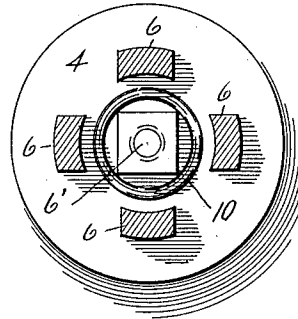
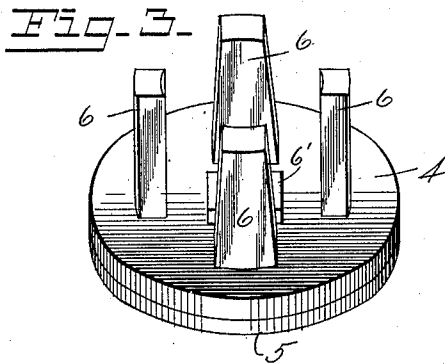
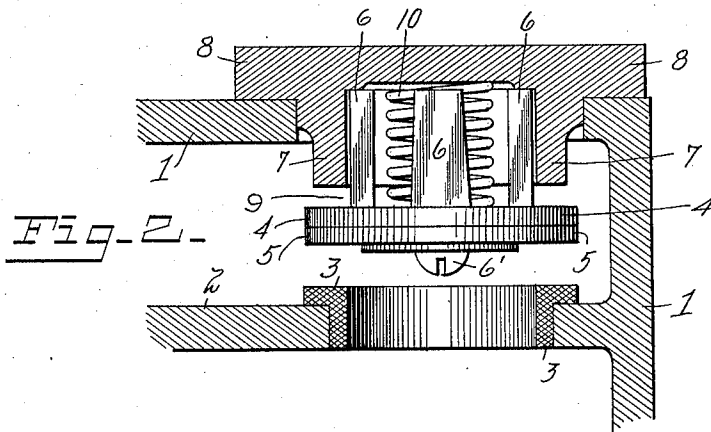
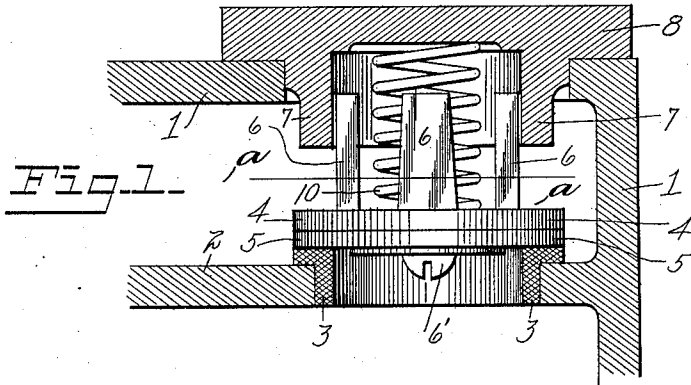


C. O. LUCAS.  
PUMP VALVE.  
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1,003,479.

Patented Sept. 19, 1911.



Witnesses  
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# UNITED STATES PATENT OFFICE.

CHARLES O. LUCAS, OF DAYTON, OHIO.

## PUMP-VALVE.

1,003,479.

Specification of Letters Patent. Patented Sept. 19, 1911.

Application filed August 24, 1910. Serial No. 578,785.

*To all whom it may concern:*

Be it known that I, CHARLES O. LUCAS, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Pump-Valves; and I do 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 the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in pump valves.

The object of the invention is to provide a pump valve so constructed that liquid may freely pass through the guides and housing when flowing through the valve and whereby the valve mechanism so subjected to the flowing liquid is maintained in a cleansed condition.

A further object of the invention is to provide a valve with individual guide members so that an unobstructed outlet is obtained, and a valve which is unrestricted in its movement to the limit of its opening movement so that it may rotate to find a new seat or a new point of engagement between the valve and its seat.

In the accompanying drawings which illustrate my improved pump valve, Figure 1 is a vertical sectional view, Fig. 2 is a view similar to Fig. 1 with the valve shown raised from its seat. Fig. 3 is a perspective view of the valve disk. Fig. 4 is a cross section on the line *a-a* of Fig. 1.

In the description and drawings similar reference characters indicate corresponding parts.

1 designates the valve housing having a deck 2. Within said deck is a gridless valve seat 3 which may or may not be an integral part of said deck. Owing to the said valve seat being of a gridless character, an extra large passage for the fluid passing therethrough is provided. Coöperating with the seat 3 is a disk 4 of the valve, said disk being provided with a facing of rubber 5 or any other yielding material. The back pressure of the fluid

against the valve is resisted by the disk 4 and not by the rubber facing 5 which takes up any uneven wear of the valve seat. The valve can therefore be cheaply constructed and may be used on extremely high pressures. The rubber facing 5 is attached to the disk 4 by a bolt 6' and is therefore easily removable.

Projecting upwardly from the valve disk 4 is a plurality of parallel guides 6 which form a cage. These guides 6 slide in an annular flange 7 which projects from the valve cap 8. The ends of the guide 6 abut with the valve cap 8 when the valve disk 4 is in its upper position away from its seat. The length of the said guides 6 and the depth of the flange 7 are such, that, when the valve disk 4 is in its upper position it will not engage the flange 7, but will provide an opening 9 through which the liquid may pass and be instrumental in washing out all parts of the valve mechanism. A spring 10 is provided between the valve disk 4 and the cap 8 to normally hold said disk on its seat.

Having described my invention, I claim:

In a pump valve, the combination with a housing provided with upper and lower alined openings, of a valve disk 4 coöperating with said lower opening, an elastic disk 5 secured to said disk 4, a series of guide members 6 extending from the valve disk 4 and lying inwardly from the periphery thereof, a compression spring 10 extending from said valve disk 4, a cap 8 having a flange 7 extending through the upper opening of said housing, said cap providing an abutment for the valve guide members 6, and a flange 7 coöperating with said members 6 in guiding the valve disk 4, said flange 7 being of a length less than the length of the guide members 6 whereby an opening is provided above the valve disk through which liquid may flow when the valve is open, substantially as specified.

In testimony whereof I affix my signature, in presence of two witnesses.

CHARLES O. LUCAS.

Witnesses:

MATTHEW SIEBLER,  
R. J. McCARTY.