

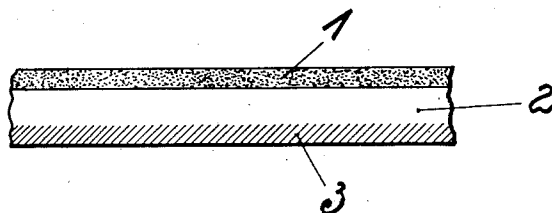
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PHOTOGRAPHIC FILM

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PHOTOGRAPHIC FILM.

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This invention relates to photographic films for projection purposes.

Heretofore it was the practice to coat the rear surface of the films with a fatty substance, to facilitate the gliding or slipping thereof in a projection apparatus. The superficially applied substance has the disadvantage that it can be easily wiped off, and for this reason soils the film and the apparatus.

The present invention has for its object the provision of a readily slipping film without the disadvantages mentioned.

Briefly expressed, the invention consists in incorporating the substance producing the slipping effect in the surface layer of the film instead of applying it upon the surface thereof. In this way the substance can be no longer wiped off, so that a transfer to other parts of the film or to the apparatus is avoided, and a uniform and permanent slipping effect is obtained. Another advantage of the invention is the possibility of imparting the slipping quality during the manufacture of the film carrier body in wide strips, while up to now the treatment was applied only to the narrow finished picture strips.

Another material advantage of the invention lies in the possibility of using substances which as such have no slipping quality, which however when incorporated in a state of fine subdivision in the surface layer of the film, produce a marked slipping effect.

The invention may be carried out by dissolving the substance to be applied in a suitable solvent which has a solvent action upon the mass of the film and then applying the solution to the surface of the film in well known manner, as for instance by a brush, by spraying or by drawing the film through the solution.

It is also possible to apply substances which are practically insoluble in the solvent. They are mixed with the latter, in a state of fine subdivision, and then penetrate under the action of the solvent upon the film into the surface thereof. Particularly applicable in this respect are colloidal suspensions of substances such as gypsum, zinc carbonate or other material which does not chemically react upon the celluloid material or generally of white pigments, which be-

come so finely distributed in the surface layer of the film that the transparency thereof is not materially affected.

The following examples may be considered as fairly representing the invention:

1. A 1-1.5% solution of sodium stearate in methanol is applied in any suitable manner. The solvent, by its action upon the film, makes it possible for the sodium stearate to penetrate into the latter. After evaporation of the solvent, as for instance caused methodically by movement of the film in a warm air current, the sodium stearate is deposited in the surface of the film.

2. A colloidal suspension of gypsum in methanol is prepared in a well known manner, so that the percentage of gypsum is about .1%. The suspension is applied in the same manner as before indicated. The solid particles embed themselves in the surface of the film body and form an integral part thereof.

These two examples, it is understood, are merely representatives of relatively large classes of soluble and insoluble substances available for carrying out the object of the invention. Similarly, methanol is referred to merely as a well known solvent for films. Any other solvent known or unknown at present may be used in a like manner. The film body may be treated during the manufacture as previously suggested or after the film is finished. In the latter case the face opposite the sensitive layer is treated, as is understood.

In the drawing forming a part of this specification, 2 represents the body of a celluloid film serving as the usual support for the photo-sensitive gelatine layer 1. In the surface opposite the photo-sensitive layer 1, is embedded finely divided material of the order of gypsum, zinc carbonate or generally of the order of white pigments, which when finely distributed over the entire surface does not materially affect the transparency thereof, or conversely expressed, which has light-transmitting quality. The material which may be carried into the body of the film to any practical desirable extent defines a zone 3 co-extensive with the film. While there is considerable latitude in regard to the method of embedding the material in

the film, I preferably apply a solvent which has a mild solvent action, such as for instance methanol.

We claim:

5 1. Process of improving the slipping quality of films, which consists in embedding in the entire surface of a film opposite the photo-sensitive layer, in a state of fine sub-
10 division a material having light-transmitting quality and the property of making the surface slippery.

2. Process of improving the slipping quality of films, which consists in applying to the surface of the film opposite to the photo-sensitive layer, in the presence of a solvent
15 therefor, a finely divided material having light-transmitting quality and the property of making the surface slippery.

3. Process of improving the slipping quality of films, which consists in applying to the surface of the film opposite to the photo-sensitive layer a liquid having a solvent
20 action upon the body of the film and containing a substance which in solid form has

light-transmitting quality and the property 25 of making the surface of the film slippery.

4. A film having incorporated in the entire surface opposite the photo-sensitive layer a finely divided material having light-trans-
30 mitting quality and the property of making the surface slippery.

5. A film having incorporated in the entire surface opposite to the photo-sensitive layer thereof a finely divided material hav-
35 ing light-transmitting quality and the property of making the surface slippery.

6. A film having incorporated in the entire surface opposite the photo-sensitive layer a finely divided material of the order of a
40 white pigment.

7. A film having incorporated in the entire surface opposite the photo-sensitive layer a finely divided material of the order of
gypsum.

In testimony whereof we affix our signa- 45 tures.

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WERNER GLADHORN.