TOP CLOSURE FOR LEAKPROOF DRY CELLS

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TOP CLOSURE FOR LEAKPROOF DRY CELLS

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1. This invention relates to an improved top structure for a leak-proof dry-cell of the type commonly used in flash lights.

The primary object of the invention is to provide a strong inexpensive construction of attractive appearance wherein the metal top closure not only is insulated from the zinc electrode but also holds the insulating material in proper position and is capable of withstanding internal pressure which may be in the neighborhood of 100 pounds per square inch.

Leak-proof cells of the type now in common use have a steel jacket and accordingly are more expensive to manufacture than the common type of cell using a paper jacket. The present invention has many of the advantages of the steel jacket construction but due to the improved top structure is able to seal up the paper jacket so that the cell is substantially leak-proof and of greatly enhanced appearance.

A further object of the invention is to provide an improved metal top which may be readily installed and will cooperate with the sheathed zinc electrode to provide a mechanical structure of great strength.

The invention is illustrated in a preferred embodiment in the accompanying drawing, in which—

Figure 1 is an elevational view, partly in section, showing the improved construction; Figure 2, a top plan view of the cell; and Figure 3, an exploded view showing how the parts of the casing are assembled.

In the embodiment illustrated, the usual hollow cylindrical zinc electrode 4 may be in the form of a cup containing a centrally disposed carbon electrode 8 surrounded by a bobbin of depolarizing mix 6 immersed in electrolyte 7. Preferably an insulating washer 9 is provided in the upper portion of the zinc electrode and snugly fits around the carbon electrode 8. The zinc electrode is forced down into a strong paper or cardboard container 9 and the top marginal portions of the insulating container 9 are turned inwardly and downwardly so as to embrace the upper marginal portion of the zinc electrode, as indicated at 10.

Hot sealing material 11 of asphalt or other desired material is then poured into the cell above the washer so that the down turned end portion of the insulating jacket is embedded therein.

The metal top closure 12 is in the form of an inverted dish having its upper marginal portion turned inwardly and downwardly so as to embrace the upper marginal portion of the zinc electrode; and a metal top closure in the form of an inverted dish having its marginal edge portion tightly nested in the turned insulating material of the jacket beneath the top edge of the zinc cup, said metal top closure having a socket portion electrically connected to and enclosing the upper end of said carbon electrode, and said closure being tightly locked in position by having the top marginal portion of the sheathed zinc tapered inwardly above the closure to a smaller diameter than said closure.

2. In dry-cell: a hollow cylindrical zinc electrode; a centrally disposed carbon electrode; a strong fibrous insulating jacket enclosing the side walls of said zinc electrode and having its upper marginal portion turned inwardly and downwardly so as to embrace the upper marginal portion of the zinc electrode; and a metal top closure in the form of an inverted dish having a centrally disposed socket embracing and electrically connected to said carbon electrode, the marginal edge portions of the closure being turned downwardly and provided with an outwardly presented bead to provide a shoulder, said closure being tightly locked within the confines of said zinc electrode by having the top edge portion of the sheathed zinc bent inwardly above said shoulder.

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