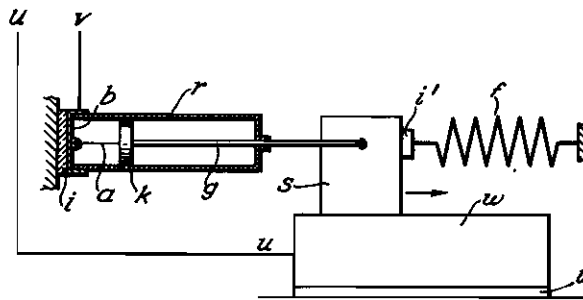


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DEVICE FOR INTERRUPTING OVERLOADS
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DEVICE FOR INTERRUPTING OVERLOADS

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The present invention relates to a device for interrupting overloads.

The interruption of overloads is effected the simpler, the quicker the interrupting device reduces the current value. This may be accomplished according to the invention by the use of a resistance switch which is released by means of a fuse. In this case by a resistance switch, a device is to be understood, by means of which a resistance is rendered effective in a very rapid manner in the circuit to be interrupted. The rapid operation of the device controlling the resistance is, however, completely utilized only if this control device can be released also very rapidly. To this end, a fuse is employed according to the invention, since it is possible to attain with the aid of the latter very high releasing speeds. The combination of a resistance switch and of a fuse releasing the same enables an effective suppression of the overload already upon the occurrence thereof.

The fuse may be arranged in the form of a fusible cut out. Since it, however, has not the function of the ordinary fusible cut outs but is supported or replaced by the resistance to be inserted in the circuit when disconnecting the current, it may be proportioned considerably smaller than the ordinary cut outs. Above all it is made shorter, since an arc produced at the point where the fusion occurs need not be feared, because it is weakened by the immediate insertion of a resistance and is therefore extinguished rapidly or may be extinguished with the simplest means.

An embodiment of the invention is shown in the accompanying drawings in diagrammatic form.

In the circuit u , v to be interrupted, the resistance switch consisting of a resistance body w and a contact s sliding thereover is connected in series with the wire fuse a . The wire fuse is enclosed in an insulating tube or cylinder r and connected with the contact s through an electrically conductive connecting member g . The contact s is pulled in the direction as indicated by the arrow

by a power storing device, for instance, in the form of a stretched spring f and is held in the position of rest against the action of the spring by the wire a before the latter is fused. If the wire a fuses the spring f pulls the contact s very rapidly towards the other end of the resistance body w , the current is immediately reduced to a considerable extent by the resistance becoming effective and extinguishes the arc caused by the fusion of the wire a . To support the extinction of the arc occurring at the wire fuse it is preferable to arrange in a known manner in the neighborhood either gas developing insulating materials or to arrange the wire fuse in a pulverized insulating material; for instance, in quartz.

The vapors developed during the fusion of the wire a may also be utilized to accelerate the movable part of the resistance switch. To this end, a piston k which is guided in the tube in a sufficiently tight manner is interposed between the wire fuse a and the connecting member g designed in the form of a rigid rod. The piston k is forced by the gas pressure caused during the fusion within the fusing chamber towards the open end of the tube and thereby supports the driving force of the spring f . The wire fuse is connected to the current supply conductor v through the conductive bottom b of the tube r . The spring f is insulatedly secured to the movable contact s . The insulating part and the insulating supports on which the tube r and the resistance body w are firmly mounted are denoted by the reference character i . The spring f may also be replaced by a power storing device of another type, for instance, by an energized electromagnet.

In this manner a cut-out for currents of great intensity may be easily produced which operates in response to an overload within the shortest time and which in connection with the resistance switch interrupts the current without dangerous arcs being formed.

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