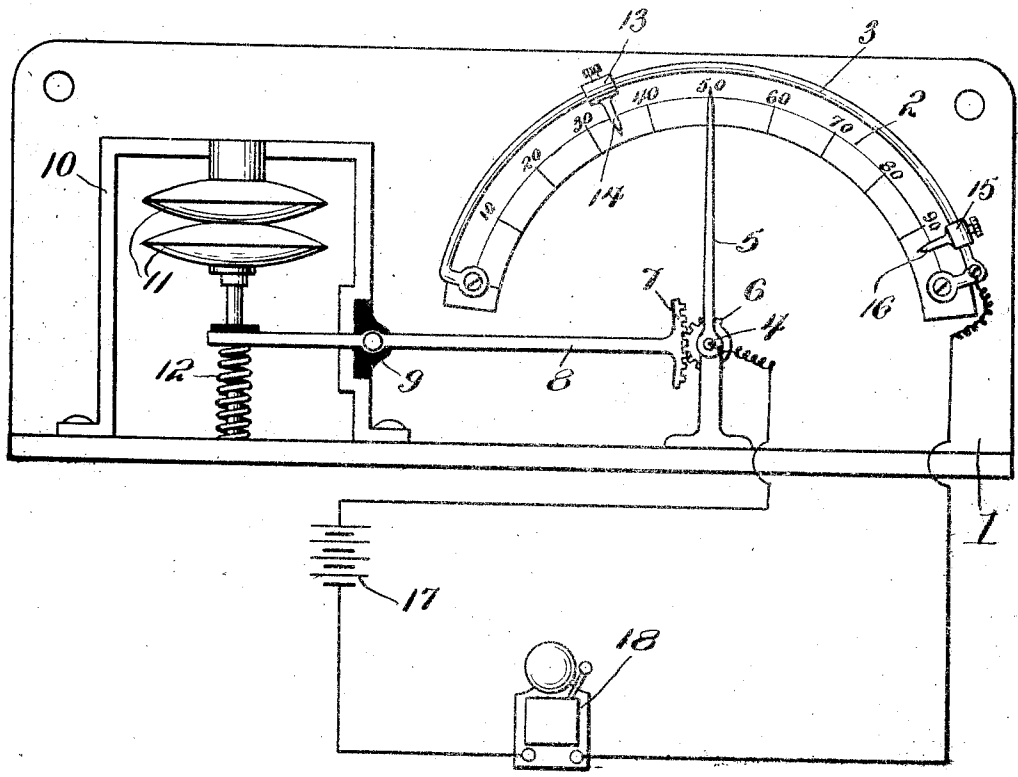


F. C. KEPPLER.
CIRCUIT CLOSER.
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1,187,334.

Patented June 13, 1916.



Witnesses

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FRANK C. KEFFLER, OF CLIFTON, ARIZONA.

CIRCUIT-CLOSER.

1,187,334.

Specification of Letters Patent.

Patented June 13, 1916.

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To all whom it may concern:

Be it known that I, FRANK C. KEFFLER, a citizen of the United States of America, residing at Clifton, in the county of Greenlee and State of Arizona, have invented new and useful Improvements in Circuit-Closers, of which the following is a specification.

This invention relates to improvements in temperature indicators and has particular application to a thermostatically controlled alarm apparatus.

In carrying out the present invention, it is my purpose to provide a thermostatically controlled alarm apparatus wherein the alarm will be sounded when the temperature reaches the predetermined maximum and minimum points and wherein the alarm will remain silent as long as the temperature remains at a degree between the predetermined maximum and minimum points.

It is also my purpose to improve and simplify the general construction of thermostatically controlled temperature indicators and to provide an indicator which will operate efficiently and effectively for its intended purpose and wherein the component parts will be so correlated and arranged as to reduce the possibility of derangement to a minimum.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of parts hereinafter set forth in and falling within the scope of the claim.

In the accompanying drawing, the figure is a view in elevation of a temperature indicator constructed in accordance with the present invention, parts being shown diagrammatically.

Referring now to the drawing in detail, 1 designates a baseboard constructed of any suitable material. Secured to the baseboard 1 is a semicircular strip 2 graduated and marked to indicate the various degrees of temperature. Suitably fastened to the base 1 and offset outwardly therefrom is a segmental rod 3 disposed concentrically of the strip 2 and having the opposite extremities thereof fastened to the base. Projecting outwardly from the base 1 at the center of the arm described by the strip 2 is a shaft 4 and secured to the shaft 4 is an indicator finger 5 movable over the graduated surface of the strip 2. Fixed upon the shaft 4 is a pinion 6 with which meshes the teeth of a

rack bar 7 carried by one end of a horizontal lever 8 pivoted between its ends upon a support 9. Disposed adjacent to the remaining end of the lever 8 is a bracket 10 and secured to the upper extremity of the bracket 10 is a thermostat 11 connected with the adjacent end of the lever 8 while bearing against the under edge of the lever 8 at the end thereof is a coiled expansion spring 12 counteracting the thermostat 11.

Adjustably mounted upon the rod 3 is a collar 13 provided with a depending finger 14 and also adjustably mounted upon the rod 3 is a second collar 15 provided with an inwardly projecting finger 16. An alarm circuit including a suitable source of electrical energy as a battery 17 and an alarm 18 has the terminals thereof connected, respectively, with the rod 3 and the finger 5.

In practice, the collar 13 is adjustable along the rod 3 until the finger 14 is opposite the desired low temperature mark on the scale 2 and the collar 15 is adjusted along the rod 3 until the finger 16 registers with the desired temperature mark on the strip 2, at which time the collars 13 and 15 are secured in their adjusted positions by means of set screws carried thereby. As the temperature varies the thermostat 11 causes the lever 8 to swing about its pivotal connection with the support 9 and so transmit motion to the shaft 4 through the medium of the rack 7 and pinion 6 and in the rotation of the shaft 4 the finger 5 moves over the graduated surface of the strip 2. When the upper end of the finger contacts with one or the other of the fingers 14, 16, the alarm circuit is closed and the alarm 18 sounded.

I claim:

In a circuit closer, a baseboard, a semicircular strip secured to said baseboard and graduated to indicate degrees of temperature, a rod secured to said baseboard concentrically of said strip and offset from said baseboard, collars adjustably mounted upon said rod, fingers carried by said collars and overlying said strip and adapted to register with predetermined marks on said strip, a shaft rotatably mounted at the center of the arc described by said strip, a finger fixed to said shaft and movable over said strip and adapted to engage said first-mentioned fingers, the terminals of an alarm circuit secured to said last-mentioned finger and rod respectively whereby the alarm in the

circuit will be sounded when the last-mentioned finger engages either of the first-mentioned fingers, a pinion on said shaft, a rack meshing with said pinion, a lever
5 pivoted between its ends and having one extremity connected to said rack, a bracket adjacent to the remaining extremity of said lever, a thermostat carried by said bracket and connected to said lever, and a spring

connected to said lever and counteracting 10 said thermostat.

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

FRANK C. KEPPLER.

Witnesses:

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