

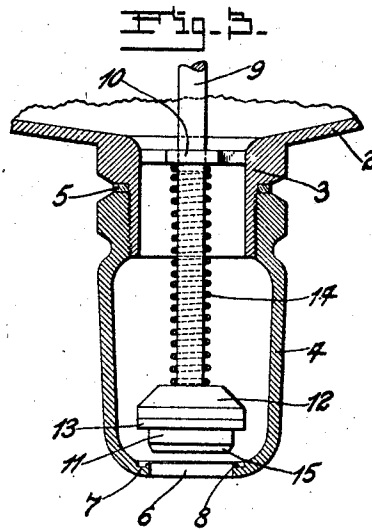
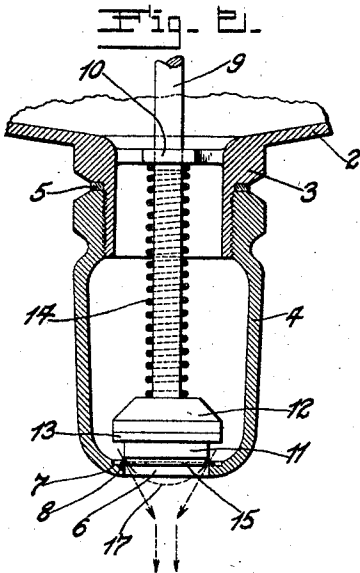
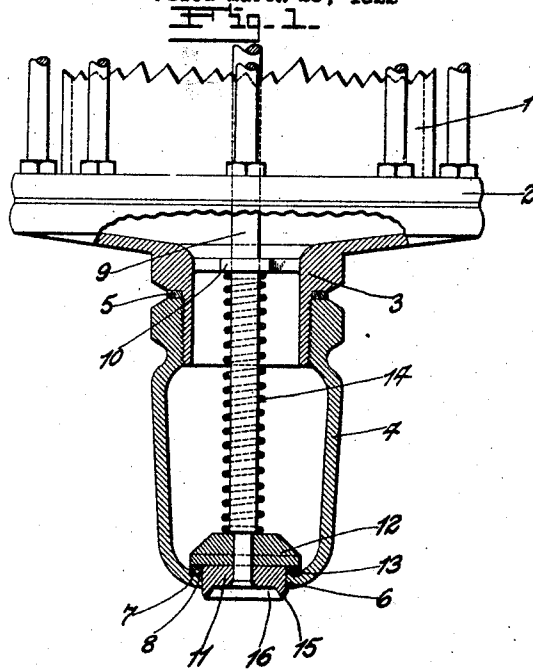
Oct. 13, 1925.

1,556,848

C. M. KRUGER

VALVE

Filed March 23, 1922



Inventor.
Charles M. Kruger,
by *Rippen Klingland,*
His Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES M. KRUGER, OF ST. LOUIS, MISSOURI, ASSIGNOR TO PARBEE MANUFACTURING COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

VALVE.

Application filed March 23, 1922. Serial No. 546,113.

To all whom it may concern:

Be it known that I, CHARLES M. KRUGER, a citizen of the United States, residing at St. Louis, Missouri, have invented a new and useful Valve, of which the following is a specification.

This invention relates to valves, and has special reference to a valve for controlling the outlet passage of a receptacle or container for heavy fluids such as oil.

An object of the invention is to provide a valve for controlling the outlet passage of a receptacle or container embodying a construction for securely closing the discharge opening and for preventing adhesion of the fluid to the structure of the valve or to the outside of the passage, the result being that dripping of the fluid from the closed valve is prevented.

Another object of the invention is to provide an improved valve for the outlet passage of an oil receptacle or container, in which the passage is arranged to discharge the oil downwardly and in which the valve is movable within the passage to open the outlet opening and in which the valve embodies a construction and is characterized by a mode of operation that will prevent spreading of the stream flowing from the passage and will prevent oil from adhering to the valve or to the passage, with the result that dripping of the oil is avoided.

Other objects will appear from the following description, reference being made to the drawing in which,

Fig. 1 is a sectional view showing the valve closed.

Fig. 2 is a view showing the valve partially open and showing the formation and direction of flow of the oil stream passing through the outlet opening.

Fig. 3 is a view showing the valve open far enough to permit a full flow of oil through the passage.

As shown, the invention is in connection with an oil container or receptacle including a transparent cylinder 1 and a bottom 2 for the cylinder, having an opening there-through surrounded by a downwardly extending tubular flange 3. The lower portion of the flange 3 is exteriorly threaded and a valve chamber 4 is screwed on the threaded portion of said flange. A washer 5 of elastic packing material is compressed between the upper end of the valve chamber

and a shoulder on the flange 3 forming a seal to prevent leakage of the fluid through the joint.

The lower end of the valve chamber has an outlet opening 6. A groove 7 is formed in the inner side of the valve chamber around the outlet opening, leaving a flange 8 between the groove and the opening.

The valve stem 9 extends upwardly through the valve chamber and through the container or receptacle 1. The valve stem extends through a hole in a web 10 extending across the opening through the bottom wall of the container.

The valve is attached to the lower end of the valve stem 9 and comprises a member 11 arranged to fit snugly within the opening 6; a member 12 above the member 11 and of greater diameter so that it will not pass through the opening 6; and an elastic washer or gasket 13 encircling the member 11 below the edge portion of the member 12. The members 11 and 12 are attached to the lower end of the valve stem 9 which is operable to open and to close the valve. A spring 14 of the expansion type encircles the valve stem 9 between the member 12 and the web 10 and the energy thereof is utilized to close the valve and to hold the valve in closed position until the stem 9 is operated to raise the valve from its seat. The elastic washer or gasket 13 is arranged to rest upon the valve seat around the opening 6. As shown, the valve seat upon which the gasket or washer rests comprises the groove 7 and the flange 8. The power of the spring 14 is sufficient to press the gasket or washer 13 into the groove 7 and to cause the flange 8 to compress the inner edge portion of the gasket or washer, thereby forming a close and impervious joint preventing leakage of any of the fluid past the valve.

The valve also embodies a construction for controlling the fluid in order to converge the fluid into a small stream and to prevent adhesion of the fluid to the valve when the valve is closed, thus preventing dripping. In the construction shown, an annular rib 15 is formed on the lower side of the valve member 11, the walls of the rib being beveled to form an attenuated or wedge-shaped lower edge. This leaves a basin or recess 16 in the lower side of the valve member 11 which basin or recess is surrounded by the rib 15. In the closed position of the valve

the rib 15 extends some distance below the adjacent portion of the valve chamber.

When the valve is opened there is a flow of oil all around the valve through the outlet 6. Since the portion 12 of the valve is of greater diameter than the outlet opening and since the lower wall of the valve chamber 4 converges inwardly, the flowing oil will be given a centripetal movement causing it to converge into a small stream and preventing splashing or scattering. Due to the presence of the rib 15 the flowing oil will not enter the chamber 16 in the underside of the valve member 11 but an air bubble having the general outline of the dotted line 17 (Fig. 2) will be formed and maintained below the valve while the oil is flowing. When the valve is closed the valve member 11 enters the outlet opening and stops the flow of oil, and during the closing movement of the valve the rib 15 still prevents oil from entering the chamber 16 or adhering to the lower surface of the valve. Due to the fact that there is not sufficient area along the attenuated edge of the rib 15 to provide for the necessary capillary attraction, nearly all of the oil will be discharged and not enough oil will adhere to form a drop. The valve is thus maintained in a clean condition and dripping of the oil is avoided.

From the foregoing it will be seen that my invention accomplishes all of its intended objects and purposes. It is possible that the

construction and design of the valve may be varied to obtain the same beneficial results without departure from the nature and principle of the invention. I do not restrict myself unessentially, or to specific features, except as pointed out in the appended claims.

What I claim and desire to secure by Letters Patent is:—

1. The combination with a discharge outlet passage having an outlet opening, of a valve having a portion of greater length than said opening and being movable to project said portion through and withdraw said portion from the opening, and a rib on the outer side of said portion extending well beyond the wall of the opening when the valve is closed and the lower edge of said rib being beveled inwardly to form an attenuated lower edge.

2. The combination with a discharge outlet passage having an outlet opening, of a valve having a portion of greater length than said opening and being movable to project said portion through and withdraw said portion from the opening, and a rib on the outer side of said portion extending well beyond the wall of the opening when the valve is closed, the lower edge of said rib being beveled inwardly to form an attenuated lower edge and said portion of the valve having a chamber in its lower side surrounded by said rib.

CHARLES M. KRUGER.