

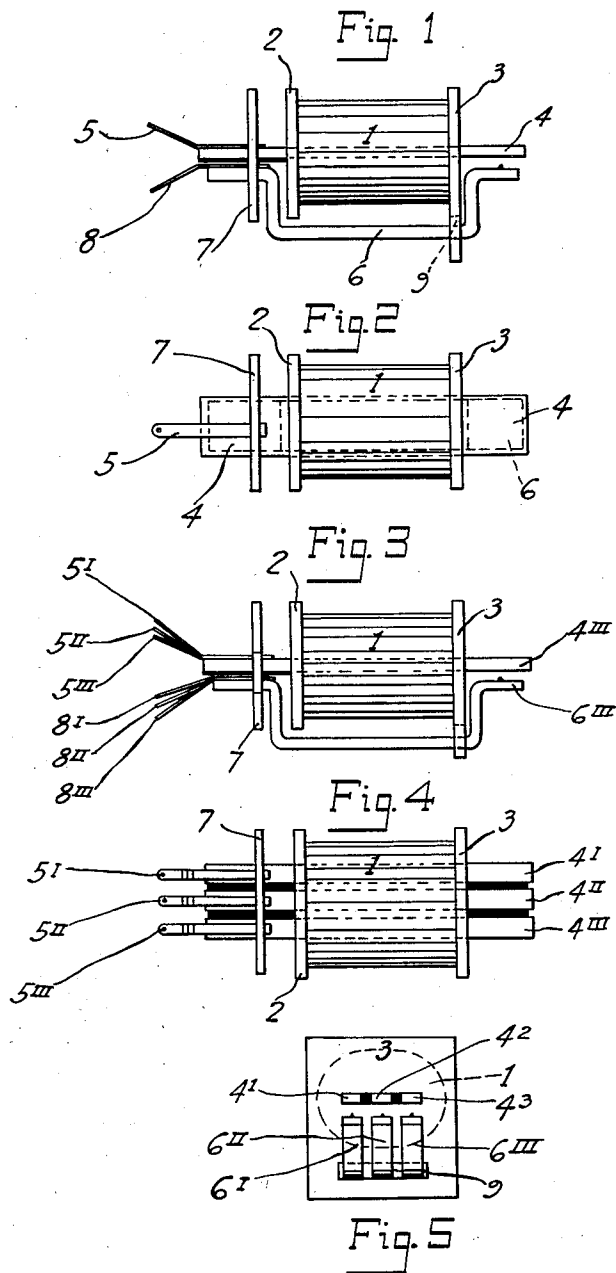
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ELECTROMAGNETIC RELAY

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ELECTROMAGNETIC RELAY

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The invention relates to electro-magnetic relays, especially for weak current purposes.

The object of the invention is to create a cheap relay, which is achieved according to the invention mainly in that the circuit to be controlled by the relay passes over the magnet circuit of the relay. Thereby the construction of the relay is considerably simplified, as special contact carriers as well as contact springs or the like are not required, thus reducing the number of parts.

A particularly suitable solution of the given problem according to the invention is obtained in that for steering several circuits of such a relay there are provided several magnet circuits which are insulated from one another, the circuits to be controlled passing over the said magnet circuits.

Two methods of carrying out the invention are shown in the drawings.

Figs. 1 and 2 show such a relay for controlling only one circuit, the relay being shown in side elevation and plan, while Figs. 3, 4 and 5 shows such a relay having several armatures for controlling a corresponding number of circuits.

The relay consists of the coil 1, which can contain one or more windings. The ends of the coil are limited by coil flanges 2 and 3 in the usual manner that are usually made of a fibrous insulating material. The coil of Figs. 1 and 2 surrounds a flat iron core 4, both ends of which project out of the coil 1. One of the ends carries a connecting tag 5, while the other end forms the pole piece for the armature. Below the coil is fitted the armature 6 parallel to the core 4. This armature likewise consists of a flat iron piece and is provided with a connecting tag 8. It is bent to a U-shape and its rear bent end is movably mounted on the core 4, but is insulated therefrom. It is secured thereto by means of a perforated insulating disc 7, which is passed over both parts. The front coil flange 3 has a slot 9, through which projects the armature 6, on the lower edge of which it rests in the deenergized condition of the relay. Preferably the free end of the armature 6 associated with the pole piece of the core 4 is provided with a contact pimple,

which does not touch the pole piece of the core when no current flows through the relay. But when current does flow, the armature 6 is moved out of its normal position by the magnetic field formed at the pole piece of the armature, and its contact is caused to touch the pole piece of the core 4, so that current passes between the armature and the core, and the circuit connected thereto is closed.

In order to be able to use such a relay for controlling several circuits, it is provided with a corresponding number of magnet circuits, which are insulated from one another, as is shown in the Figs. 3-5, inclusive. The relay shown in these figures has, for example, three magnet circuits separated from one another. For that purpose each of the circuits to be controlled has one of each of the magnet cores 4 I, 4 II, and 4 III and the armatures 6 I, 6 II, and 6 III, that are insulated from one another. The cores, as well as the armatures, are each placed next to one another in a plane and each of them has one of the soldering tags 5 I-5 III, while each of the armatures has one of the soldering tags 8 I-8 III. The rest of the construction of the relay is the same as that already described with reference to the Figs. 1 and 2. When current passes through the winding of the coil 1, magnetic fields are created at the pole pieces of all the cores, thereby causing the pulling-up of the corresponding armatures to close the circuits that pass over them and over the cores.

In the example shown, the cores and the armatures have the same external dimensions, but these can be different in order that the armatures shall take different lengths of time to operate. Furthermore the position of the armatures with respect to the cores can be different from that shown. Also, by means of a suitable construction of the relay, the armatures can operate front as well as back contacts.

What is claimed is:

An electromagnetic relay comprising an energizing coil wound upon a flat iron core between two coil flanges secured on said core at substantial distances from the ends thereof, one of said coil flanges provided with an

aperture, a U-shaped armature having flaring ends and arranged substantially parallel to the surface of said core, said armature projecting through said aperture and positioned thereby with one of its flared ends adjacent an end of said core, means for insulatedly fulcruming said armature at its other flared end on said core at its other end, and soldering tags on the end of said armature and core adjacent said fulcrum means
10 whereby said armature and core may be included in an electric current circuit, said armature adapted to be moved on said fulcrum and within said aperture upon the energization of said coil to engage its free end
15 with said core, and adapted to be oppositely moved by gravity upon the deenergization of said coil, thereby closing and opening the current circuit of the armature and core each
20 time the coil is energized and deenergized.

In witness whereof, I hereunto subscribe my name this second day of May, A. D. 1930.

HUGO SCHEDLBAUER.

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