired movement.

5 While but one specific embodiment of the invention has been herein shown and described it will be understood that many details of the construction shown may be varied or omitted without departing from  
10 the scope of the claims.

I claim:

1. A valve, comprising a casing having a plurality of upper and lower ports therein, a closure rotatively mounted in the casing  
15 and having a transverse passage adapted to communicate with any adjacent two of the upper ports, and having a longitudinal bore adapted to communicate with any of the lower ports when the transverse passage is  
20 out of register with the upper ports, and means for operating said closure.

2. A valve, comprising a casing having two sets of circumferentially alined ports, those of one set being in vertical alinement  
25 with a portion of those of the other, a closure rotatively mounted in said casing having transverse passages adapted to connect the ports of one set in pairs, and having an axial bore opening at its inner end through  
30 one side thereof adapted to individually connect with the ports of the other set when the transverse passages are out of operative position, and means for operating said closure.

35 3. A valve, comprising a casing having two sets of ports opening in different transverse planes, those of one set being in vertical alinement with corresponding ones of the other set, a closure rotatively mounted  
40 in said casing having an axial bore opening at its inner end through one side of the closure and adapted to register with the ports of one set, and having a plurality of transverse passages adapted to register with the  
45 ports of the other set and connect them in pairs, and means for operating said closure.

4. A valve, comprising a casing having two sets of ports opening in different transverse planes, a closure rotatively mounted in  
50 said casing having an axial bore opening at its inner end through one side of the closure

and adapted to register with the ports of one set, and having a plurality of transverse passages adapted to register with the ports of the other set and connect them in pairs  
55 when the bore is out of register with its ports, an operating lever for the closure, and interlocking means on the lever and casing adapted to hold the closure in adjusted position.

5. A valve, comprising a casing having two sets of ports opening in different transverse planes, a closure rotatively mounted in said casing having an axial bore opening  
60 at its inner end through one side of the closure and adapted to register with the ports of one set, and having a plurality of transverse passages so arranged as to register with the ports of the other set and connect them in pairs, when the bore is out of  
70 operative position, an operating lever on the closure, a locking lever pivoted on the operating lever, and a locking pin on the locking lever adapted to engage the casing and hold the closure in adjusted position.

6. A valve, comprising a casing having two sets of ports therein in different transverse planes, a closure rotatively mounted in said casing having a stem at its outer end adapted to be connected with a hose, and  
80 having a threaded stud on its inner end projecting from the bottom of the casing, a bottom plate on the casing, a nut on the stud adapted to hold the plate in place, there being an axial bore in said stem and closure  
85 opening at its inner end through the side of the closure in position to register with one set of ports, and there being transverse passages in the closure adapted to connect the ports of the other set in pairs when the bore  
90 is out of operative position, an operating lever on said stem, a locking lever pivoted on the operating lever, and a locking pin on the locking lever adapted to engage the casing and hold the closure in adjusted position.

In witness whereof I have hereunto subscribed my name in the presence of two witnesses.

JOHN G. BIENIEK.

Witnesses:

JOSEPH SCHLENKEL,  
CARL ROBINSON.