July 23, 1935. W. S. LAWRENCE ET AL 2,008,763

TRANSFER

Filed March 19, 1932

Fig. 1.

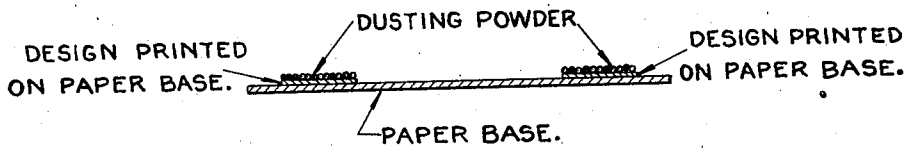
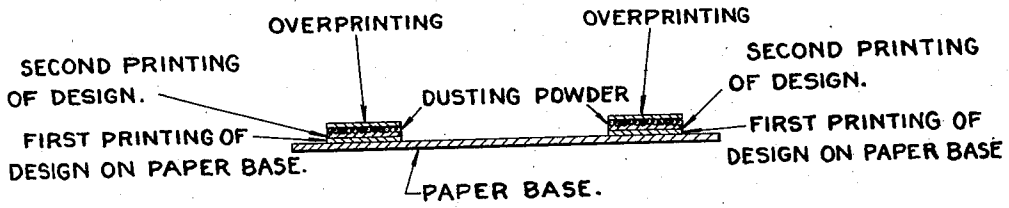


Fig. 2.



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TRANSFER

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Application March 19, 1932, Serial No. 600,066

6 Claims. (Cl. 41—33)

Our invention relates to a new and improved transfer.

One of the objects of our invention is to provide certain improvements in and to applications Serial No. 548,029 filed on June 30th, 1931 and Serial No. 568,531 filed on October 12th, 1931. The latter application has matured into Patent No. 1,968,083, issued July 31, 1934.

Another object of our invention is to provide a transfer by means of which intricate and detailed designs of great beauty can be easily and reliably impressed upon leather.

Another object of our invention is to provide an improved transfer comprising a base made of paper and other suitable material, on which the marking is impressed, by means of the fusible marking composition or medium, so that the marking can be transferred from the paper base to the leather by means of heat and pressure and without the necessity of moistening the paper base.

Another object of our invention is to provide a simple and efficient substitute for decalcomania in that the use of moisture is rendered unnecessary.

Another object of our invention is to provide a transfer in which the marking composition is impressed upon the paper base by means of surface printing or relief printing, as distinguished from the usual intaglio method which has heretofore been used. We prefer to impress the marking composition upon the paper base of the transfer, by means of an offset lithographic press. However, the marking composition can be impressed upon the paper base by any suitable printing method such as gravure or intaglio printing.

Other objects of our invention will be set forth in the following description and drawing which illustrates preferred embodiments thereof, it being understood that the above general statement of the objects of our invention is intended merely to generally explain the same and not to limit it in any manner. Figs. 1 and 2 are diagrammatic sectional views which illustrate different embodiments of the invention.

While we do not wish to limit ourselves to the specific methods or to the specific materials or proportions specified herein, certain practical examples of our improved method and of the improved transfer are set forth as follows:—

The design may be first printed upon the paper base of the transfer, by means of a colorless or substantially colorless marking composition or size.

Said marking composition or size may be applied by means of an offset lithographic press.

Said marking composition may comprise

	Parts
Gum dammar	70
Castor oil	20
Ordinary commercial kerosene	40
Boiled linseed oil	20

It is to be understood that these proportions are by weight. The gum dammar represents a fusible material which becomes viscous and tacky when it is heated, without melting, over a substantial temperature range. Instead of using ordinary castor oil, we may use a blown castor oil which is of great viscosity. The viscosity of the blown castor oil is about the same as that of a thick molasses at an ordinary room temperature—70° F.

Instead of printing by means of a substantially colorless marking composition of the kind above specified, we may add a metallic pigment to said marking composition. Said metallic pigment may consist of extremely fine bronze powder of the kind known as "lining bronze". This lining bronze is extremely fine and it has the same fineness as the bronze used for inks. Instead of using a bronze powder of natural color, we may use a dyed bronze powder. Of course we can also use fine aluminum powder in different colors, either natural or dyed. If a bronze powder or other metallic pigment is added, as much of the bronze powder is incorporated into the marking composition having the formula above specified as is possible. That is, the marking composition should be as thick as is possible for use in a printing press or lithographic press.

It is to be understood that we can use an ordinary printing press instead of a lithographic press, if desired, and that we can likewise use engraved plates, etc. Ordinarily, about forty to fifty per cent of bronze powder would be added to the substantially colorless marking composition having the formula above mentioned.

After the marking has been impressed upon the transfer base, either with the substantially colorless marking composition, or with the marking composition containing the metallic pigment, we prefer to dust the marking before it has dried.

For this purpose a suitable amount of fine bronze powder or other metallic powder is strewn upon the marked side of the transfer base, and the bronze powder is then spread over the face of the marking by means of a suitable soft brush. This causes the fine bronze powder to cling to the

moist marking and to form an extremely fine but uniform surface layer upon the surface of the marking. Since the marking is adherent, the metallic particles can be applied directly thereto, and without intermixing said metallic or pigment particles with a lacquer vehicle, which coats the particles and which acts as a binder.

The marking is then allowed to dry at ordinary room temperature by evaporation of the kerosene until it is sufficiently dried or set to enable the transfers to be stored and shipped in the form of flat sheets. Of course the transfer may be printed by means of a rotary press. The embodiment previously described is shown in Fig. 1.

The composition will transfer at about 190° F. In order to prepare the improved printing composition, the gum dammar is melted, the castor oil and the boiled linseed oil are thoroughly intermixed with the melted gum dammar, and the mixture is then allowed to cool somewhat below the boiling point of the kerosene. The kerosene is now added to the mixture which has been sufficiently cooled in order to form a viscous printing composition. If the metallic pigment is to form part of the composition, said metallic pigment is stirred in until the composition is as thick as is capable of use in the printing press or rotary press.

The use of a metallic pigment is much superior to the use of a non-metallic pigment for many purposes. It is to be understood that the paper base of the transfer is made from a relatively impervious paper.

Another method, which is represented in Fig. 2, is as follows:—

The marking is first impressed upon the paper base by means of a substantially colorless composition, according to the formula specified. This impression is then allowed to dry at ordinary room temperature by evaporation of the kerosene. The sheet of dried paper is then again passed through the press, and a second impression is printed over and in registration with the first impression. This second impression is made by means of a non-fusible gloss varnish which consists essentially of a drying oil, such as linseed oil. This drying oil may have a small amount of resin therein, the proportion of resin being too small to make the second composition fusible for practical purposes.

The dusting of the bronze powder is then performed in the manner previously indicated, before the second printing (with the drying oil) has been allowed to dry. The marking with the dusted and adhering metallic particles is then again overprinted with a fusible ink containing metallic particles. The fusible ink containing the metallic particles may be made according to the formula previously specified.

Hence, the marking which has been printed upon the paper base consists in effect of four layers. The first layer which is directly printed upon the paper base comprises a fusible and substantially colorless marking composition. The second layer consists of the gloss varnish which is infusible and which is substantially colorless. The third layer consists of the particles of metallic powder, which adhere to the second layer. The fourth and top layer has the same formula as the bottom layer, save that the fourth or top layer contains a large amount of metallic powder therein.

However it is preferable to apply the pigment directly to the printed impression which has been made with the use of the gum dammar printing composition because the self-adherence of the moist impression connects the particles of pigment to said impression without the use of any adhesive or binding material.

We do not wish to exclude from the scope of this invention, the use of pigments which are non-metallic. One of the essential and pioneer features of this invention is that a moist marking is dusted with a non-fusible pigment or metallic powder, so that it is not necessary to subject the transfer to a fusing operation, subsequent to the dusting operation.

It will be noted that in all the embodiments of our invention, the transfer has a marking made by means of a fusible composition, and that this marking is associated with a surface layer of non-fusible metallic pigment material. Even if the gloss varnish is used, this is printed quite thin so that it may be considered that the gloss varnish merely acts as a binder to hold the metallic particles associated with the surface of the fusible marking.

Whenever we have referred to dusting with bronze powder or the like, it is to be understood that we could apply gold leaf or other metallic leaf (either natural or artificial) instead of the powder.

Hence, whenever we refer (in the claims) to finely divided particles of non-fusible pigment material, we intend to cover the use of gold leaf, silver leaf, or the like.

If gold leaf is applied to the surface of the fusible marking, it may be desirable to overprint the exposed face of the gold leaf with a suitable fusible size or printing composition (according to the formula above specified) in order to enable the entire transfer marking to adhere to the leather.

Of course it is understood that this invention is particularly directed to decorating leather, although it is also useful in connection with a great many other purposes, and it is not to be limited for use on leather.

The invention is particularly useful in decorating fabrics or materials having coatings of pyroxylin lacquer, which are relatively impervious.

We have shown a preferred embodiment of our invention, but it is clear that numerous changes and omissions could be made without departing from its spirit.

We claim:

1. In the art of making a transfer, those steps which consist in impressing a marking upon a paper base by means of a marking composition having a fusible base in which a non-fusible pigment material is incorporated, while said base is unfused and moist and then applying to said marking a finely divided and non-fusible pigment material before said marking has dried, and then permitting the marking to dry.

2. A method of forming a transfer which consists in printing upon a paper base by means of a marking composition having a fusible base which is substantially free from infusible pigment, while said base is unfused and moist, overprinting said marking by means of a substantially non-fusible marking material, applying finely divided and non-fusible pigment material to the last mentioned marking material before the same has dried, and then overprinting by means of an unfused but fusible marking composition containing non-fusible pigment material.

3. A transfer comprising a paper base having

a marking having a fusible base impressed thereon, said marking having a non-fusible surface layer, said surface layer having a non-fusible pigment material upon the surface thereof, said surface layer having a top layer of fusible material containing non-fusible pigment material, said marking and said layers being releasable by the use of dry heat and pressure.

4. A transfer comprising a paper base having an imprinted marking of fusible material on a part thereof, said marking being releasable from said paper base by the use of dry heat and pressure, said coating having a sharply defined layer composed of particles of pigment, said particles of pigment being connected to said coating solely by the self-adherence thereof, said particles of pigment being free from infusible and non-metallic binding material, said fusible material having a major proportion of gum dammar.

5. In the art of making a transfer, those steps which consist in impressing a marking having a fusible base, upon a paper body, and while said marking is unfused and moist and adherent, said marking then containing a solvent and then applying non-fusible pigment material in free powder form to the surface of the marking before said marking has dried, and then permitting said solvent to evaporate.

6. In the art of making a transfer, those steps which consist in impressing a marking having a fusible base, upon a paper body, and while said marking is unfused and moist and adherent, said marking then containing a solvent and then applying non-fusible pigment material in free powder form to the surface of the marking before said marking has dried, and then permitting said solvent to evaporate, said pigment material being a fine metallic powder.

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