

UNITED STATES PATENT OFFICE.

SOLON VATHIS, OF PARIS, FRANCE.

PROCESS FOR PRODUCING MULTICOLORED PHOTOGRAPHIC PROOFS.

No. 809,651.

Specification of Letters Patent.

Patented Jan. 9, 1906.

Application filed July 25, 1902. Serial No. 117,023.

To all whom it may concern:

Be it known that I, SOLON VATHIS, a citizen of the French Republic, and a resident of 42 Rue Vivienne, Paris, France, have invented 5 a certain new and useful Improved Process for Producing Multicolored Photographic Proofs, of which the following is a specification.

This invention relates to a process for producing multicolored photographic proofs.

The invention is characterized by the direct application of heat upon the positive proofs produced in certain conditions, such heat being associated with luminous rays or not—that is to say, it may take the form of a flame or of a heated iron, the action of the source of heat principally while it is luminous acting either directly or by reflection.

For obtaining these multicolored photographic proofs it is necessary to use any sensitive paper or surface permitting of toning after exposure in gold chlorid and in hydrochloric acid, thus giving to the proofs a brown-yellow, violet-red, violet-blue color, &c. It 20 is possible to use but with less satisfactory results other toning solutions or agents which are well known on the market. These various toning solutions or agents give to the proofs when they are finished and submitted 25 to the treatment which is the object of the present invention changes of coloration either partial or local or general, giving almost all the shades of red and of yellow and by combination with violets and blues. The colorations vary 30 naturally with the purity of the products employed and the manner in which the preliminary manipulations are effected, the coloration obtained being different, according to the shade of the proof, according to the number of washings, and the time of duration of 35 the toning, all the colorations presenting, however, their particular advantages.

The proportion of the gold chlorid may be augmented for obtaining a more bluish tint. 40 In the ordinary manner with sensitive surfaces of collodio chlorid and similarly of citrates after exposure of the proof I employ a toning-bath constituted in the mixture in a liter of water of three hundred cubic centimeters of hydrochloric acid and two grams of gold chlorid.

The positive proofs being obtained in the ordinary manner with a normal exposure and toned as hereinbefore described, I wash them 45 from five to six times for cleansing, then I pass them into a six-per-cent. solution of so-

dium thiosulfate, (hypo,) and there let them remain for about ten minutes, after which I wash and dry them. This having been done, I submit the proofs to the action of heat, 60 either in passing them over a direct flame applied by preference at the back or in submitting them to the action of a clear fire, or yet in applying over them at the desired places a heated iron, this latter means being more convenient for applying the heat to particular points of the proofs, though not effecting an intense coloration by reason of the less intensity of the heat. After this is done I place the proofs in water for about ten minutes, 70 then I mount them in the ordinary manner or allow them to dry.

The heat required for effecting the coloration of photographic proofs varies from 55° to 260° centigrade. In effecting the red coloration of a proof the source of heat is applied, as hereinbefore described, at the place where the coloration is to be made, and a pale-red coloration appears, which ultimately turns to a dark coloration, passing gradually through 80 the intermediate tints. If a yellow coloration is required, the heat is augmented, and the dark-red coloration then slowly changes from red to yellow, and from yellow by the application of heat a brown coloration may be 85 produced, according to any shades that are required.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A process for producing multicolored photographic proofs, consisting in exposing a sensitized surface, toning said surface, fixing the image thereon, and submitting said surface to the action of varying degrees of heat at the places where coloration is required at a minimum temperature of 55°, substantially as described.

2. A process for producing multicolored photographic proofs, consisting in exposing a sensitized surface, toning said surface in a solution of hydrochloric acid and chlorid of gold, fixing the image thereon, and submitting said surface to the action of varying degrees of heat at the places where coloration is required at a minimum temperature of 55°, substantially as described.

3. A process for producing multicolored photographic proofs, consisting in exposing a sensitized surface, toning said surface in a solution of hydrochloric acid and chlorid of gold, fixing the image thereon, and submitting said surface to the action of varying de-

grees of reflected heat at the places where coloration is required at a minimum temperature of 55° , substantially as described.

4. A process for producing multicolored photographic proofs, consisting in exposing a sensitized surface, toning said surface in a solution of hydrochloric acid and chlorid of gold, fixing the image thereon, submitting said surface to the action of varying degrees of heat at the places where coloration is re-

quired at a minimum temperature of 55° , and placing said proofs in water, substantially as described.

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

SOLON VATHIS.

Witnesses:

EDWARD P. MACLEAN,
PAUL F. PAQUET.