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PROCESS OF PRODUCING SOUNDING BOARDS FOR STRINGED INSTRUMENTS

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Sounding boards for musical instruments, more particularly for stringed instruments, have hitherto been produced either by cutting out of wood from hand or by mechanical cutting on a milling machine and finishing from hand. A production process has also been known consisting in pressing veneer plates being glued together during the pressing process or by pressing plywood plates. The production of sounding boards from hand by cutting out of the full material results in a very considerable waste amounting to at least 40 percent of high-grade sounding board wood, the time-wasting manual or mechanical shaping of the material and the tiresome finishing from hand requiring moreover many skilled hands and causing high production costs. The use of glues for the production of sounding boards from pressed veneer plates deteriorates the quality of the finished product, as the glues are forming intermediate layers on the veneers being glued together which layers are prejudicious to the resonance properties. Moreover, the production costs are considerable, as it is necessary to make use of high-grade veneers.

The use of finished plywood plates presents the same drawbacks, the sounding properties being deteriorated by the intermediate glue layers, so that this process is suitable only for the production of musical instruments of lower quality grades.

Efforts have been made to eliminate the aforesaid drawbacks by the production of sounding boards for stringed instruments consisting in bringing about a permanent deformation of the plates by steam-treating wood having a degree of dampness above the saturation point of the fibres. However, the results of this production process failed to be fully satisfactory, as at a higher degree of dampness, the steam being introduced at a high temperature and pressure destroyed the weak profile of the plate inside the closed mould, without ensuring a permanent deformation.

The aforementioned drawbacks have now been removed in accordance with the present invention in that the plates made of one or of a plurality of parts of full wood glued together along their width and pre-dried below the point of saturation of the fibres are subjected to mould pressing, after having been wetted on the surface on both sides at the points of an expected greater deformation.

The rough blanks of the parts of sounding plates under treatment, pre-dried to a dampness of 7 percent are united together in a well known manner (key-slot) and glued together. After the drying out of the glue, the glued plate is subjected to the finishing operation by planing off to the requisite thickness in such a manner as to be thicker by 0.6 mm. at the points of maximum

convexity. This is indispensable for the necessary extension of the wood to the sides on pressing the board.

After the trimming of the boards thus glued together and finished to the rough outline of the shape of the sounding board, the dampness of the wood is checked up and adapted by artificial subsequent drying to the required percentage of dampness below the point of saturation of the fibres, amounting to 3 to 8 percent in accordance with the kind and nature of the wood treated.

After adapting the board to the required dampness, it is necessary, immediately before introducing the same into the pre-heated mould mounted in the hydraulic press, to wet the board at the points of the expected maximum profile curvature and along the whole circumference rim on both sides.

The wetted board having been introduced into the pre-heated pressing mould is then subjected to the pressing operation in the hydraulic press at a mould temperature of 150 to 180° C.

The pressing operation is carried out intermittently at a pressure of 25 to 65 kg./cm.^{2} according to the kind and nature of the wood under treatment, whereupon the pressed board is subjected to climatisation.

The pressing operation according to the present invention results in a partial densification of the wood, enabling even the use of a non-resonant wood for the process above disclosed, as it acquires the necessary sounding properties.

I claim:

1. In the manufacture of curved sounding boards for stringed instruments, the boards having a curved profile, the method which includes finishing a rough board of at least a single strip of solid wood so as to be about 0.6 mm. thicker at the predetermined place of subsequently provided maximum curvature and to gradually decrease in thickness from said place toward the edges of the board, predrying the board below the point of saturation of the wood fibers, wetting only such portions of the board as will subsequently be flexed most, and subjecting the board to a forming action under heat and pressure.

2. In the manufacture according to claim 1, said drying being carried out to about 3 to 8% humidity.

3. In the manufacture according to claim 1, said predetermined place being approximately at the center thereof.

4. In the manufacture according to claim 3, the additional step of wetting said board along the edges thereof when in the predried condition and prior to subjecting the same to said forming action.

5. In the method according to claim 1, carrying out said forming action at a temperature of about 150° to 180° C. and under a pressure of about 25 to 65 kg./sq. cm.

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