

UNITED STATES PATENT OFFICE.

EDUARD PÜTTMANN, OF SCHWELM, GERMANY.

DECORATING SHEET METAL FOR CEILINGS, &c.

SPECIFICATION forming part of Letters Patent No. 446,191, dated February 10, 1891.

Application filed April 24, 1890. Serial No. 349,372. (No specimens.) Patented in France October 19, 1889, No. 201,435, and in Belgium December 6, 1889, No. 88,748.

To all whom it may concern:

Be it known that I, EDUARD PÜTTMANN, of the town of Schwelm, in Westphalia, Kingdom of Prussia, in Germany, a citizen of the German Empire, have invented certain new and useful improvements in making enameled and decorated wall steel sheet-plates for the covering of the walls and ceilings of rooms, (for which I have obtained Letters Patent of France, No. 201,435, dated October 19, 1889, and of Belgium, No. 88,748, dated December 6, 1889,) of which the following is a specification.

The object of this invention is intended to transfer the designs that are to be enameled in a clear and ornamental manner; and the invention consists in a process of enameling sheet-metal articles by first transferring the patterns by a suitable size from an elastic plate or roller on the article to be ornamented, and covering these sized portions with pulverized enamel and then fixing said enamel by burning.

For carrying out my improved process in a practical manner, the designs that are to be transferred upon the sheet-metal articles to be decorated are engraved or etched into the surface of plates or rollers, by means of which the transfer is made. However, the liquid enamel is not transferred directly upon the articles; but the pattern or design on said plates or rollers is covered with an adhesive vegetable size of such nature as to leave very little ashes when burned, so that the tint of the colored enamel is not affected. This adhesive substance or size is transferred to the article to be decorated by means of a slight pressure on the plate or roller.

For the purpose of readily observing whether the impression of the size has been made in a clear and uniform manner, a suitable vegetable dye—such as an aniline color—is added to the size, so that the same clearly shows the surface which is covered by the size. If the transfer of the design to the article to be decorated appears sufficiently clear, the colored enamels or porcelain colors are dusted or applied in pulverized form on the sized surfaces, and the pulverized enamel will adhere to those parts that are covered with size—that is to say, to those parts which belong to the design to be enameled—

while it can be readily removed from those parts which are not to be enameled. The articles which are thus coated with size and pulverized enamel are then placed into muffles, in which the enamel is burned into the articles. During the burning operation the colored size is entirely burned out, so as not to appear on the articles when they are removed from the muffle, while, on the other hand, the design transferred upon the articles is reproduced in a uniform manner. This process is adapted for the manufacture of sheet-metal articles of all kinds, especially, however, for the manufacture of enameled sheet-metal tiles, which can be used in place of clay or porcelain tiles for covering floors. In the manufacture of enameled metallic tiles care, however, has to be taken that the metal does not warp while burning on the enamel, for which purpose the blanks are made slightly convex, so that when they are attached to the floor they appear in plain sheets. The fastening of such tiles is accomplished by means of screws, which are introduced through a hole in the center of the plate, so that upon drawing up or tightening the fastening-screw the bottom surface of the metallic tile rests on the substructure and a nearly plain surface of the tile is obtained, which, however, has sufficient elasticity to prevent concussions on the tiles from destroying the enameled surfaces of the same.

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

The process herein described of making enameled sheet-metal articles, which consists in transferring an adhesive size containing a coloring-matter to surfaces to be enameled, then spreading pulverized porcelain colors or enamels over the sized surfaces, and finally burning the articles until the colored size is consumed and the enamel fixed upon the tile, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

EDUARD PÜTTMANN.

Witnesses:

CHARLES KRUEGER,
RUDOLPH FRICKE.