June 17, 1941. R. G. SIDNELL 2,246,110

HEARING-AID BATTERY

Filed Oct. 22, 1940

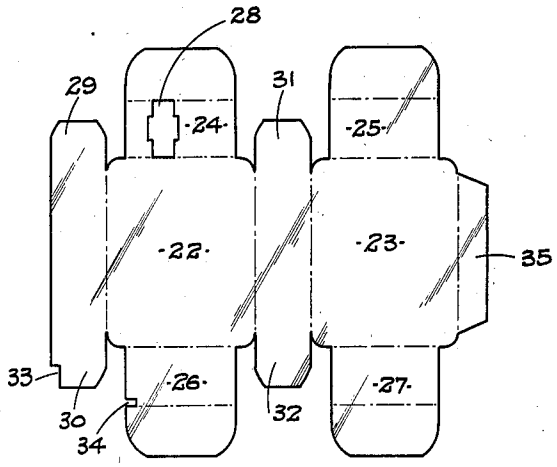


FIG. 1.

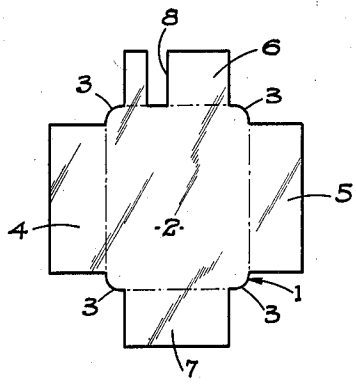


FIG. 2.

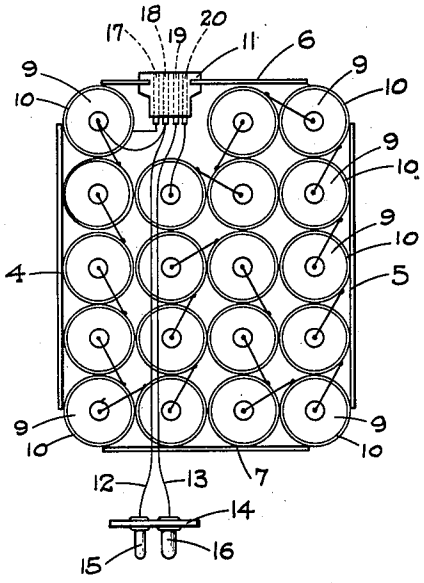


FIG. 3.

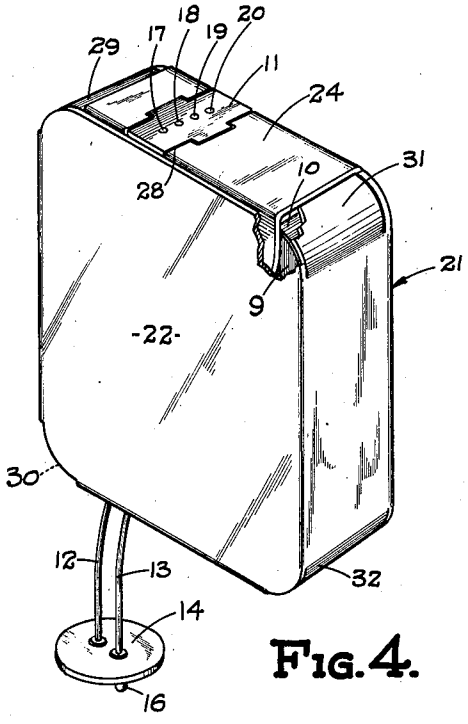


FIG. 4.

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HEARING-AID BATTERY

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2 Claims. (Cl. 136—109)

This invention relates to a dry cell battery or battery unit which is particularly well adapted for use with hearing aids and pocket radio sets. Hearing aid apparatus is, of course, designed to be carried upon the person and it is desirable that the battery or battery unit therefor be of such size and shape that it can be carried in a suitable pocket provided in the clothing with the least inconvenience to the wearer. Heretofore batteries for such devices have been generally enclosed within a carton or box which has square corners with the result that the corners of the box wear or tear the clothing and make it difficult to insert or to remove the battery from a pocket in the clothing.

One of the objects of this invention is to provide a hearing aid battery which will avoid the difficulties hereinbefore mentioned and which is contained within a box or carton which is generally rectangular in shape and provided with rounded corners so that the battery will be more comfortable to wear and can be more readily inserted into or removed from a pocket in the clothing and at the same time will not unduly wear or tear the clothing.

Another object of the invention is to provide a hearing aid battery which comprises an inner casing which contains a plurality of dry cells arranged within the casing, the casing being generally rectangular in shape and having rounded corners, such casing fitting into an outer carton which is of the same general shape as the inner casing and which has rounded corners fitting the rounded corners of the inner casing, the entire battery unit being of such size as to comfortably fit within a convenient pocket in the clothing and to be readily removable therefrom.

A still further object of the invention is to provide a hearing aid battery which consists essentially of an inner casing which is generally rectangular in shape and which contains a plurality of cylindrical dry cells arranged within the casing, the side and end walls of the inner casing being cut away at the corners thereof and there being a cell disposed at each corner of the inner casing and projecting partially through the adjacent cut away portion and imparting a rounded contour to the corners, such inner casing being received within an outer carton which has flap portions extending around the corner portions of the inner casing and fitting the contour thereof.

A still further object of the invention is to provide a hearing aid battery having the above described distinguishing features, characteristics and advantages and which is well adapted for quantity production at comparatively low cost.

Further and more limited objects of the invention will appear as the description proceeds and by reference to the accompanying drawing in which Fig. 1 is a view of the blank from which the outer carton is formed; Fig. 2 is a view of the blank from which the inner casing is formed; Fig. 3 is a top plan view of the inner casing with the cells arranged therein, and Fig. 4 is a perspective view of the completed battery unit.

Referring now to the drawing, the battery unit consists essentially of an inner casing or carton which is preferably formed from a single piece of cardboard or other suitable material and which contains a plurality of dry cells arranged therein, each cell having an insulating wrapper thereon and being cylindrical in shape. The inner casing is then enclosed within an outer carton which has a window therein permitting access to the terminal of the battery unit. Referring now to the drawing, the reference character 1 indicates generally a blank from which the inner casing is formed. This blank comprises a rectangular bottom portion 2 having rounded corners 3. The blank also is provided with side flaps 4 and 5 and end flaps 6 and 7. The end flap 6 has a slot 8 cut therein to receive the terminal socket connection for the battery. The flaps are scored as indicated in dotted lines in Fig. 2. The flaps are turned upwardly to the position indicated in Fig. 3 and the cells are inserted therein. Each cell 9 comprises a cylindrical cup or casing which is enclosed within a wrapper 10 of insulating material such as paper. It will be noted that the intersecting side and end walls of the casing are cut away at the corner portions thereof, the purpose of which will hereinafter appear. The cells are arranged within the casing in the manner shown in Fig. 3 and there is a cell disposed at each of the four corners of the casing and so disposed that a portion of the side wall thereof projects through the adjacent cutaway portion. The cells are preferably connected in series as will appear from Fig. 3. Secured within the slot 8 in the flap portion 6 of one end wall is a terminal socket connection 11 which is connected with the cells in such a manner as to give the voltages required for the particular hearing aid for which the battery is designed. Leading from the terminal socket connection are a pair of wires 12 and 13 which connect with a plug 14 having terminals 15 and 16 which are adapted for connection with an A battery. The

terminal socket connection has openings 17, 18, 19 and 20 therein adapted to receive a jack therein for connecting the battery unit with the hearing aid.

It will be seen that the cells are arranged within the inner casing in such a manner that the side walls of the cells disposed at the corner portions thereof project partially through the cut-away portion and impart a rounded contour to said corners.

The inner casing with the cells therein is adapted to be inserted into an outer carton indicated generally by the reference character 21. The outer carton 21 is preferably formed from a blank of suitable material which is shown in detail in Fig. 1. This blank has portions 22 and 23 which form the opposite side walls of the outer carton and two pairs of flaps indicated by the reference characters 24, 25, 26 and 27 which form the end walls of the outer carton. These flap portions are scored as indicated by dotted lines so as to provide tuck-in portions. The flap portion 24 has a window 28 therein which, when the outer carton is formed, is disposed over the terminal socket connection 11. The blank is also provided with flap portions 29 and 30 and intermediate flap portions 31 and 32. The flap portions 29, 30, 31 and 32 are disposed at the corners of the carton and engage the exposed portions of the corner cells, the corner cells serving to impart a rounded contour to the corner portions of the outer carton. The flap portion 30 has a corner portion thereof cut away as indicated at 33 and the flap portion 26 has a slot 34 therein. The blank also has a flap portion 35 which is adapted to be glued or otherwise secured to the oppositely disposed flap portion when the carton is formed. The cutaway portion 33 and the slot 34 cooperate with each other to provide an opening through which the wires 12 and 13 extend.

It will now be clear that I have provided a battery unit which comprises an inner carton or casing containing a plurality of dry cells, the casing being generally rectangular in shape and having rounded corners, the inner casing being received within an outer carton of the same general shape as the inner casing and having rounded corners which fit and conform to the contour of the rounded corners of the inner casing. Such a battery unit may be readily inserted into or removed from a pocket in the clothing of the wearer without tearing the clothing and without unduly wearing the pocket.

It will of course be understood that the embodiment of the invention herein disclosed is to be considered as merely illustrative and not in a limiting sense as various changes may be made in the construction and arrangement of parts as well as in the electrical connections for use with wearable and/or pocket radio sets as well as hearing aids without departing from the spirit of the invention. The invention, therefore, is limited only in accordance with the scope of the appended claims.

Having thus described my invention, what I claim is:

1. A hearing aid battery comprising an inner casing generally rectangular in shape and having rounded corners and formed from a single piece of material and having upstanding side and end walls, said side and end walls being cut away at the corner portions thereof, a plurality of cylindrical dry cells disposed within said inner casing and electrically connected with each other, there being a cell disposed at each of the four corners of said casing and having a portion of the side walls thereof projecting through the adjacent cut-away portion, a terminal socket connection carried by one of said walls and electrically connected with said cells, an outer carton of the same general shape as said inner carton and receiving the same therewithin, said outer carton having flaps at the corner portions thereof engaging the exposed portions of the corner cells, said corner cells serving to impart a rounded contour to the corner portions of said outer carton, said outer carton having an opening therein disposed over said terminal socket connection and rendering the same accessible, and connections leading from said socket connection and extending through a wall of said outer carton and adapted for connection with an A-battery.

2. A battery unit of the character described comprising an inner casing generally rectangular in shape and having rounded corners and provided with upstanding side and end walls, said side and end walls being cut away at the corner portions thereof, a plurality of cylindrical dry cells disposed within said inner casing and electrically connected with each other, there being a cell disposed at each of the corners of said casing and having a portion of the side walls thereof projecting through the adjacent cut-away portion, a terminal socket connection electrically connected with said cells, an outer carton of the same general shape as said inner casing and receiving the same therewithin, said outer carton having flaps at the corner portions thereof engaging the exposed portions of the corner cells, said corner cells serving to impart a rounded contour to the corner portions of said outer carton, said outer carton having an opening therein disposed over said terminal socket connection and rendering the same accessible, and connections leading from said terminal socket connection adapted for connection with another battery.

ROBERT G. SIDNELL.