

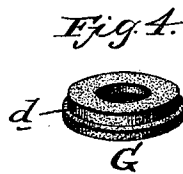
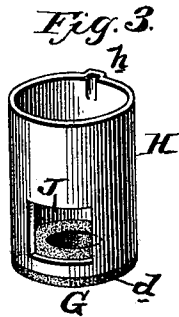
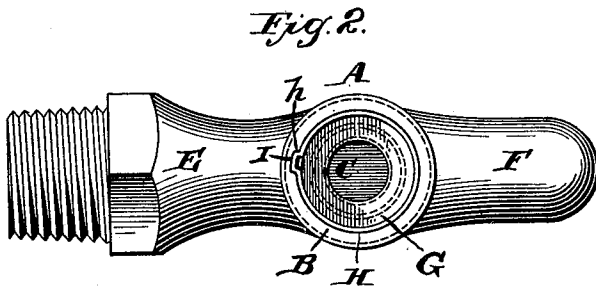
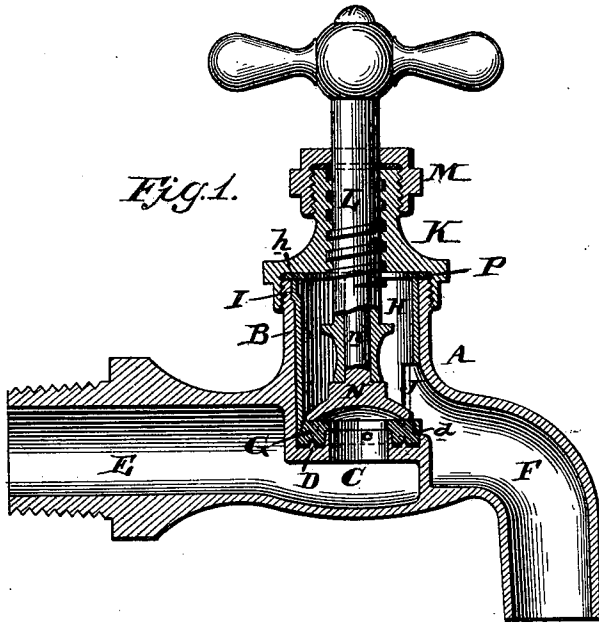
No. 627,473.

Patented June 27, 1899.

J. F. BOYER.
SPIGOT OR VALVE.

(Application filed Apr. 22, 1898.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN FRANK BOYER, OF NORRISTOWN, PENNSYLVANIA.

SPIGOT OR VALVE.

SPECIFICATION forming part of Letters Patent No. 627,473, dated June 27, 1899.

Application filed April 22, 1898. Serial No. 678,453. (No model.)

To all whom it may concern:

Be it known that I, JOHN FRANK BOYER, of Norristown, Montgomery county, Pennsylvania, have invented an Improvement in Spigots or Valves, of which the following is a specification.

My invention has reference to spigots or valves; and it consists of certain improvements, which are fully set forth in the following specification and are shown in the accompanying drawings, which form a part thereof.

The object of my invention is to provide a construction of spigot which shall be easily and cheaply repaired, cheap to construct, durable in operation, and adapted to operate without liability of trouble from water-ram effects.

In carrying out my invention I form the body of the valve with a perforated diaphragm, the chamber on the under side of which is in communication with the inlet and the chamber upon the upper side of which communicates with the discharge nozzle or mouth. The valve-seat proper is formed of an annular washer of vulcanite fiber or other suitable material adapted to fit upon the perforated diaphragm and having secured to its outer edge a tubular casing extending upward to the top or slightly above the upper edge of the body. The casing is held against rotation and is perforated for permitting the flow of water to the nozzle. The cap screws down upon the body and holds the casing down upon the valve-seat to make a tight joint. The valve-rod passes through a suitable stuffing-box and carries at its lower or inner end a cup-shaped valve free to have longitudinal and rotary motion relatively to the valve rod or spindle. The valve-rod is screw-threaded and works in the cap. It may be rotated after the valve has been received upon its seat. In repairing the valve when the seat has become worn it is only necessary to take off the cap and pull out the casing and attached valve-seat.

My invention will be better understood by reference to the accompanying drawings, in which—

Figure 1 is a sectional elevation of a spigot or valve embodying my invention. Fig. 2 is a plan view of same with the cap and valve removed. Fig. 3 is a perspective view show-

ing the casing and valve-seat attached, and Fig. 4 is a perspective view of the valve-seat removed from the casing.

A is the body of the valve and has a tubular part B, terminating at the bottom in an annular or perforated diaphragm C, preferably having the inner upright flange *c* and the annular rib D. The body below this diaphragm communicates with the inlet E, and above it communicates with the outlet or nozzle F. The valve-seat G is formed of an annular washer of vulcanite fiber and surrounds the flange *c* while resting upon the diaphragm. The upper inner edge of the seat may project over the flange *c* to give greater upper surface for the seating of the valve.

H is a valve-casing and is made of thin tubing and at the bottom is fitted to the outer part or periphery of the valve-seat and may be clamped, screwed, or otherwise attached to the valve-seat. I have found in practice that the friction created by simply forcing the valve-seat into the casing answers all requirements. The lower edge of the casing rests upon a shoulder *d* of the valve-seat, so that when forced down it presses the valve-seat down upon the diaphragm and holds it against rotation. The upper edge of the casing is stamped out to form a feather or key *h*, which is received in a groove I in the upper inner edge of the body. This holds the casing against turning and also insures the aperture J therein above the valve-seat being in line with the outlet or discharge port.

K is the cap and screws down over the upper edge of the body and presses down upon the casing II to hold the valve-seat in position.

L is the valve rod or spindle and is screw-threaded to work through the cap. Its upper part is made liquid-tight by passing through a stuffing-box M. The lower end of the valve-rod is formed with a longitudinal hole, into which the stem *n* of a valve N is received. The valve N is inverted-cup shaped and adapted to seat itself upon the flat upper surface of the valve-seat. The valve may revolve freely upon the valve-rod, or vice versa, so that when the valve reaches the seat it may cease to revolve, while the rod continues to rotate in its adjustment. The casing H forces the annular seat G down upon the rib

D of the diaphragm and secures a tight joint. This is increased when the valve N is forced down upon the upper surface of the seat. The valve is preferably of a diameter almost
 5 equal to the internal diameter of the casing, so that the upward throw of the water in rising through the central aperture of the seat always tends to raise the valve and keep it against the lower end of the spindle or
 10 stem.

If desired, a packing may be interposed between the cap K and the top of the body and casing, as indicated at P.

It will be evident that if the valve-seat is
 15 worn and needs replacing it is only necessary to lift out the casing H and remove the seat G, and after placing a new seat firmly upon the end of the casing the latter is again put into position.

20 While I prefer the construction herein set out, the minor details thereof may be modified without departing from the spirit of the invention.

What I claim as new, and desire to secure
 25 by Letters Patent, is as follows:

1. In a valve a body having a flat annular diaphragm, and a valve movable to and from said annular diaphragm and having an annular rim, in combination with a flat annular
 30 valve-seat on the discharge side of the diaphragm formed of fiber or other non-metallic substance and having its outer edge or rim cut down as at *d* to constitute a very shallow offset of considerable depth and terminating
 35 at the bottom in an abrupt shoulder, a thin tubular casing H having a thickness substantially equal to the thickness of the offset or

shoulder of the valve-seat and having its lower end fitted down tightly about the valve-seat and resting upon the shoulder and also provided with an aperture above the valve-seat,
 40 and a cap to hold the tubular case within the valve-body, the construction being such that the case clamps the valve-seat down upon the annular diaphragm and also holds it so that
 45 it may be readily removed when worn out by simply withdrawing the case.

2. In a spigot or valve, a body part having a perforated diaphragm formed with an upright flange *c* and the annular rib D and inlet and discharge ports respectively from below and above the said diaphragm, in combination with a casing fitting into the upper tubular portion of the body and formed with a transverse opening in alignment with the
 55 discharge-port of the body, a removable valve-seat of non-metallic substance such as vulcanite fiber held in place by the lower end of the casing so as to be pressed down upon the rib D and adapted to be held down to its seat
 60 by the casing, a removable cap adapted to fasten over the upper part of the body and carrying a vertically-adjustable valve rod or stem rotatably secured therein, and a valve
 65 carried upon the lower end of the stem and formed with an annular edge pressing upon the seat above the rib D of the diaphragm and adapted to the valve-seat within the casing.

In testimony of which invention I hereunto set my hand.

JOHN FRANK BOYER.

Witnesses:

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