

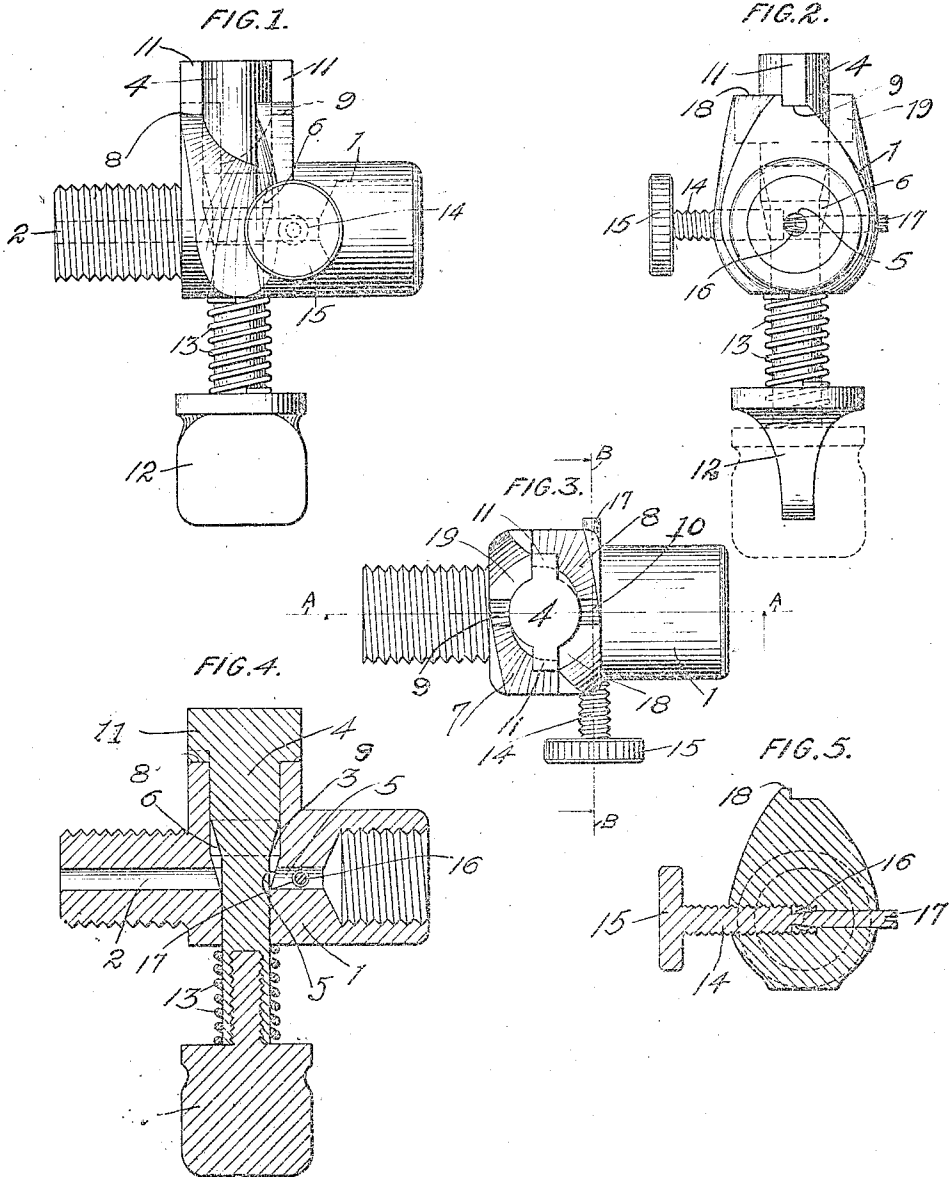
J. MELIO.

VALVE.

APPLICATION FILED JULY 16, 1912.

Patented Mar. 25, 1913.

1,056,925.



WITNESSES

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VALVE.

1,056,925.

Specification of Letters Patent.

Patented Mar. 25, 1913.

Application filed July 15, 1912. Serial No. 709,486.

To all whom it may concern:

Be it known that I, JAMES MELIO, a citizen of the United States of America, and a resident of Chicago, county of Cook, State of Illinois, have invented certain new and useful Improvements in Valves, of which the following is a specification.

The main objects of this invention are to provide an improved form of valve or pet cock, the valve member of which is adapted to be normally urged toward its closed position; to provide improved means for holding said valve member in its open position; to provide improved means for causing said valve member to be normally shifted toward its closed position when it is partially moved from its full open position; and to provide improved means for regulating the cross-sectional area of the passage through said valve.

An illustrative embodiment of this invention is shown in the accompanying drawings, in which:

Figure 1 is a side elevation of a valve constructed according to this invention, the same being shown with the valve member in its open position. Fig. 2 is an end elevation of the same. Fig. 3 is a plan view of the valve with the valve member shown in its closed position. Fig. 4 is a sectional elevation taken on the line A—A of Fig. 3. Fig. 5 is a sectional view taken on the line B—B of Fig. 3.

In the construction shown in the drawings the valve comprises a casing 1 through which extends a small longitudinally disposed passage 2. A larger bore 3 extends through said casing in a transverse direction, and intersects with the passage 2, and has a valve member 4 rotatably mounted therein. At the point of intersection of the bore 3 and passage 2 the bore is reduced so as to form an annular conical shoulder or valve seat 5, with which coacts the annular conical shoulder 6 on the valve member 4 for securely closing the passage 2 when the valve member is shifted to one limit of its movement, and for opening communication through the passage 2 when said valve member is shifted to the opposite limit of its movement.

The casing 1 has formed thereon the external inclined surfaces 7 and 8 symmetrically arranged and spaced apart substantially 180 degrees. These surfaces terminate at their upper ends in ledges 9 and 10.

The valve member 4 extends to the exterior of the casing and has integrally formed thereon the oppositely disposed shoulders 11, which are adapted to respectively coact with the ledges 9 and 10 for holding the valve in its open position, and with the inclined surfaces 7 and 8 for shifting the valve member toward its closed position when the shoulders are disengaged from the ledges. The valve member 4 also extends to the exterior of the casing on the opposite side, and has detachably secured thereto a key 12. A compression spring 13 embraces the member 4 between the key 12 and casing 2, and normally exerts a pressure on the member 4 that will urge it toward its closed position when the shoulders 11 are in engagement with the surfaces 7 and 8.

A threaded rod 14 having a knurled head 15 is supported in the casing 1, so that the reduced portion 16 of the extension pin 17 intersects with the passage 2. This rod may be adjusted for the purpose of regulating the cross-sectional area of the passage 2, and thereby controlling the flow of fluid through the valve.

The casing 1 is provided with shoulders 18 and 19 located between the inclined surfaces 8 and 9, and having their faces disposed at right angles so as to respectively engage opposite sides of the shoulders 11 for limiting the movement of the valve member 4 in opposite directions.

The operation of the device is as follows: When it is desired to open the valve the member 4 is turned by means of the key 12, which causes the inclined surfaces 7 and 8 to coact with the shoulders 11 and elevate the valve member as it is turned until the shoulders 11 rest on the ledges 9 and 10. The elevating of the member 4 separates the annular shoulders 5 and 6; and opens communication through the passage 2. If the valve member 4 is turned in the reverse direction sufficiently to cause the disengagement of the shoulders 11 from the ledges 9 and 10, the inclined surfaces 7 and 8, coacting with the shoulders 11 under pressure of the spring 13, will cause the valve to shift and effect the reengagement of the conical shoulders 5 and 6, and thereby shut off communication through the passage 2. If it is desired to adjust the flow of fluid through the passage 2, the rod 14 may be turned so as to shift the reduced portion 16 to increase or decrease the cross-sectional area of the

passage 2, as circumstances may require. It will thus be seen that this valve is adapted for use where it is desired to have a full flow of fluid when the valve is opened, and to insure positive closing of the valve when the rotatable valve member is shifted from its full open position.

Although but one specific embodiment of this invention has been herein shown and described, it will be understood that numerous details of the construction shown may be altered or omitted without departing from the spirit of this invention as defined by the following claims.

I claim:

1. A valve comprising a casing having a longitudinal passage extending there-through; a valve member movably mounted in said casing and extending to the exterior of said casing on both sides thereof, said member being adapted to be moved into and out of position for obstructing said passage for respectively closing and opening said valve; an external inclined surface formed on said casing and terminating in a ledge at its outer end; a shoulder on one end of said member adapted to engage with said ledge and surface for respectively holding said member in position for opening said valve and for shifting said member to close said valve when said member is moved to disengage said shoulder from said ledge; and a spring embracing the opposite end of said member and normally exerting a pressure that will cause said member to shift toward said closed position when said shoulder is in engagement with said surface.

2. A valve comprising a casing having a longitudinal passage extending there-through; a valve member movably mounted in said casing and extending to the exterior of said casing on both sides thereof, said member being adapted to be moved into and out of position for obstructing said passage for respectively closing and opening said valve; a pair of external inclined surfaces formed on said casing and spaced apart substantially 180 degrees, said surfaces terminating in ledges at their outer ends; a pair of oppositely disposed shoulders formed on one end of said member and adapted to engage with said ledges and inclined surfaces for respectively holding said member in position for opening said valve and for shifting said member to close said valve when said shoulders are disengaged from said ledges; and means normally exerting a pressure on said member that will cause it to shift to close said valve when said shoulders are in engagement with said surfaces.

3. A valve comprising a casing having a longitudinal passage extending there-

through and a bore extending transversely therethrough and intersecting with said passage, said bore being shaped to form an annular conical shoulder at the point of intersection with said passage; a valve member movably mounted in said bore and extending to the exterior of said casing; said valve member having an annular conical shoulder thereon adapted to be shifted into and out of engagement with the conical shoulder of said bore for respectively closing and opening said valve; a pair of external inclined surfaces formed on said casing and spaced apart substantially 180 degrees, and terminating in ledges at their outer ends; oppositely disposed shoulders formed on said valve member and adapted to engage with said ledges and inclined surfaces for respectively holding said member in position for opening said valve and for shifting said member to close said valve when said shoulders are disengaged from said ledges; and resilient means normally exerting a pressure on said member that will cause it to shift to close said valve when said shoulders are in engagement with said surfaces.

4. A valve comprising a casing having a longitudinal passage extending there-through; a valve member movably mounted in said casing and extending to the exterior of said casing on both sides thereof, said member being adapted to be moved into and out of position for obstructing said passage for respectively closing and opening said valve; an external inclined surface formed on said casing and terminating in a ledge at its outer end; a shoulder on one end of said member adapted to engage with said ledge and surface for respectively holding said member in position for opening said valve and for shifting said member to close said valve when said member is moved to disengage said shoulder from said ledge; a spring embracing the opposite end of said member and normally exerting a pressure that will cause said member to shift toward said closed position when said shoulder is in engagement with said surface; and a rod supported in said casing and intersecting said passage, and having a reduced portion adjacent to the intersection of said rod and passage, said rod being adapted to be adjusted so as to shift said reduced portion across said passage and thereby vary the cross-sectional area of said passage.

Signed at Chicago this 13th day of July 1912.

JAMES MELIO.

Witnesses:

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