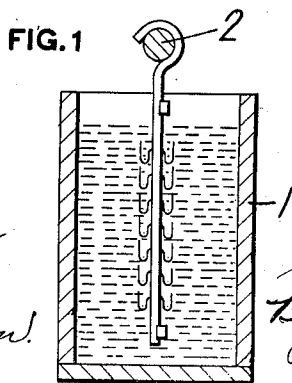
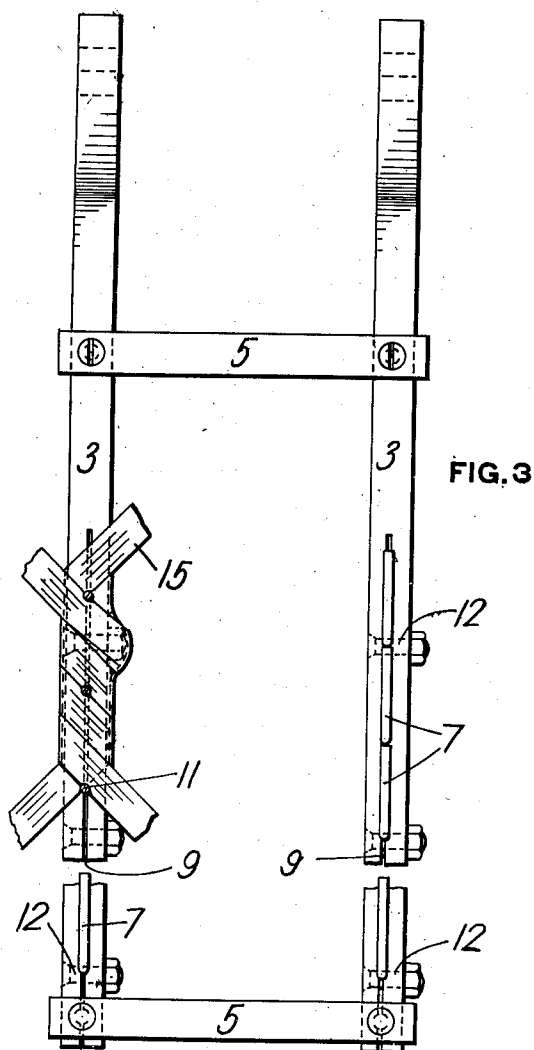
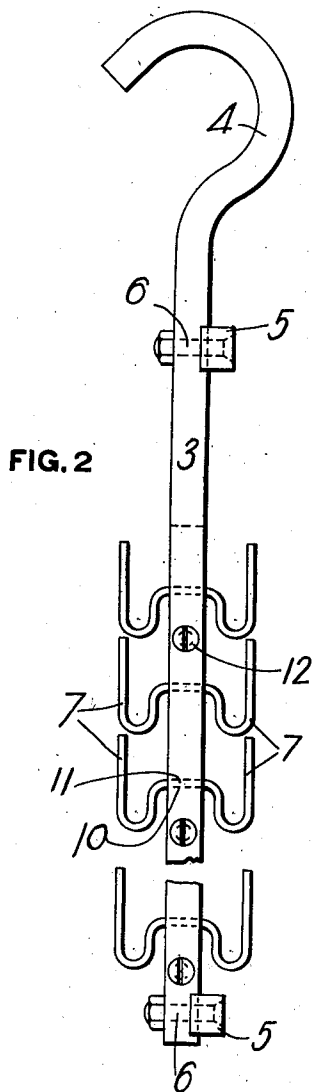


1,010,647.

C. E. LEFFEL.
ELECTROPLATING RACK.
APPLICATION FILED JUNE 26, 1909.

Patented Dec. 5, 1911.

2 SHEETS—SHEET 1.



WITNESSES

Chas. Loderman
Estelle M. Johnson

INVENTOR

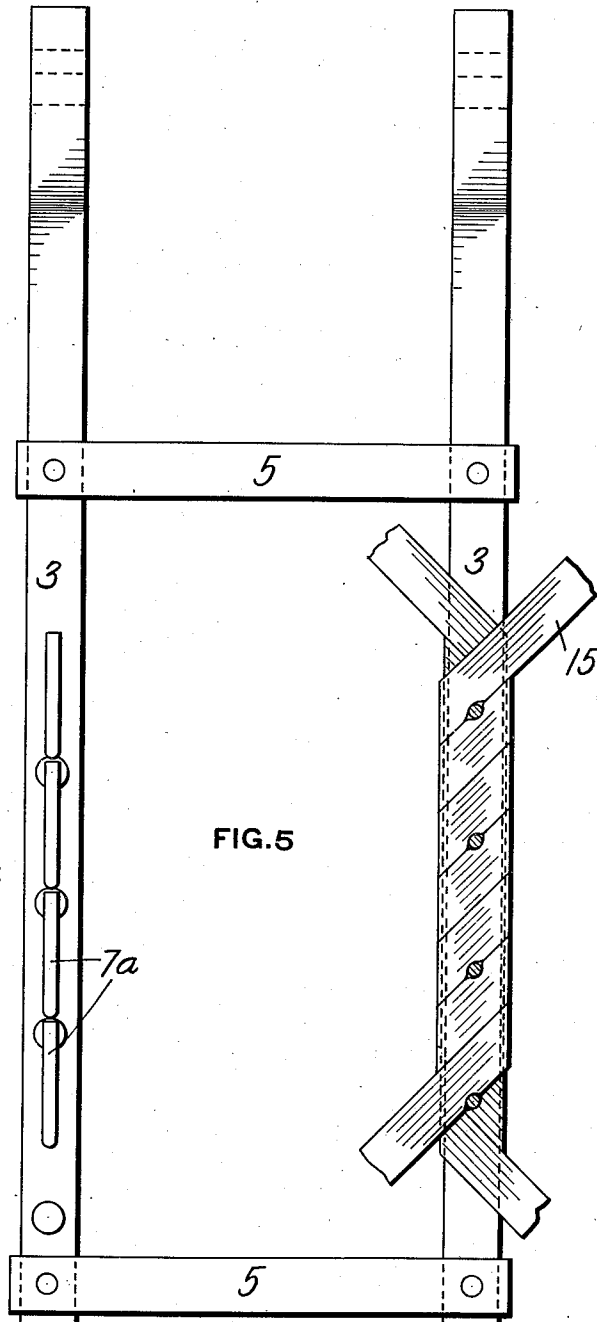
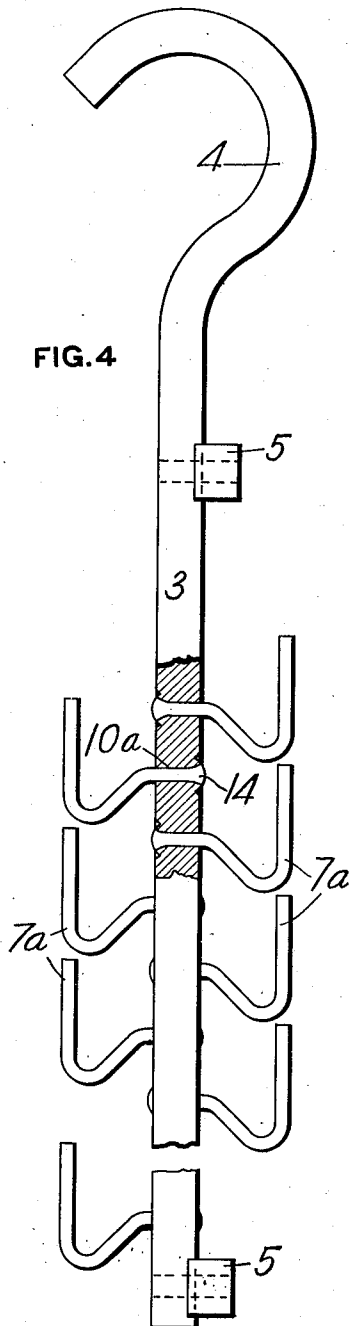
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2 SHEETS—SHEET 2.



WITNESSES
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UNITED STATES PATENT OFFICE.

CLARENCE E. LEFFEL, OF MEADVILLE, PENNSYLVANIA, ASSIGNOR TO THE SPIRELLA COMPANY, OF MEADVILLE, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

ELECTROPLATING-RACK.

1,010,647.

Specification of Letters Patent.

Patented Dec. 5, 1911.

Application filed June 26, 1909. Serial No. 504,447.

To all whom it may concern:

Be it known that I, CLARENCE E. LEFFEL, a resident of Meadville, in the county of Crawford and State of Pennsylvania, have invented a new and useful Improvement in Electroplating-Racks, of which the following is a specification.

This invention relates to racks or hangers for use in electroplating articles, and more particularly to cathode hangers for electroplating.

In electroplating all bare metallic surfaces connected with the cathode and immersed in the bath or solution receive a deposit of the metal and consequently the metallic supports which hold the work or convey the current become heavily coated. This coating is practically wasted or, at least, has to be recovered at considerable expense, and in addition to this its deposition involves a wasteful consumption of current.

The object of this invention is to reduce to a minimum the bare surface of the rack outside of that necessary to make a proper electrical contact with the article to be plated. It also provides for holding all parts of the work to be plated practically equidistant from the anode so that all portions of the article are uniformly coated.

The invention comprises a rack constructed and arranged as hereinafter described and claimed.

In the accompanying drawings Figure 1 is a sectional view of a portion of an electroplating tank showing one of the racks in position; Fig. 2 is an end view of the rack with the insulating sheathing omitted; Fig. 3 is a side elevation thereof showing a portion of the insulating sheathing; and Figs. 4 and 5 are respectively end and side views, partly in section, showing a modification.

In the drawings the electroplating tank is shown at 1 and the cathode conductor at 2. The anode is not shown, but preferably there will be two, one on each side of the cathode as is the usual custom and as will be readily understood by those skilled in the art.

The rack shown comprises two similar side members 3, each formed of copper, brass or other good conducting metal and in the form of a bar with a hook 4 at the upper end for ready attachment to or disconnection from the cathode conductor. These side members or bars are connected

by cross bars 5 suitably secured to the side bars, such as by means of bolts 6. The side bars 3 have removably connected thereto laterally projecting article supports 7 shown in the form of hooks for receiving and supporting the articles.

In the arrangement shown in Fig. 1 the hooks are of double construction, projecting on both sides of the bar 3. To permit their disconnection from the bar in order to replace the same by fresh hooks when excessively coated the bars 3 are bifurcated or split from their lower ends by a kerf 9 provided at intervals with transverse enlargements 10 for receiving the intermediate or shank portions 11 of the hooks, and prevent the hooks from sagging downwardly. To hold the hooks in place and to give a good electrical connection the two legs of the bar are clamped tightly against the shanks of the hooks, such as by means of clamping bolts 12 or any other suitable means.

Figs. 4 and 5 show a modification in which the side bars 3 are not split or bifurcated but instead the hooks 7^a, which are single in this case instead of double, have their shanks extending through holes 10^a in the bars with their outer ends upset as shown at 14. This form of hook cannot be as readily removed from the bars as that shown in the preferred form, but by cutting off the upset end the hook can be withdrawn and a new one put in its place.

The side bars 3 in both forms are covered from their lower ends up to a point above the level of the solution or bath with a suitable covering which will prevent the adherence of a metal deposit thereto, and preferably of some non-conducting or insulating material which will prevent the deposit of metal. Various substances for this purpose may be employed, the drawings for this purpose showing the bars wrapped with strips or tapes 15 of any suitable insulating material preferably a fabric, such as canvas, cotton cloth, or various forms of rubber fabrics, or fabric of any kind coated with a rubber composition, asphaltum, insulating paint or the like. This fabric entirely envelops the bars and is substantially a non-conductor so that no metal will deposit upon the bars, but only upon the hooks and articles contained on the latter. When the hooks become excessively coated they can be removed and replaced by

clean ones. The cross bars 5 may be formed of insulating material, such as fiber, and if formed of metal they also may be wrapped with the strips or tape 15, although this is not necessary.

In the form illustrated in Figs. 4 and 5 where single hooks are provided those on the opposite faces are staggered or placed in alternate relations so as to give free access of the bath to both sides of the articles supported thereon. This can also be accomplished in the form shown in Figs. 2 and 3 by properly shaping the hooks, that is, by having one of the hooks of the double hook bent upwardly and the opposite one bent downwardly.

The rack is so constructed that the articles can be readily placed therein and removed therefrom. It holds the articles a uniform distance from the anode and this insures a uniform coating. The hooks are only of small cost so that they can be cheaply replaced when they become excessively coated.

What I claim is:

1. A cathode hanger for electroplating, comprising a pair of conducting rods, cross members connecting said rods, insulating covers on said rods, and conducting supports detachably connected to said rods and projecting laterally therefrom.

2. A cathode hanger for electroplating, comprising a pair of conducting rods, cross members connecting said rods, a fabric sheathing covering each of the said rods,

and conducting supports detachably connected to the rods and projecting laterally beyond the sheathing.

3. A cathode hanger for electroplating, comprising a pair of conducting rods, cross members connecting said rods, fabric strips wound on said rods and covering the same, and conducting article supports detachably connected to said rods and projecting beyond the fabric coverings.

4. A cathode hanger for electroplating, comprising a pair of conducting rods, cross members connecting said rods, an insulating sheathing for each of said rods, and metallic hooks detachably connected to the rods and projecting laterally therefrom.

5. A cathode hanger for electroplating, comprising a split conducting rod, conducting supports clamped between the members of said rod and projecting laterally therefrom, and a non-conducting covering for said rod.

6. A cathode hanger for electroplating, comprising a split conducting rod, conducting supports clamped between the members of said rod and projecting laterally therefrom, and insulating fabric strips wound on said rod and covering the same.

In testimony whereof, I have hereunto set my hand.

C. E. LEFFEL.

Witnesses:

J. H. PARDEE,
ERMA PORTER.