Jan. 12, 1932. W. D. MARSHALL 1,840,459

SOUND AND PICTURE FILM AND METHOD OF MAKING SAME

Filed March 30, 1929

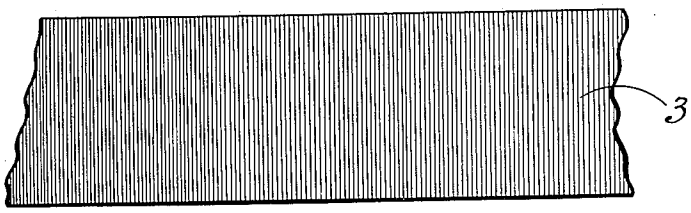
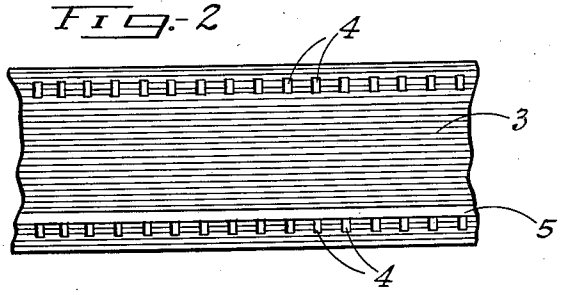



Fig.-1

Fig.-2



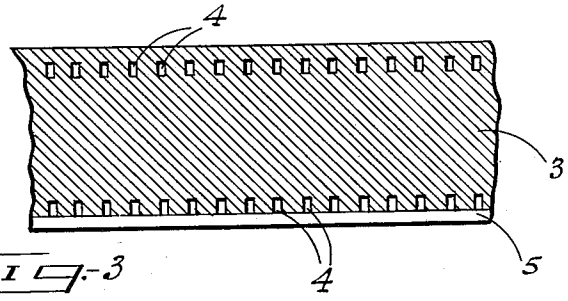




Fig.-3

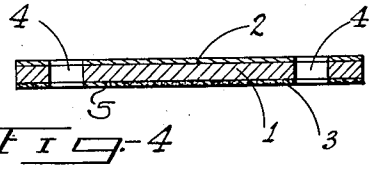



Fig.-4

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# UNITED STATES PATENT OFFICE

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## SOUND AND PICTURE FILM AND METHOD OF MAKING SAME

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This invention relates to film for use in the reproduction of synchronized sound and motion pictures, and a method of preparing the same.

In order to present certain pleasing effects in connection with the reproduction of motion pictures it has become the practice to employ various tinted films. but it has been found that certain of these tints now in use interfere with the reproduction from sound records formed on such films, because so much of the light is absorbed thereby.

In the manufacture of tinted film it is much easier and more satisfactory to tint the film before slitting and perforating but in order to have the clear sound track exactly coincide with the portion which is to be kept free from any tint it has practically been necessary in following known methods to do the tinting after the film has been slit. This procedure necessitates additional color applying machinery through which the film must be passed thereby adding a further operation and requiring additional inspection.

Also in making tinted films having a clear sound track much difficulty has been encountered in preventing the dye or tint from coming into contact with the sound track.

In accordance with the present invention it is proposed to apply the tint or dye to the entire area of the film including the picture area and the sound track and subsequently to remove the tint by means of a bleaching or leaching operation. This bleaching or leaching operation may be performed either before or after the film is slit and perforated, preferably after these operations.

For a clearer understanding of the invention reference is made to the drawings where Fig. 1 shows an uncut section of film in which the entire surface has been treated with a tint or dye; Figs. 2 and 3 show the slitted and perforated films having different locations of the bleached sound track; while Fig. 4 is a cross-sectional view of the film.

In the manufacture of film according to the present invention, a support 1 of plastic composition such as cellulosic material is coated with a sensitized emulsion 2. The rear surface of the support is then completely covered with a layer 3 of a tint or dye of the desired color. Thereafter the film may be slit to the form shown in Figs. 2, 3 and 4 and provided with perforations 4. A sound track portion 5 shown between the series of perforations in Fig. 2 and represented on the outer margin of the film shown in Fig. 3 is formed by subjecting this portion to a bleaching or leaching solution which renders it substantially clear. A solution suitable for this purpose may be formed of chlorine water, Javelle water or potassium permanganate.

Instead of using a chemical solution to bleach the dye obscuring the sound track this portion of the dye may be bleached by subjecting it to very high intensities of ultra-violet light. This operation would, of course, have to be performed after the development of the image.

What I claim is:

1. A film strip for the simultaneous reproduction of motion pictures in a single color and of sound, comprising a flexible light transmitting photographic band having a longitudinally extending area constituting a picture area and colored with a single tint and a second longitudinal area and constituting a sound record area colored with a similar faded tint.

2. A film strip for the simultaneous reproduction of motion pictures in a single color and of sound, comprising a flexible transparent photographic band having a longitudinally extending area constituting a series of exposure fields and parallel thereto a longitudinal area constituting a sound record field, the film being colored over both of said areas with a material that is unaffected by photographic processes, the coloring over said second area having been subjected to fading action.

3. A film strip for the simultaneous reproduction of motion pictures in a single color and of sound comprising a transparent flexible support having upon one surface a photographically sensitive emulsion, a longitudinally extending area of said film strip constituting the greater part of the width thereof and constituting a series of motion picture

exposure fields, and a second narrow longitudinally extending area constituting a sound record area, both of said areas being colored with a material that is unaffected by photographic processes, the coloring material over said sound record area having been treated to reduce its radiation absorbing power.

4. A film strip for the simultaneous reproduction of motion pictures in a single color and of sound comprising a light transmitting, flexible support having upon one surface a photographic layer, an area of uniform width extending longitudinally of the strip and uniformly colored with a material that is unaffected by photographic baths and constituting a series of motion picture exposure fields and a second colored area of uniform width extending longitudinally of said strip parallel to the first area and constituting a sound record area, the color of said second area having been subjected to an agent for reducing its radiation absorbing power.

5. A film for the simultaneous reproduction of motion pictures of a single color with audible accompaniment, said film being in the form of a long, continuous band comprising a support of a transparent elastic cellulosic compound having upon one surface a uniform photographic sensitive emulsion providing an area for a series of motion picture exposure fields and a sound record area, the other surface of said support being colored with a dye that penetrates into the support to a greater extent than the ordinary photographic baths, the colored surface in registry with said sound record area having been subjected to a chemical bleaching agent.

6. The method of preparing tinted photographic film having a series of motion picture exposure areas and a sound record area which comprises applying a photographic layer to a support, applying a tinted layer to the entire area of one surface of said support, and treating that portion of the tinted layer overlying said sound record area to reduce its radiation absorbing power.

7. The method of preparing tinted photographic film having a series of motion picture exposure areas and a sound record area which comprises applying a photographic layer to a support, applying a tinted layer to the entire area of one surface of said support, and treating with a chemical agent capable of attacking tint in the tinted layer that portion of the tinted layer overlying said sound record area to reduce its radiation absorbing power.

8. The method of preparing tinted photographic film having a series of motion picture exposure areas and a sound record area which comprises applying a photographic layer to a support, applying a tinted layer to the entire area of one surface of said support, and bleaching that portion of said tinted layer overlying the sound record area to reduce its photoelectric density.

Signed at Rochester, New York, this 27th day of March, 1929.

WALTER D. MARSHALL.