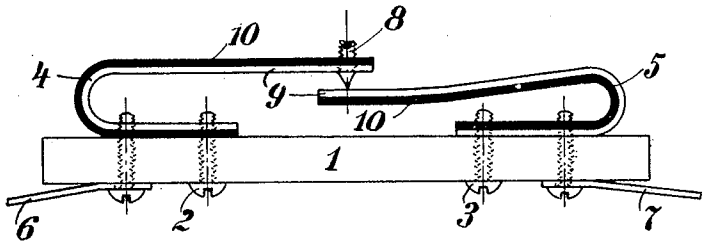
A. A. BUCK.

THERMOSTATIC CIRCUIT CLOSER.

APPLICATION FILED OCT. 30, 1918.

1,408,168. Patented Feb. 28, 1922.



Witnesses:
Tom Pinder
Fred Just

Inventor:
Alton A. Buck.
By J. M. Hosschel
His Attorney.

UNITED STATES PATENT OFFICE.

ABTON ALBERT BUCK, OF ZURICH, SWITZERLAND.

THERMOSTATIC CIRCUIT CLOSER.

1,408,168. Specification of Letters Patent. **Patented Feb. 28, 1922.**

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To all whom it may concern:

Be it known that I, ABTON ALBERT BUCK, a citizen of the Swiss Confederation, residing at Zurich, Canton Zurich, Switzerland, have invented new and useful Improvements in Thermostatic Circuit Closers, of which the following is a specification.

This invention relates to thermostatic circuit closers of the kind in which an elastic arm or a fork, formed of two differently expanding metals, is adapted to make and break contact with a fixed pin or screw so as to control an electric current for an even temperature. Closers of this kind have the disadvantage of a sluggish cutting-out action and sparking, thus interrupting the current only after heating in excess of the predetermined temperature, while the gradual oxidation consequent on the aforesaid sluggishness renders the action of the closer uncertain.

The object of my invention is to obviate the said defects by providing two U-shaped, composite, thermostatic bars, having their metals oppositely placed in said bars, said bars being mounted on the support with the curved portions extending away from each other and so clamped that the bars move about a point near the lower portion of the curve as a center so that the radii from the fixed points of the bars towards the contact points form with each other an obtuse angle of nearly 180° so that the contact points move in substantially a straight line.

My object is attained by the means shown in side elevation on the accompanying drawing and fully set forth in the following description with reference to the same, as well as pointed out in the claim appended thereto.

Referring to the drawing, on an insulation base 1, screws 2 and 3 fix two U-shaped thermostatic bars 4 and 5, the former communicating with the leading-in conductor 6 and the latter with the leading-off conductor 7. The free end of the bar 4 is fitted with a contact screw 8 which touches the free end of the bar 5. Each bar is composed of two superposed united metals, such as brass and steel. The bar 4 has the brass on the inside of the steel bar 10, while the bar 5 is inversely arranged; this being the essential feature. The bars 4 and 5 are mounted on the support 1 with the curved portions extending away from each other and so clamped that the bars move about a point near the lower portion of the curve as a center so that the radii from the fixed points of the bars towards the contact points form with each other an obtuse angle of nearly 180° so that the contact points move in substantially a straight line.

The action is as follows:—

With closed circuit, the brass expands more than the steel, consequently the bar 4 with its brass lining at the inside spreads its end (see the figure), while the bar 5 with its brass lining externally of the steel contracts its end, so that the said ends move in opposite directions. By this arrangement the free ends of the contact bars separate twice as quick as when only a single bar and a stationary contact screw are provided, so that now the circuit becomes interrupted immediately at the separation of the ends of the bars.

By virtue of the specified action of the bars 4 and 5, the interruption of the current, and consequent control of heat, takes place almost instantly. Further, this device can be comparatively smaller than the known forms of heat regulators, small closers of which latter acting so sluggishly as to render heat regulation illusory.

I claim:

Improvements in thermostatic circuit closers having a support with two U-shaped, composite, thermostatic bars, having their metals oppositely placed in said bars, said bars being mounted on the support with the curved portions extending away from each other and so clamped that the bars move about a point near the lower portion of the curve as a center so that the radii from the fixed points of the bars towards the contact points form with each other an obtuse angle of nearly 180° so that the contact points move in substantially a straight line.

ABTON ALBERT BUCK.