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TRANSFER SHEET AND METHOD OF MAKING SAME

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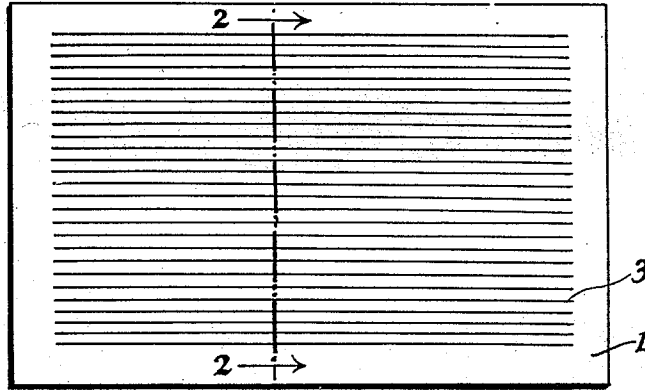


Fig. 1

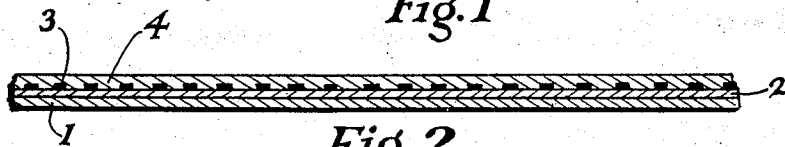


Fig. 2

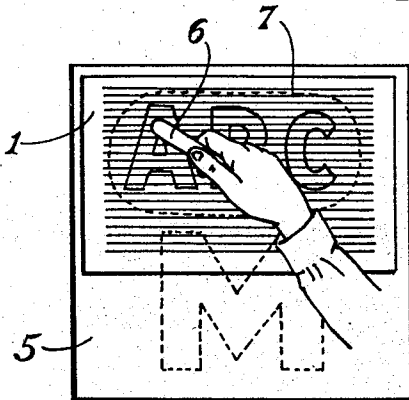


Fig. 3

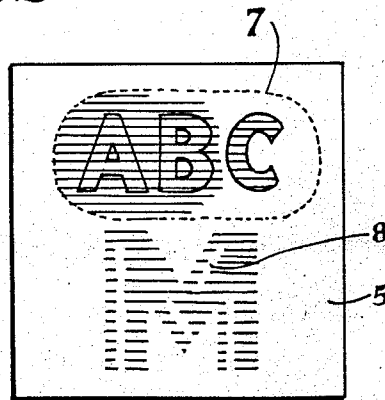


Fig. 4

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TRANSFER SHEET AND METHOD OF MAKING SAME

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This invention relates to a transfer sheet which is adapted to be used by artists, engravers and the like for reproducing backgrounds or shadings for original sketches or the like, and has for one of its objects the provision of a sheet which does not need a frame or other means for supporting it normally out of contact with the sheet upon which the shading or background is to be placed.

Another object of the invention is to provide a transfer sheet which is flexible and so constructed and arranged that the flexing of the sheet will in no way injure the usefulness thereof.

Another object of the invention is to make a transfer sheet which may be kept indefinitely without impairing its usefulness. This is accomplished by using materials which will not harden due to long standing but will always retain their pliability as well as their other original properties.

Another object of the invention is to provide a transfer sheet which will transfer the shading or background or the like bodily to the sheet upon which it is desired to be placed so that no trace of the background or shading remains on the transfer sheet.

Still another object of the invention is to provide a transfer sheet which permits the shading or background printed thereon to be transferred to a sheet upon which it is desired that this background or shading appear and which will permit the removal of any desired portion of the shading or background transferred in order to reduce high lights in the shading or background or to enable one to remove undesired portions of the shading which have been transferred to the second sheet.

A still further object of the invention is the provision of a process for making a transfer sheet such as described above.

Other objects of the invention will appear hereinafter.

In the drawings,

Fig. 1 represents a plan view of a transfer sheet embodying my invention;

Fig. 2 is a cross-section on the line 2—2 of Fig. 1;

Fig. 3 illustrates one step in the use of my invention; and

Fig. 4 illustrates a still further step in the use of my invention.

Referring more particularly to Figs. 1 and 2, 1 represents a sheet of tissue paper upon which the desired shading or background is adapted to be mounted. While it is not absolutely necessary to use tissue paper in carrying out my process, still it has been found to be more desirable in view of the fact that it is quite transparent and since it does not tend to distort the layers of substances mounted thereon when the sheet is flexed either during its use or during the time when it is being shipped or at any other time when it is subjected to any flexing. In fact, by using tissue paper it has been found that the transfer sheet can be even folded without destroying the usefulness thereof. This is not possible with heavier papers, since the bending or flexing of the heavier papers causes a considerable distortion of the substances mounted on the surfaces of the paper adjacent the folded portion thereof. This sheet of paper is moistened and placed on a smooth surface such as a japanned surface or a polished aluminum plate. A squeegee is then run over the surface of the paper to press out any air or surplus of moisture from beneath the sheet and so that the sheet will lie perfectly flat on said surface.

Before the sheet is permitted to dry, a layer of glue 2 is placed on the upper surface of the sheet. This may be done by means of a brush or any other suitable means. The consistency of this glue forms a very important feature of the present invention, as it has been found that ordinary glues do not provide the proper qualities necessary in a device of this character. The glue I have found most desirable for the purposes of this invention consists of a mixture of glycerine, gum arabic and soft soap. When I refer to soft soap I refer to that type of soap which does not dry out and become hard. These substances are mixed in approximately the following proportions: Glycerine 30 per cent, gum arabic 35 per cent, and soft soap 35 per cent, all percent-

ages being by weight and not by volume. Such a glue has a very uniform consistency and is free from small lumps which are very undesirable in a glue to be used with a transfer sheet such as I have invented. At the same time such a glue as I have described will flow uniformly over the surface upon which it is applied and will not leave small openings in the surface produced by this coating of glue such as often occurs with the use of the ordinary glue. After the glue has been mixed with the above noted proportions of glycerine, gum arabic and soft soap, there is added thereto enough distilled water to reduce the glue to the desired consistency. The glue can thereafter be spread upon the surface of the tissue paper in a very thin coat or film. By placing the glue on the paper while the latter is still damp the glue penetrates the paper and forms a bond between the paper and the glue.

After the glue has been applied to the tissue paper, the paper and glue are permitted to dry for about an hour or longer if necessary. I wish to have it understood, however, that although I refer to drying the glue, I do not in any way intend to convey the idea that the glue becomes hard and brittle, as this is not the case. By drying I merely mean that the moisture is removed from the glue and that the glue is in a state ready to receive the ink which is to provide the shading or background for the transfer sheet. The type of glue which I have described does not dry as a hard layer, but remains soft and yielding so that when the sheet of paper is flexed the glue will not crack and any small amount of tension produced in the layer of glue will be taken care of by the yielding qualities of the glue.

After the glue is dry, the paper with its coating of glue thereon is peeled from the smooth surface upon which it was first mounted and is then in a condition to receive the background or shading. This background or shading is printed in a well known manner upon the surface of the glue. For the purpose of illustration only I have shown a series of parallel lines for use as a background or shading, but I wish to have it understood that any desired form of background or shading may be printed upon the surface of the glue. When the background or shading has been applied to the glue, the relation which it bears to the glue is illustrated in Fig. 2. It will be understood, however, that sometimes the printing of the background on the surface of the glue will cause slight depressions where the markings were applied, but this in no manner affects the usefulness of my invention as long as a layer of glue remains between the printed surface and the sheet of tissue paper.

In order to protect the printed surface and also to aid in protecting the glue I

desire to coat the entire surfaces of the glue and ink which are exposed with a compound which consists of approximately fifty per cent of bleached beeswax and fifty per cent of paraffin, both percentages being in weight and represented by the reference numeral 4 in Fig. 2. The paraffin and beeswax are melted together and mixed so as to produce a liquid of uniform consistency. This liquid is placed in a suitable container, preferably one which has means for keeping the liquid at the desired temperature. I then take the sheet of paper with the coating of glue and hold it with the coated surface toward the surface of the liquid in the container and move the coated surface toward the liquid until it rests on the surface thereof with the upper surface of the sheet out of contact with the liquid in the container. This sheet may be floated on the surface of the liquid, but it has been found in practice that about all that is necessary is to place the sheet on the surface and draw it along the surface for a short distance and then lift the sheet with the coating of wax and paraffin thereon. The coating of wax and paraffin cools almost instantaneously after the sheet has been removed, and the sheet is now ready for use. Due to the quickness with which the wax and paraffin dry the sheets may be placed one on top of the other as soon as they have been prepared and are ready for shipment as desired.

A transfer sheet constructed in the manner just described therefore consists of a layer of tissue paper, a coating of glue on one side thereof, a printed shading or background on the surface of the glue, and a coating of paraffin and beeswax for both the glue and the printed background or shading. For purposes which will appear later it is desirable that the opposite side of the sheet of tissue paper be left free of any coating which might close the pores in the tissue paper and prevent moisture from passing therethrough to the glue. That is why only the printed surface of the sheet is coated with the wax and paraffin compound previously described.

The use of the transfer sheet just described is best illustrated in Figs. 3 and 4. In these figures 5 represents a sheet of paper or other surface to which the shading is to be applied. The transfer sheet is placed upon the sheet 5 with the coated surface thereof against the last mentioned sheet and in such a position as to cover the area which is to be shaded. For the purposes of illustration I have shown the letters A, B and C which are to be formed with certain desired shading thereon. Pressure is applied to the back of the sheet 1 by means of some hard, smooth surface such as a piece of bone, spoon or the like. In Fig. 3 I have shown the use of a piece of bone 6, which has been smoothed and which presents a very hard surface. This bone is pressed

against the back of the sheet 1 and over the entire area to which it is desired that the shading be applied. Due to the fact that the compound of beeswax and paraffin has a certain amount of adhesiveness it will adhere to the surface 5. In pressing on the back of the sheet it is not necessary that one be careful not to go outside of the area desired to be shaded. For instance, in Fig. 3 one could press down the entire area enclosed by the dotted line 7. This area includes all of the surface which it is desired to shade. If after the back of the sheet has been pressed in the manner just described the sheet is lifted from the surface 5 the paper will carry with it the layer of glue, the shading and also the waxed surface away from the surface 5 and leave the sheet the same as it was before the area 7 was pressed down by means of the piece of bone 6, so that in case it were discovered that the wrong type of shading had been applied it could be removed again and the desired type of shading applied thereto without in any way injuring the first transfer sheet used.

In order to cause the shading or background to remain on the surface 5, it is necessary after the area 7 has been pressed down, to moisten the back of the sheet of paper 1 so that the moisture will soak through the glue and cause the glue to be loosened from the surface of the tissue paper. The moisture is usually applied by means of a small sponge, brush or piece of cotton dipped in clean water. The paper is permitted to stand about fifteen seconds or thereabouts after the moisture has been applied to the back thereof in order to give the moisture sufficient time to entirely free the glue from the surface of the sheet of paper. Thereafter the paper is lifted and it will be found that the coating defined by the area 7 will remain on the surface 5 and will come entirely free of the sheet 1. Thus it will be seen that the entire amount of shading which has been printed on this area is removed from the sheet 1 so that the shading or background will be of uniform weight due to the fact that the entire printed surface has been removed, whereas in prior devices the pressure applied to the transfer sheet determined to a great extent the amount of the printed matter which was transferred to the desired surface. After the sheet 1 has been removed the surface 5 within the area 7 is coated with a layer of wax and paraffin on top of which is the printed background or shading and the vestiges of glue which remain after the sheet 1 has been separated from the coating. Some of the glue perhaps remains on the sheet 1, but this in no way affects the usefulness of my invention.

Since there is a layer of wax and paraffin between the printed background or shading and the surface 5, it is very easy to remove any undesired portion of the shading or

background from the surface 5 by merely scraping the background or shading from the surface 5 with a pen knife or any other suitable device. In Fig. 4 the shading around the C has been removed so that the shading only remains on the letter C. Letters A and B can be trimmed likewise. In Fig. 4 I have also shown the letter M with shading applied thereto and with the undesired shading removed from around the edges, and I have also shown on this letter M how parts of the shading may be scraped away to produce high lights 8 or like shading effects in the letters.

Thus it will be seen that a very simple and yet very effective means has been provided by which shading or background or the like may be applied to any desired surface and without the use of any great amount of skill or artistic ability. In former devices of this nature it was necessary that the transfer of the shading be made by an artist or skilled craftsman, since care had to be exercised in order that only the surface upon which the shading was to appear be pressed down. This care was necessary since the printing was carried on the outer surface of the transfer sheet and when the transfer sheet was pressed down from the back thereof the ink itself came in contact with the surface on which the shading was to be placed and it was very difficult thereafter to remove any excess shading without injuring said surface. With the present invention, however, it is possible for one who has no great ability to transfer the shading to the surface to be shaded since any undesired shading may be quickly removed from the surface without injury thereto. Of course it is necessary in removing the undesired portion of the shading that care be exercised so that too much of the shading may not be removed, although if too much were removed the entire surface could be cleaned and more shading readily applied.

Since the background is removed from the transfer sheet as a whole, that is to say any section of the background which is to be used is removed as a whole, the entire weight of the background which has been printed upon the glue by the printing process is transferred to the surface upon which the shading is placed, thus giving very sharp, distinct and opaque shade lines. With the old processes it was seldom if ever possible to remove the full weight of the shading from the transfer sheet to the surface upon which the shading was to be placed and it was not always possible to have the shading in one place as dark as that at another place unless one used the same amount of pressure over the entire surface to be shaded. With the present invention, however, it is only necessary that a sufficient pressure be used to cause the beeswax and paraffin to adhere to the surface 5

and any excess pressure will not in any way change the operation of the device.

It will be understood that white ink may be used just as readily as black ink, or that any other desired type of ink or other suitable marking material may be used in carrying out my invention. I prefer to use printer's ink which will dry, although it is not necessary that such an ink be used. However, since the ink never comes in contact with the surface which is to be shaded or with the transfer sheet, it will readily be seen that an ink which will dry can be used as it does not have to reproduce the background by contact with the surface itself.

Obviously those skilled in the art may make various changes in the construction and arrangement of parts without departing from the spirit and scope of the invention as defined by the claims hereto appended, and therefore I do not desire to be restricted to the precise construction herein disclosed.

Having thus fully described and shown an embodiment of my invention, what I claim and desire to secure by Letters Patent of the United States, is:

1. A transfer sheet comprising a mounting sheet, a gelatinous coating on said sheet, inked markings carried by said gelatinous coating, and a coating of pressure adhesive material covering said markings, said pressure adhesive material being removable without injury to the surface to which the same is applied.

2. A transfer sheet comprising a transparent mounting sheet, a gelatinous coating on said sheet, markings carried by said gelatinous coating, and a wax covering for said markings and gelatinous coating.

3. A transfer sheet comprising a transparent sheet, a coating of glue on one side thereof, ink markings on said glue, and a wax coating for said glue and markings.

4. In a device of the class described, a mounting sheet of transparent material, a gelatinous coating on one side only of said sheet, a plurality of markings on said gelatinous coating and a composition of wax and paraffin covering said glue and markings, the opposite side of said sheet being free of any coating which would prevent moisture from penetrating the sheet from said last mentioned side.

5. A transfer sheet comprising a sheet of transparent flexible material, a plurality of markings supported on said sheet by a layer of moisture softenable material, and a coating of pressure adhesive material covering the markings and moisture softenable material, said pressure adhesive material being such that it can be quickly removed from a surface to which it is applied without injury to said surface.

6. A device of the class described comprising a sheet of tissue paper, a coating of

glycerine, soft soap and gum arabic combined in suitable proportions, mounted thereon, markings carried by said coating, and a layer of material covering said markings comprising a compound of wax and paraffin.

7. The method of preparing a transfer sheet which comprises the steps of moistening a sheet of relatively thin paper, pressing it down firmly on a smooth surface, applying a coating of glue thereto while said sheet is wet, applying markings to the surface of said glue after it is dry, and covering said glue and markings with a compound of wax and paraffin.

8. A device of the class described comprising superimposed layers of glue and wax composition carried by a relatively thin sheet of material, and a plurality of markings between said layers.

9. A device of the class described comprising superimposed layers of glue and wax composition carried by a relatively thin transparent sheet of material, and a plurality of markings between said layers.

10. In a transfer sheet, the combination with a flexible carrier, of markings releasably supported by said carrier, and a layer of wax completely covering said markings and the exposed portions of said carrier on the same side of said markings, said markings being adapted to be bodily transferred with said wax to any desired surface.

11. The method of forming transfer sheets which comprises the steps of coating a sheet of material with a releasable coating, placing markings on said coating and completely covering said coating and markings with a layer of wax.

12. The method of forming transfer sheets which comprises the steps of moistening a sheet of relatively thin material, smoothing said material down upon a flat surface so that the same lies smoothly thereon, coating said surface with glue, drying said glue and sheet, superimposing markings on said glue, and covering said markings with a layer of wax.

13. The method of forming transfer sheets comprising the steps of coating a surface of material with water-softenable adhesive, superimposing markings to be transferred on said glue, and covering said markings completely with wax.

14. The method of forming a transfer sheet comprising the steps of moistening a sheet of flexible, porous material, covering said material with glue, drying said sheet and glue while said sheet is stretched out flat, superimposing markings above said layer of glue, and coating said markings with wax.

15. The method of forming transfer sheets which comprises the steps of superimposing a series of markings to be bodily transferred to a given surface upon a supporting layer of relatively thin, transparent material and

covering said markings with a protecting layer of wax, which wax also acts as a vehicle for transferring the markings bodily onto a given surface.

In testimony whereof I have signed my name to this specification on this 22nd day of May, A. D. 1929.

HAVY Q. R. CROWDER.

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