

No. 628,709.

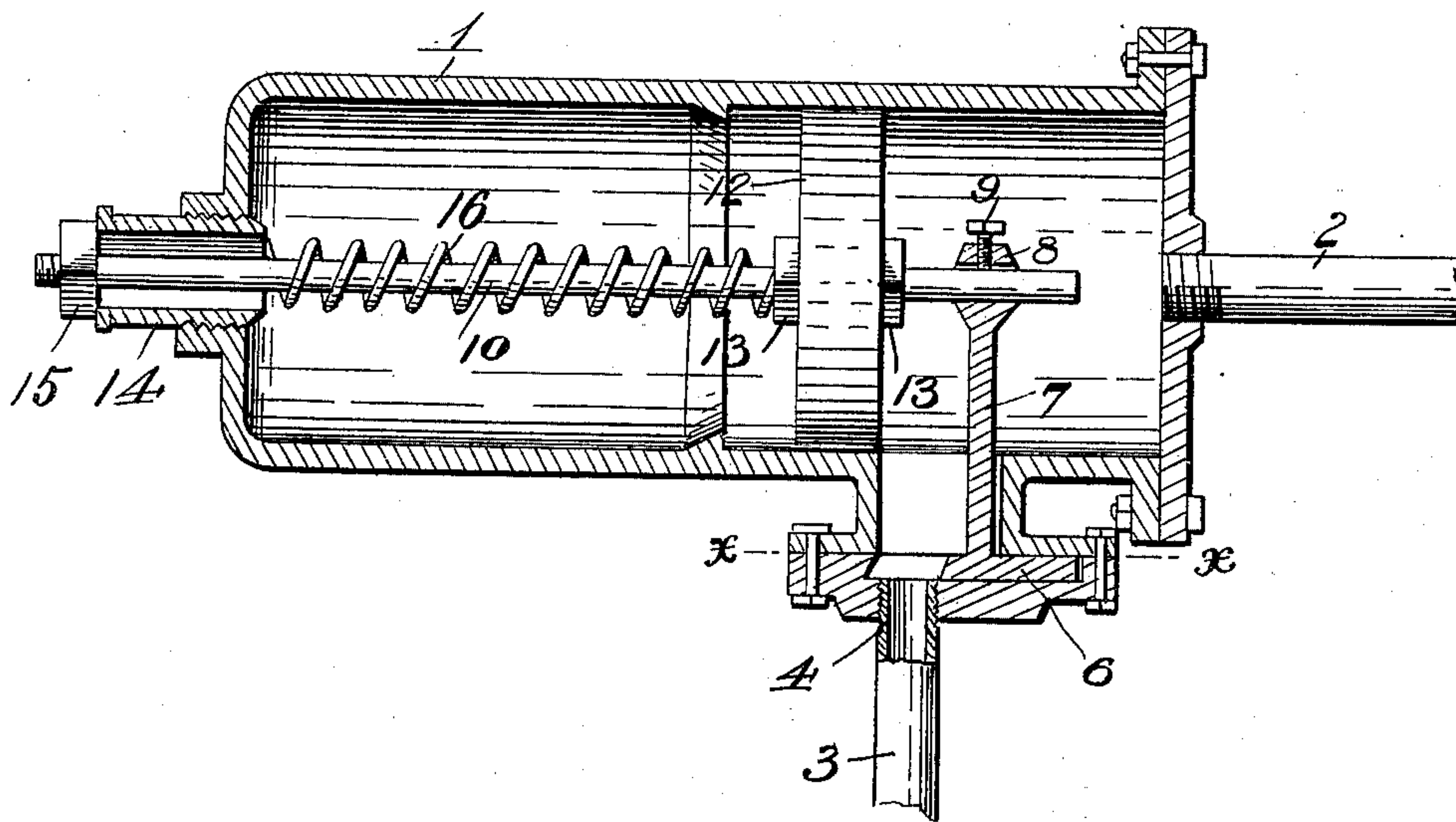
Patented July 11, 1899.

J. H. HALL.  
PRESSURE REGULATING VALVE.

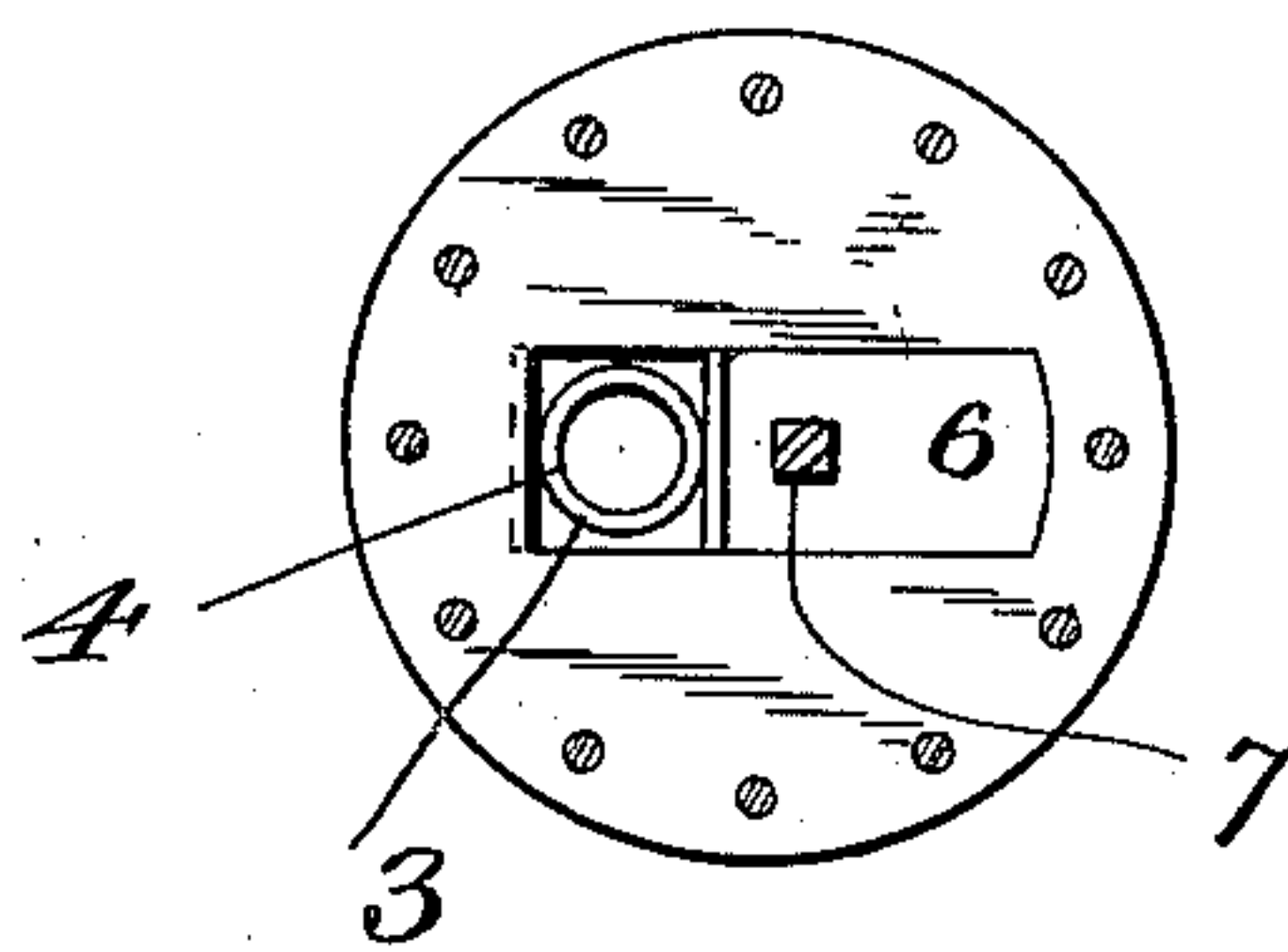
(Application filed Apr. 13, 1899.)

(No Model.)

*Fig. 1.*



*Fig. 2.*



Witnesses

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# UNITED STATES PATENT OFFICE.

JOHN H. HALL, OF PATRICK, WEST VIRGINIA.

## PRESSURE-REGULATING VALVE.

SPECIFICATION forming part of Letters Patent No. 628,709, dated July 11, 1899.

Application filed April 13, 1899. Serial No. 712,890. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN H. HALL, a citizen of the United States, residing at Patrick, in the county of Kanawha and State of West Virginia, have invented certain new and useful Improvements in Pressure-Regulating Valves; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in pressure-regulating valves; and the object is to simplify and improve the construction and increase the efficiency of the device.

To these ends the invention consists in the construction, combination, and arrangement of the several parts of the device, as will be hereinafter more fully described, and particularly pointed out in the claim.

In the accompanying drawings the same reference characters indicate the same parts of the invention.

Figure 1 is a longitudinal section of a pressure-regulating valve embodying my invention. Fig. 2 is a horizontal section on the line *x x* of Fig. 1.

1 denotes a cylinder provided with a steam-inlet pipe 2 and an outlet-pipe 3.

4 denotes an outlet-port, and 6 a slide-valve which has a sliding engagement with said port to open or close it, and said valve is provided with a vertical arm 7, terminating in a hub 8, carrying a set-screw 9, by means of which it is adjustably secured to the piston-rod 10, on which the piston 12 is secured by the jam-nuts 13 13. The piston-rod extends through the guide-sleeve 14, having a threaded engagement with the cylinder, and its projecting threaded end is provided with a limiting-nut 15.

16 denotes the pressure-spring encompassing the piston-rod, the tension of which is exerted against the piston to counterbalance the steam-pressure on the opposite side of the pis-

ton. The tension of this pressure-spring is conveniently regulated by the threaded sleeve 14.

The valve being adjusted to supply a given pressure of steam, an increase in the steam-pressure will act on the piston to compress the spring and cause the slide-valve 6 to reduce or cut off the amount of steam at the port 4, and vice versa. Should the steam-pressure in the boiler fall below the normal, the spring will overcome the pressure on the piston and cause the valve 6 to open wider and allow a greater volume of steam to pass out through the port 4 to the engine.

The accompanying drawings show my invention in the best form now known to me; but many changes in the details might be made within the skill of a good mechanic without departing from the spirit of my invention as set forth in the claim at the end of this specification.

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

In a device of the class described, the combination with the cylinder, the inlet and outlet ports, the piston-rod, a piston secured thereto, a valve for regulating the passage of steam through the exhaust-port, said valve provided with an arm, means for adjustably securing the arm to the piston-rod, a spring confined between the piston and one end of the cylinder to exert its energy against the pressure of steam entering the cylinder through the inlet-port, means for limiting the movement of said piston, and means for varying the tension of said spring, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN H. HALL.

Witnesses:

LOGAN HIGH,  
F. F. DYER.