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TRANSFER

Winthrop Stanley Lawrence, Brooklyn, N. Y.,
assignor to Kaumagraph Company, New York,
N. Y., a corporation of New York

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My invention relates to a new and improved transfer.

One of the objects of my invention is to provide a dry transfer of the type which is printed upon a sheet of paper and which is released from the paper base by means of heat and pressure. Transfers of this type are applied to the fabric or the like which is to be marked and the back of the transfer is then pressed with a hot iron, so that the transfer marking is melted and is taken up by the fabric or other material which is to be marked or decorated.

Another object of my invention is to provide a transfer which will produce a very brilliant mark in a light color on a dark background.

Another object of my invention is to provide a transfer which shall utilize the material commercially known as "Amberol". This "Amberol" is a phenol formaldehyde condensation resin which is caused to condense in the presence of an added resin, such as rosin.

This material "Amberol" is also referred to in the trade by the names "Albertol" and "Albertole". These products are identified in the textbook entitled "Synthetic Resins and Their Plastics" by Carlton Ellis, published in 1923, pages 147 and 148. Generally speaking, these products are phenol-formaldehyde condensation resins which have been caused to condense in the presence of an added resin, such as common rosin.

Another object of my invention is to provide a transfer in which this artificial resin is properly blended with oils and waxes, so that it can be suitably used as a printing composition when in molten form. The improved composition also contains a solvent which is volatile but which has a high boiling point, when the transfer base is printed. This causes the transfer to rapidly age so that after the transfer base has been printed the transfer does not smear on the paper base after a few days, even though the composition includes an opaque pigment in a relatively high proportion.

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

Although I do not wish to be limited to the

specific ingredients and proportions mentioned, I prefer to use the following formula, the proportions being by weight:

150 parts of Amberol (type F7)	55
84 parts of carnauba wax	
32 parts of ozokerite	
35 parts of No. 6 litho varnish	
60 parts of blown castor oil	
1 part of cobalt drier	60
10 parts of butyl carbitol	
215 parts of cadmium selenide	

In order to prepare this composition for printing on the transfer base, the fusible elements are first melted and intermixed and the oils are then added, and the mass is thoroughly intermixed. The butyl carbitol is diethylene glycol mono butyl ether and it has a boiling point of 220° C. The temperature of the mixture is then lowered almost to the hardening point and the butyl carbitol is then added and the mass is again thoroughly mixed.

The cadmium selenide, which is the pigment utilized in the above mentioned formula, is then added with thorough mixing.

The artificial resin above specified furnishes a base for the vehicle which is not easily fusible, and the addition of the carnauba wax and the ozokerite renders the composition more fusible. The addition of the oils increases the fusibility of the composition so that it has a melting point between 80° C.—120° C.

The No. 6 litho varnish slowly oxidizes so that the transfer marking hardens or sets upon the base of the transfer and this setting action increases with the age of the transfer while allowing the composition to be used for printing purposes when the composition is fused. The cobalt drier accelerates this ageing action. The butyl carbitol reduces the melting point of the composition and it disappears in a few days after the transfer marking is printed upon the paper base so as to increase the rapidity of the ageing action. Due to the relatively high boiling point of the butyl carbitol, said solvent is not completely driven off during the preparation of the mixture. However, said solvent evaporates within a few days after the transfer marking has been printed, as previously stated.

These transfers are ordinarily supplied to the

consumer with the paper base wound into the form of a spiral form and rapid ageing is desirable in order to prevent the transfer markings from smearing.

- 5 The cadmium selenide has never been previously employed in transfers and the use thereof is particularly advantageous because it is an opaque pigment which is very fine and very smooth. This pigment is very useful in producing a brilliant red marking on black hosiery. If a white marking is desired, titanium oxide can be used and if a yellow marking is desired, cadmium sulphide can be used.

- 10 Cadmium selenide has remarkable resistance to heat and it does not lose its brilliancy if it is overheated, so that it is especially suited for a transfer of this type. It can therefore be employed in the above mentioned formula in a very large proportion and to secure a very intense color. Another advantage of using cadmium selenide is that it has low oil absorption.

- 20 The above formula can be varied. For example, if greater penetration of the marking is desired, more wax can be used and if less fusibility is desired, less wax can be used.

Other ingredients may be added to increase the fusibility of the composition, such as ethyl abietate.

- 30 In compositions of this type heretofore utilized, the proportion of the pigment was from six ounces to eight ounces per pound of the composition. In the above mentioned formula, it will be noted that each pound of the composition has about thirteen ounces of the pigment.

- 35 This composition is printed upon the paper base by any suitable method while the composition is in the fused condition. The composition then rapidly ages so that the transfer can be promptly shipped.

- 40 The butyl carbitol has special properties in a composition of this type. It has a relatively high boiling point so that it does not escape when the composition is fused in order to print the marking upon the paper base. Nevertheless, the butyl carbitol is sufficiently volatile to escape quite

rapidly from the printed marking upon the paper base so that in a few days after printing, the marking becomes less fusible and the ageing action is thus accelerated.

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

I claim:

1. A heat transfer comprising a paper base having a marking which includes fusible material and cadmium selenide.

2. A heat transfer comprising a paper base having a marking which includes fusible material and cadmium selenide, the cadmium selenide being not less than 50% of the marking composition.

3. A heat transfer comprising a paper base having a marking which includes cadmium selenide, a resin and an oil.

4. A heat transfer comprising a paper base having a marking which includes cadmium selenide, a resin and a thickened oil.

5. A heat transfer comprising a paper base having a marking which includes a condensation resin in the presence of rosin, a glycerol ester of rosin, a wax, an oil, and cadmium selenide.

6. A method of making a heat transfer which consists in printing upon a paper base a marking which comprises molten fusible material and a pigment and a relatively volatile fluid which does not substantially volatilize when the composition is melted and whose boiling point is above 200° C., and then allowing the volatile fluid to escape from the printed marking which is formed upon said paper base.

7. A heat transfer comprising a paper base having a marking, said marking comprising a resin which has a relatively high melting point, additional fusible material having a lower melting point than said resin, an oil, and cadmium selenide.

WINTHROP STANLEY LAWRENCE.