

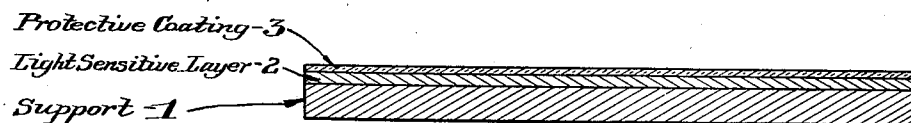
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PHOTOGRAPHIC FILM

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PHOTOGRAPHIC FILM

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3 Claims. (Cl. 95-9)

This invention relates to a photographic film, and has for its object to provide a flexible, transparent protective coating for the emulsion or light-sensitive layer of such a film, so as to avoid abrasion of the film before development, while not interfering with retouching or etching of the film when necessary, or in any way affecting printing or sacrificing clearness.

It is old to protect a film by coating with a layer of clear gelatin, but this has the objection that after the film is developed, the outer surface of the gelatin coating is smooth and glossy and makes it difficult to retouch the film, and if the protective coating contains a matting ingredient, this shows as graininess in the printing or results in loss of fine definition of the subject.

An object of the invention is to provide a film with a protective coating which after developing has a rough, non-glossy surface that can easily be retouched or etched.

Another purpose of the invention is to prevent abrasion marks on the film by applying to it a protective coating made up of materials such that when the film is developed and placed in water or processing solutions, certain soluble portions in the coating will be removed while certain non-soluble portions will remain, leaving a hardened coating with a non-glossy, rough surface that is minutely broken or sponge-like in character, the remaining hardened coating being of such character that the surface can readily be retouched or etched.

More particularly the invention has for its objective to afford a protective coating including two or more water-soluble materials and a hardening agent which acts upon one of the water-soluble materials to render it insoluble in water, while the other soluble material is not affected by the hardening agent and is removed during processing of the film.

To these and other ends, the invention consists in the construction that will appear clearly from the following description when read in conjunction with the accompanying drawing, the novel features being pointed out in the claims following the specification.

The drawing shows the invention applied to a conventional photographic film.

Referring to the drawing, 1 designates a film base or support, 2 is a photographic or light-sensitive layer or emulsion, and 3 is a protective coating applied over the light-sensitive emulsion layer 2, and composed of the materials that will now be described.

The coating 3 is clear, transparent, and flexible, and preferably formed of a mixture of two or more water-soluble materials combined with a hardening agent such as chrome alum or potash alum, that acts only on one of the water-soluble materials. As a consequence, the other water-soluble material is removed during processing or washing of the film, leaving the non-soluble material and hardening agent over the surface of the film as a permanent coating of rough and sponge-like or porous character that will take a retouching pencil or can be etched easily.

Water-soluble materials that are not affected by the hardening agent and can be successfully used are poly-ethylene glycol, methyl cellulose, sorbitol phthalate, or mannitol phthalate, while the soluble materials that are hardened and remain on the film as a permanent coating are water-soluble gums such as gum arabic, karaya, or tragacanth, gum arabic being especially adapted to the purpose since the hardened gum retains its structure on drying to a maximum degree.

The proportions of the several materials, or their equivalents, used in the coating material may be varied to suit different conditions. As an example of one practical embodiment, the coating may consist of 2.5 parts of gum arabic, 2.5 parts of poly-ethylene glycol, 1 part chrome alum, and 100 parts water, the coating being applied to the surface of the film in a conventional manner as well known in the art, and permitted to dry thereon.

During processing of the film, the poly-ethylene glycol, or other water-soluble material that is not affected by the hardening agent, is dissolved and removed from the coating, leaving the gum arabic or other than non-soluble material in a permanently hardened condition of porous or sponge-like formation on the surface of the film.

While the invention has been described with reference to the particular details herein disclosed, it is not confined to the materials set forth, and this application is intended to cover any departures or adaptations coming within the purposes of the invention or the scope of the following claims.

We claim:

1. An undeveloped photographic film including a support, a light-sensitive layer on the support, and a protective coating over the light-sensitive layer, said protective coating comprising substantially 2.5 parts gum arabic, 2.5 parts poly-ethylene glycol, and 1 part chrome alum.
2. An undeveloped photographic film including

a support, a light-sensitive layer on the support, and a transparent protective coating over the light-sensitive layer, said protective coating including materials which are soluble in water and other materials which are insoluble in water and retain a spongelike structure on drying.

5 3. An undeveloped photographic film including a support, a light-sensitive layer on the the support, and a transparent protective coating over

the light-sensitive layer, said protective coating comprising a water soluble material and an insoluble material which includes a hardening agent and retains a spongelike structure on drying, said soluble material being unaffected by the 5 hardening agent.

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