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PROCESS OF MAKING PHOTOGRAPHS

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3 Claims. (Cl. 95—5)

In U. S. Patent 2,186,942, there is described a process for making photographs characterized by the use of phototropic matter which under the influence of rays of a certain wave length visibly alter their substantial color or which adopt a definite tint on exposing them to light of a certain spectral range and which adopt a color tone different from the first one when exposed to light of another spectral range, especially of fulgides as a repeatedly applicable light sensitive material. Instead of the fulgides also compounds of hydrazones are suited for this purpose.

The further development of the above process has shown that the properties of layers for making such photographs may be varied in different direction by the use of mixtures of two or several phototropic substances. It is possible especially to widely affect and vary the tone and the extent of the color, the sensitiveness, the contrast and the gradation of the pictures.

It is well-known that the phototropic substances have in general a well defined color, which, when excited, changes in a definite manner. For instance the triphenylfulgide in a non-excited state is yellow, while, when excited, it adopts a red-brown tone. It is quite evident that such colors do not correspond in most cases to the characteristic color of the picture in photographic printing. As a rule a black and white picture is preferred. Therefore the phototropic layer should show such or a similar feature.

Since phototropic substances of sufficient sensitiveness producing a white and black color change are unknown, it is an object of the present invention to produce a layer approaching such an ideal case by mixing various phototropic substances together.

In analogy to the known monochrome toned photographic prints there is sometimes a demand for phototropic layers producing a definite color tone when energised by light.

For instance a brown-violet color tone may be obtained in the following manner: Mix the well-known α-methyl-α,δ-diphenylfulgide which is excited from yellow to red with α-methyl-α-phenyl-(o-nitrophenyl)-fulgide which is excited from yellow to blue-grey. Both components are mixed in a proportion of 1:1. By choosing another ratio of combination, it is possible to obtain a color tone leaning toward red or toward blue, as desired.

The process described in the invention may also be employed for varying the extent of the color tone (except of blackening) of the phototropic layer. By mixing a phototropic substance of great sensitiveness but of small blackening extent with another phototropic substance of little sensitiveness but of great blackening extent a combined layer may be made which incorporates great sensitiveness and great extent of blackening.

In the same way the contrast and above all the curve of gradation of the combined layer may be influenced.

The combined layers can be made in various ways. The selected components, if they are available in powdered form, may for instance be mixed in a simple way and dusted, sprayed or applied thinly in any manner upon a support provided with an adhesive layer. The various components may however also be mixed into a binding substance which is then transferred to a support. The mixing of the components may either be done in the binding substance itself or the components may be mixed before the binding substance is added to them.

It is also possible to mix each component separately with a binding substance which for various components may differ, and then mix the various preparations together.

As binding substances are selected for instance gelatine, albuminoils, alginates, cellulose derivatives, artificial resins or similar substances.

The ratio of combination depends on the prevailing requirements. Instead of the process indicated above the combined layer may also be made by superimposing several layers on a support. The pouring is best done successively in such a way that the next layer is applied only after the previous one has hardened to a certain degree. When applying this process it is possible, in addition to varying the concentration of the layers, to vary the color tone by varying the thickness of the layers.

What I claim is:

1. In a process for making a photographic positive on phototropic material whereby to provide a fugitive print, the steps of illuminating a composite layer of several different fulgides of contrasting color through a negative with light of a certain spectral range which will visibly alter the color of said layer, said layer being adapted to change its color under the influence of and in accordance with the intensity of illumination of said light passing through the negative, and then subjecting the layer to the action of light of a different spectral range which will cause the visible appearance of said layer to change back to its original color whereby the positive print produced on said layer by the first illumination is caused to disappear.

2. The process set forth in claim 1 for making a fugitive photographic positive wherein the phototropic layer is formed of a mixture of several different fulgides to provide a composite layer which will assume the characteristic appearance of a monochrome toned black and white photographic positive when light within a certain spectral range is transmitted onto the layer after passing through the photographic negative of which a positive is to be made.

3. The process set forth in claim 1 for making a fugitive photographic positive wherein the phototropic layer is formed of a mixture of several different fulgides to provide a composite layer which will assume a brown-violet color tone when light within a certain spectral range is transmitted onto said layer through the photographic negative of which a positive is to be made.

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