

(No Model.)

T. BENFIELD.
Process of Ornamenting Watch Cases and other
Articles of Jewelry.
No. 237,085. Patented Feb. 1, 1881.

Fig. 1.

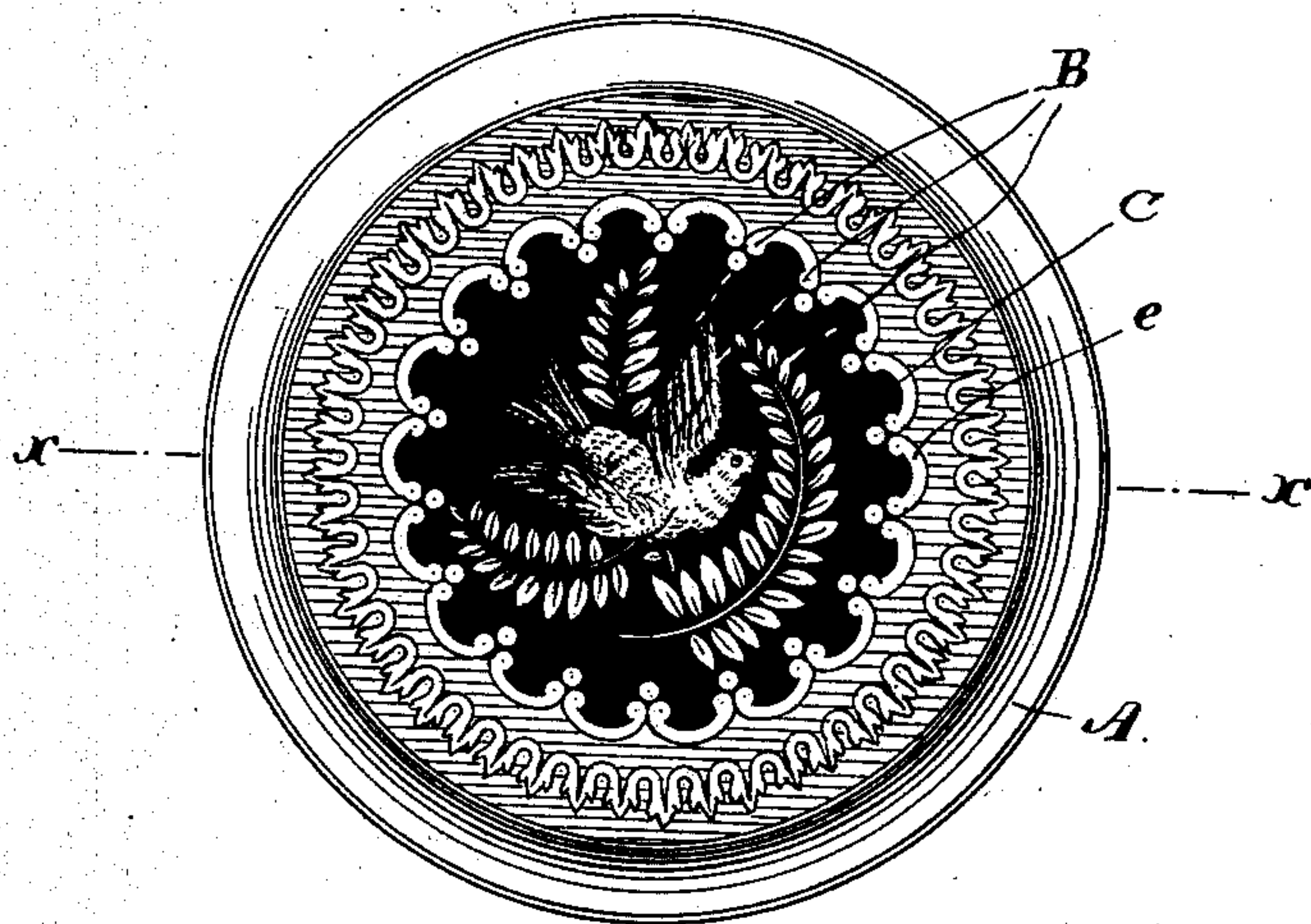


Fig. 2.

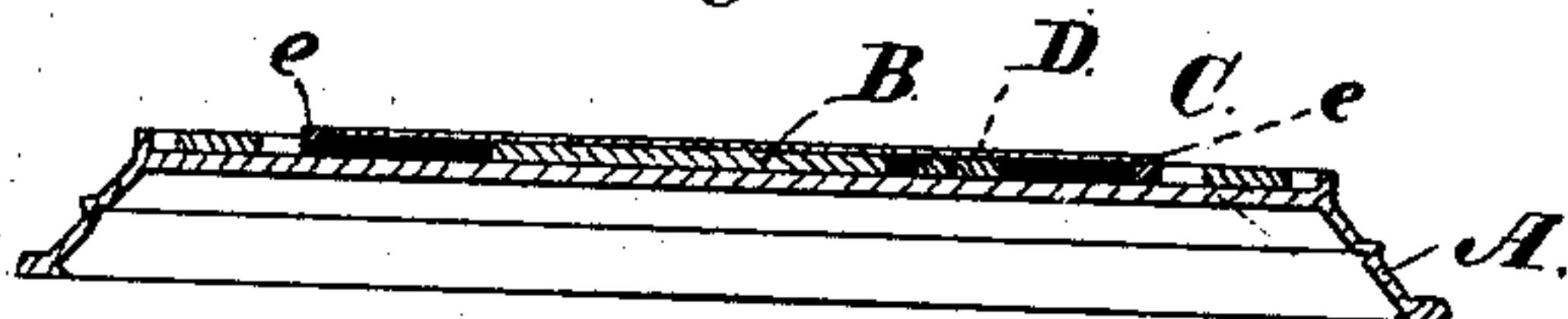
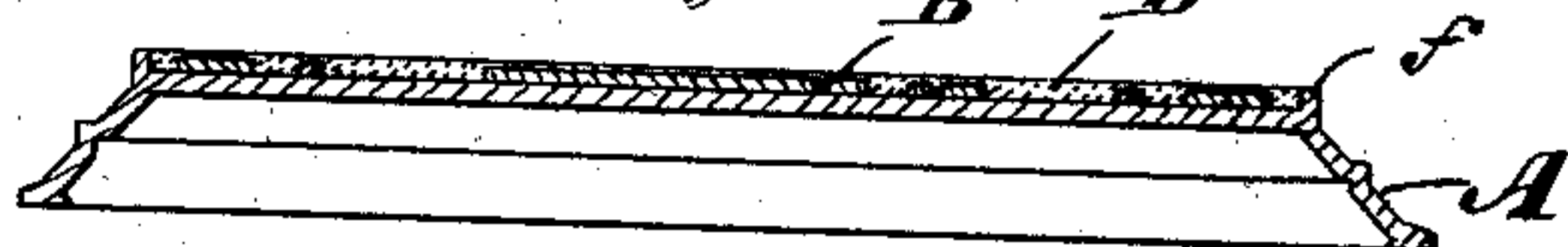


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

THOMAS BENFIELD, OF BROOKLYN, NEW YORK.

PROCESS OF ORNAMENTING WATCH-CASES AND OTHER ARTICLES OF JEWELRY.

SPECIFICATION forming part of Letters Patent No. 237,085, dated February 1, 1881.

Application filed August 30, 1880. (No model.)

To all whom it may concern:

Be it known that I, THOMAS BENFIELD, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Ornamenting Watch-Cases and other Articles of Jewelry, of which the following is a specification.

It has been customary to ornament the outer surfaces of watch-cases and other articles of gold and silver by applying to such surfaces, by brazing, soldering, or otherwise, a variety of figures, as of birds, flowers, leaves, &c., struck up from gold, silver, and other metals, or their alloys, such figures being necessarily raised above the surfaces to which they are applied. While it is possible thus to produce highly-ornamental designs upon metallic surfaces by artistic arrangements of figures formed from variously-colored metals and alloys, it is found that this style of ornamentation, owing to the fact that it is raised above the general surface, is especially exposed to wear and abrasion, and that, consequently, when in use for a short time, the sharp points and delicate lines, which largely contribute to its beauty and pleasing effect, become partly or wholly obliterated. It is also found that the fine lines which constitute the shading of the raised figures, and also the interstices between the figures, become in ordinary use soon filled with dirt and dust, which can only be removed with great difficulty, and also that the figures and the surfaces to which they are applied, being more or less alloyed with base metal, become discolored and tarnished by constant exposure to the air.

It is the object of the present invention to provide means for protecting such raised ornamentation from wear and abrasion, as well as from the injurious effects of dirt and dust, and also from oxidation and consequent discoloration; and to this end the invention consists in covering the face of the raised figures with a coating of transparent enamel, which may at the same time be applied directly to and cover the surface contiguous to the raised figures, or a coating of dark enamel may be first applied to such surface and then the transparent enamel may be superimposed and cover the face of the figures, all substantially as more fully hereinafter described, and shown in the drawings.

This invention is illustrated in the accompanying drawings, in which Figure 1 is a plan view of one side of a watch-case in which the surface surrounding the raised figures, and to which they are attached, is coated with dark enamel, and then a coating of transparent enamel covers both the dark enamel and the face of the figures. Fig. 2 is a section of the same through the line *xx* of Fig. 1. Fig. 3 is a similar section of a watch-case in which parts of its surface and the face of the raised figures are covered with transparent enamel only.

In these drawings, A represents one side of the case; B, raised figures attached, by brazing or in any other convenient way, to any part of the surface of the case. These figures may be of any desired shape, and are arranged upon the case A or other surface to form designs more or less elaborate, according to the skill of the designer and the fashion of the times. The figures may be formed in any convenient way, as by striking up in dies, and may be made from metals of different kinds and colors, according to the effect to be produced.

C is a thin coating of colored enamel, sufficiently opaque to conceal the metal beneath, and may be of any color or tint desired to contrast with the raised figures which it surrounds.

D is a coating of transparent enamel, which overlies the face of the raised figures and the surface of the dark enamel, and is applied after the dark enamel has become hardened.

Both the dark and the transparent enamel are formed in the usual way—that is, powdered glass is applied to the surface and then fused and cooled. Care should be taken to work the powdered glass evenly into the fine interstices between the raised figures, and for this purpose a sharp steel point may be used. After the transparent enamel is formed it should be evenly lapped off, so as to leave only a thin coating over the face of the raised figures and to remove the usual wavy appearance.

Whether or not it is advisable to use a coating of dark enamel upon the surface surrounding the raised figures in combination with the coating of transparent enamel will depend, not only upon the effect desired, but largely upon the character of such metal surface. If the surface is of such metal or alloy as will easily oxidize at the fusing temperature of

glass, and consequently become of an unsightly or undesirable color, the dark enamel may be advantageously used. On the other hand, if the surface is of nearly pure gold or silver or
5 other metal not materially affected by the heat, or if it is so alloyed that desired colors can be developed under the fusing temperature used to form the transparent enamel, then the transparent enamel may be applied directly to such
10 surface, and by stippling the same, or by forming what is known as a "dead-surface," very desirable effects may be produced. This latter construction is shown in Fig. 3, the coating of transparent enamel being designated
15 by D.

For convenience of applying the enamel it is desirable that the surfaces to be enameled should be surrounded with rings or frames, as seen in Figs. 2 and 3 of the drawings and designated by the letters *e* and *f*. These rings or
20 frames should be of a height about equal to that of the surface of the enamel, and may be, like the figure B, formed separately from the main surface and attached thereto.

25 If it is desired that the surface to which the raised figures are directly applied should be of finer metal than the main case or other sur-

face, such figures may be attached to supplementary plates of pure gold, silver, or other metal, and these plates attached to the surface
30 to be ornamented, and then the supplemental plates and the raised figures covered with transparent enamel, as above described.

It will be readily seen without further explanation that the raised figures, when coated
35 with transparent enamel, whether used with or without the coating of dark enamel, will not have their brilliancy or delicate tints sensibly impaired, and that they will be effectually shielded from all abrasion and wear and
40 from dirt and dust, as well as from the corroding and tarnishing effect of exposure to the air.

What is claimed as new is—

As a new article of manufacture, a watch-
45 case or other article of jewelry having its surface ornamented with raised metallic figures or designs, which are covered with transparent enamel, substantially as and for the purpose set forth.

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Witnesses:

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