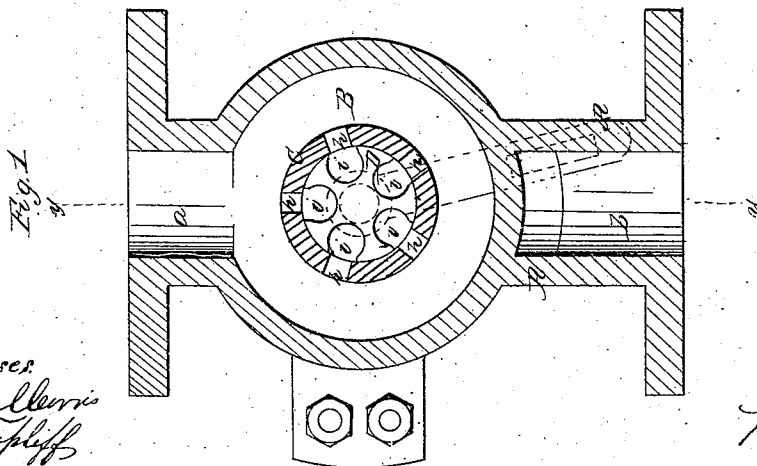
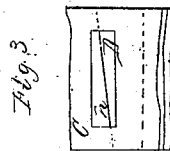
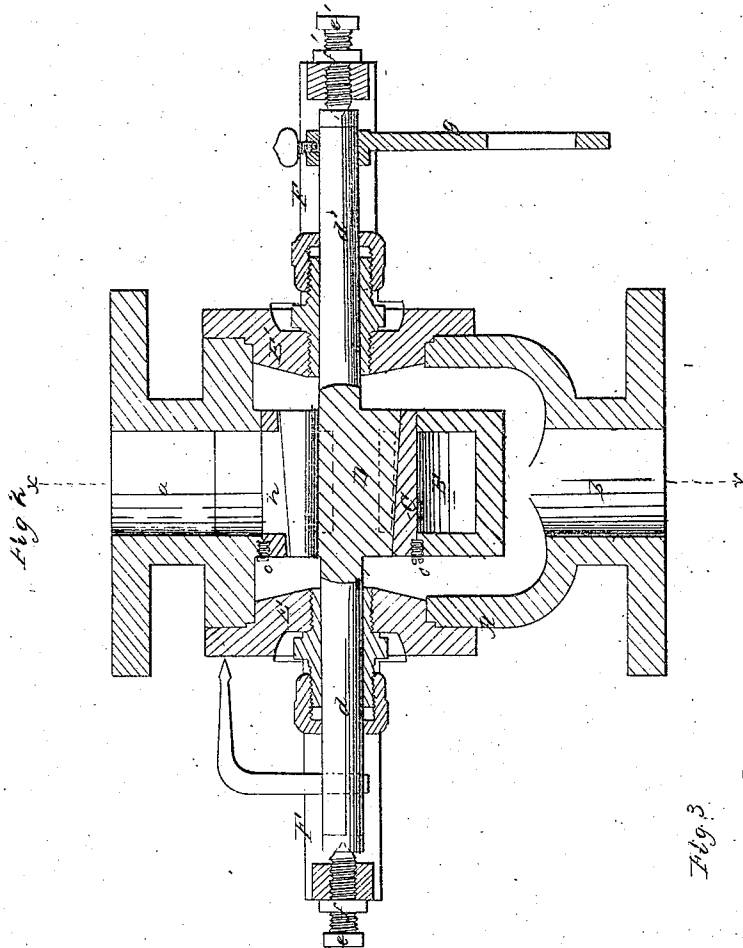


O. L. Brown,  
 Rotary Steam Valve.

No 48,652.

Patented July 11, 1865.



Witnesses  
 Henry Morris  
 C. L. Topliff

Inventor  
 O. L. Brown  
 per Munroe & Co  
 Attorneys

# UNITED STATES PATENT OFFICE.

OLIVER L. BROWN, OF MANITOWOC, WISCONSIN.

## IMPROVEMENT IN GOVERNOR-VALVES.

Specification forming part of Letters Patent No. 48,652, dated July 11, 1865.

To all whom it may concern:

Be it known that I, OLIVER L. BROWN, of Manitowoc, in the county of Manitowoc and State of Wisconsin, have invented a new and Improved Governor-Valve; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a vertical section of this invention, taken in the plane indicated by the line *x x*, Fig. 2. Fig. 2 is a similar section, the line *y y*, Fig. 1, indicating the plane of section. Fig. 3 is a partial plan of the valve and valve-seat detached.

Similar letters of reference indicate corresponding parts.

This invention relates to a valve which is provided with a series of cavities and works in an annular seat which is surrounded by a steam-chamber and perforated with a series of apertures or slots corresponding in number and position to the cavities in the valve in such a manner that by turning the valve in its seat said cavities can be made to register partially or wholly with the apertures in the seat and more or less steam passes through the valve. The cavities in the valve are tapering on top, so that their edges cut off the steam gradually, and injury to the working parts by a sudden stoppage is prevented. The position of the valve in its seat is regulated by set-screws acting on the ends of the valve-stem, so that it works with the least possible amount of friction, and the steam acts on it with equal pressure all round, so that it works equally well under pressure as it does in the open atmosphere.

My valve is composed of a shell, A, of cast-iron or any other suitable material, to which steam is admitted through a channel, *a*, and from which the steam discharges through a channel, *b*. The supply-channel *a* leads to a steam-chamber, B, which forms a separate part of the case A, and the sides of this chamber are bored out to receive the seat C of the valve D. Said seat is slightly tapering, so that it

can be firmly secured in the sides of the chamber, and it is fastened in its socket by suitable screws or keys, *c*.

The valve D is slightly tapering, and it is fitted into the seat C, as clearly shown in Fig. 2 of the drawings, and it is provided with two stems, *d d'*, extending in opposite directions through suitable stuffing-boxes in the heads B B' of the case A. The outer ends of these stems are furnished with steel caps to receive the points of the screws *e e'*, which screw into the ends of arms F screwed to the case A. By means of these screws the valve can be adjusted in its seat so that it works with the least possible friction, and said screws are prevented shifting their position spontaneously by jam-nuts *f f'*. One of the stems bears the lever *g*, which connects by a suitable rod with the governor, and the other stem is perforated to receive the index, which moves over a scale marked on the outside of the head B, and calculated to show the amount of motion given to the valve.

The valve-seat C is perforated with a series of apertures, *h*, at suitable distances apart, and arranged so that the valve is exposed to a uniform pressure all round, and that it will operate just as easy when exposed to a high pressure of steam as it will when exposed to the ordinary pressure of the atmosphere.

The valve D is provided with a series of cavities, *i*, corresponding in number and position to the apertures *h* in the seat. These cavities extend through the entire length of the valve, and if they are brought to register wholly or partially with the apertures *h* the steam from the chamber B passes through them into the space between the partition-walls of said chamber and the shell A, and thence through the discharge-channel *b* to the steam-cylinder or other place where it may be required. The apertures *h* in the valve-seat are rectangular, but the openings or outer edges of the cavities *i* form trapezoids, the short sides of which are parallel, as clearly shown in Fig. 3. If the valve is turned, it cuts off the steam gradually and injury from a sudden stoppage is avoided. The cavities increase toward the center for the purpose of giving free egress to the steam.

This valve works very easy under high or low pressure. It can be readily adjusted simply by turning the screws *e e'*. By combining the chamber B with the shell A all end friction of the valve is avoided and the steam has free passage at both ends, so as to equalize the reaction.

I claim as new and desire to secure by Letters Patent—

The combination of the projecting valve-

stems *d d'*, arms F, screws *e e'*, conical valve D, formed with trapezoidal openings *i*, annular seat H, with rectangular openings *h*, steam-chamber B, inlets *a*, and outlet *b*, all arranged to operate as specified.

OLIVER L. BROWN.

Witnesses:

RUFUS K. FULTON,  
D. L. WHITNEY.