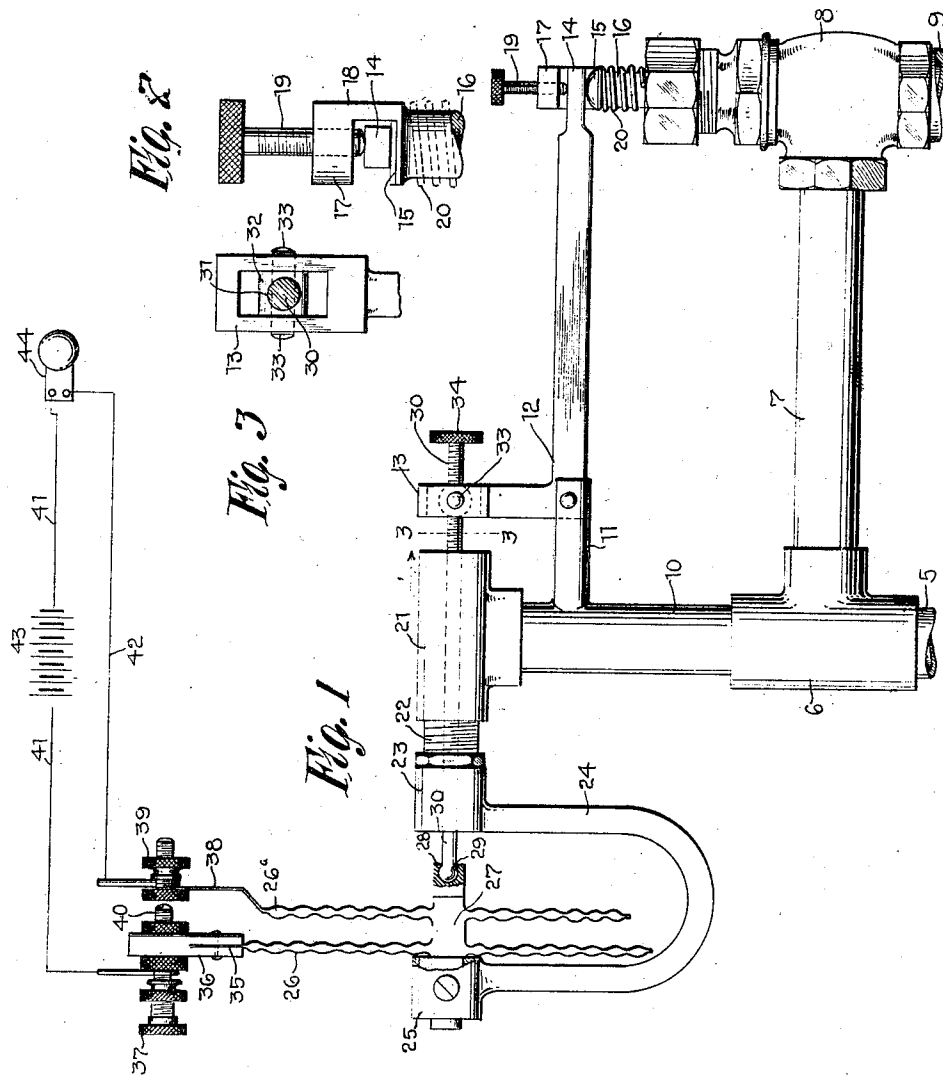


F. W. PENN.
TEMPERATURE CONTROLLER.
APPLICATION FILED MAR. 25, 1911.

1,014,511.

Patented Jan. 9, 1912.



WITNESSES
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UNITED STATES PATENT OFFICE.

FREDERICK WM. PENN, OF PETALUMA, CALIFORNIA.

TEMPERATURE-CONTROLLER.

1,014,511.

Specification of Letters Patent.

Patented Jan. 9, 1912.

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To all whom it may concern:

Be it known that I, FREDERICK WM. PENN, a citizen of the United States, residing at Petaluma, in the county of Sonoma and State of California, have invented certain new and useful Improvements in Temperature-Controllers, of which the following is a specification.

This invention relates to thermostatically-operated temperature controllers, and the principal object of the same is to provide a temperature controller that will reduce the supply of fuel to a burner when the temperature rises above a predetermined degree, and when the temperature drops below a predetermined degree, closes an electric circuit and sounds an alarm so that an attendant will be notified in time to give attention to the burner.

The improved temperature controller is capable of being used in connection with building and other structures for controlling the heating plant thereof, and is of special utility in connection with incubators, brooders and other hatcheries wherein there is a necessity for providing means whereby the temperature will be retained within certain degrees.

In the accompanying drawings, a preferred and practical embodiment of the temperature controller has been shown, wherein:—

Figure 1 is a view in side elevation of the improved temperature controller, parts thereof being shown in section. Fig. 2 is a fragmentary view in elevation showing the connection between the valve and the valve-operating arm. Fig. 3 is a vertical sectional view taken on the line 3—3, Fig. 1.

Referring to the accompanying drawings by numerals, it will be seen that the improved temperature controller has been shown as used in connection with the fuel supply pipe 5 that extends from a tank or other fuel receptacle, not shown, said pipe having an end coupling 6 from which the pipe section 7 extends laterally and engages the casing 8 of a controller valve, said casing being carried by the burner pipe 9. Coupling 6 carries a standard or other support 10 from which an arm 11 projects laterally, said arm 11 having its free end bifurcated. A bell crank lever 12 is pivotally mounted in the bifurcated end of arm 11 and its short arm projects upward and terminates in a housing 13 that is preferably

rectangular. The long arm of lever 12 terminates in a reduced end 14 that projects between the head 15 of a valve stem 16 and an overhanging flange 17 that projects from an arm 18 carried by said stem 16. A set screw 19 extends through flange 17 for clamping the end 14 of lever 12 to the head 15 of stem 16. A spring 20 is coiled about stem 16 and interposed between head 15 and the upper end of valve casing 8 and opposes inward movements of said stem relative to said casing.

The upper end of standard 10 carries a coupling sleeve 21, one end of which is adjacent housing 13 and the other end having a nipple connection 22 with a sleeve 23, at one end of a bracket 24 that is preferably U-shaped. Bracket 24 has its other end equipped with a sleeve 25 that is in alignment with sleeve 23.

A pair of spaced parallel thermostat disks 26—26^a have one end of their hub 27 fast in sleeve 25, the other end of said hub being provided with a socket 28 in which a ball 29 of an operating and adjusting rod 30 is mounted. Rod 30 is threaded and extends through sleeve 23, nipple 22, and through a threaded opening 31 in a rocker bearing 32 that is pivotally supported in housing 13 by the pivots 33 which extend through the sides of said housing and engage the ends of said bearing. Rod 30 has a head 34 by means of which the same may be manually rotated to adjust the short arm of lever 12. The disks 26—26^a are hollow and preferably of the corrugated type and are filled with a volatile liquid, such as ether. The upper portion of disk 26 carries an extension 35 that is fastened to an insulating block 36. Block 36 carries a binding post 37. Disk 26^a has an angular extension 38, that carries a binding post 39 that is in proximity to the contact point 40 of post 37. Posts 37 and 39 are in a circuit including the wires 41 and 42, battery 43, and bell 44.

In use, when the disks 26—26^a are expanded by high temperature, rod 30 is forced away from bracket 24, so that bell crank lever 12 is rocked so that its long arm forces the valve stem in casing 8 to partially close the valve and thereby reduce the supply of fuel to the burner, with a consequent reduction in the heat from said burner. When the disks contract, due to a fall in the temperature, the valve is opened and the circuit is closed through contact 40 and post 39,

thereby causing the bell 44 to ring so that the attendant will be notified.

The ball and socket connection between hub 27 and rod 30 and the rocker bearing 5 32 of housing 13 permit the necessary pivotal movement of said rod 30 to compensate for the movements of lever 12.

What I claim as my invention is:—

10 A temperature controller comprising a supply pipe, a coupling carried thereby, a burner pipe provided with a controlling valve, means for connecting said coupling and said controlling valve, a support carried by said coupling and provided with a later- 15 ally projecting arm, a bell crank lever pivoted to said arm, a stem projecting from said controlling valve, an arm carried by said stem and provided with an overhanging flange, means carried by said stem for

clamping the end of one arm of said bell 20 crank lever to said stem, a housing carried by the other arm of said lever, a pivotal bearing in said housing, a coupling carried by the end of said standard, said coupling having one end adjacent said housing and 25 the other end provided with a bracket, thermostatic disks mounted in said bracket, and a rod pivoted to said disks and extending through the last mentioned coupling and engaging the pivotal bearing of said hous- 30 ing.

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

"FREDERICK WM. PENN.

Witnesses:

H. C. SCHROEDER,
F. P. SCHROEDER.