

UNITED STATES PATENT OFFICE.

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MANUFACTURE OF MIRRORS WITH TRANSLUCENT COLOR DECORATIONS.

SPECIFICATION forming part of Letters Patent No. 689,525, dated December 24, 1901.

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To all whom it may concern:

Be it known that we, EDUARD WAGNER and GOTTFRIED LORENZ, subjects of the Emperor of Austria-Hungary, and residents of Vienna, in the Province of Lower Austria, Empire of Austria-Hungary, have invented certain new and useful Improvements in the Manufacture of Mirrors with Translucent Color Decorations; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has relation to the art of ornamenting mirrors; and it has for its object a process whereby either transparent or translucent ornaments can be rapidly and economically produced and very artistic effects obtained.

The invention consists, essentially, in forming a pattern of the ornamentation or design on the reflecting material—*i. e.*, on the back of the mirror—with a substance that will dry slowly or that will become soft on exposure to heat, or both, and in then coating with a substance or composition that will become hard and brittle when dried or that will dry rapidly and become hard and brittle when dry. This coating is then allowed to dry or is dried by exposure to heat, the substance with which the pattern is formed being then removed, together with the reflecting material laid bare by such removal. In this manner we obtain a negative transparent pattern, which is or may then be colored, and if a translucent design is desired it is colored with a translucent color or colors or inks.

We will now describe in detail the manner in which our invention is carried out.

The composition we use for forming the design or ornamentation on the reflecting material or back of the mirror is, as stated, one which will dry slowly or which will become soft under the action of heat and which can be applied by a brush or by impression. To this end we make use of what we may term an "ink" or "composition," consisting of oil of cloves, glycerin, and a suitable filler—that is to say, a material that will give sufficient body to the composition to adapt it for use with a brush or for printing—and to this com-

position gum-arabic is or may be added. As a body material we may use printers' varnish or printers' ink, or both, of any desired color, which is reduced to the proper thickness by a diluent, as turpentine. This composition will dry very slowly, and the presence of the oil of cloves and glycerin softens the same when exposed to the action of heat. This composition is sufficiently attenuated to adapt it for use with a brush or as a printers' ink, the pattern being then painted by hand, though we prefer to print the same on the reflecting material or back of the mirror, as this saves a great deal of time and labor. The printing may be effected in any well-known manner. After the pattern has been formed on the reflecting material the latter as well the pattern are coated with a thin coating of a substance that will become hard and brittle on drying. To this end we may use any suitable varnish dissolved in a readily-vaporizable solvent, though we prefer to use a solution of shellac. After the thin coating of varnish has become dry, hard, and brittle a slight pressure will break the same along the contour of the softer material of the pattern, while said coating of shellac tenaciously adheres to the reflecting material, so that the softer composition can be readily wiped off, together with its coat of varnish, which does not so tenaciously adhere thereto and is readily broken up. The pattern composition is now removed, as is also the reflecting material laid bare by such removal, thereby leaving a transparent negative stencil-like pattern with very sharp outlines, requiring but little if any retouching. The removal of the pattern composition can be effected with any suitable soft material, as wash-leather or a rag or any suitable textile material. The reflecting material of the mirror thus laid bare is then removed by any well-known means, as by friction, which in most kinds of mirrors will be sufficient, though a solvent may be used, thus leaving a transparent negative pattern, which is then colored either by hand or by printing, and in the latter case but little retouching is necessary if any care at all is taken, and if the design is to be translucent translucent colors or inks are used. Exceedingly beautiful and highly artistic opaque or

translucent ornamentations can thus be produced in a simple and rapid manner and at a comparatively small cost.

The proportions of oil of cloves and glycerin may vary considerably and depend in a measure on the time that may elapse between the formation of the pattern and the coating with shellac and the time required for drying such coating. If the several steps of the process are carried out in rapid succession—that is to say, immediately one after another—the composition may simply be one that will not dry during the time it requires to apply and dry the coating of shellac, the proportions of glycerin and oil of cloves being then smaller than they would be if the shellac coating were applied some time after the formation of the pattern, which would then be produced by a composition that will not only dry slowly, but that will soften when exposed to heat.

In practice we prefer to carry out the process in as rapid a manner as possible with a view to economy and to decreasing the possibility of the inked-in pattern drying before its removal is attempted. To this end we use, as stated, a solution of shellac instead of ordinary varnish thinned with a more or less highly vaporizable solvent, the coating of the reflecting material and pattern following immediately after the printing of the latter on the reflecting material and the drying of the shellac coating by heat following immediately after the coating, while the removal of the pattern follows immediately after the shellac coating has hardened and become brittle.

It will of course be understood that by "design" we do not limit ourselves to any particular style or species of ornamentation, as there is, so to speak, substantially no limit to the kind or species of designs, pictures, &c., that can be made use of as a means for ornamenting mirrors.

The ornamentation on the back of the mirror may of course be protected from injury in any desired manner.

Having thus described our invention, what we claim as new therein, and desire to secure by Letters Patent, is—

1. The process, which consists in forming on the reflecting material of a mirror a pattern of any desired ornamental design with a substance that can be wiped off, superimposing a frangible layer on said pattern and on the adjacent or surrounding reflecting material that cannot be removed therefrom by wiping, wiping off the aforesaid substance with the frangible layer covering the same and removing the reflecting material laid bare without altering the surface of the glass of said mirror, for the purpose set forth.

2. The process, which consists in forming on the reflecting material of a mirror a pattern of any desired ornamental design with a substance that can be wiped off, superimposing a frangible layer on said pattern and on the adjacent or surrounding reflecting material that cannot be removed therefrom by

wiping, wiping off the aforesaid substance with the frangible layer covering the same and removing the reflecting material laid bare without altering the surface of the glass of said mirror and coloring the transparent stencil-like pattern thus produced, for the purpose set forth.

3. The process, which consists in forming on the reflecting material of a mirror a pattern of any desired ornamental design with a substance that can be wiped off, superimposing a frangible layer on said pattern and on the adjacent or surrounding reflecting material that cannot be removed therefrom by wiping, wiping off the aforesaid substance with the frangible layer covering the same, and removing the reflecting material laid bare without altering the surface of the glass of said mirror and coloring the transparent stencil-like pattern thus produced with a translucent color or colors, for the purpose set forth.

4. The process, which consists in forming on the reflecting material of a mirror a pattern of any desired ornamental design with a slowly-drying substance, coating the pattern and adjacent or surrounding reflecting material with a substance that will dry rapidly and become hard and brittle, drying the same and removing the slowly-drying substance with the frangible layer covering the same and then the reflecting material laid bare without altering the surface of the glass of said mirror by such removal, for the purpose set forth.

5. The process, which consists in forming on the reflecting material of a mirror a pattern of any desired ornamental design with a slowly-drying substance, coating the pattern and adjacent or surrounding reflecting material with a substance that will dry rapidly and become hard and brittle, drying the same and removing the slowly-drying substance with the frangible layer covering the same and then the reflecting material laid bare by such removal without altering the surface of the glass of said mirror, and coloring the transparent stencil-like pattern thus produced, for the purpose set forth.

6. The process, which consists in forming on the reflecting material of a mirror a pattern of any desired ornamental design with a slowly-drying substance, coating the pattern and adjacent or surrounding reflecting material with a substance that will dry rapidly and become hard and brittle, drying the same and removing the slowly-drying substance with the frangible layer covering the same and then the reflecting material laid bare by such removal without altering the surface of the glass of said mirror, and coloring the transparent stencil-like pattern thus produced with a translucent color or colors, for the purpose set forth.

7. The process which consists in forming upon the reflecting material of a mirror a pattern of any desired ornamental design with a

substance that will dry slowly and become soft on exposure to heat, coating the pattern and the adjacent or surrounding reflecting material with a substance that will dry rapidly and become hard and brittle when exposed to heat, and that will adhere firmly to said reflecting material, exposing the surface so prepared to heat and removing the hard brittle coating overlying the softened material together with the latter and then removing the reflecting material thus laid bare without altering the surface of the glass of said mirror, whereby a stencil-like transparent pattern is obtained, for the purpose set forth.

8. A mirror having a design in translucent pigments applied directly to the surface of the glass and the outline of which is in juxtaposition to the reflecting-surface, whereby the design can be viewed by both transmitted and reflected light, substantially as and for the purpose set forth.

In testimony that we claim the foregoing as our invention we have signed our names in presence of two subscribing witnesses.

EDUARD WAGNER.
GOTTFRIED LORENZ.

Witnesses:

JOSEF RUBASCHT.
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