Nov. 17, 1931. P. LOPEZ 1,832,716

PROCESS OF ETCHING PORTRAITS ON MIRRORS

Filed Sept. 22, 1930

Fig. 1.

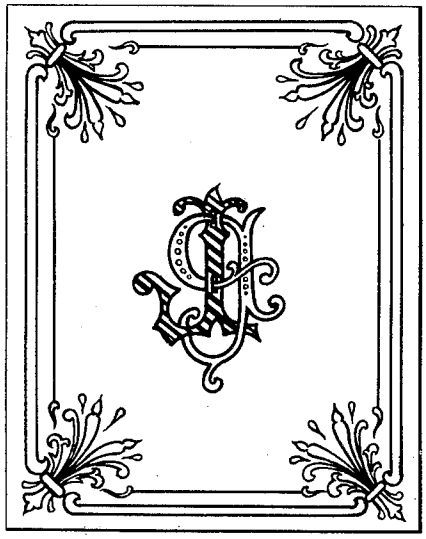


Fig. 2.

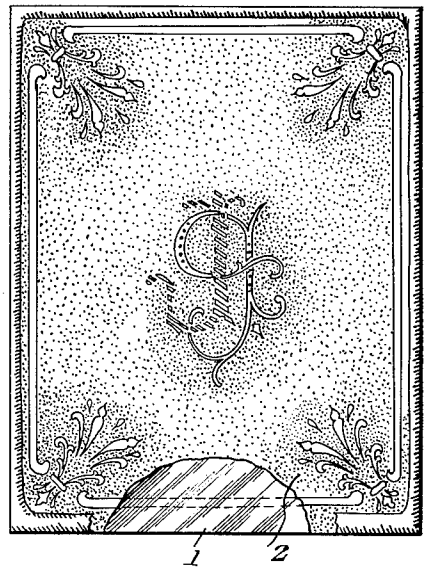


Fig. 3.

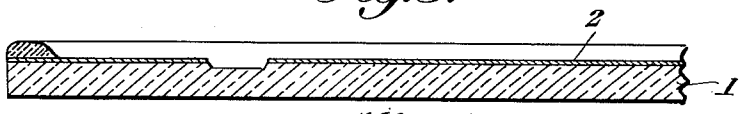
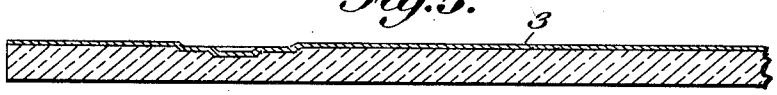


Fig. 4.



Fig. 5.



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UNITED STATES PATENT OFFICE

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PROCESS OF ETCHING PORTRAITS ON MIRRORS

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This invention relates to a process of preparing an etched image representation having a mirrored background and by which process, portraits, scenes, emblems, and other image representations may be presented to view at the reflected surface of a mirror so as to present an attractive appearance and to give depth to the representation.

Another object of the invention is to evolve a process whereby the rear surface of a mirror pane or in other words that surface of a glass pane which is to be coated with a mirror surfacing, such as silver, may be etched to different depths, at different portions of its area, in consonance with the depth of the tones of the image representation.

In the accompanying drawings illustrating the invention:

Figure 1 is a view in front elevation of a mirror pane produced by the process of the invention.

Figure 2 is a rear elevation of the pane illustrating its condition in the carrying out of one step of the process.

Figures 3, 4 and 5 are sectional views representing, schematically, different steps in the process.

In the carrying out of the process, a pane of glass indicated by the numeral 1, is to be treated and, for the purposes of the process, there is first prepared an opaque multi-tone pattern of the image representation to be etched in the pane 1, and this pattern may be a photograph or an opaque oil painting. The pane of glass 1 is first thoroughly cleansed and dried and is then disposed upon and covering the pattern, the assemblage being disposed on a perfectly level surface. To the upper face of the pane of glass there is applied a layer of a fluid medium resistant to a chemical compound capable of etching glass, which compound in the carrying out of the process of the invention is hydrofluoric acid, this being applied however, only to that portion of the face of the pane not covering the pattern and the next step in the process consists in applying to this face of the pane and over said layer of respondent material, a boundary beading which is preferably of a wax composition consisting of yellow wax, parowax, and Venice turpentine.

The next step in the process consists in pouring onto the said face of the pane, within the bounds of the image to be etched, dilute hydrofluoric acid, whereby to effect an initial etching of that portion of the face of the pane. This acid is permitted to remain for a minute and is then removed and the surface of the pane is rinsed with sufficient water to remove all traces of the acid. There is then poured onto the surface, an acid composition consisting of hydrofluoric acid, sodium carbonate and water, and this acid solution is permitted to remain in contact with the surface of the pane for a period of thirty minutes, whereupon it is drained from the pane and the suface of the pane is rinsed with water and permitted to dry.

The next step in the process consists in disposing the pane treated by the preceding steps, over the pattern of the image representation and in registration therewith, over the darkest tone of the image representation are covered with a resistant consisting of a mixture of bitumen judea and turpentine, and dilute hydro-fluoric acid is then poured over this surface of the pane and permitted to remain for several minutes whereupon the acid is drained from the pane, care being taken to avoid its contact with any other portion of the pane than that referred to, and the surface of the pane is then rinsed with water, and when this surface is dried, the pane is again disposed over the pattern and the same resistant composition is applied over the portions of the face of the pane which are above the pattern area next lighter in tone than the portions first mentioned.

These steps are repeated for a number of times in the successive treatment of different portions of the face of the pane which are over the successively lighter tone portions of the area of the pattern.

In the drawings and particularly in Figures 2, 3 and 4 thereof, the layer of resistant medium is indicated by the numeral 2 and

by a comparison of Figures 3 and 4 it will be observed that, in the successive steps of the process, the portions of the surface area of the pane of glass which are over the patterned area portions of lighter tone, are etched to a greater depth than the portions which are over the darker area portions of the pattern.

After the pane has been prepared in accordance with the process above described, a coating layer 3 of a mirror surfacing mixture or material is applied to the etched face of the pane and is permitted to dry.

What I claim is:

1. The process of preparing an etched image representation having a mirrored background, which process comprises the steps of preparing an opaque multi-tone pattern of the image representation, disposing the pattern against one face of a pane of glass, applying, to the other face of the pane, a layer of a fluid medium resistant to a chemical compound capable of etching glass, to cover that portion of the pane not covered by the pattern, applying a boundary beading to the last mentioned face of the pane, pouring onto the said face of the pane, within the bounds of the pattern, dilute hydrofluoric acid, whereby to effect initial etching of the face of the pane, removing the acid and washing the etched surface with water, pouring onto the surface a mixture of dilute hydrofluoric acid and sodium carbonate and permitting the same to remain until the pane surface is further etched, removing the mixture, and pouring water onto the etched surface and permitting the same to remain for a period of approximately one half hour, disposing the etched pane over the pattern and applying to the face of that portion of the pane, which is over the darkest tone portions of the area of the pattern, a layer of the said resistant medium, pouring dilute hydrofluoric acid onto the said face of the pane, and permitting the acid to remain a few minutes, and then repeatedly carrying out the four last described steps in the order stated, and pursuing these steps, in the successive treatment of different portions of the face of the pane over successively lighter tone portions of the area of the pattern.

2. The process of preparing an etched image representation having a mirrored background, which process comprises the steps of preparing an opaque multi-tone pattern of the image representation, disposing the pattern against one face of a pane of glass, applying, to the other face of the pane, a layer of a fluid medium resistant to a chemical compound capable of etching glass, to cover that portion of the pane not covered by the pattern, applying a boundary beading to the last mentioned face of the pane, pouring onto the said face of the pane, within the bounds of the pattern, dilute hydrofluoric acid, whereby to effect initial etching of the face of the pane, removing the acid and washing the etched surface with water, pouring onto the surface a mixture of dulte hydrofluoric acid and sodium carbonate and permitting the same to remain until the pane surface is further etched, removing the mixture, and pouring water onto the etched surface and permitting the same to remain for a period of approximately one half hour, disposing the etched pane over the pattern and applying to the face of that portion of the pane, which is over the darkest tone portions of the area of the pattern, a layer of the said resistant medium, pouring dilute hydrofluoric acid onto the said face of the pane, and permitting the acid to remain a few minutes, and then repeatedly carrying out the four last described steps in the order stated, pursuing these steps, in the successive treatment of different portions of the face of the pane over successively lighter tone portions of the area of the pattern, and applying a mirror surfacing to the entire surface of the face of the pane which is etched.

In testimony whereof I affix my signature.

PETER LOPEZ.