Aug. 28, 1934. W. AUGUST ET AL 1,971,700

METHOD OF FORMING ORNAMENTAL RELIEF FIGURES

Filed July 25, 1932

Fig. 1.

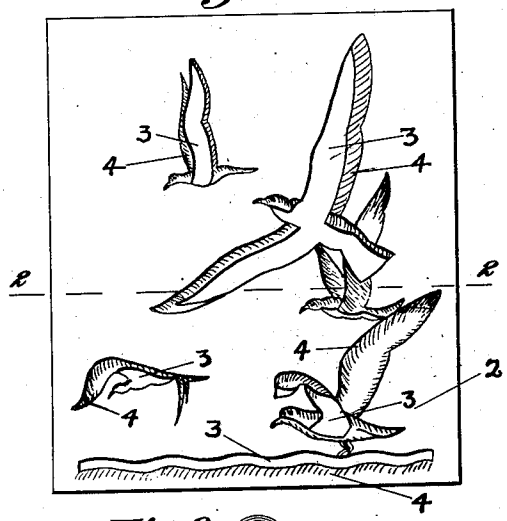


Fig. 3.

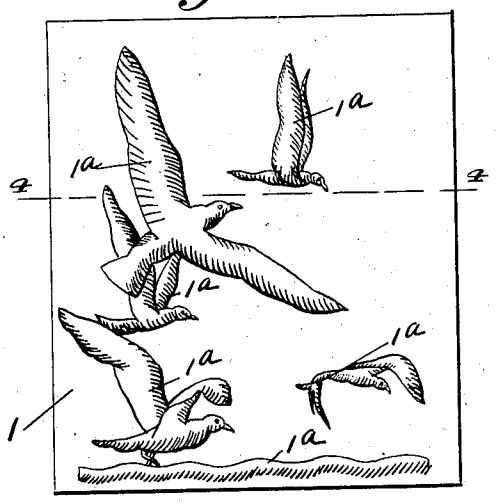


Fig. 2.

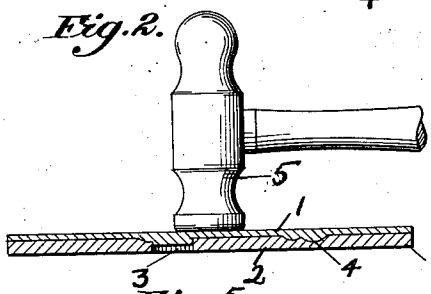


Fig. 4.

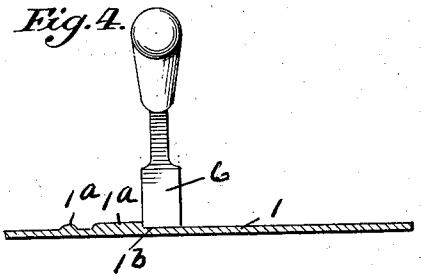


Fig. 5.

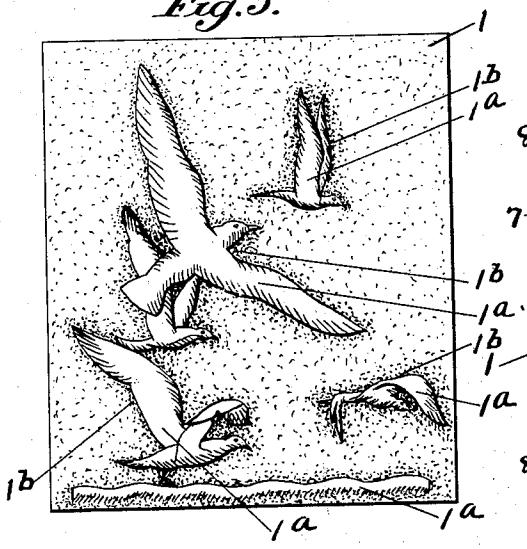
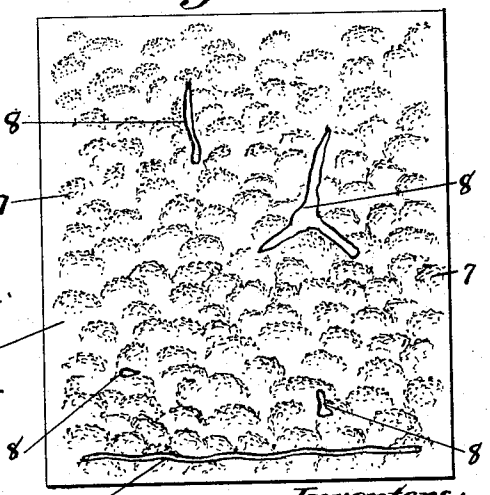


Fig. 6.



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UNITED STATES PATENT OFFICE

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METHOD OF FORMING ORNAMENTAL RELIEF FIGURES

Wendell August, Grove City, James McCausland, Falls Creek, and Howard J. Chapin, Brockway, Pa., assignors to Wendell August Forge Incorporated, Grove City, Pa., a corporation of Pennsylvania

Application July 25, 1932, Serial No. 624,640

7 Claims. (Cl. 41—24)

The present invention is designed to form ornamental relief figures on metal plates which plates may be used for various purposes. The method gives to the plates a very artistic effect and can be readily and rapidly practiced so that the plates may be formed in production rapidly enough to make such plates readily salable. The plates may be used for various purposes, as for example, they may be shaped into ordinary trays. Features and details of the invention will appear more fully from the following specification and claims.

A preferred manner of carrying out the method and the tools for practicing it are illustrated in the accompanying drawing as follows:—

Fig. 1 shows a plan view of a pattern block.

Fig. 2 a section on the line 2—2 in Fig. 1.

Fig. 3 the ornamented plate as it comes from the block.

Fig. 4 a section on the line 4—4 showing a retouching, or forming tool more definitely outlining the design.

Fig. 5 a plan view of the finished plate.

Fig. 6 a rear view of the finished plate.

1 marks the plate. This may be of ductile metal. We have found that ordinary aluminum is well adapted for the purpose. A pattern block 2 has a pattern formed in its face. For very many designs the pattern may be formed by cutting the design through the block and in the block 2 portions of the pattern 3 are formed by simply sawing out, or removing the material entirely through the block in the ordinary manner of scroll sawing. Other parts of the pattern may be worked into the surface of the block giving more definitely a surface design. Such portions of the pattern are indicated at 4. The parts 4 are depressed and with the parts 3 give the completed pattern. With this pattern block the plate to be ornamented is laid upon the block and hammered by a hammer, such as the hammer 5. The operator merely hammers the back of the plate. The yielding of the metal indicates to the operator those portions of the plate which are over the parts of the design having the higher relief and having some idea of the pattern the operator can manipulate his hammer using the peening end, if desired, forcing the metal to follow the design. For very many parts of the design no particular attention is required by the operator. Merely following over the surface with the hammering operation will form a sufficient relief to carry the pattern. The amount of relief and nature of the design controls to some extent the hammer blows, but generally speaking it is a very simple operation which can be readily followed.

In the hammering of the metal the metal partly flows and partly bends to form the design. The parts of the design having the least relief are formed largely through the flowing of the metal while the deeper portions are formed by flowing and bending. The design as it comes from the block is indicated in Fig. 3, having the relief portions 1*a*, and the outlines of the design may be sharpened to give it a slightly more pleasing effect, if desired, by a forming tool 6 which is operated along the lines to bring out more definitely certain of the lines desired by depressing portions 1*b* along the line of the relief. This is just an ordinary forming tool operated upon by a hammer and worked along the lines desired. The face of the material may be given an added mottled appearance, as indicated in Fig. 5, by hammering, but it gets some of this effect from the hammering on the back, so that this step is unnecessary.

The rear of the plate has the hammered surface with the hammer indentations 7 and the higher parts of the relief are indicated to some extent, but with no definite degree of similarity by depressions 8 which are formed by the hammer, or peening end of the hammer, the peening portion of the hammer being small enough to follow these depressions.

What we claim as new is:—

1. The method of forming ornamental plates which consists in forming a depressed portion in a pattern block; placing the plate thereupon and hammering the back of the plate forcing the material of the plate into the depressions formed in the block.

2. The method of forming ornamental plates which consists in forming a depressed portion in a pattern block; placing the plate thereupon and hammering the back of the plate; forcing the material of the plate into the depressions formed in the block forming a hammered surface on the plate.

3. The method of forming ornamental plates which consists in forming a depressed portion in a pattern block; placing the plate thereupon and hammering the back of the plate forcing the material through such hammering of the plate into the depressions formed in the block by metal flow and bending.

4. The method of forming ornamental plates which consists in forming a depressed portion in a pattern block; placing the plate thereupon and hammering the back of the plate forcing the material through such hammering of the plate into

the depressions formed in the block; reversing the plate; and sharpening the outline of the design by a forming operation along the lines of the design.

5. The method of forming ornamental plates which consists in forming a depressed portion in a pattern block by extending openings entirely through the block; placing the plate thereupon and hammering the back of the plate; and forcing the material through such hammering of the plate into the depressions formed in the block.

6. The method of forming ornamental plates which consists in forming a depressed portion in a pattern block by extending a part of said depressed portion entirely through the block and other parts of the depressed portion partially through the block; placing the plate thereupon and hammering the back of the plate; and forcing the material through such hammering of the plate into the depressions formed in the block.

7. The method of forming ornamental plates which consists in forming a depressed portion in a pattern block; placing the plate thereupon and hammering the back of the plate forming a hammered surface on the plate and forcing the material through such hammering of the plate into the depressions formed in the block; reversing the plate; and sharpening the outline of the design by a forming operation along the lines of the design.

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DISCLAIMER

1,971,700.—*Wendell August*, Grove City, *James McCausland*, Falls Creek, and *Howard J. Chapin*, Brockway, Pa. METHOD OF FORMING ORNAMENTAL RELIEF FIGURES. Patent dated August 28, 1934. Disclaimer filed January 15, 1935, by the assignee, *Wendell August Forge Incorporated.*

Therefore, disclaims from each of claims 1, 2, and 3 any method of forming ornamental plates except a method in which the hammer blows upon the back of the plate are selectively governed with relation to the depressed portion of the pattern block.

[*Official Gazette February 5, 1935.*]

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