(No Model.)

F. J. FREESE.

PRESSURE REGULATOR.

No. 297,373. Patented Apr. 22, 1884.

Fig. 1.

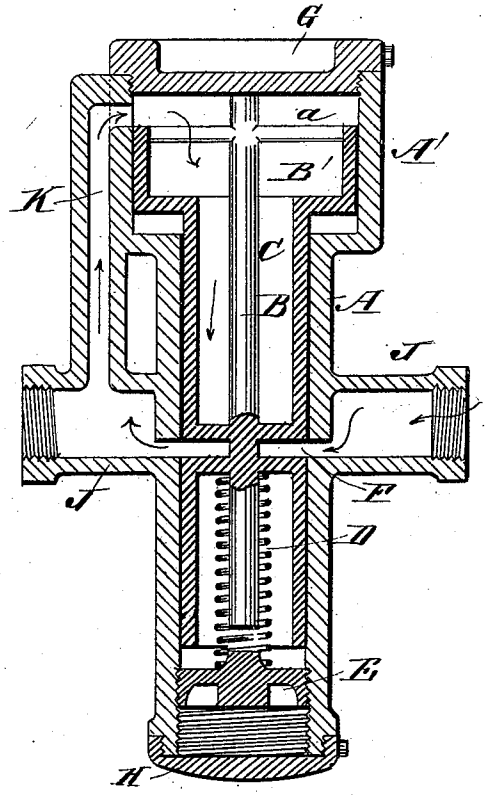
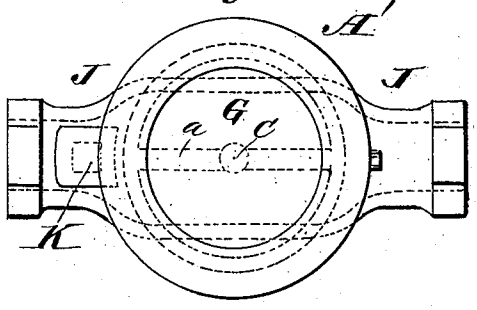


Fig. 2.



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UNITED STATES PATENT OFFICE.

FRANCIS JOSEPH FREESE, OF MANCHESTER, NEW HAMPSHIRE.

PRESSURE-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 297,373, dated April 22, 1884.

Application filed August 21, 1883. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS J. FREESE, of Manchester, in the county of Hillsborough and State of New Hampshire, have invented a new and Improved Pressure-Regulator, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved device for automatically regulating the pressure of liquids, gases, steam, &c.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a longitudinal sectional elevation of my improved pressure-regulator. Fig. 2 is a plan view of the same.

A cylindrical casing, A, is provided at its upper end with an enlargement, A′, and contains a hollow sliding plunger, B, provided at its upper end with an enlargement, B′, fitting in the enlargement A′. A rod, C, extends longitudinally through the plunger, and is partly surrounded by a gaged spiral spring, D, which rests between a nut, E, screwed on the bottom of the casing, and the bottom of a channel or duct, F, extending transversely through the plunger at about the middle of the same. The upper end of the rod is braced by arms *a*. The rod C projects slightly above the top of the plunger and forms a check by striking against the top cap, G, of the casing, and prevents the plunger from being raised too high by the spring D. The casing is provided with a bottom cap, H. The casing is also provided with two diametrically-opposite necks, J, to which the pipes for conducting the steam, &c., are connected. A duct, K, extends from one of the necks J to the top of the casing. The steam enters the casing through one of the necks J, passes through the duct F into the other neck, and then passes up through the duct K to the top of the casing, and acts on the head of the enlargement B′ and the top partition forming the duct F. If the pressure of the steam, &c., is too great, it presses the plunger B downward, thereby moving the ends of the duct F below the inner openings of the necks J, thus allowing less steam, &c., to pass, and thereby reducing the pressure and permitting the spring D to raise the plunger again, so that more steam, &c., can pass, and so on, the plunger B is raised and lowered and regulates the pressure automatically. The spring D must be gaged according to the desired pressure.

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

In a pressure-regulator for steam, gases, or liquids, the combination of the cylindrical casing A, enlarged at A′, provided with opposite internally-threaded necks J J, and having caps G H, the hollow sliding plunger B, enlarged at B′ to fit into enlargement A′, the rod C, having arms *a* and a top extension-check extending through the plunger, and provided with a spiral spring at the lower end, and the nut E, screwing into the lower end of case, as shown and described.

FRANCIS JOSEPH FREESE.

Witnesses:
JOHN O'NEIL,
CHRIS. A. GALLAGHER.