UNITED STATES PATENT OFFICE.

CHARLES ROSS, OF BURLINGTON, NEW JERSEY.

PRODUCTION OF RELIEF STIPPLE PAPER.

SPECIFICATION forming part of Letters Patent No. 265,444, dated October 3, 1882.

Application filed June 20, 1882. (Specimens.)

To all whom it may concern:

Be it known that I, CHARLES ROSS, a citizen of the United States, and a resident of Burlington, New Jersey, have invented an Improvement in the Production of Relief Stipple Paper, of which the following is a specification.

The object of my invention is the production of a drawing-paper or equivalent material having a surface of fine uniform dotted stipple-points in relief, on which drawings in crayon or ink may be made, more especially for reproduction by photolithographic or phototypographic processes, and this object I attain as more fully described hereinafter.

In the production of many pictures by photolithography, it is necessary to obtain a stipple effect, and the customary method of obtaining this is to laboriously work with a stipple-pen on the stone itself. A paper with a grained surface has been used in some cases, the drawing being first drawn on the grained paper to produce a grained effect, and then transferred to the stone; but a paper with round dots which will closely imitate hand-stippling has not yet been produced. By my method I produce a surface of raised stipples, forming a perfect reproduction of hand-stippling.

I proceed in the following manner: I first produce on a photolithographic stone, by the ordinary hand-stippling with a pen, a uniform drawing of the fine even dots which form a stipple, and for economy's sake I only stipple a small portion of the stone to a rectangular form and take several duplicate impressions and accurately join them together to form a large sheet with a perfect stipple impression over the entire surface. This is then transferred to a stone having a surface so prepared, or its natural surface so destroyed with nitric acid and gum, that the impression so transferred will not stick, or, in other words, that the stone will not "take" the greasy ink, but the impression will readily wash off. The stone is now counter-etched with a weak etching solution, preferably of citric acid, which produces on the portions of the stone not protected by the stipple-points the original natural surface, which will take greasy ink applied to it. Lithographic or transfer ink is then rolled over the entire surface and allowed to penetrate the portions of the stone counter-etched, as described, and not protected by the dots of the stipple originally transferred to the stone. When this ink has been left on sufficiently long to allow the unprotected and etched portions of the stone to take the greasy ink the ink is washed off the stone, leaving the grease adhering only to the portions of the stone between the original stipple dots. Hence when the stone is now damped in the usual way for printing and rolled over with lithographic ink the stipple dots will appear in light, with a black ink background, or, in other words, a negative stone is the result. This can now be rolled up and etched to any required depth, after which the stone is washed clean. The result will be a perfect matrix or mold corresponding with the original stipple, the dots having been cut out in intaglio by the acid. On this matrix I lay the prepared paper on which I wish to produce the raised stipple surface and pass the stone and paper through the press. The drawing-paper thus impressed will have the stipples appearing in relief, and from the same matrix as much of this stipple relief paper may be molded as may be desired. The drawing-paper with the stipple surface is then ready for the artist to draw the design in crayon, pencil, or ink, the stipple effect being produced by the surface of the paper, and a stippled design which is thus readily and quickly produced on paper can at once be transferred to stone and printed impressions taken to any desired number.

I claim as my invention—

1. The mode herein described of producing a matrix for molding a drawing-surface having stipple in relief, said mode consisting in first preparing a uniform stippled impression, then transferring it to stone prepared not to take the transfer, then counter-etching the stone and inking it, then washing off the ink and etching the stone to the desired depth, all substantially as described.

2. The mode herein described of producing a relief stipple surface, said mode consisting in first transferring a hand stipple impression

to a stone prepared not to take the transfer; secondly, etching the stone to produce the natural surface on the parts unprotected by the impression; thirdly, inking the stone; fourthly, washing off the ink; fifthly, etching the stone to the desired depth, and, sixthly, molding paper or similar material in the matrix thus formed.

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

CHAS. ROSS.

Witnesses:
HARRY DRURY,
HUBERT HOWSON.