

(No Model.)

C. GALLE.
FLEXIBLE WINDOW PANE OR SIGN.

No. 463,273.

Patented Nov. 17, 1891.

Fig. I.

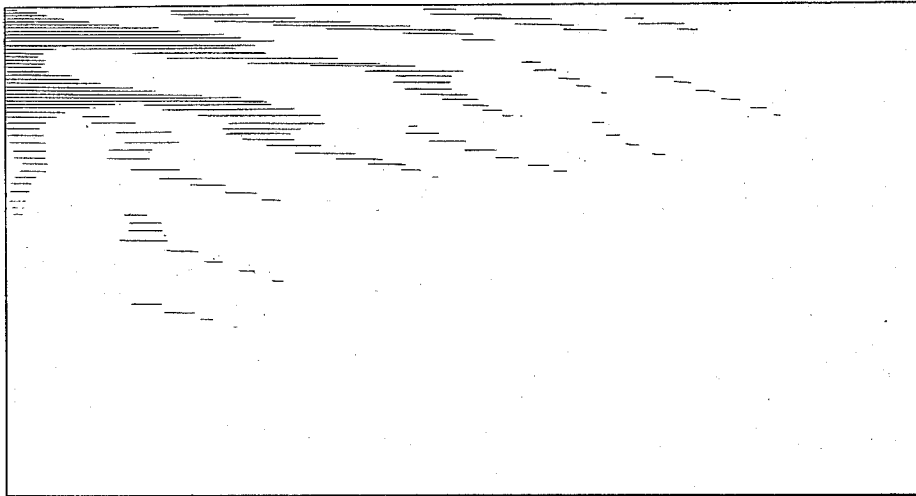


Fig. II.

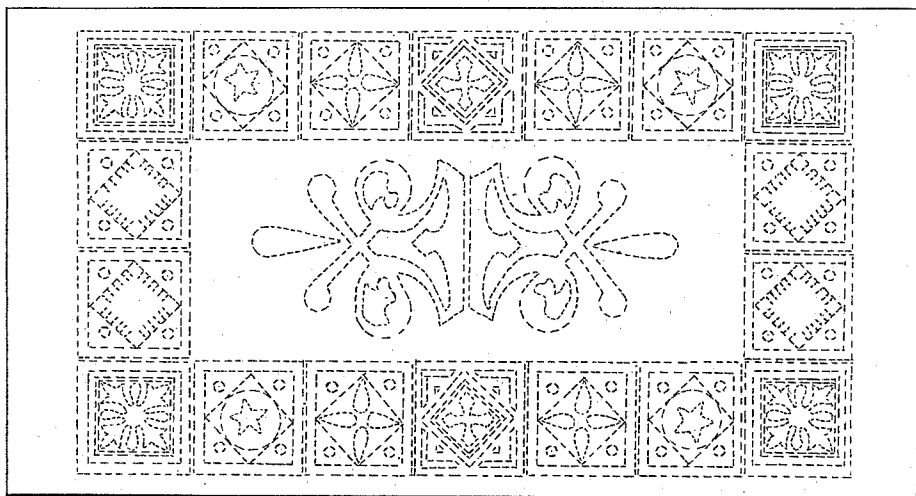
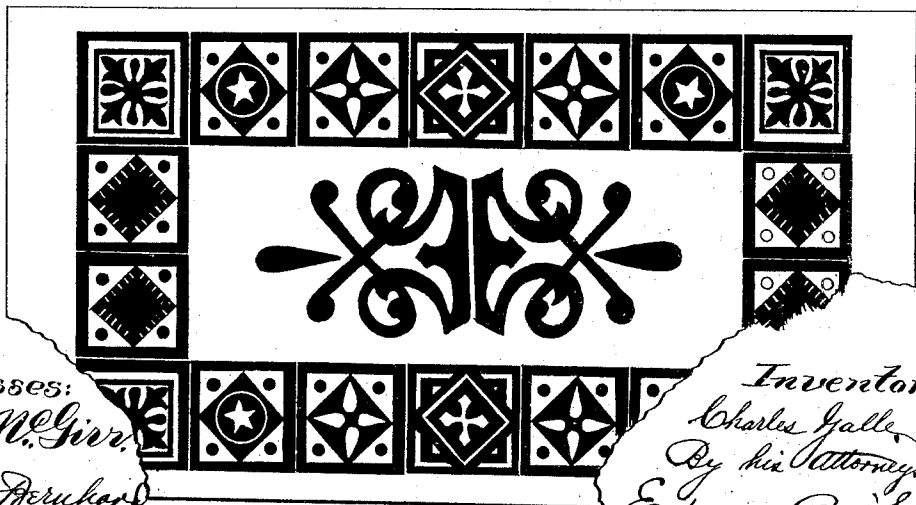


Fig. III.



Witnesses:

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UNITED STATES PATENT OFFICE

CHARLES GALLE, OF ST. LOUIS, MISSOURI.

FLEXIBLE WINDOW PANE OR SIGN.

SPECIFICATION forming part of Letters Patent No. 463,273, dated November 17, 1891.

Application filed June 7, 1890. Serial No. 354,584. (No model.)

To all whom it may concern:

Be it known that I, CHARLES GALLE, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Ornamental Transparent Flexible Window Panes or Signs; and I 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.

The present invention relates to an ornamental window pane or sign; and the object is to provide a flexible and transparent or translucent sheet which has an ornamental surface so treated and prepared as to be unaffected by inclemencies of the weather and insoluble in water.

With this end in view my invention consists in the method of producing an ornamental pane or sign composed of a single thickness or layer of celluloid or pyroxyline material having a suitable design inscribed on its surface by applying, first, an adhesive coating to such surface and then applying to said adhesive coating when it is in a "tacky" condition an opaque pigment or a metallic powder which adheres to such first coating and cannot be effaced by water or the action of the elements. Any suitable opaque pigment or metallic powder may be applied to the adhesive coating on the face of the flexible transparent sheet—as, for instance, aluminum, copper, brass, and other metallic powders; but as the copper or brass powders are liable to corrode when exposed to the weather and be effaced when washed I coat the ornamented surface of the pane or sign with a suitable transparent colorless varnish, which serves to protect the metallic powder, which forms the bright ornamental surface, from the weather. It will be understood, however, that this finish coat of colorless transparent varnish is not indispensable, as it is not necessary to apply the same when a non-corrosive metallic powder, as aluminum powder, is applied to the adhesive coating on the sign.

To enable others to more readily understand my invention, I will now proceed to a detailed description thereof in connection with the accompanying drawings, in which—

Figure I is a view of a blank sheet of cel-

luloid or pyroxyline material from which my improved sign is made. Fig. II is a view showing the first adhesive coating applied to the face of the pane or sign. Fig. III is a view showing the sheet of pyroxyline material after the metallic powder has been applied.

In carrying my invention into practice I first take a sheet, layer, or single thickness of flexible, transparent, or translucent celluloid or pyroxyline material, which may be of any desired color or size, and treat or prepare the same in the manner presently described to impart thereto an ornamental metallic non-corrosive surface or opaque design which appears in metal color on the surface of the sheet or sign.

It is well known that celluloid has a hard-finished and polished surface and is not an absorbent of the oily matter contained in ordinary printing-ink, and consequently such ink would dry very slowly if applied to the surface of the sheet of pyroxyline material and it would not adhere firmly to the celluloid; but, on the contrary, it could be very easily effaced or rubbed off. I therefore resort to the use of a mixture of printing-ink and an artificial quick-drying compound, such as japan or manganese driers, which I have found by practical tests dries very quickly and adheres firmly to the polished non-absorbent sheet of celluloid or pyroxyline material; but I do not strictly confine myself to the use of this mixture as the adhesive coat, because other substances can be used in lieu thereof.

The ornamentation or design is applied to the surface of the sheet or pane by means of an adhesive coating substantially such as described, and by an opaque pigment or metallic powder which is applied to the adhesive coating when it is in a certain condition or state known in the art as "tacky." The ornamentation may be of any preferred style—as, for instance, an ornamental border with an advertisement or design in the space inclosed by the border; but this is optional and may be varied within wide limits, according to the use to which the sign or pane is to be applied, without departing from my invention.

The adhesive coating (of printer's ink and quick-drying compound) is applied to the sur-

face of the sheet of celluloid by a suitable stamp, plate, or the equivalent thereof, or the sheet may be embossed or struck up in relief or intaglio by suitable dies or rolls, and I therefore reserve the right to ornament the sheet of celluloid in any preferred manner within the scope of my invention. When the adhesive coating becomes tacky, or in that condition when it is sufficiently dry, but not completely hard, to cause the opaque pigment or metallic powder to firmly adhere thereto, said pigment or powder is applied to or rubbed into the adhesive coating; but care must be taken that the metallic powder is not applied to the adhesive coating while it is moist, because the powder is then liable to become mixed with the adhesive coating. I have attained the best results by applying or rubbing the metallic powder into the ornamental adhesive coating before the latter has become completely hard and dry and while it is in the tacky condition, which causes the metallic powder to firmly adhere to the surface of the sheet and cannot become effaced therefrom when the pane or sheet is washed and exposed to the weather.

Any suitable metallic powder or opaque pigment can be used—as, for instance, aluminum, copper, or brass powders. Aluminum powder being non-corrosive, the sheet or sign is in condition for use as soon as the ornamental surface is dry; but when copper or brass or other corrosive powder is applied to the adhesive ornamental surface the sign is coated with a light colorless varnish to protect the metallic powders from the action of water and the elements thereon and from being effaced when the surface is washed. I am thus enabled to produce a superior cheap article for use as a window pane or sign in which a bright shining ornamental surface appears in opaque metallic colors on or through a transparent or translucent sheet of celluloid or pyroxyline material.

The ornamental sheet can be used for a variety of purposes, and it is especially well adapted for making ornamental window panes and signs for advertising purposes. As a window-pane it possesses the following advantages: It cannot become broken and is lighter than glass, is easily cut by edge tools to the desired size, and can be bent or curved

to adjust the same to angles and curves. It can be printed on and decorated to any desired degree of ornamentation, and is insoluble in water and not affected by the inclemencies of weather, as hail, frost, &c.

I am aware that changes in the substances mentioned for preparing and treating the sheet of celluloid can be made without departing from the spirit of my invention, some of which I have described, and I therefore reserve the right to make such modifications as fall within the scope of my invention.

I reserve the right to use the sheet prepared as herein specified in connection with mountings on metal or glass or between two transparent sheets or plates and adapted for use as an illuminated sign or for a lantern-glass.

The improved sheet of decorated celluloid may be treated or shaped in any suitable manner to adapt it for service as a shade for electric-light lamps and other illuminated objects where the flame does not come in contact with the shade.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The method of producing an ornamental pane, sign, and similar articles, which consists in applying an outline of the design to a surface of pyroxyline material by a primary coat of adhesive composition, and then while the primary coat is in a tacky or partially-dried condition forcibly applying or rubbing a metallic powder to such primary adhesive surface, thereby polishing the same, substantially as and for the purpose specified.

2. The method of producing an ornamental non-corrosive pane or sign, which consists in first applying the desired design to a layer or sheet of celluloid by a primary coat of quick-drying adhesive composition, then forcibly rubbing or applying an opaque pigment into said primary adhesive coat while the latter is in a tacky condition, and finally coating the sign and its contained design with colorless varnish, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES GALLE.

Witnesses:

EDWIN G. GREENBURY,
JOSEPH ZITKO, Jr.