April 10, 1934. R. N. HARTZELL 1,954,754

VENEERING

Filed Sept. 26, 1932

Fig. 1

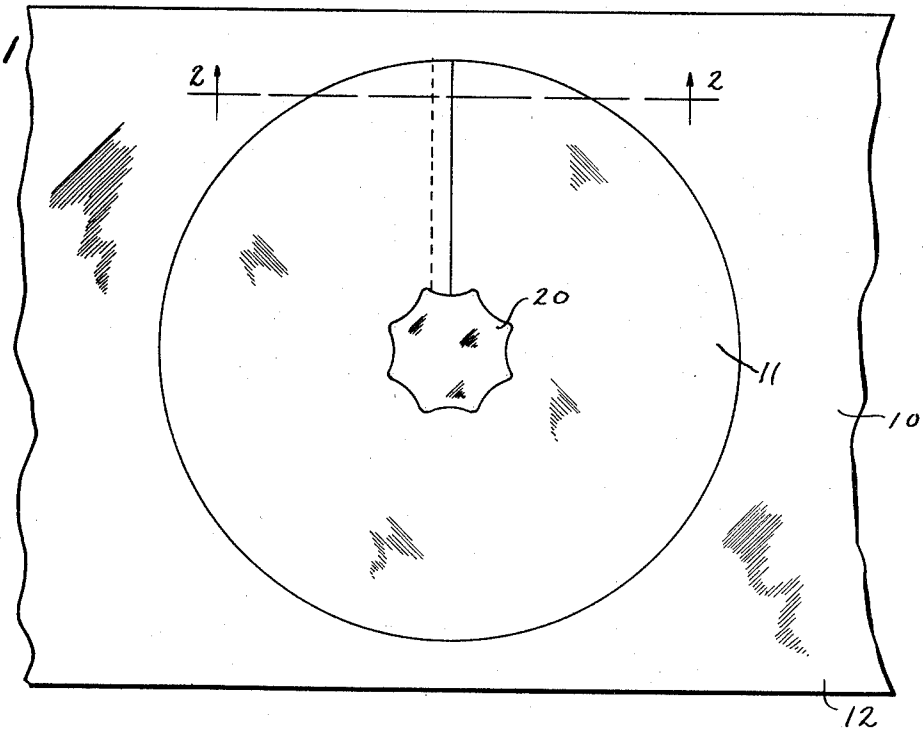


Fig. 3

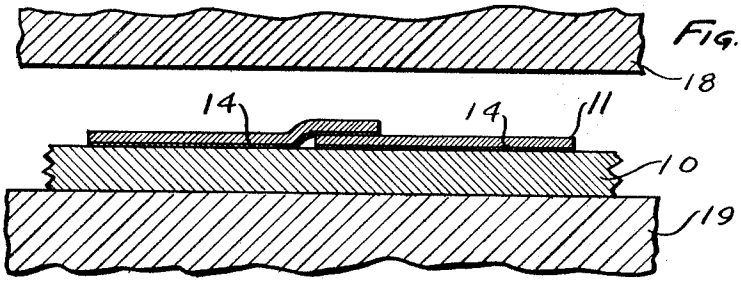


Fig. 4

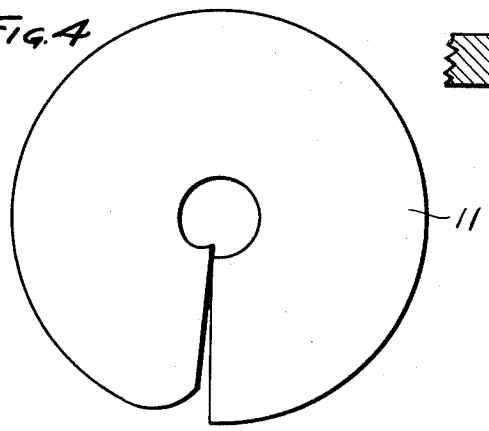
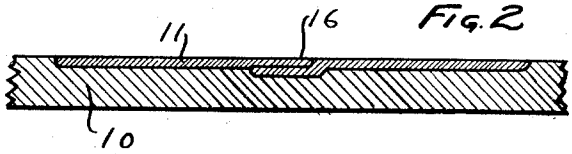


Fig. 2



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Patented Apr. 10, 1934 1,954,754

UNITED STATES PATENT OFFICE

1,954,754

VENEERING

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Application September 26, 1932, Serial No. 634,835

12 Claims. (Cl. 41—35)

This invention relates to the art of veneering.

One object of the invention is the provision of a novel method of making a veneered sheet in which a very thin surfacing piece having a thickness of the order of 1/100'' is attached to and is forced into the surface of a base piece of wood or the like by the application of a comparatively high pressure.

Another object of the invention is the provision of a method of the character mentioned in which end portions of the very thin veneering or surface sheet are overlapped one on the other, the pressure applied being of such character as to provide a substantially flush outer surface of all of the parts.

Another object of the invention is the provision of a method as above set forth, in which the very thin sheet of surfacing veneering is applied without taping and is exposed directly to the action of a hot rigid pressure member or plate.

Another object of the invention is the provision of a laminated wood strip made in accordance with the method herein set forth.

Further objects and advantages of the invention will be apparent from the following description, the appended claims and the accompanying drawing in which,—

Fig. 1 is a top plan view of a veneered wood strip embodying the present invention;

Fig. 2 is a section on the line 2—2, shown on an enlarged scale;

Fig. 3 is a section showing the thin veneering sheet superimposed on the surface of a base sheet and ready to be pressed into place; and

Fig. 4 is a detailed view on a smaller scale showing one of the thin sheets of surface veneering that may be used in accordance with the present invention.

It has been the practice, in the veneering art, where a surfacing sheet of grained wood is inlaid in a supporting base piece, to cut a depression in the base piece of sufficient depth and conforming in shape so as to exactly receive the surfacing grained piece, the two parts being then glued together. Such a procedure requires a comparatively large amount of time and requires very accurate workmanship in order to get the parts to properly abut one another at the joints. In accordance with the present invention, however, a very thin veneering sheet of grained wood or the like, having a thickness of the order of 1/100'', is pressed bodily into the upper surface of a base piece, the latter being deformed by the substantial pressure applied so that the thin sheet is sunk into the base piece flush with the upper surface, and fastened in place.

Fig. 1 of the drawing to which reference is now made, shows a base piece 10 of wood into which has been pressed a surfacing veneer sheet 11 of grained wood or of wood which contrasts in appearance with the surface of the piece 10. As shown in Fig. 2, the upper side of the sheet 11 is substantially flush with the upper side of the piece 10.

In making the composite wood strip 12, illustrated in Fig. 1, a base piece 10 of wood is employed, the opposite faces of the wood piece 10 being substantially smooth and unbroken and preferably perfectly flat. A suitable quantity of adhesive or glue 14 is then applied, preferably in the form of a substantially solid paper like sheet, the sheet of glue being laid on the upper surface of piece 10. Upon the glue there is then superimposed the very thin sheet of veneering 11, or a number of comparatively small sheets arranged side by side in any desired pattern. If desired the glue may be applied to the under surface of the thin veneering sheet 11 instead of being applied to the upper surface of the base piece 10.

When the thin veneering sheet 11 is in the proper position on the base piece, it is temporarily spotted or attached at spaced points by a hot iron for example which temporarily holds the thin veneering sheet 11 in a desired location. It is not necessary to accurately abut adjacent side edges of the part 11, as these may be overlapped as shown in Fig. 3 to a sufficient extent so that the shrinking of the part 11 during the pressing operation to be presently described, will not cause the adjacent side edges to separate from one another. With the surfacing veneer sheet 11 properly placed on the upper surface of the piece 10, pressure is applied to the upper side of the sheet 11 so as to sink this sheet into the upper portion of the base piece 10, the latter being deformed due to the substantial pressures exerted so that the upper side of the veneering sheet will be substantially flush with the surrounding or adjacent exposed portions of the base piece 10, as shown in Fig. 2. The overlapped portions of the sheet 11 will be pressed then so as to form a substantially smooth and continuous upper surface at the joint 16 as shown in Fig. 2.

The veneering sheet 11 is of the order of 1/100'' in thickness so that an excessive amount of deformation of the top surface of the base piece is not required, and so that destructive pressures are avoided. The veneering sheet 11 should not

be more than 1/64" or less than 6/1000" in thickness, the proper size being dependent upon the thickness of the parts 10 and 11 and upon their relative hardness and the pressures employed.

Any suitable glue or cement may be used to permanently attach the veneering sheet 11 to the base piece 10. Very satisfactory results have been obtained by using a bakelite resin glue, 6% to 10% moisture being present in the wood so that by the application of heat and pressure the veneering sheet 11 is firmly and permanently secured in place.

The pressure may be applied by a rigid flat pressure plate 18 of a suitable press, the base piece 10, having the veneering sheet 11 superimposed on it, being laid flat on a platen or base plate 19 of the press and the pressure plate 18 being then brought down so as to apply a pressure of from three hundred to five hundred pounds per square inch, depending on the particular character of the wood employed, and the wood thickness. The flat pressure plate first engages the upper surface of the part 11 and when it has pressed this part into the base piece 10 the plate is forced against the exposed portions of the base piece. The parts 18 and 19 are preferably heated. With a heat value of about 270° F. the pressure is maintained for several minutes, the time value being preferably from 8 to 12 minutes, more or less, depending upon the character of the materials. The pressure exerted on the veneering sheet 11, which is preferably somewhat harder and substantially thinner than the base piece 10, is sufficiently great that it forces the veneering sheet into the upper side of the base piece and permanently deforms the latter so that the resultant product is substantially smooth with adjacent parts extending continuously or flush at their exposed ends. The pressure plate 18 is preferably very smooth and rigid and flat, and as it presses directly against the upper surface of the wood pieces 10 and 11 it has the effect, due to the high pressures employed, of leaving the entire upper exposed surface of the finished product quite smooth and compacted so that only a minimum amount of fine finishing sanding is required.

It will be apparent that it is not necessary to tape the joints of the veneering sheet 11 where they abut or overlap. In other words it is not required to glue or attach the end parts of the thin veneering sheet 11 to a common strip of tape or paper or the like in order to hold these end portions in their proper relative positions. The joining or end parts of the veneering sheet may be merely overlapped a sufficient distance so that the contraction of the sheet due to the heating effect of the pressure plate does not cause a separation of the edges. If tape were employed to hold the joints in place this tape would have to be sanded off or removed from the upper surface of the finished article, which would be practically impossible in view of the paper-like thinness of the veneer sheet 11.

The veneer sheet 11 may be of any suitable character, having a pretty grain or an appearance which contrasts with the exposed surface of the base piece 10. It may comprise a number of separate pieces, preferably overlapping at their joints, but as shown in Fig. 1, a substantially continuous single sheet of veneering 11, broken only on one substantially radial line, may be used. Such a sheet may be obtained by shaving a conical end of a wood log to produce a substantially spiral shaped strip which may then be cut to proper lengths so that each length will form a little more than a complete circle or ring. Such a ring is illustrated in Fig. 4, and when applied flat to the upper side of the base piece 10 the radially extending ends overlap a substantial distance as illustrated in Fig. 1 so that they will not be separated by the shrinking effect of heat and resultant loss of moisture content. The center of the design may be made, for example, by superimposing a thin sheet of star-shape or of any other desired design upon the center of the sheet 11 as indicated at 20, a sufficient amount of glue of course being used below the piece 20. The piece 20 is of course applied to the sheet 11 before the latter is forced into the base piece so that the entire design is made at once.

The base piece 10, which has been illustrated in Figs. 2 and 3 on a greatly enlarged scale, may be as thick as desired. It may be a sheet which itself is to be used as a veneering surface sheet to form the outer surface of a table top or the like. For such purposes the base piece 10 is a rather flexible piece made about 1/30" in thickness, or of greater thickness if desired. The base piece 10, however, is substantially thicker than the surfacing veneer sheet 11 so that the latter may be forced into or embedded in the surface of the base piece.

While the method and product herein described constitute preferred embodiments of the invention, it is to be understood that the invention is not limited to this precise method and product, and that changes may be made therein without departing from the scope of the invention which is defined in the appended claims.

What is claimed is:

1. The method of veneering comprising superimposing a thin sheet of wood veneering of the order of 1/100" in thickness on a substantially thicker and larger smooth surfaced base piece of wood, with an intermediate application of glue, and applying a flat pressure plate first to the thin sheet and then to both sheets with sufficient pressure to deform the surface of the base piece and sink the thin sheet into and flush with the surface of the base piece.

2. The method of veneering comprising superimposing a thin sheet of wood veneering of the order of 1/100" in thickness on a substantially thicker and larger smooth surfaced base piece of wood, with an intermediate application of glue, and applying a flat pressure plate first to the thin sheet and then to both sheets with sufficient pressure to deform the surface of the base piece and sink the thin sheet into and flush with the surface of the base piece, and maintaining the pressure with the application of heat for a period of time to harden the glue.

3. The method of veneering comprising superimposing a thin sheet of wood veneering of the order of 1/100" in thickness and with portions of the thin sheet overlapping one another directly upon a smooth surfaced base piece of wood of the order of about 1/30" in thickness with an intermediate application of glue, and applying a smooth surfaced plate first to the top of the thin sheet and then to both the thin sheet and the base piece with sufficient pressure to deform the surface of the base piece and sink the thin sheet of veneering into the surface of the base piece so that the top of the finished product is flat.

4. The method of veneering comprising applying a rigid flat pressure member against a thin sheet of wood veneering of the order of 1/100" in thickness which is superimposed with portions

of the thin sheet overlapping one another upon a substantially thicker base piece of wood with an application of glue between the thin sheet and the base piece, with sufficient pressure to sink the sheet of veneering into the surface of the base piece, and with the application of heat with the pressure for several minutes.

5. The method of veneering comprising applying a heated hard rigid plate to a thin sheet of wood veneering of the order of 1/100" in thickness which is superimposed upon the surface of a base piece of wood with glue between the base piece and the veneering and applying a pressure of several hundred pounds per square inch for several minutes so as to permanently sink the thin sheet of veneering into the surface of the base piece and permanently attach it in place.

6. The method of veneering comprising superimposing a thin sheet of wood veneering of the order of 1/100" thickness upon a substantially thicker base piece of wood, overlapping adjacent end portions of the thin sheet of veneering a substantial distance one above the other, and applying a flat pressure plate first to the top of the thin sheet and then to both the thin sheet and the base piece with sufficient pressure to deform the surface of the base piece and sink the sheet of veneering into the surface of the base piece so that the top of the finished product is substantially flat.

7. The method of veneering comprising applying an approximately circular sheet of wood veneer of the order of 1/100" in thickness to the outer unbroken surface of a base piece of wood with an intermediate layer of glue, end portions of the circular sheet being overlapping, and pressing the thin sheet against the base piece with sufficient force for a substantial time and with the application of heat, applied to the upper surfaces of both the thin sheet and the surrounding portions of the base piece to deform the surface of the base piece and sink the sheet of veneering into its surface so that the two pieces are substantially flush on their exposed sides.

8. The method of veneering comprising pressing a rigid flat plate which is heated to a temperature of a few hundred degrees Fahrenheit against overlapped thin sheets of wood veneering of the order of 1/100" in thickness which are superimposed upon the larger surface of a thicker smooth surfaced sheet of wood with glue therebetween, and maintaining a pressure of a few hundred pounds per square inch for several minutes so as to press and hold the thin sheets within the base sheet and flush with the top of the base sheet.

9. A veneered wood strip comprising a comparatively thick base piece of wood having on a portion of its surface a thin cover portion of grained wood of the order of 1/100" in thickness embedded flush in the surface of the base piece and glued thereto, characterized by the fact that the base piece is compressed below the cover portion with the fibers of the base piece continuously following the outline of the embedded part of the cover portion, the upper surface of the cover portion and the upper surface of the base piece surrounding the cover portion being smooth and compacted.

10. A veneered wood strip comprising a base piece of wood to a portion of the top surface of which is applied a thinner cover portion of grained wood of the order of 1/100" in thickness, portions of the applied grained wood overlapping one on the other and embedded in and glued to the base piece, the fibers of the base piece following the outline of the embedded part of the cover portion and the upper surface of the cover portion and base piece being flush, smooth and compacted.

11. A thin veneering piece of wood having a thickness of about 1/30" adapted to form a veneer surface on a larger piece of wood and provided on a part of its exposed surface with a thin sheet of grained wood of the order of 1/100" in thickness which is glued to and embedded in the surface of the veneering piece so that it is substantially flush with the outer surface of the latter, the fibers of the veneering piece of wood following the outline of the embedded part of the thin sheet in a continuous and unbroken manner.

12. A thin veneering piece of wood having a thickness of about 1/30" adapted to form a veneer surface on a larger piece of wood and provided on its exposed surface with a thin sheet of grained wood of the order of 1/100" in thickness and with portions thereof overlapping one another, the thin sheet being glued to and embedded in the surface of the veneering piece so that it is substantially flush with the outer surface of the latter, the fibers of the veneering piece of wood following the outline of the embedded part of the thin sheet in a continuous and unbroken manner.

ROBERT NORRIS HARTZELL.