

H. P. JONES.
Steam-Valves.

No. 142,702.

Patented September 9, 1873.

Fig. 1.

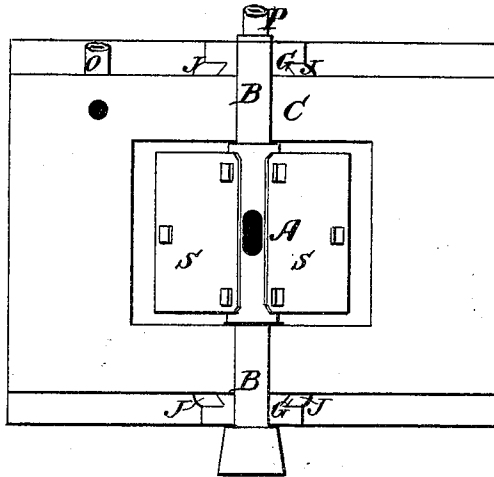


Fig. 2.

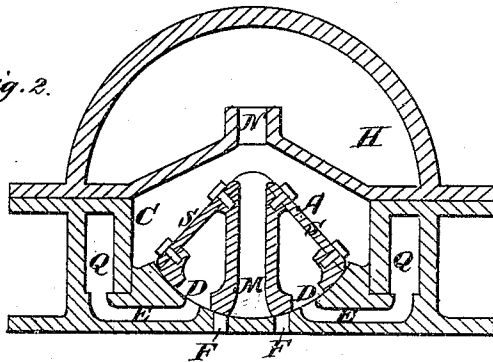


Fig. 3.

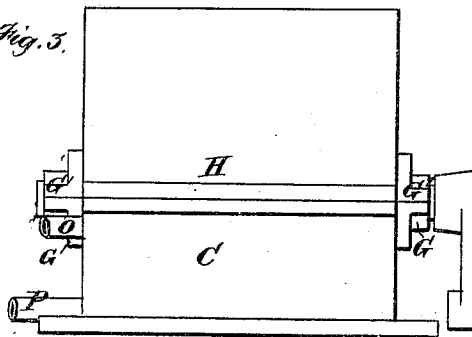
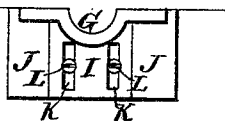


Fig. 4.



Witnesses.

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IMPROVEMENT IN STEAM-VALVES.

Specification forming part of Letters Patent No. **142,702**, dated September 9, 1873; application filed May 7, 1873.

To all whom it may concern:

Be it known that I, HARVEY P. JONES, of Davenport, in the county of Scott and State of Iowa, have invented a new and useful Improvement in Steam-Valves; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings forming part of this specification, in which—

Figure 1 is a plan view of my invention with the exhaust-chamber removed. Fig. 2 is a longitudinal central section, and Fig. 3 an end elevation, and Fig. 4 a detached view, of one of the boxes.

Similar letters of reference in the accompanying drawings denote the same parts.

This invention has for its object to produce a valve for steam-engines which is simple in construction, hard to get out of order, and easy to work as compared with valves in common use. To this end the invention consists, partly, in the arrangement for equalizing the expansion of the valve and its seat, so as to prevent the escape of steam between the two, and partly in an arrangement for adjusting the valve to the valve-seat as the degree of expansion of either of these parts may require, all which I will now proceed to explain.

In the accompanying drawings, A is the valve, the same being of the oscillating variety, and of quadrantal shape, and having trunnions B, which support the valve within the box C. The valve is made hollow, in order to serve as a reservoir for supplying the cylinder with steam, and has two inlet-ports, D, one near each side, which ports, as the valve oscillates, receive steam alternately from the passages E, and discharge it by the same port that receives it into the cylinder through the ports F alternately. The passages E connect the valve-seat with the hollow-walled box C, which receives steam from the boiler and conveys it on all sides of the valve-seat, in order to cause the seat to expand equally in all parts, in the same manner as the valve does, by reason of the introduction of steam into its interior. This equal expansion causes the valve to work tightly enough to prevent

the escape of steam between it and the seat. If the expansion proceed so far as to produce binding between the valve and seat, this can be compensated by shifting the adjustable boxes G, which are fastened to the outside of the box C, and support the trunnions B, each box G being supplemented by another box, G', attached directly above it to the end of the exhaust-chamber H. These boxes have dovetail offsets I, which fit between dovetail lugs J, and have also elongated slots K, through which set-screws L pass into the sides of the box C and chamber H, so that, the set-screws being loosened, the boxes may be raised or lowered at pleasure, and then fastened by tightening the screws. M is the exhaust-pipe, the same being of funnel shape, and running through the middle of the valve A, and terminating at the apex of the same, immediately beneath the pipe N, which projects up into the exhaust-chamber a short distance, in order to prevent grit of any kind from being sucked back into the cylinder when steam is shut off and the engine still continues in motion. Steam enters the pipe M by the ports F alternately, and escapes from the exhaust-chamber, at one corner of the same, through a passage leading to the adjacent corner of the box C, where it escapes by a pipe, O. The steam-pipe P from the boiler opens into the space Q between the walls of the box C, which space extends entirely around the box. The plates S, which form the sides of the valve, can be removed, in order to see how to set the valve.

I claim as my invention—

1. The valve A, in combination with the removable side plates, substantially as and for the purpose set forth.

2. The adjustable boxes G, having an offset, I, and slots K, in combination with the box C, having dovetail lugs J and with set-screws L, substantially as and for the purpose specified.

HARVEY P. JONES.

Witnesses:

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