(No Model.)

W. F. GARRISON.

PUPPET VALVE FOR PISTONS OF AIR OR GAS PUMPS.

No. 525,541. Patented Sept. 4, 1894.

Fig. 1.

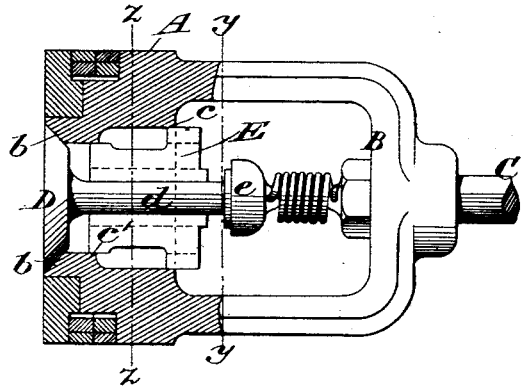


Fig. 2.

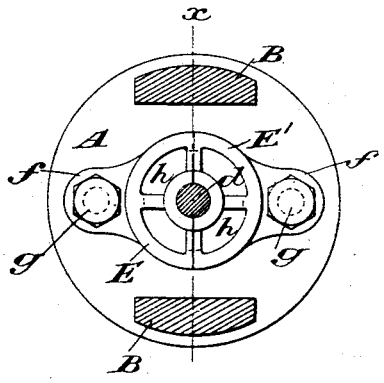


Fig. 3.

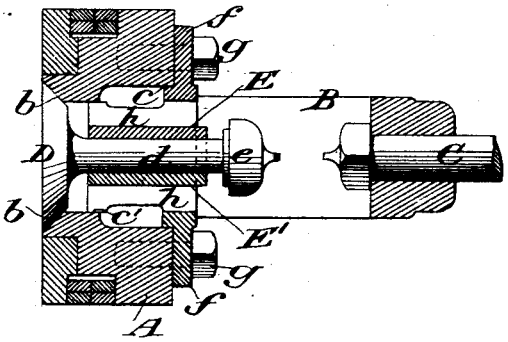
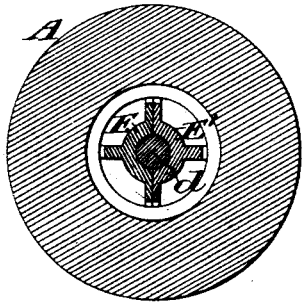


Fig. 4.



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PUPPET-VALVE FOR PISTONS OF AIR OR GAS PUMPS.

SPECIFICATION forming part of Letters Patent No. 525,541, dated September 4, 1894.

Application filed January 17, 1893. Serial No. 458,655. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. GARRISON, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Puppet-Valves for the Pistons of Air or Gas Pumps, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to puppet valves which have upon their stems solid heads to serve as stops for limiting their opening movement. The guides for such stems have to be divided into the direction of the length of the said stems, in order to get the stems into them. The guides so divided are commonly secured in place by screws or screw-threaded connections. The object of this invention is to provide by a simple construction for the employment of such a puppet valve with a solid-headed stem and a divided guide in the piston of an air or gas pump and to obviate all liability of the breakage of the screws by which the said guide is secured in the piston.

Figure 1 in the accompanying drawings is a side view partly in section, of an air pump piston embodying my invention, the section being taken centrally in the line *x x* of Fig. 2 which is a transverse section taken in the line *y y* of Fig. 1. Fig. 3 is a longitudinal view partly in section, taken at right angles to the view shown in Fig. 1. Fig. 4 is a transverse section taken in the line *z z* of Fig. 1.

Similar letters of reference designate corresponding parts in all the figures.

A designates the body of the piston constructed with a yoke B with which is connected the piston rod C.

D is the valve having its stem *d* made with a solid head *e*, that is to say, having its head made integral or in the same piece with it.

E E′ designate the two halves of the longitudinally divided guide for the valve stem. The seat *b* for the valve D is represented as in that face of the piston which is farthest from the yoke and from this seat the piston is bored concentrically for the passage of the valve stem and the reception of its guide E E′ which is fitted to the bore of the piston at *c c′*, as shown in Figs. 1 and 3. The said guide which is inserted into the piston from the opposite side to that in which the valve seat is presented, is provided with flanges *f*, one on each half of the guide, and these flanges abut against the face of the piston to which they are secured by screws *g g* passing through said flanges and screwing into the piston. The guide has provided within it openings *h* for the passage of air through the open valve and through the piston.

By the above construction the screws which hold the guide are protected against the slamming of the valve in closing and the striking of the head of the stem in opening, as the valve closes against the piston independently of the guides and if the head should strike the guide in opening, the blow is met by the abutment of the flanges *f* against the solid piston head without any concussion on the screws *g g*.

What I claim as my invention is—

In a piston for an air or gas pump, the combination of a puppet valve seat in one face of the piston, a puppet valve having a solid-headed stem, a divided guide for said stem having flanges which abut against the other side of said piston and screws for securing said flanges to the piston, substantially as herein set forth.

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