

UNITED STATES PATENT OFFICE.

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PHOTOGRAPHIC PAPER AND SENSITIVE EMULSION THEREFOR.

SPECIFICATION forming part of Letters Patent No. 314,346, dated March 24, 1885.

Application filed March 18, 1884. (No specimens.)

To all whom it may concern:

Be it known that I, THOMAS C. ROCHE, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful
5 Improvement in Photographic Paper and Sensitive Emulsions Therefor, of which the following is a full, clear, and exact description.

This invention consists in the production, as a new article of manufacture, of a photographic-
10 printing paper having a toothed facing of gelatine and bromide of silver; and it further includes a compound for facing photographic paper consisting of gelatine, bromide of silver, and a suitable tooothing substance, substan-
15 tially as hereinafter described; likewise a combination, with a photographic emulsion of gelatine and bromide of silver, of a tooothing substance, such as the sulphate of baryta.

Heretofore when a sheet of paper has been
20 coated with a gelatine emulsion sensitized with a bromide of silver, the surface, when dry, has been smooth and incapable of having a tooth to receive and hold the mark of a crayon or pencil. By my invention, however, I am en-
25 abled to obtain in a quick and simple manner a mat or roughened surface on gelatine-bromide paper suitable for positive photographic printing which shall have tooth for touching or marking it with crayon, lead-pencil, pastels,
30 &c., and this I do by directly mixing a suitable tooothing substance with the gelatine emulsion sensitized with a bromide of silver, and then applying to the surface of the paper, in the usual or any suitable manner, said sensi-
35 tive emulsion having the tooothing substance, which is insoluble therein, incorporated with it. Thus I obtain in a quick and simple manner a mat or roughened surface on gelatine-bromide paper for positive photographic print-
40 ing, so as to give tooth for touching or marking it with crayon, lead-pencil, pastels, &c., and am enabled to prepare a rapid printing-paper for enlarging purposes, either by the solar camera or other enlarging apparatus.

In carrying out my invention the gelatino-
45 bromide-of-silver compound I prefer to use is that described in Letters Patent No. 241,070, issued to me May 3, 1881, and which consists in first softening the gelatine in water and adding
50 bromide of ammonia or an equivalent bromide in suitable proportions, say, about

one hundred and fifty grains of good gelatine, sixty grains of bromide of ammonia, and about five ounces of water, then dissolving the gelatine by heat and adding gradually nitrate of
55 silver, say, about one hundred grains dissolved in about five ounces of water, then subjecting the whole to a continued heat for two or three days, (more or less,) at about 80° to 100° Fahr-
60 enheit, then, after allowing it to cool and set, cutting it into fragments and washing out the soluble matter, then melting it by heat and adding about its weight of water. To
this or other like emulsion I then add for each
65 four liquid ounces thereof about one tea-spoon-ful (more or less) of the insoluble tooothing substance and thoroughly incorporate the same therewith. To produce a very coarse-grained
or toothed surface, double the quantity speci-
70 fied of the insoluble graining or tooothing substance may be incorporated with the sensitive material or emulsion.

Different tooothing substances insoluble in
said emulsion might be used, including the
75 sulphate of baryta, pumice-stone powder or emery powder of different grades, and the paper to which said sensitive emulsion is applied may either be sized or unsized, and said
gelatino-bromide-of-silver emulsion having the
80 insoluble tooothing substance incorporated with it may be applied to the surface of the paper on which the positive photographic printing
is to be done in any suitable manner known to the arts for applying other or simple emulsions.

If the graining or tooothing substance used
85 be sulphate of baryta, which gives a superior finish to the white portions of the picture, then said sulphate may be used in a wet state, as when used in a damp state it readily assim-
90 ilates with a gelatine emulsion and is held in suspension therein. It might, however, be used in a dry state, in which case the propor-
tion may be about one dram of sulphate of baryta to each ounce of the sensitive emulsion,
95 first mixing it, however, in a weak solution of gelatine and water, and afterward mixing and incorporating it in any suitable manner with the sensitive emulsion. Said sulphate of baryta will be held in suspension just as the
100 bromide of silver is held, and does not affect the sensitiveness of the emulsion.

By incorporating an insoluble graining or

toothings substance with the gelatine and bromide of silver I dispense with all special or mechanical means for producing a grained or toothed surface upon the paper, and by means
5 of a gelatino-bromide-of-silver emulsion having a toothings substance incorporated with it, as described, the usual method of producing a mat or roughened surface upon the paper by rubbing down the surface of the print with cuttle-fish bone and pumice-powder is dispensed
10 with, and I am enabled to quickly prepare a surface superior in uniformity to that heretofore produced for the purposes specified.

From the foregoing description it will be
15 seen that I have produced a sensitive photographic-printing paper having all the rapid printing and developing qualities of bromide-of-silver paper with the added quality that the print when toned and finished in the ordinary
20 manner has a roughened or tooth surface and may be then touched and worked by the pencil or crayon.

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

1. As a new and useful or improved article of manufacture, a photographic-printing paper made with a toothed facing of gelatine and bromide of silver, as herein set forth.

2. The within-described compound for facing photographic paper, consisting of gelatine, 30 bromide of silver, and a suitable toothings substance, such as the sulphate of baryta, prepared in the manner and proportions substantially as described.

3. The combination, with a photographic 35 emulsion of gelatine and bromide of silver, of a toothings substance, such as the sulphate of baryta, substantially as herein described.

THOMAS C. ROCHE.

Witnesses:

HY. DIETRICH,
H. N. WILSON.