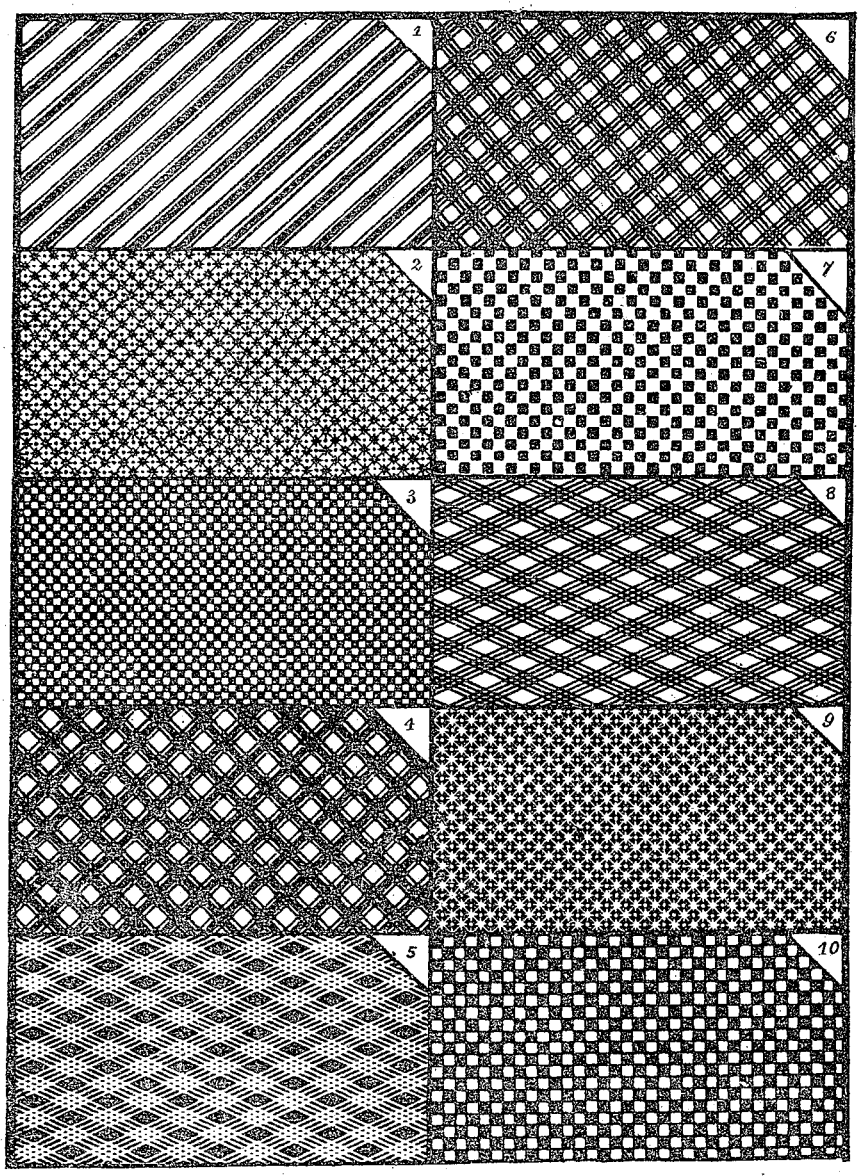
A. E. SCHMIDT & G. J. M. RADBRUCH.

Process of Decorating Tin Plate.

No. 163,262. Patented May 11, 1875.



WITNESSES

Walter Allen

Henry Sanner.

Albert Edwin Schmidt.

Gustav Jacob Max Radbruch.

By Knight Bros. Attorneys

UNITED STATES PATENT OFFICE

ALBERT EDWIN SCHMIDT AND GUSTAV JACOB MAX RADBRUCH, OF HAMBURG, GERMANY, ASSIGNORS TO HAMBURG AMERICAN SEWING-MACHINE COMPANY, OF SAME PLACE.

IMPROVEMENT IN PROCESSES OF DECORATING TIN-PLATE.

Specification forming part of Letters Patent No. **163,262**, dated May 11, 1875; application filed April 5, 1875.

To all whom it may concern:

Be it known that we, ALBERT EDWIN SCHMIDT and GUSTAV JACOB MAX RADBRUCH, of the city of Hamburg, in the Empire of Germany, have invented a new and useful Improvement in the Art of Decorating Tin-Plate, of which the following is a specification:

This invention relates to the production of what is known as figured or decorated tin-plate, for use in the manufacture of sheet-metal ware.

The present invention consists, first, in producing the pattern or figure in any desired color, from silver-white to dark gold or tombac, by merely regulating the heat of the stove or oven in which the plates are baked, the plates having been previously coated with a peculiar varnish or solution containing alkannin, as hereinafter described. The invention consists, secondly, in the process hereinafter specified, considered as a whole, whereby figured or decorated tin-plate can be produced with superior facility and cheapness.

The accompanying drawing represents ten specimens of designs, such as can readily be produced in different colors by means of this improved process.

The pattern, design, illustration, view, writing, or figure to be produced on the tin-plate is first drawn in the ordinary way on a lithographic stone. A peculiar paper is prepared with paste, gum, and glycerine, the paper being of the same dimensions as the plate to be decorated. The stone is then prepared with a printing-ink consisting largely of lamp-black, and an impression is then taken upon the transfer-paper. The paper is then placed on the tin-plate, which already lies close at hand on the printing-press. Paper and plate pass through the machine together, and the pattern becomes transferred to the plate from the paper. The plate is then coated with a particular lacquer, and by this it receives a glazed surface, the paper having been damped with a sponge dipped in water and drawn off the plate. This paper can be used again.

The transfer-paper is prepared by impregnating it with a mixture consisting of large proportions of paste and glycerine and a small proportion of gum, these three ingredients being thoroughly mixed by boiling. The paper, after being thus prepared, is hung up to dry, which is accomplished in a few moments.

After a sufficient number of plates are printed they are placed in a large drying-stove, which is heated up to 70° Reaumur. They remain in the same all night, and are then coated with a mixture of copal-varnish, lacquer, turpentine, and alkannin, (a coloring matter extracted from the *Anchusa tinctoria*.) They are then placed in a stove with shelves, or a suitable oven, and subjected to a heat of 110° Reaumur, more or less. After this baking has been continued for twelve hours, or thereabout, the process of decorating is completed.

The alkannin has the effect of allowing any color to be produced, from silver-white to brass, gold, tombac, &c., by merely regulating the heat of the stove according to the color required.

The following is claimed as new in this invention, namely:

1. As an improvement in the art of decorating tin-plate, coating the surface with a varnish containing alkannin, and subjecting the coated plate to heat, the color of the plate being determined or varied by regulating the heat, substantially as herein set forth.

2. The improved process of decorating tin-plate, consisting in printing the pattern or figure thereon, coating the printed surface with a varnish containing alkannin, and subjecting the prepared plate to heat of a greater or less degree to produce the desired color of pattern or figure, substantially as herein specified.

Hamburg, 18th of March, 1875.

ALBERT EDWIN SCHMIDT.
GUSTAV JACOB MAX RADBRUCH.

Witnesses:

HERMANN DORNER,
EUGENE SAINT CLAIR DE MASSIALE.