

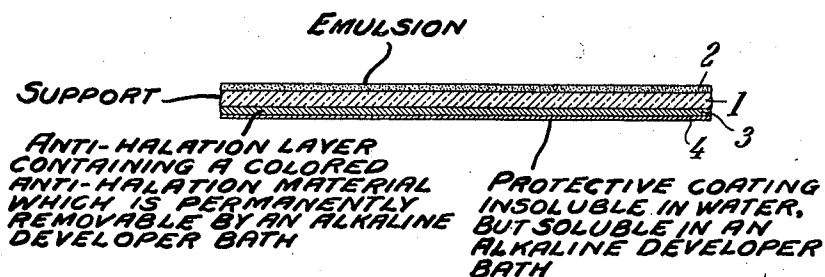
March 30, 1937.

W. SCHNEIDER

2,075,144

ANTIHALATION LAYERS FOR PHOTOGRAPHIC PLATES AND FILMS

Filed Oct. 15, 1931



Inventor:
Wilhelm Schneider,
By Philip S. Hopkins,
Attorney.

UNITED STATES PATENT OFFICE

2,075,144

ANTIHALATION LAYERS FOR PHOTOGRAPHIC PLATES AND FILMS

Wilhelm Schneider, Dessau, Germany, assignor to
Agfa Ansco Corporation, Binghamton, N. Y., a
corporation of New York

Application October 15, 1931, Serial No. 569,067
In Germany October 31, 1930

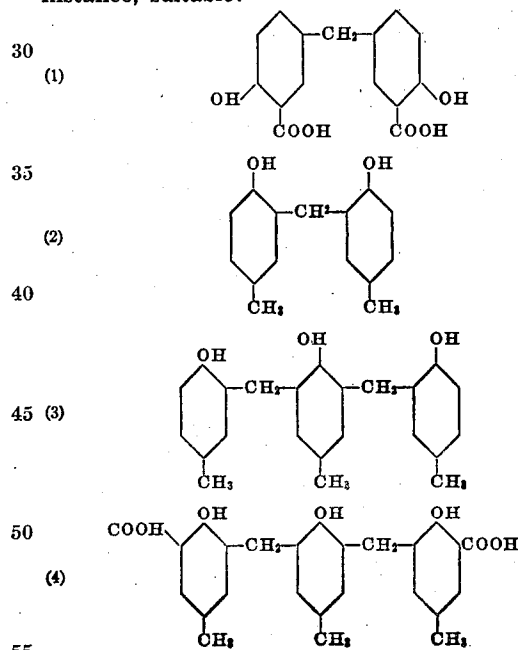
5 Claims. (Cl. 95—8)

My present invention relates to anti-halation layers for photographic plates and films, and more particularly to a protective layer for an anti-halation layer applied on the back of such plates and films.

One of its objects is to provide a process of preventing particles to split from the color layer by coating the said layer with a protective layer. Another object are the new plates or films being provided with such an improved anti-halation layer. Further objects will be seen from the detailed specification following hereafter.

The known anti-halation layers applied on the back of photographic plates and films frequently deliver colored particles when mechanically stressed, which deposit in the picture taking apparatus and, when they come on the light-sensitive layer, cause spots by masking the light or by chemical influence.

Now I have found that the said drawback can be avoided by providing the anti-halation layer, containing a colored anti-halation material which is permanently removable by an alkaline developer bath, with a colorless coating which comprises a diarylmethane derivative containing at least one hydroxyl group or carboxyl group in a nucleus. The following compounds are, for instance, suitable:



Suitable compounds for the aforesaid purpose are likewise diarylmethanes of the kind described which bear besides a carboxyl group or hydroxyl group a hydroxy alkyl group. Furthermore it is not necessary that the diarylmethyl compounds in question are built up symmetrically; one of the nuclei may be substituted if at all by substituents other than those attached to the other nucleus.

The coating material is usually applied in a thickness of 0.5–2 μ which is completely sufficient for protecting the dye-containing anti-halation layer from being mechanically damaged.

In order to apply the coating material it is dissolved in a non-aqueous solvent. Aliphatic alcohols have proved to be suitable solvents especially those containing 1 to 5 carbon atoms.

The coating layer can easily be removed, it being soluble in the usual photographic developers within about 30 to 40 seconds. It may be mentioned that those derivatives of diarylmethane which contain only hydroxyl groups more easily dissolve in developers having a strong alkaline reaction, while derivatives of diarylmethane containing carboxyl groups dissolve in both kinds of developers, those having a strong or those having a weak alkaline reaction.

The following examples illustrate my invention:

1. A solution of 1 gram of the ammonium salt of polyglucuronic acid and 1 gram of fuchsine in 100 cc. of water is applied on a nitrocellulose film. After drying, the anti-halation layer thus obtained is coated with a solution of 4 grams of dihydroxydiphenylmethane - dicarboxylic acid (see Formula 1) in 100 cc. of ethanol.

2. A cellulose acetate film is provided with an anti-halation layer from a solution of 2 grams of gum arabic, 1 gram of methyl blue, 50 cc. of ethanol and 50 cc. of water. After drying, the anti-halation layer is coated with a solution of 5 grams of dihydroxydimethyldiphenyl-methane (Formula 2) in 100 cc. of propanol.

The quantities of coating solution indicated in the examples allow to coat a surface of about 2 to 3 square meters.

It is to be understood that my invention is not limited to the foregoing examples nor to the specific details given therein. Other suitable colorless coating materials of the kind described are considered to be equivalents of those mentioned. Other alcohols than ethanol or propanol likewise may be used.

The annexed drawing illustrates my invention. The figure represents a sectional view of a photographic plate prepared according to my inven-

tion. In this figure 1 is the glass plate which serves as support, 2 is the emulsion layer, 3 is the color layer forming the anti-halation layer on the back of the plate, and 4 is my new coating layer preventing particles of being split off from the color layer.

What I claim is:

1. Photographic plates or films provided on their rear side with an anti-halation layer, said anti-halation layer being coated with a protection layer comprising a derivative of a diarylmethane substituted with at least one radical of the group consisting of —OH and —COOH.

2. Photographic plates or films provided on their rear side with an anti-halation layer, said anti-halation layer being coated with a protection layer comprising dihydroxydiphenylmethane-dicarboxylic acid.

3. Photographic plates or films provided on their rear side with an anti-halation layer, said anti-halation layer being coated with a protec-

tion layer comprising dihydroxydimethyldiphenylmethane.

4. Photographic plates or films comprising a support bearing on one side a light-sensitive emulsion layer and on the rear side a solid anti-halation layer containing a colored anti-halation material which is permanently removable by an alkaline developer bath, said anti-halation layer being coated with a protective layer which is insoluble in water but soluble in an alkaline developer bath.

5. Photographic plates or films comprising a support bearing on one side a light-sensitive emulsion layer, and on the rear side, a solid anti-halation layer containing a colored anti-halation material, which is permanently removable by an alkaline developer bath, said anti-halation layer being coated with a protective layer, which is insoluble in water but soluble in an alkaline developer bath within about 30-40 seconds.

WILHELM SCHNEIDER.