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PROCESS FOR PRINTING INSCRIPTIONS AND DRAWINGS INTENDED TO BE PLACED UPON WOOD, FABRICS, AND OTHER ABSORBENT MATERIALS

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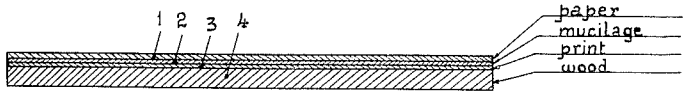

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PROCESS FOR PRINTING INSCRIPTIONS AND DRAWINGS INTENDED TO BE PLACED UPON WOOD, FABRICS, AND OTHER ABSORBENT MATERIALS

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The present invention has for its object a process for printing, by means of lithographic or typographic machines, inscriptions or drawings in one or several indelible colors capable of being transferred upon wood, fabric or any other absorbent material, the said transfer being effected by a simple superposition of the printing to be transferred upon the surface intended to receive it in a hot and moist condition.

The present process is characterized substantially by:

1. A preparation of the paper intended to prevent this latter absorbing the inks or colors which are applied thereto and to permit the transfer therefrom on to surfaces of wood, fabric or other materials:

2. A preparation of the printing inks or colors to render the employment of them possible in ordinary lithographic and typographic machines and to retain them in such a condition that they can be transferred at the desired time, by pressure and heating and moistening, upon surfaces of wood, fabric and the like.

3. A treatment of the sheets which have just been printed to enable them to be immediately stacked and to render them suitable to retain unaltered their property of transferring even after long periods of time, for example after many years.

The preparation of the paper referred to in paragraph 1 consists substantially in coating it with a special mucilage which is obtained, according to the invention, in the following manner:

(*a*) There is placed in 18 litres of boiling water firstly about 12 kilos of dextrine of white maize and then about 2 kilos of powdered rice starch and the whole is allowed to boil during about 5 minutes. As soon as the mixture is taken from the fire it is sieved to remove from it any lumps which it may contain.

(*b*) There is placed in two litres of cold water about 400 grammes of carbonate of sodium and 400 grammes of very pure French colophony in powder and the whole is boiled and is continually mixed, until the colophony is completely liquefied. Finally the whole is poured into the composition indicated in paragraph (*a*).

(*c*) There is placed in a litre of water about 200 grammes of albumen of eggs a few hours before effecting the other operations, so that the albumen may be entirely liquefied by the time when it should be used. This solution is poured into the composition indicated in paragraph (*a*) immediately after having poured therein the preparation indicated in paragraph (*b*).

(*d*) At the same time as the preparation (*c*) there is poured into the composition indicated in paragraph (*a*) about 200 grammes of flowers of sulphur and 400 grammes of gum arabic and finally 2 kilos of pale glycerine at 28° Beaumé.

The mucilage thus obtained is sieved, conveniently three times, in order to obtain from it a perfect liquid. Finally the printing paper is coated with it, either by hand or by means of a machine.

Packing paper will be employed with advantage, having a weight of about 60 grammes per sheet measuring 75 c. m. by 100 c. m., having a base of cellulose and perfectly smooth and this smooth surface is coated.

The printing inks or colors referred to in paragraph 2, are prepared in the following manner:

There is placed in a container about 5 litres of French spirit of turpentine, one kilo and a half about of very pure beeswax, 250 grammes of stearine (or preferably paraffine) and 2 kilos of powdered French colophony; the whole is heated in a water bath until all the substances are completely dissolved. Finally the composition is passed through a sieve.

The preparation thus obtained ought to be mixed with printing inks or colors in the proportion of about 300 grammes for each kilo of ink or colors; the inks ought to be of the best quality and the printing should be fat.

Referring to paragraph 3, when the inscriptions and drawings have been printed, the sheets are immediately dusted with very pure French colophony reduced to a very fine powder; this operation may be effected either by hand or mechanically.

The invention therefore comprises the following three preparatory processes:

The paper to be printed is coated with a special mucilage to prevent the penetration of the color or of the ink and to render the transfer possible upon surfaces of wood or fabric, there is added a chemical composition to the inks or color in order to retain them active and to give to them the properties necessary for the transfer and finally the sheets which have just been printed are dusted with powdered colophony, to enable them to be stacked immediately, notwithstanding the fat printing, in order to maintain the colors fresh and to permit the transfer of them even after several years.

The transfer is based upon the absorption of the surfaces to be covered, which ought therefore to possess suitable absorbent properties, for example to be constituted of wood or fabric. The transfer is made by placing the sheet of paper printed upon the surface in question, by covering the sheet with a moist cloth or moistening the sheet, and finally by exerting upon the same pressure accompanied by heating.

In the case of fine fabric, such as silk, white cloth and the like, the pressure of a smoothing iron during three or four seconds will be sufficient, whilst for all other materials such as wood, packing cloth and the like, it will be necessary to employ mechanical pressure which should however always have a duration of three to four seconds.

The accompanying drawing shows, without limiting the invention, a transfer according to this application applied on a wooden board on which it is desired to transfer the inscription or drawing, the view being a conventional, exaggerated cross-sectional showing.

Referring to the figure, 1 is a supporting paper sheet, 2 the layer of mucilage, 3 is the impression carried by the sheet 1, and 4 is the wooden board on which it is desired to transfer the impression 3. As shown on the drawing, the sheet is placed on the board with the impression 3 turned toward the board surface, and a pressure is then exerted on the sheet 1 by means of rolls, pressure plate or other suitable means. In order to facilitate transferring the impression, the transfer is first moistened and the pressure roll or plate is heated by known means.

What I claim is:

1. The method of printing on absorbent materials, which comprises coating a sheet with mucilage composed of dextrine of white maize, rice starch carbonate of sodium, colophony, albumen, flowers of sulphur, gum arabic and pale glycerine, printing a design or inscription onto the coated sheet with printer's ink or colors mixed with spirit of turpentine, beeswax, paraffine and powdered colophony, and offsetting the design or inscription from the sheet onto wood, fabric or other absorbent materials by pressure and heat.

2. In the method of printing, on absorbent materials as claimed in claim 1 the step which comprises coating a sheet with mucilage consisting of about 12 kilos of dextrine of white maize, 2 kilos of powdered rice starch boiled in 18 kilos of water for about 5 minutes, adding to the above 400 grammes of carbonate of sodium and 400 grammes of pure powdered French colophony placed in 2 liters of cold water stirred and boiled until the colophony is completely liquefied, adding to the above mixture simultaneously a solution containing 200 grammes of egg albumen completely liquefied in a litre of water and a mixture of about 200 grammes of flowers of sulphur, 400 grammes of gum arabic, 2 kilos of pale glycerine distilled at 28° Beaumé and straining the above.

3. In the method of printing on absorbent material as claimed in claim 1, in which the mixture added to ordinary printer's ink or colors is composed of about 5 liters of spirit of turpentine, one and one-half kilos of beeswax, 250 grammes of stearine and about 2 kilogrammes of powdered French colophony heated in a water bath until all the substances are completely dissolved.

In testimony that I claim the foregoing as my invention, I have signed my name.

GAETANO MUZZIOLI.