(No Model.)

J. BAYNES.

METHOD OF ORNAMENTING METAL.

No. 378,421. Patented Feb. 28, 1888.

Fig. 1.

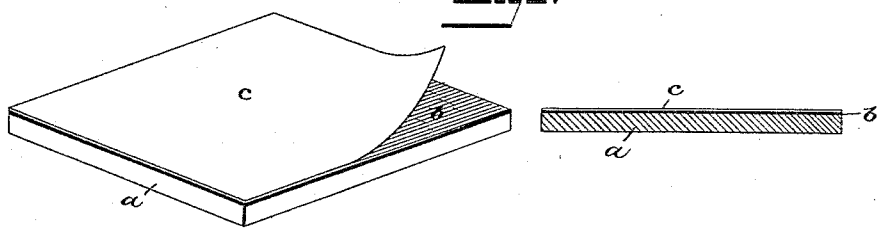


Fig. 2.

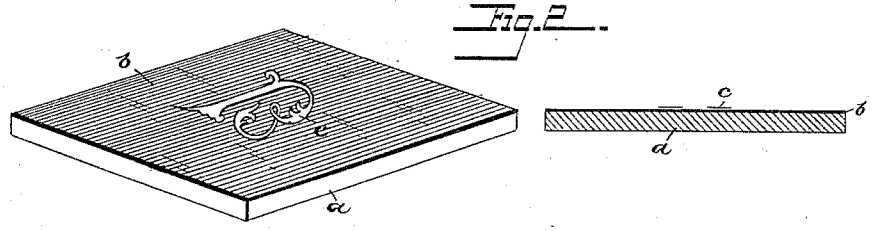


Fig. 3.

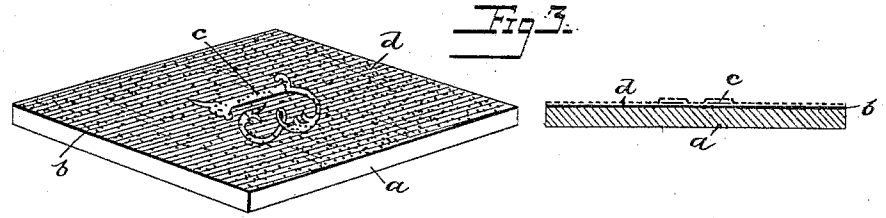
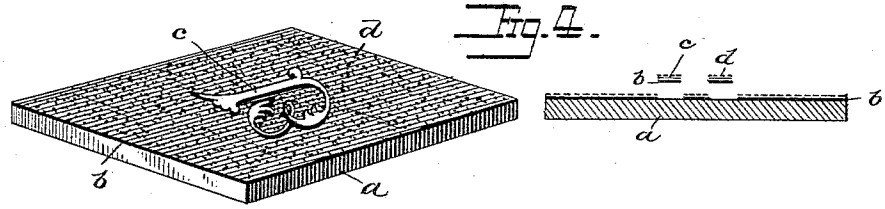


Fig. 4.



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UNITED STATES PATENT OFFICE.

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METHOD OF ORNAMENTING METAL.

SPECIFICATION forming part of Letters Patent No. 378,421, dated February 28, 1888.

Application filed May 21, 1887. Serial No. 238,992. (No specimens.)

To all whom it may concern:

Be it known that I, JOHN BAYNES, a subject of the Queen of Great Britain, and a resident of the county of Westchester, in the State of New York, United States of America, have invented certain new and useful Improvements in Methods of Ornamenting Metal, &c., of which the following is a specification.

My present invention relates to a method of ornamenting various articles—such as plates of metal, for instance; and it consists in the method of operation, substantially as hereinafter pointed out, and involves the use of what I term an "adhesive negative" applied directly to the object to be ornamented.

I will describe the invention as applied to the ornamentation of a plate of metal; but it will be understood that I do not limit its use to that alone, and for convenience will assume that it is desired to produce thereon either recesses or perforations having the form or outline of letters.

I take the plate to be operated upon and brush or coat it with an adhesive varnish—preferably an acid-resist, as asphaltum varnish, though other varnishes may be used, as copal varnish. When this has dried sufficiently or become "tacky," I take a sheet of tin or lead foil and lay it over the varnish, taking care to press it closely thereon, so as to make it adhere firmly and evenly thereto. The design of the ornamentation may then be drawn or otherwise applied to the foil; or, without first making the design, the foil may be cut or traced through with a needle or other instrument corresponding to the outline of the design or letters. When this is done, the foil is picked up and removed from all portions of the plate except the parts intended to be sunk or etched. If the varnish first applied is an acid-resist sensitive to light, it may be left upon the plate, and the plate being then exposed to the influence of light-rays the varnish thus exposed becomes hardened and insoluble, after which the parts of the foil corresponding to the design or letters of the ornamentation are removed, and the varnish under these parts, having been protected thereby from the rays of light, can be dissolved or brushed away, leaving the plate exposed at the parts corresponding to the design which is to be etched. If, however, the varnish first applied to the plate is not of such a character as to be a resist to acid after the foil has been removed, as above described, leaving only those parts corresponding to the design to be produced, the whole plate is covered with a sensitive acid-resist and exposed to light, and after it has become hardened the remaining portions of the foil are removed, and with them the resist spread over them, leaving the plate coated with an insoluble acid-resist upon all portions except those corresponding to the pattern, and the varnish on these parts having been removed the plate is ready to be etched or otherwise operated upon to produce the design.

If the design is to be produced in relief instead of intaglio, it is evident that the same process may be made use of, except the portions of the foil first removed would correspond to the pattern and the plate would finally be covered with the insoluble acid-resist upon the portions corresponding to the pattern when it could be etched.

In order that my invention may be better understood, reference is made to the accompanying drawings, in which—

Figure 1 shows in perspective and in section a plate, *a*, covered with a varnish, *b*, and sheet of foil, *c*. Fig. 2 shows the plate *a* covered with the varnish *b*, and with the foil *c* removed from all parts except those corresponding to the design of the ornamentation. Fig. 3 shows the plate *a* covered with varnish, *b*, and having the foil *c* in the shape of the design, and the whole covered with the sensitive acid-resist *d*, represented by dots. Fig. 4 shows the plate *a* coated with varnish, *b*, and resist, *d*, in all places except those corresponding to the design from which the varnish *b*, foil *c*, and resist *d* have been removed, leaving these portions of the plate clean.

What I claim is—

1. The method hereinbefore described, which consists in applying a metal foil to the article, removing the foil from all parts except those to be ornamented, coating the whole with a sensitive acid-resist, exposing the coated plate to light, removing the foil and resist corresponding to the design, and etching the plate.

2. The method hereinbefore described, which consists in coating the article with varnish, applying a sheet of metal foil thereto, cutting

and removing the foil except that corresponding to the portions to be ornamented, coating the whole with a sensitive acid-resist and exposing it to light, then removing the foil, resist, and varnish from the parts corresponding to the design, and finally etching the design on the plate.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN BAYNES.

Witnesses:
P. KEMBLE, Jr.,
BERNARD J. KELLY.