(No Model.)

C. BERLIN.

METAL ORNAMENTATION.

No. 358,767. Patented Mar. 1, 1887.

Fig: 1.

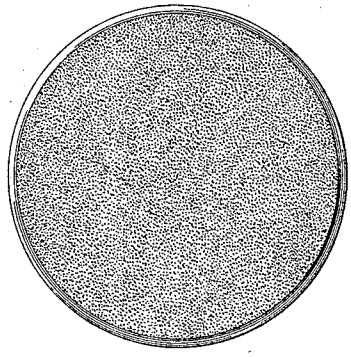
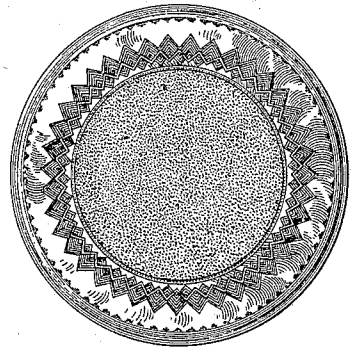


Fig: 2.



Witnesses:
John A. Rennie
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Inventor,
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by Wright Brown Quinby
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N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

CHARLES BERLIN, OF WALTHAM, MASSACHUSETTS, ASSIGNOR TO THE AMERICAN WALTHAM WATCH COMPANY, OF SAME PLACE.

METAL ORNAMENTATION.

SPECIFICATION forming part of Letters Patent No. 358,767, dated March 1, 1887.

Application filed September 11, 1886. Serial No. 213,276. (No model.)

To all whom it may concern:

Be it known that I, CHARLES BERLIN, of Waltham, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in the Method of Ornamenting Metal Surfaces, of which the following is a specification.

This invention relates to the operation of finishing or ornamenting the surface of watch-plates and other like articles, and it has for its object, first, to produce a finish or ornamentation which shall be more durable and less liable to defacement than any finish produced by methods heretofore used, and, secondly, to enable a greater variety of design and style of finish or ornamentation to be employed than heretofore.

To these ends my invention consists in the improved method of finishing or ornamenting metal surfaces, and in a plate finished or ornamented by said method, all of which I will now proceed to describe.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a face view of a plate after the first step of my improved method. Fig. 2 represents a view of the plate after the second step.

In carrying out my invention I take a watch-plate or other like article, the same having a smooth surface, and form on said surface innumerable extremely minute or microscopic pits or indentations, thereby giving the entire surface a frosted appearance or "satin-finish," as it is sometimes termed. (See Fig. 1.) These pits or indentations may be produced by the action of a rapidly-revolving wire brush, in a manner well known to those skilled in the art, or they may be produced by any other suitable means. I then subject the frosted or satin-finished surface to the action of suitable chemicals, to give the desired luster, using, by preference, nitric and sulphuric acids and sulphate of zinc for a dead luster, and the same acids with chloride of sodium for a bright luster, although any other suitable chemicals may be employed. I next, by the use of suitable tools well known to ornamenters of metal surfaces, cut or grind away portions of the frosted surface, so as to produce a smooth or lined or grained surface, *a*, Fig. 2, which affords a pleasing contrast to the frosted surface, each mutually heightening the effect of the other. The polished or ground portion of the surface may have any desired form. It is shown in Fig. 2 in the form of an annular band, but it is obvious that the ground portion may be arranged in parallel bands or in any manner which the taste or fancy of the ornamenter may dictate. I finally, by the electroplating process, deposit a thin coating of any suitable metal—such as gold, silver, or nickel—on the surface ornamented as above described, said coating preventing oxidation, and being so thin that it does not conceal the ornamentation.

By the above-described method I produce a very desirable ornamental finish, which is not easily tarnished.

My improved method may be used to ornament watch-cases and other articles besides watch-plates.

I am aware that it has been proposed to ornament metal surfaces by first matting and afterward removing by burnishing, &c., portions of the matted surface to present a design thereon; so I do not, therefore, desire to be understood as broadly claiming such steps.

My invention will be readily distinguished from the above in that, after forming the frosted surface, I treat such surface with chemicals, to impart thereto the desired luster to heighten the effect of the contrast between such surface and the design subsequently formed by removing portions of the frosted surface.

I claim—

1. The improved method of ornamenting metal surfaces, the same consisting in first frosting the surface to be ornamented, chemically treating such frosted surface to impart luster thereto, as described, and then cutting away or grinding portions of the frosted surface, as set forth.

2. The improved method of ornamenting metal surfaces, the same consisting in first frosting the surface to be ornamented, then cutting away or grinding portions of the frosted surface, and finally finishing and protecting the frosted and ground surface by an electroplate coating, as set forth.

3. The improved method of ornamenting metal surfaces, the same consisting in first

frosting the surface to be ornamented, and then making the frosted surface lustrous by chemical action, then cutting away or grinding portions of the frosted surface, and finally electroplating the frosted and ground surface, to finish and protect the same, as set forth.

4. As an article of manufacture, a watch-plate or other like article having a surface which is partly frosted and chemically lustrous, and partly ground or polished, and is protected by a thin electroplate coating, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 25th day of August, 1886.

CHARLES BERLIN.

Witnesses:
WILLIAM F. ROMEY,
GEORGE P. WILLIAMS.