

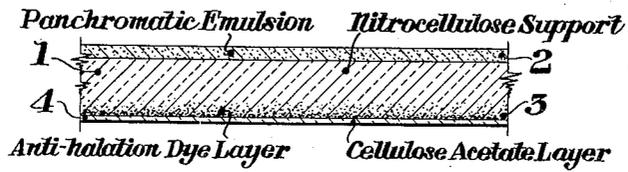
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ANTISTATIC NONHALATION MOTION PICTURE FILM

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By

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# UNITED STATES PATENT OFFICE

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## ANTISTATIC NONHALATION MOTION PICTURE FILM

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This invention relates to photographic film and more particularly to motion picture film for use as a negative material for studio purposes where the illumination is largely from light sources, such as incandescent electric bulbs, the light from which is especially poor in the blue and ultra-violet and where provision is especially desirable against static and halation.

There are particular advantages in the use of a permanent dye for anti-halation purposes, since the removal, bleaching and destruction of the dye frequently has deleterious effects in the continuous processing of motion picture film.

When necessary, reference will be made to the single figure of the accompanying drawing in which there is shown on a greatly magnified scale, a section of the film embodying my invention.

In the preferred form of my invention, I utilize a film support or base 1 of a nitrocellulose composition of the type now in general use, there being upon one surface a photographically sensitive layer 2 which is panchromatic or specially sensitive in the red and yellow portions of the spectrum. There is applied directly to the support 1 a dye layer 3 by means of suitable solvents which penetrate the support. It sometimes happens that there is a tendency for particles of dye to flake off and there is also a very strong and objectionable tendency for film of nitrocellulose composition to create static as it passes through the camera. I overcome both of these difficulties by applying directly over the dye layer a cellulose acetate varnish which remains in the form of a very thin layer. The particular composition of the nitrocellulose support and the varnish layer are not material to the invention since these are well known.

I contemplate the use of other materials for the support and for the varnish, it being only necessary that they shall have opposite

electrical characteristics and that the varnish be permanent, hard and insoluble under all conditions to which the film is subjected in use. I particularly consider the mixed esters of cellulose and other cellulosic compositions as suitable for this purpose.

The dye layer is preferably one which absorbs light throughout the entire photographic range and is neutral in tint. Since positives must be printed upon the negative, the density must not be so great as to slow up the printing to an undesirable extent. I have found that halation is sufficiently prevented if the density throughout the visual range is of the order of .20 to .25, although I do not limit myself to these limits. Particularly in the blue region of the spectrum, it may well fall considerably below that figure, say to .10. Preferably, however, the density should not be greater than .30. A layer of this type sufficiently prevents halation and permits of printing in the regular machines without too greatly retarding that operation. If the tint is neutral and of the specified density, the quality of the picture may be judged by ordinary standards.

The particular dyes that may be used are not essential to the invention, though I have found Nigrosine to be satisfactory. However, mixtures of dyes may be used, such, for instance, as Spirit blue R and Alphazurene or a mixture of Zapon black, Metanil yellow and Tolidine blue. These dyes would, of course, be mixed in such proportion as to give the desired non-color-selective appearance.

I contemplate as included within my invention, all such modifications and equivalents as fall within the reasonable scope of the appended claim.

Having thus described my invention, what I claim as new and desire to be secured by Letters Patent of the United States is:

Motion picture film comprising a support of a cellulose nitrate composition, having on one surface a photographic emulsion highly

sensitive to red and yellow light and, applied directly on the other surface, a permanent dye layer having a density between .10 and .30 as to light of all visible wave lengths and, applied directly over said dye layer, a permanent very thin layer of a cellulose acetate composition which acts both to prevent static and to protect the dye layer.

Signed at Rochester, New York this 30th day of June 1931.

DONALD McMASTER.

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