

PATENT SPECIFICATION

399,977

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COMPLETE SPECIFICATION.



Process of Reproducing Colour-record Images on Lenticular Films by Projector Printing.

We, I. G. FARBENINDUSTRIE AKTIEN-
GESELLSCHAFT, a Joint Stock Company
organised according to the Laws of Ger-
many, of Frankfurt a/Main, Germany,
do hereby declare the nature of this in-
vention and in what manner the same is
to be performed, to be particularly
described and ascertained in and by the
following statement:—

This invention is an improvement in
or a modification of that described in
Specification No. 356,701.

That specification relates to a process
of printing colour record images con-
tained on a lenticular film by optical
means on to another lenticular film, with-
out lateral inversion, wherein the nega-
tive film is illuminated, from the side next
the refracting surface, in such a manner
that a luminous plane is projected on
the negative film. A special mode of
carrying out this process with the object
of avoiding any overlapping of the
interference pictures formed, consists in
placing in that plane of the optical
system which occupies the same position
relatively to the negative as did the
plane of the multi-colour filter or its
virtual image during the taking of the
negative film a diaphragm having aper-
tures arranged in steps (see Fig. 3 of
Specification No. 356,701).

According to the present invention the
said diaphragm is dispensed with, and
the negative film is illuminated by means
of an incandescent lamp, the filaments
of which are arranged in the form of
steps in the same manner as the apertures
of the said diaphragm (that is to say, in
such a manner that a line drawn in the
plane of the filaments perpendicularly to
the direction of the stripes of the filter
will intersect only one filament) and lie
in a common plane perpendicular to the
optical axis and occupying the same posi-
tion with respect to the negative film as
did the plane of the multi-colour filter
or its virtual image during the taking of
the negative. By this arrangement a
uniform illumination of the film is
obtained and all the light projected to the
negative film is available for printing.

Subject to the observance of the condi-
[Price 1/-]

tion above indicated that a line drawn
in the plane of the filaments perpendicu-
larly to the direction of the stripes of the
filter shall intersect only one filament,
the filaments may have any position with-
in the space corresponding with one colour
area; however, in a preferred arrange-
ment, the filaments are arranged in such
a manner that their optical centres lie
each on one of the straight lines drawn
parallel to the direction of the filter
stripes through the points occupied by the
optical centres of the stripes or of their
virtual images during the taking opera-
tion.

In the accompanying drawing there
are shown two ways of arranging the
filaments of the incandescent lamp,
which are preferably in the form of
coils for the purpose of obtaining a better
yield of light when a three-colour filter
was used for taking the negative. The
parallel coils are arranged at distances
apart equal to those between the optical
centres of the filter stripes, and prefer-
ably parallel to the filter stripes. The
plane of the colour screen is represented
in broken lines. The coils may be con-
nected in series (as shown in Fig. 1) or
in parallel (as shown in Fig. 2). In
this latter case the current may be
supplied to each coil separately. This
arrangement has the advantage that the
luminosity of each coil may be the same
or, if in the print a colour is predominant,
owing, for instance to a mistake in taking
the negative, this colour can be corrected
by reducing the luminosity of the respec-
tive coil.

The extension of the glass bulb of the
incandescent lamp in the direction of the
negative film must be smaller than the
distance of the virtual image of the
colour screen from the negative in taking
the negative film.

Preferably the glass bulb is such that
no reflected pictures are projected on the
negative printing gate. For this purpose
the bulb may be given a suitable form,
or the face of the bulb remote from the
negative may be dulled or blackened.

The invention is not limited to the
arrangements shown in the drawing it

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- being understood that these are only given by way of example. The wire filaments may be arranged in the same bulb or in several bulbs.
- 5 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:—
- 10 1. A process of printing by optical means a colour-record negative contained on a lenticular film on to another lenticular film, without lateral inversion, according to Specification No. 356,701,
- 15 wherein the stepped diaphragm used for eliminating the effects of lateral diffraction spectra is dispensed with and the negative film is illuminated by means of a number of incandescent filaments contained in one or several lamps and equal
- 20 to the number of colour areas of the multi-colour filter used in taking the negative, these filaments being arranged in steps in the same manner as the apertures of the said diaphragm and lying
- 25 in the plane occupying the same position with regard to the negative film as the plane of the multi-colour filter or its virtual image during the taking of the negative.
- 30 2. A process as claimed in Claim 1, wherein the filaments are parallel to one another.
- 35 3. A process as claimed in Claim 1 or Claim 2, wherein the filaments are arranged with their optical centres each on one of the straight lines drawn parallel to the filter stripes through the points occupied by the optical centres of the stripes or their virtual images during the
- 40 taking of the negative.
4. A process as claimed in Claim 1, 2 or 3, wherein the filaments are parallel to the filter stripes.
- 45 5. A process as claimed in Claim 1, 2, 3 or 4, wherein the filaments are arranged in series.
- 50 6. A process as claimed in Claim 1, 2, 3 or 4, wherein the filaments are arranged in parallel.

Dated this 26th day of September, 1932.
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FIG. 1.

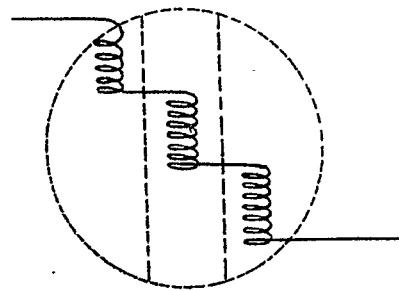
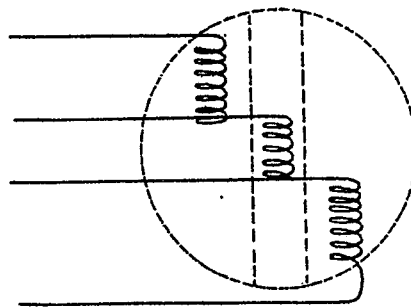


FIG. 2.



[This Drawing is a full-size reproduction of the Original.]