UNITED STATES PATENT OFFICE.

JOHANNES SCHUHMACHER, OF ROEMISCHE POSEL, SOERNEWITZ BEI MEISSEN, KOENIGR SACHSEN, GERMANY, ASSIGNOR TO LOUIS GRAF, OF VAN BUREN, ARK.

IMPROVEMENT IN PROCESSES OF PRODUCING COLORED PICTURES UPON LINEN OR OTHER MATERIAL.

Specification forming part of Letters Patent No. **220,435**, dated October 7, 1879; application filed May 10, 1879.

To all whom it may concern:

Be it known that I, JOHANNES SCHUHMACHER, of Roemische Posel, Soernewitz bei Meissen, Koenigr Sachsen, Germany, have invented a new and Improved Process for Producing Colored Photographs on Linen or other Material, of which the following is a specification.

My invention relates to the production of the photograph upon paper or card-board, the painting or coloring of the picture, and the transfer of the same to a linen, metal, or other surface to make the permanent picture.

To produce a picture upon linen the process is as follows: I first prepare the following solutions:

No. 1 solution: Seven grams (108.08 grains) of distilled water; eight grams (123.52 grains) of nitrate of silver; fifty grams (1 ounce 4 drams 52 grains) absolute alcohol.

No. 2 solution: Thirty grams (7 drams 43.20 grains) absolute alcohol; two grams (30.88 grains) chloride of calcium.

No. 3 solution: Thirty grams (7 drams 43.20 grains) absolute alcohol; two grams (30.88 grains) citric acid.

I then add to solution No. 1 gradually, and shaking constantly while mixing, fifteen ounces, one dram, and 27.68 grains (four hundred and seventy-two grams) of ordinary collodion. To this mixture solution No. 2 is then added, drop by drop, under constant shaking, after which No. 3 solution is added in the same manner. This mixture is now ready for use in preparing the paper.

The proportions above given are preferred, but may be varied.

I next take ordinary chalk-paper and cover it with a strong solution of gelatine, (1.25.) When dry the gelatine coating is to be covered with a film of the mixture or silver collodion above described. On the paper thus prepared a photographic impression is printed from a negative in the usual manner. The photographic picture is then washed in the ordinary manner, and colored in a bath prepared as follows:

In one and a half liters of distilled water two grams of chloride of gold are dissolved. In the same quantity of distilled water forty grams of rhodanide of ammonium are separately dissolved, and these two solutions are then mixed under constant stirring.

The picture is fixed by a bath consisting of hyposulphite of sodium and distilled water, (1.10.)

After washing, the picture is dried and varnished, and the surface painted with oil-colors. The color should be applied so as to sketch the figures merely, for the reason that the photograph itself gives the details and modulations of the picture. After drying, the picture is covered with French retouching-varnish, and pasted on the linen with the colored side next to the linen surface.

The adhesive medium may be variously composed, but the retouching-varnish will answer.

The picture, as will be understood, is now inclosed between the paper and linen. The paper is to be removed by soaking and washing in warm water, and the picture will then appear in a finished state upon the linen.

For transferring the picture to tin, wood, glass, or other material, some additions may be required, according to the nature of the surface. If the surface be of dark color—as, for instance, a black varnished salver—the photograph, after painting, will be covered with a coat of white paint to neutralize the effects of the dark background. When the white paint is dry it is then to be coated with some adhesive varnish, and when that is nearly dry, but still adhesive, the face of the picture is to be applied to the metal surface. When the varnish is completely dry the paper and gelatine are to be washed off with lukewarm water.

To protect and bring out the colors of the picture, its surface and the article decorated should be varnished; but no alcohol varnish can be used for fear of dissolving the film of collodion. The picture may also be burned into the tin by a temperature not exceeding 150° Réaumur.

When treated in this manner the photo-

graphic picture remains perfectly intact, and errors in modulation and form are perfectly excluded.

The luster, freshness, and intensity of the colors in pictures produced by this process are of remarkable effect.

I am aware that it is not new to make a simple transfer of the collodion film; but in my process the picture is colored by simple sketching, and the photograph gives shading to the colors.

What I claim as new and of my invention is—

The process of producing collodion transfer-pictures upon linen or other material, which consists in first washing with a solution of gelatine the surface that is to receive the picture, then flowing it with the collodion mixture described, and printing thereon from the negative, then finishing in the usual manner, then coloring and applying adhesive varnish, and then transferring the collodion picture film, as set forth.

JOHANNES SCHUHMACHER.

Witnesses:
KARL GOTTLOB GÄRGER,
GUSTAV KOCH.