

# UNITED STATES PATENT OFFICE.

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## COLLODION COATING COMPOSITION.

No Drawing.

Application filed June 23, 1924. Serial No. 721,935.

This invention relates to compositions of matter adapted for use as a solution in which gelatinous articles such as developed photographic films or plates, either positive or negative, may be immersed, for the purpose of giving many added features, including longer life, to such immersed article thereby providing a new article of manufacture.

For the sake of brevity the word "film" only will be hereinafter used throughout the specification and claim, to mean a film having a celluloid base provided with a sensitized surface, or a plate having a glass base provided with a sensitized surface; it being understood that film having a celluloid base may be either in large rolls such as motion picture film, or in small rolls such as is used in kodaks, or in small sheets such as after the larger or small rolls have been cut into individual pictures, or as is used in film packs.

For some purposes it may be practicable to treat only the side of the film base opposite that of the sensitized surface. However this invention relates more particularly to treating both sides of film after it has been developed and such film will be designated in this application as "developed film" which may be either positive or negative.

An object of this invention is to provide for gelatinous articles, such as developed films, a waterproof protector and preservative that is flexible and that will not chip or crack under rough handling, or normal temperature changes.

Other objects and advantages are cheapness, ease of handling and ease of application.

An object is to provide developed motion picture films with a transparent coating which will retard the explosion point of such films.

An object is to provide means whereby a developed film may be cleaned or washed with any suitable kind of liquid cleaning preparation.

Another object is to provide novel means whereby the ratchet teeth holes in motion picture films may be materially strengthened.

Advantages gained by immersing devel-

oped films or like gelatinous substances in my solution are:—

It clears the picture or negative and brings out the detail.

Prevents injury to such film by any liquid.

Makes the celluloid base film very flexible so that sharp bending will not crease or crack such film.

The gelatine on the film will not swell after applying my solution.

Reduces tendency of developed film to curl.

Retards the explosion point of film.

Another advantage is that oil or water colored developed film may be treated with equal advantages and without danger of the colors running during application or impairment of color after drying.

A further object is to provide novel means whereby the developed sensitized surface of a film may be covered or coated with a transparent coating so that such surface will be protected and preserved and not be exposed to the dangers of handling.

This invention is broadly new, basic and pioneer in that I provide a developed film with a transparent protective and preservative coating.

Other objects, advantages and features of invention may appear from the subjoined detail description and the appended claim.

A well known type of developed film comprises a base or body, having on one side of said body a developed sensitized surface.

In the film the body is of celluloid and is provided with ratchet teeth holes that are adapted to receive the usual ratchet teeth of a projecting machine feeding mechanism.

This invention resides mainly in covering the developed sensitized surface with a covering or coating. But by completely covering the developed film, the body and surface are protected as well as providing means for strengthening the ratchet teeth holes the walls of which are completely covered by the coating. It is found in practice that many of the holes may be spanned by a pellicle of the solution which may be easily cleaned out by running the film through the regular feeding mechanism on a projecting machine.



The method of producing this new article of manufacture is preferably accomplished by first mixing together a solution or composition of matter consisting of varnish (preferably Spar varnish), ether, japan drier, Venice turpentine, (an oleoresin of the European larch) and collodion in the manner and proportions substantially as follows, to wit:

10	Varnish (of the character of Spar varnish)-----	1 pint;
	Ether-----	1/4 pint;
	Japan drier-----	1 ounce;
	Venice turpentine-----	1 ounce;
15	Collodion-----	2 ounces;

and then dipping a developed film in such solution.

The above ingredients may be thoroughly mixed together in any order, but for the sake of convenience and speed in mixing the following order and method is preferred. The varnish is thinned with the ether which makes it practicable to use a varnish on the film, the japan drier is then added, the Venice turpentine, is heated until it is of a consistency corresponding to that of a thin cough syrup and is then added to the mixture, and then the collodion is added.

By heating or melting the Venice turpentine it will mix more readily and evenly with the other ingredients.

It is very important to use only the correct amount of Venice turpentine as too large an amount will prevent drying of the solution.

The Venice turpentine and the collodion gives to the product that characteristic which prevents chipping of the coating applied to the film.

I have found by experiment that a satisfactory product or solution may be obtained by eliminating the collodion, and also by omitting the ether and using a proportionate amount of collodion in substitute therefor. However, the preferred and most satisfactory solution includes all of the ingredients as above set forth.

After the ingredients are all added to-

gether the solution is shaken to thoroughly intermingle the ingredients with one another when the solution may be put in containers and tightly corked, when it will keep practically indefinitely.

The solution is preferably added to the film by dipping the film into the solution which may be contained in a pan or tank having an open top. The film is run through the solution or washed therein in a manner similar to that used when the film is developed, one gallon of the solution will coat about 5000 feet of developed motion picture film.

Great care must be taken that the developed film does not touch any exposed part of the container above the solution or any other article when applying the solution or until it is thoroughly dried. In case the film should touch the edge of the pan or tank containing the solution or any other article while wet with the solution the film will turn a milky white and that portion of the developed film will be ruined.

After dipping or running the developed film into or through the solution it is then hung up to dry in any suitable manner such as commonly used after developing of the film. It will take about 30 minutes for the coating or solution to dry.

If the film is supported from both ends in a horizontal position during drying any puddles of the solution accumulating on the developed film will not be detrimental to it. The only result will be that the coating at such places will be thicker.

I claim:

A film protector and preservative solution composed of the following ingredients in the proportions substantially as set forth, namely; one pint of Spar varnish; one quarter pint of ether; one ounce japan drier, one ounce Venice turpentine, and two ounces of collodion.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 16th day of June, 1924.

WILLIAM HENRY GARDNER.