METHODS OF PRODUCING SHEETS OF WOOD VENEER AND THE SHEETS OF WOOD VENEER SO PRODUCED

Fig. 8

Fig. 9

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METHODS OF PRODUCING SHEETS OF WOOD VENEER AND THE SHEETS OF WOOD VENEER SO PRODUCED
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This invention relates to methods of producing sheets of wood veneer, and to the wood veneer so produced. The method according to the present invention is concerned with producing veneers having varying "flowers" (i.e., the patterning of the wood) from a common wooden block, the flower of the veneers so produced running substantially normal to the grain of the wood.

When a veneer lamination is cut from a wooden log in the direction of the grain, i.e., in a direction from the bottom to the top of the tree from which the wooden log is prepared, the flower of the veneer lamination produced runs substantially parallel to the grain of the veneer lamination.

Sheets of wood veneer are conventionally cut directly from a log which may have been squared or quartered and the quality of the veneer obtained depends entirely on the growth of the tree from which the log was taken. In general, only a comparatively small proportion of the available trees yield logs from which high quality wood veneers may be sliced, and accordingly many proposals have been made for producing sheets of wood veneer which have the appearance of having been cut from a tree, the growth of which has been regular.

The methods of manufacturing sheets of wood veneer which simulate natural veneers of high quality have all involved the assembly of a plurality of veneer laminations into a block from which the final product is cut. However, none of the methods proposed hitherto have yielded sheets of wood veneer which have an artificial "flower" and which are of a commercially acceptable quality.

In fact it has hitherto been considered impossible to obtain a veneer of high quality which has an artificial "flower." According to the present invention, there is provided a method of producing a sheet of wood veneer comprising the steps of cutting a plurality of veneer laminating, forming from the veneer laminations a V-shaped block in which the grains of the laminations are in a direction across the V of the block, and slicing sheets of wood veneer from the block with a knife, the sheets of veneer obtained having smooth surfaces suitable for polishing.

The important feature of the block which is sliced by the knife is that each of the veneer laminations comprising the block has the configuration of a V with the grains of all the laminations in a direction across the V of the block. When it is said that the grain of a lamination is across the V of the block, it is meant that the direction of the grain is substantially straight down one arm of the V to the apex of the V and then substantially straight up the other arm of the V.

The profile of the actual block is immaterial provided that the individual laminations have the configuration of a V as described. The block may itself have the shape of a V or it may first be trimmed to a substantially rectangular shape, or indeed to any shape which is appropriate and suitable for the veneer slicing machine by which the final veneers are to be sliced from the block.

A preferred embodiment of the invention provides a method of producing a sheet of wood veneer comprising the steps of cutting a plurality of veneer laminations, ar-
FIGURE 6 shows the veneer produced by cutting the block of FIGURE 3 in a plane parallel to M.N.O.P. FIGURE 7 shows a veneer lamination cut from a wooden fitch in a direction from bottom to top of the tree.

FIGURE 8 shows diagrammatically a V-shaped block according to the invention, mounted between the chucks of a rotary cutting machine, and FIGURE 9 shows a veneer lamination cut from the block of FIGURE 8 by the blade of a rotary cutting machine.

Referring now to FIGURE 1 of the drawings, a glued stack of veneer laminations is prepared in the usual manner, namely, by stripping sheets of wood from a log which has preferably been steam cured to aid cutting, cutting the sheets of wood into laminations of a predetermined size and free from imperfections, selecting a number of veneer laminations and applying glue to the veneer laminations in the conventional manner and placing the laminations in a stack, so that the grain and the flower of the wood in each veneer lamination runs in the same direction throughout the stack of veneer laminations.

Before the glue has set, the stack of veneer laminations is placed on the lower female V-shaped jig 2 in a press with the grain of the wood in a direction across the V of the lower jig 2. The stack of veneer laminations is then compressed by applying pressure to the male V-shaped jig 3 and compressing the block to set the glue.

The glue may be any suitable synthetic resin adhesive, but in each case the glues are allowed to set without the application of any heat or steam.

The V-shaped block prepared in this manner is shown in FIGURE 2, and the natural flower and grain are indicated by numerals 4 and 5 respectively.

In order to produce the veneers by the preferred method of the invention, the block 1 is inverted and according to the flower of the veneer desired, the block may be tilted at any angle $\alpha$ between 0° and 90° to a knife shown generally at 6, and the block is then cut by the knife acting at the appropriate angle $\alpha$ to the length of the V of the block. The knife 6 is the knife of a flat cutting machine.

At an angle $\alpha=2^\circ$ corresponding to cutting the block in the plane A.B.C.D. the veneer produced is shown in FIGURE 4, and it is found that the artificial flower 7 of the veneer cut in this way runs normally to the direction of the grain 8.

When $\alpha=45^\circ$ and 90° corresponding to cutting the block in planes parallel to planes AB YZ and MNOP, the veneers produced are shown respectively in FIGURES 5 and 6, and it is seen that the artificial flower 7 of the veneer runs substantially normal to the grain 8 of the wood. The "herring-bone" flower of the veneer of FIGURE 6 will be particularly noted.

For reasons of comparison a sheet of wood cut from a wooden fitch is shown in FIGURE 7. The grain 8 of the wood runs substantially parallel to the flower 7 of the wood when the fitch is cut in the direction of the grain, i.e. in the direction from the bottom to the top of the tree.

Before slicing veneers from the V-shaped block, the block may be trimmed into a rectangular block, but of course the individual veneer laminations will still remain distorted into a V-shape. All the veneers sliced from a squared or rectangular block with $\alpha=0^\circ$ or 90° will have the same size.

Attempts to cut veneers from a V-shaped block in which the grain of the individual veneer laminations runs parallel to the apex of the V, i.e., along the length of the V of the block by a knife acting in the same direction, results in a veneer which easily disintegrates and cannot be polished, and, even if a thin veneer is cut by other means, for example sawn from such a block, the veneer cannot be polished.

Referring now to FIGURE 8, there is shown a block 75 which has been made by the method described with reference to FIGURE 1, and then trimmed so as to have a substantially cylindrical outline, the block 9 being mounted between the chucks 10 of a rotary cutting machine.

As the block 9 is revolved in the rotary cutting machine, a series of veneer laminations is cut from the surface 11 of the block 9. The figure 12 which is present on a veneer lamination 13 cut from the block 9 in the rotary cutting machine is shown in FIGURE 9.

As shown in FIGURE 8, the trimmed block 9 of veneer laminations, the grain of which laminations is in a direction extending from one chuck 10 of the rotary cutting machine to the other chuck 10, is mounted eccentrically between the chucks 10. Consequently a series of veneer laminations 13 is cut from the block and each of these veneer laminations 13 will have a slightly different width which decreases for each successive lamination because the block 9 is becoming smaller in size. However, the block 9 may alternatively be mounted symmetrically between the chucks 10 so that a continuous sheet of veneer is sliced from the block by the blade of the rotary cutting machine. This continuous sheet of veneer will have a repeating pattern of FIGURE 12 on it and may then be subsequently cut into a series of veneer laminations of a desired size.

In all the embodiments of the invention which have been described and illustrated, the V-shaped block has a single V and the grain of the veneer laminations runs across the V of the block, the length of the V of the block being substantially linear. However, if desired, some further shaping may be impressed on the length of the V of the block, whereby variations in the figure of the veneers sliced from the block is obtained.

The veneer laminations from which the V-shaped block is made may be all of the same colour, or may include veneer laminations of different colours so that specially controlled coloured figured veneer can be obtained. The coloured veneer laminations may be natural colour variations or may include artificially coloured veneer laminations.

The veneers produced by the method of the pressure invention are mechanically strong and pliable and moreover, when polished, give rise to an extremely smooth and regular surface.

We claim:

1. A method of producing a fabricated sheet of wood veneer each having a grain direction, comprising the steps of: cutting a plurality of natural wood veneer sheets to a selected uniform shape; assembling said plurality of natural wood veneer sheets in a stack; orientating the natural wood veneer sheets comprising the stack so that the grain direction of all of the natural wood veneer sheets lies generally in the same direction throughout the stack; positioning the stack of natural wood veneer sheets in relation to a press whose complementary male and female jigs each comprise a single V so that the grain direction of all of the natural wood veneer sheets in the stack is generally perpendicular to the apex of the V of the male jig of the press; pressing the stack of natural wood veneer sheets in the press to impose a V-shape on the natural wood veneer sheets comprising the pressed stack and thereby producing a V-shaped block of natural veneer sheets; presenting the side of the block which contains the inverted V of a veneer sheet included in the said V-shaped block to the knife of a veneer slicing machine; and slicing a fabricated sheet of wood veneer from the block by the action of the said knife to include at least
several layers of the stack and at an angle to the V of the block.

2. A fabricated sheet of wood veneer, the wood veneer including a grain in a given grain direction, comprising:
   a plurality of overlapped V-shaped sections of wood veneer laminations bonded together by a glue and exhibiting a regular patterning of the wood;
   the grain direction of the wood of the veneer laminations being at right angles to the general direction of the overlapped V-shaped sections; and
   the veneer having smooth uniplanar exposed surfaces suitable for polishing.

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