

UNITED STATES PATENT OFFICE.

CONRAD STURM AND HEINRICH STURM, OF MÜNCHEN-GLADBACH, GERMANY.

MANUFACTURE OF COLORED FOIL, BRONZE FOIL, AND METAL FOIL.

1,152,060.

Specification of Letters Patent.

Patented Aug. 31, 1915.

No Drawing.

Application filed May 6, 1914. Serial No. 836,809.

To all whom it may concern:

Be it known that we, CONRAD STURM and HEINRICH STURM, subjects of the Emperor of Germany and King of Prussia, residing at Waldhauserstrasse 77, München-Gladbach, Germany, have invented certain new and useful Improvements in the Manufacture of Colored Foil, Bronze Foil, and Metal Foil, of which the following is a specification.

This invention relates to the manufacture of foil consisting of a layer of agglomerated color or bronze powder, or leaf metal, and essentially consists in using, for the preparation of this layer, a support or carrier consisting of fibrous material, such as thin paper, which is then destroyed or "broken down" so that the foil need not be pulled off its backing, but can be used together with whatever remains of the backing.

We may, for example, use a thin paper backing saturated with a 10% solution of sulfuric acid. When a color or bronze layer has been applied to this, and has become dry, we heat the paper, and the paper fiber is by this treatment, following the acid treatment, broken down. To produce the foil layer, the paper treated with acid may be coated with adhesive matter, by brushing, dipping or sprinkling, and powdered color or bronze powder may then be sprinkled thereon; or after producing a ground layer of adhesive matter and color or bronze powder in this manner, a final coating of color or bronze powder may be applied. Bronze powder or color powder mixed with adhesive matter may also be applied. The heating may be effected by passing the foil over a heated cylinder or heated plates, or by any other convenient means. When the paper fiber has been broken down the backing no longer serves as a support for the foil, and the latter depends on its own cohesion for maintaining its constitution. The backing only serves as a carrier until the foil is constituted.

In case acid is used, which would have a deleterious effect on the foil, the acid may be neutralized before the color or bronze is applied.

We may also treat the backing with acid, for example dilute sulfuric acid, after the foil layer has been applied, and then heat it. Leaves of metal, including gold, may be

applied to the carrier to make a sheet or strip of foil.

It is quite immaterial to the invention in what manner the foil layer itself is produced, apart from the use of the backing and the breaking down thereof. We may use any convenient kind of adhesive, soluble in alcohol, water, or otherwise, and we may impress the foil with hot or cold dies, and apply to it a protective coating to prevent tarnishing, oxidation and the like.

The foil can be manufactured in the form of a web, which can be rolled, and the foil can be drawn off the roll for subsequent treatment or use, which is of great convenience.

We claim:

1. The process of producing colored foil or bronze foil, which consists in applying a layer of color or bronze to a carrier of fibrous material, such as thin paper, treating said carrier with a destructive agent and then breaking down the fiber by heating, so that the foil can be used and treated with the residual backing.

2. The process of producing colored foil or bronze foil consisting in applying a layer of color or bronze material by means of an adhesive matter to a carrier of fibrous material, treating said carrier with a destructive agent and finally breaking down the carrier by exposing the foil to heating.

3. The process of producing colored foil or bronze foil consisting in applying a layer of color or bronze material by means of an adhesive matter to a carrier of fibrous material, saturating said carrier with 10% solution of sulfuric acid, thereupon drying the foil and finally breaking down the carrier by heating the foil.

4. The process of producing metal foil consisting in applying a metal leaf by means of an adhesive matter to a carrier of fibrous material, saturating said carrier with 10% solution of sulfuric acid, thereupon drying the foil and finally breaking down the carrier by heating the foil.

In testimony whereof the foregoing specification is signed in the presence of two witnesses.

CONRAD STURM.
HEINRICH STURM.

Witnesses:

HENRY QUADFLIEG,
PAUL VREES.