PATENT SPECIFICATION

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COMPLETE SPECIFICATION.

Improvements in or relating to Colour Photography or Kinematography.

We, LOUIS DUFAY, a citizen of the French Republic, and SOCIÉTÉ ANONYME: COMPAGNIE D'EXPLOITATION DES PROCEDES DE PHOTOGRAPHIE EN COULEURS LOUIS DUFAY, a company organised according to the French laws, both of 10, rue Champ Lagarde, Versailles (Seine-et-Oise), France, 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:—

The present invention relates to improvements in colour photography or kinematography.

Colour photography on transparent supports comprising a number of microscopic elements, coloured in violet, green, orange and exactly juxtaposed is in itself known. Each coloured element must be dyed to a relatively considerable intensity in order to select the coloured rays effectively, and the photograph thus produced can be viewed as a transparency provided the illumination is sufficiently brilliant. However, if the illumination is poor as for example when the photograph is laid upon a sheet of white paper, the photograph is too dense for viewing.

If the colour intensity is reduced however, the image may be viewed in a poor light, but such coloured elements do not have the required optical qualities for effecting a correct selection of the colours when exposing the negative.

It has been proposed to overcome these defects by employing a process which consists in producing on the front and back of a transparent or translucent support two congruent poly-colour reticules in such a manner that the parts of the two reticules which are of the same colour cover each other, the elements of the one reticule serving as a viewing reticule and carrying the emulsion being of such a colour intensity that they produce in the top view on a white ground a neutral gray, while the reticule on the back, serving as a compensating reticule, congruent with the viewing reticule, is so intensely coloured that its colour elements absorb, in combination with the congruent elements of the same colour of the viewing reticule, their complementary colour.

Another process is also already known, which consists in dyeing the elements of a selecting screen with two sets of dyestuffs of different characters, one of which is adapted to be removed more easily than the other one, producing a picture on said screen, and removing one of the sets of dyestuffs without affecting the other set.

The present invention comprises a selecting screen for photographic plates or films for producing pictures in colours, comprising two contiguous and separable multi-colour screen layers of different relative intensities of colouration arranged so that similar coloured parts of each layer coincide exactly.

The invention also comprises a process according to which the screen layers are both dyed whilst in contiguous contact with each other.

The invention is clearly applicable to films for use in kinematography.

A diagrammatic representation of a screen according to the invention is shown in the accompanying drawing.

On the front of a suitable support S, for example a thin sheet of celluloid, is spread a layer of transparent gelatine G. This is formed into a colour selecting screen by any known process by employ-

[*Price* 1/-]

ing any dyestuffs having chemical affinity for gelatine and celluloid.

By suitable choice of dye-stuffs, the gelatine may be dyed to any desired intensity, the dye subsequently penetrating the celluloid to any desired extent, thus producing two contiguous and separable multi-coloured screens the individual colour elements of which register exactly.

The colouring in the upper layer is sufficiently intense for taking a photograph, whilst in the lower layer it will be of less intensity, sufficient only for viewing the picture. A light sensitive emulsion E is spread on the back of the said support.

After taking the photograph in the usual manner the gelatine selecting screen G is removed by washing, for example with hot or cold water.

The photograph can be mounted on any suitable reflecting support, or substances of such a nature as to render the support reflective (for example sulphate of baryta or the like) can be introduced in the emulsion.

Use can be made of the following dyestuffs, rhodamine, fuschine, safranine, auramine, malachite green, methylene blue, carmine blue, etc.

The penetration of the dye-stuffs in the celluloid can be facilitated and the intensity of the selecting screen can be regulated by suitably treating to a more or less degree, the front of the celluloid and before spreading the gelatine, with for example ether, acetic ether or acetone. The thickness of the support S will depend on the size of the coloured elements of the screen so that upon examination of the photographic proof, effects of parallax may be eliminated.

The order of superposition and the chemical nature of the layers used are given by way of example only. Thus gelatine can be used as a layer on the front of the celluloid, or instead of gelatine and celluloid use can be made for instance of gum or any other transparent or translucent material.

The forms, dimensions, colours, details and accessories and the applications can of course be varied according to circumstances without departing from the invention.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. A selecting screen for photographic plates or films for producing pictures in colours, comprising two contiguous and separable multi-colour screen layers of different relative intensities of colouration arranged so that similar coloured parts of each layer coincide exactly.

2. A process of producing a selecting screen for photographic plates or films for producing pictures in colours as claimed in Claim 1, characterised in that the screen layers are both dyed when in contiguous contact with each other.

3. A selecting screen for photographic plates or films for producing pictures in colours, as claimed in Claim 1, characterised in that the screen layers comprise a thin sheet of celluloid and a layer of transparent gelatine with which the celluloid is covered, which layer is dyed with dyestuffs having chemical affinity for both gelatine and celluloid so that the celluloid is dyed to any desired intensity after the gelatine has been dyed throughout its thickness to any other desired intensity, a light-sensitive emulsion being spread on the uncovered side of the celluloid.

4. A process of producing a selecting screen for photographic plates or films for producing pictures in colours as claimed in Claim 3, characterised in that the face of the sheet of celluloid which will receive the layer of gelatine is treated before the said gelatine is spread, with ether, acetic ether or acetone for the purpose of regulating the intensity of colouration of the celluloid.

5. A process of producing a selecting screen for photographic plates or films for producing pictures in colours as claimed in Claim 1, characterised in that substances of such a nature as to render the light-sensitive emulsion reflective (for instance sulphate of baryta), are introduced in the layer of emulsion.

6. The process of producing a selecting screen for photographic plates or films for producing pictures in colours, substantially as described with reference to the accompanying drawing.

7. The selecting screen substantially as described.

Dated this 27th day of July, 1926.

LOUIS DUFAY.
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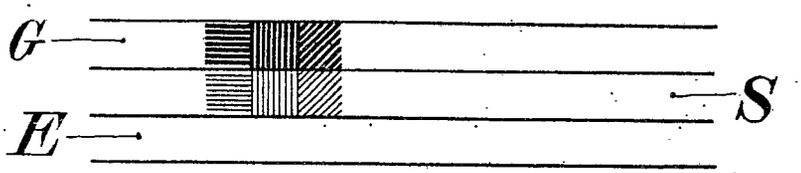

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