

N^o 9465



A.D. 1905

Date of Application, 5th May, 1905

Complete Specification Left, 6th Nov., 1905—Accepted, 15th Feb., 1906

PROVISIONAL SPECIFICATION.

“Improvements in and relating to the Production of Negatives and Positives for Multi-colour Projection and Improved Means for Projection on to a Screen”.

WILLIAM FRIESE-GREENE Assistant 24 Arundel St. Kemp Town Brighton do hereby declare the nature of this invention to be as follows;—

This invention relates to cinematographic apparatus for taking & projecting animated pictures in their natural colours, & it has more particularly for its object to provide a self-contained apparatus of compact arrangement & small bulk for exhibiting animated pictures in their natural colours, & which requires only a small amount of light such as an ordinary oil lamp, & can be constructed in a portable form adapted for home use. According to this invention I take the ordinary cinematographic apparatus as mentioned in my Patents No. 22,954 of 1893—22,928 of 1896. 21,649 of 1898 13,883 of 1900—By using one lens with a prism of 20 degrees placed half way across at the back so as to obtain two pictures side, by side upon the orthochromatic film, placing the yellow-orange colour screen near the focussed image, & the blue-red screen near the focus of the second image identical negatives are taken with one lens from the same point of view.

In superimposing the transparencies upon the screen for projection, I use the relative coloured screens that the pictures were taken with, only of lighter degree taking in consideration the colour & density of the transparencies & the light to be used, this produces fairly accurate records,

For more accuracy in obtaining the varied colour tones, shades, & distance, I may vary in any way three lenses & adjustable prisms likewise coloured screens. The best effect I have obtained at present, is with each lens, & adjustable prisms producing two pictures side, by side simultaneously the first two pictures having blue & yellow screens, the second two pictures having red & green, the third two pictures violet & orange, using the same screens for projection, having a neutral grey as the colour of deposit for the transparencies, taking the pictures at the rate of fifteen a second, giving one lens where one of the colours appears most prominent to the eye in the object or scene three consecutive exposures to one of the others—I may according to object or colour make the exposure one to 3. 5. 7 or any number relative to the colour screens values, & orthochromatic sensitized band or film which produces the best effect for projecting natural colour records. I may also cause the apparatus to work & show the colour records automatically as well as regulate the source of illumination as stated in my Patent No. 13,883 of 1900.

14th of June 1905.

WILLIAM FRIESE-GREENE.

COMPLETE SPECIFICATION.

“Improvements in and relating to the Production of Negatives and Positives for Multi-colour Projection and Improved Means for Projection on to a Screen”.

I, WILLIAM FRIESE-GREENE, Assistant, of 24, Arundel Street, Kemp Town, Brighton, do hereby declare the nature of this invention and in what manner

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Improvements in and relating to the Production of Negatives and Positives, &c.

the same is to be performed to be particularly described and ascertained in and by the following statement:—

This invention relates to cinematographic apparatus and projecting animated pictures in their natural colours, and it has more particularly for its object to provide a self-contained apparatus of compact arrangement and small bulk for exhibiting animated pictures in their natural colours, and which requires only a small amount of light such as an ordinary oil lamp, and can be constructed in a portable form adapted for home use, and forms an improvement on the invention described in Letters Patent No. 3729, dated 17 February, 1903, and granted to Benjamin Jumcaux and William Norman Lascolles-Davidson.

According to the present invention a single prism is disposed behind the lens so as to intercept some of the rays from the image, which being refracted, form a second image.

Referring now to the drawings which shew diagrammatically one means of applying this invention to a camera for taking animated photographs for reproduction in colours.

$a b$ is the object, c the lens of the camera, d a prism, e a yellow orange colour screen, f a blue red screen and g the focus of the lens c .

The ray $a h$ is refracted by the lens c and passes through the focus g and through the screen e , the focussed image of a appearing at j . The ray $a k$ passes through the centre of the lens c is not refracted thereby and strikes the prism d and is refracted, the ray $a k m$ passes through the screen f and the image appears at n . All rays from a which are not intercepted by the prism d pass through the point j and form the image of a ; similarly all rays from a which are intercepted by the prism d are refracted and a second image of a is formed at n .

In the same manner the ray $b o$ is refracted by the lens c , the ray $o p$ passing out of the lens in the direction of the focus g , but it is intercepted by the prism d , passes through the screen f and the image of b appears at q . The ray $b k$ passes unrefracted through the centre of the lens c through the screen e and an image of b appears at r . All rays from b which are intercepted by the prism d pass through the point q and form an image of b ; similarly all rays from b which are not intercepted by the prism d pass through the point r and form a second image of b .

Rays from points intermediate between a and b are refracted by the lens c or the lens c and the prism d , so as to pass through the screen e or the screen f and produce images intermediate between r and n .

The screens e and f are arranged so that all rays which are not intercepted by the prism d pass through the screen e and all intercepted rays pass through the screen f .

As shown the prism is disposed between the lens and its focus and it is placed half way across the lens with its apex on the centre line of the lens.

The apparatus used may be that described in my previous Patents No. 22,954 of 1893, No. 22,928 of 1896, No. 21,649 of 1898, or No. 13,883 of 1900, and the prism used is preferably a prism of 20 degrees.

The two images $j r$, $n q$ of the object $a b$ are similar to all appearances and may overlap slightly according to the position of the prism d .

In use the orthochromatic film is passed through the plane $r n$ so as to receive the images side by side on the film, that is to say assuming the diagrammatic drawing to be a plan the film would pass vertically, or if the film is to pass horizontally the drawing must be taken to be in elevation.

In projecting the pictures the relative coloured screens with which the pictures were taken, are used, only of lighter degree, taking into consideration the colour and density of the transparencies and the light to be used.

In projecting the prism used is of greater angle so as to produce greater deviation and consequently a magnified projected image.

For more accuracy in obtaining the varied colour tones, shades, and distance

Improvements in and relating to the Production of Negatives and Positives, &c.

the above described arrangement may be multiplied, the screens being of different colours, for instance blue and yellow screens may be used for one pair of pictures, red and green for another pair, and violet and orange for a third, the same screens being used for projection.

5 In some cases where one of the colours appears most prominent to the eye in the object or scene, more exposures may be made through one pair of screens than through the others. According to object or colour the exposure may be made one to 3, 5, 7 or any number relative to the values of the colour screens, and orthochromatic sensitized band or film which produces the best effect for
10 projecting natural colour records.

The apparatus may be made to work and show the colour records automatically as well as regulate the source of illumination as stated in my previous Patent No. 13,883 of 1900.

15 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. In photographic cameras and projecting apparatus having one lens, the use of a prism disposed behind the lens, substantially as and for the purpose set forth with reference to the accompanying drawing.

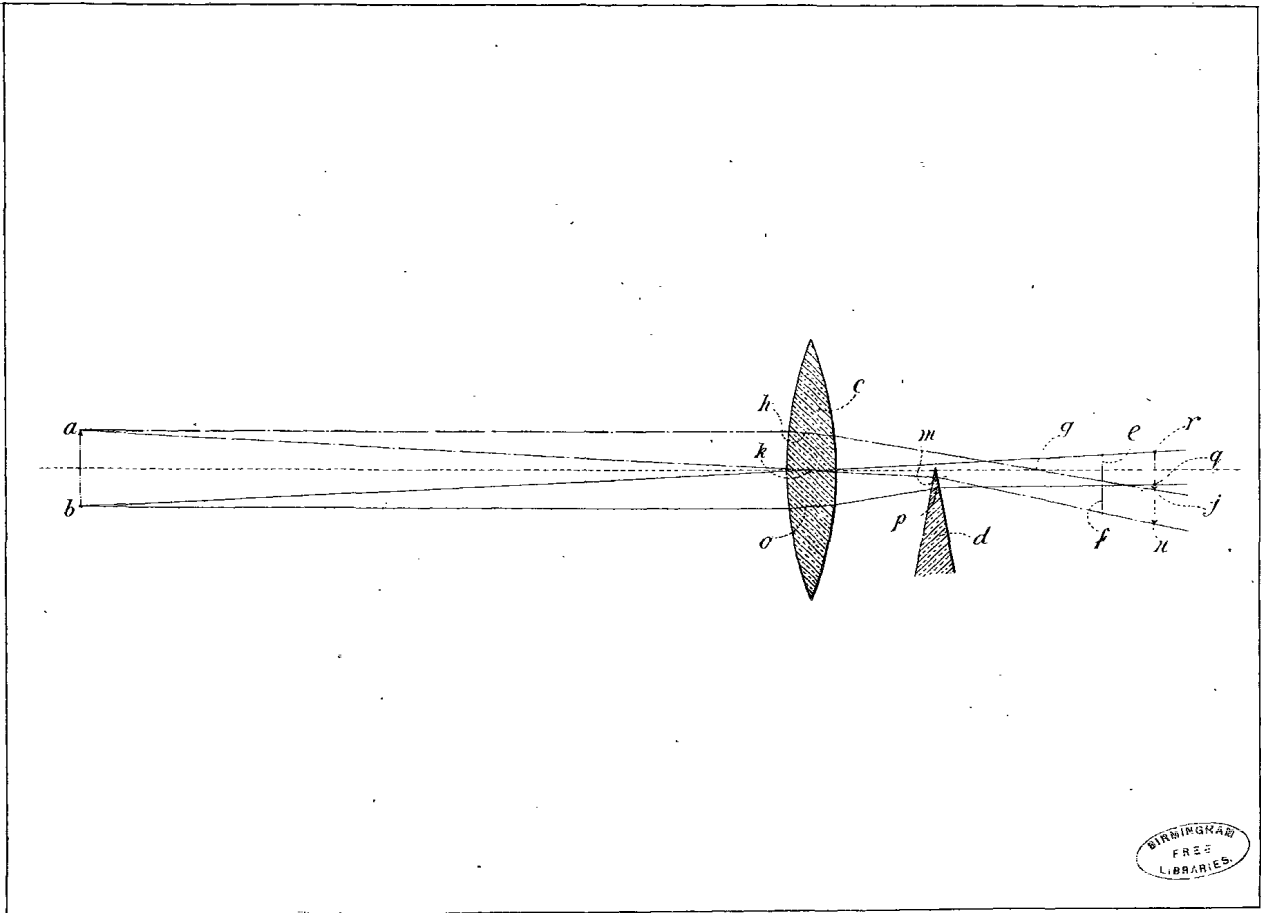
20 2. In photographic cameras and projecting apparatus as claimed in Claim 1, arranging colour screens in such a way that exposures through said screens may be varied in any desired ratio.

Dated this 4th. day of November 1905.

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

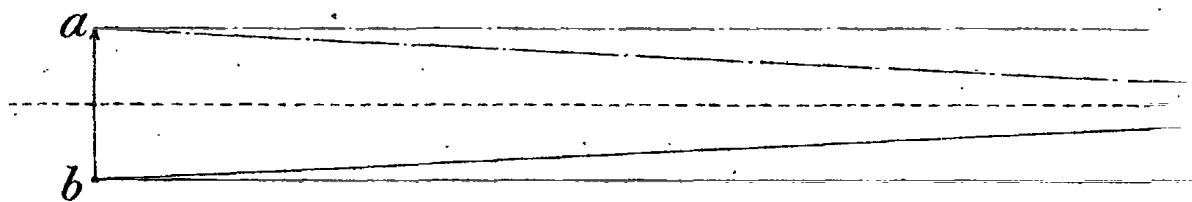


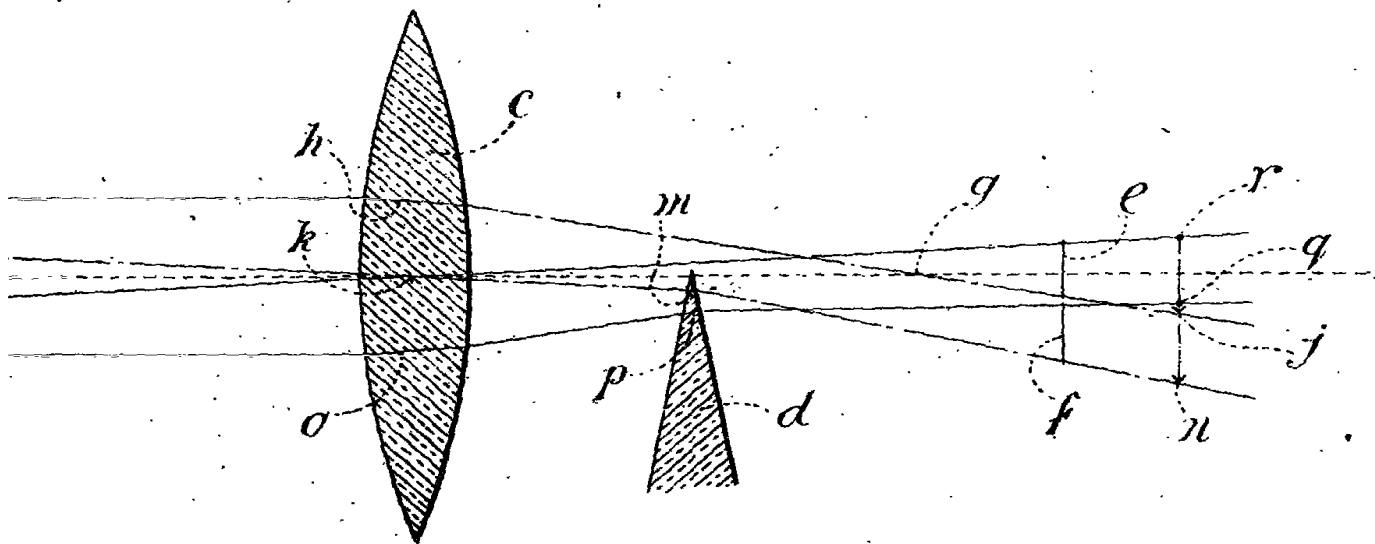
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FRIESE—GREENE'S COMPLETE SPECIFICATION.

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