

# UNITED STATES PATENT OFFICE.

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## PROCESS FOR PHOTOGRAPHIC TONING AND MOUNTING.

No. 871,188.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that I, HARRY SCHMIDT, a citizen of the United States, residing at Council Bluffs, in the county of Pottawattamie and State of Iowa, have invented new and useful Improvements in Process for Photographic Toning and Mounting, of which the following is a specification.

This invention relates to a process of treating and mounting any gelatin coated emulsion paper used in photography which may be toned in various tones that can be produced by the different methods and solutions of toning by baths or developing solutions, and the essential object of the same is to preserve a particular luster finish and also save the expense and inconvenience of card mounts. The advantage of my invention is that I preserve a particular tone and luster which in ordinary card mounting is lost and the tones as to color may be varied in accordance with the usual baths or solutions to which the gelatin emulsion paper may be subjected.

Heretofore all photographic printing-out papers were usually caused to adhere by the use of some kind of paste. Some printing-out papers, such as collodion or platinotype could not be made to properly adhere to glass by the use of an adhesive substance. Material advantage would have resulted in the finish of photographs if it had been possible to cause collodion or platinotype papers to adhere to glass by the use of the modern tone that they possess. In the early photographic practice it was common to cause gelatin paper to adhere on a ferrotype plate to obtain a gloss or luster, but the gelatin film would stick so hard in parts that in taking it off the picture would become spoiled to such an extent as to be worthless. To obviate this disadvantage the next practice was to rub paraffin on the ferrotype plate in order to have the paper come off in a high polish and finally glue or otherwise secure the picture thus finished on any suitable card mount.

By my process I obtain the superior tone of collodion or platinotype papers and have the latter stick to a glass plate or mounting without detracting from the desirable luster polish which is derived from the gelatin emulsion. In carrying out the process or in arriving at the point where my process begins, I wash the gelatin emulsion printing-out papers in five or six changes of water, or

wash the same a sufficient length of time to remove the free silver tone in a plain gold bath. I use in the latter bath one and one-fourth grains of chlorid of gold to sixty ounces of water and neutralize with a sufficient quantity of a saturated solution of borax. In some instances the neutralization, as will be understood by those skilled in the art, is obtained by the use of sal-soda, or some other soda. I tone the papers in this gold bath not more rapidly than eight minutes, or until they begin to color and then take them out of the bath when the color is reddish brown and put them in clear water and change them three or four times according to the quantity of prints, and then subject the papers to a toning operation in a bath of aristo platinum or a solution of chloro-platinite fifteen grains, phosphoric acid two drams, and water two ounces. Of this latter composition I take two drams to sixty ounces of water and subject the prints to a further toning operation. The prints are toned in the latter bath from seven to twelve minutes until the desired color is obtained and are then again put in clear water and subjected to three or four washings and fixed in a bath composed of hypo-sulfite of soda twenty degrees strong, hydrometer test, the prints being left in this fixing bath at least fifteen to eighteen minutes and finally washed in fresh water which is constantly changed every five or ten minutes for about one hour and a half.

The tone colors which I derive from these several operations and prefer to be preserved for mounting as will be presently specified, are green or olive black, but I desire to be understood that I may adopt other tone colors, such as red, brown, blue or blue black, which are produced as will be readily understood through the several baths, especially in the gold bath in accordance with instructions usually accompanying the formula for treating gelatin emulsion papers of all types. After the prints have thus been completed I then prepare glass plates to receive the prints and first cleanse the said plates thoroughly, care being taken, of course, to observe that there are no flaws in the plates. Each print is then taken singly and dipped in clean water at a temperature of about seventy degrees and is then laid on the glass plate. After the print has been applied to the glass plate it is subjected to pressure or a squeezing operation by means of a suitable implement

which may be made of any suitable material, such as rubber or celluloid and of a convenient form or shape to adapt it to squeeze out all the water and also the air between the print and the glass plate, and when this latter operation of removing the water and air has been completed, the glass plate with the print thereon is placed to one side and permitted to dry.

10 If the foregoing process is fully carried out as set forth, particularly that part embodying the features of my invention, the result will be a picture having a tone similar to that printed out on collodion or platino-  
15 type paper with the advantage of a positive adherence to the glass plate. By my process I am also enabled to dispense with many steps and treatments heretofore pursued in producing a luster finish with the advantage  
20 that I obtain such finish with a particular tone color which may be varied as hereinbefore specified. Furthermore, I do not confine myself to the use of any particular gelatin emulsion printing-out paper.

25 What I claim is:

1. The herein described process consisting in developing a gelatin emulsion photographic paper print, dipping the print in clear warm water, applying it directly to a  
30 glass plate and squeezing out the air and water between the print and plate and per-

mitting the print to dry on and adhere to the plate.

2. The herein described process consisting in developing a gelatin emulsion photographic paper print, dipping the same in clear warm water to soften the gelatin, applying the print thus treated to a glass plate and forcing out the water and air between the plate and print and finally permitting the  
40 print to dry on the plate.

3. The herein described process of mounting a gelatin emulsion photographic paper print consisting in developing the paper, softening the gelatin of the print, applying  
45 it to a glass plate and pressing it closely against the latter, and permitting it to dry on said plate.

4. The herein described process of mounting a gelatin emulsion photographic paper  
50 print which consists in developing the paper, softening the gelatin of the print, applying it to a glass plate and pressing it closely against the same to force out the water and air between the plate and print, and permit-  
55 ting the print to dry on the plate.

In testimony whereof, I affix my signature in presence of two witnesses.

HARRY SCHMIDT.

Witnesses:

CHAS. H. BOWEN,  
GEO. E. McMAHON.