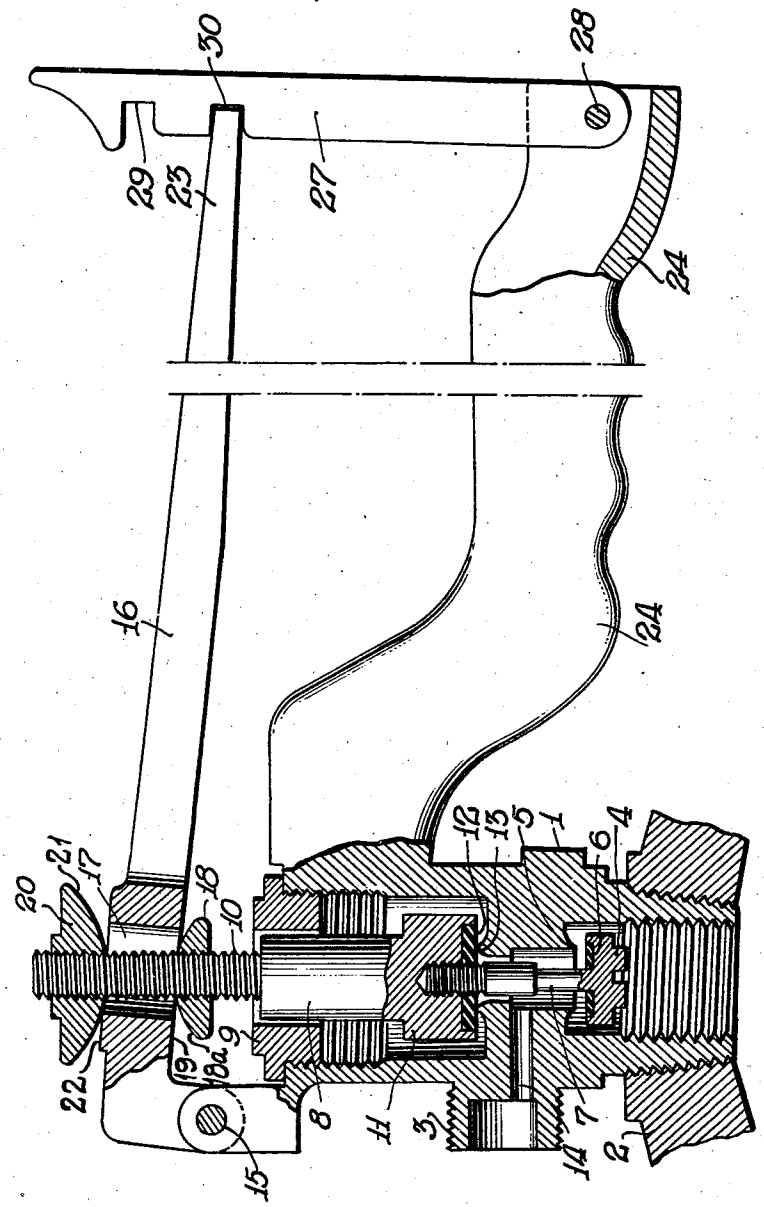
Oct. 29, 1946. V. REMUS 2,410,105

VALVE

Filed April 17, 1940



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Patented Oct. 29, 1946

2,410,105

UNITED STATES PATENT OFFICE

2,410,105

VALVE

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Application April 17, 1940, Serial No. 330,197
In Belgium April 29, 1939

1 Claim. (Cl. 251—32)

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The invention relates to obturating means for fluid pipes and containers under high pressure, and particularly concerns the obturating devices used in connection with pipes and containers in which an obturating valve opens against the pressure of the fluid. In obturating devices of this kind, serious difficulties are encountered to ensure the tightness of the valve due to the fact that the generally soft packing materials are liable to deteriorate, such tendency being more marked when the materials are subjected to severe temperature conditions, expansion of highly compressed fluids, or other conditions, such for example as a chemical action due to the character of the fluid. On the other hand, owing generally to the same reasons, during the discharge of the fluid, fluid losses through the valve are unavoidable, and the same is true also during the loading of the pipes or containers with the fluid under pressure when such loading is effected by causing the fluid to flow through the obturating device.

The main object of the invention is to avoid these difficulties and provide an obturating device the tightness of which may be ensured under all conditions, that is both in the state of complete or partial load of the associated pipe or container, and during the loading of said pipe or container with fluid under pressure, or during the discharge of said fluid, and under whatever conditions to which the device may be subjected, or the nature of the fluid.

The invention consists in means to seat a main valve and also an auxiliary valve. A lever is provided by which the valves may be operated, and means associated with such lever are provided whereby, without operating such lever, one of the valves can be locked upon its seat. The invention consists in associating with the main valve closing the container or pipe and adapted to be locked on its seat, the auxiliary valve adapted to isolate the passage for the fluid from the operating means, as well during the loading operation as during the discharge of the fluid, and which is adapted to be locked on its seat by the operation of the means for locking the main valve.

The drawing is a vertical section through a device embodying the invention.

As illustrated in the drawing, the valve body 1 is mounted on the fluid container 2, the device controlling the flow of fluid through the outlet 3. In the body 1, there is a main valve member 4 cooperating with valve seat 5 on body 1, packing 6 being disposed on the face of member 4. The stem 7 of member 4 is screw-threaded into rod

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8 which passes through guide member 9 screw-threaded into body 1. The portion of rod 8 which passes through guide member 9 and extends from body 1 is screw-threaded at 10. Rod 8 is provided with an auxiliary valve member 11 having packing 12 on its face co-operating with valve seat 13 on body 1. The valve members 4 and 11 are so related that when the rod 8 is lowered it unseats member 4 and seats member 11, and when it is raised it seats member 4 and unseats member 11. Between the seats 5 and 13, the body 1 has a passage 14 affording communication between the interior of the container 2 and the outlet 3.

Body 1 is provided with a pintle 15 on which is pivotally mounted an operating lever 16 having a transverse bore 17 through which passes the screw-threaded portion 10 of the rod 8. Threaded on the portion 10, below the lever 16, is a stop collar 18, the upper surface 18-*a* of which is convex and co-operates with the edge 19 on the lower face of lever 16 about bore 17. Threaded on the portion 10, above the lever 16 is a stop collar 20, the lower surface 21 of which is convex and co-operates with the edge 22 on the upper face of the lever 16 about bore 17. The handle 23 of lever 16 may be manipulated by grasping it together with the handle 24 on body 1, to move lever 16 downwardly. A latch 27 is pivoted on handle 24 at 28 and has notches 29 and 30 in which handle 23 can be engaged when the latch 27 is swung into engaging position, for retaining lever 16 in either adjusted position.

From the foregoing description of the details of construction of the device, its use and operation will be obvious. When the parts are in the relation shown in the drawing, the handle 23 engaged in the notch 30 of the latch 27 depresses the lever 16 which through the collar 18 depresses the rod 8 unseating valve member 4 and seating the valve member 11. Rotation of collar 18 about rod 8 will cause rod 8 to be further depressed, since lever 16 is held immovable by latch 27. The further depression of rod 8 causes valve member 11 to be locked in intimate engagement with its seat 13. When the latch 27 is swung to release the handle 23, the lever 16 can be moved upwardly and the handle 23 engaged in the notch 29 of the latch 27, thereby raising the rod 8 unseating valve member 11 and seating valve member 4. Rotation of collar 20 about rod 8 will cause rod 8 to be further raised, since lever 16 is held immovable by latch 27. The further raising of rod 8 causes valve member 4 to be locked in intimate engagement with its seat 5.

As the passage 14 between the container 2 and the outlet 3 is completely isolated during passage of fluid into or out of container 2, by the locking of valve member 11 on its seat 13, no packing for rod 8 will be necessary and sufficient clearance between rod 8 and guide member 9 may be provided to permit rod 8 to slide easily therein.

From the foregoing it is obvious that the adjustment of the collars 18 and 20 relative to the rod 8, when the lever 16 is held immovable by the latch 27, determines the degree of sealing engagement of valve members 4 and 11 with their valve seats 5 and 13, respectively.

I claim:

In a valve assembly, the combination of a body provided with a longitudinal bore; an annular valve seat in said bore; a valve member co-acting with said seat; a second annular valve seat in said bore; a second valve member co-acting with said second valve seat; a reciprocatory valve stem on which both members are mounted for unitary oscillation in said bore, the members being so related that when one member is seated the other member is unseated, and vice versa; a conduit communicating with said bore intermediate said seats; a lever pivoted on said body and connected with said stem for reciprocation thereof; locking means to prevent pivotal movement of said lever; a threaded extension on said stem; and the connection between the stem and lever including an adjustable stop threaded on said extension and co-acting with said lever when said lever is held immovable by said locking means, the adjustment of said stop determining the degree of sealing engagement of one of said valve members, when said valve member is seated.

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