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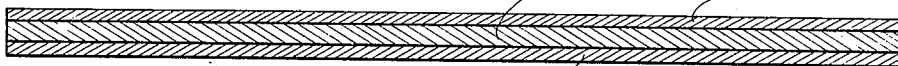
2,320,693

DUPLEX PHOTOGRAPHIC MATERIAL

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*Opaque Support Whiter Than Pure White
Paper to Reflect Actinic Rays*

Light Sensitive Layer



2—Light Sensitive Layer

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DUPLEX PHOTOGRAPHIC MATERIAL

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1 Claim. (Cl. 95—8)

This invention relates to improvements in duplex photographic material, with more particular reference to photocopy or other photographic paper in which a base or support is coated on both sides with a light-sensitive photographic layer or emulsion so as to enable producing an image on both surfaces of the sheet, and the object of the invention is to afford a construction that will effectively prevent actinic rays from penetrating the base or support without reducing the photographic speed of the light-sensitive coating.

One of the chief difficulties experienced with photographic paper adapted to receive an image on both surfaces of the sheet, such as duplex photo-copy paper used in the recording of deeds, wills, and other documents, has been due to actinic rays directed toward one light-sensitive surface of the sheet penetrating through the base or support to the opposite light-sensitive surface and thus partially exposing the sensitive coating on such opposite surface at a time when only the first mentioned light-sensitive surface should be exposed, since the opposite sensitized layers are exposed at different times to independent records or objects.

Various methods have been tried to overcome the difficulty, but any expedients thus far tried have resulted in absorbing some of the light during exposure or slowing down the photographic speed of the sensitized layer, and it is a purpose of the invention to obtain maximum photographic speed of the sensitized layers without any of the objections that characterize a light barrier such as a dye, and at the same time effectively prevent penetration of the base or support by the actinic rays when one surface is exposed, so as to make impossible even partial or slight exposure of the opposite sensitized layer.

In a more specific aspect, the invention consists in providing a base or support such as paper with reflecting surfaces on both sides thereof, such reflecting surfaces being preferably white and produced by adding sufficient white pigment to the paper or other support, the reflecting or white surfaces having the capacity to reflect substantially all the actinic rays directed toward one light-sensitive layer and thereby prevent such rays from penetrating the base or support and affecting the opposite light-sensitive layer.

To these and other ends, the invention consists in the construction and arrangement of parts that will appear from the following de-

scription when read in conjunction with the accompanying drawing, the novel feature being pointed out in the claim following the specification.

The drawing is a sectional view of a duplex photographic material constructed in accordance with a preferred embodiment of the invention.

Referring more particularly to the drawing, 1 designates the base or support, preferably formed of suitable paper, and 2 designates light-sensitive photographic layers, or suitable photographic emulsions of known composition applied to opposite surfaces of the support 1, it being understood that in the use of such photographic material, the two sensitized layers are successively exposed at different times and an image thus produced on opposite surfaces of the same sheet.

In order to prevent penetration by the actinic rays through the base or support when the first sensitized surface is exposed, the opposite surfaces of the base or support are constructed to possess a reflecting capacity preferably by applying sufficient white pigment to the paper or to the surfaces thereof where paper is used as the support, the effect of the white reflecting surfaces being to reflect substantially all the actinic rays away from the body of the support and prevent such rays from passing through the base or support and acting upon the sensitized coating on the opposite surface during a given exposure.

The most satisfactory results have thus far been obtained by the use of paper as a base or support, and imparting to the paper sufficient light reflecting capacity by incorporating in the paper during its manufacture additional reflecting medium or pure white pigment, such for instance as titanium oxide, barium sulphate, or other suitable chemical material having the quality of imparting increased whiteness or increased reflecting capacity to the paper.

For the purposes of the invention, in order to impart the necessary reflecting or white characteristic to the paper, there should be added considerably more white pigment than ordinarily employed for obtaining merely a pure white color, and while the invention is not limited to any particular amount of white pigment, satisfactory results have been had by increasing the amount of such pigments by approximately fifty per cent over what is ordinarily required for obtaining a pure white paper.

White paper has been employed in the manufacture of duplex photographic material, but

there have been no attempts made and no intention of adding white pigment to the paper beyond what is required to obtain a clear legible copy of black on white, and so far as known, there has been no effort heretofore made to provide paper for duplex photo-copy material with sufficient whiteness or white surfaces to give a reflecting capacity that will serve effectively to reflect the actinic rays and prevent their penetration of the support. The white paper heretofore used for photo-copy paper has been of such a character or whiteness as to permit the actinic rays when directed upon one of the light-sensitive coatings to penetrate the base or support and partially affect the opposite light-sensitive coating.

It is new in the art to increase the amount of white pigment applied in the manufacture of a white paper, or otherwise to provide a paper or other base or support with opposite reflecting surfaces characterized by a capacity to reflect substantially all or nearly all the actinic rays and thus serve to prevent their penetrating the base or support and acting upon both light-sensitive layers simultaneously.

By utilizing white color as the reflecting medium, it is possible to obtain the desired result

without in any way interfering with or lessening the photographic speed of the light-sensitive photographic layers on opposite surfaces of the support, since there is nothing present to absorb any of the actinic rays or interfere with their action upon the light-sensitive layer in the shortest possible period of time.

While the invention has been described with reference to the specific disclosure herein set forth, this application is intended to cover any modifications or other adaptations of the invention coming within the purposes of the improvement and the scope of the following claim.

We claim:

- 15 Duplex photo-copy material comprising a single ply opaque paper base or support coated on both sides with a light-sensitive photographic layer, the paper support containing substantially fifty percent more white pigment than pure white paper normally contains and possessing white surfaces on both sides that reflect substantially all actinic rays during exposure of the light-sensitive layer and prevent said rays penetrating the support to an appreciable extent and affecting the light-sensitive layer on the other side.

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