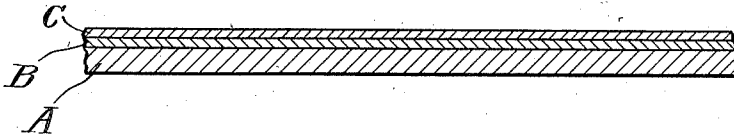


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METHOD OF AND ARTICLE FOR MAKING PHOTOGRAPHIC POSITIVE PRINTS.
APPLICATION FILED JULY 14, 1914.

1,303,635.

Patented May 13, 1919.



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UNITED STATES PATENT OFFICE.

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METHOD OF AND ARTICLE FOR MAKING PHOTOGRAPHIC POSITIVE-PRINTS.

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Specification of Letters Patent.

Patented May 13, 1919.

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To all whom it may concern:

Be it known that I, JOHN G. CAPSTAFF, a subject of the King of Great Britain, residing at Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Methods of and Articles for Making Photographic Positive-Prints; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-letters marked thereon.

My present invention has for its object to provide an article for and a method of taking and developing photographic positives on a single support, whereby the usual operations of making a negative and separately applying the same to a sensitized surface, which subsequently becomes the positive print, is obviated. By the use of this article and the method, positive prints may be made in a single apparatus, such for instance as an automatic coin controlled machine, without the necessity of hand manipulation, the ultimate support of the positive print serving also as a support for the temporary negative.

The article by means of which the method is carried out consists generally of a film embodying a support, an insoluble sensitive layer or coating and a superposed removable sensitized layer or coating of greater sensitiveness than the former, and the method consists generally in exposing such an article in a camera to the action of light passing through the lens, then developing the image formed in the outer, more sensitive coating only, preferably washing the developer from the print thus formed, then exposing the lower and less sensitive coating to the action of actinic light through the developed negative, and finally removing the outer coating, carrying with it the negative image and subsequently developing, fixing and washing the final print.

In the accompanying drawing, is shown a greatly enlarged sectional view of a film or sensitized element embodying my invention, and used in carrying out the method.

The sensitized element is formed of a support, indicated by A in the drawing, and preferably of white or light colored paper

upon which is coated or deposited, in the usual manner, a coating B of silver bromid or bromo-iodid emulsion, made by any of the usual or well known methods, and also rendered insoluble in the ordinary developing and fixing solutions, and also in hot water. C indicates a coating or layer of silver bromid or bromo-iodid emulsion, applied over the coating B, but of much greater sensitiveness than the latter, so that a photographic image will be formed upon the coating C by a momentary exposure in the camera, which is not of sufficient intensity or duration to affect the coating B underneath. The relative sensitiveness of the emulsion coating B to the emulsion coating C should not be less than one to fifty, but in practice it is considerably higher, say one to two hundred, so that light which would affect the outer coating C would not affect the silver salt in the coating B during a sufficient exposure of the outer coating.

The outer or more sensitive coating C is, after exposure and development, readily removable, and is preferably composed of a gelatino argentic emulsion, soluble in warm water.

In using this article and carrying out the process, the paper or sensitized element constructed as described is exposed in the ordinary manner in the camera for a sufficient length of time to permit the light passing through the lens to affect the silver salt in the outer emulsion only, then the image thus formed is developed in any of the usual developers, affecting the silver in the outer coating only. The developer is then preferably washed from the print, which is then exposed to the action of actinic light, and this, passing through the transparent or translucent portions of the negative, will affect the lower coating B.

After printing for a sufficient length of time the coating C is removed by dissolving it in warm or hot water, which operation will not injuriously affect the image in the lower coating. Then the print is developed with the usual developer, washed with water and fixed with sodium thiosulfate (hypo), and again washed with water in the usual way.

The resulting print is a positive, but of necessity the objects in the picture are re-

versed in position. However, for ordinary purposes, and particularly portrait photography this is immaterial.

I claim as my invention:

- 5 1. A sensitized element for use in photography, embodying a base or support, an insoluble light sensitive layer thereon and a superposed layer of soluble light sensitive material of relatively greater sensitiveness.
- 10 2. A sensitized element for use in photography embodying a base or support, an insoluble light sensitive layer of silver haloid emulsion thereon and a superposed soluble layer of silver haloid emulsion of
- 15 greater sensitiveness.
3. A sensitized element for use in photography embodying a support, an insoluble layer of silver haloid emulsion, and a superposed soluble layer of silver haloid emulsion.
- 20 4. The method of making photographic prints consisting in exposing to the action of light in a camera, the outermost layer of a sensitized element embodying a support, a layer of insoluble light sensitive material
- 25 and a superposed soluble layer of relatively more sensitive material, developing the image in said outermost layer while in position over the lower layer, exposing the lower layer to the action of light passing
- 30 through the negative thus formed and while the latter is in position thereon, dissolving the negative and finally developing, fixing and washing the print formed in the lower layer.

5. The method of making photographic prints consisting in exposing in a camera the outermost layer of a sensitized element embodying a support, an insoluble light sensitive layer and an outer soluble light sensitive layer of greater sensitiveness, subjecting the element to the action of a developer, light printing through the negative thus formed upon the lower layer of sensitized material and while the same is in position thereon, dissolving the negative and finally developing, fixing and washing the print formed in the lower layer.

6. The method of making permanent photographic prints consisting in exposing in a camera the outermost and more highly sensitive one of two distinct sensitive elements in the presence of the other while said elements are in intimate relationship each of said elements containing haloid salts those in the outermost being more sensitive than those in the innermost element, developing the image in said outermost element while in the same relationship with the other element, exposing the latter to light passing through the negative thus formed, without changing their original relationship, separating the elements and finally developing, fixing and washing the print formed in the less sensitive element.

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