March 3, 1931. H. C. MILLER 1,794,528

PROCESS FOR PRODUCING WOOD EFFECTS UPON METAL PANELS

Filed May 21, 1929

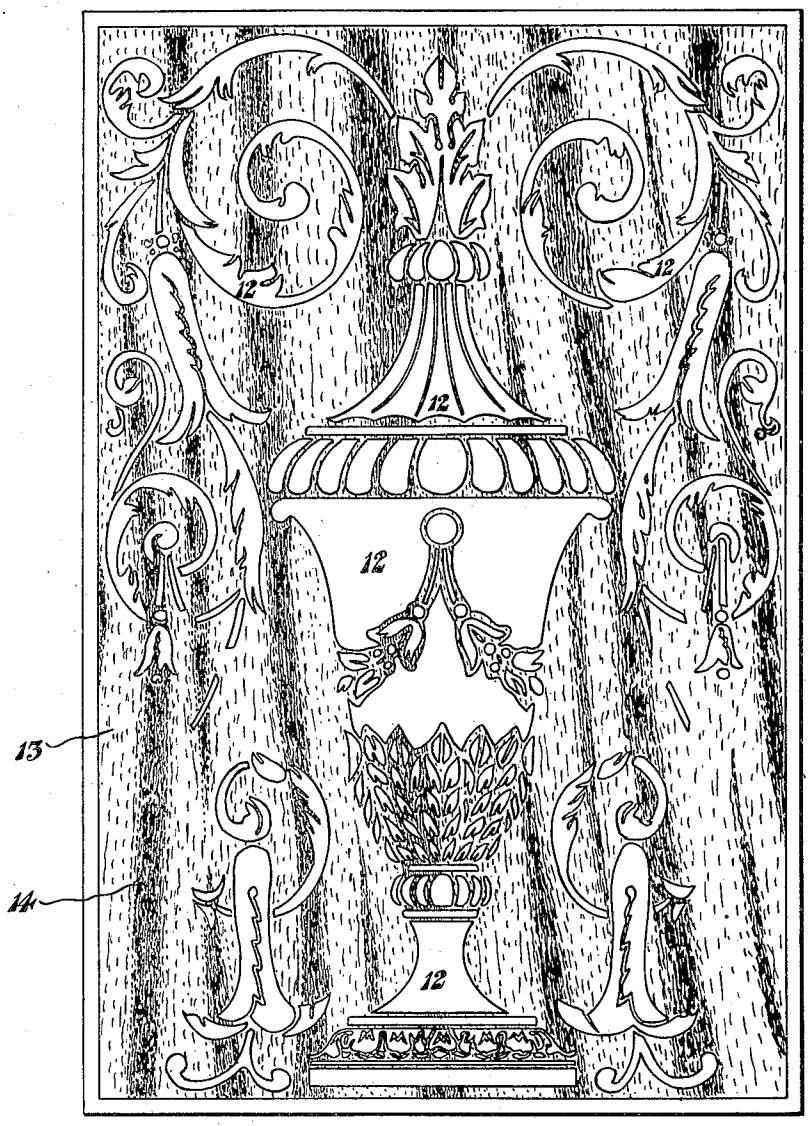


Fig. 1

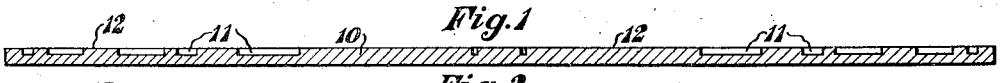


Fig. 2

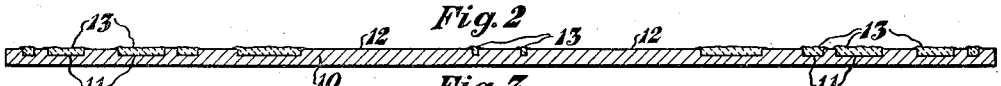


Fig. 3

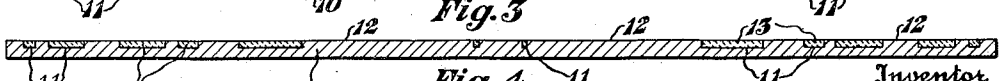


Fig. 4

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UNITED STATES PATENT OFFICE

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PROCESS FOR PRODUCING WOOD EFFECTS UPON METAL PANELS

Application filed May 21, 1929. Serial No. 364,766.

The invention relates to the ornamentation of metal panels for use upon metal doors, elevator entrances and other places where ornamented sheet metal is used and more particularly to the production of wood effects on etched metal sheets or plates.

Attempts have been made to ornament etched metal sheets or plates by pressing a wood veneer into the recesses and crevices of the etched metal surface, glue or cement being used to cause the wood to adhere thereto.

It is very difficult to permanently attach wood to metal by means of cement or glue and it has been found by experience that after a short time, particularly where the same is exposed to any dampness or moisture, the wood will peel from the metal surface. It is also obvious that very fine crevices in the etched metal surface cannot be filled with the wood veneer as the same will break and crumble when cut into very narrow widths.

The object of the present improvement is to produce a wood inlay effect on etched metal panels which will evenly fill all fine crevices in the etched surface and which will adhere permanently thereto.

The objects of the invention may be attained by first etching a sheet or plate of copper, brass or any other desired metal, leaving in relief only the design which is desired to be shown in metal on the finished panel.

A plastic mineral inlay or composition is then rubbed into all of the etched cavities and crevices, entirely filling the same and the panel is then baked until the mineral inlay is properly hardened. The surface is then smoothed by grinding or the like, cutting the baked inlay material down until it is flush with the exposed metal surface.

A chemical coloring matter to produce any desired wood finish is then painted over the surface and grained to represent wood, after which the finished surface may be sanded with very fine emery cloth or the like and lacquered if desired.

An embodiment of the invention is illustrated in the accompanying drawing, in which

Figure 1 is an elevation of a panel ornamented by the improved process;

Fig. 2, an enlarged cross sectional view through the etched metal plate;

Fig. 3, a similar view showing the plate after the mineral inlay has been rubbed into the crevices and recesses therein; and

Fig. 4, a similar view of the completed article.

Similar numerals refer to similar parts throughout the drawing.

In carrying out the process, the metal sheet or plate 10 is first etched to produce the desired design upon the surface thereof.

This etching is carried out in any usual and well known manner by covering the portions of the metal surface showing the design with any suitable acid resisting coating and then etching the plate with acid which eats out the exposed surfaces of the metal, forming recesses and crevices, as indicated generally at 11, leaving the design in relief, as shown at 12.

A plastic mineral inlay indicated at 13 is then rubbed into all of the recesses and crevices, as indicated in Fig. 3, and the same is baked in a kiln or oven. This plastic mineral inlay may be composed of a mixture of whiting, graphite, varnish, lime, whitelead, bronze and aluminum powder, water, red-lead and oil.

After the mineral inlay has been thus hardened by baking, the rough or irregular surfaces thereof are ground down until the same are flush with the metal surfaces 12, producing a flush surface, as shown in Fig. 4.

A chemical coloring is then applied to the surface to produce any desired wood effect. This coloring has an affinity for the mineral inlay but will not adhere to the metal surfaces of the design. This colored surface may then be grained in the manner customary in graining wood finished metal.

The entire surface may then be sanded with fine emery cloth or the like, leaving the bright smooth metal surfaces 12 showing the design and the wood grained inlay, as indicated at 14, surrounding the design. Lacquer or the like may be applied to the entire finshed surface if desired.

From the above it will be seen that objections present in the wood veneering process are overcome because the plastic mineral inlay may be rubbed into the finest crevices in the etched plate or sheet and the inlay will permanently adhere to the metal and will not be loosened therefrom by dampness or moisture.

I claim:

1. The process for producing wood effects on metal panels which consists in etching a design upon a metal surface, filling the recesses and crevices in the etched surface with a plastic mineral inlay, baking said inlay, grinding the surfaces of the baked inlay flush with the normal surface of the metal, coloring the mineral inlay with a chemical coloring and graining the surface of the mineral inlay in imitation of wood grain.

2. The process for producing wood effects on metal panels which consists in etching a design upon a metal surface, filling the recesses and crevices in the etched surface with a plastic mineral inlay, baking said inlay, grinding the surfaces of the baked inlay flush with the normal surface of the metal, coloring the mineral inlay with a chemical coloring, sanding the entire surface of the metal and inlay, graining the surface of the mineral inlay in imitation of wood grain, and lacquering the finished surface.

In testimony that I claim the above, I have hereunto subscribed my name.

HERMAN C. MILLER.