

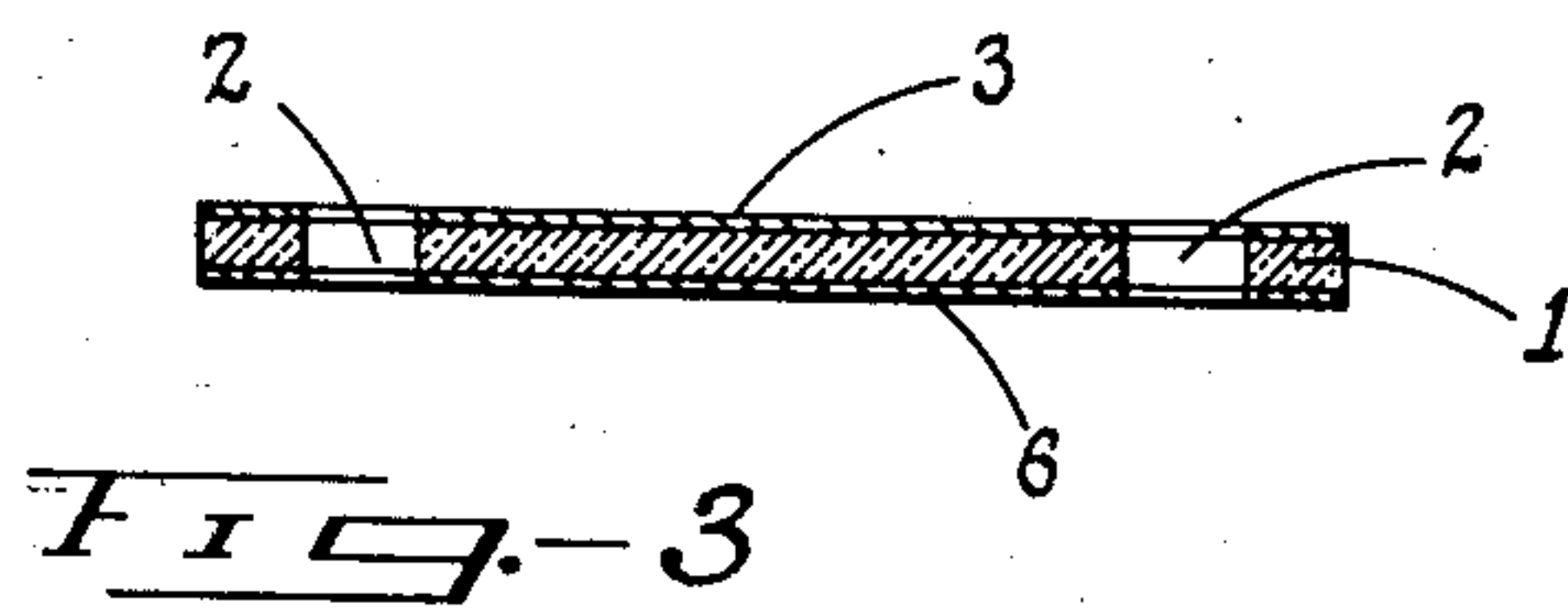
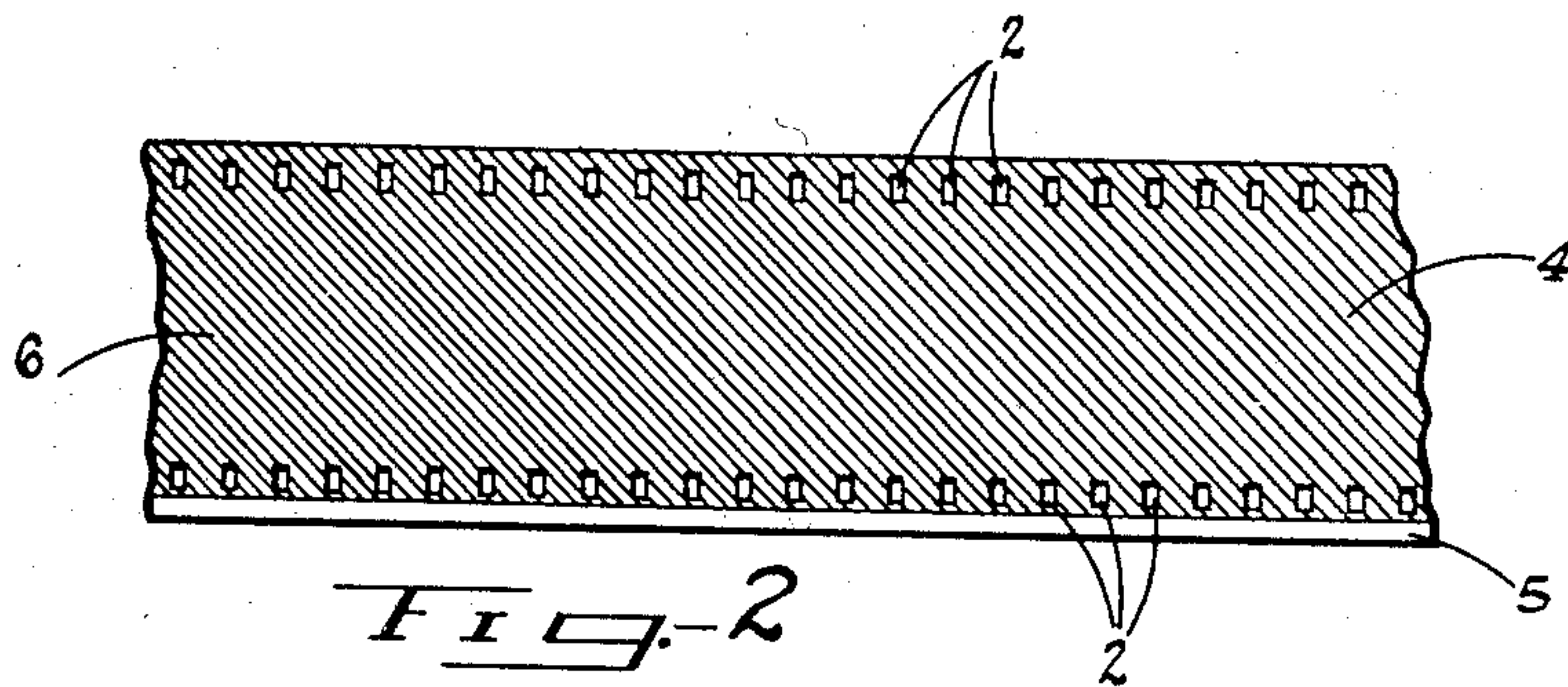
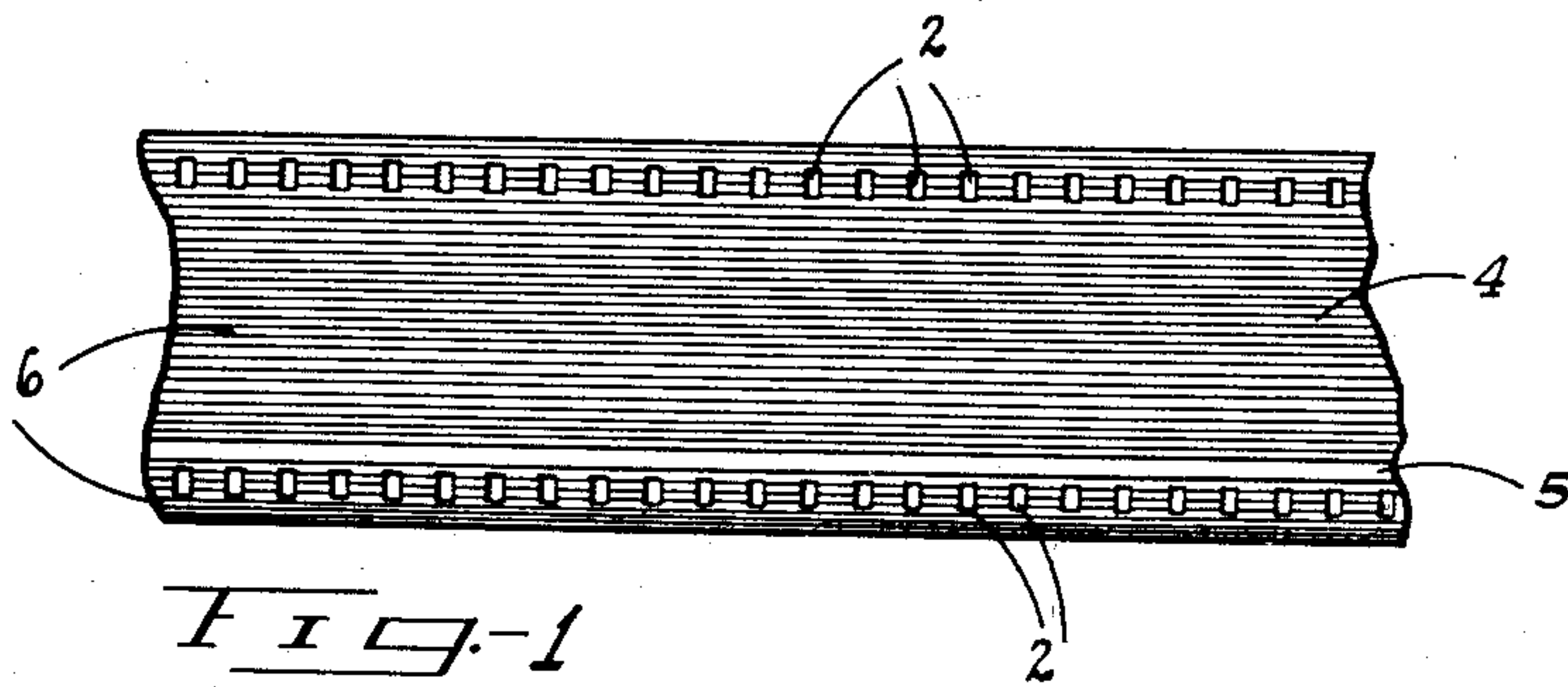
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TINTED SOUND AND PICTURE FILM AND METHOD OF MAKING SAME

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## UNITED STATES PATENT OFFICE

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## TINTED SOUND AND PICTURE FILM AND METHOD OF MAKING SAME

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This invention relates to film to be used in the synchronized reproduction of sound and motion pictures. 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 such as red for indicating fire scenes, yellow for lighted interiors and various shades of blue for presenting twilight scenes. It has been found, however, that certain of the tints now in use seriously interfere with the reproduction of a sound record formed on such film.

It has, therefore, been proposed to apply tinting or coloring to the picture areas only of the film while leaving the sound record portion of the film uncolored. In following this practice it sometimes happens that such film is somewhat warped due to the fact that the solvents used in applying the tint tend to attack the film support and cause it to shrink. This difficulty makes itself manifest when the film is being dried after development in as much as it imparts to it a strong negative curl. Such film frequently tends to buckle during projection since the shrinkage is much more prevalent in the tinted area than in the untinted portion.

In accordance with the present invention it is proposed to obviate this difficulty by treating the tinted portion or the untinted portion or both of said portions on the support side of the film with water or water containing small amounts of solvents which do not dissolve the dye.

For a clearer understanding of the invention reference is made to the accompanying drawing in which Figs. 1 and 2 are views of two different films embodying several forms of my invention while Fig. 3 is a cross section of the film of Fig. 1.

The film of the present invention is shown in the form of a long band such as is used in the synchronized reproduction of sound and motion pictures and includes a support 1 formed preferably of a plastic composition such as cellulosic material. This support is provided with perforations 2 along each border and carries on one of its surfaces a sensitized emulsion 3. The portion of the

emulsion between the two series of perforations in Fig. 1 constitutes a series of exposure fields 4 on which motion picture images will be formed and a sound track strip 5 on which a sound record may be formed. During the process of manufacturing the film a layer 6 of coloring material coextensive with the exposure field 4 or coextensive with all of the film except the sound track strip 5, is applied to the rear surface of the support. This layer comprises a dye in a solvent which penetrates the material of the film support to an extent greater than the ordinary photographic process or bath so that for all photographic or motion picture purposes the dye layer is permanent. Since the solvent for the dye attacks or dissolves the surface of the film support to which it is applied causing it to shrink and since the sound track remains unaffected because it has not been treated, there is sometimes warping of the film due to this condition. I have discovered that this difficulty of unequal shrinkage may be substantially obviated if immediately after the tint has been applied and the film dried, the support side of the film is bathed in water or water containing small amounts of one or more solvents which do not dissolve the dye. I prefer to treat substantially the entire support side of the film in this manner. However, it is helpful to treat either the tinted portion or the sound track portion of the support side of the film with water or water including one or more solvents. The solvents which may be combined with water for this purpose include either ethyl alcohol, methyl alcohol or acetone, the proportions of water with these solvents being variable within wide limits. This bathing of the film in water or water including solvents may be effected at room temperature but appears to be somewhat more effective at slightly higher temperatures, for example 90 to 100 degrees F.

While the sound track 5 in the modification of Fig. 1 is at the edge of the area between the two series of perforations, it will be understood that it may be on one of the margins of the film just outside of one of

the series of perforations as in Fig. 2. Although the invention has been shown applied to a film for commercial purposes in which four perforations in each series is  
5 provided for each picture area, it will be understood that this invention may also be applied to films for amateur or home use in which but one perforation of each series is provided for each exposure area.

10 The present disclosure is merely typical of my invention and I contemplate as included within the scope thereof all modifications and equivalents which fall within the terms of the appended claim.

15 What I claim is:

A film strip for the simultaneous reproduction of motion pictures in a single color and of sound comprising a support of cellulosic composition having a photographic  
20 layer on one surface only and having a series of motion picture exposure areas tinted with a single color, and an uncolored sound track, the support surface only opposite said sound track having been treated with water and a  
25 solvent above normal room temperatures.

Signed at Rochester, New York, this 16th day of April, 1929.

HENRY R. COUCH.

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