Oct. 3, 1944. C. P. DEIBEL 2,359,468

UNIVERSAL TERMINAL

Filed May 15, 1942

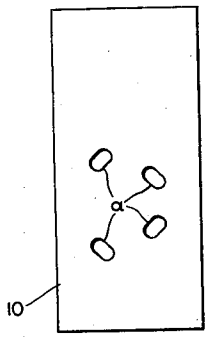


FIG. 1.

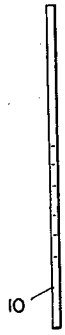


FIG. 2.

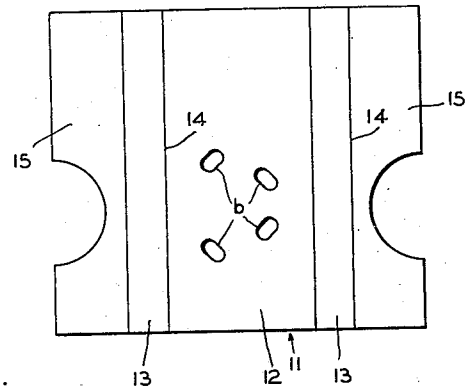


FIG. 3.

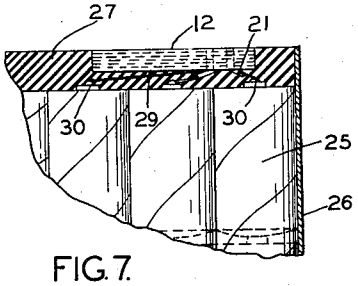


FIG. 7.

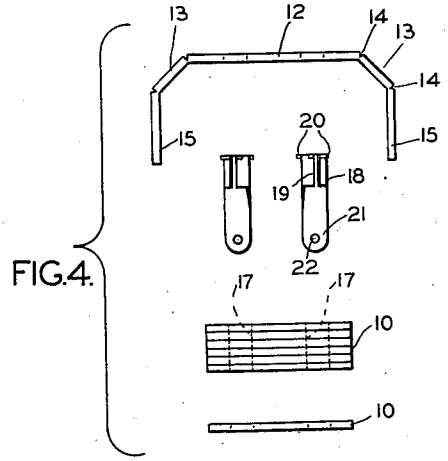


FIG. 4.

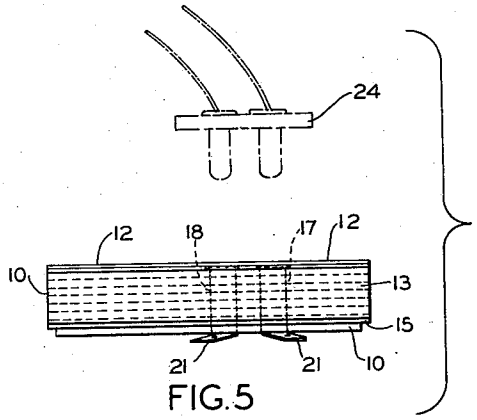


FIG. 5.

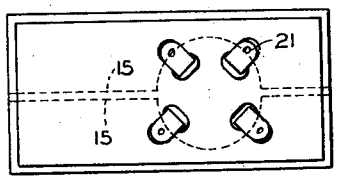


FIG. 6.

INVENTOR.
CYRIL P. DEIBEL

BY Fay, Macklin, Golrich
Williams, Chilton and Isler.
ATTORNEYS.

Patented Oct. 3, 1944

2,359,468

UNITED STATES PATENT OFFICE

2,359,468

UNIVERSAL TERMINAL

Cyril P. Deibel, Lakewood, Ohio

Application May 15, 1942, Serial No. 443,121

2 Claims. (Cl. 173—332)

The present invention relates to a universal terminal for batteries, such as are used in radio equipment and the like, and to batteries containing such universal terminals.

Universal terminals of the kind here described have hitherto been made with a housing of Bakelite, a material which is comparatively expensive and is no longer available in unlimited quantities.

One object of the invention is to make a universal terminal from inexpensive insulating material preferably fibrous sheet material such as scrap cardboard. Such material is available in any desired amount at a very low price and may be handled in a simple manner to form a housing for the conductors which have to be inserted in a universal terminal.

Another object of the present invention is to provide insulating layers for a universal terminal which layers are assembled in a simple way. It is an advantage of these layers that they may be built up to form a housing for the above mentioned conductors without application of heat or pressure such as Bakelite articles need for their assembly.

Another object of the invention is the construction of a dry cell battery unit with a universal terminal of the above design included therein. Other objects and advantages of the present invention will appear from the following description and the accompanying drawing.

Fig. 1 is a plan view of a single layer of insulating material;

Fig. 2 is an end view of the same;

Fig. 3 shows the cover for a pile of layers in unfolded position;

Fig. 4 is an exploded view of the terminal;

Fig. 5 is a side view of the terminal with a plug about to be inserted therein;

Fig. 6 is a bottom view of the terminal; and

Fig. 7 is a partial view of a battery including the universal terminal.

As shown in Figs. 1 and 2 the single layer for building up the housing of the universal terminal according to the invention consists of a piece of insulating material **10** into which are punched a number of openings *a* in a staggered position which corresponds to the staggered prongs of a standard plug. Fig. 3 illustrates a cover for a pile of layers **10**. The cover **11** comprises five portions made integrally, but being divided by longitudinal cuts **14** which make them capable of being bent at right angles so as to form a box-like enclosure. The middle portion **12** has openings *b* punched out to register with openings *a* of Fig. 1. The two portions **13** adjoining the middle portion **12** are of a width that corresponds to the number of layers which these portions **13** are intended to cover. When bent to final shape, these portions form the side walls of the enclosure whereas the middle portion **12** forms the top. The cuts, better seen in Fig. 4, extend down about half way through the thickness of the material. Lateral portions or flaps **15** are folded over to form the bottom of the wrapper.

These openings in the superimposed layers **10** form holes **17** (Fig. 5) each of which receives a conductor in the form of a metal sleeve **18**. The sleeves **18** are of standard make, having a slot **19** and ears **20** which are bent back to grip the material. Extending downwardly from the sleeve is a lug **21** with an opening **22** that serves to receive a connecting wire which may be soldered to the lug **21** at one end and to one of the cell terminals at its other end.

In assembling the terminal several layers of insulating material are put one on top of the other to form a pile; each of the four holes **17** receives therein a sleeve **18** with the lugs **21** extending outwardly in downward direction. Then the cover **11** is wrapped around the pile of layers with portion **12** on top, portions **13** forming side walls and flaps **15** forming the bottom portion. For holding the flaps in position another layer **10** is placed over them and the whole is then held together by bending back the lugs **21** as shown in Figs. 5 and 6. **24** designates a plug to be inserted in the terminal.

Fig. 7 illustrates a battery unit including the terminal according to the invention. The unit comprises a casing **26** of insulating material, in which the cells **25** are housed. On top the casing is sealed by a layer of wax, pitch or the like, shown at **27**. Enclosed in said mass is a terminal **12**, having the metal lugs **21** connected by wires **29** to desired contact points **30** of the battery.

Although cardboard has been mentioned as a very suitable material for the layers building up the housing of the terminal, it will easily be understood that the invention is not limited to that use; any insulating sheet material that lends itself to form layers with holes punched out therefrom, for instance, pressed board, fiber board, linoleum and the like, may be used instead.

Having thus described my invention, what I claim is:

1. A universal terminal comprising a pile of superimposed layers of electrical insulation material, each of said layers having spaced openings which register with the openings in the other layers to form holes, sleeve-like conductors disposed

in said holes and having outwardly extending ears at their upper ends in engagement with the surface of the uppermost layer of insulating material, and a covering for said pile, said covering comprising a sheet of insulating material having a portion overlying the uppermost layer of said pile and engaging said ears and having openings aligned with said holes, portions extending from said first-named portion and forming side walls for said pile, and bottom portions underlying and in engagement with the lowermost layer of said pile.

2. A universal terminal comprising a pile of superimposed layers of electrical insulation material, each of said layers having spaced openings which register with the openings in the other layers to form holes, sleeve-like conductors disposed in said holes and having outwardly extending ears at their upper ends in engagement with the surface of the uppermost layer of insulating material, and lugs protruding from the bottom of said holes, a covering for said pile, said covering comprising a sheet having a portion engaging said ears and having openings aligned with said holes, portions forming side walls for said pile and portions engaging the lowermost layer of said pile, and a layer of insulating material engaging the outer surface of said last-named portions, said lugs being bent into engagement with said last-named layer to maintain the elements of said terminal in assembled relation as a unit.

CYRIL P. DEIBEL.