

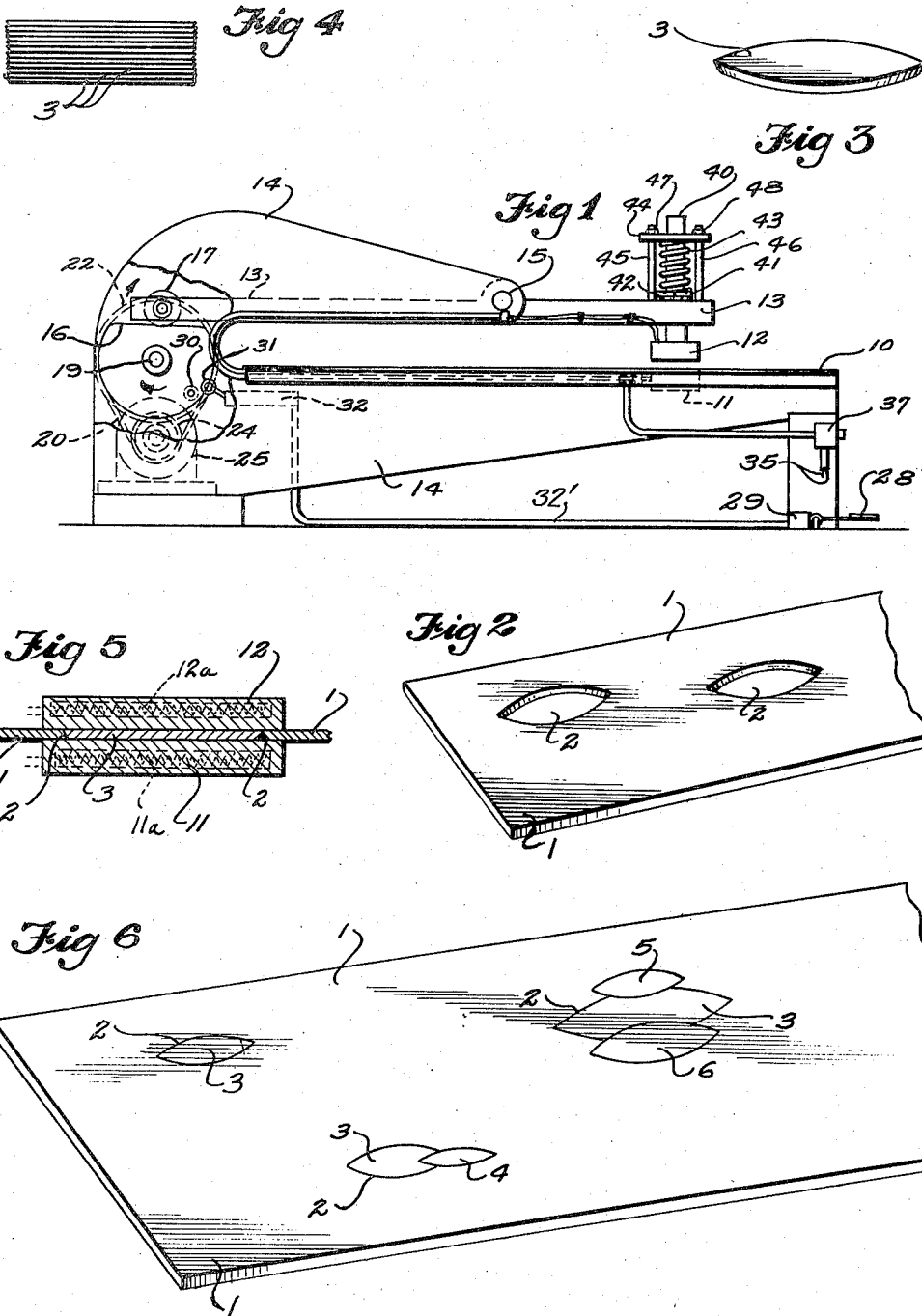
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MEANS FOR PATCHING VENEER

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MEANS FOR PATCHING VENEER

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This invention relates to the patching and repairing of wood veneer sheets, and has reference more particularly to an improved method of, and means for applying and securing in place, patch pieces in sheets of wood veneer and the like; it being the principal object of the invention to provide a method of preparing patch pieces, and for a subsequent application of the pieces that is easier, quicker and more economical than methods now generally employed for this work, and wherein the finished patch is of much better appearance and quality.

Explanatory to the present invention, it will here be stated that it is now a general practise to remove defects, such as knots, pitch pockets and stains, from the outer wood veneer covering of a laminated or plywood board or the like, by manually cutting out the defective portions and then manually fitting in the recesses or openings, patch pieces of good material; glue being applied to the patch pieces as a means of securing them in place. During drying of the glue, the sheets so repaired are stacked and held in a press.

Another method that has been practised is the removing of the defective spot or area in the single veneer sheet, fitting a patch therein, and holding it in place until assembled into a laminated or plywood board or the like by a large piece of gummed paper. This has been found impractical in that other defects show up which have been covered and hidden by the gummed paper, thus necessitating repatching or additional patching.

In view of the requirement for considerable time to complete drying of the glue, and the objection to the use of gummed paper, it has been the object of this invention to provide a method whereby the patch is applied with glue to the single sheet of veneer wood, and the drying of the glue is substantially coincident with the application of the patch piece, thereby eliminating the usual long drying time and the repatching or additional patching, and expediting, to a material extent, the manufacture or assembly of wood veneer into laminated or plywood boards and the like.

More specifically stated, the objects of the present invention reside in the provision of tapered patch pieces with glued edges and the provision of tapered openings in the veneer sheets to receive these patch pieces, and also the pressing of the patch pieces into the openings between clamping heads that are electrically heated, whereby to set the glue joint practically instantly.

Other objects of the invention reside in the

various steps of the method and in the improved details of construction of the device for pressing the patch pieces into place and drying the glue.

In accomplishing the various objects of the present invention, I have provided the improved details of construction of certain equipment illustrated in the accompanying drawing, wherein—

Fig. 1 is a side view of a preferred type of patch setting press with electrically heated heads.

Fig. 2 is a perspective view of a sheet of veneer, formed with pockets, or openings for receiving patch pieces, whereby to repair the defects.

Fig. 3 is a perspective view of a patch piece.

Fig. 4 illustrates the arrangement of patch pieces in stacks for application of glue thereto preparatory to use.

Fig. 5 is a cross sectional detail of a piece of veneer to which a patch piece is applied and clamped between the heated heads of the patch setting machine.

Fig. 6 is a perspective view of a piece of veneer with patches applied in accordance with the present invention.

Briefly described, the sheets of veneer coming from the mill are inspected and sorted for quality. Certain small defects in pieces that otherwise would be usable, are removed by a router head of a predetermined size and a prepared patch is inserted in the pocket or opening. The patch is then pressed into place by the application of heated press heads, under considerable pressure and high temperature. The pressure seats the patch firmly in place and the heat not only causes the glue to become plastic and stick, but also melts out defects, such as pitch pockets, in that immediate area of the defects.

Referring more in detail to the drawing—

1 designates a sheet of wood veneer and 2 designates pockets, or recesses that have been cut therethrough for the removal of defective portions that appeared in the veneer sheet. These pockets or recesses are formed by a router head that, while revolving at high speed, is lowered slowly into cutting contact with the sheet of veneer wood. At present, the routing machine used carried a single router head which cuts a plurality of sizes of pockets or recesses, determined by the depth to which it is lowered, there being patches for the various sized pockets which the router is adapted to cut.

The patch pieces 3, which are best shown in Fig. 3, are cut from clear sheets or pieces of material, and preparatory to use, a plurality of

these patches of like size are stacked, as seen in Fig. 4, and a coat of glue is sprayed on the edges thereof. This may be either a wet or dry glue.

The machine for cutting these patches may be any one of several kinds now used, but preferably one of a type using two cupped disk saws, oppositely faced and mounted on means whereby they are alternately caused to cut through the sheet of material from which the patches are to be formed, to form two intersecting arcuate cuts whereby the opposite side edges of the patches are defined and a downwardly tapered edge is formed on the patch.

The patches are made in predetermined sizes, corresponding to the various sizes of pockets that may be made to receive them, and their edges are inwardly and downwardly beveled, as seen in Fig. 5, in accordance with the bevel of the edge surfaces of the pockets.

In practicing the invention, an operator, on receiving a veneer sheet, inspects it for defects, and marks spots or areas that should be removed. Another operator then places the sheet in a machine that cuts out the defects to form the pockets 2 of predetermined sizes, then another operator inserts a patch piece of right size into each pocket and the sheet is delivered to a press whereby the patches are pressed into place.

A feature of this invention resides in the fact that the patch pieces, prior to their application to the veneer sheet, have been given an edge coating of glue, and this glue is caused, by application of heat while the sheet is in the press, to flow and then set almost instantly so that no drying period is required.

The preferred type of press is that shown in Fig. 1, comprising a horizontal table, or bed, 10 across which the veneer sheets with pockets formed and patch pieces inserted therein, are delivered between a pair of flat clamping pads 11 and 12; the pad 11 having its top surface flush with the top surface of table 10 and the pad 12 being mounted at the end of an overhanging lever arm 13 directly over the pad 11 for clamping action thereagainst, as presently described.

The two pads are heated by electric current passed through resistance coils 11a and 12a therein and the heating current is under thermostatic control.

The lever arm 13, pivotally mounted intermediate its ends in U-frames 14 by a cross pin 15, is operated, to lower the pad 12, by a rotating cam 16 which operates against a roller 17 on the end of the lever opposite that carrying the pad. This cam is mounted between the U-frames 14, on a revolving cross shaft 19, and the shaft is rotated by a chain belt 20 passing around a large sprocket 22 fixed on the shaft and around a smaller sprocket wheel 24 driven by an electric motor 25.

The cam 16 is circular throughout approximately 270° of the circle, and is then formed with a flat surface which is shown in Fig. 1 to be at the top of the cam. When the cam follower 17 passes onto this flat surface, the lever 13 will lift at its outer end, thereby to move the pad 12 upwardly from the pad 11. The machine is automatically stopped when the cam follower is approximately centrally of the flat surface of the cam as shown in Fig. 1. As soon as the machine is started, the cam follower will be actuated to move the lever 13 to lower the pad 12, and as the follower passes onto the circular part of the cam, it reaches the maximum clamping position,

which is maintained until the follower 17 again passes onto the flat surface.

A foot pedal 28 is arranged to actuate a switch 29 to close the motor circuit and start the motor, and after approximately one complete revolution of cam 16, a roller 30 on the cam engaged with a roller 31 on the switch lever 32' of a cut-out switch 32, to actuate the switch to open the circuit and stop the motor. The power line 35, in conduits, is connected to the switch and 10 thermostatic control 37, and thence to the pads 11 and 12.

A novel feature of this invention is the mounting of the heated pad 12, as seen in Fig. 1, which pad has a threaded stud 40 extending upwardly 15 through an opening in the lever arm 13, and has two nuts 41 and 42 threaded thereon for adjustment and adapted to be tightened or locked together to hold the adjustment. The adjustment is to regulate the spacing apart or closing together of the two pads 11 and 12. Incidentally, the nuts provide a seat for a coiled spring 43 that encircles the stud 40 and bears against a retaining plate 44 held in place by two threaded bolts 45 and 46 fixed in lever 13. Nuts 47 and 48, 25 threaded on the bolts, hold the plate, and these may be tightened or loosened to regulate the amount of spring pressure to any amount desired. It is evident that through this construction, the adjustment of the pad 12 relative to pad 11 is controlled by the setting of the nuts 41 and 42 while the spring pressure may be increased or decreased by tightening or loosening the nuts 47 and 48 on the bolts 45 and 46, and this will not disturb the adjustment of the head 35 spacing, and vice versa.

Assuming that a patch piece 3 has been applied to a pocket 2 in a veneer sheet 1, and that the sheet has been passed upon the table and the patch area located between the pads 11 and 12, 40 it is quite apparent that the pads may be actuated by the means described, against opposite surfaces of the sheet and the patch piece to seat the patch firmly in place, and that, at the same time, the glue will be caused first to flow and then to set, thus to secure the patch in place.

Another novel feature resides in the fact that if it should be found, after insertion of one patch piece, that it does not entirely cover the defective area, or that a pitch pocket has been melted out by the heat, another pocket could be formed, without delay, through the patch already applied, and another patch applied, as has been illustrated in Fig. 6, where a patch 4 has been inserted in a pocket formed endwise through patch 3, and also patches 5 and 6 have been inserted in pockets formed beside and through the patch 3.

A particular advantage in the present method resides in the fact that the drying of the glue joint is practically coincident with the seating of the patch piece, and for this reason, a considerable amount of time and labor is saved in the manufacture of laminated plywood or veneer, or articles using the repaired veneer sheets.

A further advantage resides in the patching of the veneer sheets before assembly and the use of the coating of glue and the heat in place of gummed paper, as described, which removes the possibilities of waste or necessary repatching or additional patching.

The machine in itself also is advantageous as it provides a means for heating the glue at the same time of applying or seating the patch pieces.

It should be understood that the inventor

realizes that any satisfactory means of heating the pads, other than electricity, may be utilized, such as steam, and that the particular means of applying the pressure may also be of any optional form.

It is not intended that the method and means of such a process be limited to the details herein disclosed, but that the claims be given an interpretation commensurate with the spirit and scope of the invention disclosed.

Having thus described my invention, what I claim as new therein and desire to secure by Letters Patent is:

1. In a machine of the character described, a stationary pad, a movable pad in clamping relationship therewith, means for supporting the movable pad, means for actuating the support through a definite time interval to move its pad into clamping relationship with the stationary pad, and for an automatic release of said clamping action at the end of said time interval.

2. In a machine of the character described, a stationary bottom pad, a movable top pad support, a top pad disposed normally in spaced relation to and above the stationary pad for the reception of a veneer sheet between the pads, a supporting shank for the top pad, guides on the top pad support slidably mounting the shank therein and means arranged for acting against the movable support for actuating it to move the

top pad into and from clamping position relative to the bottom pad, and for controlling the duration of the clamping interval.

3. A veneer patch setting machine comprising a table, a pad set in the table surface and across which a veneer sheet with a patch pocket therein may be located, a clamp lever pivotally mounted and overlying the table, a pad mounted by one end of the lever in position to opposedly coact with the first mentioned pad for the pressing of a patch piece into the pocket of the veneer sheet, a cam follower on the lever and a rotatably driven cam operable against the follower to actuate the lever to move the pad thereon into clamping contact with the veneer sheet and table pad for the seating of a patch in the pocket of the sheet, and, after a predetermined time interval, to move the lever for the release of the sheet from between the pads.

4. A machine as recited in claim 3 wherein the clamp lever has a definite travel toward and from the table pad, and the pad carried thereby has a mounting shank slidable in the lever, a nut threaded on the shank to adjustably limit its movement downwardly relative to the lever, a spring mounted by the lever and acting to yieldingly retain the shank at its downward limit of travel and means for changing the pressure applied by the spring.

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