

# UNITED STATES PATENT OFFICE.

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## EMULSION FOR PHOTOGRAPHIC-PRINTING PAPER.

SPECIFICATION forming part of Letters Patent No. 439,021, dated October 21, 1890.

Application filed October 22, 1889. Serial No. 327,846. (No specimens.)

*To all whom it may concern:*

Be it known that I, LOUIS F. MARTEN, of St. Charles, in the county of St. Charles and State of Missouri, have invented a certain  
5 new and useful Improvement in Emulsion for Photographic-Printing Paper, of which the following is a full, clear, and exact description.

My invention relates to a sensitive emulsion for coating paper for printing from negatives; and it consists in features of novelty hereinafter fully described, and pointed out in the claims.

My invention consists, mainly, in combining salts of gold, salts of bromide—such as  
15 ammonium, potassium, sodium, zinc, or cadmium bromide, and nitrate of silver—with a substance having holding qualities—such as gelatine—and with other suitable salts, in such a manner as to form an emulsion which  
20 can be easily spread on paper and form a smooth surface, and my preferable manner of preparing the emulsion is as follows:

I first take of bromide of ammonium fifteen grains and dissolve it in three ounces  
25 of water, then add one hundred and eighty grains of gelatine and let it soak fifteen minutes, then dissolve in a water-bath, which is raised to a temperature a little below the boiling-point, when add, stirring briskly, one  
30 grain of chloride of gold in about three drams of water having the same temperature as the above solution. Next dissolve seventy-five grains of nitrate of silver in one ounce of water, which is heated same as first solution and added drop by drop, stirring  
35 briskly. Next dissolve ninety-five grains nitrate of ammonium in three-fourths ounce of water and add two grains chloride of gold in two drams of water. Heat same as first  
40 and add gradually, stirring well. Next dissolve seventy-five grains citric acid in one-half ounce of water, heated as first, and add, stirring well. Next place one hundred and fifty grains gelatine in a vessel and pour the  
45 above-described solution over it, and keep warm until dissolved, when it is ready for use, and should be kept warm until used to coat the paper.

It is not necessary to adhere strictly to above formula and to the proportions given, 50 as the proportions may be changed, resulting in a different tone; but it is essential that nitrate of silver, chloride of gold, and a bromide salt should be used in connection with other salts in or on a holding substance in such a 55 manner to form a good printing-surface.

After the paper has been coated and dried, it is ready for use. The printing should be deep, either in sun or shade, according to negative. When printed, place in water un- 60 til limp, or rinse in two or three changes. Then place in a bath composed of four ounces of water containing from one grain or more of sulphocyanide of ammonium, according to the character of the emulsion, when it 65 will tone the print, after which it is fixed, as usual, in a bath of hyposulphite of soda and water, composed of about one ounce of hyposulphite of soda to six ounces of water. The print is then washed, as usual. 70

The following advantages are claimed for my process: By means of my emulsion I am enabled to dispose of the usual gold-toning bath, which decomposes and is very expensive. All printed pictures will tone alike if 75 printed on similar paper similarly coated. The silvering of the paper is dispensed with. Amateurs will find no trouble in toning. The keeping qualities are good. There is a great saving in manipulation and time. The 80 paper does not need fuming.

I claim as my invention—

1. An emulsion for photographic paper, consisting of salts of gold, a bromide, nitrate of silver, and a holding substance, substan- 85 tially as described.

2. An emulsion for photographic paper, consisting of salts of gold, bromide of ammonium, or its equivalent, nitrate of silver, and a holding substance, substantially as de- 90 scribed.

3. The combination, in an emulsion for photographic paper, of salts of gold, bromide of ammonium, nitrate of silver, and gelatine, or other suitable holding substance, substan- 95 tially as described.

4. The combination, in an emulsion for photographic paper, of bromide of ammonium, chloride of gold, nitrate of silver, nitrate of ammonium, citric acid, and gelatine, substantially as described.

5. The combination, in an emulsion for photographic paper, of bromide of ammo-

nium, chloride of gold, nitrate of silver, and other salts combined, substantially as set forth.

LOUIS F. MARTEN.

In presence of—

HY. WILLBRAND,  
ED. P. HEHNER.