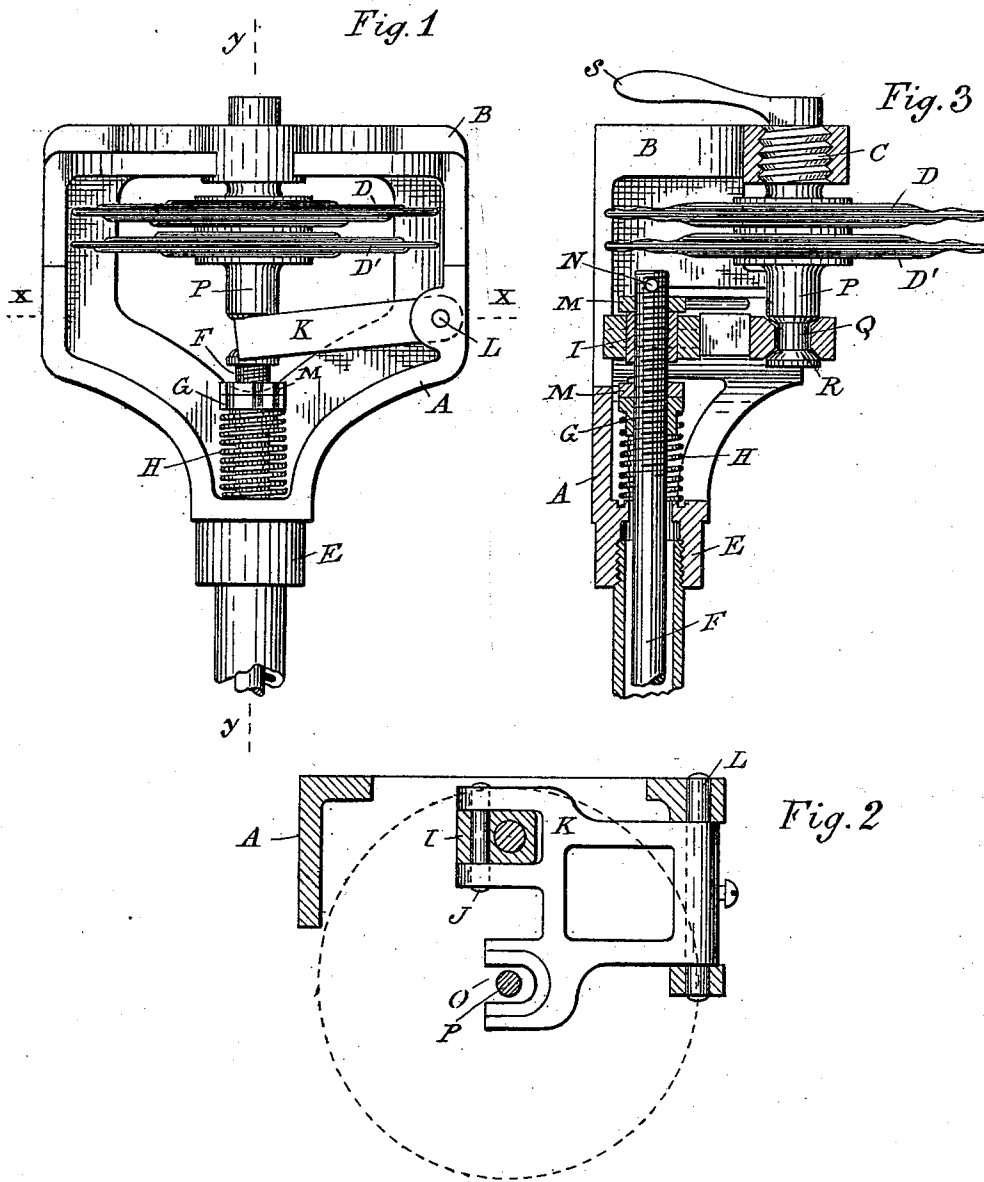


(No Model.)

J. F. McELROY.
TEMPERATURE REGULATOR.

No. 471,315.

Patented Mar. 22, 1892.



Witnesses:
P. M. Hulbert
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UNITED STATES PATENT OFFICE.

JAMES F. McELROY, OF ALBANY, NEW YORK, ASSIGNOR TO THE CONSOLIDATED CAR HEATING COMPANY, OF WHEELING, WEST VIRGINIA.

TEMPERATURE-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 471,315, dated March 22, 1892.

Application filed May 27, 1891. Serial No. 394,311. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. McELROY, a citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Temperature-Regulators, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to new and useful improvements in temperature-regulators; and the invention consists in the peculiar construction of the supporting-frame and the connecting mechanism for transmitting the expansive force in the thermic cells to the valve or damper to be regulated, and, further, in the peculiar construction, arrangement and combination of the various devices, as more fully hereinafter described and claimed.

20 In the drawings, Figure 1 is a front elevation of my improved device. Fig. 2 is a cross-section thereof on line *xx* in Fig. 1. Fig. 3 is a vertical central section on line *yy*, Fig. 1.

A is the supporting-frame, provided with suitable means for attaching it to the wall of the chamber to which the device is to be applied. This frame is provided at the top with a horizontal bracket B, which is centrally provided with screw-threaded sockets adapted to receive the stem C, which is correspondingly threaded and which extends through the top of the bracket. To the lower end of this stem is secured a thermic cell or cells D D'. I preferably employ two cells, as it enables me to get a greater expansion without increasing the diameter. In these cells I place any suitable expansible medium, preferably one which will vaporize at or about the temperature desired to be maintained.

40 The frame A is provided at its lower end with a guide E, through which the connecting-rod F passes. This rod may be connected to any suitable valve or damper, and this connection may be made in any desired manner. The upper end of this rod is screw-threaded and with it engage the adjusting-nut G, which rests upon the spring H, supported in the top of the bearing E. This rod also engages with a nut I above the nut G, which is pivoted by means of the pin J to a swinging frame K. This frame is bifurcated to receive

the nut and is pivoted upon the pin L at one side of the frame.

M are suitable jam-nuts.

In setting the device it frequently is necessary to raise and lower the connecting-rod to get the proper adjustment to the valve-seat, and by making the same screw-threaded engagement between the nuts G and I, I can raise or lower the rod F by turning it and still maintain the same relative position between the nuts, and I can turn the nut G independently of the nut I and increase the tension of the spring H. I preferably provide the aperture N, through which a pin 65 may be passed to turn the rod F.

The frame K is provided at its opposite side in line with the center of the thermic cells D with the notch O, in which the stem P, secured to the under side of the thermic cells, engages. A suitable neck Q, with rounded sides R, is formed to engage with this notch to allow of a change of angular relation between the parts as the cell expands and retracts. It is evident that as the cell expands the frame 75 K will be moved downward, carrying with it the rod which actuates the valve, and as it contracts the spring H, which has been under pressure, will expand and raise the valve to its normal position. 80

By turning the stem C, which may be done by means of the handle S, I can compress or expand the cell to cause it to act at a higher or lower temperature.

It is evident that I may turn my device the other side up without changing its operation; but I preferably suspend the thermic cell, as all the element of weight upon it is eliminated.

What I claim as my invention is—

1. In a temperature-regulator, the combination, with the frame and a bracket thereon, of a thermic cell suspended from said bracket and a hinged frame having its outer free edge extending to within proximity of the thermic cell and connected with the same and with the valve to be actuated, substantially as described. 95

2. In a temperature-regulator, the combination, with the frame and a bracket thereon, of a thermic cell suspended from said bracket, a hinged frame having its outer free edge extending to within proximity of the thermic 100

cell, a suitable connection between the said free edge and the thermic cell, a connecting-rod for connecting the free edge with the valve to be actuated, and means for adjusting the length of the connecting-rod, substantially as described.

3. In a temperature-regulator, the combination, with the frame and bracket thereon, of a thermic cell suspended from the bracket, a connecting-rod, a connecting-frame between the thermic cell and rod, a nut I on said frame, in which the rod engages, means for turning the rod in said nut to lengthen or shorten the connection between the thermic cell and valve to be operated, a spring H on the rod, the lower end of which rests against the frame,

and a nut G on the rod above the spring, whereby the tension of the same may be adjusted, substantially as described.

4. In a temperature-regulator, the combination of the frame A, thermic cell D, the bracket B, screw-threaded stem C, engaged with said bracket, the stem P, neck Q, hinged frame K, and the pivotal connection between said frame and the connecting-rod, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES F. McELROY.

Witnesses:

JOHN B. BRAIDWOOD,
ALMON C. BROWN.