

Oct. 26, 1926.

1,604,592

S. B. MERRY

VALVE

Filed Feb. 24, 1926

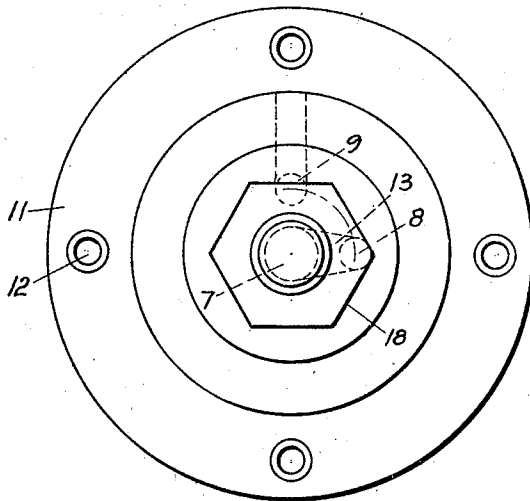


Fig. 2.

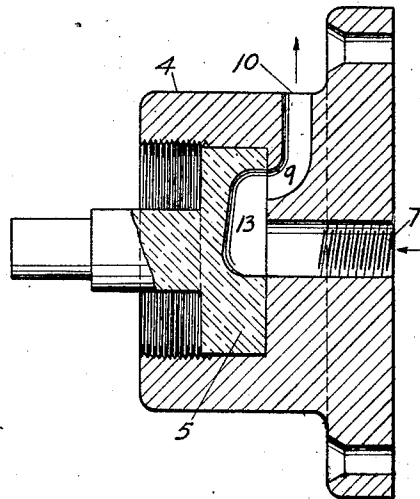


Fig. 3.

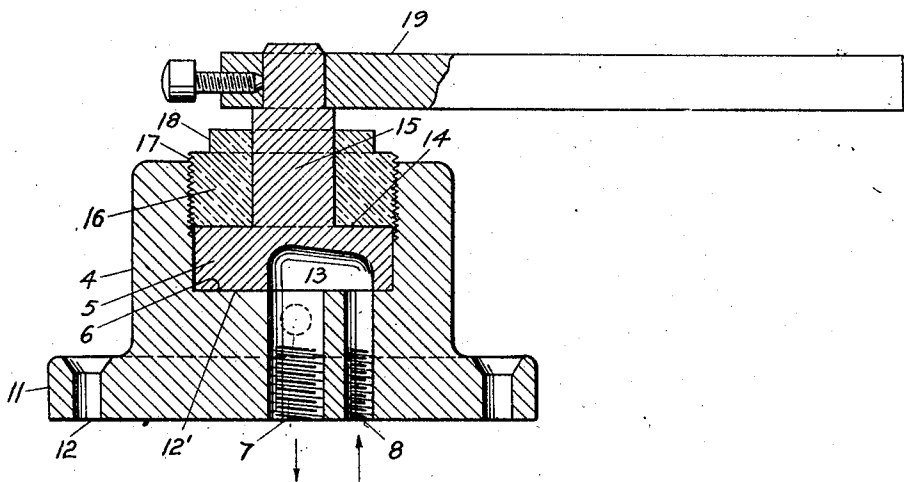


Fig. 1.

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1,604,592

UNITED STATES PATENT OFFICE.

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VALVE.

Application filed February 24, 1926. Serial No. 90,321.

My invention relates to valves, and more particularly to a control valve for the dispensation of oils and other fluids by means of air under pressure passing through the valve.

At present, the primary use for my valve and for which I designed it, is for mounting it on the top of an oil tank, such as per my copending patent application Serial No. 90,320, filed February 24, 1926, to form a part of the oil tank equipment as is usually employed in oil service stations for motorists, and for purposes of convenience I will relate my valve thereto throughout the specification; but it is to be understood that I do not limit the invention to such tanks, as it has many other useful applications.

The tanks referred to have mounted thereon hand pumps for the dispensation of lubricating oils and the like, and such pumps are large and costly for the services rendered, and as all service stations carry air under pressure I have sought a means for the dispensation of the oil products controllable by the said air under pressure and without the aid of pumps of any nature. Therefore, my chief object is the production of a most simple and inexpensive valve to displace the pump, and to deliver the products by means of air pressure alone although the products do not pass through the valve.

Another object is to make the valve small and compact so as to occupy but little space.

A further object is to dispense with stuffing boxes and packing of any kind, as by my construction these are superfluous.

A still further object is to construct the valve so as to render it most durable and provide for wear by simple adjusting means.

I attain the above objects by my novel device, and other objects and advantages of the invention will appear in the subjoined description of the accompanying sheet of drawings, in which:

Figure 1 is a central vertical section taken through the valve.

Fig. 2 is a plan of the valve with the lever removed; and

Fig. 3 is a central vertical section taken through the body of the valve at right angles to Fig. 1, the valve therein having been turned on the body ninety degrees.

I will now describe the invention in de-

tail. The numeral 4 indicates the body of the valve which is illustrated as cylindrical in shape. The upper side of the body is recessed and snugly houses the disk valve 5. The bottom of the recess is preferably flat and is the seat 6 for the valve 5. Centrally and axially through the valve body and leading from the seat is a port 7, and near and parallel thereto is another port 8 which may be smaller if desired. This latter port also leads from the valve seat 6. Both ports may be threaded opposite the valve seat side to receive pipes (not shown) for the inlet and discharge of air through the valve, the smaller port being the inlet. Also leading from the valve seat 6 and passing through the body is another port 9. This port is the exhaust port and may be the same size as the inlet port 8, and also may be positioned therefrom a suitable angular distance such as ninety degrees and equidistant from the central port 7. The end of the exhaust port 9 is open free to the atmosphere and may terminate at 10 on the surface of the cylindrical body 4. Surrounding the bottom of the body is a flange 11 provided with holes 12, to receive bolts or the like for securing the valve to a tank.

The valve 5 consists of a rotatable disk of suitable material such as bronze, and has a flat valve face 12' provided with a radial channel 13 of size and shape to register with the central port and either one of the other two ports, and having a depth sufficient for the passage of air from one port to the central port and vice versa. The other side 14 of the disk valve is flat and blank and has centrally thereon a cylindrical valve stem 15.

A nut 16 surrounds the valve stem and has its outer cylindrical surface finely threaded as at 17 to fittingly engage the complementary threads formed on the upper end of the walls of the recess in the body. The threads extend in the recess below the side 14 of the disk valve, so as to allow the nut to be turned in adjustment as the faces of the valve wear in service. A hexagon head 18 on the nut facilitates the manipulation of the nut.

On the outer end of the valve stem 15, any suitable lever 19 may be employed to turn the valve from one position to the other.

The operation of the valve is as follows: When the valve is in service and positioned

as shown in Fig. 1, air under pressure is led through inlet port 8, as indicated by the arrow, and conveyed by the radial channel 13 to and through the central port 7, to any desired surface of oil inclosed in a tank to force the oil therefrom in a steady dispensation. Immediately on turning the valve through an arc of ninety degrees, in this case, the air supply is cut off and the radial channel of the valve communicates with the exhaust port 9, Figure 3, whereby the pressure on the tank is relieved to the atmosphere and the dispensation flow of oil ceases.

From the foregoing description taken in connection with the accompanying drawings the advantages of the construction and method of operation will be readily understood by those skilled in the art to which the invention appertains, and while I have described the principle of operation, together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative and that such changes may be made, when desired, as fall within the scope of the appended claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent of the United States the following:

1. A valve unit comprising a body, a valve and valve-retaining means; the body provided with a recess and the bottom of the recess being the seat for the valve, the body further provided with a central port and two other ports near thereto leading from the seat, and one of the latter ports being the exhaust port with its outlet free to the atmosphere; the valve being a rotatable disk adapted to fit within the recess and contact the seat and the valve provided with a radial

channel on its face side and of a length adapted to register with the central port and with each of the other two ports alternately; the valve-retaining means adapted to engage the body and hold the valve in contacting engagement with the seat.

2. A valve unit of the class described comprising, a vertically-positioned cylindrical body provided with a cylindrical recess in its upper side, the recessed end of the body formed to receive valve-retaining means and the bottom of the recess constituting a valve seat, a central port and an inlet port near thereto leading from the seat and through the body; and an exhaust port spaced from the inlet port and from the central port also leading from the seat and through the body to the atmosphere; a rotatable disk valve of diameter and depth adapted to fit within the recess and having a face thereof contacting the seat, the said face provided with a radial channel of a size adapted to register with the central port and each of the other two ports alternately, the valve having a central stem on its blank side; means surrounding the stem and adapted to engage the recessed end of the body to retain the valve in the body and hold it in contact with the seat; and operative means on the stem to turn the valve.

3. A structure as set forth in claim 2, and in which, the recessed end of the body is threaded, and the valve-retaining means consisting of a threaded nut surrounding the stem whereby the said means is adjustably secured in the recess, as and for the purpose set forth.

In testimony whereof, I affix my signature.

SEWARD B. MERRY.