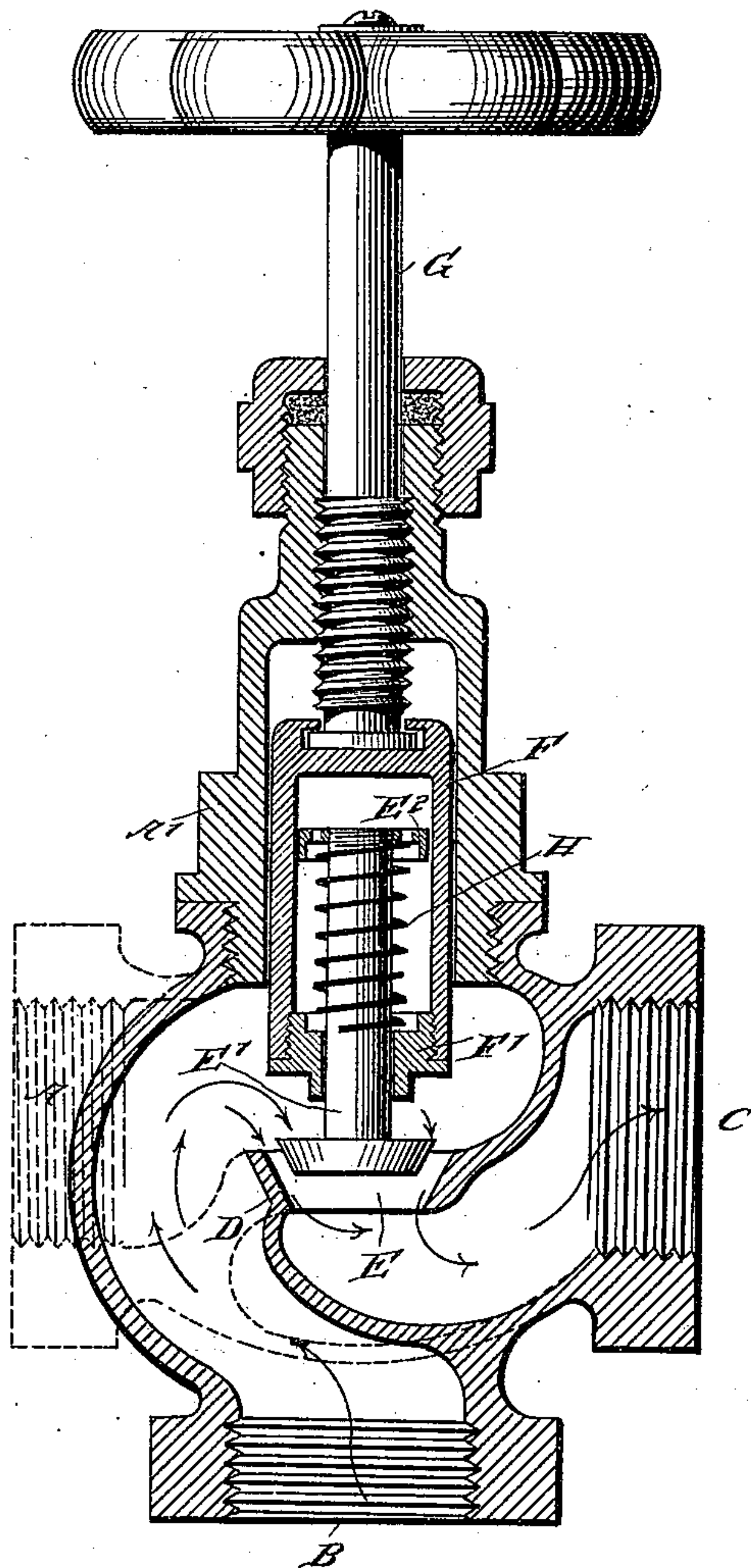


(No Model.)

C. F. SLEIGH & J. M. DE LONG.
PRESSURE REGULATING VALVE.

No. 547,506.

Patented Oct. 8, 1895.



WITNESSES:

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PRESSURE-REGULATING VALVE.

SPECIFICATION forming part of Letters Patent No. 547,506, dated October 8, 1895.

Application filed March 1, 1895. Serial No. 540,180. (No model.)

To all whom it may concern:

Be it known that we, CHARLES FRAMTON SLEIGH and JOHN MARKWOOD DE LONG, of North Baltimore, in the county of Wood and State of Ohio, have invented a new and Improved Pressure-Regulating Valve, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved valve more especially designed for automatically regulating fire in boilers or stoves or the flow of gas or other fluid under pressure to a line of pipe, so that on an increase of pressure the valve closes proportionately and on a decrease of pressure opens correspondingly, and also to provide a valve that will act on a very sensitive pressure and have little or no friction.

The invention consists principally of a valve fitted to slide in a cage adapted to be raised or lowered to move the valve to and from its seat and a spring supporting the said valve in the cage and yielding on an increase of pressure to permit the valve to close proportionately.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawing, forming a part of this specification, in which the figure is a sectional side elevation of the improvement.

The regulating-valve is provided with a valve-body A, having an inlet B, an outlet C, and a comparatively deep valve-seat D, made conical in shape and adapted to be engaged by the valve E proper, held on a valve-stem E', fitted to slide loosely in the cap F', secured on the lower end of a cage F, fitted to slide in the cap A' of the valve-body A and adapted to be raised or lowered therein by the usual threaded stem G, carrying at its outer end a hand-wheel.

On the upper end of the valve-stem E', within the cage F, is secured a cap E², on which presses the upper end of a spring H, coiled on the stem E' within the cage F, the lower end of the spring H resting on the top of the cap F'. The cap E² is provided with holes through it and fits loosely in the cage F, thereby avoiding friction or back-pressure. Now it will be seen that by the arrangement described the valve E is supported in position by the spring H and the latter is supported

in the cage F, so that when the cage is raised or lowered by the operator manipulating the threaded stem G the valve E can be set relative to its valve-seat D to permit the gas to flow through the body A in the direction of the arrows, as indicated in the drawing. Now when an increase in the pressure of the gas flowing through the valve body takes place the pressure on the top of the valve E causes the latter to move downward toward its valve-seat D to compress the spring H proportionately to the increasing pressure, at the same time decreasing the opening between the valve-seat D and the valve E correspondingly. On a decrease of pressure the valve E will again open, owing to the action of the spring H, which will lift the valve E, until finally the valve E again assumes its normal position to which it is set when the normal pressure is again reached. Thus it will be seen that the valve E will be regularly set relative to the seat D to leave a certain opening for the gas to pass through the valve-body and as soon as an increase of pressure takes place the valve closes proportionately and on a decrease of pressure it opens correspondingly, until it finally again assumes its normal position.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

1. A pressure regulating valve, provided with a valve fitted to slide in a cage, adapted to be raised or lowered to move the valve to or from its seat, and a spring supporting the said valve in the cage, and adapted to be pressed on by an increase of pressure on the valve to permit the latter to close relative to the valve seat, and on a decrease of pressure to permit the valve again to open proportionately until normal pressure is reached, substantially as shown and described.

2. A pressure regulating valve, comprising a valve body formed with a seat, a valve operating in conjunction with the said seat, a cage adapted to be raised or lowered in the said valve body, and a spring held in the said cage and supporting the stem of the said valve within the cage, substantially as shown and described.

CHARLES F. SLEIGH.
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Witnesses:

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GEORGE W. EWING.