

UNITED STATES PATENT OFFICE.

GEORGE W. MARTIN, OF CHELSEA, MASSACHUSETTS.

PROCESS OF ORNAMENTING GLASS.

SPECIFICATION forming part of Letters Patent No. 223,369, dated January 6, 1880.

Application filed February 10, 1877.

To all whom it may concern :

Be it known that I, GEORGE W. MARTIN, of Chelsea, in the county of Suffolk and State of Massachusetts, have invented a new and valuable Improvement in Processes of Ornamenting Glass; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

This invention has relation to the art of ornamenting glass or providing it with durable reflecting-surfaces and figures; and it consists in the novel process of covering the glass, partially or wholly, with gold or silver or other metallic foil and burning the same thereon; of the method of using patterns and the sand-blast or other means for ornamenting the surface or surfaces, either before or after the gold and silver leaf is burned on, as hereinafter shown and described.

The invention is applicable to shades and chimneys for lamps, chandeliers, windows, signs, name-plates, and all articles of glass adapted to be provided with reflecting or ornamental surfaces; and it is carried into effect in the following manner:

The shade or other article to be ornamented or covered has, if plane, a back and front; if hollow, an inside or outside. The process may involve both sides or only one, according to the nature of the article and effect sought to be produced.

In lamp chimneys and shades and other hollow articles the exterior surface is usually treated. This may be plain or ground, and is designed to be covered with gold or silver leaf, which is laid on with water, a solution of isinglass, or other adhesive material, after which the article is baked in an oven, or otherwise sufficiently heated, whereby the leaf is fixed upon or to the surface of the glass in such a manner as to be intimately connected therewith, and forms a strong and durable reflecting-coat, which will withstand any ordinary usage, handling, and washing. The ornamentation of a surface of this character is designed to be effected by laying patterns on the part and using the sand-blast or other means to grind or cut

away the surface exposed in and around said patterns, either before or after the leaf is burned on, as above stated. If the sand-blast is used before the leaf is laid on, then the figure and ground will both be covered with the leaf, and the ornamentation will be apparent, because of the frosted or polished appearance of the figure or ground, as the case may be, because the figure is embossed or raised above the ground or cut below the same. If the leaf is first burned on, a firm metallic surface is provided admirably adapted for subsequent ornamentation by the use of patterns, by the use of the sand-blast, and either the figure or the ground being cut away and translucent, leaves the other in relief and covered with leaf and with well-defined clearly-cut edges. In either case the ornamentation will be clearly visible from either side, and in marked contrast with the ground on both sides of the glass, and a reflecting-surface is provided.

Sometimes both sides of the glass are involved in carrying out this invention, as in ornamenting door or other glass plates or partitions, in which case the leaf may be burned on one side of the glass, while the ground or figure is cut on the other, a very bright and beautiful effect being thus produced with colored as well as plain glass.

I am well aware that a gold pigment has heretofore been burned onto glass and china, and I therefore make no claim to so doing.

What I claim as new, and desire to secure by Letters Patent, is—

The process herein described of ornamenting glass; by coating the surfaces thereof with gold, silver, or other metallic leaf, burning the same into the glass, and afterward removing the gold from portions in various patterns by means of a sand-blast applied through suitably-designed apertures in or spaces around a superimposed pattern or patterns, substantially as shown and specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

GEO. W. MARTIN.

Witnesses:

WALTER C. MASI,
HOWARD ZEVELY.