

PATENT SPECIFICATION

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349,267

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Complete Accepted : May 28, 1931.

COMPLETE SPECIFICATION.



Improvements in or relating to the Reproduction of Colour-record Images on Lenticular Films.

We, SOCIETE FRANCAISE DE CINEMATOGRAPHIE ET DE PHOTOGRAPHIE FILMS EN COULEURS KELLER-DORIAN, a body corporate organised under the laws of France, and JEAN LEON VIDAL, 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:—

This invention relates to a method of reproduction of lenticular film images on another lenticular film for projection in colours.

The present invention enables the linear lenticular "nets" or mesh to be given any desired relative directions.

According to the invention a method of reproduction of colour-record images made on a linear lenticular film on another linear lenticular film with any angle between the directions of the lenticular elements of the two films consists in utilising a reproduction objective and a special diaphragm having unmasked parts which provide light transmission areas said areas being determined in accordance with the common single-colour areas obtained by the superimposition of two multi-colour filter screens similar to that employed when exposing the film in the camera the colour bands of said screens intersecting at the same angle as the lenticular elements of the two films.

The invention is illustrated in the accompanying drawings in which:—

Figure 1 shows one arrangement employed with a known objective in two parts symmetrical with regard to the diaphragm which is placed in the focal plane common to each of said parts. Figure 2 is a view of a known diaphragm for reproduction in the case in which the lenticular elements of one film are parallel to those of the other film. Figures 3 and 4 represent special diaphragms used in the cases in which the lenticular elements of one film are respectively at right angles and oblique to those of the other film.

The most satisfactory known methods of lighting a machine for the reproduction of lenticular films consist either in

using a lighting lamp with a long filament, or choosing a convenient focal length for the lantern condenser, so as uniformly to light the whole reproduction diaphragm of the objective.

The diaphragm D (see figure 1) will thus be adequately lighted by the diffraction spectra of the rectilinear filament through the "net" of the film.

Referring to figure 1, F is the original film and F¹ the virgin lenticular film and O, O¹ the reproduction objective, which as above stated, is composed of two parts symmetrical with regard to the diaphragm D. The form of diaphragm shown in figure 3 may be conveniently employed in the case in which the embossings of the films are at right angles to each other though the invention is not, of course, limited to the use of such diaphragm.

For a given direction of either of the lenticular elements the diaphragm may be considered as divided in three determined zones parallel to the direction of the embossing and corresponding to the three elementary colours red, green and blue (*r*, *g*, *b* of figure 2) of the selector filter of colours used with the objective for taking views.

Referring to figure 3, there are three bands *r*, *g* and *b* corresponding to a given embossing and three other bands R, G and B corresponding to an embossing perpendicular thereto. Obviously, the non hatched parts in the figure are appropriate to the two perpendicular embossings simultaneously, but each one belongs only to a single elementary colour i.e.

r corresponds to R

g corresponds to G

b corresponds to B

Consequently, if a diaphragm cut out as shown by the unshaded parts in figure 3 is placed in the objective O, O¹, it is possible to reproduce a lenticular film image on another lenticular film, the directions of both embossings being perpendicular to each other; in this case, the moiré effects disappear entirely. When using a diaphragm determined as shown in figure 4, it is possible to reproduce on a lenticular film the image on another lenticular film, with any angle

whatsoever between the directions of embossings.

In addition, when using a diaphragm of this type in the manner explained here-
 5 above, it is possible to reduce the light transmission areas more or less in order to rectify the colours and if necessary to ensure uniform illumination the essential
 10 condition being that the said light transmitting areas should be entirely contained within the openings determined in the manner set forth.

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

1. A method of reproduction of colour-
 20 record images from one linear lenticular film upon another linear lenticular film in which the directions of the lenticular elements of the two films are at an angle to one another, and which consists in utilising a reproduction objective and a
 25 special diaphragm, having unmasked

parts which provide light transmission areas said areas being determined in accordance with the common single-colour areas obtained by the superimposition of two multi-colour filter screens similar to
 30 that employed when exposing the film in the camera the colour bands of said screens intersecting at the same angle as the lenticular elements of the two films, sub-
 35 stantially as described.

2. The method of reproduction of colour record images as claimed in claim 1 wherein the lenticular elements of the two films are perpendicular to each other.

3. Methods of reproduction of colour-
 40 record images made on a linear lenticular film and apparatus for carrying those methods into effect substantially as herein described and illustrated in the accom-
 45 panying drawings.

Dated the 1st day of May, 1930.

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

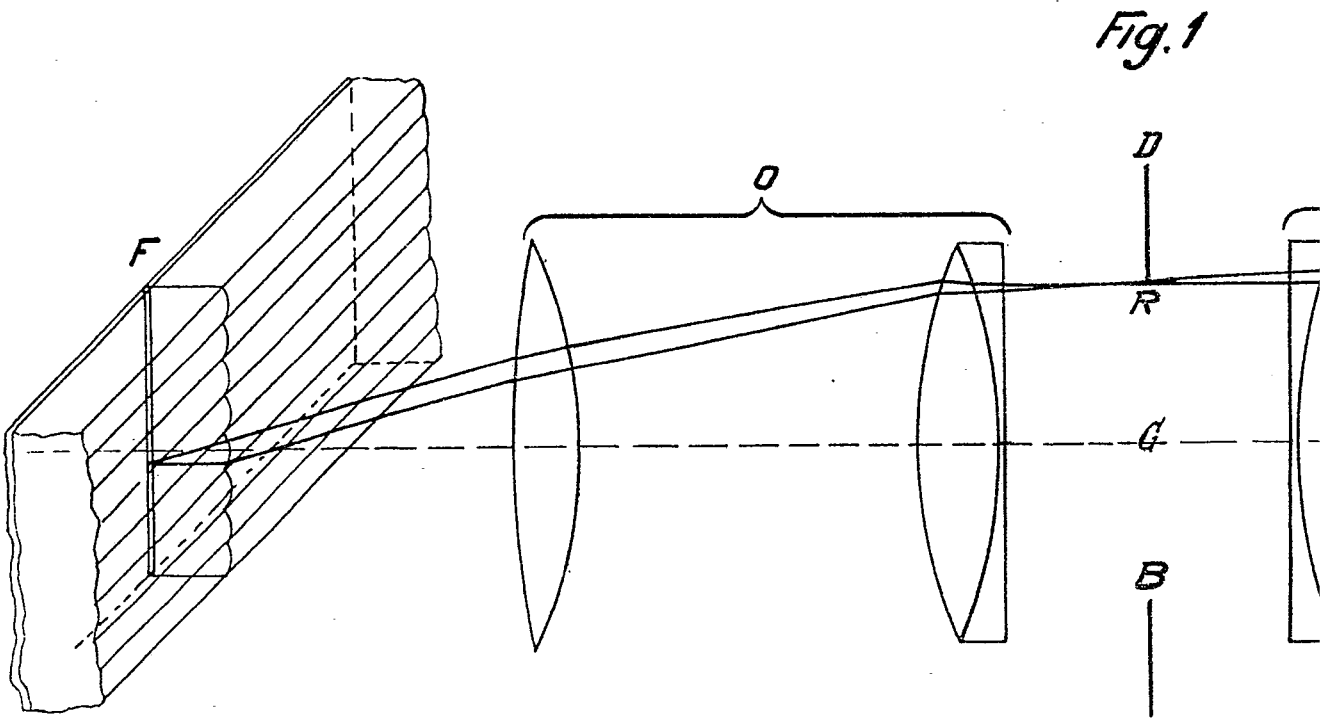


Fig. 2

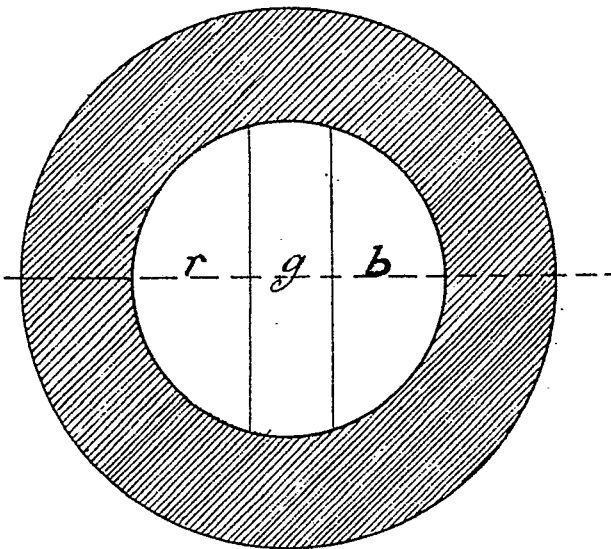


Fig. 3

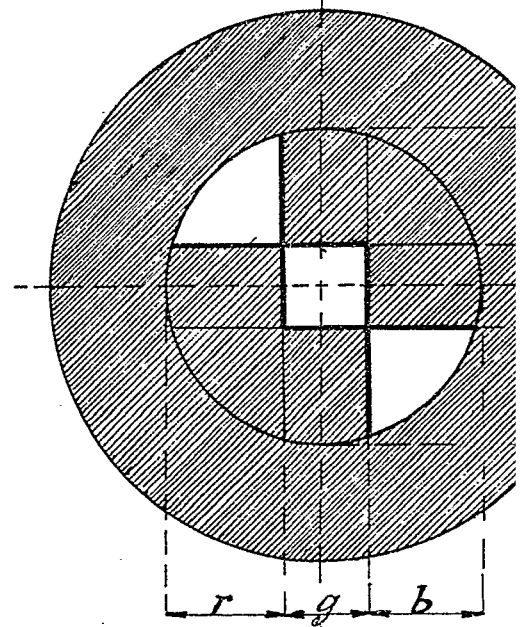


Fig. 1

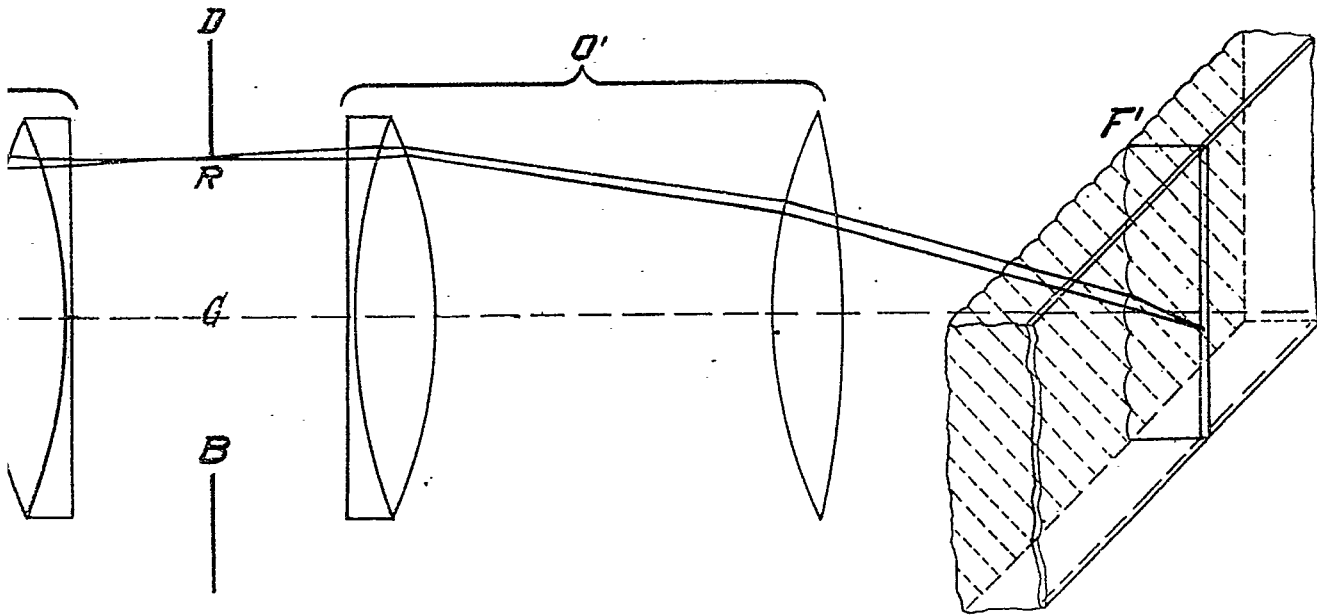


Fig. 3

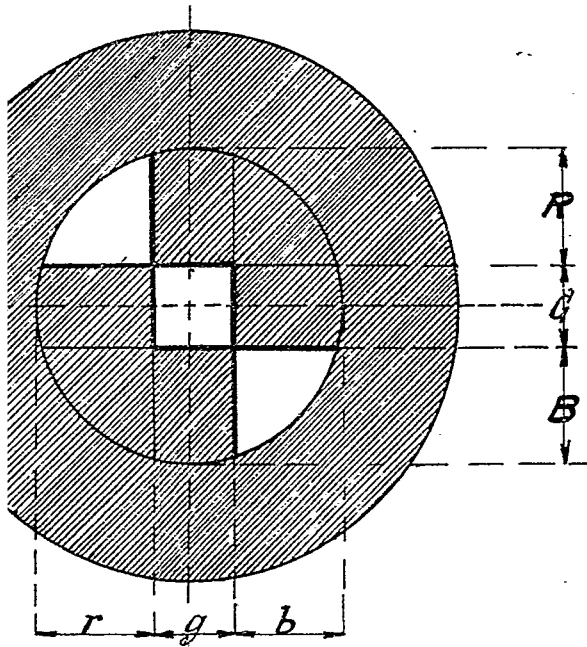
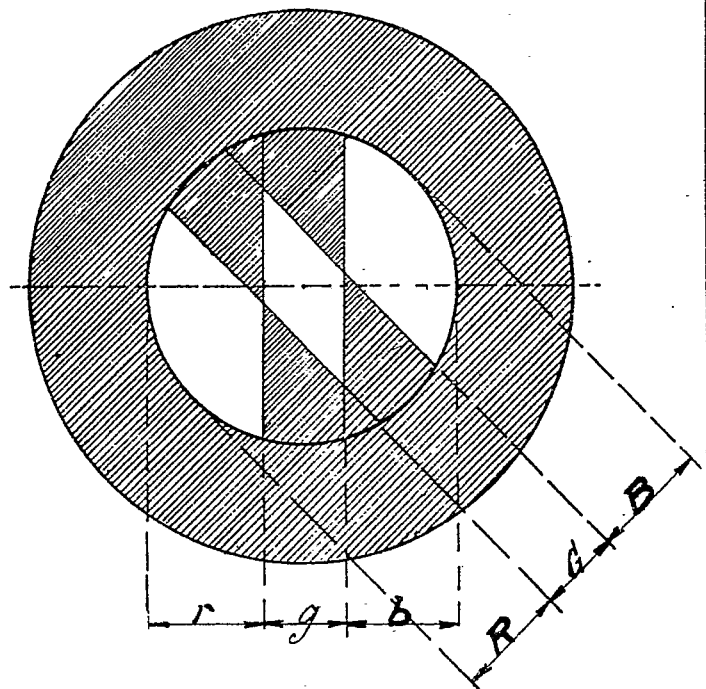


Fig. 4



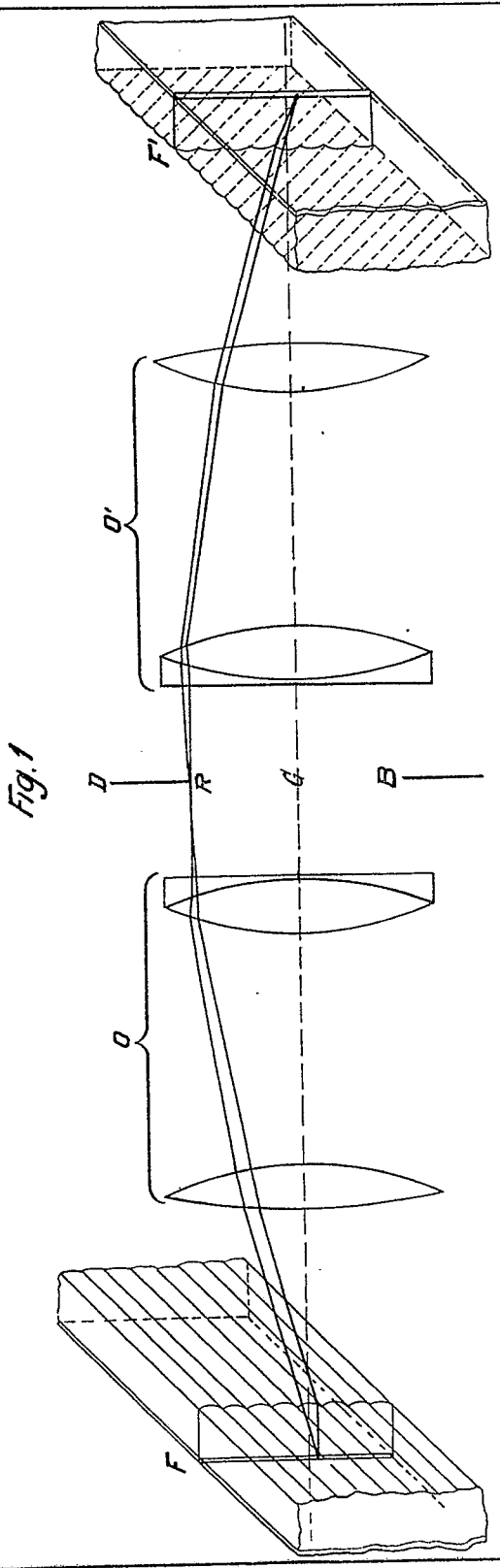


Fig. 1

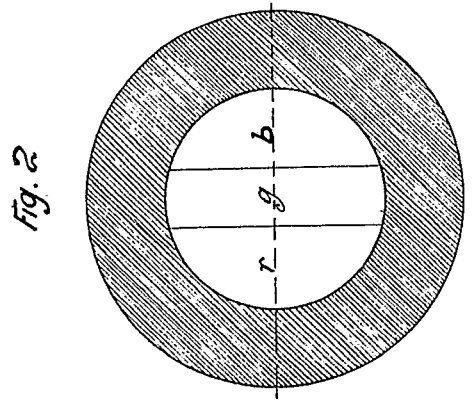


Fig. 2

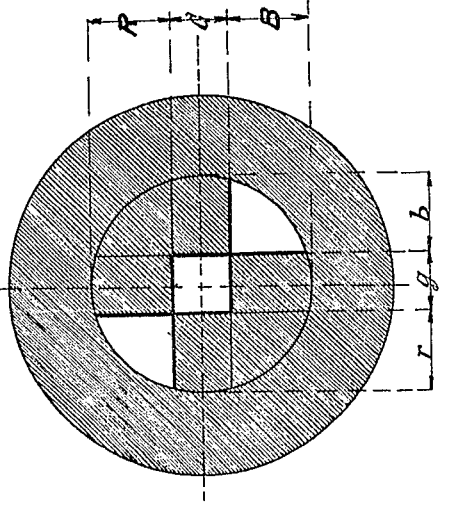


Fig. 3

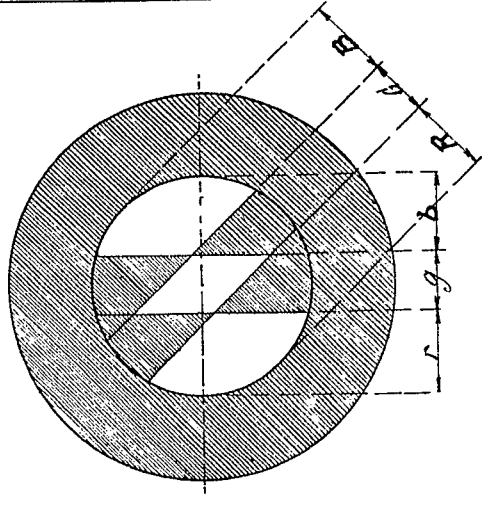


Fig. 4

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