

UNITED STATES PATENT OFFICE

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METHOD OF ELECTROLYTICALLY DEPOSITING CHROMIUM

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My invention relates to a method of electrolytically depositing chromium, and it is an object of my invention to provide a method in which chromium can be deposited more easily and more efficiently than was hitherto possible.

The improved method consists in treating a solution of chromic acid or compounds thereof with an oxidizing agent of a higher order, such as peroxide of hydrogen, (H_2O_2) potassium permanganate, ($KMnO_4$), etc. The concentration of the chromic acid solution and of the oxidizing agents may be varied within very wide limits.

As for instance, the initial concentration of the chromic acid solution may be that usual in electrolytes for metal deposition. To obtain the highest concentration of the oxidizing agents, they may be dissolved in water just sufficient for the purpose, and may be added in this form to solid chromic acid.

The concentration of the solutions of the oxidizing agent employed is determined by its character and activity. With hydrogen peroxide a 1-30% solution may be used. The voltage in the electrolyte may be 4 volts when the electrodes are $3/8$ inches apart, and is preferably 4-5 volts, a suitable current density being about 20 amperes per square decimeter.

It will be understood that the concentrations, voltages, current densities, etc. indicated above are merely given by way of example and that such data may be varied as desired without departing from my invention.

I claim:—

1. A method of electrolytically depositing metallic chromium, which consists in treating a solution containing a chromic acid radical with peroxide of hydrogen, and electrolyzing the solution.

2. A method of electrolytically depositing metallic chromium, which consists in treat-

ing a solution containing a chromic acid radical with an oxidizing agent of the order of peroxide of hydrogen, and other than a chromium oxidizing agent and electrolyzing the solution.

In testimony whereof I affix my signature.
OSKAR HAHN.

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