UNITED STATES PATENT OFFICE.

JOSEF EBERLE, OF VIENNA, AUSTRIA-HUNGARY.

PREPARATION OF LITHOGRAPHIC PRINTING-SURFACES.

SPECIFICATION forming part of Letters Patent No. 316,251, dated April 21, 1885.

Application filed August 28, 1884. (No specimens.) Patented in Germany June 20, 1884, No. 30,472; in France July 11, 1884, No. 163,253; in England July 11, 1884, No. 10,073; in Austria-Hungary July 31, 1884, No. 16,838 and No. 34,287; in Belgium August 12, 1884, No. 66,007, and in Italy September 30, 1884, XVIII, 17,242; XXXIV, 178.

To all whom it may concern:

Be it known that I, JOSEF EBERLE, a subject of the Emperor of Austria, and a resident of Vienna, in the Empire of Austria, have invented certain new and useful Improvements Relating to the Preparation of Lithographic Printing-Surfaces, of which the following is a specification.

This invention relates to an improved method of preparing lithographic printing-surfaces.

There are in lithography the following distinct methods of preparation: first, by engraving; second, by transferring, in which the drawing or writing appears elevated on the stone; third, by drawing or writing directly upon the stone; fourth, by drawing with a crayon on a grained stone; fifth, by transferring from a granulated paper upon stone; and, sixth, by etching in the stone. In all the preceding methods, with the exception of the engraving, the drawing or other design is etched directly upon the stone by means of nitric acid or phosphoric acid, or the like, mixed with gum and water, in order to obtain impressions from the same. The engraving, on the other hand, is rubbed with linseed-oil in order to cause the adhesion of the fatty printing-ink.

According to this invention the drawing, writing, or other design produced upon the stone by any of the methods hitherto employed, and having been covered with printing-ink, is gently rubbed with very fine colophony by means of cotton. As soon as the colophony has combined with the printing-ink the drawing, writing, or other design under preparation is caused to melt lightly by applying an open flame to it. The stone is then left to cool, whereby the coating is caused to harden, and this coating then forms an impermeable protecting-surface, protecting the stone from all injury during the etching. The stone is subsequently brushed over with strong caustic gum (generally composed of one part of nitric acid, ten parts of solution of gum of the usual strength, and twenty parts of water, the solution being stronger or weaker, as required) until the design has acquired the desired height. This very simple process produces a much better effect as regards beauty and durability of the design than heretofore. The stone is then ready for printing, which can be effected in any of the well-known ways; but in addition the present invention allows to produce reproductions on dry paper by roller-printing even if the latter is not smooth, and as many as one hundred thousand reproductions may be taken of the design without the design losing in beauty or distinctness, but, on the contrary, increasing in this respect.

I claim—

The further treatment of a drawing, writing, or other design produced in any of the ways hitherto employed upon a lithographic printing-surface, consisting in covering the surface with printing-ink, in then rubbing it gently with very fine colophony, in then lightly melting this covering by applying an open flame to it, and in then leaving the stone to cool, whereby an impermeable coating is produced which will prevent the injurious effects of the subsequent and indispensable etching, and in finally brushing the stone with strong caustic gum of the usual composition until the design or writing has acquired the desired height, substantially as described.

The foregoing specification of my improvements relating to the preparation of lithographic printing-surfaces signed by me this 24th day of July, 1884.

JOSEF EBERLE.

Witnesses:

ADOLF KROMP,

E. G. J. VOELLER.