No. 745,479. PATENTED DEC. 1, 1903.

F. W. CANN.

ANODE HOOK.

APPLICATION FILED APR. 9, 1902.

NO MODEL.

Fig. 1.

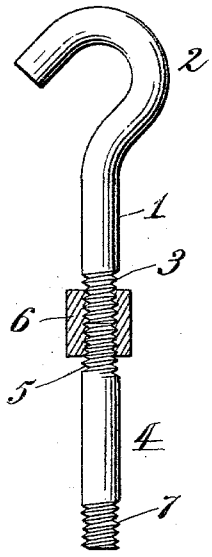
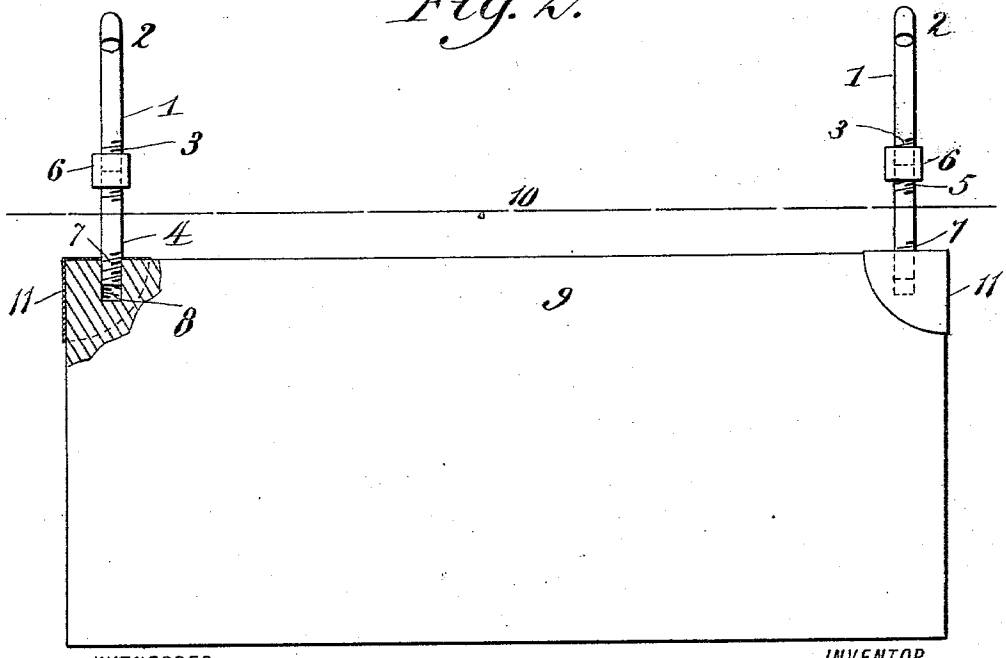


Fig. 2.



WITNESSES:

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No. 745,479. Patented December 1, 1903.

UNITED STATES PATENT OFFICE.

FRANK W. CANN, OF BROOKLYN, NEW YORK.

ANODE-HOOK.

SPECIFICATION forming part of Letters Patent No. 745,479, dated December 1, 1903.

Application filed April 9, 1902. Serial No. 101,990. (No model.)

To all whom it may concern:

Be it known that I, FRANK W. CANN, a citizen of the United States, and a resident of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Anode-Hooks, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar figures of reference indicate corresponding parts.

The subject of the present invention is an improved anode for electroplating-baths, and has for one of its prominent objects the provision of plate-suspending means, the more important parts of which are capable of repeated and extended use. A novel arrangement of those portions of the anode-plate to which the suspending means are immediately engaged also forms an object of my improvements.

With the above and other purposes in view I have devised a suspending device the shank of which is in two connected parts, whereby the lower, which is that engaged with the plate and subject to the decomposing action of the solution, may when seriously attacked be superseded by a corresponding section positively connected with the upper or hook part proper.

I apply to those portions of the plate engaged by the suspending means a coating of wax or other material equivalent for the purpose to defend such portions against the disintegrating action of the bath and insure the anode being properly suspended in position until all but the wax-coated parts is eaten away.

In the drawings accompanying this specification, Figure 1 is a view showing, partly in side and partly in sectional elevation, my anode-suspending device. Fig. 2 is a vertical face view, partly in section, of an anode with a pair of the improved suspending devices engaged therewith, the engaged portions of the anode having a defense of wax applied thereto.

In the form of anode-suspending means with which I am familiar a hook is provided made in a single piece of metal, the lower end of the shank portion adapted to engage the plate and generally having a considerable part of its length below the level and subject to the attacking action of the bath. As a consequence when the submerged portion becomes so disintegrated that the use of the device is no longer desirable the latter, with the hook portion included, becomes entirely worthless for further service as a suspending means and is generally thrown into the scrap. Moreover, the customary arrangement of anode-plate is such that the decomposition of the metal proceeds as rapidly, if not more so, at the points of the connection of the suspending means as it does at other points of the plates. Consequently the supporting parts are destroyed before the body of the plate has rendered full service. This arrangement defeats economy and is not productive of full results.

In carrying out my invention I provide a suspending device comprising two parts suitably connected together, as by threads, and a coupling-sleeve, the upper part 1 being preferably of copper and shaped to present the hooked terminal 2 for engaging the current-conveying rod suitably extending above the bath. The lower end portion 3 of this part 1 is externally threaded. The lower part 4 is shown as consisting of a straight length of metal rod threaded at its upper end 5, corresponding with the portion 3 of the upper part, so that said contiguous threaded portions may be coupled by an interiorly-threaded nut 6 to rigidly connect the upper and lower parts together. A thread 7 on the lower end of the part 4 adapts the same for the engagement of a short vertical threaded socket 8 in the top of the anode-plate 9.

By referring to Fig. 2 it will be observed that a pair of the novel suspending devices is provided for the anode, and the engagement of the latter is made at the upper corner portions of said anode. As thus arranged the devices will properly support the anode within the tank or plating-receptacle below the level of the bath, (indicated by the line 10.) As the most efficient immersion of the anode requires its upper edge being considerably beneath the bath-level, the parts 4 of the suspending devices are also immersed for a considerable portion of their length subject to the decomposing solution, for which reason they should be of the same metal as the body of the anode. Under such conditions the lower parts 4 of

the suspending devices will efficiently serve for a definite period, but will be practically useless for service thereafter. When this stage is reached, instead of entirely discarding the particular devices that have been employed they are removed from the supporting-rod and the threaded part 5 of each disengaged from its coupling and another part 5 adjusted in place thereof, thus permitting the head portion and coupling to be employed indefinitely.

As the engaged portions of the anode are frequently eaten away more rapidly than other parts thereof, thereby resulting in the disconnection of the anode from the suspending devices before the former has rendered full service, and as this is particularly liable to be so in the present instance on account of the recessing of the corner portions, I externally provide the latter with a coating 11, of wax or other material insensible of the action of the bath, which will serve to insure the suspension of the anode in position until all but the corner portions are eaten away. This is highly important, as it conduces to economy in both time and material in conducting plating operations.

Should the couplings 6 of the suspending devices occupy such a low plane that splashing of the bath solution might cause it to reach the same, the latter will protect the engaged threads of the upper and lower parts 1 4 from any corroding action that might ensue. This effect will be promoted by making the coupling-sleeve of some material or metal not sensible to such corrosion or by externally providing it with a protecting-facing or enamel.

From the foregoing description it will be readily appreciated that an anode or element equipped and suspended in accordance with my invention presents a simple, durable, and highly efficient arrangement.

I do not wish to be understood as limiting myself to the particular construction and details shown and described, but reserve the right to such modifications and changes as will be within the spirit of my invention.

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

1. The combination with an anode-plate provided with a threaded recess, of an anode-hook for electroplating-baths, comprising upper and lower parts threaded at their adjacent ends, the former part having provision for hanging the device and the latter part having a thread for engaging the recess of the anode-plate, and an interiorly-threaded coupling-sleeve for detachably connecting said adjacent ends.

2. The combination with an anode-plate having a threaded recess, of an anode-hook for electroplating-baths, comprising upper and lower parts threaded at their adjacent ends, the former part having provision for hanging the device and the latter part having a thread adapted for engaging the recess of the anode-plate, and an interiorly-threaded coupling-sleeve for detachably connecting said adjacent ends, said sleeve composed of material not sensible to corrosion by a bath solution; substantially as shown and described.

3. The combination with an anode provided with a threaded recessed portion, of a suspending device comprising detachable upper and lower parts threaded at their adjacent ends the former part having provision for hanging the device, and the latter part with a lower threaded end for engaging a recess in the anode, substantially as shown and described.

4. The combination with an anode-plate, of a suspending device therefor, embodying an anode-hook comprising upper and lower parts threaded at their adjacent ends, the former part having provision for hanging the device and the latter having a threaded end part adapted for engaging a threaded recess in the anode-plate, and an interiorly-threaded coupling-sleeve for detachably connecting said adjacent ends, said sleeve composed of material not sensible to corrosion by a bath solution; substantially as shown and described.

5. As an anode-hook for electroplating-baths, the combination with the upper part having suspending means at its free end and a screw-thread at its lower end, and the adjacent lower part having a screw-threaded upper end and a screw-threaded lower end, both of said parts being composed of metal adapted for making anodes, of the coupling detachably connecting the abutting ends of the said hook, substantially as shown and described.

6. An anode-plate-suspending device for electroplating-baths, embodying an anode-hook composed of metal corresponding to the active face of an anode-plate, and comprising two parts contacting with each other, the upper part having suspending means at its upper end and a screw-thread at its lower end, and the lower part having a screw-thread at each end, and an interiorly-threaded coupling-sleeve detachably connecting the abutting end parts, whereby a current may pass through them, but they may be detached when desirable, the said coupling-sleeve composed of material not sensible to corrosion by a bath solution, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 31st day of December, 1901.

FRANK W. CANN.

Witnesses:
JOHN W. CANN,
JOHN T. FROST.