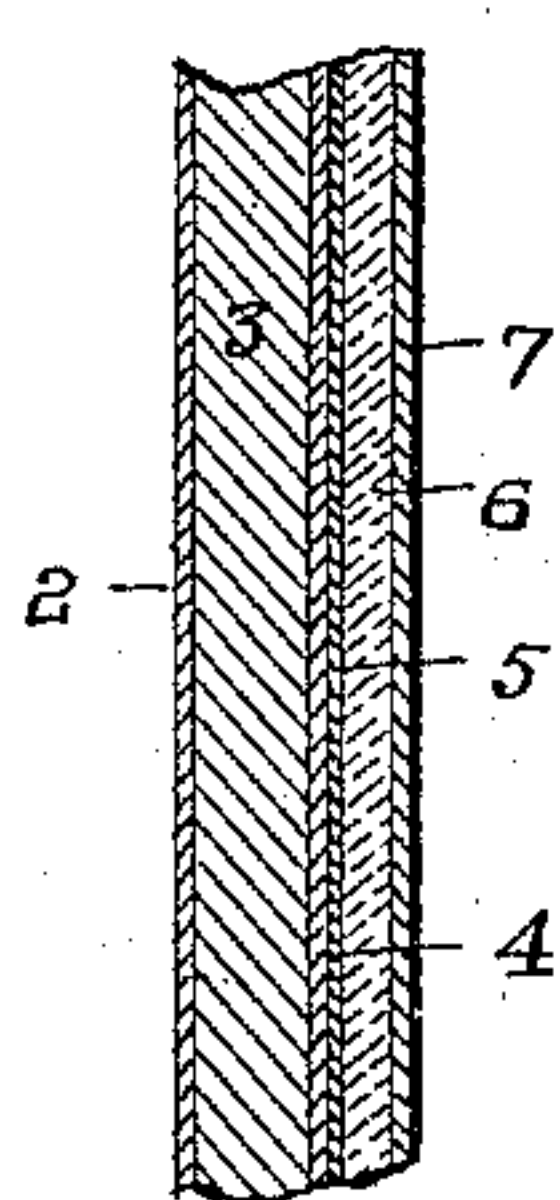
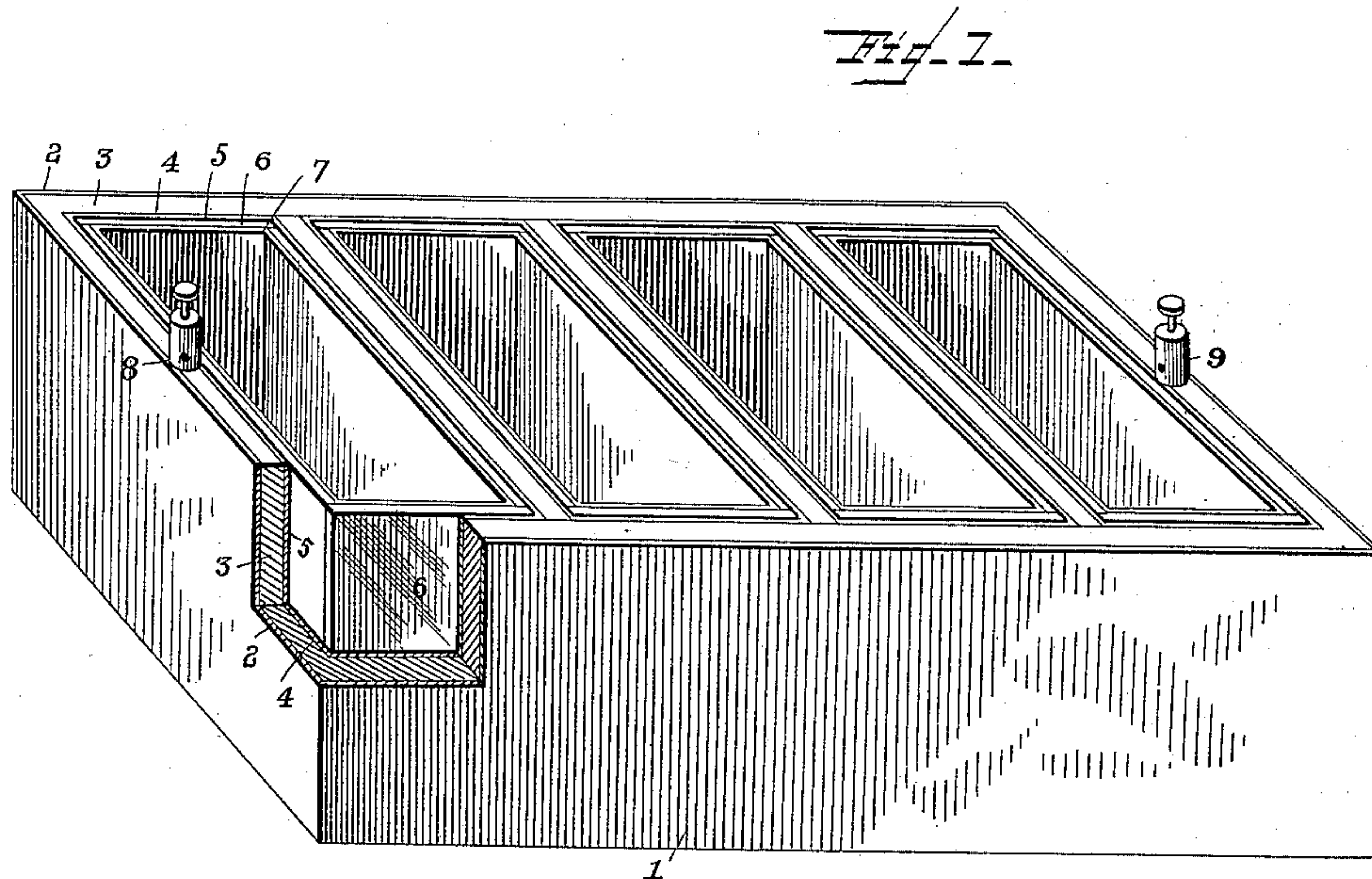


(No Model.)

J. WIEST.
BATTERY VESSEL.

No. 378,484.

Patented Feb. 28, 1888.



WITNESSES

Edwin L. Yewell.
A. R. Macko

INVENTOR

John Wiest

By *R. A. H. Read*
Attorney

UNITED STATES PATENT OFFICE.

JOHN WIEST, OF YORK, PENNSYLVANIA.

BATTERY-VESSEL.

SPECIFICATION forming part of Letters Patent No. 378,484, dated February 28, 1888.

Application filed September 17, 1887. Serial No. 249,950. (No model.)

To all whom it may concern:

Be it known that I, JOHN WIEST, a citizen of the United States, residing at York, in the county of York and State of Pennsylvania, have invented certain new and useful Improvements in Battery Tanks or Vessels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to containing-vessels for the elements and liquids of electric batteries, and embodies certain improvements by which they are rendered strong, tough, and durable, so as to withstand the shocks and strains to which they may be subjected in handling or transportation, by which they may be rendered thoroughly acid-proof, and by which they may be thoroughly insulated, so as to provide against leakage of the electric current.

To these ends my invention consists in certain details of structure, hereinafter fully described in this specification, and definitely indicated in the claims.

Battery jars or tanks as now constructed are usually made of glass, rubber, or other fragile material, which is unfit for use where subjected to wide differences or sudden changes of temperature, by reason of liability to crack from rapid expansion or contraction, and where the cells must be moved a shock will cause a crack or break which will cause serious inconvenience and frequently render them entirely unfit for use. These difficulties are very great where, as with storage-batteries, the cells must be carried on vehicles where there is much jolting, or shifted from one vehicle to another. My invention is designed to overcome all of these difficulties.

It has heretofore been proposed to make battery-tanks of wood; but in all with which I am familiar the provisions against leakage have been so imperfect that they do not last for any considerable length of time.

In practicing my invention I make a trough or box of a fibrous material, such as wood or pulp, and divide it by transverse partitions into cells of the desired number and size. Before shaping the box the material is thoroughly saturated with an alkaline silicate. I have found silicate of soda to answer well.

Any well-known treatment may be adopted to secure a thorough impregnation, as by heating the fibrous material and then soaking it in the silicate solution under pressure, if desired.

The water-proofing and acid-proofing properties of the silicate are improved by an admixture therewith of lime or plaster-of-paris, though, by reason of an increased density of the fluid, such a step would render the impregnation of the fibrous material more difficult. In cases such as hereinafter mentioned when the trough is molded from pulp this addition would prove expedient and serviceable.

In view of the fact that the boxes are lined with glass, but little access of the fluid to the fibrous material can be had. The material so treated is rendered, when dry, exceedingly tough and water-proof.

If made of pulp, the box can, if desired, be molded with the partitions integral with the sides and bottom, in which case the pulp could be impregnated with a silicate compound before molding. The box is coated inside and outside with the silicate alone, or mixed with lime or plaster-of-paris. A chemical reaction between the silicate and lime produces a strong, dense, and acid-proof cement. When these coatings are thoroughly dry, the inner faces of the boxes are coated with a water-proof adhesive compound—such as marine glue, for example—and lined with panes of glass. The joints and the face of the glass itself are then coated several times with the compound silicate and lime.

In the accompanying drawings I have illustrated a tank with four cells embodying my improvements.

Figure 1 shows the tank in perspective with part broken away. Fig. 2 is a detached sectional view showing the arrangement of the coatings and the glass lining.

1 is the box; 2 and 4, the coatings of the silicate compound; 3, the impregnated fibrous material; 5, the adhesive material; 6, the glass held thereby, and 7 the interior coating. 8 and 9 are binding-posts, suitably located to make circuit-connections.

I have herein particularly mentioned silicate of soda as the material adopted; but I do not desire to be understood as limiting my-

self specifically to its use. Silicate of potash, magnesia, or lime might be adopted in its stead.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A battery-vessel of fibrous material impregnated with the silicate of an alkali and an alkaline earth and coated with water-proofing material.

2. A battery-vessel of fibrous material impregnated with the silicate of an alkali, lined throughout with glass, and sealed at all joints with an acid-proof material.

3. A battery tank or vessel coated with an acid-proof material and lined throughout with glass, all joints of the glass being sealed with an acid-proof material.

4. A battery tank or vessel of fibrous ma-

terial impregnated with a silicate of an alkali, coated inside and outside with a compound of a silicate of an alkali and lime, having the inside lined with glass, and the joints of the glass lining sealed with the compound, as set forth.

5. A battery tank or vessel of fibrous material impregnated with silicate of soda, coated inside and outside with a compound of silicate of soda and lime, having the inside lined with glass secured thereto, and the faces and joints of the glass lining coated with an acid-proof material, as and for the purpose set forth.

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

JOHN WIEST.

Witnesses:

A. B. MICKLEY,

B. F. HUBLEY.