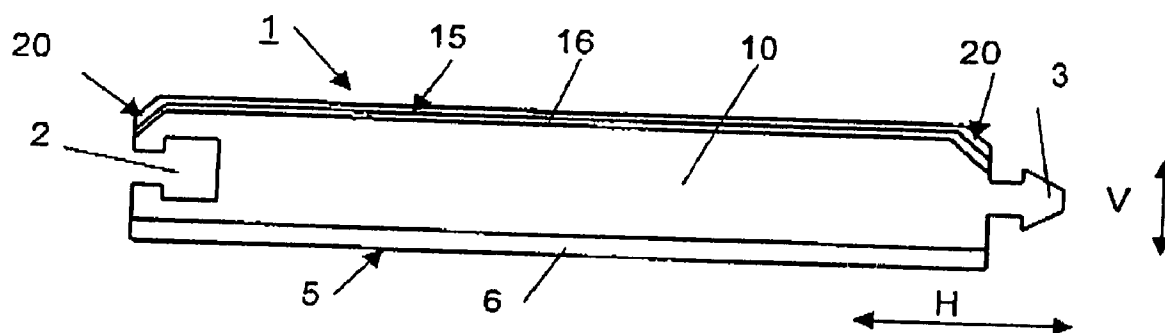




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## Publication Classification

A panel, in particular a flooring panel, of a wood material which is provided with a mechanism for the detachable connection of a least two panels, whereby form-fitting elements for locking in the vertical direction and in the horizontal direction with another panel are embodied on at least one lateral edge of a first panel, whereby a chamfer is embodied on at least one lateral edge starting from an upper side. The chamfer or the form-fitting elements are coated or impregnated with at least one melamine layer.



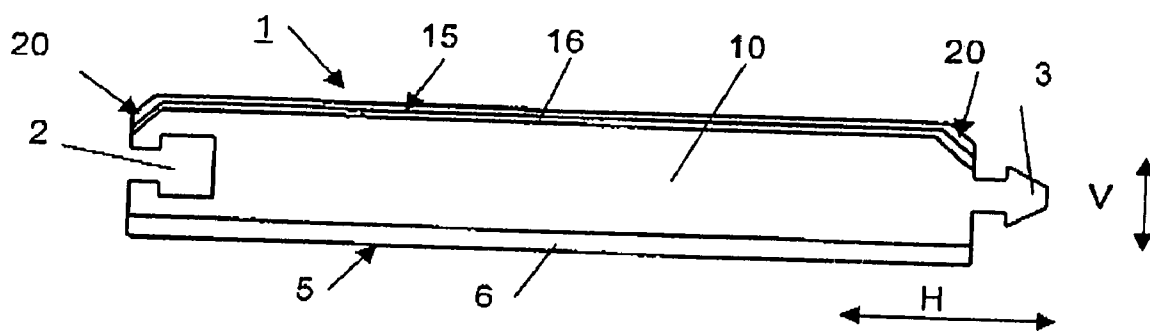


Fig. 1

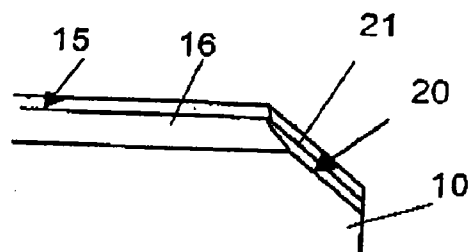


Fig. 2

## FLOORING PANEL

### BACKGROUND OF THE INVENTION

#### [0001] 1. Field of the Invention

[0002] The invention relates to a panel, in particular a flooring panel, of a wood material which is provided with means for the detachable connection of a least two panels. Form-fitting elements for locking in the vertical direction and in the horizontal direction with another panel are embodied on at least one lateral edge of a first panel, whereby a chamfer is embodied on at least one lateral edge starting from an upper side of the panel.

#### [0003] 2. Discussion of Background Information

[0004] A panel is known from WO 01/96688 A1. In the conventional art, the chamfer produced by milling is either left untreated or is covered by a decorative strip which is either laminated onto it or adhered to it. A method of this type is very expensive and requires extremely precise work, since the chamfers are very narrow. The production costs are high due to the correspondingly slower process speeds; likewise, inexact gluing results in visually less appealing products or defective cover, which leads to swelling of the wood material when penetrated by liquid.

### SUMMARY OF THE INVENTION

[0005] An object of the invention is to provide an improved panel with respect to surface sealing and an economically more effective method for producing such a panel.

[0006] This object is attained according to the invention in that the embodied chamfer or the form-fitting elements are coated with at least one melamine layer through which a higher durability of the panel can be achieved with regard to mechanical wear or against penetration by water. Furthermore, a higher quality is ensured with respect to the prior art with regard to the sealing of the chamfer surface.

[0007] It is provided in a further development that a decorative layer is applied on the upper side of the panel, which decorative layer preferably comprises a melamine-impregnated paper layer. A decorative layer of paper is likewise applied to the surface of the chamfer, alternatively the chamfer is varnished or printed, preferably in the color of the decorative layer. Subsequently, the chamfer thus treated is coated or impregnated with melamine through which the desired resistance to water or mechanical wear is achieved. This coating of the chamfer or of the locking elements simultaneously serves to seal the wood material against mechanical stress and penetration by moisture or foreign bodies. The varnish layer applied or the printing alternatively features a color approximating the decorative layer so that the most uniform coloring of the surface in the installed state is achieved. Alternatively, contrasting colors can be provided based on esthetic preferences, so that the V-shaped vertical joint produced between two panels is emphasized. A color design is particularly advantageous when the carrier plate of the decorative layer was made of a fiber material which generally features a design that is less appealing in terms of color. If other wood materials are used, e.g., with the use of chipboard or OSB (Oriented Strand Boards), a decorative layer can be omitted; however, trans-

parent films or transparent protective layers are usually pressed onto the surfaces of such materials in order to ensure a surface protection.

[0008] To increase throughput speeds, it is provided that the melamine applied is dried via a thermal radiator or a heating duct. To avoid premature hardening or clotting or a non-uniform coating, it is provided that a standard climate is created in the vicinity of the application head so that the melamine or varnish application is always carried out under the same microclimatic conditions. This occurs in that the air in the vicinity of the varnish head is humidified.

[0009] Other exemplary embodiments and advantages of the present invention may be ascertained by reviewing the present disclosure and the accompanying drawing.

### BRIEF DESCRIPTION OF THE DRAWINGS

[0010] The present invention is described in the detailed description which follows, in reference to the noted plurality of drawings by way of non-limiting examples of exemplary embodiments of the present invention, in which like reference numerals represent similar parts throughout the several views of the drawings, and wherein:

[0011] FIG. 1 shows a diagrammatic representation of a panel in cross-sectional view; and

[0012] FIG. 2 shows a detailed view of FIG. 1.

### DETAILED DESCRIPTION OF THE PRESENT INVENTION

[0013] FIG. 1 shows a panel 1 in a cross-sectional view which is coated on an upper side 15 with a decorative layer 16 and on an under side 5 with a so-called counteracting layer 6. The core 10 of the panel 1 is made of an MDF or HDF material and is compressed at high pressure during production. The decorative layer 16 and the counteracting layer 6 serve as a stabilizing film and give the panel 1 a durable surface. The form-fitting elements 2, 3 arranged on the lateral edges are used to lock several panels to one another and lock the panels both in the horizontal direction H and in the vertical direction V. In addition to the embodiment shown, laying profiles or pivot profiles can also be available on the lateral edges.

[0014] Alternatively to the use of fiberboards as core 10, OSB materials, chipboard or laminated wood can be used. Starting from the upper side 15, one chamfer 20 each is milled out on both lateral edges, which chamfers in the locked state form a V-shaped vertical joint.

[0015] In order to avoid a swelling of the core 10 and in order to make the panel 1 more durable, it is provided that the surfaces of the chamfers 20 are provided with a varnish layer, a paper layer or a print which are coated with a melamine layer 21.

[0016] FIG. 2 shows a detailed view of the panel 1 in an enlarged representation from which it can be discerned that material was removed, preferably milled, from the decorative layer 16 and the core 10 on one lateral edge of the panel 1. This chamfer 20 preferably arranged at an angle of 45° is coated with a melamine layer 21, the melamine layer 21 being applied after varnishing, printing or coating with a paper layer.

[0017] The varnish can be embodied as an opaque varnish if the core **10** of the panel **1** has an undesirable color. In particular, when natural woods are used, as with a laminated wood or with OSB, no decorative layer needs to be present, instead a surface sealing, e.g., through a transparent melamine film, is sufficient. The varnish to be applied and the melamine layer **21** for sealing the chamber **20** then can also be transparent.

[0018] Alternatively to a color-coordinated embodiment of the varnish layer or the melamine layer **21**, this can be embodied to contrast with the decorative layer **16** in order to emphasize the embodiment of the joint.

[0019] In contrast to a film adhesion on the chamfer **20**, the varnishing or printing and the subsequent coating with melamine has a higher quality regarding resistance to moisture and wear. Likewise the process control is simpler and high throughput speeds and thus higher productivity can be achieved. Drying the varnish, the printing ink and the melamine takes place through a thermal radiator, which preferably works in a range of 200° C. to 400° C.

[0020] While the present invention has been described with reference to an exemplary embodiment, it is understood that the words which have been used herein are words of description and illustration, rather than words of limitation. Changes may be made, within the purview of the appended claims, as presently stated and as amended, without departing from the scope and spirit of the present invention in its aspects. Although the present invention has been described herein with reference to particular means, materials and embodiments, the present invention is not intended to be limited to the particulars disclosed herein; rather, the present invention extends to all functionally equivalent structures, methods and uses, such as are within the scope of the appended claims.

1. A panel of a wood material which is provided with means for the detachable connection of a least two panels, form-fitting elements for locking in a vertical direction and in a horizontal direction with another panel are embodied on

at least one lateral edge of a first panel, a chamfer is embodied on at least one lateral edge starting from an upper side, the chamfer or the form-fitting elements are coated or impregnated with at least one melamine layer.

2. The panel according to claim 1, wherein a decorative layer is applied to an upper side of the panel and the melamine layer features a color approximating the decorative layer.

3. The panel according to claim 1, wherein the decorative layer is a varnish layer applied on the chamfer of the panel or the chamfer is printed and subsequently the melamine layer is applied.

4. The panel according to claim 1, wherein the chamfer is varnished or printed.

5. The panel according to claim 1, wherein the panel includes a core made of medium density fibreboard (MDF) or high density fibreboard (HDF) material compressed at high pressure during production.

6. The panel according to claim 1, wherein the panel includes a core made of oriented strand board (OSB) materials, chip board or laminated wood.

7. The panel according to claim 1, wherein the chamfer in a locked state of adjoining panels form a V-shaped vertical joint.

8. The panel according to claim 1, wherein the surface of the chamfer is provided with a varnish layer, a paper layer or a print which is coated with the at least one melamine layer.

9. The panel according to claim 8, wherein the varnish is an opaque varnish.

10. A panel comprising form-fitting elements for locking in a vertical direction and in a horizontal direction with another panel are provided on at least one lateral edge of a first panel, a chamfer is provided on at least one lateral edge starting from an upper side, the chamfer or the form-fitting elements are coated or impregnated with at least one melamine layer.

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