

W. Nichols,
Steam Balanced Valve.
N^o 59,252. Patented Oct. 30, 1866.

Fig. 1.

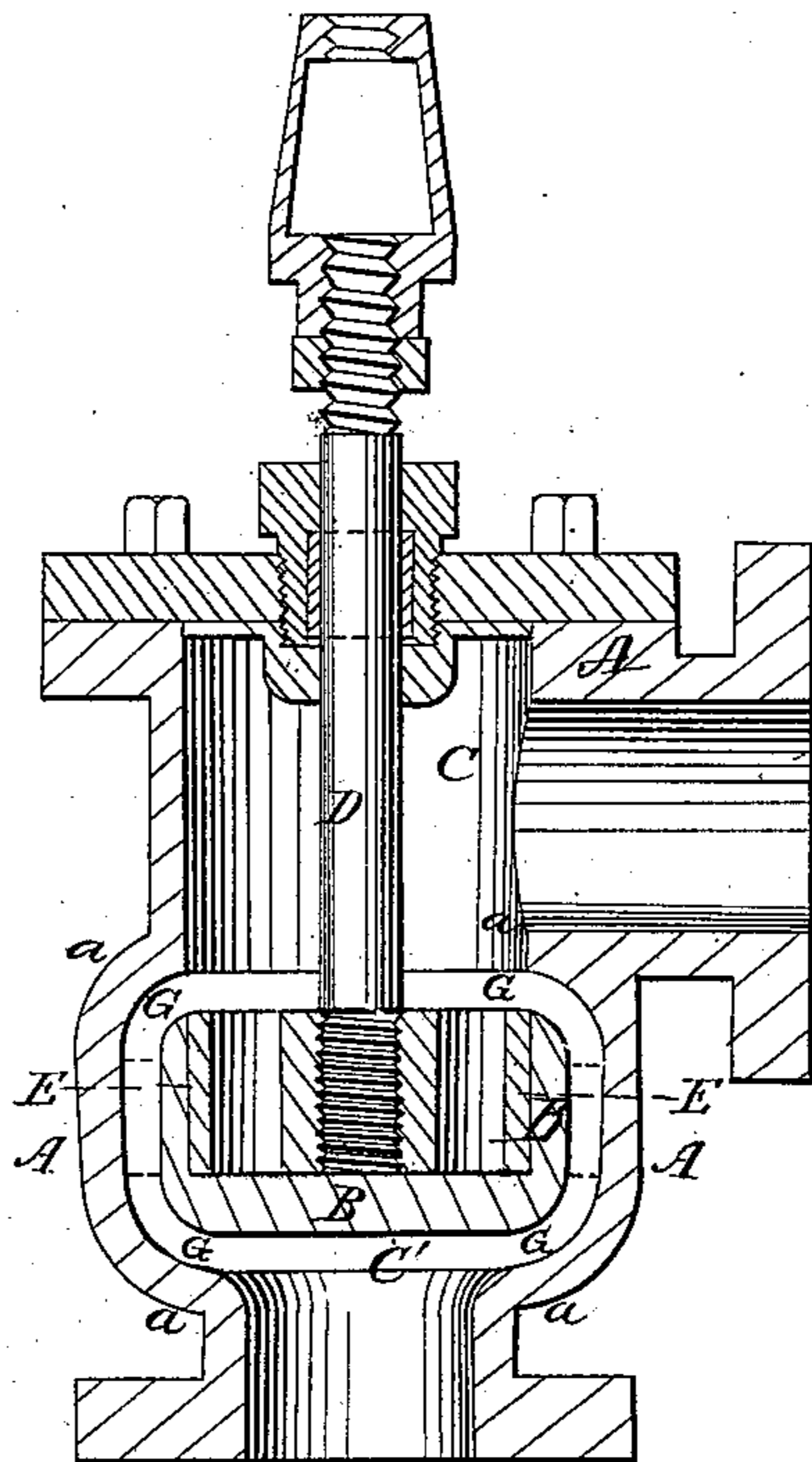
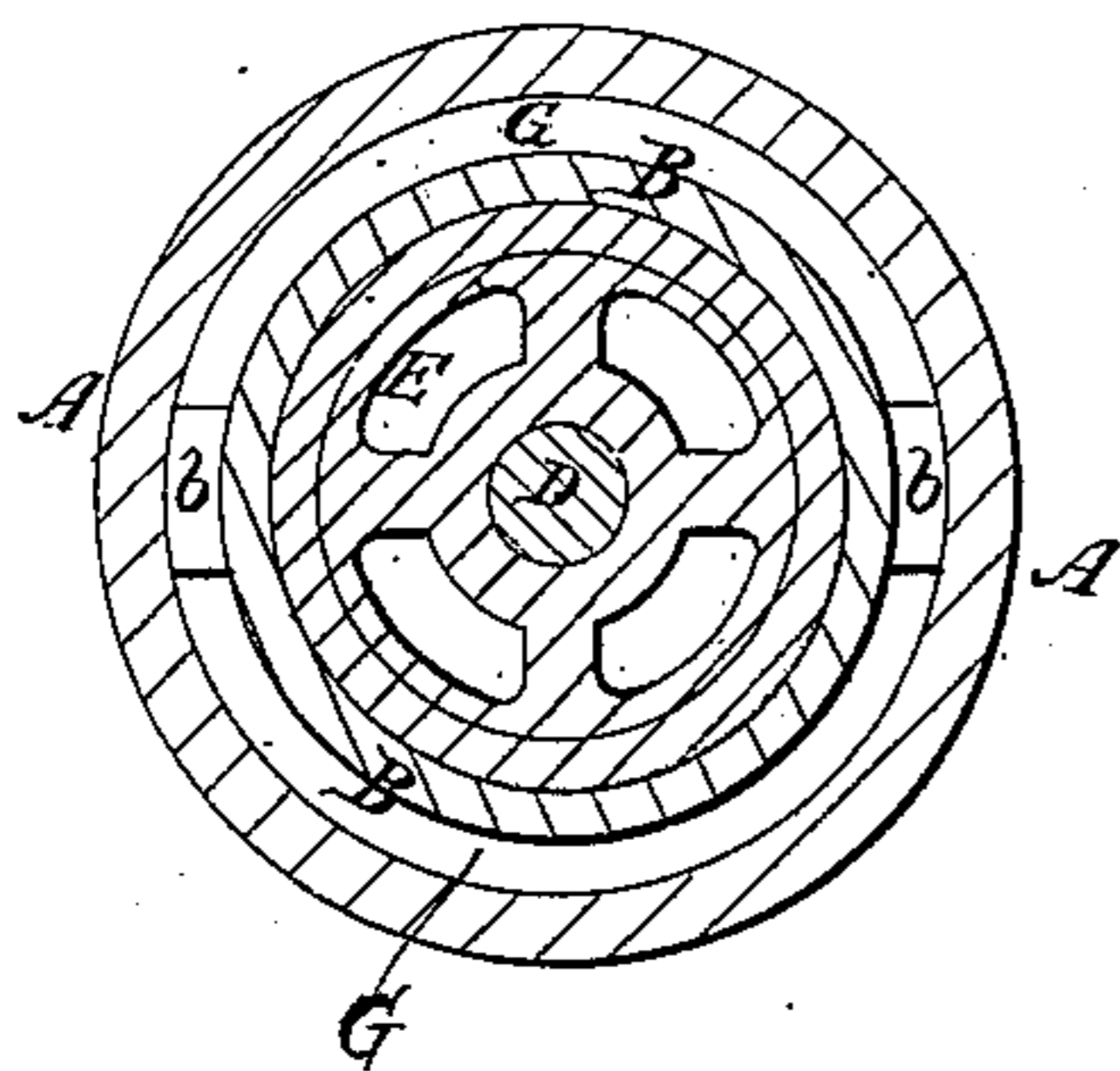


Fig. 2.



Witnesses.

A. A. Yeatman
W. Clayton

Inventor.

W. Nichols,
by Atty,
J. C. Clayton

UNITED STATES PATENT OFFICE.

WILLIAM NICHOLS, OF ELMIRA, NEW YORK.

IMPROVEMENT IN STEAM PISTON-VALVES.

Specification forming part of Letters Patent No. 59,252, dated October 30, 1866.

To all whom it may concern:

Be it known that I, WILLIAM NICHOLS, of Elmira, in the county of Chemung, and in the State of New York, have invented certain new and useful Improvements in Valves for Steam-Engines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawings, forming a part of this specification.

In the drawings, Figure 1 is a vertical section, and Fig. 2 is a cross-section.

My invention consists in a new and simple mode of constructing reciprocating governor-valves for steam-engines.

I first cast the valve-shell A of suitable size and shape to be secured to the steam-chest and pipes, and being somewhat in form of a cylinder with lower third bulged out, as shown in drawings at *a*.

At the same time the valve-cup B, which is cast as a part of the shell A, is cast concentrically within the enlarged portion, being attached thereto by the metallic portions *b*, so as to leave two or more ports of communication between the valve-chambers C and C' above and below the cup B.

E is the valve, secured to the valve-stem D, which is to be secured to the governor-stem. G is a circular port, and is the narrow space included between the top of the cup B and the enlarged part of the valve at *a*. When desired the valve can be easily varied in its construction, so as to have two or more ports.

The operation is very simple. When the balls of the governor are at rest the valve-port is open, as shown in Fig. 1, the valve E being seated in its valve-cup B. As the governor-stem rises the valve E proportionally rises and closes the port G. The round port G, having so large a diameter, can be made vertically very narrow, and yet be of sufficient capacity for the steam. By this construction I gain very much in the sensitiveness of the machine, having to move the valve E through such a short space.

It is obvious that the valve can be balanced opposite the port G, so as to shut off both at the up and the down strokes.

What I claim as my invention, and desire to secure by Letters Patent, is—

The valve-shell A, constructed as described, being enlarged at *a*, and provided with cup B, cast as a part of the shell, and attached at *b*, so as to form the enlarged circular port G, in combination with the valve E and rod D, in the manner and for the purposes described.

In testimony that I claim the above-described invention for improved valve for steam-engines I have hereunto signed my name this 31st day of July, 1866.

WM. NICHOLS.

Witnesses:

CHAS. G. LAPPE,
O. M. FLETCHER.