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1,481,104

T. LENAGHAN
ELECTROMAGNETIC RELAY
Filed July 7, 1921

Fig. 1.

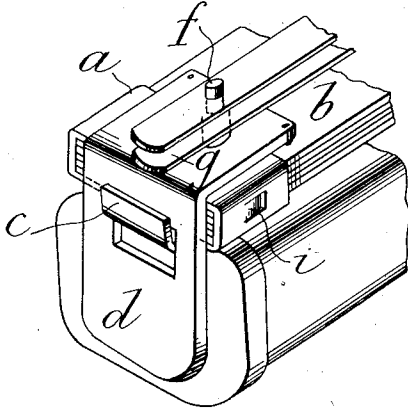


Fig. 4.

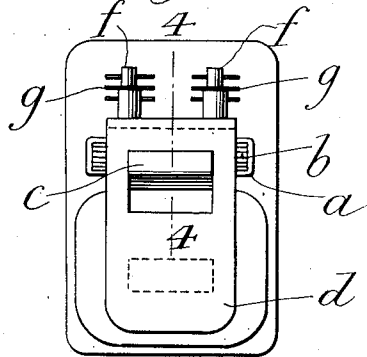


Fig. 2.

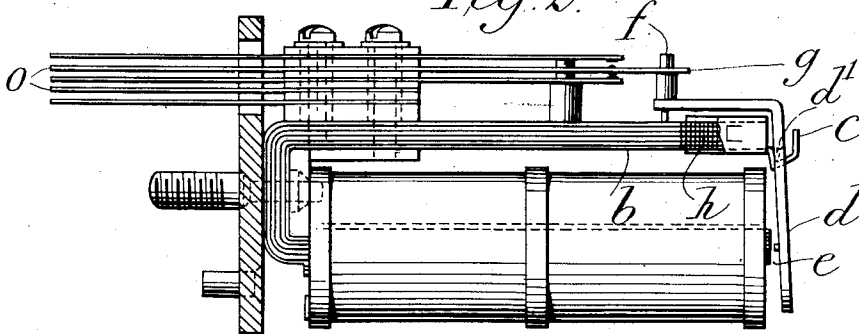
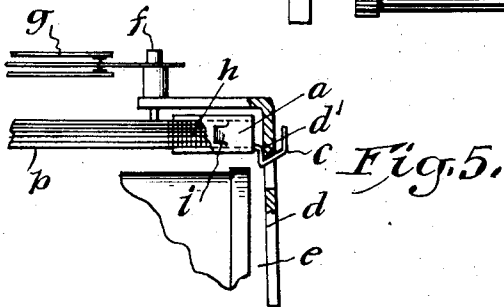
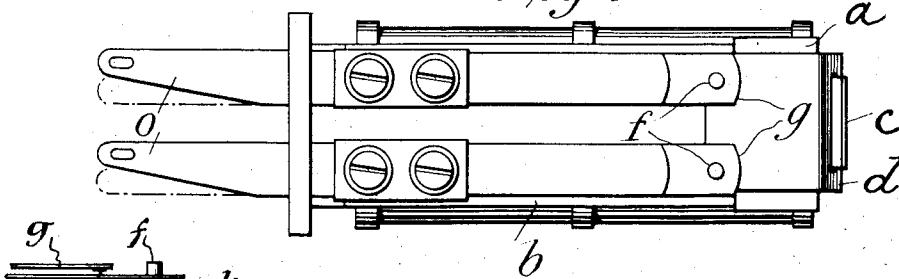


Fig. 3.



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THOMAS LENAGHAN, OF CROYDON, ENGLAND.

ELECTROMAGNETIC RELAY.

Application filed July 7, 1921. Serial No. 482,982.

To all whom it may concern:

Be it known that I, THOMAS LENAGHAN, a subject of the King of Great Britain and Ireland, residing at Croydon, in the county of Surrey, England, have invented Improvements Relating to Electromagnetic Relays (for which I have filed an application in Great Britain June 3rd, 1920, No. 15,075), of which the following is a specification.

This invention relates to electro-magnetic relays as used in telephone, telegraph and other electrical circuits and it has for its object to effect certain improvements herein-after appearing, prominent amongst which is simplification of construction. In the familiar "knife edge armature" type of relay, the core extension is usually machined to a suitable shape to furnish the knife edge support, and the adjustment, that is to say the air gap and spring blade adjustment, is obtained by the use of regulating screws or members.

According to the present invention the machining referred to is dispensed with and the knife edge support produced in a pressed or formed member adapted to be frictionally secured upon the core extension of the relay without employing any separate fastening devices, adjustment of the air gap and spring blade movement, if desired, being effected by forcing the pressed member into different positions along the core extension.

In the accompanying drawings, Fig. 1 is a perspective view of a portion of a relay showing one form that the pressed member according to the invention may assume. Fig. 2 is a side elevation, Fig. 3 a plan and Fig. 4 an end elevation of one type of relay having a laminated core to which the pressed member shown in Fig. 1 is applied. Fig. 5 is a part sectional detail view on the line 4-4 of Fig. 4.

As shown in Fig. 1, the member *a*, which may be formed by pressing a sheet of metal into a sleeve-like shape, encircles the core extension *b* of the relay so that it is a driving fit thereon, and is provided with a lip or projecting portion *c* turned up as shown. This lip or projecting portion *c* extends through an aperture in the armature *d* and is formed with a smooth rocking region for the reception of the armature knife edge *d*¹. In Figs. 1 to 5 the core extension *b* is laminated. If desired the armature *d* may likewise be laminated.

It will be evident that by forcing the

pressed member *a* into different positions along the core extension *b*, a definite air gap at *e* (Fig. 2) between the core and armature (Fig. 2) is obtainable with a corresponding alteration in leverage distance between the knife edge *d*¹ and centres *f* at which the armature acts upon the spring blades *g* of the relay. The core extension *b* may have its face or sides serrated as exemplified at *h* in Fig. 5, and the sleeve *a* stamped in such a form as to grip the serrations and ensure the sleeve retaining its position when adjusted, the change of adjustment being obtained by rocking the pressed member whilst applying pressure in the required direction, Figs. 1 and 5 showing the sleeve as stamped with a side tongue *i* for the purpose referred to.

What I claim is:—

1. An electromagnetic relay, comprising a coil, a core therein having an immovable external extension arranged parallel to the coil and so that its free end is adjacent to the free end of the coil and hence occupies a constant position in relation to the latter, a knife-edged armature and a supporting member for such armature entirely independent of the coil adapted to fit frictionally tight upon and to be forcibly moved into different positions along the free end of the core extension said member being thus self-holding on such extension.

2. In an electro-magnetic relay, embodying a core with an integral extension, parallel to itself so that the core and extension ends are adjacent, an armature supporting member formed at one part to slidably embrace the core extension near its free end and of such a fit as to necessitate for its movement thereon, against frictional resistance, the application of a force which when removed will result in the member being held stationary.

3. In an electromagnetic relay, a pressed sheet metal armature supporting member, such member comprising a sleeve like portion and a lip proceeding from one edge of the sleeve, such lip extending firstly in a direction away from the sleeve and being thereafter turned up and reversed in direction.

4. In an electro-magnetic relay, embodying a coil, and a core therein having an external extension, an armature having an opening therein one margin of which is knife edged and a self holding armature-support-

ing member adapted to be driven on the core extension and having a lip on which the armature knife edge rests.

5 In an electromagnetic relay, a core extension having serrated sides and an armature-supporting member formed at one part to embrace the core extension and having means, such as tongues, adapted to engage

the serrations aforesaid, the said supporting member being adjusted in position by rocking the same whilst applying a pressure urging it along the core extension. 10

Signed at London, England, this 9th day of June, 1921.

THOMAS LENAGHAN.