

UNITED STATES PATENT OFFICE

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METAL ETCHING MORDANT

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This invention relates to an etching or cutting mordant or solution for metal, practically all of the common metals, and particularly for copper, bronze, brass, aluminum, and such special metals as Monel, pewter and nickel-silver.

It is aimed to provide an etching mordant superior to those in use in that it will etch more rapidly and without emission of an objectionable odor. I have found that the mordant will etch straight through without undercutting and that it cuts entirely through metal up to 10 oz. quickly and smoothly. As is well known, the emission of fumes by existing mordants is injurious to health.

It is further aimed to provide a mordant which will not injure the bare hands and which is of more general adaptation in that it will etch more than one or two metals.

In carrying out the invention, 2 oz. of potassium dichromate, either powdered or crystal, is dissolved in 16 oz. of water. To such solution of potassium dichromate, I add 1 oz. of hydrochloric acid, 1 oz. of nitric acid and ½ oz. of sulphuric acid. All of the chemicals mentioned are C. P. or Tech. To the mixture potassium bichromate and the various acids mentioned, I add ½ oz. of

liquid castile soap. Such liquid castile soap is of the strength of 1 oz. of soap dissolved in 8 oz. of water.

The mordant or solution thus prepared possesses all of the advantages previously mentioned.

I might add that the resist used in connection with the mordant or solution is an asphaltum or a wax resist.

Various changes may be made within the spirit and scope of the invention.

I claim as my invention:—

1. A metal etching mordant having therein potassium dichromate, hydrochloric acid, nitric acid, sulphuric acid and soap.

2. A metal etching mordant having therein potassium dichromate, hydrochloric acid, nitric acid, sulphuric acid and castile soap.

3. A metal etching mordant having therein potassium dichromate, hydrochloric acid, nitric acid, sulphuric acid and liquid castile soap.

4. A metal etching mordant having therein a water solution containing 2 oz. of potassium dichromate, 1 oz. of hydrochloric acid, 1 oz. of nitric acid, ½ oz. of sulphuric acid and ½ oz. of liquid castile soap.

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