May 10, 1932. A. G. WENSLEY ET AL 1,857,903

ELECTROLYTIC APPARATUS

Filed March 12, 1931

Fig. 1.

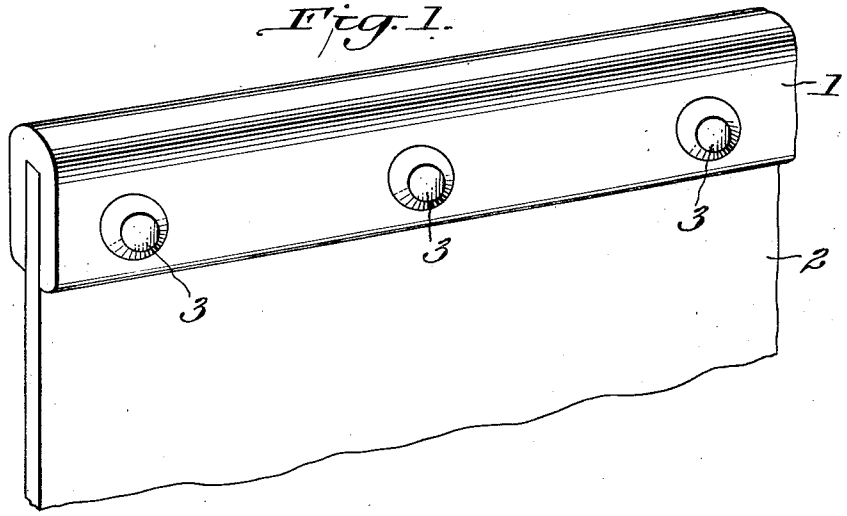


Fig. 2.

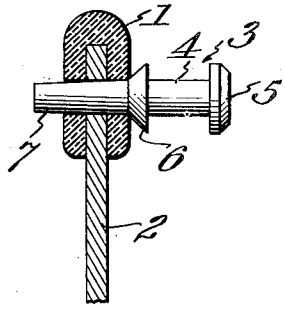


Fig. 3.

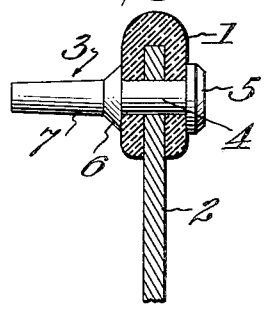


Fig. 4.

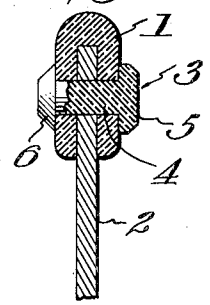
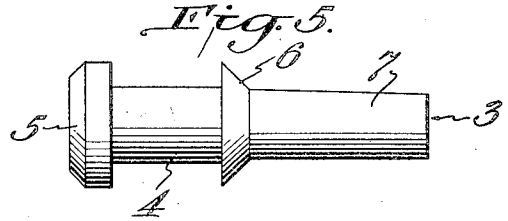


Fig. 5.



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UNITED STATES PATENT OFFICE

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ELECTROLYTIC APPARATUS

Application filed March 12, 1931. Serial No. 522,152.

This invention relates to apparatus for use in electrolytic processes and particularly to insulating members for electrodes of the plate type.

In practising certain electrolytic processes, such as, the electrolytic deposition of zinc, it is necessary to space and insulate the anodes from the cathodes in a positive manner. One method of doing this is by forcing onto the edges of the electrodes wooden sticks having longitudinal grooves of slightly less width than the thickness of the electrodes. The sticks, being held on the electrodes merely by friction, often become detached from the electrodes and besides become warped and rotted, due to immersion in the electrolyte, as a result a considerable expense for labor and material is involved in maintaining the wooden stick insulators.

To overcome these difficulties, we first proposed simply to substitute for the wooden sticks, members of similar shape formed of rubber, but it was found that the rubber members did not adhere to the electrodes as well as did the wooden sticks.

The expedient of riveting the rubber members to the electrodes by means of metal, e. g. aluminum rivets was tried, but a deposit of zinc was built up on the rivets which forced the rubber members away from the rivets and permitted them to drop off of the electrode.

This deposition of zinc on the rivets was avoided fairly successfully by disposing a rubber bushing around the shank of each rivet. However, this arrangement involved such a large increase in cost for labor and material over the use of wooden sticks that it was not satisfactory from a commercial point of view.

The present invention contemplates the use of fastening members constructed entirely of rubber and similar in shape to rivets.

Inasmuch as the fastening members, after assembly, operate in a manner similar to rivets but are completely formed before assembly, we prefer to designate these members as "preformed rivets".

The invention will be more fully described and illustrated in connection with the accompanying drawings in which:

Fig. 1 is a perspective fragmentary view showing a plate electrode provided with an insulating member constructed according to the invention,

Figs. 2, 3 and 4 are transverse cross-sectional views showing successive steps in the assembly of the members and the preformed rivets on the plate electrode, and

Fig. 5 is an enlarged view of a preformed rivet.

The insulating member 1 consists of well vulcanized but flexible rubber and is provided with a longitudinal groove adapted to fit the edge of the electrode plate 2. The rivet 3 has an integral head on one end and an outwardly tapering circumferential flange formed integral with the shank, intermediate the ends of the shank. The rivet 3 also is made of well vulcanized but flexible rubber and comprises the shank portion 4, the head 5 and the outwardly tapering flange 6 and the free end 7. The headless end 7 of the shank is provided with a slight taper, the purpose of which will appear hereafter.

Conveniently spaced, registering perforations are provided in the electrode plate and the grooved portion of the insulating strip as shown in Figs. 2 to 4. The free end 7 of the rivet is inserted in one set of registering perforations, see Fig. 2, and then pulled, as by means of a pair of pincers whereby the flange 6 is forced through the perforations in the member 1 and the plate 2 to the position shown in Fig. 3. The head 5 and flange 6 preferably, are spaced to correspond with the combined thickness of the plate 2 and the two walls of the member 1, so as to hold the walls of the member 1 snug against the plate. Due to the tapered form of the flange it is readily deformed while being drawn through the strip and plate and thus offers little resistance to its passage through these members.

The free end 7 of the rivet may then be cut off as illustrated in Fig. 4.

The present invention provides strips for insulating the electrodes of electrolytic apparatus which are easy and inexpensive to install, reliable in operation and which require little replacement or repair.

The invention is not limited to the specific apparatus, material and uses herein disclosed but may be employed wherever it is desired to provide an edge protecting member for a plate, or where an insulating member is to be secured to a conductor, and in other analogous applications.

We claim:

In electrolytic apparatus, the combination with a plate electrode, of a strip formed of rubber engaging an edge of said electrode and a fastening member formed of rubber extending through said electrode and said strip to secure said strip to said electrode.

In testimony whereof, we affix our signatures.

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