

UNITED STATES PATENT OFFICE.

ALBERT A. GRAESER, OF PITTSBURG, PENNSYLVANIA.

METHOD OF SECURING DESIGNS ON GLASS ARTICLES.

SPECIFICATION forming part of Letters Patent No. 487,013, dated November 29, 1892.

Application filed March 21, 1892. Serial No. 425,834. (No specimens.)

To all whom it may concern:

Be it known that I, ALBERT A. GRAESER, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in the Method of Securing Designs on Glass Articles; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to a method of securing printed designs to the lower surfaces of glass articles, such as paper-weights, dishes, plaques, or like articles, so that they may be burned in and retained permanently thereon. Taking a paper-weight as an illustration of what has been done in this art, several methods of securing the design to the lower face thereof have been employed. One method has been to retain the design in place by pasting a cloth or piece of felt to the lower surface of the weight after the design has been placed thereon; but such a method would not insure the permanent retention of the design. Another method consisted in transferring the design to the opal-glass surface in vitrifiable colors, burning in the design, and then covering this surface with molten glass to the depth desired to give body to the weight.

The object of my invention is to provide a simple and inexpensive method of securing the designs by burning them permanently in the glass, so as to bring out clearly and distinctly all the parts which compose the design.

To these ends my invention consists, generally stated, in the method of securing designs, prints, or photographs to the lower surfaces of glass articles, consisting in placing a design, print, or photograph with vitrifiable colors on the lower surface of the glass, applying an opaque enamel to the back of such design, print, or photograph, and then burning the glass article to produce a hard opaque surface on the back of said design, print, or photograph to furnish a background, against which the design, print, or photograph stands out in clear and distinct outlines.

To enable others skilled in the art to make and practice my invention, I will describe the same more fully in the accompanying specification.

I will describe my invention in connection with its application to paper-weights,

such as are formed of glass or other like transparent substance. These paper-weights are made of different shapes and designs, and to add to the beauty of their appearance it has been customary to secure to the lower face a design, print, or photograph, so that when the weight is in use the design, print, or photograph is clearly seen through the body of glass or like transparent substance. In carrying out the several steps of my invention I take such a block of glass as may be suitable for the purpose and transfer to the lower surface thereof the design, print, or photograph to be employed. The design, print, or photograph is transferred with its face in contact with the lower face of the block. This transfer may be made from wood-cuts, stereotype-plates, type, or other like means by different processes; but to provide for the burning in of the design, as will more fully appear, it is necessary to print the design originally with vitrifiable ink, or if ordinary ink has been used it is necessary to dust or sprinkle the surface of the design with vitrifiable colors after the transfer, the ink taking up these colors and forming a vitrifiable print. The transfer may also be made by photographic process. One of the simplest means of transferring the design to the glass surface is by the use of a rubber stamp containing the design, which has been inked with a vitrifiable ink, or if ordinary ink is employed the design, after the transfer to the glass, is dusted or sprinkled with vitrifiable colors. When the design, print, or photograph has been transferred to the lower surface of the block in vitrifiable colors, the back of said design, print, or photograph is coated with an opaque enamel or like substance, which when burned will form a hard impenetrable coating over the back of said design, print, or photograph and protect the same, while at the same time the opaque enamel provides a background against which the design stands out in bold relief, each detail thereof being distinctly visible. This opaque background renders it practically impossible to distinguish surrounding objects through the body of glass, and consequently there is nothing but the design visible, and there is no opportunity to confuse the design with surrounding objects. This enamel may be composed of zinc oxide

5 melted with a vitreous flux, and is allowed to
flow over the back face of the print, photo-
graph, or design until the same is properly
coated, or the enamel may be applied with a
10 brush. After the enamel has dried properly
the block is placed in a kiln and heated to a
degree sufficient to burn a glaze on the lower
surface of the block. In this manner the
print or photograph is preserved permanently
15 on the block and there is no opportunity for
it to be defaced. There are different enam-
eling compositions which may be employed
to produce the above result, and I do not con-
fine myself to any one particular compound.
15 This method provides a very simple and
inexpensive means of securing the designs in
place, and at the same time affords such pro-
tection to the designs as will prevent the de-
facement of the designs.
20 What I claim as my invention, and desire to
secure by Letters Patent, is—

The herein-described method of securing de-
signs to the surfaces of glass articles, consist-
ing in transferring a design, print, or photo-
graph with vitrifiable colors to the lower sur- 25
faces of glass articles, applying a suitable
opaque enamel to the back of such design,
print, or photograph, and then burning the
glass article to produce a hard impenetrable
30 coating on the lower face thereof to preserve
the print, photograph, or design permanently
thereon, and provide an opaque background
against which the said design, print, or pho-
tograph stands out clearly and distinctly,
substantially as described. 35

In testimony whereof I, the said ALBERT A.
GRAESER, have hereunto set my hand.

ALBERT A. GRAESER.

Witnesses:

J. N. COOKE,
GEORGE J. PFEIL.