March 9, 1926. 1,576,228

C. F. SCHMIEZE

FUSE CUT-OUT CIRCUIT BREAKER

Filed Feb. 26, 1924

Fig. 1.

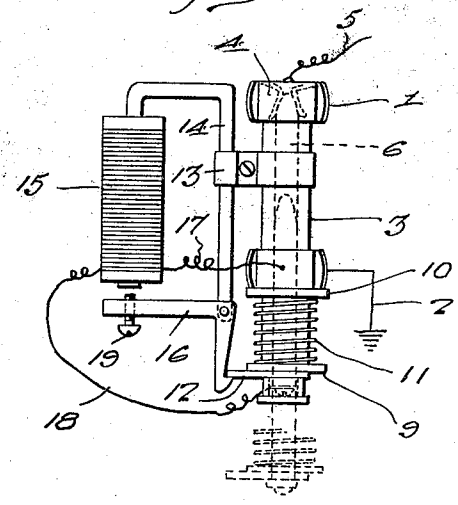
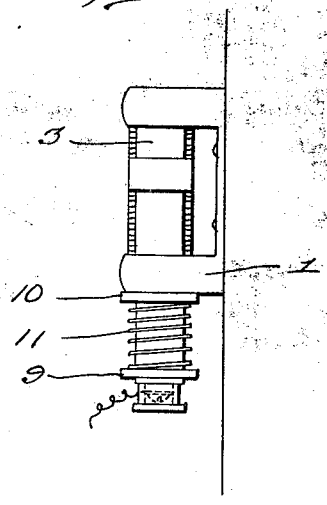


Fig. 2.



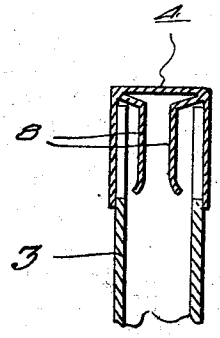


Fig. 3.

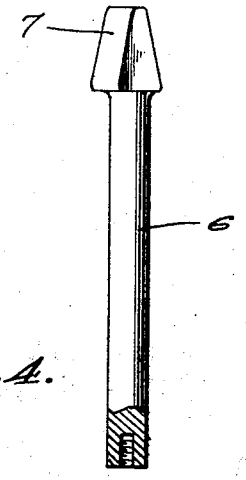


Fig. 4.

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UNITED STATES PATENT OFFICE.

CHARLES F. SCHMIEZE, OF MUSKEGON HEIGHTS, MICHIGAN.

FUSE-CUT-OUT CIRCUIT BREAKER.

Application filed February 26, 1924. Serial No. 695,225.

To all whom it may concern:

Be it known that I, CHARLES F. SCHMIEZE, a citizen of the United States, residing at Muskegon Heights, in the county of Muskegon and State of Michigan, have invented certain new and useful Improvements in Fuse-Cut-Out Circuit Breakers, of which the following is a specification.

An object of the invention is to provide a circuit breaker of simple structure adapted to be inserted in a fuse clip and which is electrically operated by the strength or surge of electric current to break the circuit. Means are provided for resetting the device and thus saving the expense of burning out fuse plugs which are required for the purposes of safety in electric circuits used for domestic and other purposes.

In the accompanying drawing:—

Figure 1 is a side elevation of the circuit breaker,

Figure 2 is an edge elevation of the same,

Figure 3 is a fragmentary detail sectional view through contact members used in the circuit breaker,

Figure 4 is a perspective view of a circuit closing member used in the device.

The circuit breaker comprises a bracket member 1 which may be electrically connected as at 2, with the ground. A cylinder 3 of paper or other insulating material is supported in the bracket 1. A socket member 4 is mounted upon the cylinder 3 and is connected by wire 5 with an electric circuit. A bolt 6 of copper or other material which is a good electrical conductor is slidably mounted in the cylinder 3 and the bolt is provided at its upper end with a wedge-shaped head 7 adapted to contact with fingers 8 provided within the socket member 4. The lower end of the bolt 6 projects beyond the lower end of the cylinder 3. Washers 9 and 10 are mounted upon the bolt 6 and a coil spring 11 is interposed between the said washers. The washer 10 bears against the lower end of the bracket 1 and the washer 9 bears against the upper surface of a finger 12 also mounted upon the said bolt. A clip 13 is mounted at the intermediate portion of the cylinder 3 and carries a U-shaped arm 14. The magnet 15 is mounted upon one end portion of the said arm and a hook 16 is pivotally mounted at the other end of the said arm. A wire 17 electrically connects the magnet 15 with the bracket 1 and a wire 18 electrically connects the magnet 15 with the lower end of the bolt 6. The hook 16 is provided with angularly disposed end portions, one of which is adapted to engage under the lug 12 and the other end portion carries an adjustable screw 19 which is disposed opposite the lower end of the core of the magnet 15. When the lug 12 is in engagement with the hook 16, the spring 11 is compressed as shown in heavy lines in Figure 1 of the drawing. In the event that a surge of current comes over the wire 5, the said current passes from the fingers 8 along the bolt 6, thence over wire 18 to the magnet 15 which is energized and the screw 19 is drawn toward the magnet whereby the hook 16 is swung and the lower end portion thereof is carried from under the lug 12. Therefore the spring 11 is released and expands and the bolt 6 is moved to the dotted line position shown in Figure 1, whereby the electric circuit from the wire 5 is broken. At the same time, the magnet 15 is deenergized and the hook 16 swings to the position shown in Figure 1. The bolt 6 may then be moved in an upward direction whereby the head 17 is brought in contact with the fingers 8 of the socket 4 and the lug 12 is engaged in the hook 16 and the parts of the circuit breaker are thus reset.

Having described the invention, what is claimed is:

A circuit breaker comprising a cylinder of insulating material, a cap member closing one end of the cylinder and having resilient fingers disposed within the cylinder, a bolt slidably mounted in the cylinder and having a head portion adapted to engage between the fingers, a washer carried by the cylinder, said bolt passing through the washer, and the washer having an intermediate portion lying in the path of movement of the head of the bolt whereby the movement of the bolt with relation to the cylinder is limited, a finger carried by the bolt, a spring interposed between the washer and the finger and tensioned to normally hold the bolt with its head out of engagement with the resilient fingers, an inverted U-shaped bracket, a clip engaged

with the cylinder and engaged with one arm of the inverted U-shaped bracket, a magnet carried by the other arm of the bracket and electrically connected with the bolt and grounded, a conductor connected with the first mentioned cap and a hook mounted upon the arm of the bracket engaged by the clamp and operatively associated with the magnet and having an end portion normally disposed under the finger which is carried by the bolt for holding the head of the bolt in engagement with the resilient fingers.

In testimony whereof I affix my signature.

CHARLES F. SCHMIEZE.