Sept. 28, 1943. J. J. LARMOUR 2,330,497

INLAID ARTICLE AND METHOD OF INLAYING

Filed March 5, 1941

Fig. 1

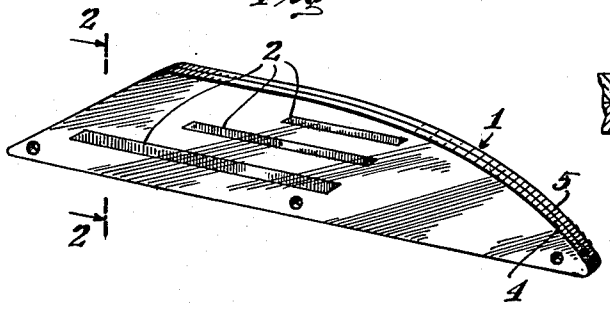


Fig. 2

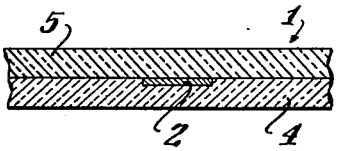


Fig. 3

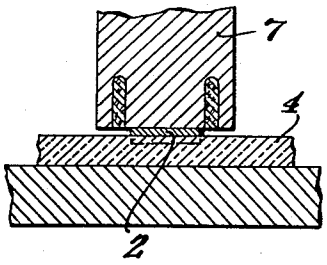


Fig. 4

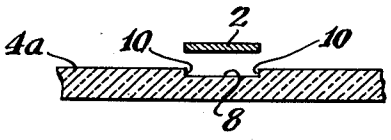


Fig. 5

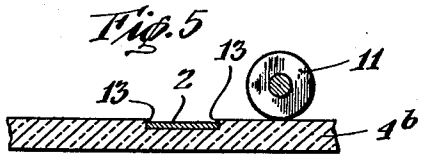


Fig. 6

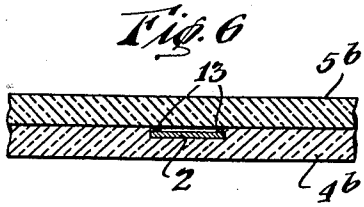


Fig. 8

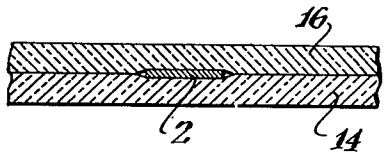
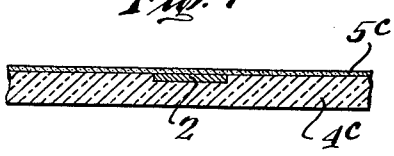


Fig. 7



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INLAID ARTICLE AND METHOD OF INLAYING

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Application March 5, 1941, Serial No. 381,790

3 Claims. (Cl. 41—35)

The present invention is a continuation, in part, of the application of James J. Larmour, Serial No. 241,564, filed November 21, 1938, which became Patent No. 2,237,152 on April 1, 1941, for Method of inlaying articles.

Inlays for synthetic molding compounds have become popular as they enhance materially the appearance of articles made from such compounds. Certain types of inlays are subject to rust or oxidation. Other inlays tend to come out and some are fragile. The present invention is particularly applicable to the above types of inlays but may be advantageously applied to inlays generally. Inlays applied in accordance with the present invention retain their luster better, do not get dirty and are more attractive than inlays of prior methods. The inlays are securely held in position and protected from the elements; hence it has a wide application.

The invention aims to provide a new and improved inlaid article and a new and improved method of producing it. The invention aims to produce a more attractive inlay with any type of material and to make practical the use of desirable inlay materials which are not feasible with present methods of inlaying. The invention prevents the loss of inlays and protects them from dust, dirt, excessive wear and thereby adds to their desirability.

An object of the present invention is to provide a new and improved inlaid article.

Another object of the invention is to provide a new and improved method of producing an inlaid article.

Another object of the invention is to provide an inlaid article having an inlay or ornament covered by a transparent or translucent layer of material to enhance the appearance thereof, to protect it from the elements and from excessive wear and to prevent accidental loss thereof.

Another object of the invention is to provide an inlay or ornament positioned between a plurality of layers of transparent or translucent material.

Other and further objects of the invention will be obvious upon an understanding of the illustrative embodiment about to be described, or will be indicated in the appended claims, and various advantages not referred to herein will occur to one skilled in the art upon employment of the invention in practice.

A preferred embodiment of the invention has been chosen for purposes of illustration and description and is shown in the accompanying drawing, forming a part of the specification, wherein

Fig. 1 is a perspective view of an article embodying the present invention;

Fig. 2 is a fragmentary sectional view along the line 2—2 of Fig. 1;

Fig. 3 is a fragmentary sectional view illustrating an article about to be inlaid;

Fig. 4 is a fragmentary sectional view illustrating an ornament about to be inlaid into a preformed recess;

Fig. 5 is a fragmentary sectional view of a modified form of the invention;

Fig. 6 is a fragmentary sectional view of the part shown in Fig. 5 as it appears in a finished article;

Fig. 7 is a fragmentary sectional view of another modified form of the invention; and

Fig. 8 is a fragmentary sectional view illustrating a further modified form of the invention.

Referring again to the drawing and more particularly to Figs. 1 and 2 thereof, there is shown an article or device 1 which is adapted to be used as a decoration for the radiator of an automobile. This particular type of device has been chosen for purposes of illustration and description and it is to be understood that the invention is equally applicable to other shapes and types of articles. In Fig. 1 the decoration is shown as formed from thin strips 2 which are preferably made of metal, but any other suitable type of hard material may be utilized. Also, any shape of ornament may be utilized, the strips 2 being shown merely for purposes of illustration and description. The decoration or ornamentation formed by the strips 2 may be located substantially at the mid-portions of the article, that is, equi-distant from the sides of the article, so that the device 1 with the ornament 2 inlaid therein presents a symmetrical appearance when viewed from any direction. The enlarged fragmentary cross-sectional view of Fig. 2 illustrates the relationship of the outer parts or sides 4 and 5 of the device and of the intermediate ornamentation 2. The outer layers 4 and 5 of the device are preferably made from a transparent or translucent synthetic resin molding compound. In some instances it may be desired to make the article with one layer opaque and the other translucent or transparent. It will be noted that the ornament 2 is shown embedded or inserted into one of the layers 4 comprising the article 1 so that its upper surface lies substantially flush with the inner surface of the layer 4. The outer layer 5 may thus fit smoothly against the lower

layer 4 and the ornament 2 and the parts may be secured together by the use of acetone or any other suitable solvent or adhesive.

Figs. 3 and 4 illustrate methods of embedding or inserting an ornament 2 into one of the layers 4 (Fig. 2). In Fig. 3 a pressing member 7, which is preferably heated in any suitable manner, is utilized to press the ornament 2 downwardly into the layer 4 to the position shown in dotted lines. Where the member 7 is heated during the inlaying operation, heat will be communicated to the layer 4 through the intermediation of the ornament itself. Thus the layer 4 will be heated only locally at the place where heat is most needed; a minimum amount of heat will be communicated to surrounding portions of the layer 4 and thus the possibility of objectionable deformation of a layer or article will be minimized. In certain instances it may be desired to rapidly reciprocate the member 5, with or without heating it, so as to tap the ornament 2 into an article.

Fig. 4 shows an ornament 2 about to be inserted into a preformed recess 8 in an article layer 4a. Preferably the ornament 2 fits closely against the sides 10 of the recess 8 to assist in retaining it therein. Pressure, heat or tapping may be utilized with this latter modification to press the ornament into the recess 8, as referred to in connection with Fig. 3.

After being inlaid into an ornament layer 4 a layer of translucent or transparent molded material 5 is placed over the lower layer 4 and adhered thereto by a suitable transparent or translucent solvent or adhesive. The decorative effect is greatly enhanced over an ordinary inlaid article. Either one or both of the layers 4 and 5 may be translucent or transparent. The ornament 2 is thus clearly visible at all times, is protected from oxidation or tarnishing due to atmospheric conditions and cannot be worn away by contact with external objects.

Thus far the ornament 2 has been described with reference to being inlaid so that its upper surface lies substantially flush with the surface of one of the layers 4. It may however be inserted into a layer so that its upper surface lies slightly below that of a layer 4b (Figs. 5 and 6). Where such is the case adjacent portions of the layer or sheet 4b are preferably reshaped or burnished by a roll mill 11 or other means so that portions of the molded article 4b are forced against the sides of the ornament 2 to hold it against movement with respect to the recess and an article. In Figs. 5 and 6 the reshaping has been performed so as to cause portions 13 of the molded article 4b to extend over marginal portions of the ornament; this feature minimizes the possibility of vertical movement of the ornament in the recess. A protective layer of translucent or transparent material 5b is then placed over the lower layer 4b and adhered thereto by adhesive or secured thereto by clips.

The modified construction shown in Fig. 7 illustrates an upper layer 5c extending over the ornament 2 which is formed from a material applied in liquid form and permitted to solidify. A transparent or translucent liquid acetate is excellent for this purpose; that is, the material may be cellulose acetate dissolved in a suitable solvent, such as acetone. There are numerous synthetic resin solutions available for forming the translucent or transparent layer 5c. The layer or article 4c of any suitable material may have a recess therein in which the ornament 2 is placed. Thereafter a liquid acetate or other solution of synthetic resin, or other material, may be applied about the edges of the ornament to hold it in position and is preferably extended over the entire ornament, and may be applied over the entire ornamented surface of the article 4c. The liquid material, being transparent or translucent, permits the ornament to show through it and thereby protects it against the elements to keep it clean and untarnished. With certain types of ornaments the inlay may be laid on the surface of the ornament without utilizing a recess. The liquid material may be applied to ornaments which project above the surface of the article or which are below the surface. One advantage of the use of a liquid is that it will fill all the space and all of the interstices. With certain types of articles it may be convenient to dip the article into the liquid material, which permits a thin film to form about the entire article. If a thicker film is desired, additional dippings may be had. Varying the viscosity of the solution used also is effective to vary the thickness of film deposited. In other cases it is sufficient to dip a portion of the article or to apply the material thereto in any suitable manner.

If desired the member or ornament 2 may be placed between the sheets 14 and 16 (Fig. 8) and thereafter the sheets compressed together so that the member 2 is partially embedded in each of the sheets by reason of the pressure applied. Also, the ornament 2 may be heated prior to being inserted between the sheets so as to facilitate the inlaying thereof into the sheets or layers 14 and 16. As the sheets 14 and 16 are compressed together, portions of the sheets adjacent the edges of the ornament 2 will reshape themselves so as to move into contact with the edges of the ornament to secure it in position and minimize movement thereof. A solvent or adhesive placed between the sheets 14 and 16 prior to the application of pressure will secure the sheets together.

It will be seen that the present invention provides a new and improved inlaid article in which the ornament is visible at all times and yet is protected from wear and exposure by a protective layer of material. Tarnishing or oxidation of an ornament is minimized since the ornament is not exposed to the atmosphere and wearing of the ornament due to repeated contact with external objects cannot occur. In some instances one of the layers between which the ornament is inlaid may be opaque and the other transparent or translucent so that the ornament may be viewed from only one side. In other instances both of the ornament covering layers may be translucent or transparent.

As various changes may be made in the form, construction and arrangement of the parts herein without departing from the spirit and scope of the invention and without sacrificing any of its advantages, it is to be understood that all matter herein is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim:

1. The method of inlaying articles, which method comprises first embedding an ornament in the surface of a substantially flat article and thereafter adhering a layer of substantially flat sheet material over said ornamented surface, the material on one side of said ornament being transparent or translucent.

2. The method of decorating articles, which

method comprises first pressing an ornament partially into the surface of an article, thereafter placing a layer of translucent or transparent material over said ornamented surface, and pressing said layer of material toward said ornament to partially embed the ornament in said layer of material.

3. The method of decorating articles, which method comprises heating an ornament, placing said ornament while heated against the surface of an article made from a material such as a synthetic resin compound, placing a layer of translucent or transparent material made from such as a synthetic resin compound over said ornament, and pressing said article and said layer of material toward each other to partially embed said ornament in each of them.

JAMES J. LARMOUR.