A. C. RECKER.

CORRUGATED DRY BATTERY CUP.

APPLICATION FILED SEPT 20, 1919.

1,374,168. Patented Apr. 5, 1921.

Fig. 3.

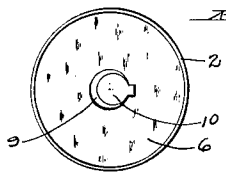


Fig. 2.

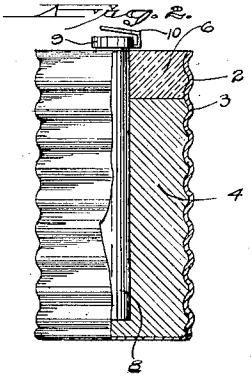


Fig. 4.

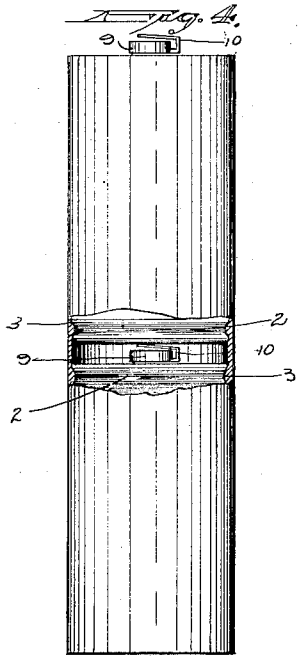
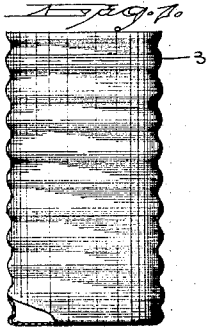


Fig. 10.



Adolph C. Recker

By Seymour and Earle

Attys

UNITED STATES PATENT OFFICE.

ADOLPH C. RECKER, OF OAKVILLE, CONNECTICUT, ASSIGNOR TO THE CHASE COMPANIES INC., OF WATERBURY, CONNECTICUT, A CORPORATION.

CORRUGATED DRY-BATTERY CUP.

1,374,168. Specification of Letters Patent. Patented Apr. 5, 1921.

Application filed September 20, 1919. Serial No. 325,211.

To all whom it may concern:

Be it known that I, ADOLPH C. RECKER, a citizen of the United States, residing at Oakville, in the county of Litchfield and State of Connecticut, have invented a new and useful Improvement in Corrugated Dry-Battery Cups; and I do hereby declare the following, when taken in connection with the accompanying drawings and the characters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this application, and represent, in—

Figure 1 a view partly in side elevation and partly in section of a one-piece corrugated, zinc, dry-battery cup embodying my invention.

Fig. 2 a view partly in side elevation and partly in vertical section of a single cell dry-battery made with my improved cup, and provided with my improved spring-terminal cap.

Fig. 3 a plan view thereof.

Fig. 4 a view in side elevation of a twin cell battery, the cells whereof embody my invention, a portion of the battery case being broken away to show the adjacent ends of the cells.

My invention relates to an improved zinc, dry-battery cup, the object being to produce at a low cost of manufacture, a simple and reliable cup of superior efficiency on account of the increased area of zinc surface it exposes to the electrolyte. A further object of my invention is to provide dry batteries with improved terminal caps with particular reference to improving the electrical connection, to minimizing the effect of corrosion, and to absorbing shocks and so avoiding the breakage of the delicate terminal of the lamp in case the battery is permitted to drop against the same of its own weight.

With these ends in view, my invention consists in a corrugated zinc, dry-battery cup. My invention further consists in a one-piece corrugated zinc, dry-battery cup. My invention further consists in certain details of construction as will be hereinafter described and pointed out in the claims.

In carrying out my invention as herein shown, I produce by suitable drawing and nurling operations, a one-piece, zinc, battery cup 2 having its side walls integral with its bottom and formed with circumferential knurls or corrugations 3, which, in a battery of given size, greatly increases the area of zinc surface exposed to the chemical action of the electrolyte 4, which may be of any approved character and composition. As shown, the corrugations 3 are concentric, but this is not essential, since a spiral form might take their place and be attended in some situations, with advantages. I do not, therefore, limit myself to any one form of circumferential corrugations, nor do I limit myself to a one-piece cup, since the advantages of the corrugations would be present in a cup produced from sheet zinc by folding and soldering instead of by drawing. In addition to increasing the area exposed to the chemical action of the electrolyte, the corrugations assist in the retention on the cup, of a paper tube or other form of battery-case, the corrugations securing sufficient grip upon the paper to hold it against slipping. This function of the corrugations is especially important when a paper tube is employed to hold a plurality of cells, since the corrugations then serve to prevent the batteries from slipping in the tube and breaking the connection between them. It frequently happens that the electrolyte when exhausted tends to expand and by forcing the walls of the cup outward bind the same in the battery-case so as to prevent its removal therefrom. The corrugations of my improved cup so strengthen it as to greatly minimize this objection.

The uppermost corrugation of the cup, or the uppermost corrugations thereof, serve to assist in retaining in place the closure employed to confine the electrolyte 4, whether this closure takes the form of the cement commonly used or the form of a cork or rubber stopper 6, as shown in Fig. 1. Whether the closure is made of cement, cork, rubber or other material, its edge takes the form of the uppermost corrugation or corrugations and is held in place thereby. The closure 6 mounts the carbon electrode or pencil 8.

The yielding terminal-cap shown in the drawings is not claimed herein, but is made the subject of an application filed February 28, 1921, Serial Number 448,690.

I claim:—

1. A dry-battery cell having a circumferentially-corrugated zinc cup, an electrolyte located therein, a relatively thick closure located within the cup and held in

place therein by the entrance of one or more of the currugations thereof into the edge of the closure, and a carbon electrode or pencil mounted in and supported by the said closure and extending into the electrolyte.

2. A multiple dry-battery comprising a plurality of independent cells having a circumferentially-corrugated one-piece zinc cup, and a tubular paper case within which the cells are located end to end, with their terminals in serial contact, whereby the cells are held against endwise displacement in the case and the contact of their terminals maintained by the partial entrance of the flexible side walls of the paper case into the corrugations of the zinc cups of the respective cells.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

ADOLPH C. RECKER.

Witnesses:
JOHN S. NEAGLE,
H. M. UPSON.