May 18, 1937. R. M. C. GREENIDGE 2,080,473

LOADING COIL CASE

Filed May 11, 1935

FIG. 1

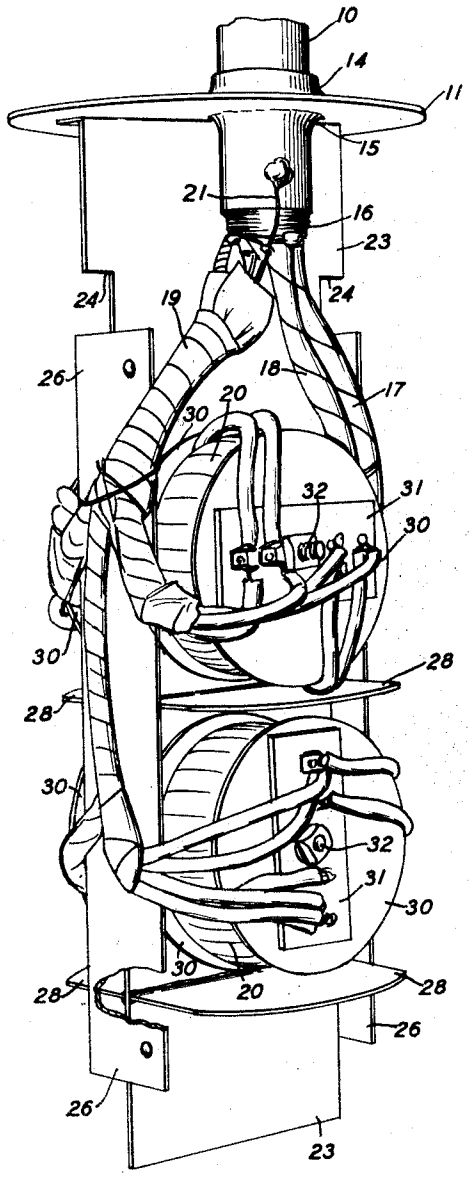
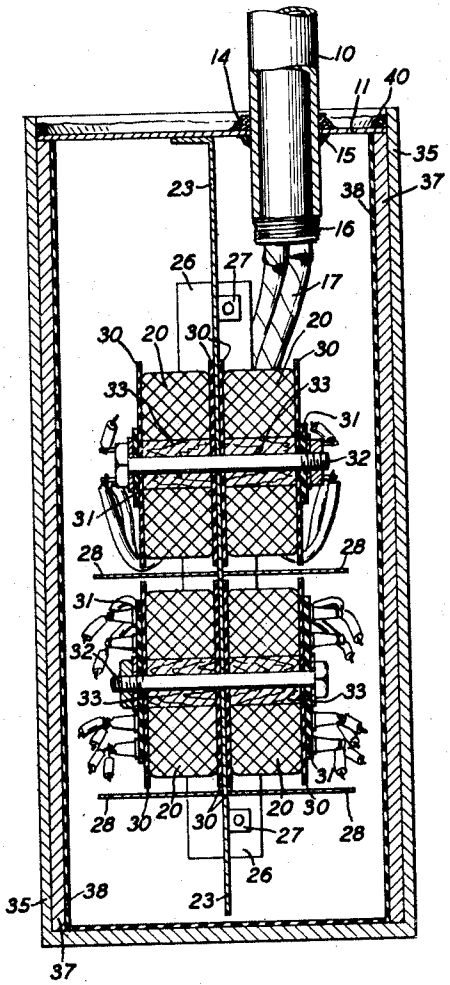


FIG. 2



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LOADING COIL CASE

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3 Claims. (Cl. 178—46)

The present invention relates to inductive devices and more particularly to an assembly of loading coils and the connecting means for the wiring thereto and to protecting means therefor.

It is an object of this invention to provide loading coils for communication cables that will be reliable and relatively inexpensive.

It is a further object of the present invention to provide supporting and housing means for relatively small installations of loading equipment, especially those using alloys for the loading coil cores.

A feature of the present invention involves an integral mounting means for supporting loading coils in any suitable relationship of their central axes and secured thereto relatively rotatable to their support and adjacent coils.

A further feature of the invention includes a strong inner case for reenforcing the outer water-proof case of a loading coil housing.

A further feature of the invention involves the recessing of a stiff head within a loading coil housing and securing it therein by welding or soldering leaving the outer face of the loading coil housing smooth.

Further objects and features of the invention will be apparent from the following specification taken in connection with the accompanying drawing of an embodiment in which:

Fig. 1 is a perspective showing of the coil mounting means and their connections, and

Fig. 2 is a cross-section through the loading coil container and through the centers of the loading coils showing the coils and their mounting arrangement in their relative positions.

In the drawing a lead sheathed stub cable 10 is shown passing through the end closure or head plate 11 of a loading coil case and off-center to the brass head plate 11. The lead sheath on the stub cable is secured to the head closure plate 11 by wiped joints 14 and 15 outside and inside the head, respectively. Wrappings or lashings of twine 16 are disposed below the end of the lead sheathing to retain the local cables 17, 18 and 19 which supply the lead connections to the terminals of the loading coils 20. A conducting grounding wire 21 is fastened or soldered to the lead sheath of the stub cable and to the sheathing of each local cable to satisfactorily ground shielding elements on the local cables.

The weight of the loading coils and their connections is carried from the head of the loading coil housing plate by a centrally arranged vertical plate 23 notched out as shown at 24 to permit the local cables to pass around the plate 23 to connect to the terminals of coils on the side of plate 23 away from the point of entry of the stub cable. A vertically arranged strip of tough insulatory material 26 is fastened to flanges or clip members 27 bent out on both vertical edges of plate member 23 to protect the insulation on the local cables from the sharp edges of plate 23. Metal shelves 28 are secured or welded in horizontal positions to this upright metal member. These shelves 28 shield the individual coils from inductive influence upon one another and may be shaped to be useful for spacing the structure from the interior walls of the loading coil housing. The loading coils 20 are arranged as shown in vertical planes between insulating cardboard members 30 arranged on either face to prevent abrasion of the insulation on either the lead wire or the loading coil. A terminal strip 31 of hard insulating material is associated with each coil for connecting the coil leads to the lead wires in the local cables. The loading coils 20 are secured in pairs to the vertical iron supporting or partition member by through bolts 32 passing through a center hole in the wooden or spool member 33 carrying each loading coil. The head and nut of each supporting bolt is drawn tightly against this hard insulating plate 31 to tighten the plate against the coil through the intervening cardboard insulation to hold the coils rigidly against the center supporting member once they have the proper rotational adjustment relative to one another. Any desired number of these loading coils may be mounted in line on a supporting member by making it of any suitable overall length.

The loading coil case proper consists of a lead sleeve casing 35 usually cylindrically shaped, closed at one end and reinforced by a stiff metallic inner shell 37 on the upper end of which rests the edges of the head plate 11. This inner disposed reinforcing shell may be of magnetic material, such as steel, for inductive shielding purposes. Paper insulation 38 finishes the interior structure of the loading coil case. The head closure plate 11 is recessed within the outer lead casing and is welded or soldered to this metallic outer case 35 by an internally disposed ring of welding or soldering metal 40. This fastening and sealing construction insures a smooth exterior surface for the loading coil case. This permits the casing to be secured close to the inner wall of a manhole or secured flat to a telegraph pole. The entire structure is seen to be formed rigidly of all-metallic elements permitting

a durable economical structure for housing and protecting the loading coils and for the inductive shielding of them from outside influences and from each other.

What is claimed is:

1. A loading coil structure having a central plate member, loading coils for a cable mounted thereon with their axes parallel to one another, perpendicular to the plate and secured in a manner to be rotatably adjustable relative to one another, rigid terminal carrying means associated with each coil and independently movable relative to the coil for supporting the terminal wires of the coil and the lead wires to the coil in suitable relationship to the cable connection.

2. A loading coil case comprising an outer metallic casing, an inner metallic reinforcing shell concentric therewith but shorter than the inner length of the outer casing, a head-piece adapted to rest on the end of said inner shell and to be tightly sealed to said outer casing, characterized in this that a metallic plate extends from said head substantially to the bottom of said casing dividing said casing into two compartments, with loading coils mounted in pairs on opposite sides of said plate by means of bolts passing through the centers of said pairs of coils perpendicular to said plate.

3. A loading coil case according to claim 2 characterized in this that the stub cable for connecting said coils to an external circuit enters said case through said head perpendicular thereto but entirely to one side of said metallic plate.

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