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METHOD OF PREVENTING CORROSION AND CORROSION RESISTING JOINTS

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5 Claims. (Cl. 285—111)

The present invention relates to a novel method of preventing corrosion at a joint between unlike metals due to electrolytic action and to a novel corrosion resisting joint.

It is known that where different metals, such as copper and iron are joined, as by soldering, and exposed to conditions whereby moisture comes in contact with said joint, corrosion occurs due to electrolytic action between the dissimilar metals. This corrosion is often serious, causing failure in the joint and breakdown in apparatus in which the joint is present. For example, in electrical refrigerator constructions there is often occasion to join copper tubing from the condenser coil with a portion of the evaporator which is in the form of an iron pipe. Usually a suitable solder is employed as the joining medium. Such a joint is exposed to very humid conditions within the refrigerator cabinet and hence subject to the corrosion aforementioned. Failure of such a joint would cause a breakdown of the machine, escape of the refrigerant and other harmful effects.

In accordance with my invention a simple, effective method is employed to prevent corrosion at joints between different metals.

The method consists in suitably joining the unlike metals by any convenient means, for example, soldering, or brazing, and then applying to the joint so made a coating of a cellulose ester, such as cellulose acetate, in such a manner that the cellulose ester is caused to form a tightly adhering, impervious coat or film on the joint. This is accomplished by applying the cellulose ester on the joint as a tape, after which the ester is treated with a solvent or softening agent in any suitable manner, so that it is caused to tighten down over the joint giving a transparent or glazed coating free of holes and impervious to water and oil.

The invention may be illustrated by describing the formation of a corrosion resisting joint between iron and copper elements. The metals, in any mechanical form, for example tubes, are joined in a convenient manner. One method is to join the metals with a suitable solder. The joint so prepared is carefully cleaned and wrappped with cellulose acetate tape. The tape is dampened with a suitable solvent for the ester, for instance, acetone. This may be accomplished in any convenient way as by dipping, spraying, brushing, etc. The tape shrinks on to the metals to form an impervious horn-like covering. Such a joint is corrosion resisting, the ester covering effectively preventing moisture from reaching the joint between the metals.

While I have specifically illustrated my invention by citing cellulose acetate as the cellulose ester, it is to be understood that the invention is not limited to this particular ester. Any other suitable cellulose ester may be employed; for example, cellulose nitrate. Due to the inflammability of the latter ester it is, however, often less advantageous to employ it.

What I claim as new and desire to secure by Letters Patent of the United States, is:

1. A method of preventing corrosion between unlike metals which comprises suitably joining said metals, taping the joint with a solid tape of cellulose ester and causing said ester to shrink around said joint to form a tightly adhering, impervious film thereon.

2. A method of preventing corrosion between unlike metals which comprises suitably joining said metals, taping the joint with a solid tape of cellulose ester and applying a softening agent to said tape to cause the latter to form on said joint a tightly adhering, impervious film.

3. A method of preventing corrosion between iron and copper elements which comprises suitably joining said elements and taping said joint with a solid tape of cellulose acetate and shrinking the latter on the joint to form a tightly adhering, impervious covering.

4. In combination, a joint consisting of iron and copper elements, and an impervious film formed of solid cellulose acetate tape covering said joint.

5. In combination, a joint consisting of unlike metallic elements joined with a solder or brazing material, and an impervious film formed of solid cellulose acetate tape covering said joint.

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