

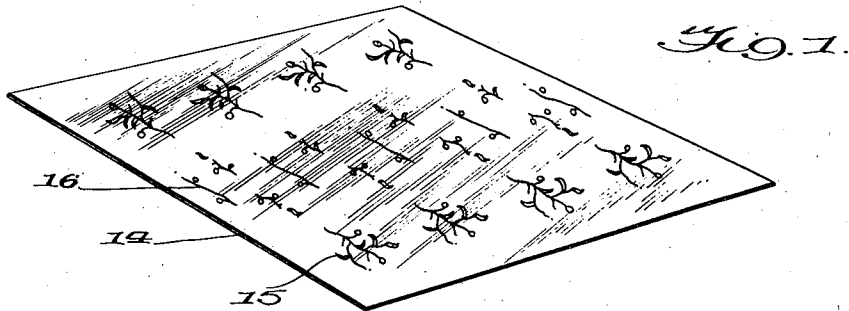
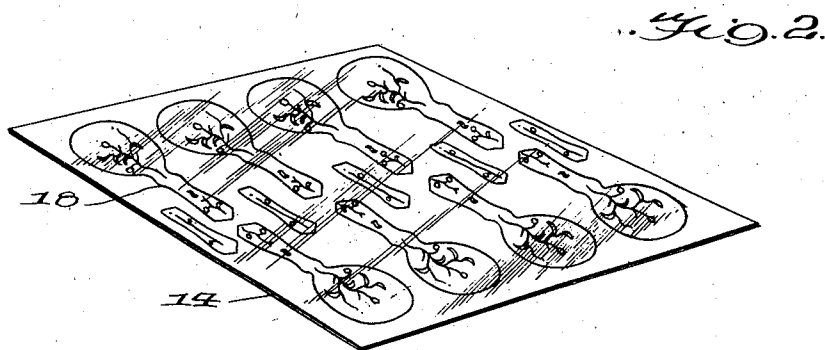
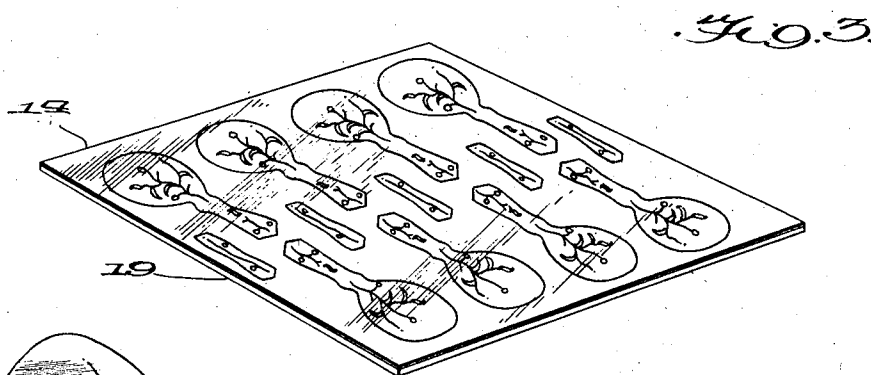
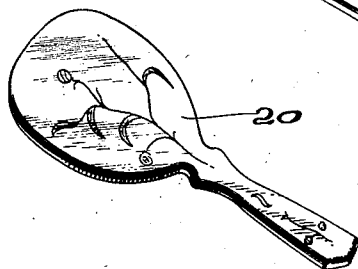
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DECORATED CELLULOSE ESTER ARTICLE AND METHOD OF MAKING SAME

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## UNITED STATES PATENT OFFICE.

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## DECORATED CELLULOSE ESTER ARTICLE AND METHOD OF MAKING SAME.

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This invention relates to a decorating process and decorated article, particularly though not exclusively applicable to composition articles, such as mirror backs, manicure handles and other similar articles, for example, dresser sets.

An object of the invention is to provide an article having a design in colors below its surface, the surface being transparent or translucent, so that the design is as evident as one on an exterior surface and yet can not wear off, fade or become defaced.

A more particular object of the invention is to provide a process for lithographing or printing a design in colors on the under side of a transparent sheet, the decorated side of which is subsequently cemented or otherwise fixed on a base sheet of similar or other desired composition, and of suitable thickness and color, and which may consist either of one solid sheet or of a number of sheets of varied thicknesses composited together to produce any desired combination of colors.

An important object of the invention is to provide such a process which permits the compositing of the decorated sheet with the base sheet while preserving the lithographed or printed design without distortion or bleeding or running of colors during the compositing operation.

Another important object is to provide an article composited as described, and the composited sheets of which will not become separated, but will remain cemented together as an integral unit.

Other objects and advantages of the invention will appear from the following description, taken in connection with the accompanying drawings illustrating a preferred embodiment of the article, and showing certain steps in the preferred manner of carrying out the process of the invention.

In the drawings:

Fig. 1 is a top plan view of a translucent or transparent composition sheet decorated in accordance with the invention;

Fig. 2 is a top plan view of the same sheet marked with the cutting outlines of the decorated articles;

Fig. 3 is a perspective view showing the decorated sheet composited with the base sheet;

Fig. 4 is a perspective view of a mirror back made in accordance with the invention.

Referring to the drawings, and particularly to Fig. 1, a thin transparent or translucent sheet 14 of seasoned composition material, such, for example, as a pyroxylin composition or a cellulose acetate plastic, is decorated with a plurality of any desired designs 15. The designs are preferably lithographed or printed on the sheet in colors. Where the conformation of the article permits, similar or matched designs for another article may also be imprinted on the same sheet, as in the illustrated example of the invention, where the designs 15 may be for mirror backs and the designs 16 for manicure handles, these articles, in the present example, forming part of a matched dresser set.

Means are provided by the invention for protecting the lithographed or printed colors from the action of the solvent cement, where such a binder is subsequently used in compositing the decorated sheet with the base sheet. The binder used may be a non-solvent binder, such as a sheet of gelatin, or may be a solvent binder such as the solvent cement hereinafter described.

Accordingly, where a solvent cement is to be used, after all the colors of the design have been applied to one side of the sheet 14, and the decorations are complete, a suitable coating of opaque color is applied over the colors comprising each design. The coating used for this purpose, in the present embodiment of the invention, may consist of zinc white, preferably combined with any suitable drier.

The conformation of the decorated articles is now indicated on the design bearing sheet as shown in Fig. 2, by means of a blanking outline 18, which may also be printed on the sheet, thus insuring that the design will be similarly placed on each of the similar articles.

The decorated sheet 14 is now composited with a base sheet 19, which may consist of one or more sheets composited together to produce any desired color combination, and in accordance with the invention this operation is carried out without producing any distortion or running of colors. As above stated, the base sheet may consist of one solid sheet, or may be composed of a number of sheets, which may be of different thickness, and may be of different colors. It will therefore be understood that, in the following description, where the base sheet

is referred to, this sheet may be either a single solid sheet or may be composed of several sheets, as here described.

As an example of the compositing operation, a solvent cement may be applied over the decorated surface of the design bearing sheet 14, and on the surface of the base sheet 19 to be affixed thereto. Where the sheets to be composited are pyroxylin composition, and a solvent cement is used in compositing the two sheets, the solvent cement may be a composition comprising (by weight) 30% dibutyl phthalate, 25% C. P. acetone, and 25% denatured alcohol. The two sheets are placed in a hydraulic press and subjected to high pressure, with the decorated surface of the sheet 14 in contact with the base sheet. During this operation, the sheets are preferably subjected to heat, for example, of approximately 200° to 240° Fahrenheit, for a short time, depending on the combined thickness of the sheets. In making the articles herein referred to by way of example, heat may be applied for about two minutes, and approximately twenty-five minutes may be allowed for cooling off.

Where it is desired to use a non-solvent binder instead of a solvent cement where pyroxylin sheets are to be composited, the non-solvent binder may consist of a sheet of gelatin, the compositing operation being carried out as above described.

Where a high surface lustre is desired, highly polished nickel alloy plates may be used in the compositing operation to give what is known as a press polish finish.

After proper seasoning, the composite sheet is blanked to the marked outlines 18 by a suitably shaped blanking die and power press, the lines 18 serving as a guide to produce the required outlines in the proper location, the larger articles being preferably cut first and the smaller articles thereafter.

After blanking to size, individual articles may be routed on edge by regular routing methods to the required bevel, radius, etc., and are then ready for finishing operations, such as preparing a handle for the reception of an implement, or recessing a mirror back for glass, the articles being thereafter ashed and polished by customary methods.

When metallic colors such as bronzes, aluminum, silver or gold are used in the lithographing or printing operation, the design is preferably lithographed or printed directly on a thin sheet, which is composited with one or more thicker sheets to form the base sheet 19, and a thin undecorated translucent or transparent sheet 14 is then composited with the compound base sheet, the compositing and subsequent operations being carried out as above described. This manner of carrying out the lithographing operation of the invention is not limited to cases where metallic colors are used, but

may be followed in connection with any color decoration, inasmuch as it gives the same appearance as the method employed in lithographing on the under side of the transparent sheet.

An article such as the mirror back 20 shown in Fig. 4, made in accordance with the invention, is for all practical purposes a unitary article, the two composited sheets forming an integral whole. The color decoration appears to the same advantage as if it were on an exterior surface, but can not wear off or become scratched or otherwise defaced. When the process is carried out as above described there is no distortion and no bleeding or running of colors.

Variations may be made from the exact details above described by way of example without departing from the invention as defined by the following claims.

I claim:

1. The process of producing decorated articles which comprises decorating one side of a diaphanous composition sheet, and compositing the decorated sheet with a second sheet of composition material, with the decoration between the two sheets, both of said sheets being composed of material soluble in a common solvent.

2. The process of producing decorated machinable articles which comprises decorating one side of a composition sheet, and compositing the decorated sheet with a second sheet of similar composition material by means of a binder, with the decoration between the two sheets.

3. The process of producing decorated articles which comprises decorating one side of a composition sheet, protecting the decoration from the action of a binder, and compositing the decorated sheet with a second sheet of composition material by means of a binder, with the decoration between the two sheets.

4. The process of producing decorated articles which comprises decorating one side of a composition sheet in colors, applying a protective coating over said colors, applying a solvent cement to the decorated side of said sheet, and compositing said decorated sheet with a second sheet of composition material.

5. The process of producing decorated articles which comprises decorating one side of a composition sheet in colors, protecting said colors from the action of a solvent cement by applying an opaque coating over said colors, applying a solvent cement to the decorated side of said sheet, and compositing said decorated sheet with a second sheet of composition material.

6. The process of producing decorated articles which comprises decorating one side of a composition sheet in colors, protecting said colors from the action of a solvent cement

by applying an opaque coating of zinc white over said colors, applying a solvent cement to the decorated side of said sheet, and compositing said first sheet with a second sheet of composition material.

7. The process of producing decorated articles which comprises decorating one side of a composition sheet in colors, protecting said colors from the action of a solvent cement by applying a protective coating over said colors, applying a solvent cement to the decorated side of said sheet, and compositing said first sheet with a second sheet of similar composition material by heat and pressure.

8. The process of producing decorated articles which comprises decorating one side of a composition sheet in colors, protecting said colors from the action of a solvent cement by applying an opaque coating of zinc white over said colors, applying a solvent cement to the decorated side of said sheet, and compositing said first sheet with a second sheet of similar composition material by heat and pressure.

9. The process of producing non-defaceable decorations on pyroxylin composition articles which comprises lithographing a design in colors on one side of a pyroxylin

composition sheet, printing on article outline mark around said design, protecting said colors from the action of a solvent cement by applying an opaque coating of zinc white over said colors, applying a pyroxylin composition solvent cement to the design bearing side of said sheet, compositing said first sheet with a second pyroxylin composition sheet by heat and pressure, seasoning and then blanking said composited sheets to said article outline.

10. A composition article carrying a non-defaceable decoration, and comprising a base sheet, a second transparent sheet cemented thereto, one of said sheets having a design in colors on its inner face, and having a protective coating on said colors and between said sheets.

11. A pyroxylin composition article carrying a non-defaceable decoration, and comprising a base sheet of pyroxylin composition, a second and transparent sheet of pyroxylin composition cemented thereto, one of said sheets having a design in colors on its inner face, and having a protective coating on said colors and between said sheets.

In testimony whereof, I affix my signature.

ALFRED S. DONALDSON.