UNITED STATES PATENT OFFICE.

VICTORIA QUARRE WEDEKIND, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN ENGRAVING COPPER, &c.

Specification forming part of Letters Patent No. **58,516**, dated October 2, 1866.

To all whom it may concern:

Be it known that I, VICTORIA QUARRE WEDEKIND, of the city of Philadelphia and State of Pennsylvania, have invented a new and Improved Method of Producing Copper or other Metal Plates engraved in relief, without aid of engravers' tools, by a chemical process; and I do hereby declare that the following is a full and exact description thereof.

I take a copper plate well polished, and of the exact size of the drawing you wish to produce, and by means of a copper-plate printer's stove I bring the plate to a moderate heat. I take German white lead, or fine white lead, finely sifted, and grind in water, and take the finest clear glue, dissolve it in water, and when moderately warm I mix carefully a small part of it with the German enamel white. I use for this operation a fine camel's-hair brush, and whiten the entire surface of the lightly-heated copper plate by passing with a camel's-hair brush from right to left and from top to bottom till I bring about a perfectly even and smooth surface. The artist or draftsman can make his design on paper and burnish it by the ordinary process, the lead-pencil marks of his picture upon the white surface of the plate, or it would be better and quicker for him, with ordinary engravers' tools, to trace his design upon the plate, taking care not to cut into the copper, because all parts of the plate he uncovers of its white surface will produce the relief of his picture, while the entire surface remaining covered with white will scoop away between the lines forming the picture.

What remains to be done is merely the work of an ordinary copper-plate engraver. Take the ordinary varnish of plate-engravers, cover the entire surface of the plate with it, and keep the plate moderately warm. The varnish being dry, line the borders with wax and pour as much nitric acid at five degrees as your basin will allow. In a short time that part of the varnished surface where white and varnish are combined will break off in small parcels. Stir continually and lightly with a brush till the whole will be removed, then empty your basin and let it dry a few minutes, then pour in nitric acid at ten degrees, taking care to remove the globules as soon as formed, and continue to renew the acid at ten degrees till you bring about the required deepness, and the minute details of the design will stand in bold relief.

Wash the plate with turpentine, and if in some places of the design, by inexperience of the draftsman, a large amount of space and deepness is required, such places can be easily deepened with engravers' tools.

Finally, print any number by the ordinary printing-press.

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

The production by chemical process of engraved plates forming designs in relief by the following process: covering the copper plates with German white, tracing of designs therein, covering the white layer with engravers' varnish, and treating it with nitric acid, substantially as above described.

VICTORIA QUARRE WEDEKIND.

Witnesses:
GEO. BUCKLEY,
H. A. KIMBALL.