

[54] FACING PLYWOOD HAVING PRINTED GRAIN

[72] Inventors: Youichi Taguchi, Nagoya; Shinji Asano, Tsushima, both of Japan
[73] Assignee: Toyo Plywood Co., Ltd., Nagoya, Japan
[22] Filed: Oct. 20, 1970
[21] Appl. No.: 82,293

[30] Foreign Application Priority Data

Feb. 10, 1970 Japan.....45/11904

[52] U.S. Cl.....161/60, 144/309, 156/293, 156/277, 161/119, 161/151, 161/164, 161/413
[51] Int. Cl.....B32b 5/12, B32b 21/10
[58] Field of Search117/9, 13, 33, 147; 161/60, 161/56, 119, 143, 151, 164, 170, 413; 144/309 A, 328; 156/293, 277, 335

[56]

References Cited

UNITED STATES PATENTS

637,636	11/1899	Meyer.....	161/143 X
2,343,740	3/1944	Birmingham	161/56
2,992,152	7/1961	Chapman.....	161/162 UX
3,146,499	9/1964	Keppler et al.....	161/151 X
3,536,574	10/1970	Buckley.....	161/123

Primary Examiner—William A. Powell
Attorney—Karl W. Flocks

[57]

ABSTRACT

A facing plywood having a printed grain on the surface and so constructed that the fibers of a lauan face veneer and numerous fibers of a sheet glued onto the face ply and also the fibers of a grain pattern printed on the surface of the sheet are all arranged in substantially the same direction, whereby the natural contour of the face ply with all its tiny grooves formed of vessels and vascular tracheids exposed on the surface can be finely reproduced on the uppermost surface for enhanced ornamental wood-graining effect.

1 Claims, 2 Drawing Figures

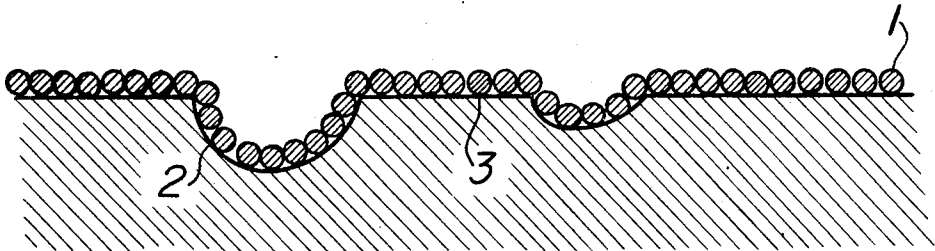


FIG. 1

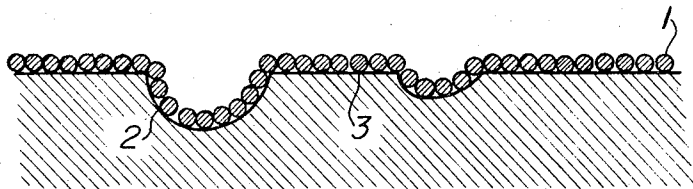
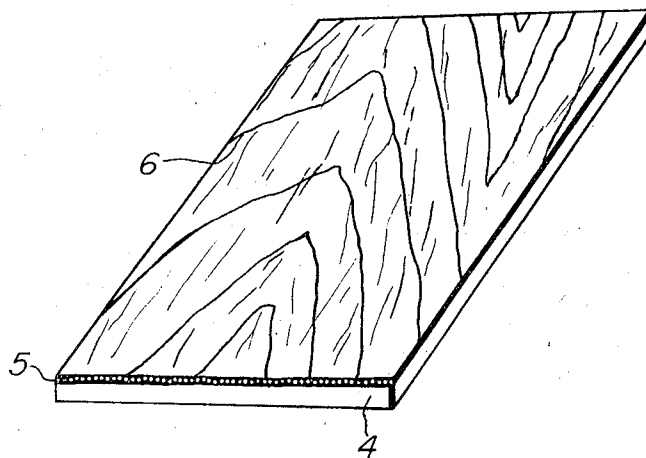


FIG. 2



Yoshiaki Tazuchi^{INVENTOR}

Shinji Asano
By ~~Kenneth~~ W. Flocks^{ATTORNEY}

FACING PLYWOOD HAVING PRINTED GRAIN

BACKGROUND OF THE INVENTION

It is known that, in the manufacture of direct-printed plywood, so-called because of direct printing on a lauan plywood rather than on a paper sheet glued thereto, the vessels on the surface of the lauan plywood is depressed with wood filler to leave the tiny grooves of crushed vessels behind, and then the lauan surface is printed to provide a pattern closely resembling the grain of hardwood.

A concept of gluing a sheet of paper, synthetic resin or the like to a backing plywood to make the most of the vessels on the surface of lauan plywood is also known in the art.

The present invention brings facing plywood having a printed grain unlike the conventionally grained products which are lauan plywood panels directly printed with grain patterns on the surface.

SUMMARY OF THE INVENTION

According to the present invention, a sheet having a large number of fibers arranged in the direction substantially the same as that of the fibers of a lauan face veneer and which has a few or no fibers across the width, or a sheet in which the fibers arranged parallel to the fibers of the lauan face veneer are far more than the fibers disposed in the direction at right angles thereto, is laminated on the lauan face veneer, and is printed with a grain pattern in which the fibers run substantially parallel to the fibers of the lauan face veneer and also to the large number of fibers of the sheet.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an enlarged cross-sectional view of the surface portion of a grained facing plywood according to the present invention; and

FIG. 2 is a perspective view of a grained facing plywood panel of the invention.

DETAILED DESCRIPTION OF THE INVENTION

With the construction in accordance with the present invention, the tiny grooves formed of vessels exposed on the lauan face veneer can be utilized almost as they are in the final dressing. The overlying sheet, having far more fibers which run parallel to the fibers of the lauan face than those which run crosswise, has such a texture that, along its long axis, there are formed minute surface irregularities as are usually observed on the flat surface of timber, and also, under the influence of the vessels of the underlying face, there are tiny grooves as of vessels or vascular tracheids, though smaller than those actually present on the plywood face, such surface irregularities and grooves combinedly adding much to the woody appearance of the product.

Since the sheet having such a woody appearance is imparted with a final grain pattern in which the fibers run substantially parallel to the fibers of the sheet and the underlying lauan face, the resulting plywood most closely resembles an ordinary plywood faced with a real wood ply of the same grain.

Because the sheet that is used in accordance with the present invention has a relatively large number of fibers arranged in the same direction as the fibers of the lauan plywood to form the base, it is possible to use fibers of different size or increase or decrease the number of fibers per unit width of the sheet depending upon the pattern of grain to be printed on the

sheet surface. This, in turn, renders it possible with advantage to obtain a plywood panel having an appearance well harmonized with the grain pattern that is printed on the sheet surface.

The sheet having a large number of fibers arranged along its long axis may prove inadequate in transverse tensile strength in certain applications, in which case the defect may be eliminated by interposing a thin sheet of paper or plastic film between the plywood and the sheet. The interposition of the paper or plastic film in such a case has little adverse effect and can provide an appearance as woody as the construction without any such interlayer.

Now the present invention will be more particularly described hereunder with reference to the accompanying drawings showing an embodiment thereof. In the enlarged cross-sectional view of FIG. 1, numeral 1 designates fibers of a sheet arranged parallel to the fibers on a face veneer. These fibers pack either partly or entirely the individual vessels 2 exposed on the veneer surface and lie side by side over the flat portion 3 of the face. This arrangement of sheet fibers confers a woody appearance on the texture of the sheet overlying the plywood.

The grained facing plywood panel shown in FIG. 2 is made in the following way. On the surface of a 5 mm. thick, type II lauan plywood 4 formed by gluing and lamination with urea resin is applied an acrylic resin in an amount of 70 grams per square meter. The plywood so coated is predried at 60° C. for 30 seconds. Next, a sheet 5 of nonwoven cloth formed of 12-denier polyvinyl chloride fibers bonded together with acrylic resin in such a manner that the majority of the fibers run in a given direction of the sheet, is glued over the plywood by a roll press so that the majority of fibers of the sheet run substantially parallel to the fibers of the underlying lauan face. Then, an artificial teak grain 6 is printed on the sheet surface by a gravure offset press using a printing ink which contains a vinyl chloride-vinyl acetate copolymer as a binder and methyl ethyl ketone or cyclohexanone as a solvent. In this way a facing plywood closely resembling a plywood faced with a real teak veneer is manufactured.

If necessary, the above procedure may be reversed by first printing a sheet having a small number of wefts with a grain pattern in which the fibers run substantially parallel to the warps of the sheet and then gluing the printed sheet onto the lauan plywood in such a way as to match the fiber directions.

As described above, the facing plywood of the present invention has a strikingly woody appearance because the fibers of the sheet which consists almost entirely of fibers arranged lengthwise and only few fibers weftwise run substantially parallel to not only the tiny grooves of vessels exposed on the underlying veneer but also the fibers of the grain pattern printed on the sheet.

What is claimed is:

A facing plywood comprising a lauan face veneer and a sheet glued to the surface of the lauan face, said sheet consisting of a large number of fibers arranged along the long axis of the sheet in the direction substantially the same as the direction in which the fibers of the lauan face run and substantially no fibers that run at right angles to said lengthwise fibers, said sheet being printed with an artificial grain pattern in such a manner that the fibers of the printed pattern run substantially parallel to the fibers of the lauan face to add to the woody appearance of the product.

* * * * *