(No Model.)

J. CLAYTON.

VALVE FOR AIR AND GAS COMPRESSORS.

No. 487,064. Patented Nov. 29, 1892.

Fig. 1.

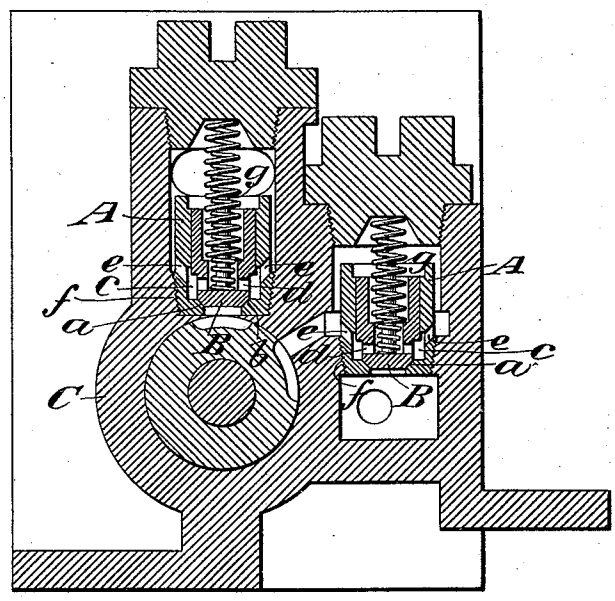


Fig. 2.

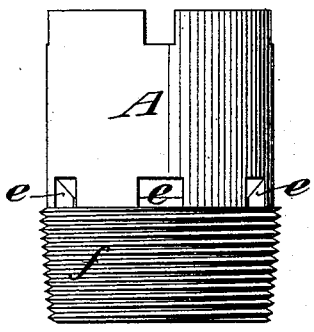
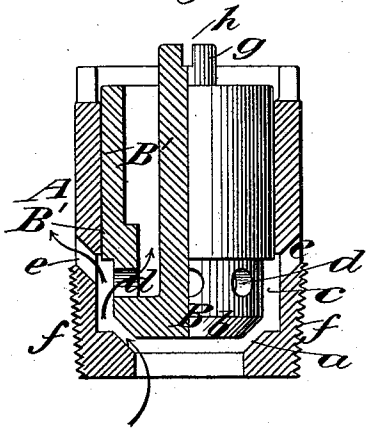


Fig. 3.



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JAMES CLAYTON, OF BROOKLYN, NEW YORK.

VALVE FOR AIR AND GAS COMPRESSORS.

SPECIFICATION forming part of Letters Patent No. 487,064, dated November 29, 1892.

Application filed May 21, 1892. Serial No. 433,809. (No model.)

To all whom it may concern:

Be it known that I, JAMES CLAYTON, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Valves for Air and Gas Compressors, of which the following is a specification.

This invention relates to that class of valves known as "puppet-valves;" and it consists in the novel construction of such valves and their boxes hereinafter described and claimed, whereby great facility is afforded for applying the valves and a very free inlet and outlet through the valves is obtained.

The valves and valve-boxes embodying my invention are applicable with especial advantage to air and gas compressors, but may be applicable to other machines or apparatus. The invention is illustrated in the accompanying drawings in its application to a compressor.

Figure 1 represents a transverse section of the compressor, taken through an inlet-valve and an outlet-valve and their boxes. Fig. 2 is an outside view of the valve-box which contains the valve-seat. Fig. 3 represents a central vertical section of the valve-seat and the box in which it is contained and represents an outside view of one-half of the valve and a central section of the other half.

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

Referring to Figs. 2 and 3, A is the valve-box, consisting of a hollow cylinder, at the bottom or inner end of which is formed the valve-seat *a*, which is of the conical form commonly adopted for puppet-valves. The said cylindrical box is open at the top.

B is the valve, having a conical face *b* to fit the seat *a*. The head of this valve is extended upward in the form of a cylinder B′, which is represented as hollow and open at the top and which fits snugly but freely within the upper part of the cylindrical box to constitute a guide to the valve and keep the latter properly centered to its seat. An annular space is formed between the valve and the lower part of the cylindrical box to provide for the passage of the air or gas around the valve when the latter is raised from its seat, and in that part of the box in which the said annular space is provided are lateral outlet-openings *e* for the air or gas. This annular space may be provided by simply making the valve-face and the part of the valve immediately adjacent thereto smaller than that part of the cylindrical head B′ which fits the box or else by enlarging that part of the box which is adjacent to the valve-seat and which contains the openings *e*. In the example represented the annular space *c* is provided, as above described, partly in the box and partly in the valve. To provide additional means and greater freedom of passage for the air or gas, lateral openings *d* are provided in the valve opposite the said annular space *c*, so that the air or gas may pass out through the open upper end of the cylindrical head B′ of the valve as well as through the sides of the valve-box A.

The valve is represented as furnished with a central stem *g;* but this is not material to the operation of the valve, though it affords convenience for the guiding of a spiral spring which may be employed to close or quicken the closing of the valve. The said stem is represented in Fig. 3 as having in its upper end a notch *h* for the reception of a suitable tool to be used in grinding the valve into its seat.

This kind of valve may be used without any variation for either the inlet-valves or the outlet-valves of a compressor, as may be understood by reference to Fig. 1, wherein the valve on the right of the compressor-cylinder C is the inlet-valve and the valve above the cylinder is the outlet-valve.

The cylindrical valve-box A, containing the valve-seat, may be fitted in any suitable manner to the inlet or outlet of the compressor or pump cylinder. It is represented in the drawings as having around its lower part a screw-thread *f* for screwing it into its place.

It is obvious that although in the example represented the valve-boxes and valves are arranged upright they might be arranged in other positions.

What I claim as my invention is—

1. The combination, with a hollow cylindrical valve-box containing a valve-seat at one end and having lateral openings near said seat, of a puppet-valve having a cylindrical head fitted to work in said box, the said box having provided within it between the valve-

seat and said lateral openings an annular space for the free passage of air, substantially as herein set forth.

2. The combination, with a hollow cylinder containing a seat for a puppet-valve and having lateral openings, of a puppet-valve having a hollow cylindrical head fitted to said cylinder and having lateral openings in said head, substantially as and for the purpose herein set forth.

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Witnesses:
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