Nov. 18, 1930. L. F. D'AUTREMONT 1,781,834

STENCIL SHEET

Filed May 6, 1929

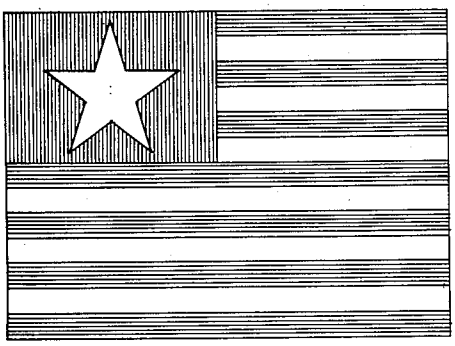


Fig. 2.

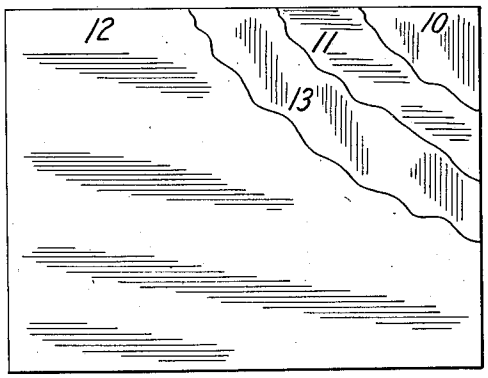


Fig. 1.

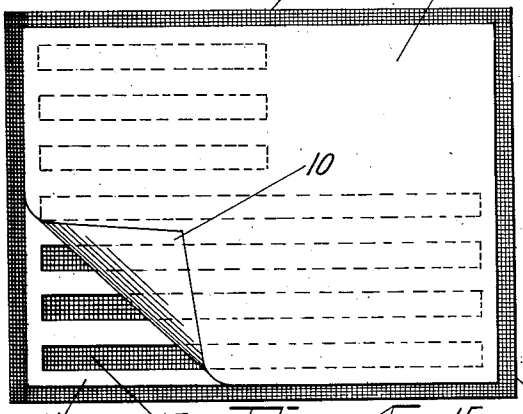


Fig. 4.

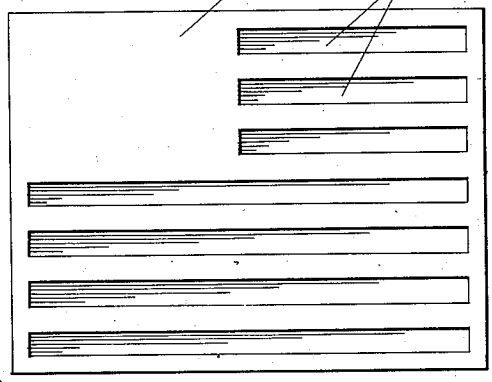


Fig. 3.

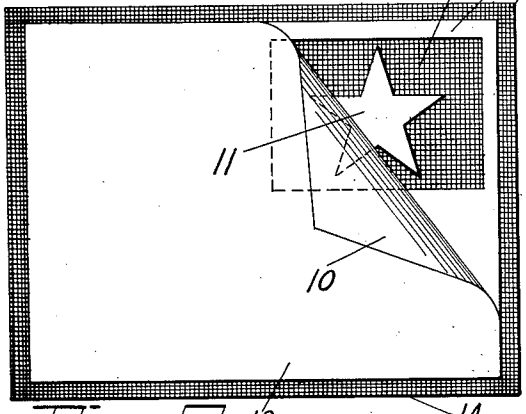


Fig. 6.

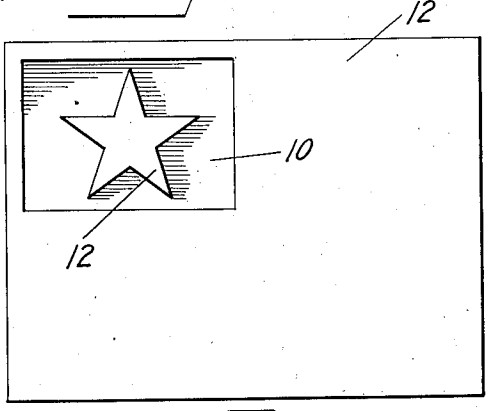


Fig. 5.

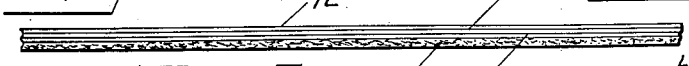


Fig. 7.

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UNITED STATES PATENT OFFICE

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STENCIL SHEET

Application filed May 6, 1929. Serial No. 360,754.

This invention relates to a stencil sheet for use in the reproduction of multi-colored designs.

One object of the invention is to provide such a stencil sheet which will enable multi-colored designs to be quickly and accurately reproduced at a relatively low cost.

A further object of the invention is to provide a stencil sheet of such a character that a film, cut away to correspond to selected portions of the design, may be applied to the screen used in the reproduction of the design.

Other objects of the invention will appear as the stencil sheet is described in detail.

In the accompanying drawings Fig. 1 is a plan view of a stencil sheet with the several layers of the film successively broken away; Fig. 2 represents a design which is to be reproduced; Fig. 3 shows a stencil sheet with the film cut away to correspond to selected portions of the design; Fig. 4 shows a stencil sheet applied to the screen with a backing sheet partially removed; Fig. 5 shows a stencil sheet with the film cut away to correspond to another portion of the design; Fig. 6 shows the stencil sheet of Fig. 5 applied to the screen with the backing sheet partly removed; and Fig. 7 is a transverse sectional view of the stencial sheet on an exaggerated scale.

In these drawings I have illustrated one form of stencil sheet embodying my invention together with several steps of the method of using that stencil sheet in the reproduction of designs but it will be understood that this embodiment of the invention has been chosen for the purpose of illustration only and that the stencil sheet may take various forms without departing from the spirit of the invention.

The stencil sheet comprises a backing sheet of transparent material having superimposed thereon a film, which is also transparent. The backing sheet and the film must be of such a character that when superimposed upon the design which is to be reproduced the colors and outline of the design will be visible through the stencil sheet but it is not necessary that either the backing sheet or the film should be perfectly transparent, and the word "transparent" as herein used is intended to include any materials or substances through which the outline and colors of the screen may be seen and traced. I prefer that the backing sheet, which is shown at 10, shall be formed from wax paper. The film may be of any suitable material and may be caused to adhere to the screen, which is used in the reproduction of the design, in any suitable manner but I prefer that the film shall be provided with an outer surface which is normally dry but which can be treated to cause it to adhere to the screen. Preferably the film is applied to the backing sheet in liquid or semi-liquid form and in the present instance the body of the film consists of a layer of shellac, as shown at 11, one or more coats being applied to the backing sheet according to the thickness of the film required for the particular reproduction which is to be made. If desired, the shellac may have mixed therewith a substance which will render the same more flexible when dry. For this purpose I may use a small quantity of castor oil, or glycerine, say one-half ounce to the gallon of shellac. Superimposed upon the shellac is a layer of an adhesive substance 12, such as lacquer or glue, which, when dry, will provide the film with a hard smooth outer surface but which may be treated to render it adhesive, as by moistening the same with a suitable liquid. In the present instance I employ lacquer for this purpose and moisten the same with a lacquer thinner. When lacquer is used as the adhesive it is preferable to interpose between the same and the shellac a layer of an impervious substance, as shown at 13, such as glue or a rubber composition, which will prevent the lacquer from penetrating the shellac. The body of the film thus produced will adhere firmly to the backing sheet but may be easily removed therefrom.

In using the stencil sheet in the reproduction of a design it is superimposed over the design and secured in fixed relation thereto with the film uppermost. Those portions of the film which lie above and correspond to those portions of the design which are of one color are then cut away, by means of a knife or stylus, and removed from the backing

sheet. The backing sheet is not cut through but remains integral and thus forms a continuous support for those parts of the film which are not removed and maintains the same in their proper relative positions. In Fig. 2 of the drawing I have illustrated a simple design, in the nature of a flag, which is to be reproduced and in Fig. 3 I have shown the stencil sheet with the film cut away to correspond to one set of stripes on the flag, all of which are of one color.

The stencil sheet with the film thus cut away to provide the same with openings corresponding to the selected portions of the design is then placed upon the screen which is used in the reproduction of the design. This screen ordinarily comprises a rectangular frame 14 over which is stretched a sheet of fine mesh fabric, preferably of silk, as shown at 15. The stencil sheet is placed upon the fabric of the screen with the film in contact therewith and the outer surface of the film is caused to adhere to the fabric of the screen. With the present stencil sheet the adhesive outer surface of the film is moistened, either before or after it is placed in contact with the screen, and then pressed in firm contact with the screen, as by the use of a plush roller, to insure a perfect contact throughout the area of the film. After the screen and film have stood for a time sufficient to permit the adhesive to harden the backing sheet 10 is peeled off, in the manner shown in Fig. 4, thus leaving the film upon the screen. The screen is then placed over the sheet on which the reproduction is to be made and the color applied to the sheet through the openings in the film on the screen, as by means of a squeegee. It will be obvious that the film will prevent the color from coming in contact with any part of the sheet other than those portions which are in line with the openings in the film and in this manner the sheet is provided with the first color of the design. After this first color has been applied to a number of sheets corresponding to the number of reproductions it is desired to make, the screen is cleaned by washing the same with a solvent which will soften the film and permit the same to be removed.

A second stencil sheet is then superimposed upon the design and the film cut away to provide openings therethrough corresponding to those parts of the design which are of a second color. In Fig. 5 I have shown the film cut to correspond to the field of the flag and it will be noted that the film is cut away on all sides of the star which is arranged in that field but the film corresponding to the star adheres firmly to the backing sheet and is thus held in its proper position with relation to the other parts of the film. This second stencil sheet is then applied to the screen in the same manner that the first stencil sheet was applied thereto, in exactly the same position occupied by the first stencil sheet. After the film has been caused to adhere to the screen the backing sheet is removed and the screen is then superimposed over the sheet on which the first color has been reproduced, care being taken to see that the screen occupies exactly the same position that it occupied in the first instance so that the openings in the film through which the second color is to be applied will be in proper relation to those portions of the sheet to which the first color has been applied. After the second color has been applied to all the sheets the screen may be again cleaned and the operation repeated as often as is necessary to provide the reproductions with all the colors of the design. It will be obvious, of course, that instead of using a single screen and cleaning the same after the application of each color a plurality of separate screens may be employed.

While I have shown and described a stencil sheet of the preferred construction it will be understood that I do not wish to be limited to the details thereof as various modifications may occur to a person skilled in the art.

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

1. A stencil sheet for reproducing multicolored designs comprising a transparent backing sheet and a transparent film carried by but removable from said backing sheet, whereby portions of the film corresponding to selected portions of the design may be cut away and removed from the backing sheet.

2. A stencil sheet for reproducing multicolored designs comprising a transparent backing sheet and a transparent film carried by but removable from said backing sheet and having an adhesive outer surface.

3. A stencil sheet for reproducing multicolored designs comprising a transparent backing sheet and a transparent film carried by but removable from said backing sheet and having a normally dry outer surface which may be rendered adhesive by moistening the same.

4. A stencil sheet for reproducing multicolored designs comprising a transparent backing sheet and a layer of shellac on one face of said backing sheet, the outer face of said shellac being coated with a substance by means of which it may be caused to adhere to a screen.

5. A stencil sheet for reproducing multicolored designs comprising a transparent backing sheet, a film carried by but removable from said backing sheet and comprising shellac mixed with a relatively small quantity of castor oil, and a coating of a substance by means of which said film may be caused to adhere to a screen.

6. A stencil sheet for reproducing multicolored designs comprising a transparent backing sheet, a layer of shellac on one face

of said backing sheet, a layer of lacquer on the outer face of said shellac, and a layer of an impervious substance between said lacquer and said shellac.

In testimony whereof, I affix my signature hereto.

LOUIS F. D'AUTREMONT.