

# UNITED STATES PATENT OFFICE.

JEAN BAPTISTE GERMEUIL-BONNAUD, OF PARIS, FRANCE.

## ART OF PRODUCING COLORED PHOTOGRAPHS.

SPECIFICATION forming part of Letters Patent No. 253,669, dated February 14, 1882.

Application filed July 7, 1881. (No specimens.) Patented in France January 28, 1879, in Belgium June 30, 1879, and in Italy September 30, 1879.

*To all whom it may concern:*

Be it known that I, JEAN BAPTISTE GERMEUIL-BONNAUD, of Paris, in the Republic of France, temporarily residing in New York city, have invented a new and useful Improvement in the Art of Producing Colored Photographs, which improvement is fully set forth in the following specification.

This invention relates to the production of colored photographs by coloring the paper or other surface in accordance with the general outlines of the picture and afterward applying a sensitized layer over the colors and developing a photographic image in said layer, so as to obtain the half-tones and shading. The object is to obtain fresher and truer pictures than are obtained by the process as originally invented by me and described in Letters Patent No. 214,752, April 29, 1879.

The invention consists in an improved preparation of the colors, so that the germ of sensitiveness is contained in the color itself. As described in said patent, the colors are mixed with water, or with gum-water and glycerine, and are covered with a layer of albumen, on which the sensitized layer is deposited.

In the present invention the colors are prepared with albumen and sal-ammoniac, and are covered with the sensitive layer of silver salt, with or without the interposition of a layer of albumen.

In order that the invention and the manner of carrying the same into effect may be well understood and that those skilled in the art to which it appertains may be able to make and use the same, a detailed description will be given of the manner in which it is or may be carried into effect.

To prepare the colors, I take vegetable color, twenty grams; glycerine, two grams; prepared albumen, (albumine solée,) fifteen grams; ammonia, a few drops; sal-ammoniac, three to five grams, according to color. With blue, carmine, and the actinic colors generally three grams of sal-ammoniac are used; with red, yellow, green, or black, five grams. The ingredients are thoroughly incorporated with each other, and the compound, after being mixed with water to which a few grams of sal-ammoniac have been added in order to make the

color spread well, is ready for use. The colors can be very readily applied in the same manner that colors are applied to fashion plates or labels for boxes by means of patterns cut from well-waxed paper or from thin sheets of zinc, in accordance with the main colors of the photographic model, without regard to details, and used as stencils. Prior to the application of the colors in this way the paper, if the picture is to be made on this material, should be plunged for a few minutes in a bath of ordinary water containing six grams per cent. of glycerine, and afterward dried with blotting-paper. After the colors have been applied the paper or other colored surface is floated upon a bath of alcohol to which a few drops of acetic acid have been added, so as to coagulate the albumen. It is then treated directly with a bath of nitrate of silver if a dull proof is desired; but if a brilliant, glossy impression is desired it is first covered with a layer of albumen prepared as stated in my aforesaid patent, to wit: by means of a bath of egg albumen, five hundred grams; pure glycerine and sal-ammoniac, each twenty-five grams, and after drying is sensitized with the compound of silver. The colored and sensitized sheet is then printed by exposure under a negative, and the image is developed and fixed by ordinary photographic methods.

Instead of applying the colors by stencil, they can be printed by chromo-lithography with excellent results. Care must be taken, however, to immerse the paper in water and glycerine previous to printing, to mix the colors with sal-ammoniac in the proportions indicated, and to treat the colored sheets with a bath of alcohol and acetic acid. It is well also to add to the bath of albumen fifty grams of very pure gelatine melted in a small quantity of warm water. The colors can also be applied by hand without the aid of stencils or similar devices, the outlines being indicated by photographic impression or otherwise.

It is obvious that equivalent agents could be used in place of albumen and sal-ammoniac. Having now fully described the said invention, and the manner of carrying the same into effect, what I claim is—

1. The method of producing colored photographs, consisting in combining the coloring-

matters with agents, such as albumen and sal-ammoniac, applying the colors thus prepared according to the general outlines of the picture, covering the colors with a sensitive layer  
5 and developing an image in said layer by exposure under a negative, substantially as described.

2. A pigment or coloring material mixed with albumen and sal-ammoniac, substantially  
10 as described.

3. A coloring compound comprising vegetable color, glycerine, albumen, and sal-ammoniac, substantially as described.

4. In the art of producing colored photographs with the colors covered by a layer hav-  
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ing the photographic image developed therein, the improvement set forth, consisting in preparing the colors with agents, such as albumen and sal-ammoniac, applying the prepared colors to paper or other material, and treating  
20 the same with a bath of alcohol and acetic acid, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JEAN BAPTISTE GERMEUIL-BONNAUD.

Witnesses:

A. POLLOK,  
C. J. HEDRICK.