

PATENT SPECIFICATION

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COMPLETE SPECIFICATION.



Improvements in or relating to Reproducing Photographic Prints.

I, RODOLPHE BERTHON, of 89, Avenue de Neuilly, Neuilly, s/Seine, France, a French citizen, 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 reproduction of photographic prints by projection invariably entails difficulties due to the necessity of focussing the light beam in order to obtain a strictly uniform illumination throughout the print. In connection with coloured prints, especially those on microscopically reticulated supports, these difficulties result not only in the intensities of the image not being faithfully preserved but also in the possibility of the colours becoming entirely transposed.

The object of the invention is to provide a method embodying a device to overcome these difficulties. The invention consists in that coloured photographic prints on reticulated films are illuminated during reproduction by projection by means of diffused light, which illuminates the prints with a substantially uniform intensity.

It has been proposed to fit diffused-light lanterns with a reflector upon which light is thrown from lamps so that the reflector throws diffused light on the object to be illuminated the object being screened from direct illumination by the lamps. The apparatus according to the present invention comprises a lantern formed by a disk having an aperture wherein is positioned the print or in front of which moves the film to be reproduced, a tube located on said disk and having a reflecting inner surface, a cup carried by said tube and having its concave surface white-coated and which has a curvature substantially concentric with the said aperture, a second tube having a reflecting outer wall and located concentrically with the said aperture, for the purpose of masking direct radiation from the source or sources of light through said aperture, and sources of light located adjacent the disk and between the two tubes.

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The lantern arrangement is illustrated by way of example, in the accompanying drawing, which shows a sectional view through the optical axis of a printing apparatus.

A is a disk provided at its centre with an aperture O opposite which the print to be reproduced is disposed (or in front of which moves the kinematographic film when such film is to be reproduced).

B is a tube secured on the periphery of disk A;

C is a shallow cup the curvature of which is substantially concentric with the aperture O at the centre of plate A. Said cup fits tightly into tube B and constitutes with the latter and with plate A the casing of the lantern;

E are lamps arranged through the plate A in a circle about O.

F is a second tube, concentric with the aperture O, and the purpose of which is to screen direct radiation from lamps E on to the aperture O.

The lamp so constituted is characterized by the following inner arrangements. The inner face of cup C is covered with a perfectly uniform dull white coating. The walls of tubes B and F facing lamps E are silvered and burnished, as is the portion of plate A through which the lamps E are disposed. The inner face of tube F is dull black. The operation of the apparatus is as follows:—Light emanating from lamps E, partly by direct rays and partly by rays reflected from the silvered walls, illuminates the inner face of the cup C with a substantially uniform intensity, so that the said cup emits a substantially uniform radiation, at least from the portion directly opposite the aperture O where the print to be reproduced is disposed.

The end face C of the lantern need not be accurately shaped provided that light is emitted with a substantially uniform intensity in all directions.

The diffusion produced by a lantern according to the invention is such that the disadvantages of lighting prints with direct light are eliminated almost entirely. In the case of reticulated prints diffraction effects disappear and

"dark shadows" are substantially decreased, leaving no occasion for using any optical device.

5 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:—

10 1. A method of reproducing coloured photographic prints on reticulated films by projection, consisting in that the negatives are illuminated by diffused light to avoid colour transposition.

15 2. Apparatus for use in carrying out the method claimed in Claim 1, comprising a lantern formed by (A) a disk having an aperture wherein is positioned the print or in front of which moves the film to be reproduced (B) a tube located on 20 said disk and having a reflecting inner

surface (C) a cup carried by said tube and having its concave surface white-coated and which has a curvature substantially concentric with the said aperture (D) a second tube having a reflecting outer wall and located concentrically with the said aperture, for the purpose of masking direct radiation from the source or sources of light through said aperture, and (E) sources of light located adjacent the disk and between the two tubes.

30 3. The method of reproducing coloured photographic prints substantially as described with reference to the accompanying drawings.

Dated this 20th day of May, 1927.

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[This Drawing is a reproduction of the Original on a reduced scale.]

