D. W. JONES.

Rotary Valves.

No. 200,728. Patented Feb. 26, 1878.

Fig. 1

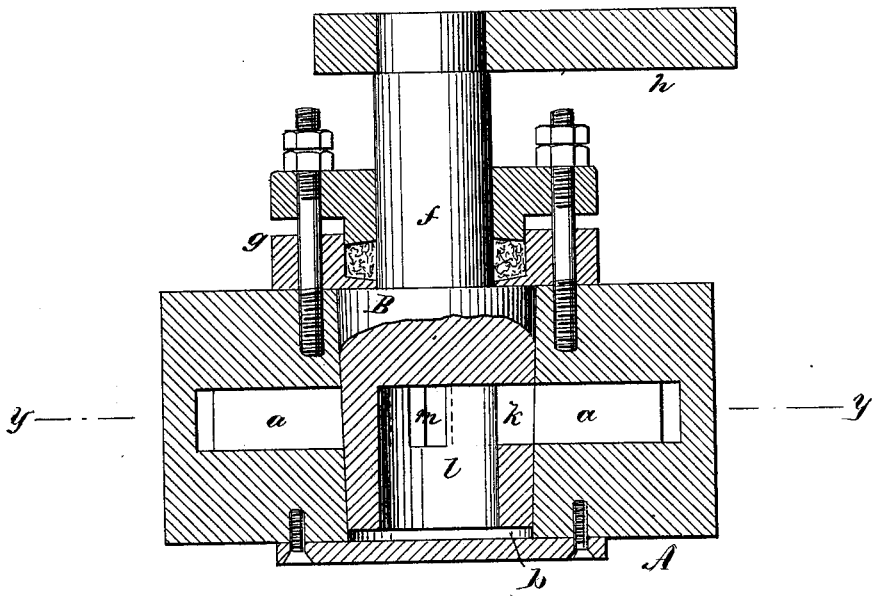
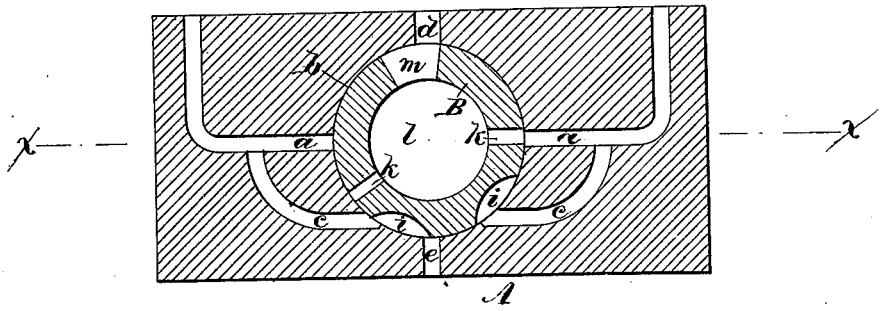


Fig. 2



WITNESSES:

C. Neveux

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ATTORNEYS.

UNITED STATES PATENT OFFICE.

DAVID W. JONES, OF POCAHONTAS, ARKANSAS.

IMPROVEMENT IN ROTARY VALVES.

Specification forming part of Letters Patent No. **200,728**, dated February 26, 1878; application filed December 8, 1877.

To all whom it may concern:

Be it known that I, DAVID W. JONES, of Pocahontas, in the county of Randolph and State of Arkansas, have invented a new and Improved Steam-Engine Valve, of which the following is a specification:

Figure 1 is a horizontal section taken on line *x x* in Fig. 2. Fig. 2 is a vertical transverse section of the valve, taken on line *y y* in Fig. 1.

Similar letters of reference indicate corresponding parts.

My invention relates to the class of engine-valves known as "cylinder" or "plug" valves; and it consists in an arrangement of steam-passages in the valve, and ports and passages in the valve-casing, by means of which the pressure on the valve is equalized or counterbalanced, so as to relieve it from friction.

In the drawing, A is the valve-casing, having the passages *a*, which communicate with the ends of the cylinder, and intersect the tapering valve-chamber *b* diametrically. There is a curved passage, *c*, on each side of the valve-chamber, which communicates with it and with the passage *a*. There are also passages *d e*, communicating with the valve-chamber, and arranged diametrically opposite in relation to the valve and at right angles to the passage *a*.

The valve B consists in a hollow slightly-tapered plug, having the spindle *f*, which extends through a stuffing-box, *g*, at the side of the valve-casing, and has attached to it the lever *h*, which is connected with the valve-operating eccentric.

In the lower side of the valve there are two cavities, *i*, which are of sufficient width to bring the supply-passage *e* into communication with the passage *c* on either side of the valve as it is oscillated.

By means of these cavities and the arrangement of the passages *c a* steam is admitted alternately to opposite ends of the cylinder. The valve is provided with openings *k* on opposite sides, which communicate with the chamber in the valve, and are arranged in relation to the cavities *i* in such a manner that when steam is admitted to one end of the cylinder through the supply-port *e*, cavity *i*, and passages *c a*, the steam escapes from the opposite end of the cylinder through the passage *a* and opening *k* to the chamber *l* in the valve, whence it passes through the wide opening *m*, which is equally distant from the opening *k* to the exhaust-port *d* in the valve-casing. The valve and valve-casing are symmetrical in the arrangement of their ports and passages.

By means of my improvement the valve is, to a great extent, balanced, and the disadvantages of steam-room in the valve chest or casing are avoided.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The combination of the rotary valve B, having the central chamber *l*, the openings *k m*, communicating with said chamber and the surface cavities *i*, with the casing A, having the connected passages *a c*, the supply-port *e*, and exhaust-port *d*, all constructed and relatively arranged as herein shown, to operate in the manner set forth.

DAVID WILLIAM JONES.

Witnesses:

C. C. ELDER,

ABRAM WEAVER.