

UNITED STATES PATENT OFFICE.

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PROCESS OF COLORING PHOTOGRAPHS.

SPECIFICATION forming part of Letters Patent No. 290,655, dated December 18, 1883.

Application filed April 18, 1883. (No specimens.)

To all whom it may concern:

Be it known that I, CHARLES L. WRIGHT, of the city, county, and State of New York, have invented a new and useful Improvement in the Process of Coloring Photographs, of which the following is a full, clear, and exact description.

The object of this invention is to produce colored photographic pictures in which the natural colors of the objects from which the negatives are taken will be rendered in conjunction with the impression taken from the negative, and in which the delicate gradations of light and shade in the photograph will not be obscured.

The invention consists in applying to photographic paper in a raw state an even coating of a mixture of egg-albumen, neutral sulphate of barium, chloride of ammonia, salicylic acid, and glycerine; then floating the coated paper, when dry, on a bath of nitrate of silver and water; then exposing the paper under a negative; then fixing the impression in a bath of water, hyposulphite of sodium, and concentrated ammonia; then applying the colors in a mixture of albumen, salicylic acid, glycerine, aqua-ammonia, and water, and then passing the colored print through a bath of alcohol, water, and nitric acid, as will be hereinafter fully described.

In carrying my improvement into practical effect, I take good photographic paper, in a raw or unprepared state, and with a soft flat brush apply an even coating of a mixture prepared as follows: To thirty grams of egg-albumen are added ten grams of neutral sulphate of barium, one gram of chloride of ammonium, five decigrams of salicylic acid, and four grams of glycerine. These ingredients are beaten to a froth and allowed to settle. The mixture is then strained, and is ready to be applied to the paper. The coated paper, when dry, is sensitized by floating it on a bath of four grams of nitrate of silver to thirty cubic centimeters of water, and is again dried. The prepared and sensitive paper is exposed under a negative until fully printed, and is then toned and fixed in the ordinary manner. The print is then treated in a bath prepared of the following ingredients: To one hundred and sixty cubic centimeters of water are added fifteen cubic centi-

meters of concentrated ammonia, for the purpose of again softening and making absorbent the albumen used in the preparation of the paper, and which was coagulated by the action of the silver in sensitizing the said paper; or the print may be fixed in a fixing-bath to which the ammonia has been added, prepared as follows: To one hundred and sixty cubic centimeters of water are added thirty grams of hydrosulphite of sodium and fifteen cubic centimeters of concentrated aqua-ammonia. The barium is used for the purpose of keeping, by its opacity, the print on the surface of the paper, and also for holding the free nitrate of silver, or that remaining in excess of the quantity used to convert the chloride of ammonium into chloride and subchloride of silver until the impression by light is formed, and also for so subdividing the film of albumen as to form a natural mat-surface, which facilitates the spreading of the color. The barium has also an absorbent power, and thus aids in drawing the liquid color into the body of the film containing the picture, and thus causing the photograph and color to appear in conjunction. The vehicle used to distribute the color is composed of the following ingredients, viz: Thirty cubic centimeters of albumen, ten decigrams of salicylic acid, ten cubic centimeters of glycerine, one cubic centimeter of aqua-ammonia, and a sufficient quantity of water to cause the mixture to work well. The colors are applied with a brush, and when the coloring is finished the prints are passed through a bath formed of four cubic centimeters of alcohol, from ten to twelve cubic centimeters of water, and one cubic centimeter of nitric acid, to set the color by the coagulation of the albumen in the vehicle. The pictures are now ready to mount, but to further protect them they may be varnished, glazed, or burnished by the ordinary methods.

I do not wish to limit myself to the details of the above-described process, as it is evident that substantially the same effect might be produced by changing the proportions of the materials used, or by the substitution therefor of other equivalent materials, which need not be specifically mentioned.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The process of making colored photographs, substantially as herein described, which consists in applying to photographic paper in a raw state an even coating of a
5 mixture of egg-albumen, neutral sulphate of barium, chloride of ammonium, salicylic acid, and glycerine, then sensitizing, printing, toning, and fixing in the ordinary manner, and
10 then softening the albumen coagulated in the preparation of the paper with concentrated ammonia, then applying the colors in a mixture of albumen, salicylic acid, glycerine, aqua-ammonia, and water, and then setting the
15 color in the prints by passing them through a bath of alcohol, water, and nitric acid, in or about the proportions as set forth.

2. The process of preparing photographic paper to receive the impression from the neg-

ative, substantially as herein described, which consists in applying to the paper an even coat- 20 ing of a mixture of egg-albumen, neutral sulphate of barium, chloride of ammonium, salicylic acid, and glycerine, in or about the proportions as set forth.

3. The process of coloring photographic 25 prints, which consists in applying the colors in a mixture of albumen, salicylic acid, glycerine, aqua-ammonia, and water, and then passing the colored prints through a setting-bath of alcohol, water, and nitric acid, in or 30 about the proportions as set forth.

CHARLES L. WRIGHT.

Witnesses:

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