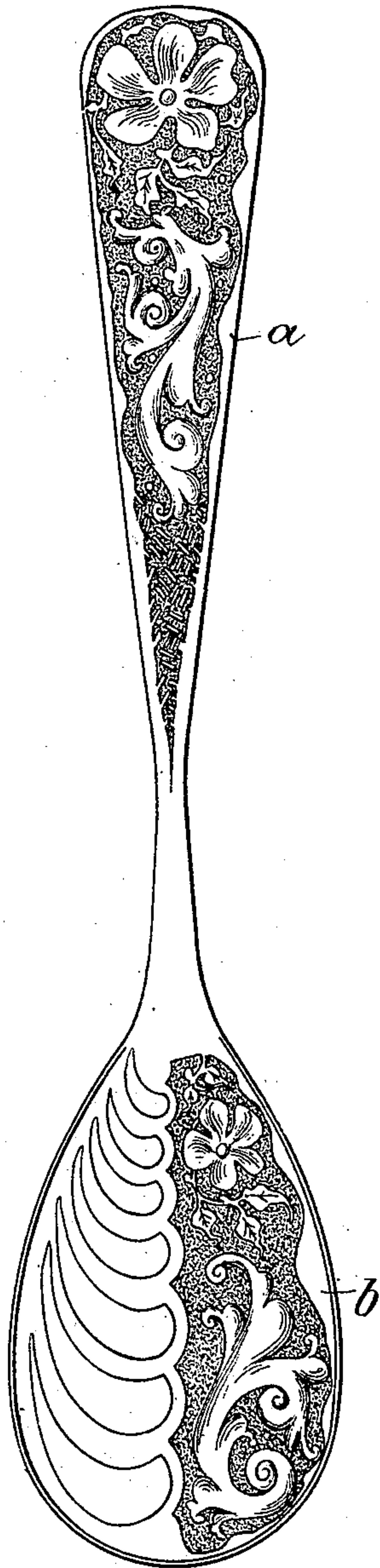


(No Model.)

G. MYRICK & W. ROLLER.
METHOD OF ETCHING GOLD PLATED SILVER WARE.

No. 421,010.

Patented Feb. 11, 1890.



Witnesses.
Hermann Bormann.
Thomas M. Smith.

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XXX

UNITED STATES PATENT OFFICE.

GEORGE MYRICK AND WILLIAM ROLLER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNORS TO MYRICK, ROLLER & HOLBROOK, OF SAME PLACE.

METHOD OF ETCHING GOLD-PLATED SILVER-WARE.

SPECIFICATION forming part of Letters Patent No. 421,010, dated February 11, 1890.

Application filed October 1, 1889. Serial No. 325,672. (No specimens.)

To all whom it may concern:

Be it known that we, GEORGE MYRICK and WILLIAM ROLLER, both citizens of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in the Process of Etching Gold-Plated Silver-Ware, &c., of which the following is a specification.

Our invention relates to an improved method of etching gold-plated silver-ware and to the ornamentation or decoration thereof, whereby is produced in the finished article an enameled effect of the background thereof.

Heretofore various methods and means have been resorted to and availed of for the ornamentation and decoration of metals, glass, &c., for use in the arts. For example, it has been proposed to etch glass by covering the surface thereof with a protecting-coating and removing parts of the protecting-coating to permit of the same being etched or eaten away by the use of an acid. Again, the surface of the glass has been coated with a solution composed of asphalt, which was rendered insoluble by exposure to light, when a photographic negative was transferred to the coated surface and exposed to light, in order that a part of said coating might be rendered insoluble and the remainder dissolved and exposed parts of the glass then etched with fluoric acid. Again, it has been proposed to etch figures or designs on metals by transferring the design by photography or drawing the design thereon with an ink resisting the action of an acid in the etching process, and so as to leave the design in bold relief; but in etching in this manner the edges of the design produced in relief invariably were rounded and the prints produced by means of such metallic printing-surfaces invariably failed to give the desired effect.

The principal object of our invention is to provide a comparatively simple and efficient method of etching and ornamenting or decorating articles or novelties gold-plated upon, preferably, sterling silver, to produce in bold relief an ornamental design of the gold, and with the surface around about the

design etched or eaten away to the silver, so as to produce a white enameled effect in the background of the finished article.

Our invention consists, essentially, in painting or tracing the design with an acid-resisting material onto the gold-plated article, then subjecting the exposed portion around about the design to the action of muriatic and nitric acids to cause the applied metal to be etched or entirely eaten away to the silver forming the ground of the article, then applying thereto preferably pure nitric acid to effect a slight corrosion of the silver for preparing the surface to better assume its finished or enameled effect, then removing the acid-resistant, and then subjecting the article to a bath composed of pearlash, saltpeter, soda, or alum, to cause the treated article to arrive at its finished state with the design in gold in bold relief and the background in silver with a white enameled effect.

A convenient method of carrying our invention into effect is as follows: Onto the article to be treated, composed of gold-plate upon, preferably, sterling silver, the particular design required is painted or traced in an acid-resistant paint—such as asphaltum—by means of a brush or other device or appliance, care being taken to see that the portions of the article on which the gold is to be retained is protected by the resisting material, so that in the action of the acids upon the exposed portion the coated part may be fully protected or be rendered acid-proof. The paint is then allowed to dry, or is artificially dried in any preferred manner. When the painted article has become dry, it is subjected to a bath composed of muriatic and nitric acids in the proportion of two to one (more or less) for a sufficient time to permit of the corrosion or entire eating away of the exposed portions of the plated article to the silver ground, when the article may be washed in water to remove all traces of acid adhering thereto, when the previously-exposed portions of the gold-plated article will be found to have been eaten away or etched into the silver ground. The still coated portions of the article around about the etched portions may now be subjected to a bath of pure ni-

tric acid for a brief period of time to cause a slight corrosion of the silver ground, in order to better prepare the same to assume its finished effect, to be hereinafter explained.

5 The article having had applied thereto the nitric acid, may be then washed in water, and the paint or coating of acid-resisting material for protecting the gold may then be removed by means of benzine, turpentine, or
10 other preferred material, whereby will be exposed to view in gold the particular design required in bold relief. The article thus treated is then subjected to the action of a bath composed of pearlash and water, to cause
15 the article to arrive at its finished state or condition for use with a white enameled background.

Instead of washing the article in a bath composed of pearlash and water, a bath composed of saltpeter or soda, alum, or sulphuric
20 acid may be availed of with good results; but, however, preference is given to the use of pearlash for this purpose, as most excellent results are obtained.

25 In the accompanying drawing is shown in front elevation a spoon with ornamental designs in bold relief formed in the arm *a*, and the bowl-shaped portion *b* thereof, and with

the surfaces around about said designs etched out, presenting a groundwork in white, thereby giving to the finished article an enameled effect. 30

Having thus described the nature and objects of our invention, what we claim as new, and desire to secure by Letters Patent, is— 35

The method of treating an article in gold and silver for producing an ornamental design in bold relief and a white enameled background, which consists in applying an acid-resistant to the article and tracing the design through the same, then immersing the
40 coated article in a solution of muriatic and nitric acids to cause the exposed portions of the applied metal to be eaten away, and after removing the acid-resistant from said article
45 immersing the same in a bath of pearlash, as described, and for the purposes set forth.

In witness whereof we have hereunto set our signatures in the presence of two subscribing witnesses.

GEORGE MYRICK.
WILLIAM ROLLER.

Witnesses:

GEO. W. REED,
THOMAS M. SMITH.