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2,958,352

METHOD FOR PRODUCING DECORATIVE WOOD PANELS

Filed Jan. 20, 1958

3 Sheets-Sheet 1

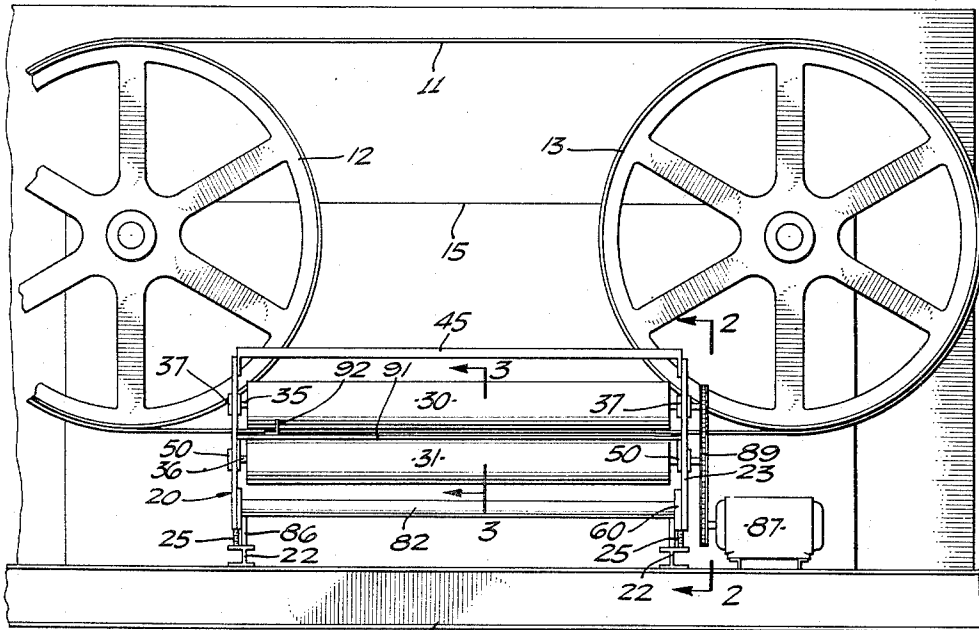


FIG. 1.

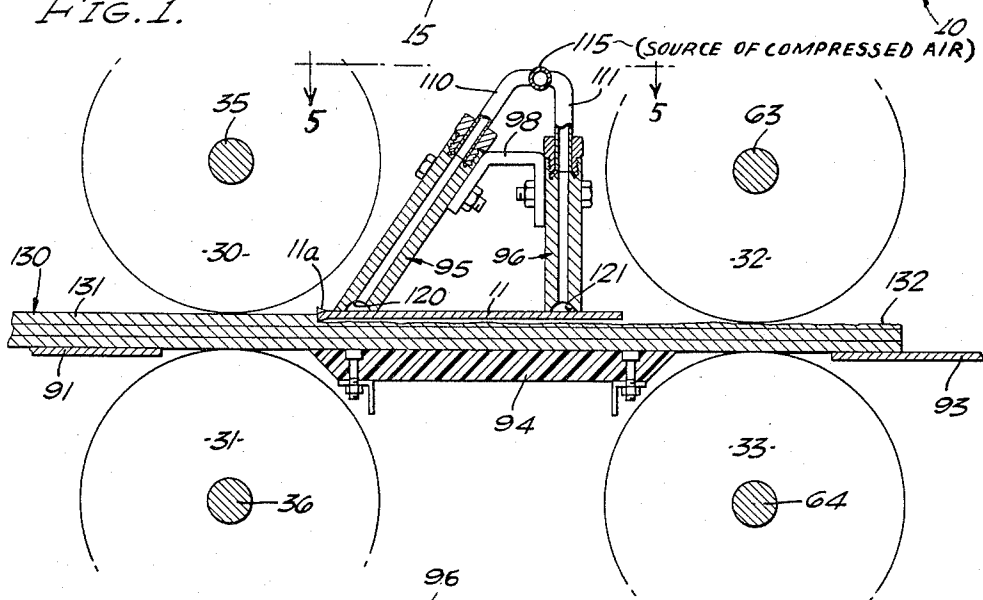


FIG. 3.

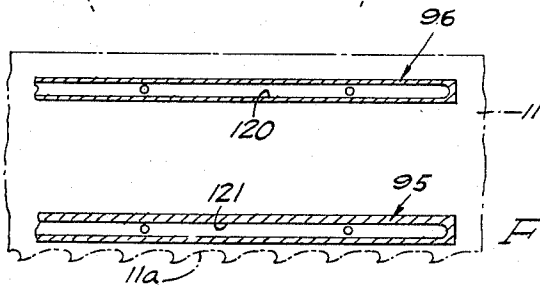


FIG. 4.

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3 Sheets-Sheet 3

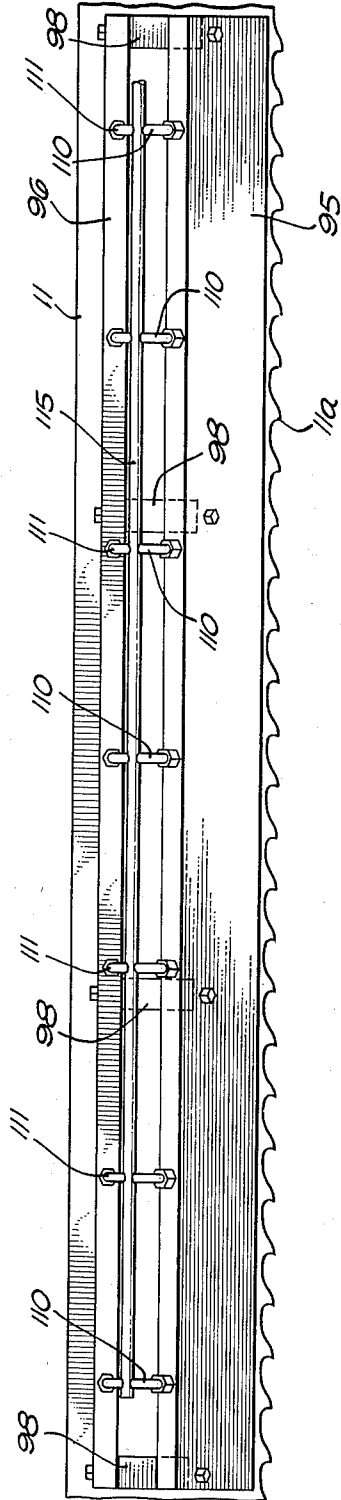


FIG. 5.

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METHOD FOR PRODUCING DECORATIVE WOOD PANELS

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1 Claim. (Cl. 144—309)

This invention relates to wood and wood products and has particular reference to decorative plywood panels and an apparatus and method for producing the same.

Current architectural requirements include wood panels and/or lumber, for external building applications, having an esthetically pleasing texture of the type produced by the rough cuts of the large band saws used in saw mills. This rough texture is possessed by so-called "re-sawn" lumber which is ordinarily produced at the mill only as an intermediate product in the milling of conventional, smooth-surfaced lumber. The production of standardized lumber with a re-sawn surface results in a highly expensive product due to the large amount of waste and the increased expense of shipping. Moreover, ordinary re-sawn lumber, like conventional wood siding materials, requires auxiliary weather-protecting means such as tar paper wrapping for external architectural applications. The difficulty of painting it to produce the desired appearance is another disadvantage of ordinary re-sawn lumber.

One of the principal objects of the present invention is to provide a novel article comprising a plywood panel having a re-sawn surface, which article is not subject to the above and other disadvantages of the prior art.

Another object of the present invention is to provide a novel apparatus and method for the production of plywood panels having a re-sawn textured surface.

Another object of the present invention is to provide an apparatus for producing a re-sawn surface inexpensively and in large volumes without the necessity for other than ordinarily skilled operators.

Other objects and advantages of the present invention it is believed will be readily apparent from the following detailed description of a preferred embodiment thereof when read in connection with the accompanying drawings.

In the drawings:

Figure 1 is a front elevation of the apparatus of the present invention.

Figure 2 is a sectional elevation taken substantially on the line 2—2 of Figure 1.

Figure 3 is a sectional elevation taken substantially on the line 3—3 of Figure 1.

Figure 4 is a sectional elevation taken substantially on the line 4—4 of Figure 2.

Figure 5 is a top plan view taken substantially along the line 5—5 of Figure 3.

Referring now to the drawings, the apparatus of the present invention includes a band saw mechanism generally indicated 10 and comprising a band saw blade 11, having conventional swedged teeth 11a, reeved over a power saw wheel 12 and a mating idler saw wheel 13, the wheels 12 and 13 being mounted for rotation in a suitable frame 15 and the wheel 12 being driven in the conventional manner by power means (not shown). It will be noted that the band saw is set up for cutting in a horizontal plane, as opposed to the more conventional vertical aspect of the usual band saw. Positioning of the saw 10 in this manner is an important, although not entirely essential feature of the present invention, as will

be apparent from the following description of the apparatus.

Mounted on the frame 15 is an auxiliary framework 20 including a pair of widely-spaced, parallel channel beams 22. Vertical frame members 23 and 24 are provided at each end of each of the beams 22, the members 23 being adjustably secured thereto by means of bolts 25 and adjustment nuts 26, and the members 24 being similarly secured by means of bolts 27 and nuts 28.

Means are provided for feeding plywood panels to the band saw and withdrawing the panels therefrom, and as shown in the drawings, these means include a pair of vertically-spaced feed rolls 30 and 31 and discharge rolls 32 and 33. The rolls 30 and 31 are keyed to shafts 35 and 36 respectively, the shaft 35 being journaled in a pair of bearing blocks 37 each vertically adjustably carried by means of a bolt 40 in a slideway formed by a pair of vertical members 41 and 42. The members 41 are each welded to one of the frame members 23, a horizontal plate 45 rigidly connecting the members 41 and 42 together. Each of the bolts 40 is secured to one of the plates 45 by means of a pair of adjustment nuts 46.

The shaft 36 is journaled in a pair of bearing blocks 50, each vertically adjustably supported by means of a bolt 51 in a slideway formed by one of the members 41 and one of a pair of vertical members 53. A horizontal plate 54 is welded to the lower end of each of the members 41, each of the bolts 51 being secured to one of the plates 54 by means of a pair of nuts 55, a spring 56 being interposed between the top of each of the plates 54 and a stop collar 57 on each of the bolts 51. The vertical members 53 are each welded to one of a pair of side plates 60, it being observed that there is no rigid connection between the members 41 and 53.

The rolls 32 and 33 are keyed to shafts 63 and 64 respectively, the shaft 63 being journaled in a pair of bearing blocks 65 each vertically adjustably carried by means of a bolt 66 in a slideway formed by a pair of vertical members 67 and 68, each of which is welded to the frame members 24 and to one of the side plates 60. A horizontal plate 70 extends across the tops of each of the members 67 and 68, and each of the bolts 66 is secured to one of these plates by means of a pair of adjustment nuts 72.

The shafts 64 are similarly mounted on bearing blocks 75 and bolts 76 secured to plates 77, except that here the bearing blocks are spring-loaded by means of the springs 80 interposed between each of the plates 77 and the stop collars 81 on the bolts 76.

The side plates 60 are maintained in horizontally rigid relationship to the channel beams 22 by means of a cross-bar 82 secured to the plates and received in vertical slots 85 formed in a pair of upstanding plates 86, one secured to each of the beams 22.

Drive means are provided for the feed and discharge rolls and as shown in the drawings, these means may include a motor 87 the drive shaft 88 of which carries a sprocket 88a, a chain 89 extending therefrom to and around an idler sprocket 90, a sprocket 63a on the shaft 63, a sprocket 64a on the shaft 64, a sprocket 36a on the shaft 36 and thence to and around a sprocket 35a on the shaft 35.

A panel receiving table 91 having a panel guide bar 92 is positioned between the frame members 23 and a similar discharge table 93 is positioned between the frame members 24. An intermediate panel supporting table 94 is carried on the side plates 60 immediately below the lower run of the band saw blade.

An especially important feature of the present invention resides in the provision of novel means for preventing lateral displacement or "chattering" of the band saw blade during operation of the apparatus. As shown in the drawings, these means may include a pair of shoe members 95

and 96 extending transversely across the framework 20. The inclined shoe member 95 and the substantially vertical shoe member 96 are each provided with planar, horizontal portions in their lower end faces, each face contacting the upper surfaces of the lower run of the band saw blade and extending parallel to the blade for substantially the entire working area thereof. The member 96 contacts the blade immediately adjacent the saw teeth 11a, the shoe member 96 contacting the rearward portions of the blade.

The shoe members are rigidly connected together by means of a bracket 98, the bracket in turn being welded to a pair of plates 99. Each of the plates is adjustably connected to one of the bolts 40 by means of a bracket 100 and adjustment nuts 101.

Means are provided for reducing the coefficient of friction between the shoe members and the band saw blade and for cooling the blade, and, as shown in the drawings, these means may include a plurality of air conduits 110 and 111 extending through bores in the shoe members 95 and 96 respectively. The conduits are connected at the top to a manifold 115 which leads to a suitable source of low pressure compressed air (not shown). The lower ends of the conduits 110 and 111 lead to grooves 120 and 121 formed in the respective shoe members 95 and 96.

In operation of the apparatus thus described, one end of a plywood panel 130 is placed on the table 91 and fed between the feed rolls 30 and 31 to be thereby delivered to the teeth of the band saw blade. From an inspection of Figure 3 it will be apparent that the spacing between the table 94 and the saw blade 11 is such that only the uppermost portion of the upper ply or face 131 of the panel 130 is removed by the saw teeth. However, the resulting surface 132 of the panel has exactly the appearance and texture of re-sawn lumber, even though only about $\frac{1}{64}$ -inch of wood is actually removed by the saw.

The apparatus is designed to operate upon standard 4 x 8 foot panels, but longer lengths can of course be accommodated. The flexibility in adjustment of the apparatus permits the treatment of panels as thick as 2 inches.

From an inspection of Figure 2, it will be seen that the front portion of the framework 20, comprising the frame members 23 and their connected parts, can be pivoted to the phantom line position for the necessary periodic removal and re-sharpening of the saw blade 11.

The plywood panels of the present invention possess the desired decorative re-sawn texture, but are relatively inexpensive to produce. Additionally, the weathering characteristics of the plywood of this invention are excellent, particularly when compared to conventional plywood which is subject to checking upon exposure to

weather. This unexpected benefit in weathering properties obtained with the present invention may be in part due to the relieving of the stresses set up in the wood veneer when it is shaved from the log. Moreover, the dimensions of panels produced in accordance with this invention permit them to be used without the tar paper wrapping generally specified for use with conventional wood siding materials. The present plywood panels are also advantageous in that they are more readily stained with log oil or the like, since the log oil is absorbed by the wood only as far as the glue line between the plies thus resulting in availability of more of the oil at or near the surface to resist weathering.

Another important advantage in the plywood panels of the present invention, as compared to ordinary re-sawn lumber, is that the re-sawn surfaces of the present panels are substantially devoid of slivers, having been sawed in the dried condition, whereas ordinary re-sawn lumber, which is sawed under wet conditions, contains many slivers on the surface thereof. Accordingly, ordinary re-sawn lumber is very difficult to paint due to interference by the slivers. The re-sawn plywood panels of the present invention, on the other hand, although they have exactly the appearance and apparent texture of ordinary re-sawn lumber, are easily painted due to the lack of any appreciable number of wood slivers.

Having fully described my invention, it is to be understood that I do not wish to be limited to the details set forth, but my invention is of the full scope of the appended claim.

I claim:

A method for producing a re-sawn surface on plywood panels comprising passing a plywood panel under a saw blade in contact with one side thereof to remove a portion only of the surface of said panel, and holding the other side of said saw blade against movement in a direction away from said panel.

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