(No Model.)

A. W. PAULL.

ART OF DRAWING SHEET METAL.

No. 413,373. Patented Oct. 22, 1889.

Fig. 1.

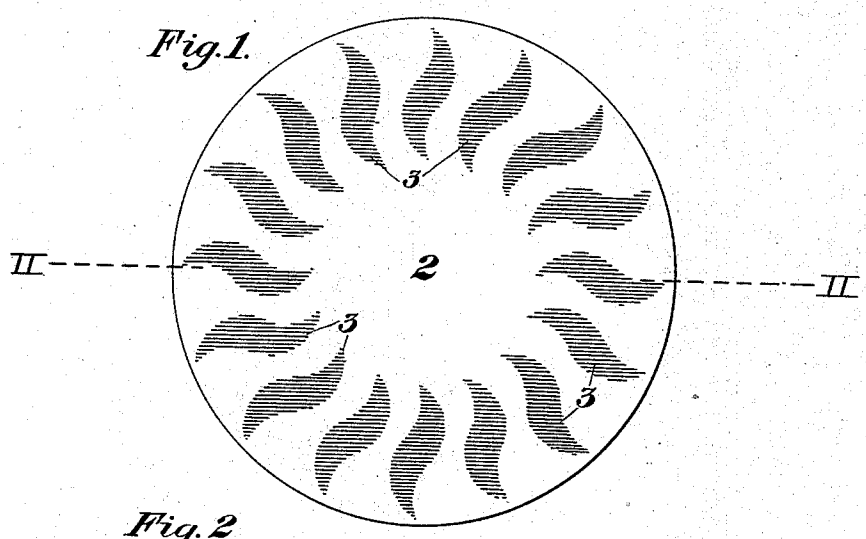


Fig. 2

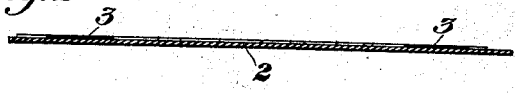


Fig. 3.

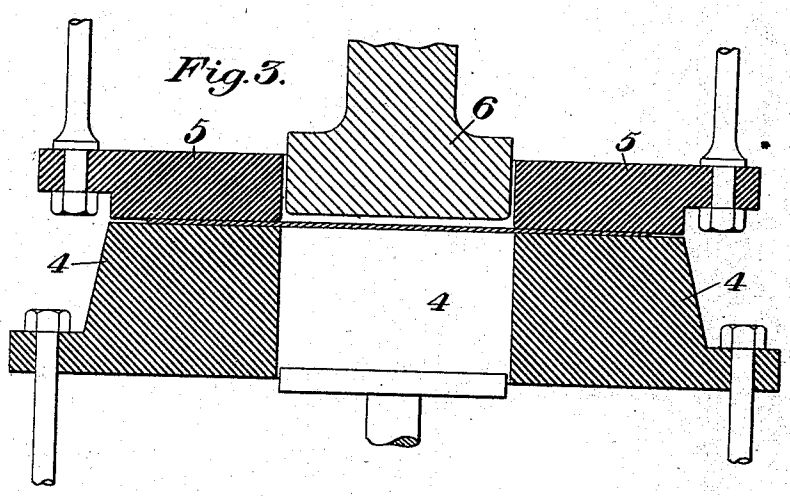
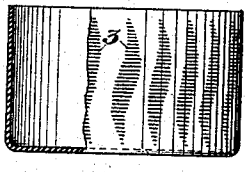


Fig. 4.



WITNESSES.

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ART OF DRAWING SHEET METAL.

SPECIFICATION forming part of Letters Patent No. 413,373, dated October 22, 1889.

Application filed April 1, 1889. Serial No. 305,607. (No model.)

To all whom it may concern:

Be it known that I, ARCHIBALD W. PAULL, of Wheeling, in the county of Ohio and State of West Virginia, have invented a new and useful Improvement in the Art of Drawing Sheet Metal, of which the following is a full, clear, and exact description.

The object of my invention is the ornamentation of drawn sheet-metal articles.

I have discovered that if a pattern be formed upon the surface of sheet metal by means of an adhesive substance—such as shellac or lacquer—and the metal be then drawn in suitable dies to form the article, a pattern corresponding in outline to the pattern so applied will be formed in the body of the metal, and may be made visible by removing the adhesive substance. It is this discovery which forms the subject of this patent.

In practicing my invention I form a pattern by applying an adhesive substance to the surface of the sheet metal by means of a brush or by stenciling, printing, or otherwise, using as the adhesive substance shellac, varnish, or, preferably, the lacquer commonly employed in decorating sheet-metal articles, though any other substance which will adhere to the surface of the sheet metal during the drawing operation may be employed. I then draw the metal into the desired form (for example, into the form of a cup, lamp-bowl, lantern top or foot, or other article) in the usual manner in suitable dies, and afterward remove the adhesive substance by washing it with a suitable solvent. There will then be found reproduced on the surface of the metal by the action of the dies an impressed pattern similar in outline to that originally applied with the adhesive substance, except that the parts of the pattern are elongated by the drawing action of the dies. The depth of the impressed pattern will depend upon the degree of thickness of application of the adhesive coating, and may be regulated by varying such thickness.

The forms and styles of pattern which may be reproduced by means of this invention are of course without practical limit; and it may be applied to articles drawn of any form or from any kind of sheet metal.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 shows in plan view a blank prepared according to the first step of my method. Fig. 2 is a vertical cross-section on the line I I I I of Fig. 1. Fig. 3 is a vertical sectional view of dies which may be used in drawing the sheet-metal blank. Fig. 4 is a side elevation, partly in section, of the product of these dies.

Like symbols of reference indicate like parts in each.

In the drawings, 2 represents the sheet-metal blank, and 3 the lacquer pattern applied thereto. After the lacquer has been applied to the surface of the sheet the metal is drawn in dies, which may be of the form shown in Fig. 3, in which 4 represents the matrix die, 5 a ring or clamp, and 6 a plunger or male die. By these dies the blank is drawn into the form of a cup, as shown in Fig. 4, and after removing the lacquer by washing with a suitable solvent the pattern will be found reproduced on its surface.

By modifying the form of the dies articles of many different forms may be made, and after the drawing operation the article may be modified in form by further drawing in other dies or by stamping, pressing, spinning, or otherwise.

I claim broadly—

1. In the art of drawing sheet metal, the improvement which consists in forming a pattern by applying adhesive material to the sheet metal, drawing the same, and removing the adhesive material, substantially as and for the purposes described.

2. In the art of drawing sheet metal, the improvement which consists in forming a pattern by applying varnish to the sheet metal, drawing the same, and removing the varnish, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand this 28th of March, 1889.

ARCHIBALD W. PAULL.

Witnesses:
THOMAS W. BAKEWELL,
J. K. SMITH.