UNITED STATES PATENT OFFICE.

ERNST OTTO SCHMIEL, OF LEIPSIC, GERMANY.

PROCESS FOR PREPARING ZINC AND ALUMINIUM PLATES FOR PRINTING PURPOSES.

No. 805,031. Specification of Letters Patent. Patented Nov. 21, 1905.

Application filed November 1, 1904. Serial No. 231,026.

To all whom it may concern:

Be it known that I, ERNST OTTO SCHMIEL, a citizen of the German Empire, and a resident of Leipsic, Saxony, Germany, have invented a useful and Improved Process for Preparing Zinc and Aluminium Plates for Printing Purposes, of which the following is a full, clear, and exact description.

The present invention consists of a process for preparing zinc and aluminium plates for printing purposes.

The zinc and aluminium plates employed are first freed from grease in the known manner by means of a diluted solution of nitric or hydrochloric acid, (four parts water and one part acid,) and then they are more or less roughened, according to the purpose for which they are required, by means of pumice-stone dust or sand blowing device. The plate is then washed with clean water and dried, then rubbed over with acetic acid in order to remove the acid from it. The plate is now in condition to receive the lithographic ink or fatty colors. The drawing is made with lithographic ink or chalk or by reproduction with grease colors. When the print or drawing has been made on the plate thus prepared, the same is rubbed over with the biting-in or acid solution, which consists of a mixture of saturated acid oxalate of potassium and gum-arabic. The plate is now ready for the printer's press.

The effect of the etching solution consisting of the above-mentioned ingredients is to prevent the spreading of the ink or color, while the surface of the plate not covered by the drawing will not retain any of the ink or color when the same is imparted to the plate by the ink or color rolls.

An important advantage of the present etching solution is that it avoids faulty etching, and thus entirely prevents the occurrence of tone or shades on the plate, which is of great advantage, since these defects occur very readily with etching solutions containing phosphoric acid and other acids having analogous effects. The etching solution should contain about equal parts of the oxalate and gum.

I claim as my invention—

1. A process for preparing zinc and aluminium plates for printing purposes, which consists in rubbing over the plate with acetic acid before the drawing or the like is produced thereon and etching subsequently, after the drawing or the like has been produced, with a solution of saturated acid oxalate of potassium and gum-arabic.

2. A process for preparing zinc and aluminium plates for printing purposes, which consists in rubbing over the plate with acetic acid before the drawing or the like is applied, and after the drawing or the like has been produced etching with a saturated solution consisting of a mixture about equal parts of acid oxalate of potassium and gum-arabic substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

ERNST OTTO SCHMIEL.

Witnesses:

MORITZ SPREER,

RUDOLPH FRICKE.