

(No Model.)

J. O. WADDELL.
FAUCET.

No. 270,353.

Patented Jan. 9, 1883.

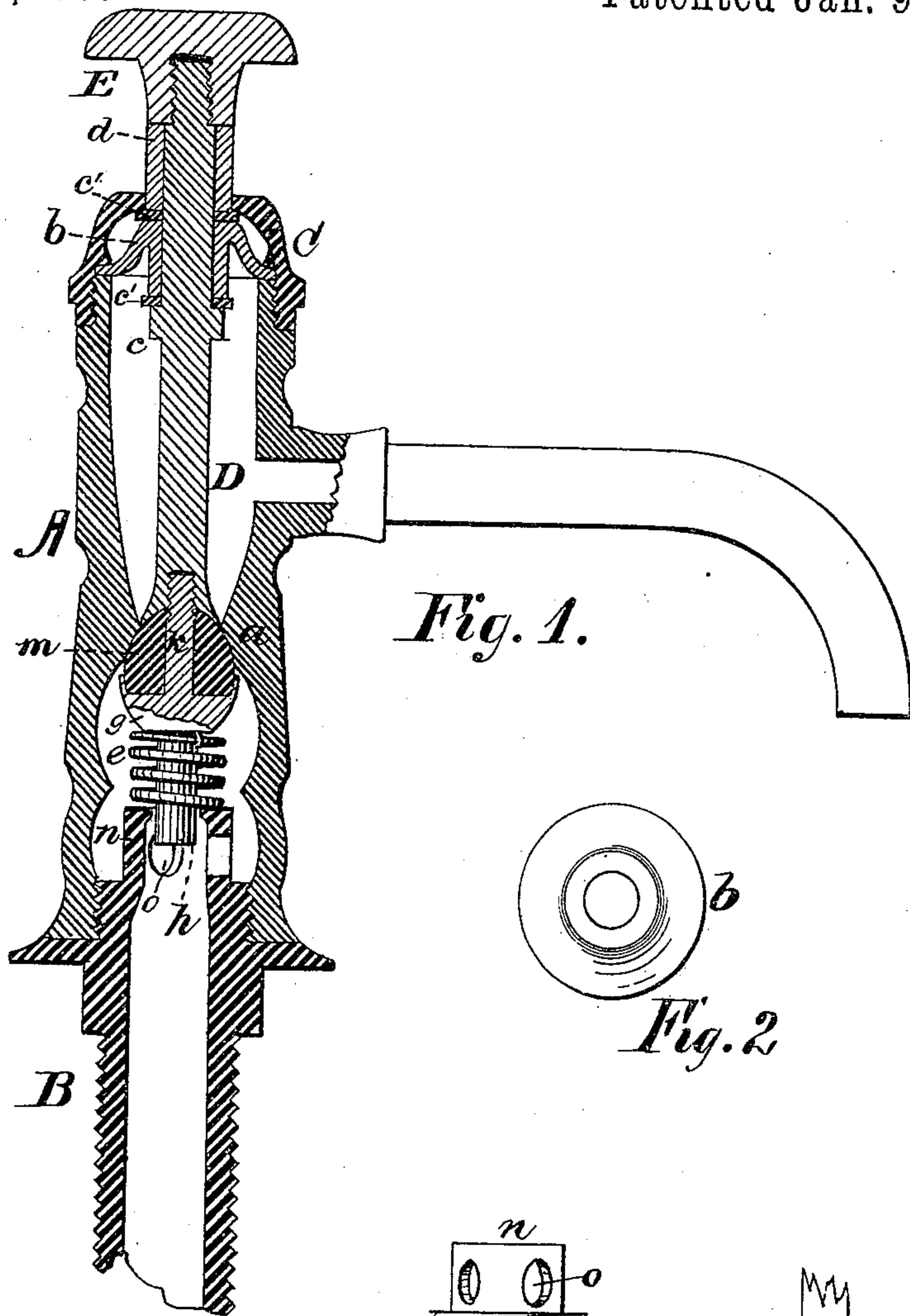


Fig. 1.

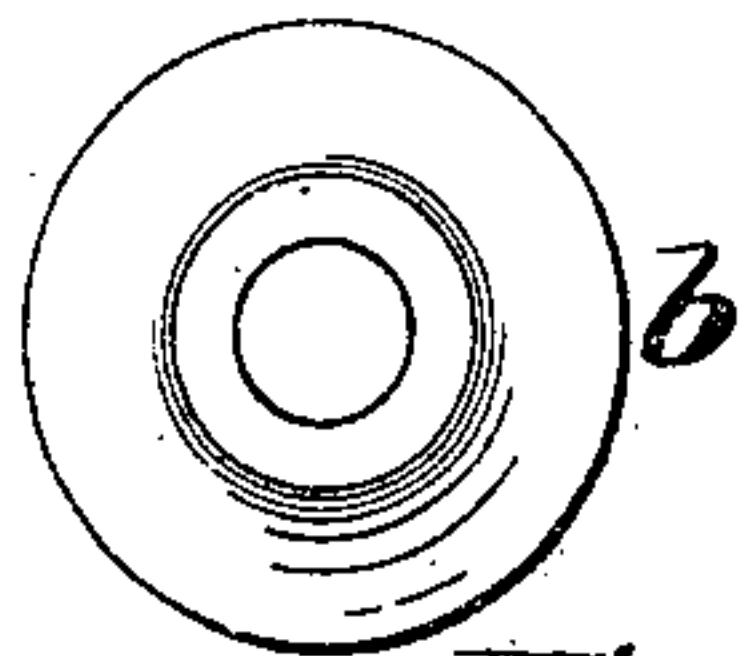


Fig. 2.

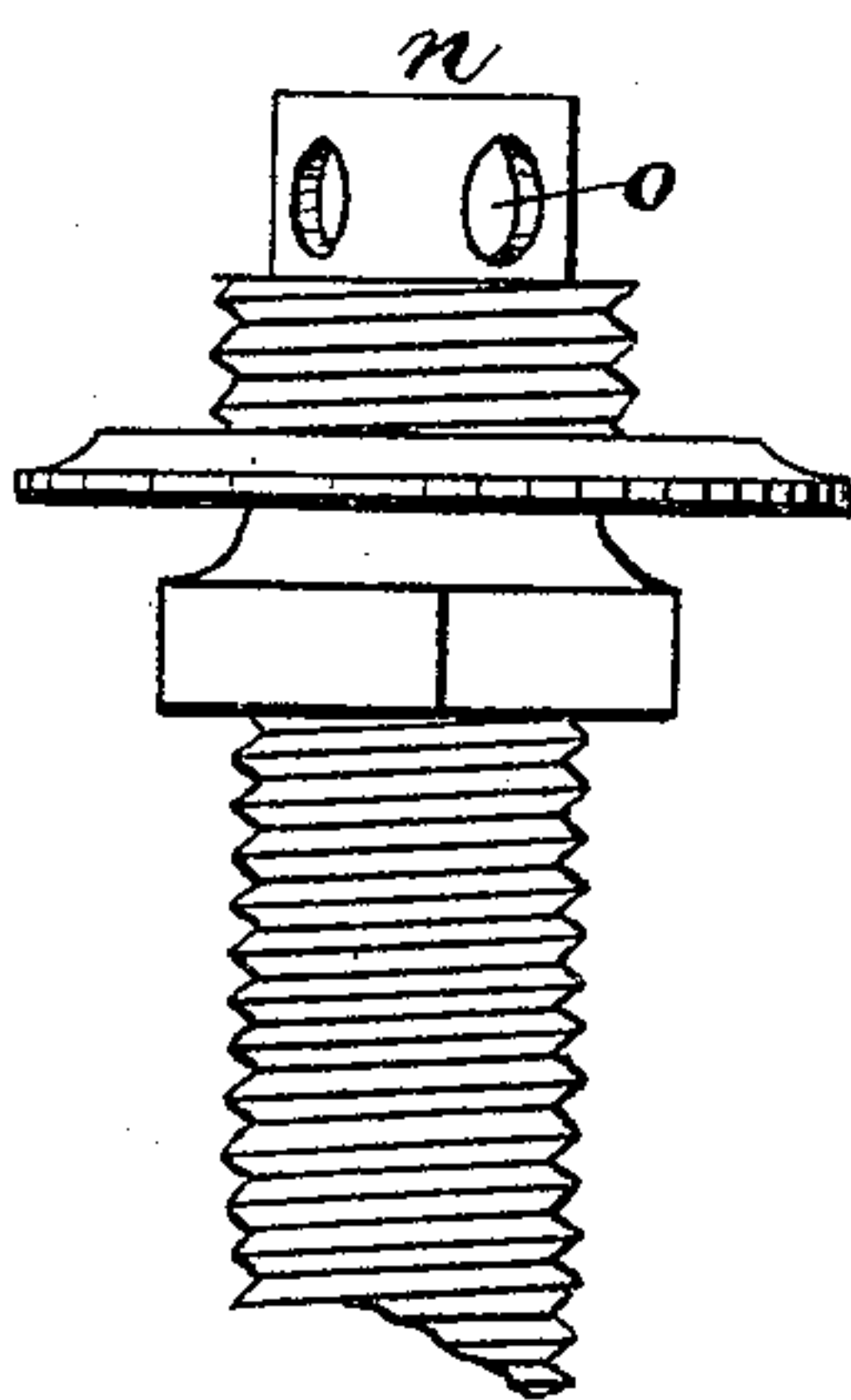


Fig. 3.

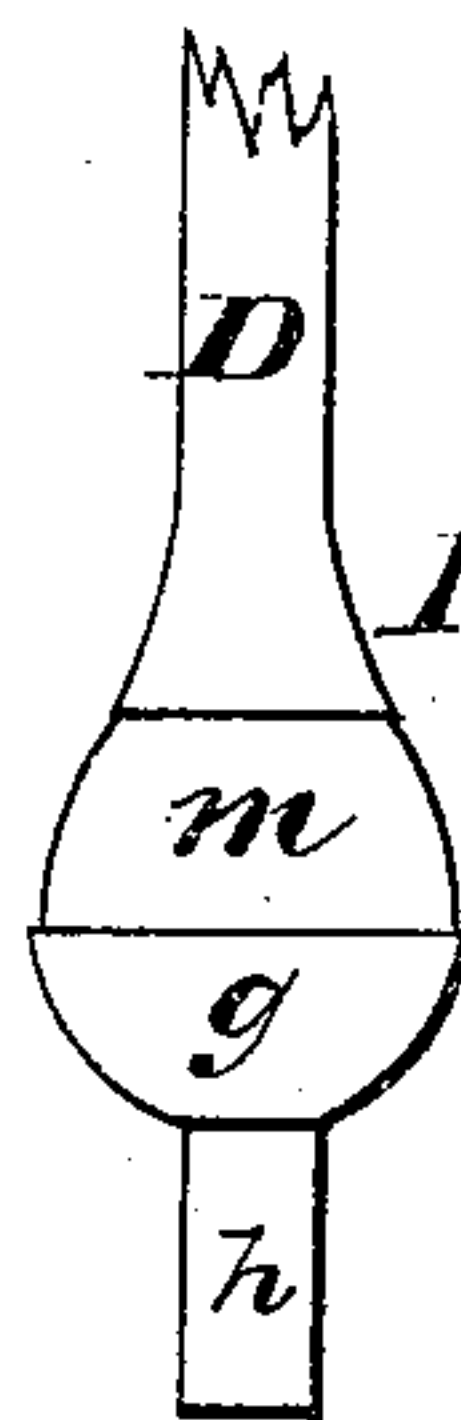


Fig. 4.

Attest:-

Charles H. Peck
Chas. J. Winters

Inventor:-

James O. Waddell,
by
O. Drake, Atty.

UNITED STATES PATENT OFFICE.

JAMES O. WADDELL, OF ELIZABETH, NEW JERSEY.

FAUCET.

SPECIFICATION forming part of Letters Patent No. 270,353, dated January 9, 1883.

Application filed March 1, 1882. (No model.)

To all whom it may concern:

Be it known that I, JAMES O. WADDELL, a resident of Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Faucets; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to reduce the cost of constructing self-closing faucets, to render them more efficient, and to increase the facility of operation.

It consists in the arrangement and combination of parts, substantially as and for the purposes hereinafter set forth.

In the drawings, Figure 1 is a vertical section of my invention, showing the interior arrangement thereof; Fig. 2, a plan of a diaphragm; Fig. 3, an elevation of a shank having an extension-piece thereon, provided with water-ways; and Fig. 4, a detail view of the valve, all of said parts being hereinafter fully described.

In carrying out my invention, I form a body, A, the interior of which is shaped to form a valve-seat, substantially as shown in Fig. 1, said body being adapted to be secured to the shank B. The upper and lower extremities of said body is open, as shown, to allow the ready insertion of the several internal parts and to give ready access to the valve-seat. The upper extremity is threaded and receives a cap, C, with a central aperture therein somewhat larger in diameter than the spindle D, and through which said spindle passes. Said spindle D is secured to the valve at one extremity and to a finger-piece, E, at the other, said finger-piece being either a cap, as shown, a lever, or other suitable device for operating the spindle.

Within the body of the faucet is formed a diaphragm, b, which is formed of non-porous elastic material—such as rubber—which diaphragm has or may have a central opening of a normal diameter smaller than the spindle, so that when said spindle passes through said opening, the diaphragm will hug the same suf-

ficiently to prevent the escape of water. The outer edge of the diaphragm passes between the cap and the upper edge of the body, so that when the said cap is screwed or otherwise brought down upon said body, egress of the water will be prevented at that point. The diaphragm where it engages with the spindle is or may be prevented from sliding thereon by shoulders c or washers c', and a collar, d, may be loosely secured between the top of the diaphragm and the hand-piece.

I am aware that elastic diaphragms have been employed heretofore for a somewhat similar purpose as the one herein described; but in each case of which I am aware the said diaphragm has been arranged at right angles with the valve-stem, so that when said valve-stem has been depressed the direct tendency has been to stretch the diaphragm and withdraw it from its seats in the stem and faucet-body. In my device the spring action is different. By depressing the said stem the normal position of the diaphragm, which is shown in the drawings, is changed, the downwardly-projecting portion then projecting upwardly, as will be understood. The process of changing the diaphragm from its normal to its abnormal position does not, as in the other cases referred to, tend (materially) to withdraw the said diaphragm from close contact with the contiguous parts. It will thus be observed that the effectiveness of the diaphragm does not depend alone on its elastic qualities, but to a great extent on its peculiar shape.

The diaphragm is preferably formed, as shown in Figs. 1 and 2, with a tubular portion, which hugs the stem with sufficient force to prevent the escape of water, and a flaring portion projecting outwardly and downwardly therefrom, which passes between the cap and extremity of the body, as before stated. This peculiar construction of the diaphragm allows a free depression of the stem and yet furnishes sufficient force to the latter to hold the valve working with the pressure of the water into engagement with its seat. To give greater security to the valve, a spring, e, is arranged beneath the valve, which coacts with the diaphragm and water-pressure. Under the circumstances it is evident that said spring may be of very light and cheap material.

The diaphragm formed and arranged as described produces an efficient upper joint and does away with the inefficient packing heretofore generally employed.

5 In constructing the valve, I form or may form from a valve-cup, *g*, having a guide-rod, *h*, and valve-shank *k* formed therein or connected therewith. Said cup *g* is adapted to receive the valve-body *m*, which is preferably formed
10 of rubber or a composition of rubber with other materials, the outer rim of the cup protecting the edge of the body, as shown. The valve-shank *k* passes through the valve body and engages with the spindle *D*, which has a cup-shaped or recessed extremity, adapted to receive the upper portion of the valve-body and
15 protect the same.

The valve guide-rod *h* receives the spring *e*, and passes downward through and has its
20 bearings in an opening in the extremity of the extension-piece *n* of the shank. Said extension-piece projects into the lower chamber of the faucet-body, and has lateral water-ways *o*, which allow the entrance of the water from
25 the shank. The lower portion of the faucet-body is threaded, and engages with the threaded shank below the extension-piece, as shown.

Having thus described my invention, what I claim, and wish to secure by Letters Patent,
30 is—

1. In a faucet, the elastic diaphragm *b*, having a tubular portion adapted to engage with the rod, and a flaring portion projecting out-

wardly and downwardly from said tubular portion, substantially as and for the purposes set forth. 35

2. In combination, in a faucet, a spindle having a recessed extremity adapted to receive and receiving the valve-body, a valve-cup, and said valve-body, all arranged as herein set forth 40 and shown.

3. In combination, in a faucet, a valve-spindle projecting above the cap *C*, and having a hand-piece secured thereto adapted to depress said spindle, an elastic and non-porous dia- 45 phragm, *b*, a valve, *m*, a valve-seat, formed integral with the faucet-body *A*, and a spring, tending to hold the valve into engagement with said seat.

4. In combination, in a faucet, the spindle *D*, 50 having the shoulder *c*, the collar *d*, and hand-piece *E*, all arranged and operating substantially as herein set forth.

5. In a faucet, the extension-piece *n*, having the lateral water-ways *o*, and guide-rod aper- 55 ture in the extremity thereof, in combination with the guide-rod and spring, substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 16th day of 60 February, 1882.

JAMES O. WADDELL.

Witnesses:

CHARLES H. PELL,
CHAS. T. WINTERS.