

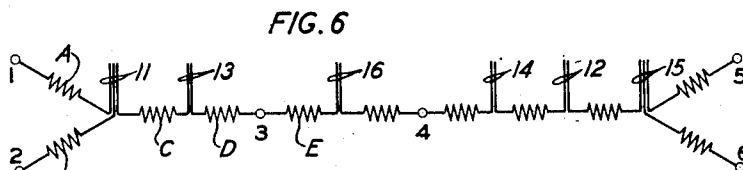
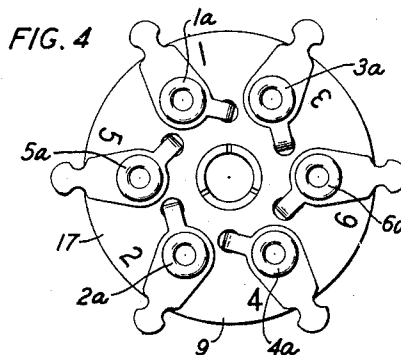
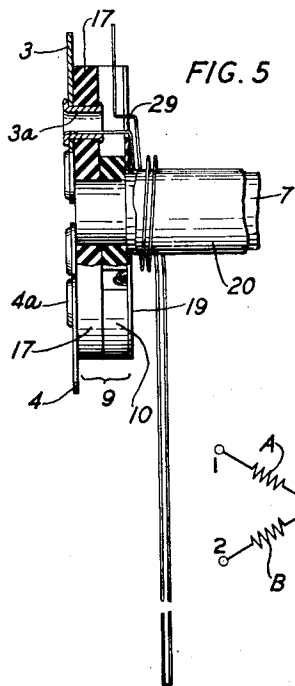
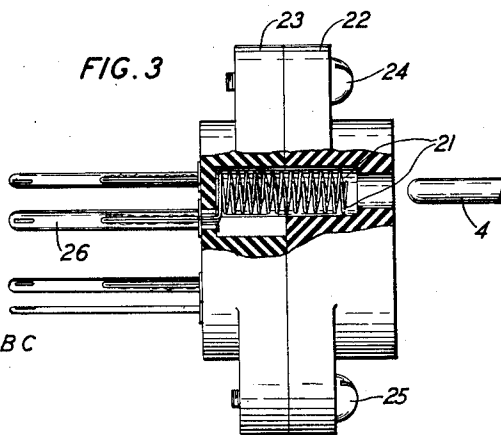
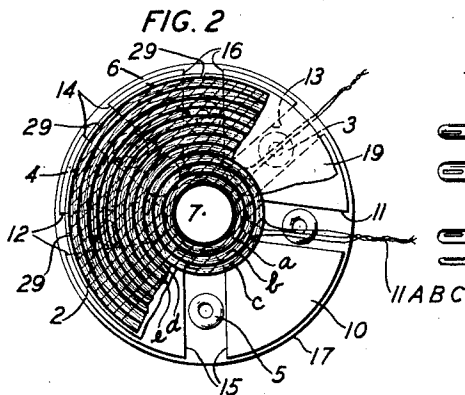
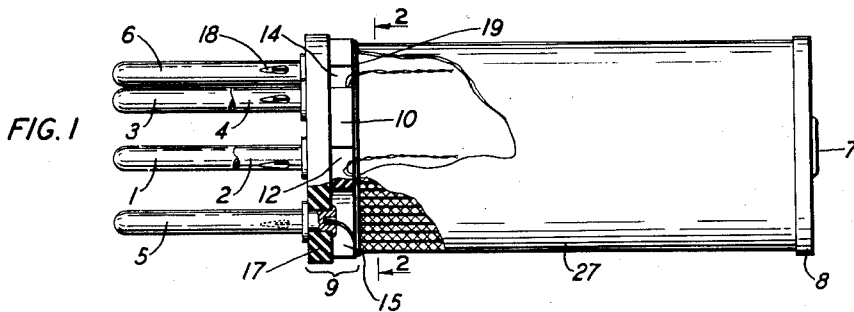
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RESISTANCE DEVICE

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RESISTANCE DEVICE

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2 Claims. (Cl. 291-63)

This invention relates to electrical resistance devices.

In connection with long four-wire circuits, as used in telephone and telegraph systems, for example, it is sometimes necessary to use a plurality of separate resistance coils and interconnect them in various ways to produce what are known as H, T and other combination resistance pads.

It is the object of this invention to produce these various combination resistance pads with only a single coil instead of a multiplicity of coils as were heretofore required. The savings in space and economy over using a multiplicity of separate resistance coils are apparent.

The invention consists in an arrangement employing a single bobbin equipped with means for making internal splices between windings thereon, and between any desired windings, to produce varied H, T and any other combination resistance pads in the same coil.

More specifically applicant provides the inner face of one spoolhead of the bobbin with a plurality of channel-shaped slots in which certain ends of the wires forming these resistance windings are placed in predetermined order for connection by splicing, and providing this spoolhead with terminals to which the other ends of these wires are connected in a predetermined order, the spliced ends of the wires being afterward bent in parallel relation to each other on the periphery of the outer resistance winding and the whole covered with a wrapping of insulating material. The wire terminals may be arranged for removably engaging jack springs which, in turn, are connected through other terminals to the line circuits, thus providing means whereby the resistance unit, thus formed, may be easily disconnected from these line circuits for changing the combination of resistances or repairs, and this without the consequent breaking and making of any soldered connection.

Other features of the invention will appear from the following description and by the claims appended thereto, reference being had to the accompanying drawing in which:

Fig. 1 is a view of the resistance unit shown partly in section and with portions of the insulating wrapping cut away;

Fig. 2 is a cross sectional view taken approximately on 2-2 of Fig. 1;

Fig. 3 is an assembly view of the terminal unit of this resistance coil partly in section;

Fig. 4 is an end view of the bobbin showing a

modification of the wire terminals shown in Fig. 1;

Fig. 5 is a side view of Fig. 4 with portions of the spoolhead cut away showing one of the resistance wires in position on the core before the winding operation; and

Fig. 6 is a diagrammatic view of a combination of resistances accommodated on this bobbin.

In Figs. 1, 2, 4, and 5 of the drawing 7 is a core on the ends of which are mounted the spoolheads 8 and 9. Spoolhead 9 is formed of disc 10 having a number of radial slots 11, 12, 13, 14 and 15 and 16 and a plain disc 17 to which the wire terminals 1, 2, 3, 4, 5 and 6 are mounted in registry with the radial slots 11, 12, 13, etc. An insulating washer 19 is placed against the disc 10 and on the core 7 is mounted an insulating sleeve 20. On this sleeve is wound as for example the resistance windings shown diagrammatically in Fig. 6, wherein the resistances A and B are shown with one of their ends connected to terminals 1 and 2, and their other ends spliced with one end of resistance C in the channel shaped slot 11 in the disc 10. This resistance in turn has its end spliced with one end of the resistance D in the slot 13 and the other end of this resistance is connected to terminal 3 to which one end of resistance E is also connected. The remaining resistances are spliced in their respective slots and connected to the terminals as indicated in Fig. 6.

The terminals 1, 2, 3, 4, 5 and 6 are each provided with an aperture such as 18 in which these resistance wires are attached as by soldering before or after the winding operation and the other ends of these wires are passed through slits in the insulating washer 19 and placed in their respective slots 11, 12, 13, etc. with their free ends 11 ABC extending outward in radial direction as shown in Fig. 2. This insulating washer 19 is provided to form a wall in order to prevent the accidental crowding of the windings in the indentations of the disc 10 and to permit passing the ends of the wires of the outer windings in their respective slots. Upon the splicing of these wires the splices are bent at right angles and in line parallel with respect to the length of the core and covered with an insulating wrapping 27 such as cellulose acetate.

Associated with the terminals 1, 2, 3, etc. of Fig. 1 there is provided a number of intermeshing jack springs such as 21. These springs are held in place in a mounting which consists of insulating block portions 22, and 23 which are arranged to be secured together by screws 24 and 25. On the block 23 are mounted a number of terminals

such as 26 to which the jack springs 21 are attached as by soldering, thus forming a contiguity of electrical connection from the terminals 1, 2, 3, etc. to the terminals 26.

5 Figs. 4 and 5 show a modification of the terminals used in the bobbin of Fig. 1. In this modification the ends of the different resistance wires are attached to eyelets 1A, 2A, 3A, 4A, 5A and 6A which also serve for securing the wire terminals 1, 2, 3, 4, 5 and 6 in place on the spoolhead, the other end of these resistances being placed in the slots 11, 12, 13, etc. for splicing in the combination of resistances as shown diagrammatically in Fig. 6 as above described.

15 By the use of this arrangement a multiplicity of resistances can be wound in a manner to form a compact unit while providing means whereby the different resistances may be easily connected in any value of resistance desired and which permit to easily disconnect this unit from the line wire circuits without the breaking or making of any soldered connection.

What is claimed is:

1. A resistance coil comprising a core, a number of windings disposed in concentric relation

thereon, a spoolhead having radially disposed slots in its inner face extending to the periphery of said spoolhead, terminals carried by said spoolhead, both ends of a number of said windings projecting through predetermined slots for splicing and the ends of the other windings being connected to terminals and projecting through predetermined slots, and spliced to wires in said slots. 80

2. In a resistance device, a core, an insulating sleeve on said core, a spoolhead at each end of said core, one of said spoolheads having a circular row of radially disposed slots in one of its faces and terminals on the other side disposed in registry with said slots, resistances wound in concentric relation on said core, both ends of a number of said windings projecting through predetermined slots for splicing and the ends of the other windings being connected to terminals and projecting through predetermined slots and spliced to wires in said slots, and an insulating member mounted on one end of said sleeve and disposed between said spoolhead and said resistances. 85 90 95

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