

PATENT SPECIFICATION

DRAWINGS ATTACHED

952.709

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COMPLETE SPECIFICATION

Dry Cell Batteries

We, OLIN MATHIESON FAR EAST LIMITED, a Company organised under the laws of Hong Kong, of Shell House, Hong Kong, do hereby declare the invention for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to dry cell batteries of the type comprising a metal, usually zinc, container open at one end which serves as a first electrode and contains an electrolyte material and a central electrode, usually a carbon rod, projecting from the container and which has on its outer end a flanged metal cap, the open end of the container being sealed around the carbon electrode by a layer of wax or bituminous material.

In accordance with the invention a cell of the above type is provided in which the outer electrode is encased in a close fitting sheath of plastics or rubber material which extends over the top of the container and is sealed around the cap on the central electrode with the sheath fitting tightly over and in contact with the whole of the upper surface of the flange on the cap and which is provided with a peripheral intumed flange extending over the bottom edge of the container to hold the sheath securely on the cell. Preferably a metal plate is provided in electrical contact with the base of the container the plate being held in position by the inherent resiliency of the flange on the sheath.

The sheath serves both to prevent leakage of acid from the cell which often occurs towards the end of its life and to prevent ingress of moisture to the cell which is likely to promote rapid deterioration of the cell.

Suitable materials for the sheath include polyethylene, polystyrene, polyvinyl chloride and natural or synthetic rubber but preferably the sheath will be of transparent plastics material e.g. polyethylene, so that a

cardboard or paper label carrying identification marks or advertising material can be inserted between the container and the sheath. Also, with a transparent sheath a layer or sheet of acid sensitive material which changes colour upon a change of pH, e.g. litmus paper, can be placed under the sheath at the top of the cell to give a visual warning of acid leaking from the container, as is described and claimed in earlier

The invention will be further described with reference to the accompanying drawings which illustrate a preferred construction of dry cell according to the invention and in which.

Fig. 1 is a perspective view of the cell, and

Fig. 2 is a longitudinal section there-through.

The dry cell is a conventional cell having a zinc cylindrical container 1 containing an electrolyte paste and depolarising mixture 2, and a central carbon rod 3 capped by a metal cap 4. The container is sealed by a cardboard disc 5 and an overlying asphalt layer 6.

A cardboard cylinder 7 encloses the container 1 and around this is a close fitting sheath 8 of transparent polyethylene. The sheath 8 extends over the top of the cell and fits tightly round the cap 4 which is provided with a flange 9 fitting tightly against the underside of the plastic sheath. The underside of the sheath is provided with an annular ridge 10 which defines a circular recess for the reception of the flange 9.

At the lower end the cell is provided with a metal plate 11 in contact with the base of the container and exposed through the bottom of the sheath. The plate 11 is securely held in place by the inherent resiliency of a peripheral intumed flange 12 around the lower edge of the sheath.

Spaced below the sheath and resting on

[Price 4s. 6d.]

the asphalt seal 6 is a circular piece of blue litmus paper 13 which is clearly visible through the top of the sheath.

WHAT WE CLAIM IS:—

- 5 1. A dry cell battery comprising a metal container open at one end and containing an electrolyte material, and a central electrode projecting from the container and having a flanged metal cap on its outer end,
10 in which the container is encased in a close fitting sheath of plastics or rubber material which extends over the top of the container and is sealed around the cap on the central electrode with the sheath fitting tightly over and in contact with the whole of the upper
15 surface of the flange of said cap and which is provided with a peripheral internal flange extending over the bottom edge of the container to hold the sheath securely on the
20 cell.
2. A dry cell battery according to Claim 1, including a metal plate in contact with the base of the metal container and held in position by the flange on the sheath.
- 25 3. A dry cell battery according to Claim 1

or 2, wherein the inside of the sheath is provided with an annular ridge which defines a circular recess for the reception of the flange on the cap of the central electrode.

4. A dry cell battery according to Claim 1, 2 or 3, wherein the sheath is of transparent plastics material.

5. A dry cell battery according to Claim 4, wherein the sheath is constructed of polyethylene.

6. A dry cell battery according to Claim 4 or 5, including a sheet or layer of acid sensitive material which changes colour upon a change of pH located at the top of the container below the plastic sheath.

7. A dry cell battery according to Claim 6, wherein the acid sensitive material is a sheet of litmus paper.

8. A dry cell battery substantially as hereinbefore described with reference to the
45 drawings.

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