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(54) Lye-treated wooden elements

(57) Method for manufacturing wooden elements, such as floor boards, having an antique or rustic look at the side which is in view when the element is being used, wherein a sight side of wooden elements of planed new wood is treated with lye by applying a lye liquid on the surface of the sight side.

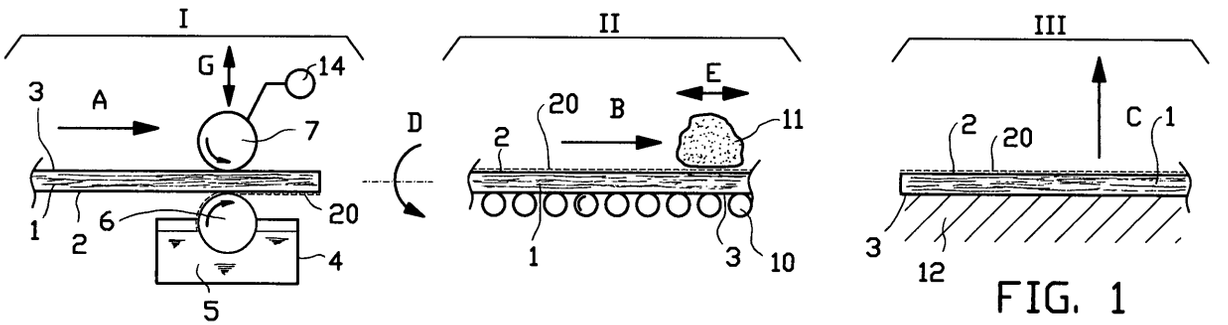

FIG. 1

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Description

[0001] The invention relates to a method for manufacturing wooden elements, such as wall boards or floor boards, having an antique or rustic look at the side which is in view when the element is being used. The invention furthermore relates to such wooden elements, particularly wall boards or floor boards.

[0002] Wooden elements, such as floor boards used for assembling a rustic or antique looking piece of furniture, wall or floor, are known to be subjected to a lye treatment. Wooden elements, such as boards, are immersed in a bath of lye liquid. Subsequently the wooden elements are dried.

[0003] A drawback of this method that has been used for quite some time now is that the wooden elements become very wet, which results in a very long drying time. Moreover as a result of variations in the wood structure of the wooden elements, the one wooden element will become moister than the other wooden element, resulting in the required drying times differing as well. This random irregularity renders the drying process hard to predict. To be on the safe side as regards the drying time would mean drying times that are unacceptably long.

[0004] It is an object of the invention to improve on this.

[0005] A further object of the invention is to provide an efficient and controllable process for treating wooden elements, such as wall boards or floor boards, with lye.

[0006] From one aspect the invention to that end provides a method for manufacturing wooden elements having an antique or rustic look at a/their side which is in view when the element is being used, wherein a sight side of wooden elements of planed new wood is treated with lye by applying a lye liquid on the surface of the sight side.

[0007] In this case applying the lye liquid (such as a caustic soda solution) takes place by application, which can easily take place in a controlled manner. The application can be immediately adjusted to the quality and the structure of the wooden elements to be treated. Drying times will thus become predictable. Moreover, the lye liquid is efficiently used, particularly because the other sides of the wooden element, such as the other main side of a board, do not have to be subjected to a lye treatment.

[0008] The controllability of the process is further enhanced when the application takes place using manipulable or operable application means.

[0009] Preferably the application means and the wooden elements are moved with respect to each other during application.

[0010] The process is further enhanced and accelerated if the applied lye liquid is pressed onto the surface of the sight side.

[0011] In an efficient embodiment the pressing takes place using the application means. The lye liquid is thus optimally used.

[0012] In a simple embodiment the lye liquid is applied using application rollers along which the wooden elements are passed. The application then takes place while transporting the wooden elements.

[0013] In that case the application rollers may partially extend into a lye liquid bath, wherein the sight side of the wooden elements is supported on the application rollers. During the treatment the application rollers are each time automatically moistened with lye liquid.

[0014] For achieving the pressure force the side of the wooden elements opposite the sight side may be engaged by pressure rollers, preferably driven pressure rollers. The pressure force is therewith also used for transport.

[0015] For optimal adjustment to the boards to be treated, it is preferred that the pressure force can be set.

[0016] In a first further development of the method according to the invention, after applying the lye liquid the sight side is treated with moisture, particularly water, in order to decelerate the lye-treatment process, particularly stopping the process. This may for instance be done by rinsing, but preferably by sponging with water, because then the quantities of applied moisture can be properly controlled, so that the surface does not become too wet. After rinsing or sponging the surface may be struck off with a wiper or the like in order to achieve an as dry as possible surface. The boards are subsequently dried. Agents, such as vinegar, may be added to the moisture or the water, in order to fully stop the lye-treatment process. In that case the wooden elements have been subjected to a single lye-treatment, and may then be referred to as red-lye treated.

[0017] In a second further development of the method according to the invention the wooden elements are subjected to the lye-treatment at least twice consecutively. A so-called double lye-treated or grey lye-treated wooden element may be obtained in this way.

[0018] The process of double lye-treatment is enhanced when a period of rest is put in between the first and second treatment of the wooden elements.

[0019] The process of double lye-treatment is further enhanced when in the period of rest the lye-treated sight sides of the wooden elements are kept against each other in pairs.

[0020] The process of double lye-treatment may be ended when after the lye liquid has been applied for the last time, the sight side after application of the lye liquid is treated with moisture in the above-mentioned manner, such as by wiping the surface with moisture, such as by sponging with water, to slow down the lye-treatment process on the wood, particularly stopping it, and is subsequently dried.

[0021] In a further development of the method according to the invention the sight sides of the wooden elements, after applying the lye liquid, are treated with a lime-water solution.

[0022] In yet a further development of the method ac-

cording to the invention the concentration of the lye (for instance caustic soda) in the solution (water) is kept in the range of approximately 1:1 -1:5, in volume-ratio lye agent (dry substance) - water.

[0023] In yet a further development of the method according to the invention lime has been added to the lye liquid, preferably in an equal volume-ratio as in which the lye agent has been added to the water of the lye liquid.

[0024] The lime in the solution extracts moisture from the treated surface of the wooden elements as a result of which the drying over the entire surface will take place more quickly.

[0025] From a further aspect a method is provided for manufacturing wooden elements having an antique or rustic look at an/their side which is in view when being used, wherein a sight side of wooden elements of planed new wood is treated with lye using a combined lye/lime solution.

[0026] From a further aspect the invention provides a wooden element, such as a board, particularly a floor board, obtained using the method according to the invention, treated with lye at a sight side only.

[0027] The used wooden elements are preferably made of hard hardwood, such as oak.

[0028] The invention will be elucidated on the basis of an exemplary embodiment shown in the attached drawings, in which:

Figure 1 shows a schematic view of an arrangement for carrying out a first advantageous embodiment of a method according to the invention;

Figure 2 shows a cross-section according to arrow II in figure 1; and

Figure 3 shows a schematic view of an arrangement for carrying out a second advantageous embodiment of the method according to the invention.

[0029] In figure 1 the board 1 of planed new wood with the future sight side 2 facing down and the opposite side 3 facing up, is passed in direction A through station I, where the application of lye liquid on the sight side 2 of the board 1 takes place.

[0030] The lye-treatment station I, shown in cross-section in figure 2, comprises a tank 4 in which a lye liquid 5 is present. An -optionally driven- application roller 6 extends in the lye liquid 5, the surface of which application roller is provided with circumferential grooves 8 (figure 2), which between them leave cylindrical circumferential planes 9. Above the application roller 6 a transport and pressure roller 7 driven by an electromotor 14 is positioned, which transport and pressure roller 7 can be adjusted as to height in the direction G, in order to set the pressure force exerted on the board 1.

[0031] By driving the transport roller 7, the board 1 is pulled in longitudinal direction through the intermediate space between rollers 6 and 7, wherein the lower side, the sight side 2, comes into pressed contact with the surfaces 9 of the application roller 6. There is lye liquid on said surfaces 9 and in the grooves 8, which lye liquid is taken along when the roller 6 rotates through the lye liquid 5. The sight side 2, which is at the bottom, is provided with a layer 20 of lye liquid over its full surface under pressure force.

[0032] After the entire board 1 has been passed in the direction A, between both rollers 6, 7, the board 1 is rotated about its centre line in the direction D, so that the sight side 2 faces up. In that orientation the board 1, supported in station II on a (driven) roller path 10, is transported over it in the direction B. Meanwhile the lye-treated surface 20 of the sight side 2 is sponged using a water moisturised sponge 11, that is reciprocated in the directions E, as a result of which the lye-treatment process is stopped there. After that, in station III, the board 1 with the sight side 2 facing up is placed on a basis 12. Here the board is dried, for instance for 24 hours. Alternatively the boards may be dried standing up, for instance placed in a rack, the advantage being that puddles on the surface are prevented. After that the dried boards that are single or red lye-treated, are discharged in the direction C to a storage.

[0033] In figure 3 the process for double or grey lye-treatment of the boards 1 is shown. In this case the boards first go through station I, and are subsequently stacked in a station IV, supported on a basis 12, wherein the boards 1 are placed in pairs with the sight sides 2, on which the lye layer 20 is present, against each other. When the stack 13 is sufficiently high or the wanted drying time has passed (for instance one quarter of an hour) the stack 13 is turned in the direction F, so that the boards placed first are now on top. From the top down boards 1 are taken away and they are passed again through station I. In this sequence of steps it is achieved that the boards 1 will approximately have the same drying time in station IV.

[0034] After passing through station I again, the boards 1 pass through the stations II and III, in order to be subsequently discharged as well in the direction C to a storage.

[0035] The boards 1 have only been provided with a lye layer 20 at the sight side 2. The lye layer may be thinner than 1 mm.

[0036] In a particularisation of the aforementioned processes the boards after passing through the lye-treatment station I can be treated in a subsequent station (not shown) with a lime-water solution. Said lime-water solution may be applied in any suitable manner, for instance using a sponge or a roller. The lime extracts moisture from the treated surface of the boards, which accelerates the drying over the full surface.

[0037] The concentration of the lye (for instance caustic soda) in the solution (water) may advantageously be kept relatively low, preferably in the range of approximately 1:1 - 1:5, in volume ratio lye agent (dry sub-

stance) - water. The lye-treatment process will cause white stains on the wood surface, which give the lye-treated surface a special effect.

[0038] In an advantageous embodiment of the process lime is added to the lye solution, so that a lime-lye solution is used. The lime on the surface of the wooden element extracts moisture again from the wooden element, due to which drying over the full surface may be speeded up. The lime, however, in combination with the lye-treated surface, also provides a particular colour effect. The lime may for instance be added to the water of the lye solution in an equal volume ratio as in which the lye agent has been added.

[0039] It is observed that the example given regards boards, used in cladding walls or floors, and which may optionally be provided with grooves and tongues for mutual connection. The method is also applicable to other wooden element, having one or more sight sides, such as furniture plates or other parts of furniture.

[0040] It is furthermore observed that the manner of applying the lye solution may be diverse, such as pouring, brushing, sponging, spraying, rolling.

Claims

1. Method for manufacturing wooden elements having an antique or rustic look at the side which is in view when the element is being used, wherein a sight side of wooden elements of planed new wood is treated with lye by applying a lye liquid on the surface of the sight side.

2. Method according to claim 1, wherein the application takes place using manipulable application means, wherein preferably the application means and the wooden elements are moved with respect to each other during application.

3. Method according to claim 1 or 2, wherein the applied lye liquid is pressed onto the surface of the sight side, wherein the pressing preferably takes place using the application means and/or wherein the pressure force preferably is set.

4. Method according to claim 2, 3 or 4, wherein the lye liquid is applied using application rollers along which the wooden elements are passed, wherein preferably the application rollers partially extend into a lye liquid bath, and the sight side of the wooden elements is supported on the application rollers.

5. Method according to claim 4, wherein the side of the wooden elements opposite the sight side is engaged by pressure rollers, preferably driven pressure rollers.

6. Method according to any one of the preceding claims, wherein after applying the lye liquid the sight side is wiped with moisture, particularly water, such as by sponging with water, and is subsequently dried.

7. Method according to any one of the claims 1-5, wherein the wooden elements are subjected to the treatment at least twice consecutively, wherein, preferably, a period of rest is put in between the first and second treatment.

8. Method according to claim 7, wherein in the period of rest the lye-treated sight sides of the wooden elements are kept against each other in pairs.

9. Method according to claim 8, wherein after the lye liquid has been applied for the last time, the sight side after application of the lye liquid is wiped with moisture, such as by sponging with water, and is subsequently dried.

10. Method according to any one of the preceding claims, wherein after applying the lye liquid the sight side of the wooden elements is treated with a lime-water solution.

11. Method according to any one of the preceding claims wherein the concentration of the lye (for instance caustic soda) in the solution (water) is kept in the range of approximately 1:1 -1:5, in volume-ratio lye agent (dry substance) - water.

12. Method according to any one of the preceding claims, wherein lime has been added to the lye liquid, preferably in an equal volume-ratio as in which the lye agent has been added to the water of the lye liquid.

13. Method for manufacturing wooden elements having an antique or rustic look at their side which is in view when being used, wherein a sight side of wooden elements of planed new wood is treated with lye using a combined lye/lime solution.

14. Wooden element, particularly a board, more particularly a floor board, obtained using the method according to any one of the preceding claims, treated with lye at one or several sight sides only.

15. Wooden element according to claim 14, wherein the wooden elements are made of hard hardwood, such as oak.

16. Wooden element according to claim 14 or 15, wherein the sight side of the wooden elements is single lye-treated.

17. Wooden element according to claim 14 or 15,

wherein the sight side of the wooden elements is double lye-treated.

18. Piece of furniture provided with wooden elements according to any one of the claims 14-17.

19. Wall cladding, such as for a wall or floor, provided with wooden elements according to any one of the claims 14-17.

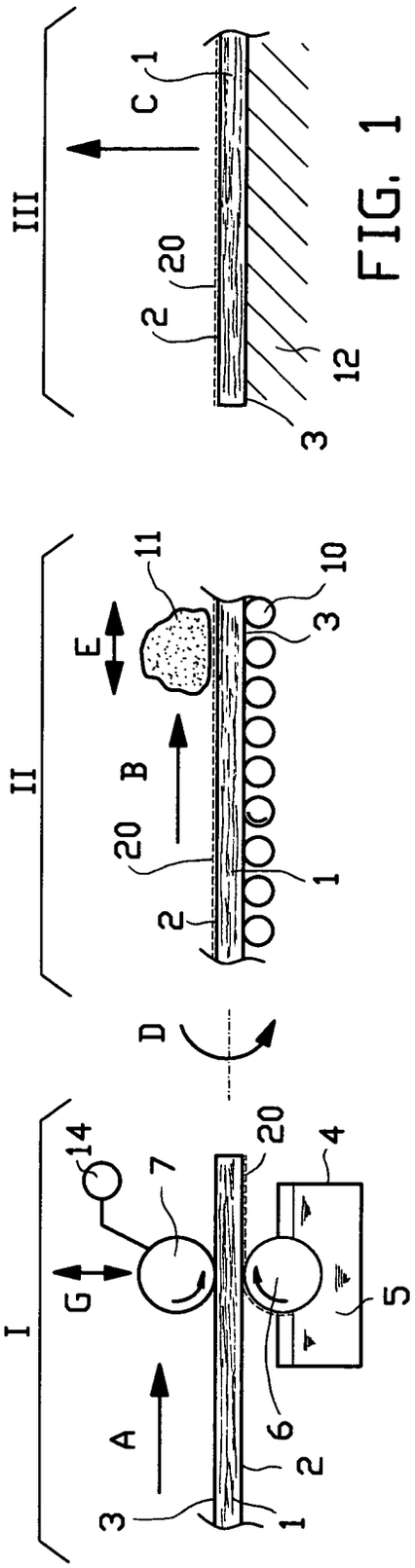

FIG. 1

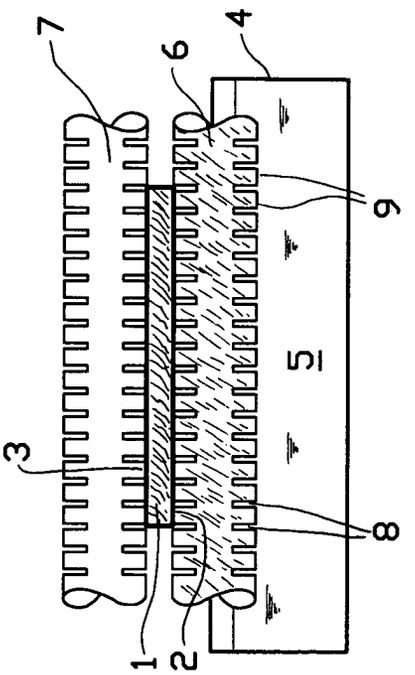

FIG. 2

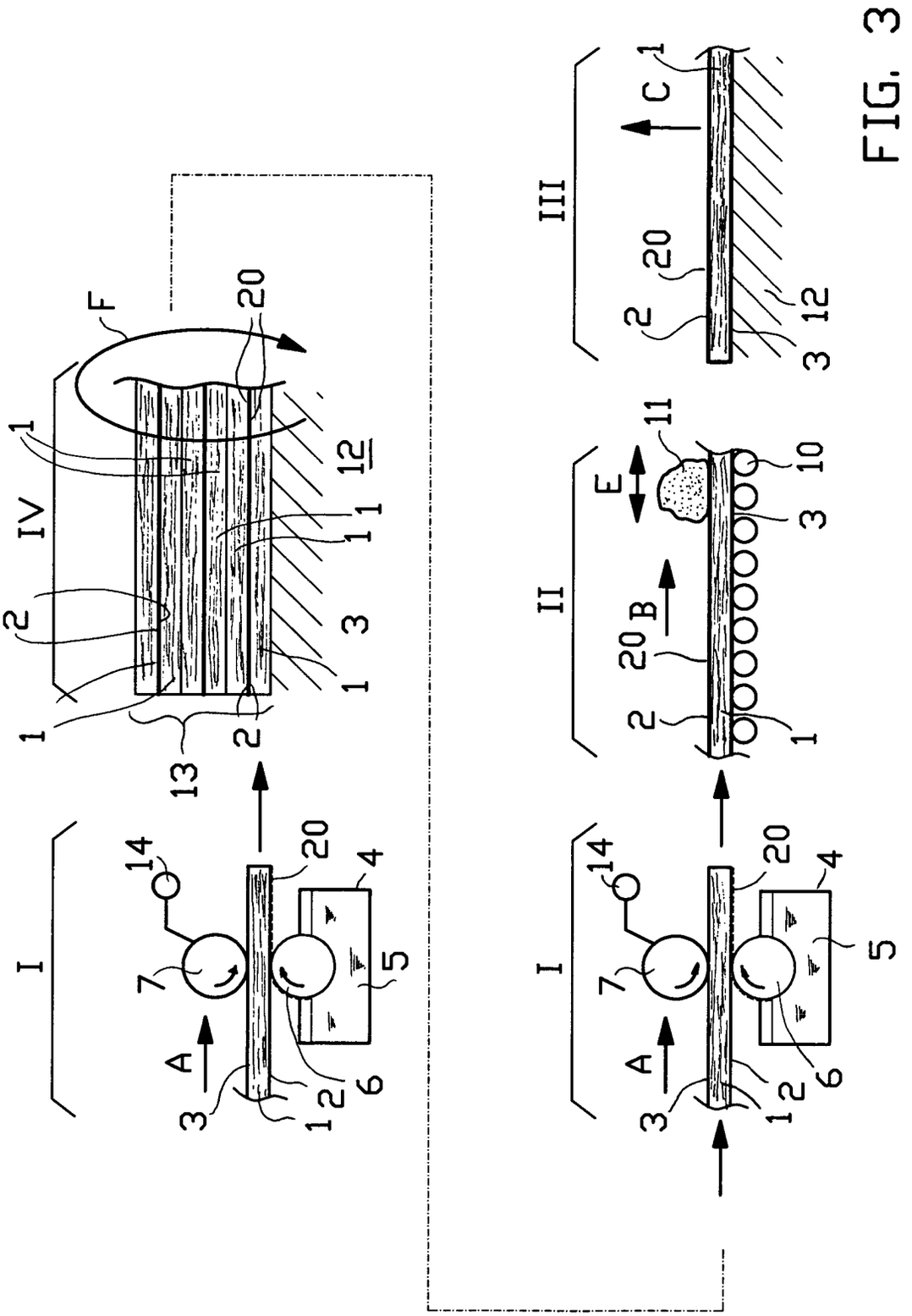

FIG. 3

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EUROPEAN SEARCH REPORT

Application Number
EP 04 07 7528

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	25 January 2005	Nissen, V

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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EUROPEAN SEARCH REPORT

Application Number
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