Oct. 24, 1972 R. D. SCHMITZ 3,700,533

DECORATIVE PANEL

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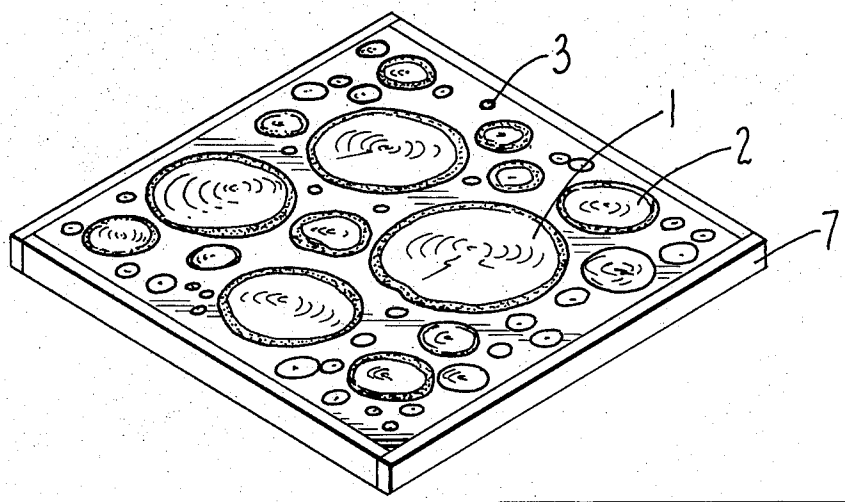

FIG. 1.

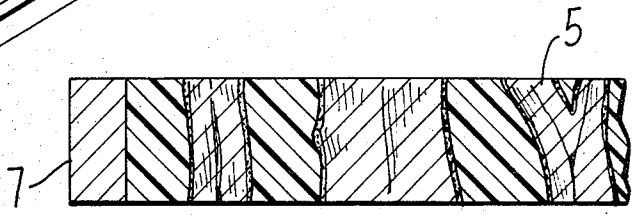

FIG. 2.

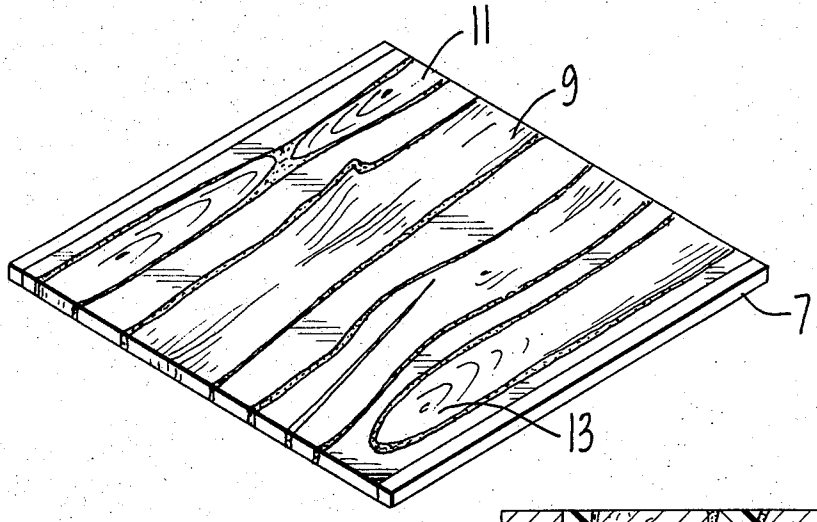

FIG. 3.

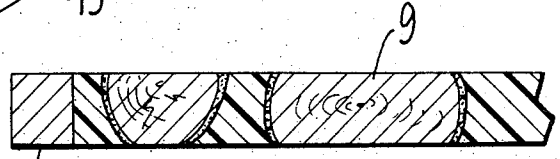

FIG. 4.

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DECORATIVE PANEL

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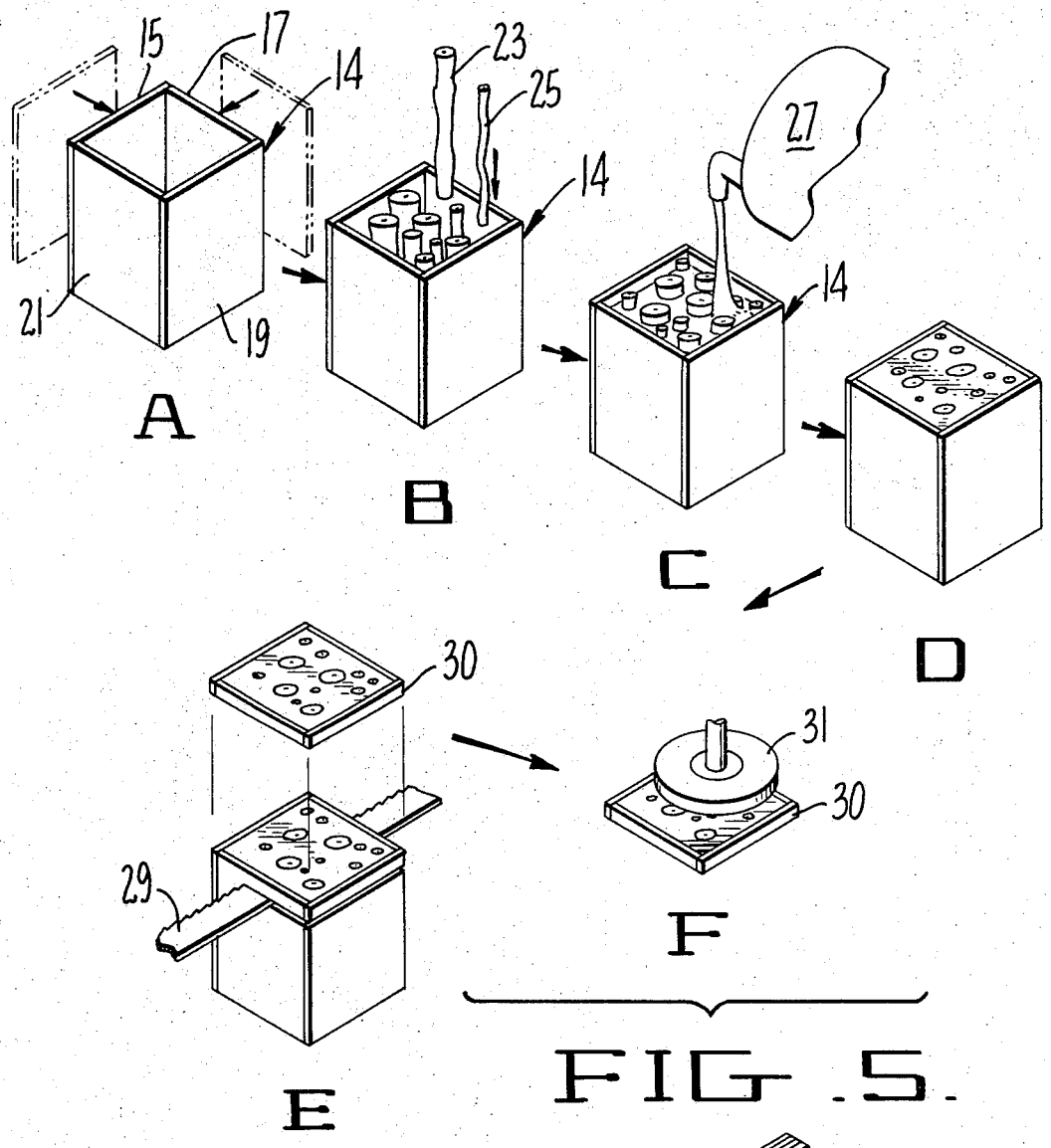

FIG. 5.

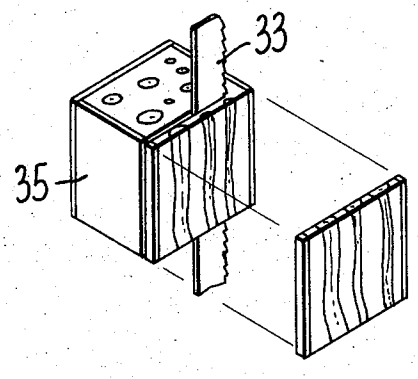

FIG. 6.

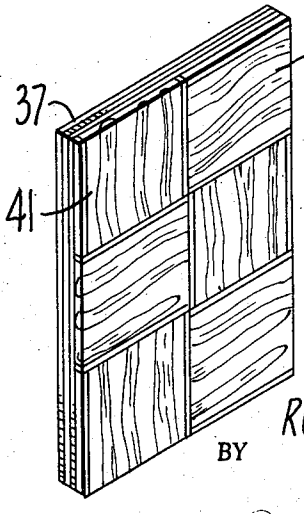

FIG. 7.

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DECORATIVE PANEL

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Int. Cl. B32b 3/10, 5/16, 21/02
U.S. Cl. 161—5 9 Claims

ABSTRACT OF THE DISCLOSURE

Twigs and limbs which ordinarily would be wasted are formed in a mold with a resin and after the resin has set, slices are made of the thus molded material. The slices are decorative and may be used as wall panels, as a veneer on a plywood base or as flooring.

SUMMARY OF THE INVENTION

In lumbering operations ordinarily a great amount of wood is wasted in the form of branches and twigs. This not only amounts to an economic loss of the wood but also presents a disposal problem. In accordance with the present invention, a process is provided for the utilization of such wood as would otherwise be wasted. In accordance with the present invention twigs and branches, preferably of assorted sizes are placed in a mold and then encased in a plastic. Preferably the plastic is a thermoset material, although thermoplastic materials can also be used. After the plastic has set, thin slices are taken through the mold to produce a veneer. The slices may be taken parallel or at right angles to the long dimension of the limbs. After slicing, the surface may be polished which reveals the natural grain of the wood. The plastic itself may be either clear or opaque. The sliced panels are very attractive and can be used for various purposes. Obviously the end use will determine to some extent the thicknes of the slices.

Very thin slices can be taken and used as a veneer on a plywood base to produce attractive wall paneling. Thicker slices can be employed for self-supporting room dividers or other purposes. Relatively thick blocks can be cut and can be used as flooring, particularly as parquet flooring.

Thus, in accordance with the present invention, the normally wasted by-products of the forest industries are largely utilized.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a panel embodying the present invention wherein the panel has been cut at right angles to the long dimension of the limbs and twigs.

FIG. 2 is an enlarged section through the panel of FIG. 1.

FIG. 3 is a perspective view of a panel wherein the slice has been taken parallel to the longer dimension of the limbs and twigs.

FIG. 4 is an enlarged section of the panel shown in FIG. 3.

FIG. 5 is a diagrammatic view showing the various steps in fabricating a panel in accordance with the present invention.

FIG. 6 illustrates an alternate method of slicing the molded article.

FIG. 7 is a perspective view of a sheet of plywood having a veneer surface produced in accordance with the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings by reference characters,

there is shown in FIGS. 1 and 2 a panel made in accordance with the present invention wherein a slice has been taken through a molded article at right angles to the length of twigs and limbs. As can be seen from the drawings, there is employed a combination of large size limbs as at **1**, medium size limbs as at **2**, and small twigs as at **3**. For the most attractive effect, a combination of sizes is preferably used and the combination also enables one to utilize extremely small pieces of wood and also secure a maximized packing density. It is not necessary to employ long, straight pieces, and branched pieces as shown at **5** can be utilized. In this embodiment, the mold itself **7** forms part of the finished articles. The mold may or may not be used in the finished structure.

In FIGS. 3 and 4 another embodiment is shown wherein the slice has been taken through the length of the limbs and twigs, utilizing relatively large limbs as at **9** and twigs as at **11**. It is not necessary that the limbs be arranged parallel and decorative effects can be achieved by having some of the limbs at an angle so they are sliced through, leaving a parabolic cut such as that shown at **13**.

In forming the articles, the limbs may or may not be debarked. In the case of wood having relatively thick, loose bark, it is preferable that some or all of the bark be removed, particularly when the slices are taken on the long dimension as is shown in FIGS. 3 and 4. The main reason for this is that the bark itself is somewhat weak and if long parallel slices are taken of thick barked wood, the structure may be weakened. When the cut is made at right angles, a larger amount of bark can be tolerated. In some instances, interesting decorative effects can be produced by partially debarking the limbs. Also, it is not necessary to employ wood of the same kind since interesting textures can be produced by employing combinations of light and dark colored woods or woods having different grains.

In FIG. 5 there is shown one of the methods of carrying out the present invention. At 5A a form generally designated **14** has been assembled employing four pieces of wood, **15**, **17**, **19** and **21**. These can be held together in any suitable manner as by gluing. Although the form has been shown as having a square configuration which is relatively high, other configurations can be employed, particularly those of rectangular plan and having a relatively short height compared to the length.

In FIG. 5B the form **14** is filled with a plurality of sticks **23** and **25** which may be of random sizes ranging from very small twigs to relatively large limbs. If desired, some means can be used to hold them in a desired alignment, although this is ordinarily not necessary and they are merely placed loosely in the mold. In fact, more interesting effects are achieved if they are placed in more or less random positions and merely allowed to rest upon each other.

At 5C a resin is poured into the mold **14** from a source **27**. Various resins can be used for this purpose but preferably thermoset materials are employed since they are easier to use in the subsequent processing. Various resins can be used such as polyesters, epoxies, polyurethanes, silicones and styrene. If the resin is one which requires a catalyst for setting, the resin and catalyst would naturally be mixed just prior to pouring in the mold.

At 5D the mold with the resin and limbs therein is cured. For many resins this can be done merely by letting the mold sit at room temperature although, if desired, the mold may be placed in an oven or other heated space to accelerate the curing.

At 5E slices are being taken from the cured mold. Normally a saw **29** would be employed for this purpose although a steel knife or other cutting means might be used.

An optional polishing step is shown at 5F wherein the polisher **31** polishes a slice **30** which has been sawed off

of the mold. Normally the polishing step would be employed since this brings out the full beauty of the structure. However, if a coarse grain structure is desired for a rough-hewn effect, the polishing step can be omitted.

In FIG. 6 an alternate cutting method is shown wherein the saw **33** slices through the mold **35** parallel to the long axis of the limbs and twigs. This obviously produces a structure such as that shown in FIGS. 3 and 4.

In FIG. 7 a composite article is shown which is made in accordance with the present invention. Here a plywood base **37** is surfaced with a plurality of blocks **39** and **41** employing a suitable adhesive. In this embodiment of the invention, an intersting effect has been achieved by placing the direction of the limbs on alternate panels at right angles to each other. Obviously instead of using the small, square blocks, larger blocks might be employed and it is not necessary that they be arranged at right angles to their neighbors. Also, one might employ a combination of cuts such as the blocks shown in FIGS. 1 and 3 in forming a finished panel.

Many variations can be made without departing from the spirit of this invention. For instance, it has been shown that after forming the molded article, one slices completely through the mold, leaving the mold material as an edging on the slices. If desired, a mold which does not adhere to the resin can be employed and removed prior to the slicing or the slices may be taken through the mold and the mold pieces then removed.

Preferably the resins which are employed are clear since this produces the most attractive effect in most instances. This is particularly true of the embodiment shown in FIG. 3 since some parts of the limbs will be completely embedded in the resin. However, in many instances, a colored resin might be used or an opaque resin to secure special effects.

It has been previously stated that thermoset resins are preferred. Thermoset resins ordinarily have better wearing properties and they are much easier to slice and polish than thermoplastic materials. However, in some instances thermoplastic materials can be used in carrying out the invention.

I claim:

1. A decorative panel comprising a plurality of twigs and branches of assorted sizes bonded together with a synthetic resin between the adjacent sides of the twigs and branches, said panel having spaced apart opposite faces, and said twigs and branches extending through said panel from one face to the other face thereof and exposed in cross section at said faces.

2. A decorative panel as in claim **1**, wherein the panel is relatively thin and the opposite faces thereof are parallel to one another.

3. A decorative panel as in claim **2**, wherein the longitudinal axes of the twigs and branches extend through the panel in a direction substantially perpendicular to the faces thereof.

4. A decorative panel as in claim **2**, wherein the longitudinal axes of the twigs and branches extend through the panel in a direction substantially parallel to the faces thereof.

5. A decorative panel as in claim **1**, wherein the twigs and branches have bark on them, the bark being exposed in cross section at said faces.

6. A decorative panel as in claim **1**, wherein said panel comprises a slice cut from a mold.

7. A decorative panel as in claim **1**, wherein said synthetic resin is clear.

8. A decorative panel as in claim **1**, wherein said synthetic resin is opaque.

9. A decorative panel as in claim **1**, wherein the opposite faces of the panel are polished.

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U.S. Cl. X.R.

161—6, 41, 168, 413; 264—158