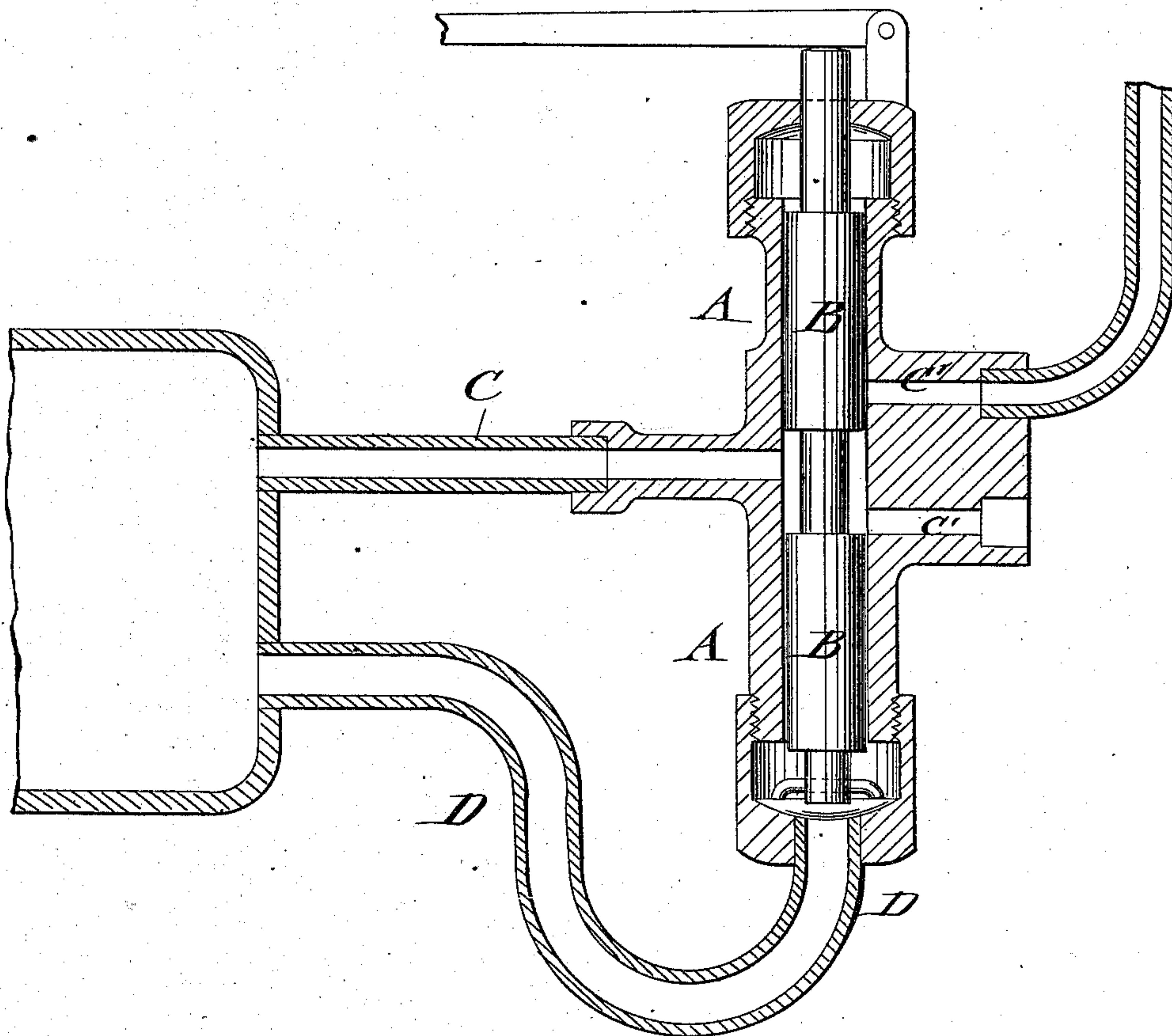


T. I. WALSH.  
Steam-Engine Governor.

No. 162,873.

Patented May 4, 1875.



WITNESSES:

*Chas. N. ...*  
*A. J. ...*

INVENTOR:

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BY *Munn & Co.*  
ATTORNEYS.



# UNITED STATES PATENT OFFICE.

THOMAS I. WALSH, OF BROWNSVILLE, PENNSYLVANIA.

## IMPROVEMENT IN STEAM-ENGINE GOVERNORS.

Specification forming part of Letters Patent No. **162,873**, dated May 4, 1875; application filed January 18, 1875.

*To all whom it may concern:*

Be it known that I, THOMAS I. WALSH, of Brownsville, in the county of Fayette and State of Pennsylvania, have invented a new and Improved Steam-Pressure Detector and Regulator, of which the following is a specification:

The accompanying drawing represents a vertical longitudinal section of my improved steam-pressure detector.

My invention is an improvement in the class of devices for indicating steam-pressure in boilers, consisting, in general terms, of a piston provided with a central annular recess, and arranged to move freely in a vertical tube or pipe connected with the steam-space of the boiler.

The improvement consists in the construction and arrangement of parts, hereinafter described and claimed.

In the drawing, A represents a vertical casing of cylindrical shape, in which slides a double piston, B, that is either acted upon by top lever and adjustable weight, or made directly of such weight that a certain fixed degree of pressure is balanced thereby. The middle connecting part of the piston B is of lesser diameter, so as to form a space around the same in the cylinder intermediately between the upper and lower piston-sections. The part of the cylinder A which corresponds to the space around the middle piston-section is connected by a pipe, C, to the boiler, and admits thereby the steam to enter into this space. Two channels, C', are arranged in the cylinder A at certain distance above and below the pipe C, the upper connecting with the blow-off pipe, the lower with the engine. A second steam-pipe, D, connects the boiler with the lower part of cylinder A, and conveys thereby the steam to the lower part of the piston. The middle recessed part of piston B is of such length and position in relation to steam pipe C and exit-channels C' that in any position of the piston the communication of pipe C with either one of the channels C' is produced.

If the steam-pressure is below the regular

fixed point to which the boiler is limited by the weighted piston, it will remain in the position shown in the drawing, and establish the communication of the pipe C with the engine-channel, so as to admit the unobstructed passage of the steam to the engine; but whenever the pressure in the boiler is increased by the negligence of the engineer or otherwise, the piston is forced by the pressure of the steam on its lower part, which overcomes its weight in upward direction, closing the communication of the pipe C with the engine-channel, and establishing that with the blow-off pipe, so as to stop the engine and give the signal to the engineer. The steam-pressure in the boiler can therefore not rise beyond its fixed limit, so that the device forms not only an alarm device, but also a self-acting pressure-regulator, as the instant when the pressure is reduced to the weight of the piston, the same slides down and re-establishes the connection with the engine.

The weighted piston is preferably inclosed in such a manner that it cannot be tampered with.

The device shuts off the steam automatically from the engine or machinery, and gives, by the blowing off at the same time, the alarm-signal to the engineer to pay strict attention to the boilers.

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

The combination, in a steam-pressure detector and regulator, of a cylindrical communicating casing with steam-exit channels, and a weighted double piston sliding therein, for establishing or interrupting the steam-connection of boiler and engine, according as the pressure is below or above the fixed limit of pressure, substantially as and for the purpose set forth.

THOMAS I. WALSH.

Witnesses:

CHARLES A. MARQUIS,  
WM. L. WILKINSON.