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PROVISIONAL SPECIFICATION.

“Improvements relating to the Pigment Process of Photography”

I, ROBERT KRAYN, Civil Engineer, of 36/37 Chaussée-strasse Berlin, in the Empire of Germany, do hereby declare the nature of this invention as follows:—

My invention relates to an improved copying material for the so-called pigment process. It consists of thin transparent leaves of celluloid, mica or the like, upon which gelatine, preferably mixed with colour, has been applied to form a transferable layer. The transferable quality of the layer of gelatine is secured by means of an under layer of rubber, wax, or rubber and collodion, or wax and collodion, and so forth, in the manner already wellknown in the photographic industry. The use of the new material to which I have given the title “Pigment Foils” is effected in such a manner that the chromated pigment foils are placed in the copying frame from behind and consequently are exposed through the thin layer of celluloid under a negative and are then placed in warm water. After a few minutes there is thereby produced the pigment picture without any transfer. The picture thus directly produced possesses in consequence of the under layer of rubber or the like the quality of a photographic transfer picture in pigment which can then be transferred to any other surface desired. In order to render the transfer more certain it is advisable to provide either the pigment picture or the transfer material with an adhesive coating of gelatine or the like in like manner as is necessary with the ordinary double transfer with pigment paper. In this manner a right-sided pigment picture is obtained without the use of a reversed negative. The celluloid foil on the new copying material may possess a coating of from 0,05 to 0,25 m.m. and this without causing any loss of definition from the copying through the back. Suggestions have been made some time ago for the object of removing the defects of the pigment paper process; thus, for instance, Dr. Von Monckhoven published in the paper Photographische Correspondence of 1879, Page 31, a pigment process according to which the pigment gelatine is poured in the form of a transferable layer upon a polished glass plate, and is exposed through this plate. The lighting from the back can here, however, on account of the presence of the glass plate, not take place in the copying frame but must be undertaken in the solar camera. The proposal of this inventor appears in consequence of this drawback to have received no attention in photographic practice. Another proposal having for its object a simplification of the pigment process is contained in the German Patent No. 66730, in which thin sheets of celluloid, mica and so forth are employed to which the layer of pigment is applied direct. The pigment picture produced by lighting from the back and direct development must here, however, remain upon the sheet as the diapositive and cannot be transferred to paper because an under layer which would render the transfer possible is not provided.

[Price 8d.]



Krayn's Improvements relating to the Pigment Process of Photography.

By my improved process and by the combination of the advantages of the two methods above set forth I have obviated the drawbacks of each separate process because my article possesses the advantage after exposure in a copying frame of being developed in warm water without transfer and then being capable of transfer to paper or the like.

It is obvious that by means of the above described new material also polychrome photographic pictures can be produced upon paper by taking the separate monochrome pictures successively and superposing them upon one and the same piece of paper. If the negative of a three-colour photograph is made use of and copied upon yellow, red and blue pigment foils respectively, then by the superposition of these three monochrome pictures photographs will be produced in the natural colours upon the paper. Instead of gelatine may obviously be used other organic substances which are soluble in cold water; such for instance as gum arabic, sugar, starch, dextrine and so forth, or mixtures thereof.

Dated this Ninth day of June, 1902.

W. P. THOMPSON & Co.
322, High Holborn, London, W.C.
Patent Agents for the Applicant.

COMPLETE SPECIFICATION.

"Improvements relating to the Pigment Process of Photography".

I, ROBERT KRAYN, Civil Engineer, of 36/37 Chausseestrasse Berlin, in the Empire of Germany, do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement:—

My invention relates to an improved copying material for the so-called pigment process. It consists of thin transparent leaves of celluloid, mica or the like, upon which gelatine, preferably mixed with colour, has been applied to form a transferable layer. The transferable quality of the layer of gelatine is secured by means of an under layer of rubber, wax, or rubber and collodion, or wax and collodion, and so forth, in the manner already wellknown in the photographic industry. The use of the new material to which I have given the title "Pigment Foils" is effected in such a manner that the chromated pigment foils are placed in the copying frame from behind and consequently are exposed through the thin layer of celluloid under a negative and are then placed in warm water. After a few minutes there is thereby produced, the pigment picture without any transfer. The picture thus directly produced possesses in consequence of the under layer of rubber or the like the quality of a photographic transfer picture in pigment which can then be transferred to any other surface desired. In order to render the transfer more certain it is advisable to provide either the pigment picture or the transfer material with an adhesive coating of gelatine or the like in like manner as is necessary with the ordinary double transfer with pigment paper. In this manner a right-sided pigment picture is obtained without the use of a reversed negative. The celluloid foil on the new copying material may possess a thickness of from 0,05 to 0,25 m.m. and this without causing any loss of definition from the copying through the back. Suggestions have been made some time ago with the object of removing the defects of the pigment paper process; thus, for instance, Dr. Von Monckhoven published in the paper Photographische Correspondence of 1879, Page 31, a pigment process

Krayn's Improvements relating to the Pigment Process of Photography.

according to which the pigment gelatine is poured in the form of a transferable layer upon a polished glass plate, and is exposed through this plate. The lighting from the back can here, however, on account of the presence of the glass plate, not take place in the copying frame but must be undertaken in the solar camera. The proposal of this inventor appears in consequence of this drawback to have received no attention in photographic practice. A simplification of the pigment process is already known, in which thin sheets of celluloid, mica and so forth are employed to which the layer of pigment is applied direct. The pigment picture produced by lighting from the back and direct development must here, however, remain upon the sheet as the diapositive and cannot be transferred to paper because an under layer which would render the transfer possible is not provided.

By my improved process and by the combination of the advantages of the two methods above set forth I have obviated the drawbacks of each separate process because my article possesses the advantage after exposure in a copying frame of being developed in warm water without transfer and then being capable of transfer to paper or the like.

It is obvious that by means of the above described new material also polychrome photographic pictures can be produced upon paper by taking the separate monochrome pictures successively and superposing them upon one and the same piece of paper. If the negative of a three-colour photograph is made use of and copied upon yellow, red and blue pigment foils respectively, then by the superposition of these three monochrome pictures photographs will be produced in the natural colours upon the paper. Instead of gelatine may obviously be used other organic substances which are soluble in cold water; such for instance as gum arabic sugar, starch, dextrine and so forth, or mixtures thereof.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is

1 Pigment foils in which gelatine or the like suitably coloured for the pigment process is superposed in the form of a removable layer on thin transparent sheets of celluloid, mica, or the like by aid of a substratum of rubber or the like, substantially as described.

2. The improved pigment foils prepared substantially as set forth but with materials soluble in cold water such as gum-arabic, starch, dextrine, or the like or mixtures thereof in place of gelatine.

Dated the 7th day of March 1903.

W. P. THOMPSON & Co.
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Patent Agents for the Applicant.