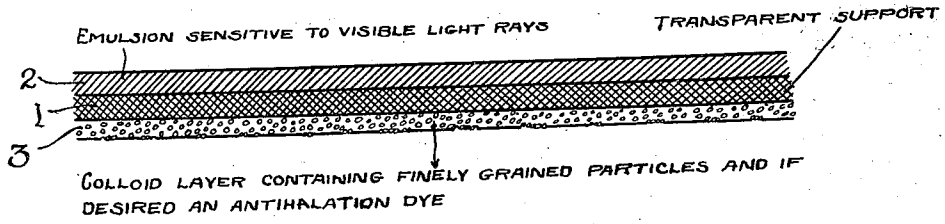
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PHOTOGRAPHIC FILM

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PHOTOGRAPHIC FILM.

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Photographic films are known in which the back is provided with a gelatine coating to stop curling. Dyed coatings on the back of supports for photographic purposes are also known in order to avoid halation.

The object of the present invention is a photographic film, the back of which is provided with a coating which not only fulfils the requirements for protection against curling and halation but which affords at the same time a suitable ground for retouching.

This is effected by a layer of a colloid in which substances are embedded that absorb or diffuse any light transmitted through the coating and the support and impart to the coating a more or less rough surface. The layer furthermore imparts a greater clearness and softness to the picture, while the softer lights show more clearly on the subdued background and stand out in better relief. Softness is desired in photography and is obtained according to the invention by the facility afforded by the film coating for retouching. For this purpose one uses hitherto a background of a dull varnish which, however, introduced difficulties in the case of films.

The possibility of retouching depends entirely upon the graininess of the layer. The least size of grain just enabling retouching is within the range of sizes of the silver grains in a developed photographic image. The grain size of the layer may be varied according to the desired degree of retouch, as to whether a strong change of the original values of the photographic image is necessary or whether there shall only be applied a little correction of a few lines. For example, a film for portrait work requires a size of grain different from that suitable for photomechanical work. Furthermore, the grain size will be regulated as to whether the film will be used in enlargement or not. In the first case too big a size of grain would cause trouble. The grain size is increased if the possibility of a strong and sharp retouch is desired.

The graininess is determined approximately by the size and the quantity of the single grains present.

It has been found that a layer fitting satisfactorily for retouch must have at least 15 to 20 percent of roughening material in the substratum, the particles having an average grain size of 1 or 2 thousandths of a millimeter. Opaque coatings now on the market have a grain size of about 3 ten-thousandths of a millimeter. Although these coatings have an optical effect since they scatter visual rays, they are not at all suitable for retouch.

It is to be understood that the minimum percentage above indicated of roughening material in the substratum is only approximate, since the size of grains varies not only with the quantity of roughening material, but also in some way with the method of mixing the solution from which the coating is flowed.

In the accompanying drawing, which is a diagrammatical sectional view, 1 represents an ordinary flexible support of nitrocellulose or the like; 2 is a gelatine-silver halid emulsion layer; and 3 is a back coating according to the invention as hereinbefore described.

As the colloid can be used mainly gelatine that can be entirely or partly replaced by other elements which are insoluble in water when the applied solution is dried, for instance albumen, caseine, and the like treated with formaldehyde. As embedded substances can be used insoluble compositions in a very fine state of division, such as carbonates, sulphates and phosphates of the alkaline earths, also suitable compounds of the heavy metals and the like. The back coating can be applied in the same manner as, for instance, in roll-films.

To enhance the antihalation effect dyes or other combinations may be added, preferably those which can easily be removed at the usual later treatment of the photographic material, for instance in the acid fixing baths. Suitable dyes for this purpose are, for example, acid fuchsine, aurin or tartrazine.

It is to be understood that the data given below is merely by way of example and that the invention is not limited to the use of the particular substances or proportions specified therein.

Example 1.—A preparation of 1 kilo of rice starch in 5 litres of water is poured into 30 litres of a solution of 10 per cent gelatine and is applied in the usual manner.

Example 2.—The material for the back coating is prepared by stirring freshly precipitated and washed calcium sulphate and a 5 to 10% solution of sodium caseinogenate, adding a small quantity of formaldehyde.

Example 3.—To a solution of 450 grams of gelatine in 2 litres of water is added a solution of 750 grams of barium chloride in 1.5 litres of water, and, while stirring a solution of 420 grams of anhydrous sodium sulphate in 2.5 litres of water. The liquid is applied to the film in this state. After solidifying it may be freed from sodium chloride by washing and then liquefied by heating before application.

Example 4.—To the mass prepared according to Example 3 is added before coating a solution of 80 grams of acid fuchsine in 2 litres of water. Instead thereof 125 grams of aurin in 1.5 litres of alcohol of 40 to 50% strength may be employed.

What I claim is,—

1. A film for photographic work with visible light rays comprising a supporting flexible sheet having on one side thereof a coating of material sensitive to visible light rays and upon the other side a coating of a colloid material containing finely grained particles in an amount and with a grain size enabling retouching.

2. A film for photographic work with visible light rays comprising a supporting flexible sheet having on one side thereof a coating of material sensitive to visible light rays and upon the other side a coating of gelatine containing finely grained particles in an amount and with a grain size enabling retouching.

3. A film in accordance with claim 1 and having incorporated in the colloid layer an antihalation dye.

4. A film in accordance with claim 2 and having incorporated in the gelatine layer an antihalation dye.

In testimony whereof I affix my signature.

DR. WILHELM LOHÖFER.