

Oct. 14, 1930.

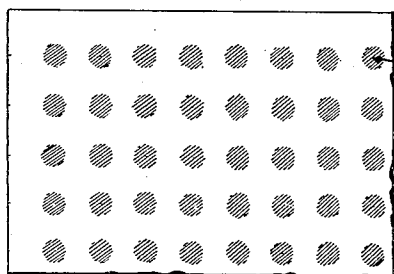
C. MAIER ET AL

1,778,397

METHOD OF PRODUCING DESIGNS AND ARTICLE FOR USE THEREIN

Filed Aug. 18, 1928

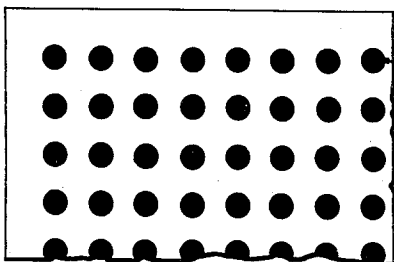
Fig. 1



LEAD SULPHATE

+

Fig. 2



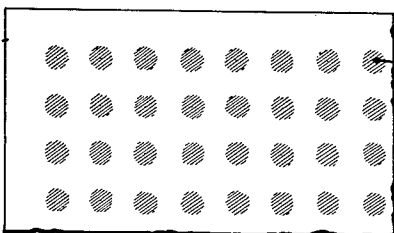
A SOLUBLE SULPHIDE

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LEAD SULPHIDE

+

Fig. 3



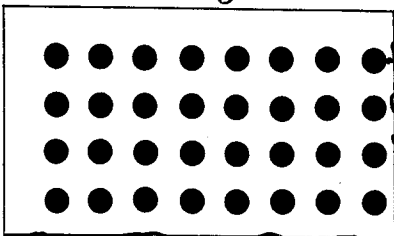
HYDROGEN PEROXIDE

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LEAD SULPHATE

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Fig. 4



A SOLUBLE SULPHIDE

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LEAD SULPHIDE

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METHOD OF PRODUCING DESIGNS AND ARTICLE FOR USE THEREIN

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The present invention relates, as indicated, to a method of producing designs and article for use therein. More particularly the invention relates to a method of forming designs on paper, cloth, or other surfaces by means of treating, with a reagent, chemicals on such surfaces to change the color of such chemicals whereby the same are rendered visible on the surface.

10 The primary object of the invention is to provide a novel means of producing designs which shall have the appearance of half-tones and which shall be adapted to be photographed; and a method whereby such designs may be removed from the surface and replaced by the same or other designs in substantially the same manner. A further object of the invention is to provide an article the surface of which is adapted to take a part in the method above described. Further objects of the invention will appear as the description proceeds.

Fig. 1 is a plan view taken from above of a sheet of paper impregnated with dots of lead sulphate; Fig. 2 is a view similar to Fig. 1 showing the reaction of a sulphide upon the dots of Fig. 1; Fig. 3 is a view similar to the preceding figures showing the reaction of hydrogen peroxide upon the dots of Fig. 2; and Fig. 4 is another view showing the reaction of said dots when treated with the sulphide.

While it is to be understood that the method of our invention may be used on practically any substantially white surface, the same will be described with respect to white paper. We prefer a sheet of paper for the carrying out of said method in the following manner. A sheet or roll of paper is inserted in any well known type of printing press and a multiplicity of closely spaced tiny dots are printed on the paper with an ink including a solid either in suspension or in solution, such solid being invisible on the surface of the paper. A suitable ink for this purpose may be compounded of glycerine and lead acetate, thickened with lead carbonate to the desired consistency for printing. If the ink thus described is used, the print is allowed to dry and is thereafter brushed with art gum or

some other suitable substance to remove the excess lead carbonate on the surface and to leave a smooth drawing surface.

Thereafter the print carrying the multiplicity of dots of lead acetate is washed with a sulphuric acid solution. Preferably, such solution is of the strength of approximately two parts of 98% of sulphuric acid and 23 parts of water. This operation causes the sulphuric acid to react with the lead acetate to form insoluble lead sulphate. Of course it is to be understood that the lead sulphate takes the place of the lead acetate both figuratively and literally, whereafter, as will be obvious, the paper or other surface is impregnated with a multiplicity of tiny spots of lead sulphate.

The tiny spots of white lead sulphate will, as will be obvious, be substantially if not entirely invisible upon the white surface of the paper. The paper is now washed with water to prevent smearing of the print, and after the print is dried the same is ready for use by an artist or draftsman.

The artist or draftsman may, of course, use either a pen or a brush in forming his design on the surface. Instead, however, of using ink or paint, the artist uses a solution of any suitable soluble sulphide which will react with the lead sulphate to form black lead sulphide. As the artist carefully works upon the surface of the paper, it will be seen that he will individually treat individual spots of lead sulphate with the sulphide solution, thus individually transforming the lead sulphate of individual spots to lead sulphide.

In case the artist or draftsman makes a mistake and draws or paints a line where no line is desired, he may dip a second brush or pen into a solution of hydrogen peroxide and draw or paint with such solution over such spots of lead sulphide as he does not wish to be visible. The hydrogen peroxide will react with the lead sulphide of such spots to transform the lead sulphide thereof to white lead sulphate, thus removing from the surface, so far as visibility is concerned, the undesired line or lines.

After the design has been completed and has been photographed for reproduction, the

print may be dipped in or washed with a solution of hydrogen peroxide, whereby all of the spots of lead sulphide will be changed again to lead sulphate, and after the sheet has been dried the same is ready again to be treated by the artist or draftsman for the production of a new design.

If a yellow print rather than a black one is desired, a solution of a chromate salt is used in place of the sulphide solution, and treatment of the lead sulphate spots with such salt solution will cause a change thereof to yellow lead chromate. In case a blank print of a lighter shade than that produced by lead sulphide is desired, the blank sheet may be impregnated with a multiplicity of spots by printing with a mixture of glycerine and tannic acid instead of with the ink above described. In case this tannic acid ink is used, the artist works with a solution of a ferric salt to develop the print or design, and such design may be eradicated by washing or treating with oxalic acid.

One of the major advantages of the present invention lies in the fact that the prepared sheets may be used over and over again without materially damaging the surface thereof and without a material amount of labor. The labor involved in erasing even a pencil drawing of any appreciable size is too great to permit the reuse of even rather valuable sheets of paper or cloth or other drawing material. The sheets of the present invention, on the other hand, may be reprepared for use merely by dipping the same in the eradicator solution and permitting them to dry.

Other forms may be employed embodying the features of our invention instead of the one here explained, change being made in the form or construction, provided the elements stated by any of the following claims or the equivalent of such stated elements be employed, whether produced by our preferred method or by others embodying steps equivalent to those stated in the following claim.

We therefore particularly point out and distinctly claim as our invention:

In a method of forming a visible design on white paper, the steps which consist in impregnating a surface of such paper with a multiplicity of tiny spots of lead sulphate, individually treating certain of said spots with a solution of a soluble sulphide whereby the lead sulphate comprising such treated spots is changed to lead sulphide, individually treating certain of said lead sulphide spots with hydrogen peroxide to change the lead sulphide to lead sulphate, and individually treating certain of said last-mentioned spots with such sulphide solution whereby the lead sulphate thereof is again changed to lead sulphide.

Signed by us this 15th day of August, 1928.

CARL MAIER.

WM. SWAYSLAND.