J. F. SCHEUER.

THERMAL CIRCUIT CLOSER.

APPLICATION FILED JAN. 26, 1914.

1,122,032.

Patented Dec. 22, 1914.

Fig. 1.

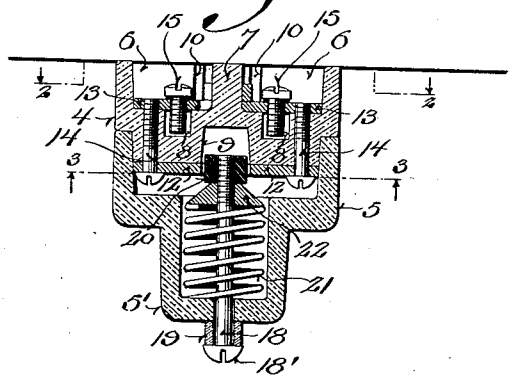


Fig. 2.

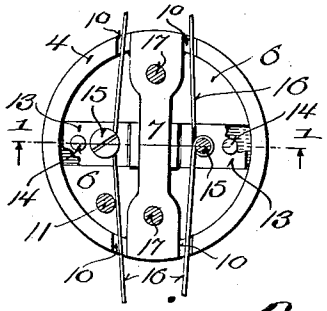
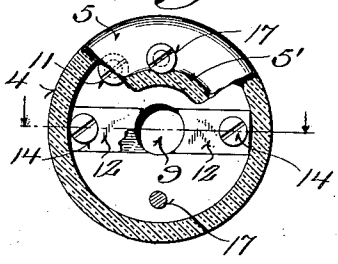


Fig. 3.



Witnesses:
Chauncey Young
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UNITED STATES PATENT OFFICE.

JOSEPH F. SCHEUER, OF TWO RIVERS, WISCONSIN.

THERMAL CIRCUIT-CLOSER.

1,122,032. Specification of Letters Patent. Patented Dec. 22, 1914.

Application filed January 26, 1914. Serial No. 814,303.

To all whom it may concern:

Be it known that I, JOSEPH F. SCHEUER, a citizen of the United States, and resident of Two Rivers, in the county of Manitowoc and State of Wisconsin, have invented certain new and useful Improvements in Thermal Circuit-Closers; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention consists in what is herein particularly set forth with reference to the accompanying drawings and pointed out in the claims of this specification, and like in my Letters Patent of October 21, 1913, respectively numbered 1,076,394 and 1,076,607, its object is to provide simple, economical and efficient thermal circuit-closers of the fusible type and which are applicable as parts of automatic electric-signaling apparatus to be individually operative in the event of an increase of temperature in the vicinity thereof beyond a predetermined degree, the construction of said circuit-closers being such as to facilitate testing of a line in which any one of the same is utilized.

Figure 1 of the drawings represents a vertical sectional view of a fusible thermal circuit-closer in accordance with my invention dependent from a ceiling to which it is attached, the plane of the section being indicated by line 1—1 in the other illustrations, and Figs. 2 and 3, horizontal sectional views of the device respectively indicated by lines 2—2 and 3—3 in Fig. 1.

Referring by numerals to the drawings, 4 indicates an insulator-block, circular or otherwise and outwardly shouldered for engagement with a cover shell 5 having a central hollow boss extension 5′. The inner end of the block is provided with recesses 6 in opposite directions from a central rib 7, and a countersink 8 extends from each of the recesses longitudinally of said block. The outer end of the block is provided with a central recess 9, and wall apertures 10 of said block communicate with the recesses first aforesaid. The block is attached to a ceiling or other support by a screw 11 for which an aperture is made in the otherwise solid portion of said block, and provision may be had for utilizing two or more screws for the same purpose.

Opposing the outer end of the block 4, to be flush with or lap the recess 9 thereof, is a pair of opposite conductor plates 12, 12, and a similar plate 13 is seated in each recess 6 of said block. Each conductor plate 12 is held in electric connection with a similar plate 13 by a conductor-screw 14 for which an aperture is provided in the otherwise solid portion of the block. Extending through each conductor plate 13, into a countersink 8 of the block, but free of said block, is a binding-screw 15 for an electric-current distribution wire 16 that extends through two of the wall apertures 10 aforesaid.

The cover 5 is held in place by screws 17 that extend through apertures thereof into seats provided in the rib 7 of the block 4, and extending through a central aperture of the boss projection 5′ of said cover is an outwardly headed stem 18, the head 18′ thereof being opposed to a metallic sleeve 19 fusible at a temperature of the predetermined degree aforesaid. On the inner end of the stem is a nut 20 of insulating material extending into the outer central recess 9 of the insulator block 4, and arranged on said stem between said nut and a spiral-spring 21 is a conical washer 22 of conductor material normally out of contact with the plates 12, 12, the spring being under tension between the washer and the boss-end of the block-cover.

In practice, the melting away of the fusible sleeve 19 will permit expansion of the spring 20 to wedge the washer 22 between the concave opposing ends of the plates 12, 12, thereby closing an electric-circuit through said plates, the screws 14, plates 13, binding-screws 15 and electric-current distribution wires 16, to effect an energization of electric-signaling apparatus (not shown) in the closed circuit. At any time it is desirable to test the line, the cover 5 and parts therewith may be removed to permit of a temporary connection of the plates 12—12 by a suitable bridge.

I claim:

1. A thermal circuit-closer comprising an insulator-block recessed at its inner and outer ends and provided with wall apertures communicating with its inner recessed portion, said block being attachable to a support; conductor-plates facing the outer end of the block in proximity to the adjacent recess of the same, similar plates seated in the inner recessed portion of the block, conductor-screws connecting the outer and inner plates in pairs through apertures in the otherwise solid portion of the block,

binding-screws engaging the innermost plates clear of the block for connection with electric-current distribution wires extending through said wall apertures, a cover shell in detachable connection with the block, a stem extending through the shell, a fusible sleeve held on the outer end of the stem against the shell, an insulator-nut on the inner end of the stem engaging the outer recess of the block, a conical washer on the stem forward of the nut, and a spiral-spring under tension between the washer and the shell.

2. A thermal circuit-closer comprising an insulator-block recessed at its inner and outer ends and provided with wall apertures communicating with its inner recessed portion, said block being attachable to a support; conductor-plates facing the outer end of the block in proximity to the adjacent recess of the same, similar plates seated in the inner recessed portion of the block, conductor-screws connecting the outer and inner plates in pairs through apertures in the otherwise solid portion of the block, binding-screws engaging the innermost plates clear of the block for connection with electric-current distribution wires extending through said wall apertures, a cover shell in detachable connection with the block, a headed stem extending through the shell, a fusible sleeve on the stem between its head and the shell, an insulator-nut on the inner end of the stem engaging the outer recess of the block, a conical washer on the stem forward of the nut, and a spiral-spring under tension between the washer and the shell.

3. A thermal circuit-closer comprising an insulator-block recessed at its inner end in opposite directions from a central rib, and provided with an outer central recess as well as with wall apertures communicating with the recesses first aforesaid, said block being attachable to a support; conductor-plates facing the outer end of the block in proximity to the adjacent recess of the same, similar plates seated in the inner recesses of the block, conductor-screws connecting the outer and inner plates in pairs through apertures in the otherwise solid portion of the block, binding-screws engaging the innermost plates clear of the block for connection with electric-current distribution wires extending through said wall apertures, a cover shell in detachable connection with the rib of the block, a stem extending through the shell, a fusible sleeve held on the outer end of the stem against the shell, an insulator nut on the inner end of the stem engaging the outer recess of the block, a conical washer on the stem forward of the nut, and a spiral-spring under tension between the washer and the shell.

In testimony that I claim the foregoing I have hereunto set my hand at Two Rivers, in the county of Manitowoc and State of Wisconsin in the presence of two witnesses.

JOSEPH F. SCHEUER.

Witnesses:
W. A. PRIEGNITZ,
W. C. BORHRINGER.