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ELECTROMAGNETIC SWITCHING DEVICE

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FIG. 1

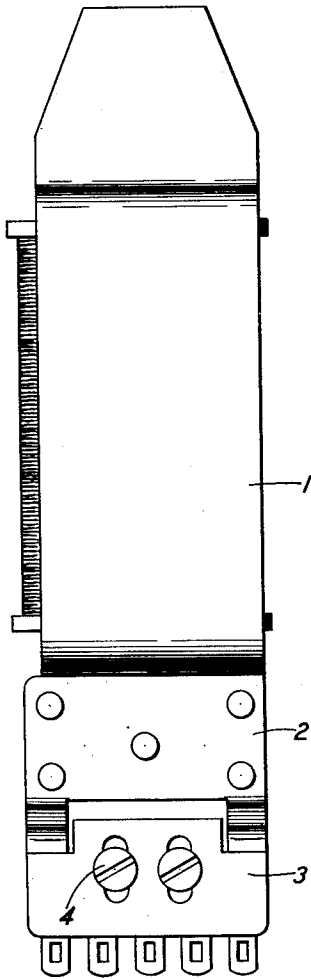
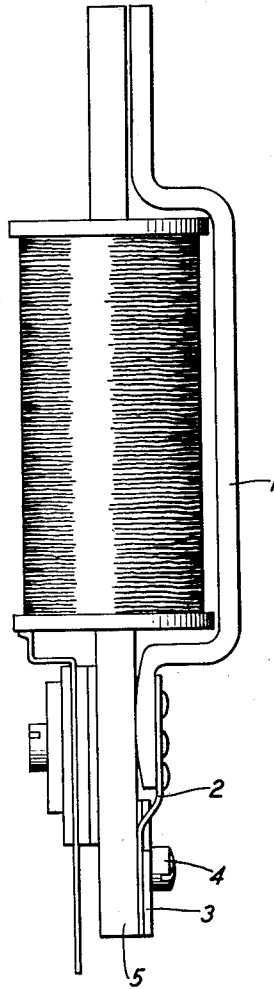


FIG. 2



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ELECTROMAGNETIC SWITCHING DEVICE

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6 Claims. (Cl. 175—336)

This invention relates to electromagnetic switching devices and more particularly to improvements in reed-type armature mountings for electromagnetic relays.

5 It is the object of this invention to improve and simplify the tensioning of relay armatures of the type which are secured to the relay core through the instrumentality of a reed-type hinge.

10 A feature of the invention resides in the provision of a means for adjusting the tension of reed mounted armatures which utilizes a particular form of reed which coats with a clamping plate for rendering possible a simplified tensioning of the relay armature.

15 Another feature of the invention contemplates the cooperation of the reed-type hinge and clamping plate in such a manner that lateral shifting of the armature is rendered impossible.

20 These and other features of the invention not heretofore specifically identified will be readily understood from the following detailed description made with reference to the accompanying drawing in which Fig. 1 shows a top plan view of a relay embodying the features of this invention; and

25 Fig. 2 is a side elevation of the relay shown in Fig. 1.

30 In the following description it is deemed sufficient to refer only to those parts of the relay structure which particularly relate to this invention, it being obvious that the remaining elements of the relay are disclosed merely to illustrate one application of the invention to a well known type of relay.

35 The armature 1 is provided with a rounded or arcuate bearing surface at its rear end which surface normally rests upon the surface of the relay core 5 near its rear end. Secured to the armature 1 by means of rivets, or in any other

40 suitable manner, such as by welding, is a reed-type hinge 2 which is, in effect, bifurcated to provide two extending portions. The extending portions are bent at an angle as they leave the main body portion of the hinge and then bent

45 a second time where they meet the core 5. By means of the angular or inclined portions of the hinge, effected by the two bends, the main body portion is located at a higher level than the two extending portions.

50 A clamp 3 is longitudinally slidably mounted on the rear end of core 5 by means of screws 4. The clamp 3 has its two inner corners cut away so that the transverse edges formed by the corner-cuts normally abut against the inclined portions

55 of the hinge extensions. The longitudinal edges

of the corner-cuts serve to offset any tendency the armature may have to shift laterally as such movement is prevented by the engagement of the inner edges of the inclined portion of the hinge extensions with the longitudinal edges of the clamping plate corner-cuts. The hinge extensions fit between the core and the clamp.

By virtue of the longitudinal slots in the clamp 3 through which the screws 4 pass, the clamp is free to be moved longitudinally.

To increase the tension on the armature it is only necessary to loosen the screws 4 and move the clamp 3 forward, or in a direction towards the front end of the relay. This movement tends to increase the return power of the armature due to the engagement of the transverse edges of the clamp corner-cuts with the inclined portions of the hinge extensions at a point higher up on the inclined portions. To decrease the tension on the armature or to reduce the return power of the armature, the clamping plate is moved in a direction towards the rear of the relay core.

What is claimed is:

1. A relay comprising a core, an energizing coil thereon, a movable armature, a reed secured to one end of said armature for maintaining a predetermined adjustment of said armature with respect to said core, said reed having an inclined portion, and adjustable means engaging the inclined portion of said reed and movable with respect thereto and in the direction of the longitudinal axis of said armature for varying the adjustment of said armature.

2. A relay having an armature and a core, means for associating said armature and core in a certain fixed adjustment, said means comprising a reed having one end permanently fixed on said armature and a plate for clamping the other end of said reed to said core, said clamp being adjustable to vary the adjustment of said armature.

3. In a relay, an armature, a core, a reed having one end secured to one end of said armature and a plate for clamping the other end of said reed on said core, said clamp being adjustable to coact with said reed for regulating the tension on said armature.

4. A relay having an armature and a core, means for associating said armature and core, said means comprising a reed having one end permanently fixed on said armature and the other end resting on said core, said reed having an inclined portion intermediate its ends and a plate for clamping the free end of said reed to said core and engaging the inclined portion of

said reed for maintaining a certain tension on said armature.

5 A relay comprising a core, a coil mounted on said core, an armature, a reed secured to said armature and having an inclined portion and a plate adapted to exert a pressure on the inclined portion of said reed to tension said armature, said plate being movable to engage said reed at various points on the inclined portion thereof to vary the tension on said armature.

10 6. A relay comprising a core, a coil mounted on said core, an armature, said armature asso-

ciated with said core by means of a flexible reed and a plate, said reed having one end permanently secured to said armature and having extensions clamped to said core by said plate and having intermediate inclined portions, the front edges of said plate coacting with the inclined portions of said reed for tensioning said armature and said reed being longitudinally slidable for varying the position of its front edges on the inclined portion of said reed whereby the tension on said armature is varied.

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