No. 794,209. PATENTED JULY 11, 1905.

B. C. WOODFORD.

PUMP VALVE.

APPLICATION FILED JULY 6, 1904.

Fig. 1.

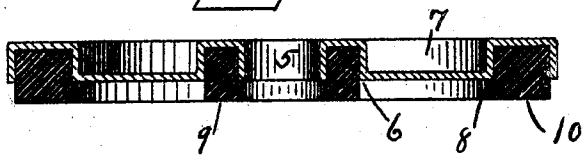


Fig. 2.

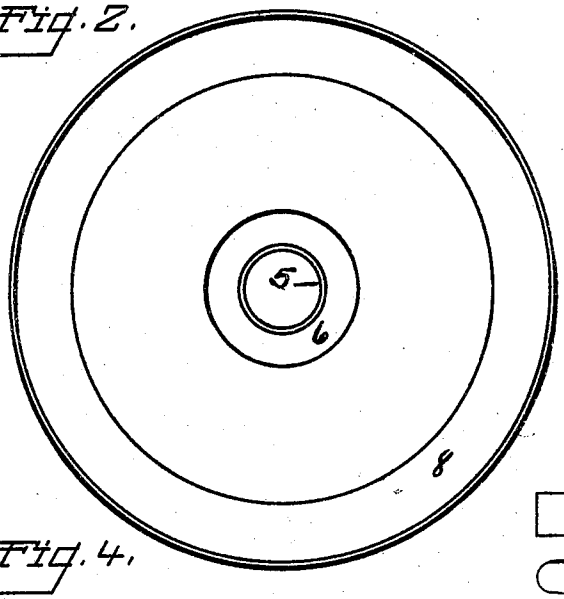


Fig. 3.

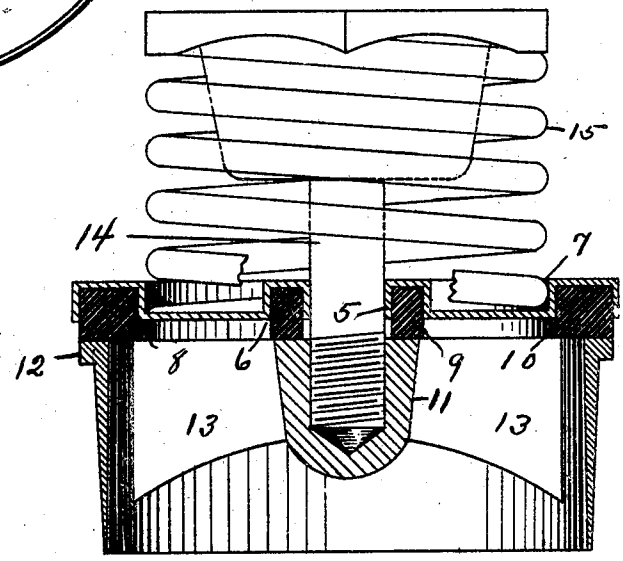
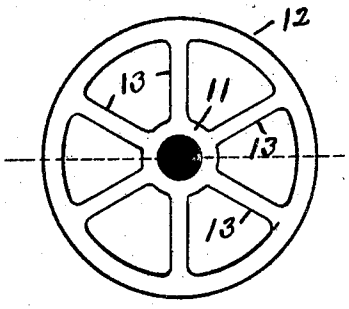


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

BRONSON C. WOODFORD, OF HOLYOKE, MASSACHUSETTS.

PUMP-VALVE.

SPECIFICATION forming part of Letters Patent No. 794,209, dated July 11, 1905.

Application filed July 6, 1904. Serial No. 215,474.

To all whom it may concern:

Be it known that I, BRONSON C. WOODFORD, a citizen of the United States, residing at Holyoke, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Pump-Valves, of which the following is a specification.

My invention relates to improvements in pump-valves; and the objects of my improvement are simplicity and economy in construction, with efficiency in use.

In the accompanying drawings, Figure 1 is a central vertical section of my valve with suitable packing. Fig. 2 is a reverse plan view of the said valve without packing. Fig. 3 is a central vertical section of the said valve, together with the valve-seat and a side elevation of the spring. Fig. 4 is a detached plan view of the valve-seat on a reduced scale.

I form the valve of a single piece of sheet metal, struck or swaged into the form shown, with a tubular center 5, immediately surrounding which there is an annular packing-groove 6 on its under or face side and near the outer edge a separate annular packing-groove 8 on the same side. The metal extends along the under side from one annular groove to the other, whereby a third annular groove 7 is formed in the top face of the valve intermediate the packing-ring groove, which groove 7 can be utilized for receiving the lower end of the spring 15. Each of the annular grooves are filled with packing-rings 9 10, of rubber, felt, or other suitable material, the grooves being deep enough to hold the said packing-rings in place, if they are properly fitted and crowded or forced into place. The packing-rings should be a little deeper than the grooves, so as to project beyond the face of the metal on the lower side of the valve, as shown.

The valve can be fitted to any proper valve-seat in any ordinary manner. As herein shown, the valve-seat consists of a hub 11 and rim 12, with connecting webs or arms 13. The valve sits thereon with its larger packing-ring 10 acting on the rim of the valve-seat and the other packing-ring 9 acting on the hub. A bolt or valve-stem 14 is screwed into the hub with a cylindrical portion passing through the tubular center of the valve, so that the valve can slide up and down on the said bolt. A spring 15, with one end bearing against the under side of the head of the bolt or valve-stem and its other end seated within the top annular groove 7 of the valve, acts to close the valve quickly after being forced open, all substantially as in other valves with the exception of the construction of the valve proper in the manner hereinbefore described.

By my improvement the valve is constructed at a small cost, the packing-rings are easily fitted, and the central tubular portion forms an efficient bearing for sliding the valve longitudinally of the valve-stem.

I claim as my improvement—

1. The herein-described valve having a tubular center with two separate annular grooves for packing-rings on its face side, and with the metal between the said grooves extending in a thin sheet along the face side of the valve from one annular groove to the other and, with the metal of the said grooves, forming an intermediate annular groove on the reverse side of the valve.

2. The herein-described valve formed of sheet metal and having a tubular center with an annular packing-recess immediately surrounding the said tubular center, one wall of which recess is formed by the said center, a plate-like portion extending outwardly from the said annular packing-recess in substantially the plane of its mouth and a second annular packing-recess at the outer edge of the said plate-like portion.

BRONSON C. WOODFORD.

Witnesses:
WM. C. WOODFORD,
JAMES SHEPARD.