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ARRANGEMENT IN HAND MICROTELEPHONES

Filed June 29, 1962

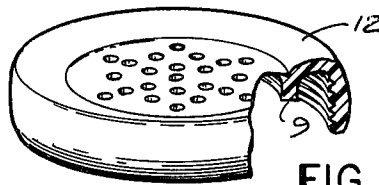


FIG. 4

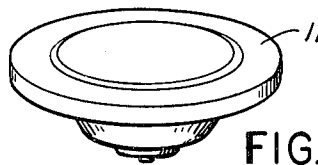


FIG. 3

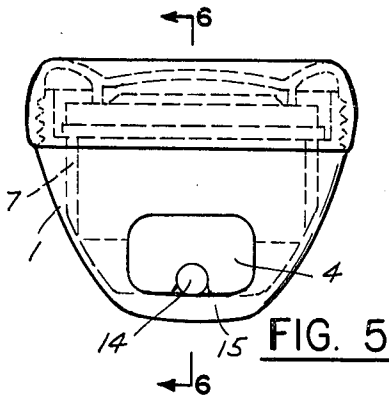


FIG. 5

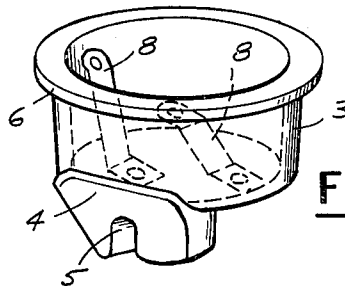


FIG. 2

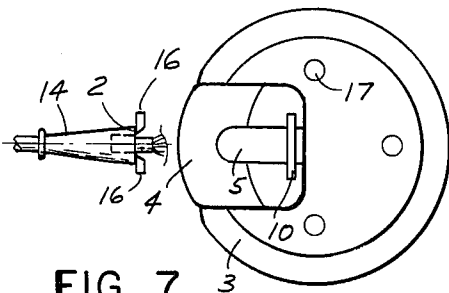


FIG. 7

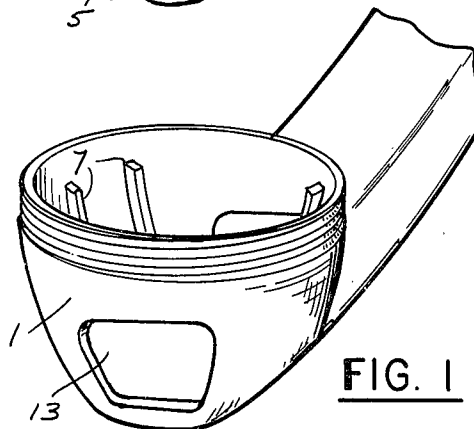


FIG. 1

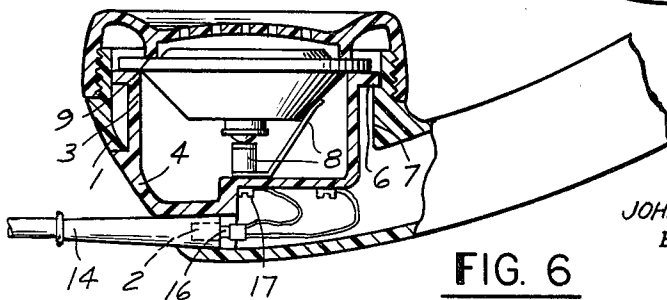


FIG. 6

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ARRANGEMENT IN HAND MICROTELEPHONES

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5 Claims. (Cl. 179-103)

The invention refers to such hand microtelephones in which the microphone capsule is arranged in a cup-formed container, which in turn is placed in the microphone housing.

The casing of the hand microtelephone is nowadays often produced by injection moulding of plastic material, the handle and the microphone housing and the receiver housing forming a single shell-structure. In order to obtain a simplification of the moulding method the use has been proposed of a longish tool core which fills the interior of the handle and extends along the microphone housing and out through an opening in it (see the indication 13 in FIG. 1 on the drawing). When the injection moulding is done, the core is pulled out through said opening in the microphone housing and a remaining not wanted and relatively big opening in said housing is obtained, the area of which coincides with the cross section area of the handle, which opening has to be covered in some way.

The present invention refers to an arrangement to cover this opening in a simple way without using any extra detail, and according to the invention a detail, which is arranged in the microphone for another purpose, is used, that is the cup-formed container, in which the microphone capsule is placed, the container at the same time serving as a leading-through member and possibly as a member for unloading the flexible cord of the microtelephone.

The invention will be further described with reference to the accompanying drawings, which show one embodiment. FIGS. 1-4 show in perspective view a part of the microtelephone handle with the microphone housing, respectively the cup-formed container for the microphone capsule, respectively the microphone capsule, respectively the microphone lid. FIG. 5 is an end view of the microtelephone seen from the microphone side and FIG. 6 is a section along the line A-A in FIG. 5. FIG. 7 shows the microphone cup seen from below with the connection end of the flexible cord shown at the side of the cup.

The microphone housing is indicated 1 and the cup-formed container, in which the microphone capsule 11 is placed, is indicated 3. On the inside of the microphone housing there is a number of ribs 7, against which the flange 6 of the microphone cup rests when the cup is placed in the microphone housing (FIG. 1). The cup 3 is at the bottom on one side formed with a part 4, which is formed with an open groove 5 (FIG. 2). The part 4 is so shaped that, when the cup 3 is placed in the microphone housing 1, it fills the recess 13 (FIG. 6) in the housing, which recess arose at the moulding. The groove 5 clutches herewith over the microtelephone flexible cord 14 and holds the latter against the bottom 15 of the microphone housing. The microphone capsule 11 rests against the flange 6 of the cup and two springs 8 fastened at the bottom of the cup 3 make contact with the microphone capsule 11. The microphone lid 12 is threaded on the microphone housing 1, whereby the inner ring 9 of the lid presses against the upper part of the microphone capsule 11, so that a good holding of the cup 3 and the capsule 11 in the housing 1 is obtained. The part 4 of the microphone cup may, together with a ring 2, which is tightly squeezed onto the flexible cord, also be used as a member for unloading

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the flexible cord 14 in that the ring 2 is provided with a pair of wings 16, which, when the flexible cord 14 is in the groove 5 of the part 4, rest in a slot 10 made in the part 4, which slot mainly is perpendicular to the longitudinal direction of said open groove 5 (see FIG. 7). The flexible cord 14 can then neither be pulled out of or pressed into the microphone housing. The conductors of the flexible cord 14 are connected with the springs 8 by aid of contact screws 17 screwed into the bottom of the cup.

The part 4 moulded in one piece with the cup 3 fills different purposes according to the invention, in the first place it serves as a lid for the recess 13, secondly as a leading-through member for the flexible cord and in the third place, if wanted, as a member for unloading the cord. Any loose details for these three purposes are not required.

I claim:

1. A telephone handset comprising a single piece supporting shell molded of plastic material and having an elongated hollow handle portion and two enlarged hollow end portions each defining a cavity for a receiver capsule and a transmitter capsule respectively, the shell end for the transmitter capsule having in its wall an aperture substantially aligned with said handle for withdrawing a molding mandrel from the shell, and a transmitter capsule received in the cavity of the respective end portion, said capsule having a cover portion matching the peripheral outline of said aperture to cover the same.

2. A telephone handset comprising a single piece supporting shell molded of plastic material and having an elongated hollow handle portion and two enlarged hollow end portions each defining a cavity for a receiver capsule and a transmitter capsule respectively, the shell end for the transmitter capsule having in its wall an aperture substantially aligned with said handle for withdrawing a molding mandrel from the shell, and a transmitter capsule, said capsule having a substantially cup-shaped portion fitted in the cavity of the apertured end portion and a cover portion protruding from the cup-shaped portion into said aperture to cover the same.

3. A telephone handset comprising a single piece supporting shell molded of plastic material and having an elongated hollow handle portion and two enlarged hollow end portions each defining a cavity for a receiver capsule and a transmitter capsule respectively, the shell end for the transmitter capsule having in its wall an aperture substantially aligned with said handle for withdrawing a molding mandrel from the shell, a transmitter capsule received in the cavity of the respective end portion, said capsule having a cover portion matching the peripheral outline of said aperture to cover the same, said cover portion including an opening therethrough, a connecting cord extended through said opening into the respective end portion of the shell, and strain relief means at said end portion blocking inward and outward movement of the cord in reference to said end portion of the shell.

4. A telephone handset comprising a single piece supporting shell molded of plastic material and having an elongated hollow handle portion and two enlarged hollow end portions each defining a cavity for a receiver capsule and a transmitter capsule respectively, the shell end for the transmitter capsule having in its wall an aperture substantially aligned with said handle for withdrawing a molding mandrel from the shell, a transmitter capsule, said capsule having a substantially cup-shaped portion fitted in the cavity of the apertured end portion and a cover portion protruding from the cup-shaped portion into said aperture to cover the same, said cover por-

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tion including a recess in its periphery leading into the respective end portion of the shell, and a connecting cord extended through said recess, said cord being clamped between the wall material of the cover member defining said recess and the adjacent wall material of the respective shell end.

5. A telephone handset comprising a single piece supporting shell molded of plastic material and having an elongated hollow handle portion and two enlarged hollow end portions each defining a cavity for a receiver capsule and a transmitter capsule respectively, the shell end for the transmitter capsule having in its wall an aperture substantially aligned with said handle for withdrawing a molding mandrel from the shell, a transmitter capsule, said capsule having a substantially cup-shaped portion fitted in the cavity of the apertured end portion and a cover portion protruding from the cup-shaped portion into said aperture to cover the same, said cover portion having a passage therethrough leading into the re-

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spective end portion of the shell, the material of the cover portion further including a recess extending substantially transverse of said passage intercepting the same, a connecting cord extending through said passage into the respective end portion of the shell, and retaining means on said cord protruding into said transverse recess to relieve said cord from strain in either direction in reference to said end portion of the shell.

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ROBERT H. ROSE, *Primary Examiner.*