

May 17, 1932.

W. S. LAWRENCE

1,858,673

TRANSFER

Filed May 3, 1929

Fig:1.

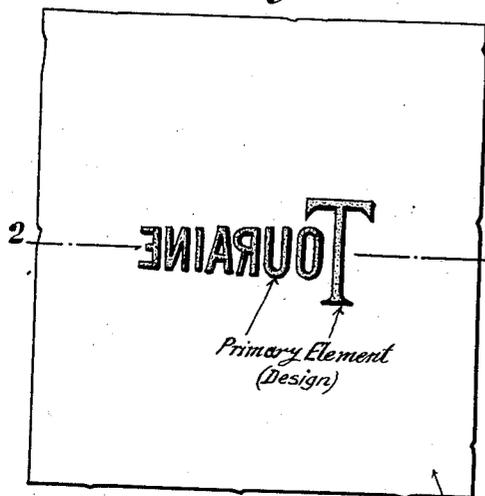


Fig:3.

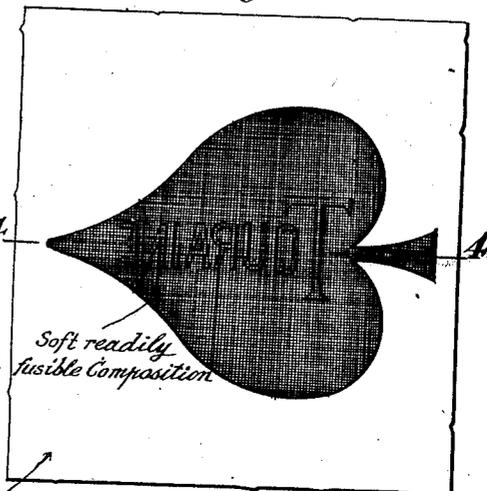


Fig:2.

ordinary paper

Fig. 4.

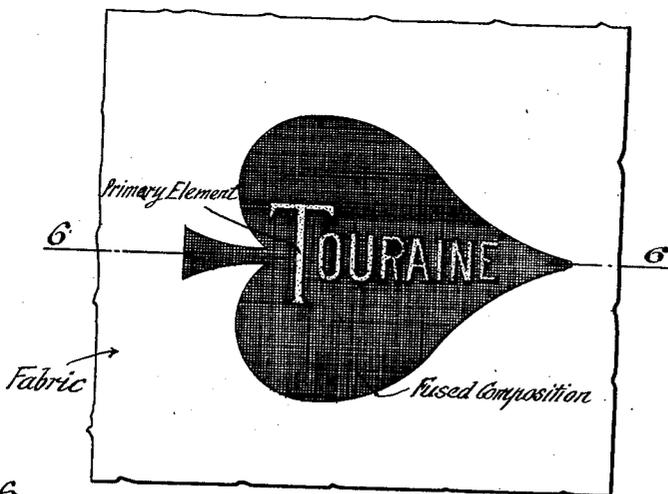


Fig. 6.

Iron

Fabric

INVENTOR

Winthrop Stanley Lawrence

BY Mock & Blum

ATTORNEYS.

UNITED STATES PATENT OFFICE

WINTHROP STANLEY LAWRENCE, OF BROOKLYN, NEW YORK, ASSIGNOR TO KAUMAGRAPH COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK

TRANSFER

Application filed May 3, 1929. Serial No. 360,305.

My invention relates to a new and improved transfer.

One of the objects of my invention is to provide a new and improved multi-colored transfer, and in particular a new and improved two color transfer.

Another object of my invention is to provide a heat transfer which shall make a very clear and distinct impression so that it can be used to mark fabrics having a complicated and confusing pattern.

Other objects of my invention will be set forth in the following description and drawings, it being understood that the above general statement of the objects of my invention is intended to generally explain the same and not to limit it in any manner.

Fig. 1 is an elevation showing how the primary element on the transfer is applied to the paper base.

Fig. 2 is a sectional view on the line 2—2 of Fig. 1.

Fig. 3 is an elevation showing how the primary element is overprinted with a background.

Fig. 4 is a sectional view on the line 4—4 of Fig. 3.

Fig. 5 shows how the transfer marking is applied to a fabric.

Fig. 6 is a sectional view on the line 6—6 of Fig. 5, the pressing iron being also diagrammatically shown.

In the drawings, the respective parts are indicated by suitable legends.

It has heretofore been a serious problem to produce transfers which could make a clear impression upon materials woven with complicated patterns. It has been proposed to make a transfer which shall produce an embossed impression or to increase the size of the transfer. It is not always possible to use a transfer of the embossing type, and it is usually undesirable to make the transfer too large. It has been proposed to make two color transfers for this purpose, but it was

found that the lettering or pictorial elements of the design or the like, would run into the background.

In order to provide a satisfactory two color transfer, I have found it necessary to use a tough plastic slow-fusing composition for making the impression of the trade mark or design, which constitutes what may be called the "primary element" of the transfer. I have also found it necessary to combine this type of composition for the "primary element" of the transfer with a soft waxy quickly melting marking composition for making the background.

I prefer to print a mixture of rosin and wax, combined with suitable coloring ingredients, for forming the readily fusible background. Any suitable quickly-fusing composition may be utilized for this purpose, such compositions being well known in the art per se.

The "primary element" of the two color transfer is preferably made from an ethylated cellulose product sold in the trade as "A. T." cellulose. This is a fine powder consisting of intermixed brownish and whitish particles. This ethylated product can be readily distinguished from cellulose nitrate, because cellulose nitrate is sold in the form of filaments. The ethylated cellulose differs from cellulose acetate because the ethylated cellulose particles are harder and form less of a pulpy mass. Likewise, the ethylated cellulose can be dissolved in numerous solvents in which neither cellulose acetate nor cellulose nitrate are soluble, such as xylol and other benzyl derivatives, such as toluol, for example. As an equivalent for the ethylated cellulose for this purpose, I can use a product sold under the trade name of benzyl cellulose which has substantially the same physical and chemical properties as the ethylated cellulose, save that the benzyl cellulose powder consists of relatively large coarse particles intermixed with finer particles. The ethylated cellulose

and the benzyl cellulose begin to soften at about 150° C., but they then begin to decompose so that it is not possible to liquefy these products without decomposing them. However, these substances can be heated to all ordinary temperature without decomposing, and without melting.

In order to produce a slow-melting composition with the use of these cellulose products, the said cellulose products can be combined in varying proportions with fusible substances, such as resins. Likewise, these cellulose derivatives are soluble in a great many solvents having high boiling points, such as the substance sold under the trade name of "Lindol", and other plastercizers. "Lindol" consists essentially of tri-cresyl phosphate.

Hence, it is not necessary to mix or combine the ethylated cellulose or the benzyl cellulose with a resin. By intermixing these preferred cellulose derivatives with a sufficiently large proportion of a suitable plastercizer, such as lindol for example, and with a sufficient quantity of relatively volatile solvent, a flexible marking transfer composition can be secured.

However, in order to secure an impression of relatively low penetrating power, I prefer to use the following:—

100 parts of ethylcellulose.
90 parts of high melting cumar.
45 parts of butyl carbitol.
75 parts of ethyl abietate (or lindol).
35 parts of No. 6 Lithographic varnish.
Likewise, a quick-fusing composition for the background can consists of the following:

100 parts of rosin.
25 parts of beeswax.
30 parts of ultramarine blue.

The trade name "Cumar" refers to paracoumarone resin. The trade name "Butyl-carbitol" refers to the mono-ethyl-ether of diethylene glycol. The trade name "Lindol" refers to tricresyl phosphate.

In order to make the improved two color transfer, an ordinary paper base is first printed with the "primary element" or design, by means of the ordinary intaglio method, such as the use of the ordinary intaglio roller engraved in the well known manner.

The background is now printed with the soft readily fusible composition by the use of the same intaglio printing method.

In order to apply this transfer to a piece of fabric, the ink side of the paper transfer base is applied to the fabric, and the other side of the transfer base then has a hot iron applied thereto. That is, the primary element and the background can be released by heat and pressure.

The soft waxy background first melts and thoroughly penetrates the fabric. The less fusible design or "primary element" then

melts, but it does not penetrate the fabric, because the fabric has already become either wholly or partially saturated at this point with the dark background composition. Likewise, the composition forming the printed letters of the design or the like, are relatively non-penetrating and infusible, as previously described.

Hence, the background is printed last and is transferred first.

The printed matter or design has a very light color and the background has a dark color so that it acts as a mask to hide the weave of the fabric. The use of a dark background is particularly desirable when the fabric has a complicated weave. While I prefer to use compositions of different fusibility for the background and for the design, I could also use two very slowly fusible compositions which would not run into each other.

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

I claim:

1. A heat transfer having a base on which a primary element is printed with a fusible composition, and a background element which overlays said primary element, said background element being printed with a composition which melts at a lower temperature than said first mentioned composition, said primary element and said background element being releasable from said base by means of heat and pressure.

2. A heat transfer comprising a paper base having a design printed thereon by means of a fusible composition, said design being overprinted with a second fusible composition which melts at a lower temperature than the first mentioned composition, said design and the overprinted part of the transfer being releasable from the base by means of heat and pressure.

3. A heat transfer comprising a paper base having a design printed thereon by means of a fusible composition which includes a cellulose product, said design being overprinted with a second design comprising a fusible penetrating composition, said last mentioned composition melting at a lower temperature than said first mentioned composition, said designs being releasable from said base by heat and pressure.

4. A heat transfer having a base on which is printed a primary element and a background which overlays said element, said primary element and said background each consisting of fusible compositions which remain free from each other when they are melted while the transfer is applied, said primary element and said background being releasable from said base by means of heat and pressure.

5. A heat transfer having a base on which is printed a primary element of a light color and a background element of a dark color, said primary element and said background
5 each consisting of fusible compositions which remain free from each other when they are melted, said primary element and said background element being releasable from said base by means of heat and pressure.

10 In testimony whereof I affix my signature.
WINTHROP STANLEY LAWRENCE.

15

20

25

30

35

40

45

50

55

60

65