W. RIKER.

Methods of Ornamenting Metallic Surfaces for Jewelry, &c.

No. 199,580. Patented Jan. 22, 1878.

Fig. 1.



Fig. 2.



Fig. 3.

Fig. 4.

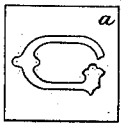


Fig. 5.



Fig. 6.

Fig. 7.

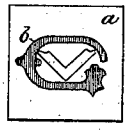


Fig. 8.



Fig. 9.



Fig. 10.



Fig. 11.



Fig. 12.



Fig. 13.



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IMPROVEMENT IN METHODS OF ORNAMENTING METALLIC SURFACES FOR JEWELRY, &c.

Specification forming part of Letters Patent No. **199,580**, dated January 22, 1878; application filed January 17, 1878.

To all whom it may concern:

Be it known that I, WILLIAM RIKER, of Newark, in the county of Essex and State of New Jersey, have invented a new and Improved Method of Ornamenting Metallic Surfaces for Jewelry and other similar articles; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing.

My invention relates to the inlaying of gold, silver, platinum, (or other suitable metal,) in gold or silver, and in producing inlaid rings, lockets, pins, necklaces, napkin-rings, spoons, and other gold and silver ware.

The method consists in cutting the forms which constitute the emblems or configuration from a bimetallic plate, or a plate having upon one side the color of metal which gives distinctiveness to the emblem, and upon the other a metal of the same quality and color as the back of the main body portion of the piece of ware to be inlaid, so that when the emblems are inserted and soldered into the apertures cut through the body-piece, and arranged to be flush on both front and back surfaces and said body-piece, said emblems appearing upon the face in different colors, while the back of each emblem being of the same color and quality of metal as the back of the main body, the reverse sides of the emblems are not distinguishable, but present, with the main part of the back, a plain homogeneous surface of uniform color and quality, thus giving the article a more finished appearance, and securing greater facilities in its manufacture, as hereinafter more fully described.

The figures of the drawing illustrate the successive steps of inlaying a masonic badge or pin, for instance, in accordance with my improved method.

In practicing my invention, I select the gold to be used for the body of the article—say, red gold of fourteen carats, as shown at *a*. This I reduce to the desired thickness—say, one-sixty-fourth of an inch. I next select the colors to be used in the different parts of the emblems—as, for instance, green gold for the compasses, as seen at *d;* silver for the square, as seen at *c;* and yellow gold for the letter G, as seen at *b*. These colors of metals I plate, before stamping, upon gold of the same quality and color, Figs. 6, 9, 12, as that constituting the body or back of the badge, (red gold of fourteen carats,) and reduce this bimetallic or plated stock to the same thickness as that from which the pin is to be made—namely, one-sixty-fourth of an inch. I now cut, with punches, (but a saw or other instrument may be used,) in the piece to be inlaid an aperture of the shape of the letter G, as seen in Fig. 4. With the same punch I cut from the bimetallic plate or plated stock, Fig. 6, having the yellow gold *b* and the red gold *a*, a letter G, Fig. 5, which I insert into the aperture, Fig. 4, and solder. I then cut another aperture, Fig. 7, in the shape of the square, and with the same punch cut from the bimetallic plate or plated stock, having a face, *c*, of silver and a back, *a*, of red gold, Fig. 9, an emblem of the square, Fig. 8, which I then insert in the aperture in Fig. 7, and solder. With a third punch I cut an aperture, Fig. 10, in the shape of the compasses, and with the same punch cut from the bimetallic plate or plated stock, having green gold *d* on its face and red gold *a* at the back, Fig. 12, an emblem of the compasses, Fig. 11, which I then insert in the aperture in Fig. 10, and solder. The inlaying is then complete, as seen in Figs. 1 and 2, and while the faces of the emblems show in different colors *b c d*, the backs of the same are all of the same color and quality *a*, Figs. 6, 9, 12, as the back of the main body portions, thus leaving a plain surface of uniform and homogeneous color, Fig. 2, to the back of the plate shown in Fig. 1, which plate is afterward worked up in the form of a finished pin, as in Fig. 13, and thus dispensing with the labor and expense of the usual independent backing-piece.

The nature of my invention therefore consists in inlaying the article to be produced with a bimetallic or plated piece, in which one metal is of the same character as the article or back of the article itself, and the other of some different color, suitable to the design or emblem to be produced.

The advantages thus gained are as follows: By this method I produce an inlaid article which possesses advantages in cheapness, durability, and in finish over inlaid articles produced by other methods.

One of the methods of producing the effect of a design in different colors of metal, which has heretofore been used, is the rolling of several plates or laminæ of different colors of gold together, and then cutting down with a tool to the color desired. The objections to this method are as follows: Great care is required to avoid cutting too deep through the thin plates, and thus exposing the wrong color; much metal must be cut away in order to expose any area of one color; the cutting being in intaglio, the bottom colors cannot be polished smoothly and simultaneously with the top faces; to produce a variety of colors the plate must be very thick at one point and thin at others, involving greater expense and loss of material; and, furthermore, the designer has no outline to guide him, and the work must be performed by skillful artists.

In my invention the surfaces of all the colors are flush to start with, and may be simultaneously and evenly polished by "lapping." The configuration of the design is produced mechanically by the die, and but little skill and a small amount of engraving are required. The plate is of uniform thickness when completely engraved, and hence may be made lighter and cheaper.

Another method, distinct from that now claimed by me, is as follows: The article to be produced may be inlaid with pieces of a single metal, showing the same colors on the back as on the face of the article thus inlaid.

This method is defective, first, in the finish of the back, which, in leaving a surface of various colors, gives to the whole a crude, cheap, and inartistic appearance; second, when fine gold and other soft metals are used, the pieces inserted are liable to be dented in matting and the other processes of finishing when unsupported by a backing of a more solid nature. These defects are sought to be remedied in the following ways: First, by means of a false back; second, by backing up each piece after it is inserted.

Objections to methods first and second: First, in using a false back, the back used must either be heavy, and thus expensive, or it is liable, when being soldered in place, to be bent and thrown out of shape by the air underneath being heated, and thus an uneven back be produced. Again, after the back is soldered in place, it is liable to be sprung out of position when the article is heated, and the face thus left without support. Unless it be heavy it is liable to be dented in matting and other processes of finishing, and the soft metals are thus liable under any circumstances. Second, in backing up each piece after it is inserted, the difficulties first mentioned are aggravated, and the finish will be still less perfect.

By my improved method, however, as described in the specification, I produce a solid piece, which is not thrown out of shape when heated, which presents an even back, of one color and beautiful finish, protecting the inlaid pieces from being dented in matting and the other processes of finishing, and at the same time the articles thus produced have the advantages of cheapness and durability.

What I therefore claim as my invention, and wish to secure by Letters Patent, is—

1. The method herein described of ornamenting metallic surfaces for jewelry and other similar articles, which consists in cutting apertures in the main plate corresponding to the design, and inlaying said apertures with designs or emblems cut from a bimetallic plate or plated piece of the same thickness as the body-plate, in which one metal is of the same character and color as the article or back of the article itself, and the other of some different color, suitable to the design or emblem to be produced, substantially as described.

2. As a new article of manufacture, a pin or badge having upon its face inlaid designs of different colors of metal and a back of uniform color and quality, the said inserted pieces being flush front and back with the body-plate, substantially as shown and described, and for the purpose set forth.

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Witnesses:
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