J. N. DAVIS.

BATTERY BOX OR TRAY AND HANDLE THEREFOR.

APPLICATION FILED JULY 14, 1908.

921,808.

Patented May 18, 1909.

Fig. 2.

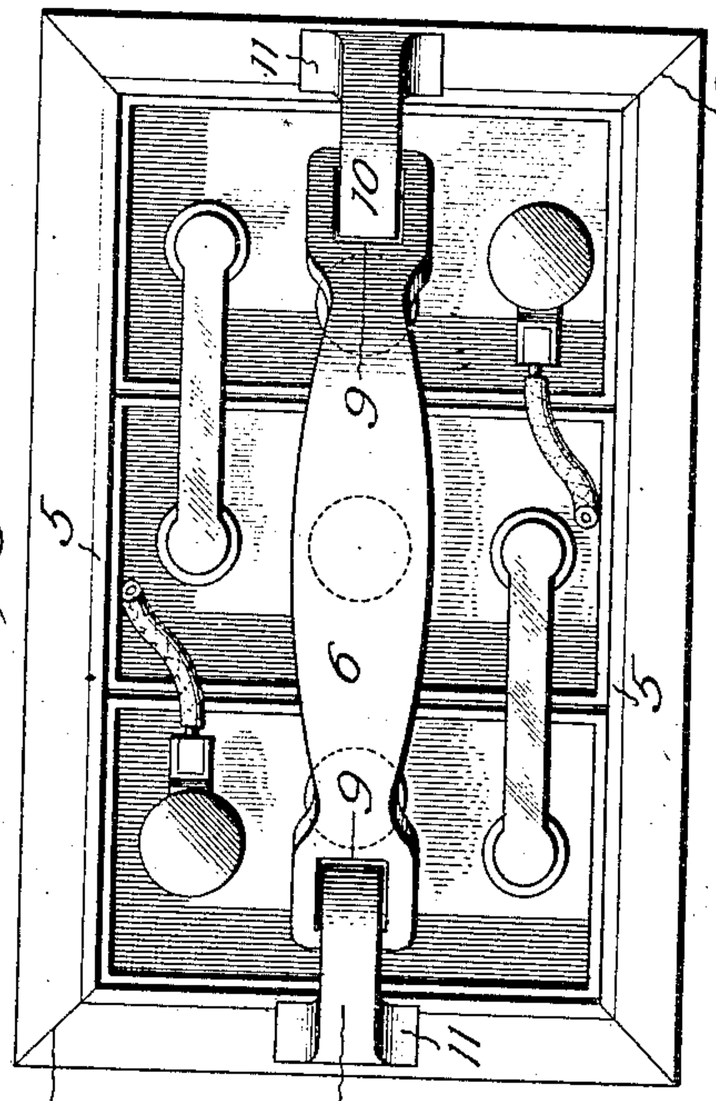


Fig. 5.

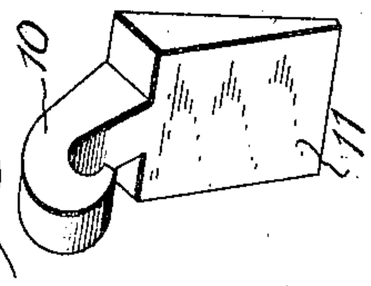


Fig. 3.

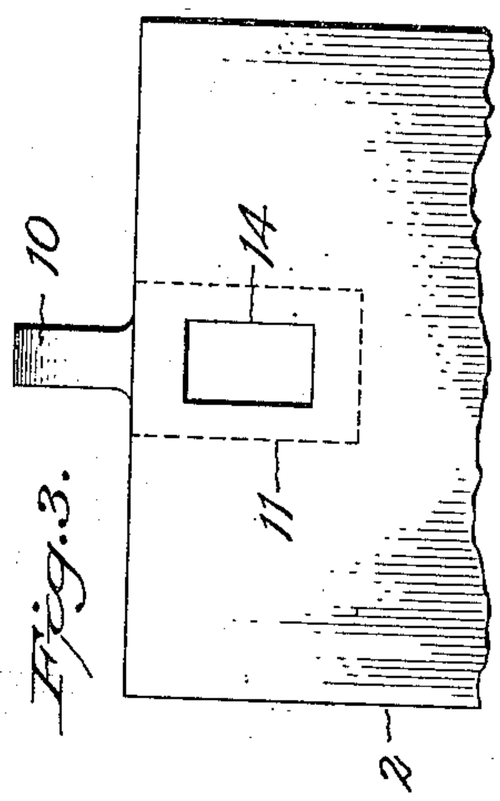


Fig. 4.

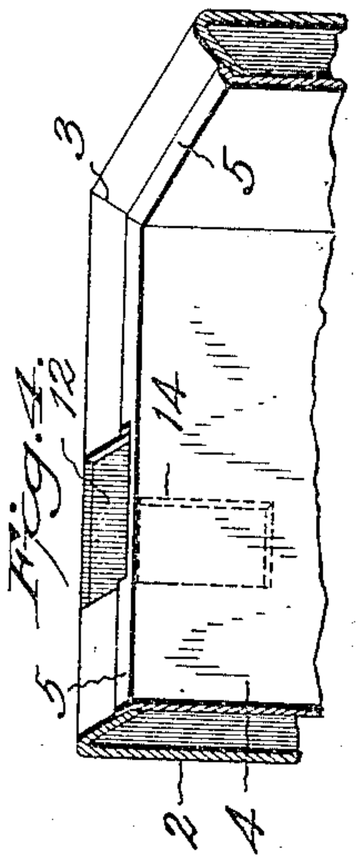


Fig. 1.

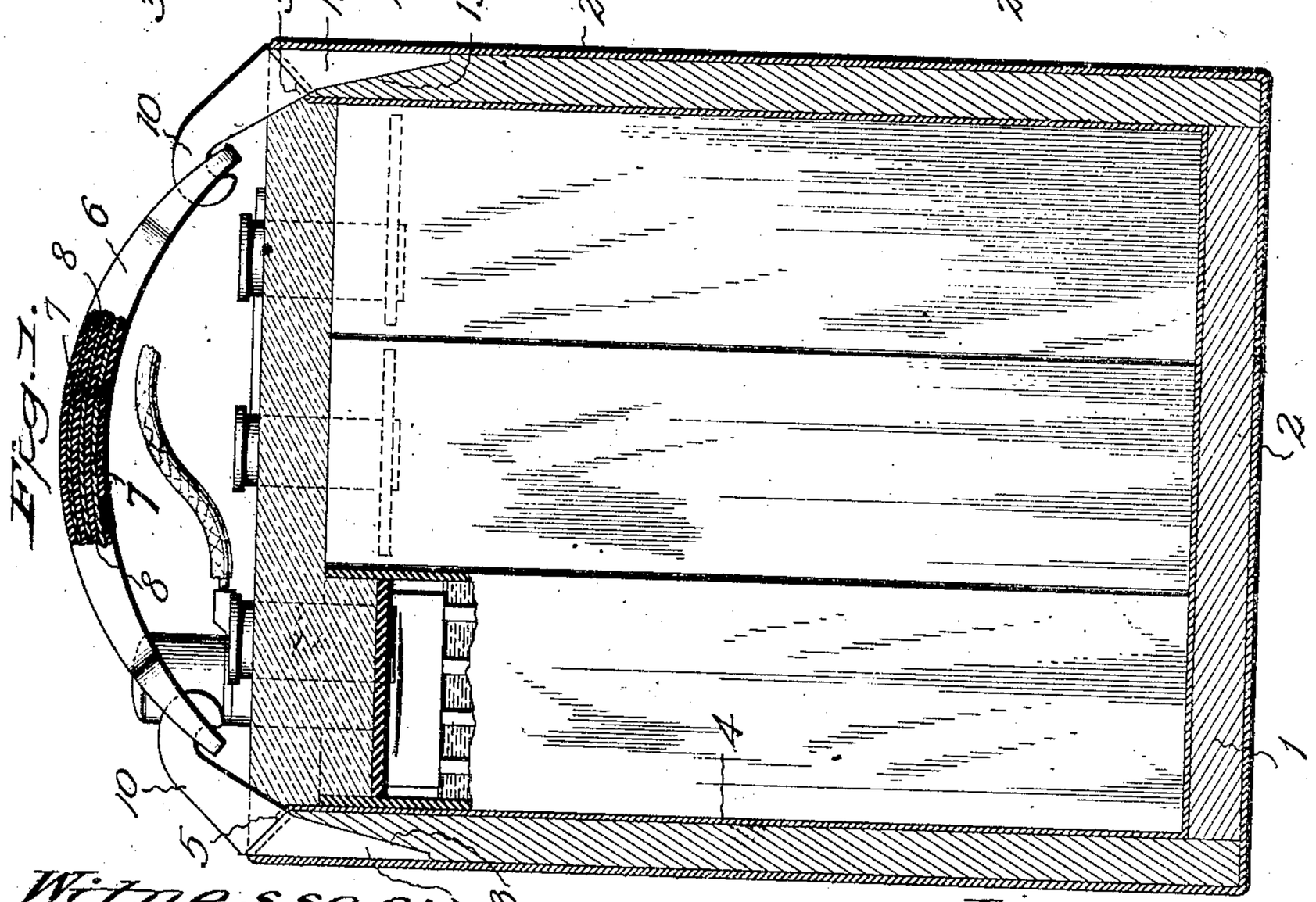
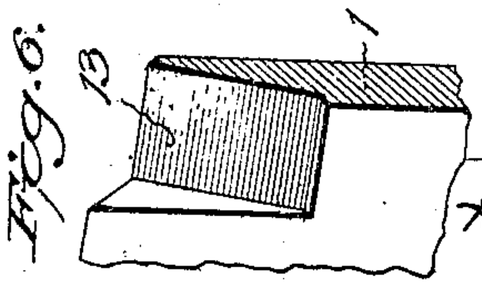


Fig. 6.



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UNITED STATES PATENT OFFICE.

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BATTERY BOX OR TRAY AND HANDLE THEREFOR.

No. 921,808. Specification of Letters Patent. Patented May 18, 1909.

Application filed July 14, 1908. Serial No. 443,541.

To all whom it may concern:

Be it known that I, JASPER N. DAVIS, a citizen of the United States of America, residing in the city and county of Denver and State of Colorado, have invented a new and useful Battery Box or Tray and Handle Therefor, of which the following is a specification.

This invention relates to improvements in ignition storage battery boxes or trays and handles therefor.

The object of the invention is to provide a wooden box having an interior lining of lead and an outside jacket of the same material, which overlaps the upper edges of the box, and is secured to the inner lining by burning, so that the box is effectively protected against the action of the sulfuric acid with which the battery cells are supplied, the lead being practically non-corrosive under the action of the said acid, thus providing a box which is not only strong and durable by reason of its construction, but which is not weakened or eaten away by contact with the said acid. Further, to provide a box of this character, having hook shaped lugs which are burned to the outer jacket, and to which are removably attached a suitable acid-proof handle, by which the battery can be lifted and transported without fear of breaking of the handle or lugs, and the consequent injury to the battery, the metal used in the construction of the box being lead exclusively, which is practically impervious to the action of sulfuric acid.

In the accompanying drawings, Figure 1, is a vertical, sectional view through the improved battery box equipped for service, the handle being in engagement with the hooked lugs, and partly broken away. Fig. 2, is a plan view of the box as shown in Fig. 1, the compound which seals the cells being omitted. Fig. 3, is a side elevation of a portion of the box, showing one of the hooked lugs, and an aperture in the outside jacket, registering with the base of the lug when the jacket and lug are burned together. Fig. 4, is a perspective view of a portion of the inside and outside jackets, showing the lap seam where the jackets are burned together, and the opening through which the handle lug is passed. Fig. 5, is a perspective view of one of the handle lugs. And Fig. 6, is a perspective view of a portion of one of the ends of the wooden box, showing the recess in which the handle lug fits.

Similar numerals of reference refer to similar parts throughout the several views.

Referring to the accompanying drawings, the numeral 1, indicates a rectangular wooden box, of a suitable size, the upper edges of which are inwardly beveled. This box is incased in a lead jacket 2, which is of sufficient thickness to insure the requisite strength. The jacket is enough longer than the box to lap over its upper inclined edges and entirely cover them, the corners of the jacket being cut to form miter joints as shown at 3, at which point the meeting edges are burned together and thus securely united. An inner lead lining or jacket 4, is placed within the box 1, and this jacket is of a size to fit snugly within the box, and extend a slight distance above the inner edge of the overlapping portion of the outside jacket, as shown in the drawings, the extended portion 5, being bent to contact with the said overlapping edge of the outside jacket, to which it is secured by burning, as will be understood by reference to Fig. 4. By this construction the wooden box is entirely inclosed between the inner and outer jackets, which are burned together so as to prevent the entrance of the sulfuric acid used in the battery cells, which otherwise would injure the box and cause it to fall to pieces. The box being thus free not only from the action of the acid but from all other moisture as well, is prevented from rotting, and consequently retains its strength and rigidity for an indefinite period.

In connection with the improved style of battery box, above described, a suitable handle is employed for lifting and transporting the same, and it is essential that this handle should be made of material that is indestructible under the action of sulfuric acid, as it frequently happens that the handles at present employed are eaten away and therefore weakened to such an extent by the acid that they break and let the battery fall, thereby causing injury to the said battery. To overcome this defect, a handle 6 is employed, which is made up of layers or sheets 7 of lead or of lead webbing, the texture of which is coarse enough to give the requisite strength, and these layers of lead or of lead webbing, are separated by layers 8 of rubber, which also cover the outer sides and edges of the lead layers, completely embedding them. The lead layers merge into one thickness at the ends of the handle, or are solid lead, and

in the ends are formed apertures 9, which are adapted to engage hooked lugs 10, which are secured to the outer jacket of the battery box. A handle constructed in this manner is not only strong and flexible, but impervious to the action of the acid, and therefore not liable to break. The hook lugs 10, to which the handle is attached, have body portions 11, which are wedge shaped, as shown in Fig. 5, and the wedge shaped portions are passed through openings 12, in the overlapping edges of the ends of the outside jacket, and into corresponding recesses 13, in the ends of the box, these recesses extending in from the outer face of the ends of the box, as shown in Fig. 6, so as to permit the outer faces of the body portions 11, to lie against the outside lead jacket, as shown in Fig. 1, and the body portions are secured to the jackets in the following manner: A hole 14, preferably rectangular in outline, and somewhat smaller than the area of the body portion 11, is formed in each end of the outer jacket, and in such a position that when the body portions are placed in the recesses 13, they cover the holes 14, as shown in Fig. 3. The edges of the aperture 14 are burned to the body portions, and the holes are then filled flush with the surface of the jacket, by placing pieces of lead in them and melting it. The edges of the openings 12, in the overlapping ends of the jackets, are also united with the body portions of the lugs, by burning, and the bodies of the lugs are thus securely united with the outer jackets, care being taken to make perfect joints so as to prevent the acid from getting through to the box. The ends of the handle are passed under the hooked lugs so that the apertures 9 in the said ends will be engaged by the hooks, for lifting or transporting the battery, and the handles can be quickly disconnected at any time, when desired. By this construction, the outer jacket supports the weight of the battery, the wooden box being relieved of all weight and strain when battery is lifted by the handle, and as lead is the only metal used in the construction of the box, there is nothing that can corrode under the action of the acid, and the danger of injuring the batteries through particles of corroded metal getting into the cells is thus entirely eliminated.

Battery boxes in present use are unsatisfactory, first because the wooden portion is inadequately protected against the acid, which soon weakens it, causing the box to fall to pieces, and second, because metals are used in their construction which corrode and are eaten away under the action of the acid, causing breakage and consequent injury to the battery, and third because pieces of corroded metal frequently get into the battery cells and injure the battery. The battery box herein described, by its construction and material, eliminates these objectionable features, besides requiring less time and care in charging them and keeping them in order.

Having described the invention, what is claimed as new and desired to be secured by Letters Patent, is:

1. In a device as specified, a box; an outer and an inner jacket inclosing the box, said jackets being of non-corrosive metal; lugs on said outer jacket, having hooked ends, and a removable handle secured to the hooked ends.

2. In a device as specified, a wooden box; an inner and an outer lead jacket inclosing said box; lead lugs secured to the outer jacket, having hooked ends, and an acid proof handle removably attached to the hooked ends of the lugs.

3. In a device as specified, a wooden box having oppositely positioned recesses in its ends; an outer lead jacket surrounding the box, the upper edges of which overlap the upper edges of the box, said overlapping edges having apertures which register with the recesses in the ends of the box; an inner lead jacket within the box, which is secured to the outer jacket; lead lugs which extend through the apertures into the recesses in the box and are secured to the outer jacket; hooks on the lugs and an acid proof handle having apertures in its ends through which the hooks pass.

4. In a device as specified, a rectangular wooden box having recesses in the end sections, which extend in from the outer face and upper edge of the sections; an outer lead jacket surrounding the box, the upper ends of which lap over the upper edges of the box, and are provided with apertures which register with the recesses in the ends of the box; hooked lead lugs having body portions which pass through the apertures and into the recesses of the box and are secured to the outer jacket; a lead jacket within the box, which is secured to the overlapping edges of the outer jacket so as to present a liquid-tight joint; and an acid-proof handle, having openings at its ends to receive the hooked lugs.

5. A battery box comprising a wooden box inclosed within an inner and an outer lead jacket, which jackets are burned together along the upper edge of the box; hooked lead lugs which are burned to the outer jacket, and a handle composed of alternate layers of lead and rubber and having solid lead end portions provided with openings which receive the hooked lugs.

6. A battery box comprising a wooden box having inwardly beveled top edges; an outer lead jacket of greater depth than the box to provide extended sides and ends which are bent over the beveled side and end edges of the box, the end bent portions having openings which register with recesses in the ends

of the box; lead hook lugs, having body portions which pass through the openings and into the recesses in the ends of the box and are burned to the outer jacket, and a handle composed of alternate layers of lead and rubber and having solid lead ends, provided with apertures, which receive the hooked lugs.

In testimony whereof I affix my signature in presence of two witnesses.

JASPER N. DAVIS.

Witnesses:
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ADELLA M. FOWLE.