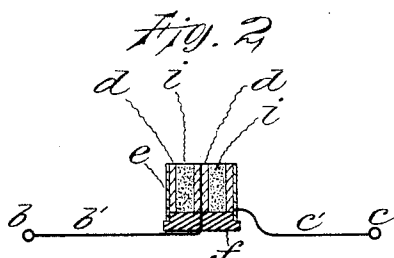
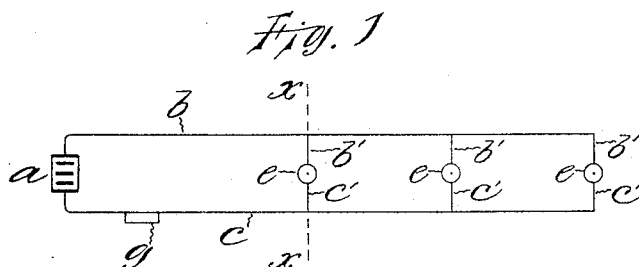


(No Model.)

O. F. ALLEN.
ELECTRICAL CIRCUIT CLOSER.

No. 580,339.

Patented Apr. 6, 1897.



Witnesses

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C. E. Burchland

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UNITED STATES PATENT OFFICE.

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ELECTRICAL CIRCUIT-CLOSER.

SPECIFICATION forming part of Letters Patent No. 580,339, dated April 6, 1897.

Application filed December 13, 1896. Serial No. 616,188. (No model.)

To all whom it may concern:

Be it known that I, OLIVER F. ALLEN, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented a certain new and useful Improvement in Electrical Circuit-Closers, of which the following is a description, reference being had to the accompanying drawings, wherein—

Figure 1 is a diagram plan view. Fig. 2 is a view on an enlarged scale as compared with Fig. 1—a view in vertical cross-section on the plane *xx* of Fig. 1—a plane cutting one of the circuit-closers in central vertical section.

The object of the improvement is the production of a device for effecting the closing of an electrical circuit through the melting of easily-fusible conductive metal. The fusible metal commonly used in so-called "fusible" plugs of fire-extinguishing systems furnishes a sample of what is meant by the term "easily-fusible" metal.

In the accompanying drawings the letter *a* denotes a source of electrical energy—a collection of voltaic cells, for instance.

The letters *b* and *c*, respectively, denote conductors leading from said source of electrical energy, ordinarily insulated wires.

The letter *b'* denotes branches of the conductor *b*, and the letter *c'* denotes branches of the conductor *c*. The end of the branch *b'* is turned into an upright, which is coated at or near the end with the fusible metal *d*. The branch *c'* terminates in a conductive cup *e*, which is supported on but insulated from the upright part of the branch *b'* by the non-conductive base *f*. The cup *e* is interiorly coated with fusible metal *d*. In the construction so far described the two electrodes are normally out of contact but with a degree of heat which will melt the easily-fusible metal, such fusible metal being collected and held in the cup *e* in common contact with both electrodes, completing the electrical circuit. It is obvious that this mode of making a contact insures the making of that contact even though dust and oil may have gathered upon the device.

As a safeguard against the gathering of

water or moisture in the receptacle for the molten fusible metal, which might form an accidental contact between the two electrodes, the cup is filled with some soft, easily-melted, moisture-repellent non-conductor, such as paraffin.

In Fig. 2 of the accompanying drawings the letter *i* denotes such paraffin.

The device described herein is useful for a great variety of purposes—as, for instance, the operation of a fire-alarm system, a signal system, a fire-extinguishing system, or any othersystem or apparatus intended to operate at that moderate degree of heat which will cause easily-fusible metal to become molten.

Let the letter *g* denote an electromagnet in the circuit to be operated by the operation of any one of the various circuit-closers included in the system. Such an electromagnet can be made readily to operate any of the apparatuses referred to.

I claim as my improvement—

1. In an electrical circuit-closer, the two electrodes normally out of contact, either or both coated with easily-fusible conductive metal, in combination with a receptacle adapted to hold the molten fusible metal in contact with both electrodes, all substantially as described and for the purposes set forth.

2. In combination, the two electrodes normally out of contact, the easily-fusible conductive metal, the receptacle adapted to hold the molten fusible metal in contact with both electrodes, and the easily-melted moisture-repellent non-conductor filling the cup, all substantially as described and for the purposes set forth.

3. In combination—in an electrical circuit-closer—the cup-electrode interiorly coated with easily-fusible metal and the second electrode situated within the cup and also coated with easily-fusible metal, all substantially as described and for the purposes set forth.

OLIVER F. ALLEN.

Witnesses:

W. E. SIMONDS,
ANDREW FERGUSON.