

No. 720,660.

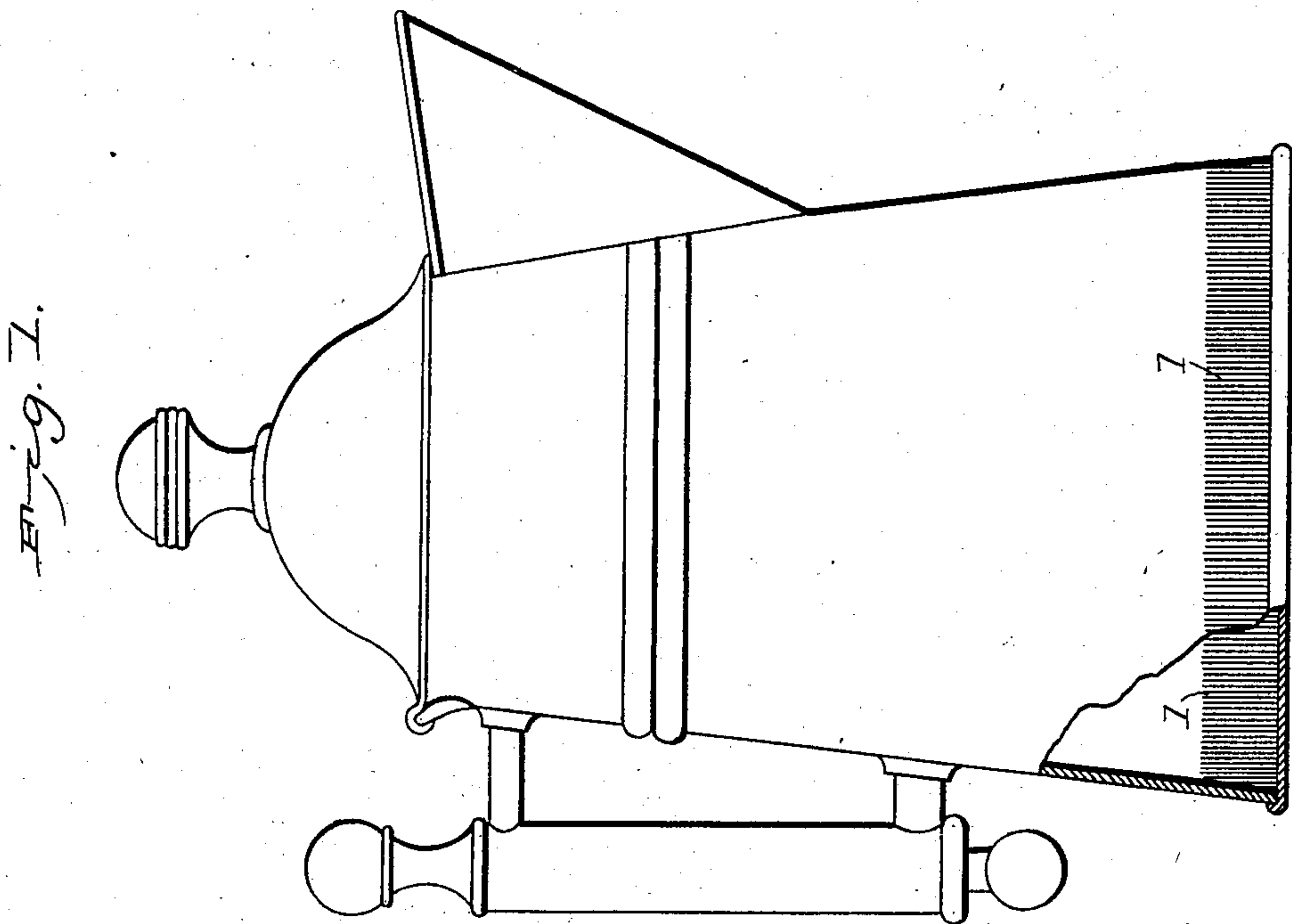
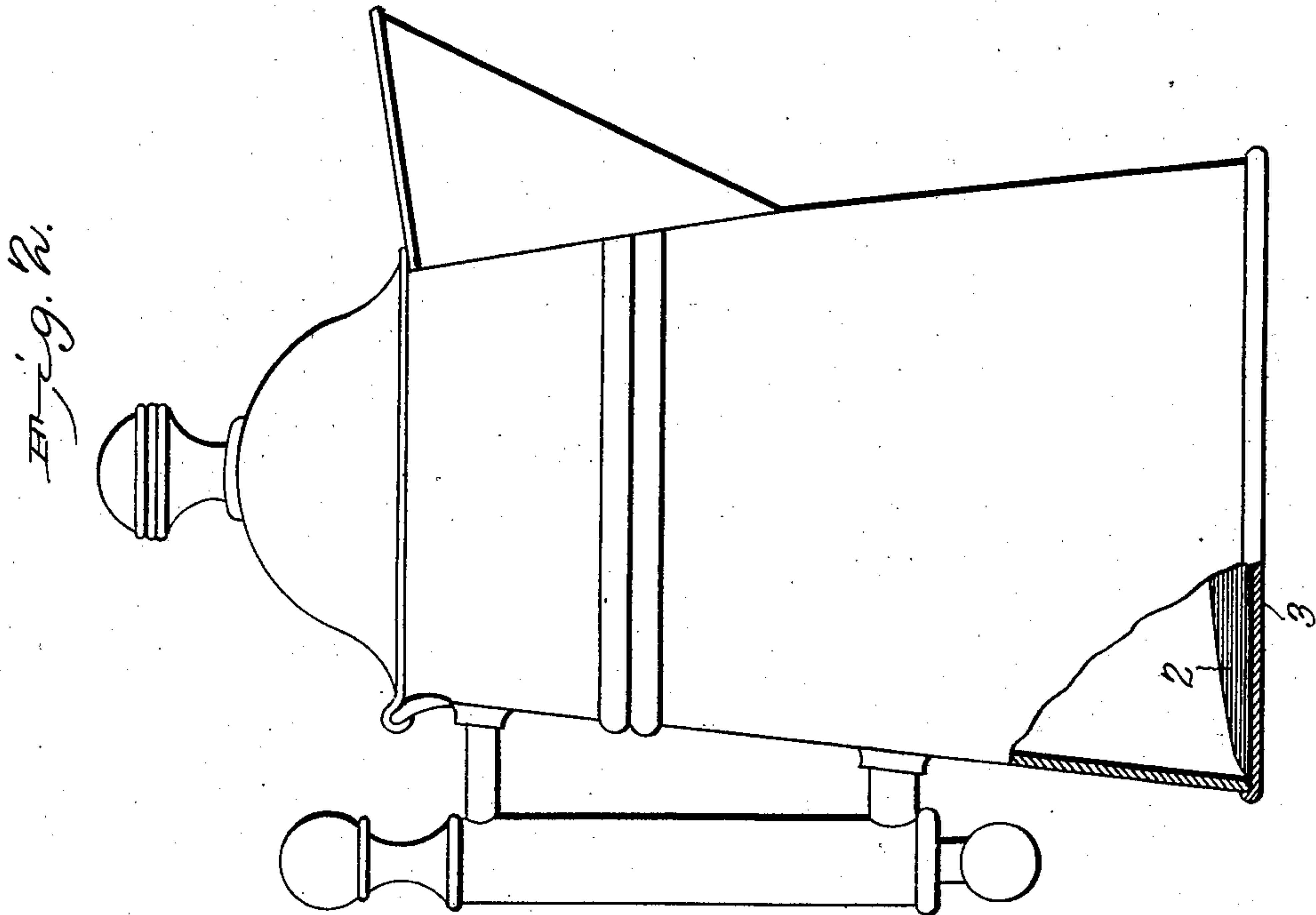
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J. A. BROOKS.

METHOD OF TREATING METALLIC VESSELS.

APPLICATION FILED JUNE 22, 1900.

NO MODEL.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOSEPH A. BROOKS, OF WARREN, ILLINOIS.

METHOD OF TREATING METALLIC VESSELS.

SPECIFICATION forming part of Letters Patent No. 720,660, dated February 17, 1903.

Application filed June 22, 1900. Serial No. 21,212. (No specimens.)

To all whom it may concern:

Be it known that I, JOSEPH A. BROOKS, a citizen of the United States, residing at Warren, in the county of Jo Daviess and State of Illinois, have invented a new and useful Method of Treating Metallic Vessels to Render Them Rust-Proof, of which the following is a specification.

This invention relates to rust-proof metallic vessels.

The object of the invention is in a ready, simple, inexpensive, thoroughly feasible, and practical manner to prevent tin-coated metallic vessels from rusting at the points of juncture of their parts and to effect a large saving of material in the procedure.

With these and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the method of treating tin-coated metallic vessels to render them rust-proof at the points of juncture of their parts, which consists in dipping a limited portion of one of the parts into a metal that is electropositive to the other part.

The invention consists, further, in the method of treating tin-coated metallic vessels to render them rust-proof at the points of juncture of their parts, which consists in coating a limited area of one of the parts, including the portion to be secured to the other part, with an alloy that is electropositive to said other part.

The invention consists, further, in the method of treating tin-coated metallic vessels to render them rust-proof at the points of juncture of their parts, which consists in coating a limited area of the lower portion of the body of the vessel with an alloy that is electropositive to its bottom.

The invention consists, finally, in a novel procedure for rendering metallic vessels rust-proof, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like characters of reference indicate corresponding parts, there are illustrated two modes of carrying the invention into effect, it being understood that the procedure may be employed with vessels other than that shown and still be within the scope of the invention, and in the drawings—

Figure 1 is a view in side elevation of a coffee-pot with the lower portion thereof broken away to exhibit the interior and showing the electropositive coating as applied to the lower portion. Fig. 2 is a similar view showing the electropositive coating as applied to the bottom of the pot.

The present invention relates more particularly to culinary utensils, and the salient feature thereof is the particular manner of coating the stock of which the utensils are formed, so that there shall be established a voltaic couple, of which the base metal of the stock forms one element, the applied coating of metal or an ingredient thereof, if it be an alloy, the other element, and the liquid contents of the vessel the electrolyte. The protective coating which is employed in this instance and which operates positively to fill any fissures or cracks in the tin plating and to prevent formation of rust contains, by preference, a large percentage of zinc, the iron of the stock of the vessel thus forming the negative plate or element and the zinc the positive plate or element of the couple. During electrolytic action hydrogen is evolved from the zinc or at the surface of the coating, while oxygen is evolved at the surface of the iron. It is known, however, that in voltaic action of this nature there is an excess of hydrogen at the surface of the negative plate, which tends to polarize it, and it is the combination of this hydrogen with the oxygen that would otherwise combine with the iron and produce iron oxid that operates to prevent the formation of rust.

Referring to the drawings and to Fig. 1 thereof, there is illustrated an ordinary tin-plate coffee-pot, the lower portion of the body of which is provided with an interior and exterior protective coating 1 to constitute the electropositive element.

In Fig. 2 the protective coating 2 is shown as applied to the bottom 3 of the coffee-pot.

The coating is preferably an alloy composed of suitable proportions of zinc, lead, and tin, the zinc being in the majority and the lead and tin being added to give smoothness and to cause the alloy easily to flow, and thus cover any exposed surface of the stock of the tin-plate and also to fill any fissures that may be present. While the alloy herein defined is peculiarly adapted for the purpose designed,

it is to be understood that any alloy or any metal may be used which will form a voltaic couple of sufficient difference of potential with the iron forming the base metal of the tin-plate of which the pot is formed to effect the result designed. In carrying the invention into effect the metal or alloy to form the protective coating is first fused and the lower end of the pot-body is dipped in a molten mass to a depth sufficient to secure the desired area of coating, and after the coating has cooled the bottom of the pot is secured in place in any preferred manner, as by being soldered. By dipping or coating only a small area of the utensil a large saving of the applied material is effected and the utensil is rendered as efficient in resisting tendency to rust as if its entire exposed surfaces were treated and a pronounced saving in the cost of production of the article is secured. With the coating above described if the coffee in the pot finds its way through the tin coating or plating at any point it acts as an electrolyte for the zinc and the iron base, and electrolytic action will ensue, with the result above described. The same result ensues when the bottom of the pot alone is coated with the electropositive metal, as shown in Fig. 2.

While the invention is herein exhibited as carried into effect in connection with a coffee-pot, it is to be understood that it is adaptable for use in connection with tinware of any kind—such as water-buckets, cooking utensils, and the like—and as this is readily understood detailed illustration thereof is deemed unnecessary.

The procedure of the present invention is

not to be confounded with the ordinary methods in vogue for preventing the rusting of tinware, such as constructing the bottom of the vessel of two different kinds of metal, or of coating the entire inside of the vessel, both bottom and body, with a non-oxidizable alloy, or of securing a strip of annulus of zinc to the bottom of a vessel at its point of juncture with the body.

Having thus described the invention, what I claim is—

1. The method of treating tin-coated metallic vessels to render them rust-proof at the points of juncture of their parts, which consists in dipping a limited portion of one of the parts into a metal that is electropositive to the other parts.

2. The method of treating tin-coated metallic vessels to render them rust-proof at the points of juncture of their parts, which consists in coating a limited area of one of the parts, including the portion to be secured to the other part, with an alloy that is electropositive to the said other part.

3. The method of treating tin-coated metallic vessels to render them rust-proof at the points of juncture of their parts, which consists in coating a limited area of the lower portion of the body of the vessel with an alloy that is electropositive to its bottom.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOSEPH A. BROOKS.

Witnesses:

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