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TRANSFER FOR PRODUCING MULTISHADE EFFECTS AND METHOD OF MAKING SAME.

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My invention relates to a new and improved transfer and method of producing same and it has for its general object to provide a transfer by the employment of which letters, words, designs, etc., on a sheet may be transferred onto fabrics of different colors, the shade of the color of the transfer on the fabric varying with the color of the fabric onto which the transfer is made.

It is also an object of the invention to provide a transfer which is adapted for use in the transferring of designs for hand embroidery, smocking, cross stitch work, cutting lines as guides for cutting out garment patterns, identification marks, lines or marks indicating where and how hand sewing should be done upon a fabric of practically any color or shade.

Another object of the invention is to provide a transfer in which the transfer material after having been deposited onto a fabric will form a distinct marking thereon, whether the iron employed for effecting the transfer is warm or hot, and also without regard to the color of the fabric on which the marking may be formed or placed.

It has been found that by the employment of a transfer embodying my invention the indicia or indicating means on the transfer sheet may be such as to indicate the character of work to be done upon a fabric, so that the transferring of such indicia or indicating means to the fabric enables the cutting out and the finishing of a garment in much less time than would be required if the heretofore known methods were employed, to wit: First, cutting out the garment, then measuring the same to indicate the positions thereon at which operations of different kinds are to be performed. For instance, the positions of buttonholes, pockets, plaits, etc., may be indicated upon the transfer sheet; also, characteristic markings to indicate different kinds of work to be performed, such as dots for smocking, crosses for cross stitching, etc., may be placed upon the transfer sheet and thereafter transferred to the fabric, so that said fabric may bear all of the indicia or indicating marks necessary to indicate to a person operating thereon the character of work and the exact position of the same.

In the manufacture of patterns for transferring designs and transfers for marking, lettering, etc., upon fabric it has been the practice for many years and still is the practice to employ a blue transfer ink for marking light colored or white fabrics; while for marking fabrics of dark blue, black, and colors of dark shades on which the blue will not give a distinct marking it has been the practice to employ a transfer ink of yellow, gold or silver color.

By the use of a transfer embodying my invention I am enabled to produce a distinct marking upon fabrics of practically any and all colors with ink of the same color without regard to whether the iron employed for effecting the transfer is just warm or is hot.

The method employed by me in the practicing of my invention may be described generically as follows: I select one of many kinds of paper which may be obtained upon the market having a "hard face"; that is, a paper having a surface which may be described generally as being non-absorbent. Having selected a paper of desired character I print thereon by the use of raised characters or designs. By the employment of such characters or designs I am enabled to deposit a generous amount of ink upon the surface of the paper, so that when a powder of the character to be hereinafter described is dusted or deposited thereon a sufficient amount of the powder is retained by the ink to produce the desired transfer. The powder should, of course, be deposited before the ink is allowed to dry and the latter should be a non-drying or slow-drying ink.

The ink employed has an excess of coloring matter therein as compared with inks heretofore employed in order that after it has been diluted by the addition thereto, after its deposition upon the paper, of powder, as hereinafter described, its color will still be of the intensity desired. The ink having been deposited in the form of lines, characters, designs, etc., upon the sheet of paper the powder is deposited thereon by dusting or in any other suitable manner or way. The powder employed consists of a combination of two ingredients, one of which is fusible at the ordinary temperatures employed in the transfer process as usually practiced, while the other ingredient is not fusible at such temperatures. In other words, the last mentioned ingredient fuses, if at all, at a relatively high temperature. The last mentioned ingredient consists pref-

erably of a metallic powder, such as bronze, aluminum or silver. The other ingredient which melts at a relatively low temperature may consist of gum damar and beeswax or shellac. When any one of these substances is combined with a metallic powder of the character above indicated and the mixture subjected to a temperature to cause fusion of the first-named ingredient, said ingredient operates as a mechanical binder of the particles of the ingredient infusible at the temperature employed in the process.

In the preferred method of carrying out the process embodying my invention I employ an ink comprising glycerine, dextrine and an excess of coloring matter, such as aniline dye,—an ink of the character designated by ink makers as a copying ink. This ink including glycerine as a base is of non-drying character. With this ink I print from the printing element onto a paper of suitable character, as above described. In the preparation of the powder to be used when this ink is employed I place approximately two pounds (2 lbs.) of resinous substance, such as refined shellac, and six ounces (6 oz.) of aluminum powder into a heated paint mill and thoroughly mix the same. The mixture is allowed to cool. After having cooled it is brittle. It is then ground into a powder which is sifted through two sieves, the first of which is what is known as fifteen (15) mesh and the second of which is what is known as twenty-five (25) mesh. These sieves are of bolting cloth. The powder which passes through the first sieve and is retained by the second sieve is that which is employed. The powder which passes through the second sieve is discarded.

After the mark, letter or design has been printed upon the paper the powder is deposited upon the sheet and a certain amount adheres to the moist ink, it being understood that the powder is deposited upon the sheet while the ink is still moist or wet. Heat sufficient is then applied to effect fusion of the shellac ingredient of the powder, but insufficient to melt or fuse the metallic powder ingredient.

Instead of employing an ink of the character above indicated I may employ what is known as a lithographic ink having or embodying therein a non-drying oil such as castor oil and also including an excess of coloring matter. The coloring matter may consist of Prussian blue, bronze blue or coloring matter of any other color.

When lithographic ink is employed I prefer to use a powder formed by mixing together five pounds (5 lbs.) of powdered gum damar, three ounces (3 oz.) of beeswax and one pound (1 lb.) of aluminum powder. These may be thoroughly mixed and intermingled in a hot paint mill. After having been thoroughly mixed and allowed to cool they are crushed or ground into a powder and passed through two sieves of fifteen (15) and twenty-five (25) mesh respectively, in the manner as above described. The powder which passes through the first of the sieves and is retained by the second is that employed for dusting and depositing upon the ink which is printed from the printing element onto a sheet of paper of the character above indicated. The powder is deposited while the ink is still moist or wet. After the powder has been deposited upon the moist ink the transfer is subjected to heat at a temperature sufficient to effect fusion of the ingredients of the powder which are fusible at the temperatures ordinarily employed in the transfer process.

Although I have mentioned inks of specific character and have described powders consisting of different ingredients I desire it to be understood that inks other than those referred to may be employed, provided they have an excess or superamount of coloring matter therein and also that powders composed of ingredients other than those mentioned may be employed provided that they consist of two or more ingredients, certain of which are fusible at the temperatures employed and certain others of which are infusible at such temperatures. The latter ingredient should consist of what is known as a metallic powder.

Upon fusion of the fusible ingredient of the powder after it has been deposited upon the moist or wet ink, as above described, it mixes with the coloring matter of the ink and forms therewith a coating upon the particles of the metallic powder which latter thereafter partake of the color of the ink, but are more iridescent and pleasing. The result of this is that when the lines, letters, designs, etc., are transferred onto a fabric they are clearly visible, regardless of the color of the fabric, so that after a transfer sheet has been produced it may be employed for transferring the characters thereon, whatever they may be, onto a fabric regardless of its color. The color shades of the transfer upon the fabric vary with the color of the fabric. Although I am not limited to an ink of any particular color in practice I prefer to use an ink having an excess of blue coloring matter therein.

The fused ingredient or substance of the powder combines with the unfused portion thereof and with the ink and forms a mass of integral character.

One of the advantages and characteristics of a transfer embodying my invention is that when the markings are transferred onto fabrics of different colors or fabrics of the same color of different shades the color shadings of the transferred markings vary with the variations in the colors of the fabrics receiving the transferred markings.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:—

1. A transfer comprising a paper base having markings thereon of ink with which is combined a fusible bonding substance and infusible particles, the latter being covered by a coating of the ink and fused bonding substance.

2. A transfer comprising a paper base having a relatively hard, non-absorbent surface, said paper base having markings thereon comprising ink having an excess of coloring matter therein, a fusible binding substance and infusible colored particles, the latter being coated with a covering of the ink and fusible substance.

3. A transfer comprising a paper base having upon a surface thereof markings which are adapted to be transferred onto a fabric, which markings consist of ink having therein an excess of coloring matter, a substantially colorless substance fusible at the temperatures employed in the transfer process and particles infusible at the temperatures employed in said process, which particles are coated with a covering of said fusible substance, the said covered particles after the markings have been transferred onto a fabric operating to produce an iridescent effect.

4. A transfer comprising a paper base having upon a surface thereof markings which are adapted to be transferred onto a fabric, which markings consist of a non-drying or slow-drying ink having therein an excess of coloring matter, a substantially colorless waxlike material which is fusible at the temperatures employed in the transfer process, and a metallic powder, the particles of which are covered by the fused waxlike substance, the said fused waxlike substance and the ink combining to bind and hold the particles to form an integral mass.

5. A transfer comprising a paper base having upon a surface thereof markings which are adapted to be transferred onto a fabric, which markings consist of non-drying or slow-drying ink having therein an excess of coloring matter, a substantially colorless, resinous material which is fusible at the temperatures employed in the transfer process, and a metallic powder infusible at the said temperatures, the particles of the latter being coated with a covering of the fused, resinous substance.

6. A transfer comprising a paper base having upon a surface thereof markings which are adapted to be transferred onto a fabric, which markings consist of non-drying or slow-drying ink having therein an excess of coloring matter, shellac which is fusible at the temperatures employed in the transfer process, and aluminum powder, the particles of which are coated with a covering of the fused shellac.

7. The method of producing a transfer which is adapted for producing markings upon fabrics of different colors which comprises the printing of the said markings upon a paper base with a non-drying or slow-drying ink having an excess of color therein, sprinkling upon the markings when still moist a powder comprising a substance fusible at the temperatures employed and metal particles infusible at said temperatures, and thereafter applying heat to fuse the said fusible substance to cause the same to combine with the ink and to cover and bind the said metal particles together.

8. The method of producing a transfer which comprises the formation of markings upon a paper base with a non-drying or slow-drying ink having an excess of coloring matter therein, mixing a substantially fusible substance with a metallic powder in the presence of heat sufficient to effect fusion of the said fusible substance, permitting the mixture to become cold, thereafter forming a powder therefrom, and depositing the same upon the said markings while the latter are still moist, and thereafter applying heat sufficient to fuse the fusible portion of the said powder.

9. The method of producing markings upon a paper base which are adapted to be transferred therefrom onto a fabric which consists in forming the said markings upon the said base with a slow-drying ink having an excess of coloring matter therein, mixing shellac and aluminum powder in the presence of heat sufficient to fuse the said shellac, permitting the mixture to cool, thereafter crushing and powdering the said mixture, depositing the powder thus produced upon the said markings while still moist, and thereafter applying heat to the said markings sufficient to cause fusion of the said shellac to effect a more intimate union between the ingredients of the said markings.

In testimony that I claim the foregoing as my invention, I have hereunto signed my name this 9th day of April, A. D., 1925.

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