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Patented Apr. 10, 1900.

F. B. ECCLESTON, W. F. MILLER & J. A. NELSON.

PUMP VALVE.

(Application filed Apr. 1, 1899.)

(No Model.)

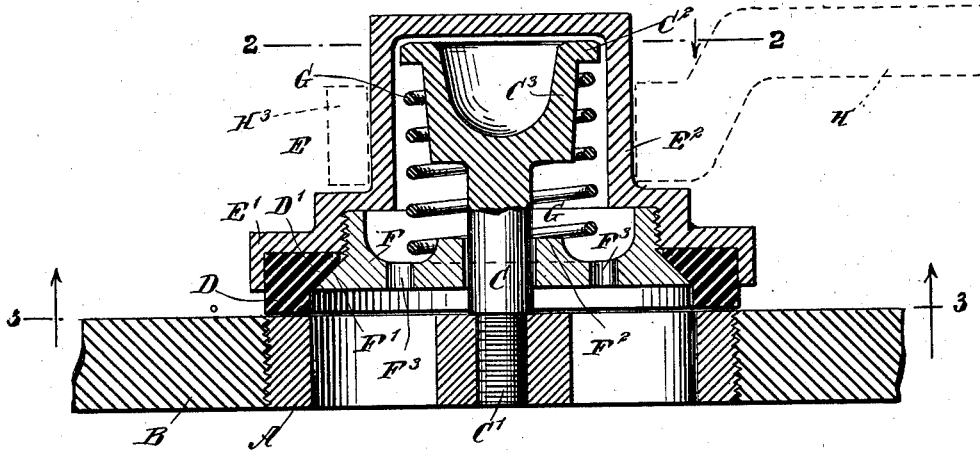


Fig. 1

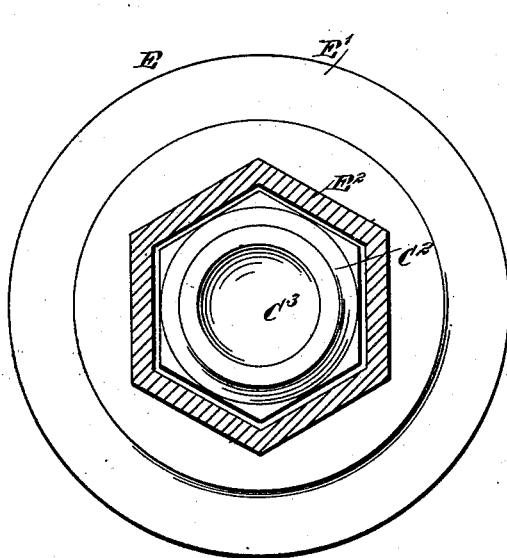


Fig. 2

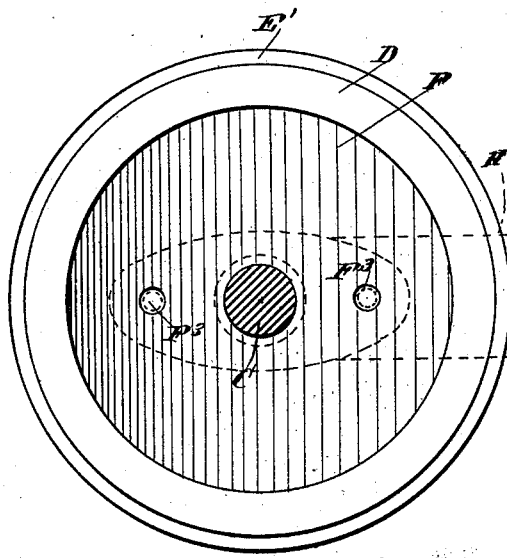


Fig. 3



Fig. 4.

WITNESSES:

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# UNITED STATES PATENT OFFICE.

FRANK B. ECCLESTON, WILLIAM F. MILLER, AND JOHN A. NELSON, OF  
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## PUMP-VALVE.

SPECIFICATION forming part of Letters Patent No. 647,383, dated April 10, 1900.

Application filed April 1, 1899. Serial No. 711,404. (No model.)

*To all whom it may concern:*

Be it known that we, FRANK B. ECCLESTON, WILLIAM F. MILLER, and JOHN A. NELSON, of Nebraska City, in the county of Otoe and State of Nebraska, have invented a new and Improved Pump-Valve, of which the following is a full, clear, and exact description.

The objects of the invention are to provide a new and improved pump-valve which is simple and durable in construction, very effective in operation, and arranged to protect the valve-ring from serious injury from the corrosive action of the liquid pumped, to insure a proper and even seating of the valve, and to allow of conveniently placing it in position on the machine on which it is to be used.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter, and then pointed out in the claim.

A practical embodiment of our invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a sectional side elevation of the improvement. Fig. 2 is a sectional plan view of the same on the line 2 2 in Fig. 1. Fig. 3 is an inverted sectional plan view of the same on the line 3 3 in Fig. 1, and Fig. 4 is a sectional side elevation of the combination wrench and spanner used for placing the parts of the valve in position.

The valve-seat A for the valve is screwed or otherwise secured in the part B of the machine on which the valve is to be used, and in the center of said seat A screws the threaded lower end C' of a valve-stem C, on which the valve proper is guided to move the valve-ring D upon and from the seat A. The valve-ring D is preferably made of hard rubber and is fitted into the annularly-recessed lower end E' of a housing E, and said valve-ring is formed at its inside with a beveled annular flange D', engaged by a correspondingly-shaped flange F' on a plate or disk F, screwing into the housing E to securely hold the valve-ring in position in the housing.

On the top of the plate F presses the lower end of a spring G, coiled around the valve-

stem C and resting with its upper end against a flange C<sup>2</sup> on the head C<sup>3</sup> of the valve-stem, said flange C<sup>2</sup> being polygonal in form and fitting into a correspondingly-shaped cap E<sup>2</sup> of the housing E. The upper end of the spring G is coiled around the head C<sup>3</sup>, and the lower end of the spring is coiled around an annular offset F<sup>2</sup>, formed on the top of the plate F, so that the spring is held in proper position both at the top and bottom to insure a uniform opening and closing of the spring upon opening and closing the valve. The plate F is formed with a central opening for the passage of the valve-stem C, which latter thus forms a guide for the plate, and its head C<sup>3</sup> forms a guide for the housing E and prevents the latter from turning on the head of the stem owing to the polygonal shape of the flange C<sup>2</sup> and the cap E<sup>2</sup>. The plate F is further provided with apertures F<sup>3</sup> for receiving the lugs H' of a combination spanner and wrench (see Fig. 4 and dotted lines in Figs. 1 and 3) to permit of conveniently screwing the plate in position on the housing E to securely hold the valve-ring D in place. The tool mentioned is provided with an aperture H<sup>2</sup> for passing over the valve-stem C when screwing up or unscrewing the plate. (See dotted lines in Fig. 3.) The tool is also provided with a polygonal head H<sup>3</sup> (shown in dotted lines in Fig. 1) to fit the cap E<sup>2</sup> and turn the housing and also the stem C to screw the lower threaded end C' thereof into or out of the center of the valve-seat A.

From the foregoing it is evident that the plate F for holding the valve-ring in position in the housing can be made of a different material from the ring and according to the liquid to the pumped—that is, the plate is preferably selected of a material not liable to injury from the corrosive action of the fluid pumped by the machine on which the valve is applied. Thus such liquid is not liable to injure the ring D, as only an extremely small portion of the same is exposed to the liquid, as will be readily understood by reference to Fig. 1. Furthermore, the housing E, with the valve-ring D and plate F, is prevented from turning on the stem owing to the flange C<sup>2</sup>, forming the polygonal guide for the polygonal

cap E<sup>2</sup>, and consequently the face of the valve-ring D always strikes the seat A at the same place.

Having thus fully described our invention,  
5 we claim as new and desire to secure by Letters Patent—

10 In a valve, the combination of a valve-seat, a stem secured thereto and having a head, a plate mounted above the seat and moving on the stem and having a beveled annular flange, a spring bearing between the head of the stem and the plate to throw the plate toward the seat, a housing having an enlarged annularly-

recessed lower end, the housing inclosing the stem and spring and the lower portion of the housing inclosing and being secured to the plate, and a valve-ring held between beveled flange of the plate and the annularly-recessed lower end of the housing. 15

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