

T. Rodda,

Steam Balanced Valve.

N^o 61,568.

Patented Jan. 29, 1867.

Fig 1

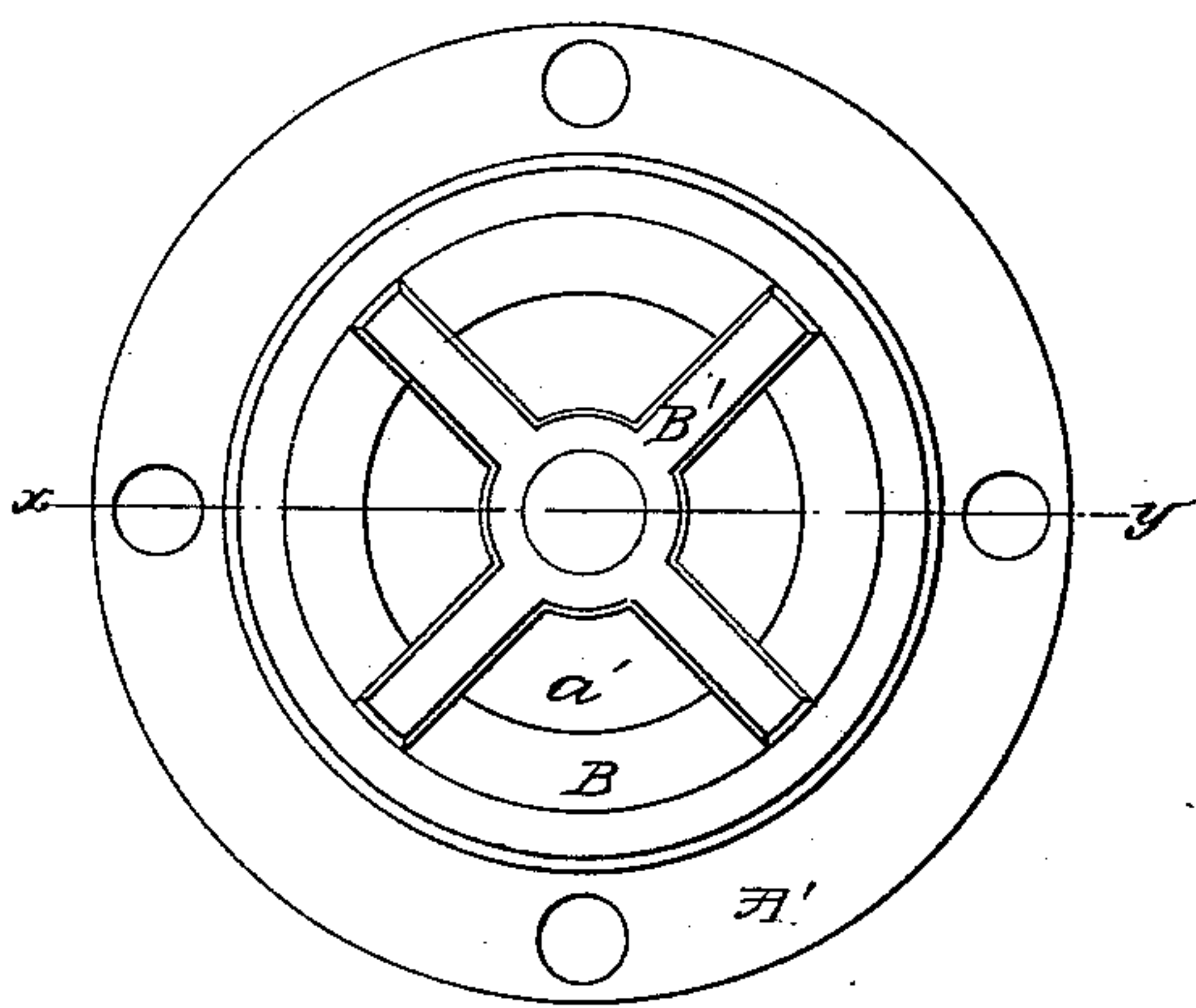


Fig 2

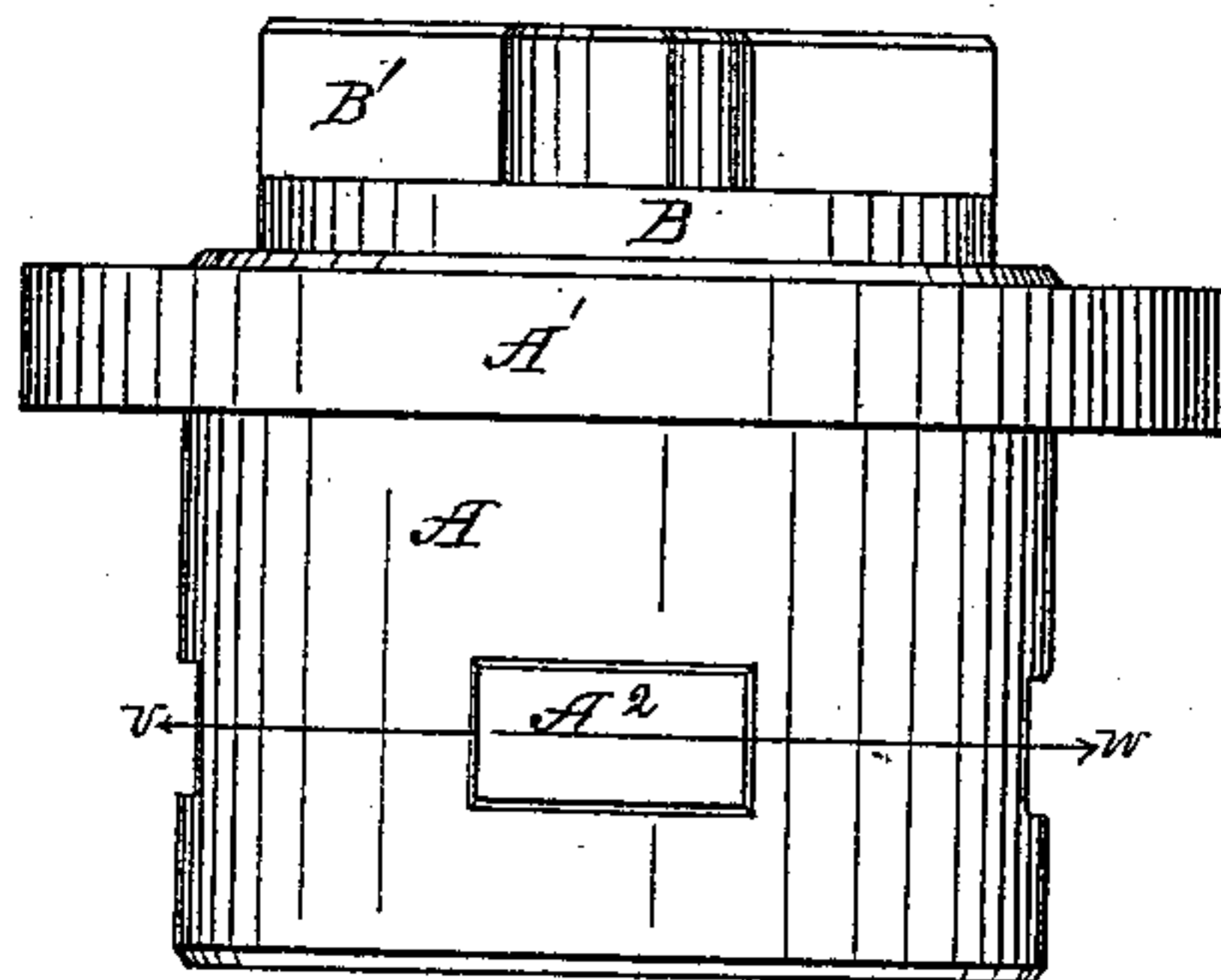


Fig 3

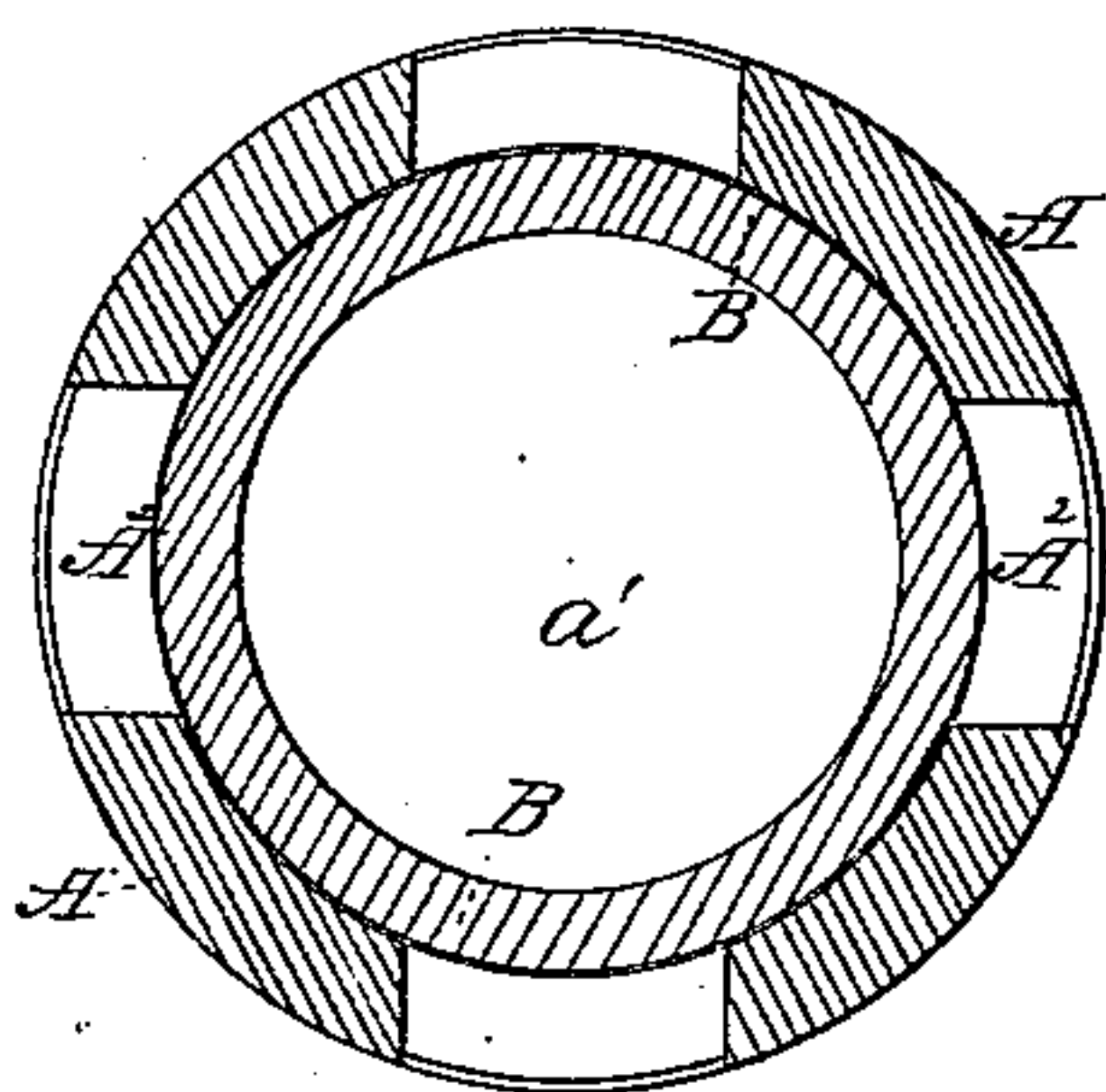
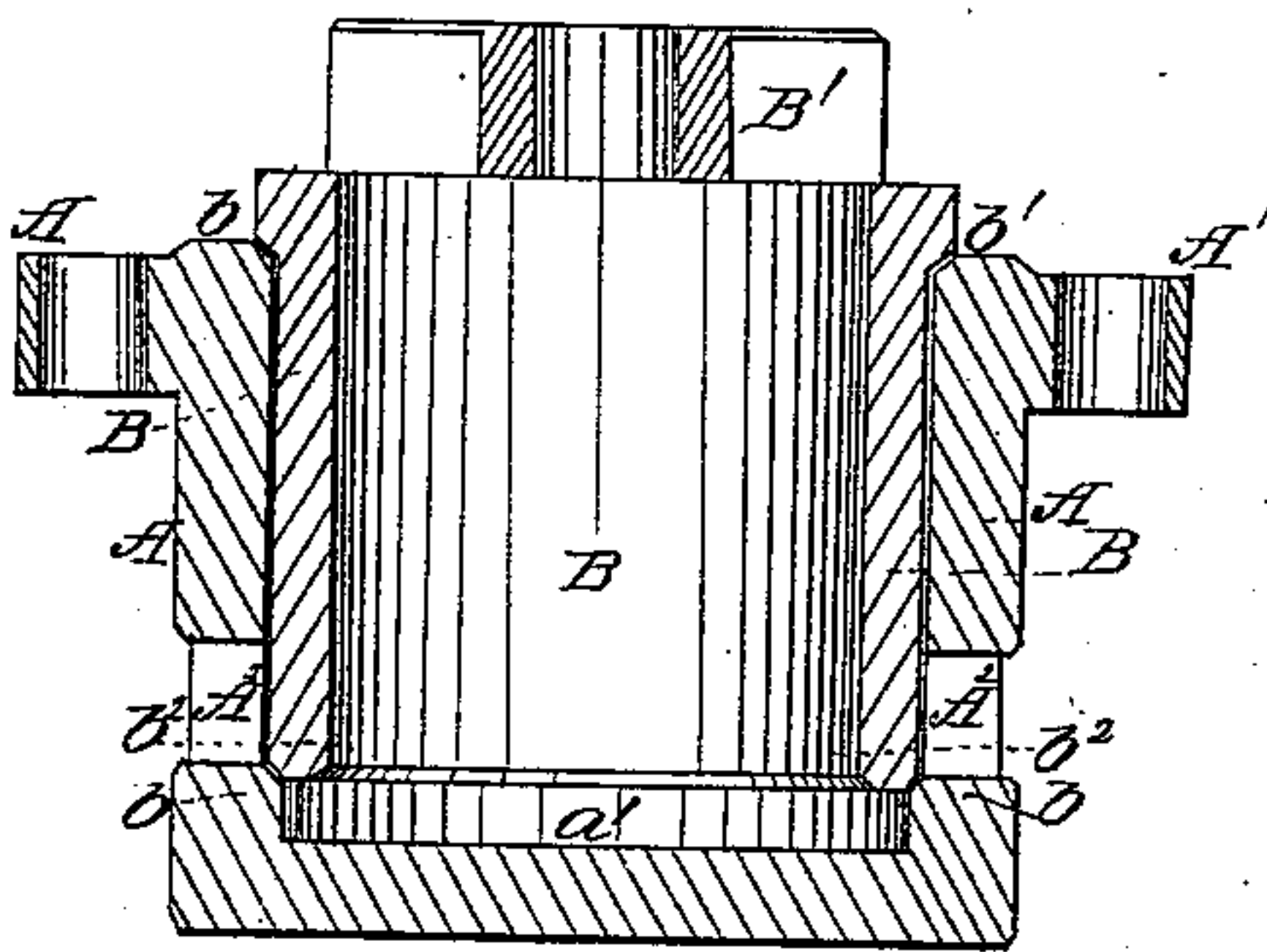


Fig 4



Witnesses

Chas W. Boyle

S. M. Randolph.

Inventor

Thomas Rodda

*By his attorneys
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United States Patent Office.

THOMAS RODDA, OF ST. LOUIS, MISSOURI.

Letters Patent No. 61,568, dated January 29, 1867.

IMPROVEMENT IN BALANCED STEAM-ENGINE VALVES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, THOMAS RODDA, of the city and county of St. Louis, and State of Missouri, have invented a new and useful Improvement in Balanced Valves; and I do hereby declare that the following is a full and clear description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

Figure 1 of the drawings is a top plan of the improved valve.

Figure 2 is a side elevation of it.

Figure 3 is a horizontal section taken on the line *v w*, in fig. 2.

Figure 4 is a vertical section taken on the line *x y*, in fig. 1.

The nature of this invention consists in the arrangement of two seats in that class of valves known as "throttle valves," and in the admission of steam at all times to an equal bearing, both above and below the valve, and resting upon it, so that but little power need be expended to open or close the valve.

To enable those skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A is a section of pipe, which encloses the valve B. The flange A¹, around the top end of the pipe, is perforated with holes, for the purpose of attaching an outside pipe (not shown) thereto. When the outer pipe is attached to the section A, there will be an annular opening between the two into which the steam will pass from the ports A². Of course the above-described construction of the ports is not new, and it may be widely varied, but it is deemed sufficiently explanatory of this part of the drawings. The valve B is fitted snugly into the cylindrical opening in the centre of the pipe A, but so it can easily be moved up or down. The cross-head B¹, attached to the upper end of the valve, is perforated with an orifice in its centre for the reception of the valve-rod that is to operate it. The manner of attaching the valve-stem or rod to it may be varied. The valve has two seats, *b* and *b*¹, as clearly shown in fig. 4, and on these alone, and not on the cylindrical joint between the valve and pipe, is dependence to be placed for a tight joint. The valve should be ground down on to its seats *b* and *b*¹. The lower end of the valve *b*² stops short before it reaches the bottom *a*¹, so as to permit the steam to get below the valve and press up against its bottom end, *b*², with almost as much force as it presses down on the upper end of it, the only difference in pressure on the two ends being a slight difference in area, and consequently the valve will be nearly balanced, and it can very easily be opened or closed. As soon as the valve is raised high enough to open the ports A², the steam will flow through them into the cylindrical opening between the pipe A and its surrounding pipe, as before described.

Having described my invention—

I claim the construction of the valve with its cross-piece B¹, with reference to the openings and construction of the pipe A, arranged as herein set forth.

THOMAS RODDA.

Witnesses:

M. RANDOLPH,

CHAS. H. BOYLE.