

United States Patent Office.

ISAAC REHN, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 76,660, dated April 14, 1868.

MODE OF PRINTING PHOTOGRAPHIC PICTURES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, ISAAC REHN, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and improved Mode of Preparing a Sensitive Surface for Photographic Printing on Non-Absorbent as well as Absorbent Materials; and I do hereby declare the following to be a full and exact description of the same.

The object of my invention is to enable any one to so prepare the surface of painted canvas, boards, iron plates, or other material, that photographic printing on the same may be easily and successfully accomplished, and especially enlargements by the solar camera for coloring in oil or other colors, or to be preserved plain.

The mode usually employed for enlargements is that of making the print upon paper, and pasting the same upon canvas, preparatory to coloring, although attempts, with partial success, have been made to print such enlargements direct upon canvas, though the methods were such that the results were very unsatisfactory, as well as also to injure the canvas, by acting upon the painted ground. By the method I employ, and am about to describe, the resulting picture is clear and strong, easily and surely made, while the canvas is in nowise injured.

I proceed as follows: Take, of pure zinc-white, one ounce; albumen of fresh eggs, one and a half ounce; salt, or chloride of ammonium, twenty grains; solution of ammonio-nitrate of silver, four (4) drachms, containing thirty grains of nitrate of silver to each drachm. Dissolve the salt in the albumen; then grind fine, on a painter's slab, the zinc-white in a portion of the albumen; then add the remainder, and mix it uniformly; place the pigment mixture in a Wedgewood mortar, and proceed to the dark room; then add the silver solution, which will immediately coagulate the albumen; take the pestle, and triturate the coagulum until it becomes smooth and pulpy. It is then ready for use. Now, take a flat camel's-hair brush, about two inches wide, and paint evenly over the canvas, or other material, with this combination, and it is ready for use when dry, or, if it is desired to print with the solar camera, it is quite as good wet. If a very intense print is required, the coating may, when dry, be subjected to the vapor of ammonia, which will still add to the sensitiveness of the coating.

This combination is very sensitive to light, and hence due caution must be observed in regard to it, so as not to injure the whites of the picture.* It has also the quality of taking very kindly to all kind of surfaces, oily or not, and may be, therefore, very easily laid quite free from bubbles or other defects. I have had quite as good results by first applying the non-coagulated coating, allowing it to dry, then flowing the silver solution over the coating; but this method is not so economical or convenient as the process first described.

The method of preparing the ammonio-nitrate of silver solution is as follows:

Take, of nitrate of silver, one ounce.

Water, one ounce.

Ammonia, quantity sufficient.

Pure nitric acid, two drachms.

Dissolve the silver in the water; remove a small portion, say, one drachm. To the larger portion add carefully sufficient ammonia to precipitate the silver, and re-dissolve the precipitate, guarding against any excess of ammonia. Then add the remaining drachm of the silver solution, to insure a decided excess of silver. Lastly, add the two drachms of nitric acid, and the solution is ready for use at any time.

After the printing process has been carried as far as may be desired, it remains only to fix the impression, which may be done in the usual way, namely, the rinsing away of the free nitrate of silver, and then pouring over the picture a solution of hyposulphite of soda for a few minutes, afterwards removing the hyposulphite of soda by washing the print under a gentle stream.

The advantages of my process are those of facility and certainty in the production of good results, the applicability of the process to every kind of substance on which it may be desired to print, and the greater degree of sensitiveness of the printing-surface over that now employed, which sensitiveness in solar-camera printing is a matter of much importance.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

The combination of the pigment, with the salted albumen and silver solution, for the purposes set forth in the above specifications.

ISAAC REHN.

Witnesses:

JOHN DAINTY,

WILLIAM REHN.