

RESERVE COPY PATENT SPECIFICATION



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COMPLETE SPECIFICATION.

Improvements in and relating to the Reproduction by Contact Printing of Colour-record Images on Lenticular Films.

We, KISLYN CORPORATION, a corporation organized under the laws of the State of Delaware, one of the United States of America, with an office at 14 Wall Street, New York City, New York, United States of America (Assignees of SOCIETE FRANCAISE CINECHROMATIQUE (Procedes R. Berthon) of Paris, France) a French body corporate, 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 novel and improved manner of eliminating the patterns or moiré effect in the copying of images by contact printing from one film to another when the films are of the lenticular form referred to, for example, in the specification of British Patent No. 310,320, and is an improvement on the invention described therein. The invention has particular use when employed with an apparatus such as is shown in the said specification. This apparatus gives perfect results provided the originals are themselves excellent considered from a photographic point of view.

It is of moment, among other things, when printing from one linear lenticular film on to another that the system of lines impressed in the sensitive layer by the luminous rays passing through the lenticular elements or embossing should not be destroyed at any point by the subsequent photographic operations such as development, reversing or possible intensification. As a matter of fact, it is the photographic system of lines inscribed on the layer of gelatine-bromide of the film which serves as a true guide for the luminous pencils in the phenomenon of the effacement of the patterns. At all the points where this system is destroyed by the photographic operations, the reproduction is as if an embossed film stripped entirely of its photographic image were superimposed on a virgin embossed film. It is evident that in this case the patterns will appear since the light will have a more or less diffused effect without any guidance coming from the system of lines inscribed in the layer of gelatine of the

original.

The present invention has for its object an improvement in the process forming the subject of the before mentioned patent specification and permits of reproducing without moiré effects such films of which the photographic system of lines has been eaten away at certain points by the photographic operations.

This process is based on the re-constitution, during the operation of reproduction of a system of luminous lines in the plane of the layer of gelatine of the original film to be reproduced. The invention consists in interposing between the point source of light and the original to be reproduced by contact printing, and substantially in contact with and parallel to the latter, a linear lenticular film stripped of its gelatine emulsion or image layer and the embossed face of which is directed towards the point source of light, the lenticulations of which are of the same nature and disposition as the lenticular elements on the original and copy films. The embossing of this auxiliary film will supply in the plane of the photographic image of the film to be reproduced, a system of luminous lines constituting the images of the source of light formed by the linear lenticular embossing, this system of luminous lines sweeping the entire surface of the original photographic proof during the oscillation of the luminous pencils as described in the before mentioned patent specification.

The auxiliary embossed film stripped of its emulsion may be of the same length as the film to be reproduced; it may be short and form a loop passing continuously in the course of printing into the unwinding apparatus of the device; finally, it may be of the dimension of a single image and simply pasted on the window of the printing gate.

In the accompanying drawing is shown one form of apparatus which may be used for the practice of the invention, this apparatus being substantially the same as that illustrated in the aforesaid patent specification.

The single figure of the drawing is a diagrammatic cross-section taken trans-

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versely of the planes occupied by the films.

In the drawing, the numeral 1 designates the original film and the numeral 2 the copy film upon which is to be reproduced the image on the original film. Each of the films 1 and 2 is provided on its face with a multiplicity of minute linear lenticular elements 3 and 4, these elements being shown greatly exaggerated in size and, as is well known in the art, being on the order of 500 or 700 to the inch. The films are shown as in contact with each other and the faces carrying the linear lenticular elements are placed adjacent each other with their lenticular elements parallel, as indicated, the image-layer 5 and sensitive emulsion layer 6 being carried on the opposite sides of the respective films.

The numeral 7 denotes a point source of light of similar character to that described and illustrated in specification 310,320, the light from which strikes a mirror 8 so disposed as to deflect a beam of light through the films 1 and 2, the axis of this beam being designated 9. A suitable lens system, indicated diagrammatically at 10, may be used and also a suitable shutter 11. The mirror 8 may be continuously oscillated in the manner described in the aforesaid patent specification by means of a cam follower 12 secured to the mirror and adapted to rock it on its pivot 13 under the action of a cam 14 secured on the shutter shaft 15.

Disposed between the point source of light, or in this case between the mirror 8 and the original film, is the auxiliary film referred to above and which is indicated at 16. This film has linear lenticular elements 17 shown as disposed towards the source of light and forms a substantially transparent element between the source of light and the films. As pointed out above, this element is derived from a sensitive linear lenticular film by stripping off its sensitive emulsion layer.

The element 16 is preferably disposed closely adjacent the emulsion 5 of the film 1 so as to be in substantially the same plane as that emulsion. The lenticular elements are usually in the form of cylindrical lens elements extending lengthwise of the film, and the result will be that the lenticular elements 17 will form a system of lines upon the emulsion 5 to take the place

of any parts of the system which may have been destroyed by the photographic operations. That is to say, it is well known that in the use of a film of the type shown herein, the film, as a result of the photographic operations which result in the formation of an image thereon, has a system of different lines forming the different colour values; for example, red, green and blue. These lines however, are apt to be partly destroyed or reduced to such a size as to be practically non-existent, in places.

By the use of the auxiliary film 16, the light passing to the original film 1 is acted upon by the multiplicity of lenticular elements 17 and caused to form a system of lines which will supply the partial lack of such a system on the original film. This system of lines formed by the elements 17, will sweep across the original film as stated above, and in this way aid in eliminating the moiré effect.

We are aware that a method has already been suggested in the patent specification No. 367,411 for printing films in a similar manner by optical projection.

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:—

Means for carrying out the described method of contact printing comprising in combination, an original film and a copy film, each of said films having a multiplicity of linear lenticular elements on one side thereof and the films being placed substantially in contact with said elements adjacent and parallel to each other, a point source of light so placed as to pass a beam of light first through the original film and then through the copy film, and a substantially transparent element disposed between said source of light and the original film substantially in contact therewith and parallel thereto and having thereon a multiplicity of linear lenticular elements of the same nature and disposition as the elements on the original and copy films.

Dated this 29th day of January, 1931.
FELL & JAMES,
Agents for the Applicants.

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

