Jan. 16, 1945. E. S. McLARN 2,367,298

CORD CONNECTOR FOR TELEPHONE INSTRUMENTS

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FIG.1.

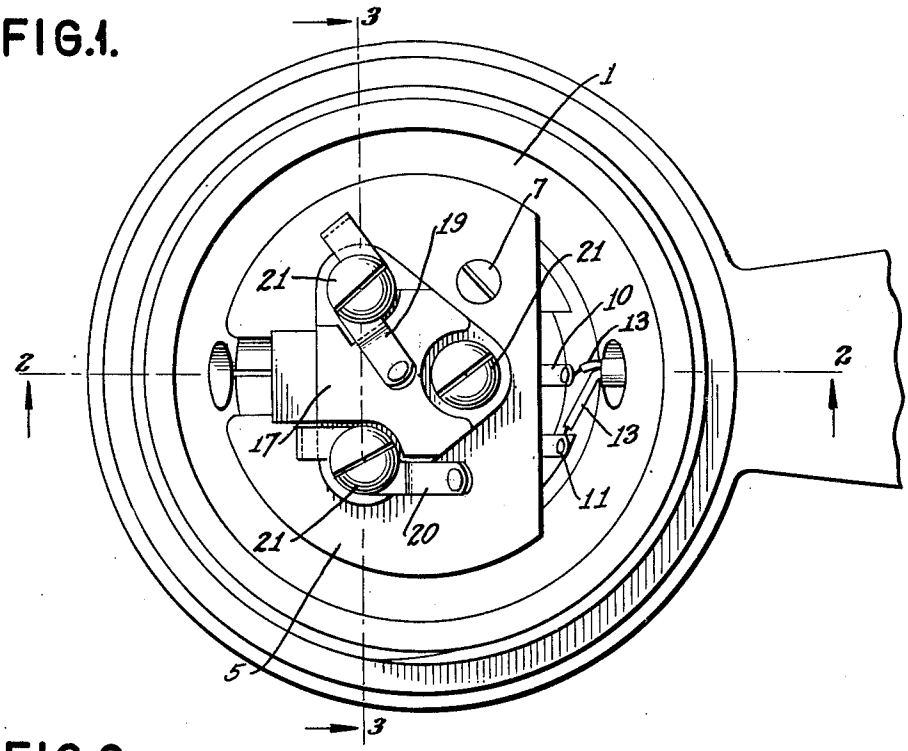
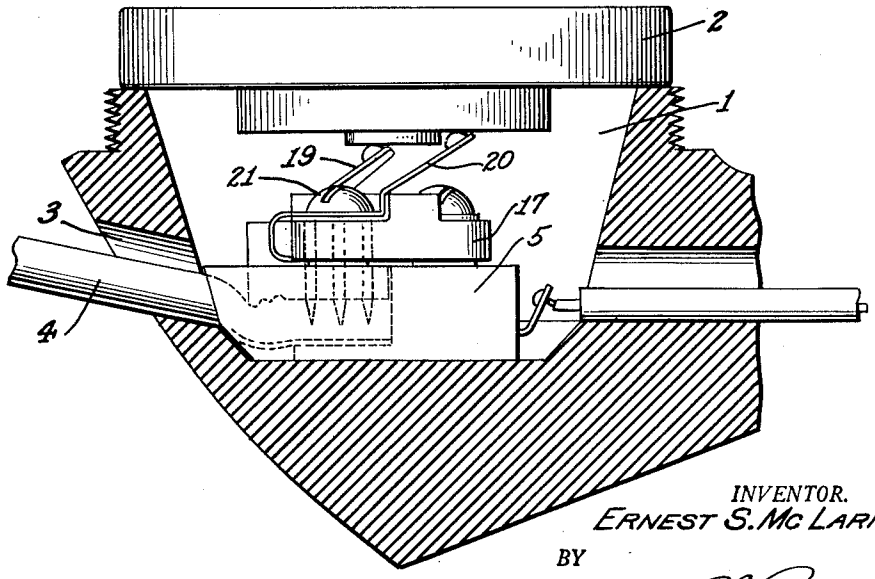


FIG.2.



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FIG. 3.

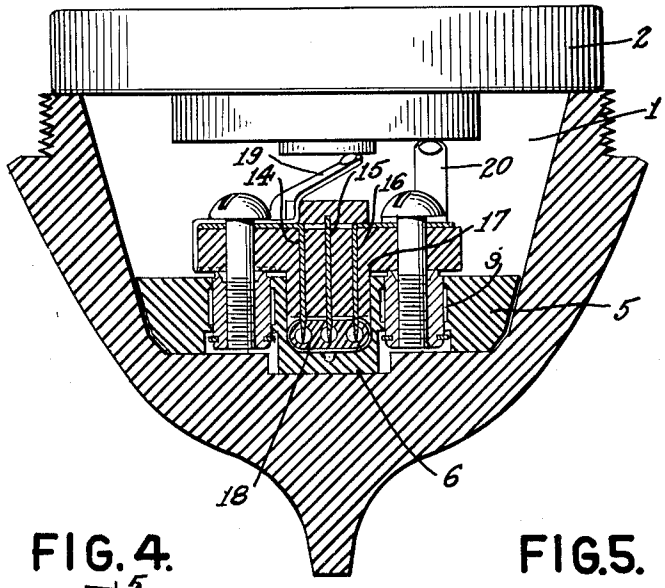


FIG. 4.

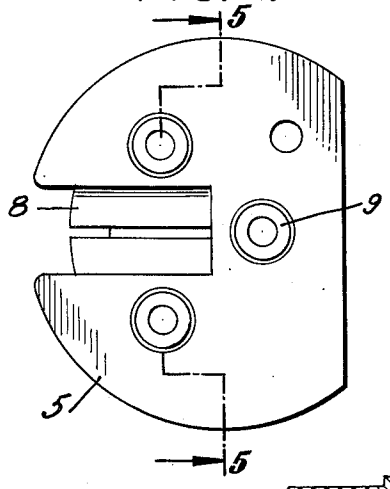


FIG. 5.

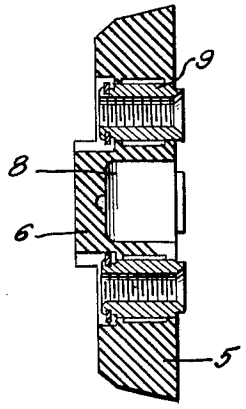
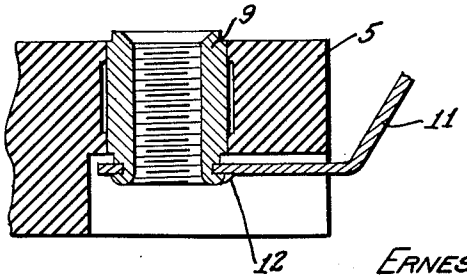


FIG. 6.



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UNITED STATES PATENT OFFICE

2,367,298

CORD CONNECTOR FOR TELEPHONE INSTRUMENTS

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Application December 29, 1942, Serial No. 470,459

3 Claims. (Cl. 179—103)

This invention relates to telephone handsets and more particularly to means for effecting electrical connections between a multi-conductor cord and the transmitter and receiver capsules.

An object of the invention is the provision of a simple form of adapter unit for use in a handset in which a so-called tipless cord is used but in which conductors separate from the cord extend from the transmitter cavity to the receiver cavity through the handle of the handset.

This and other objects and features of the invention will be clear from a reading of the following description in conjunction with the accompanying drawings in which;

Fig. 1 is a plan view of the transmitter end of a handset according to an embodiment of my invention;

Fig. 2 is a partial section on the line 2—2 of Fig. 1;

Fig. 3 is a partial section of the transmitter end taken on the line 3—3 of Fig. 1 with the transmitter capsule added;

Fig. 4 is a plan view of the adapter unit;

Fig. 5 is a section on the line 5—5 of Fig. 4; and

Fig. 6 is a sectional view of a threaded metal insert showing how a soldering terminal is attached thereto.

The handset comprises a molded shell having at one end of a handle a cavity 1 for accommodating a transmitter capsule 2 and at the other end another cavity (not shown) for the receiver capsule. An opening 3 is provided in the transmitter end for a three-conductor cord 4, the rubber or plastic cover of which is formed with a longitudinal ridge. A molded disk-shaped insert 5 shown in detail in Figs. 4 and 5 fits snugly into the bottom of the transmitter cavity 1. Proper alignment of this insert is secured by the provision on its bottom surface of a projection 6 which fits into a corresponding channel in the base of the cavity 1. A screw 7 secures the insert 5 firmly in the base of the cavity. The insert 5 is also formed with channel 8 the bottom of which is shaped to conform with the ridged side of the cord 4. Molded or otherwise secured in the insert 5 at points forming a triangle are three threaded bushings 9, the lower reduced ends of which project slightly below the underneath set back surface of the insert. Two of the bushings 9 are provided with soldering terminal tags 10, 11 each comprising a thin brass strip having an eyelet fitting over the reduced portion of the bushing which is then spun over as illustrated in Fig. 6. Proper electrical contact is ensured by a drop of solder 12 at the turned over edge of the bushing. The conductors 13 which extend down the handle of the handset shell to the receiver end are soldered to the terminal tags 10 and 11 respectively.

The end of the tip-less cord 4 is inserted through the hole 3 in the handset shell into the channel 8 formed in the insert 5. Connection is made to the conductors of the cord 4 by three pronged contact members 14, 15, 16 mounted in a clamping block 17 the construction of which is fully disclosed in Letters Patent No. 2,312,970 issued to me March 2, 1943. The contact members 14, 15, 16 which are molded or otherwise secured in the block 17 have depending portions each terminating in a number of sharp prongs 18 and horizontal portions terminating in eyelets which register with three holes in the block 17 which holes in turn register with the three bushings 9 in the insert 5.

The block 17 is also equipped with a pair of U-shaped contact springs 19, 20 shaped to clamp around the edge of the block 17, so as to remain in place when the block is removed, and formed with holes in their upper arms which register with those two holes in the block which lie on either side of the centre line of the handset handle.

When the block 17 is clamped onto the insert 5 by screwing the three screws 21 into the three bushings 9, the prongs 18 of the three contact members 14, 15, 16 pierce the insulation of the cord 4 and make contact with the three parallel stranded conductors thereof. Electrical contact is thereby made between the two outer conductors and the springs 19 and 20, the upwardly extending arms of which are shaped to make contact with the electrode terminals of the transmitter capsule 2 when the latter is subsequently inserted into the cavity 1. Thus the clamping block 17 not only establishes electrical connections to the two outer conductors of the cord 4 but also to the two electrodes of the transmitter capsule. The clamping block 17 also establishes contact between the centre conductor of the cord 4 and the terminal tag 10. Thus contact is established between the two conductors 13 and two of the conductors of cord 4 via members 15, 16', screws 21, bushings 9 and terminal tags 10 and 11.

It is to be understood that while the transmitter capsule 2 is shown connected to the two outer conductors of cord 4, and the leads 13 running to the receiver capsule are shown connected to the center conductor and one outside conductor, the connections may be reversed if desired. Thus, the spring member 19, for example, may be placed

under the middle screw and terminal tag 18 transferred to the bushing vacated by spring 19. The transmitter capsule would then be connected to the center and one outside conductor of the cord, whereas the receiver conductors 13 would be connected to the two outside cord conductors.

What is claimed is:

1. A telephone handset comprising a hollow shell having a depression in its lower wall and supporting surfaces at opposite sides of said depression, an insert in said hollow shell having its lower face seated on said supporting surfaces and said insert having a depending rib extending into said depression and seated on the lower wall thereof, said insert having a recess to receive a cord comprising a plurality of conductors, a plurality of bushings extending through orifices in said insert and having reduced ends projecting below the lower ends of said orifices, a clamping block engaging said bushings, sharp ended contact prongs carried by said block and adapted to have the sharp ends thereof engage the conductors in said recess, and electrical connections from the conductors to sundry parts of said handset.

2. A telephone handset, comprising the combination with claim 1, of a screw individual to each contact prong for clamping said block upon said insert to force the sharp ends of said prongs into contact with said conductors, a terminal tag secured to at least one of said bushings and a spring contact secured to said clamping block by one of said screws and adapted to engage an electrode terminal of said handset.

3. A telephone handset, comprising the combination with claim 1, of a screw individual to each contact prong for clamping said block upon said insert to force the sharp ends of the prongs into contact with said conductors, a terminal tag secured to at least one of said bushings and substantially U-shaped spring contacts each having a portion embracing said block and secured thereto by one of said screws and having another portion engaging an electrode terminal of said handset.

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