

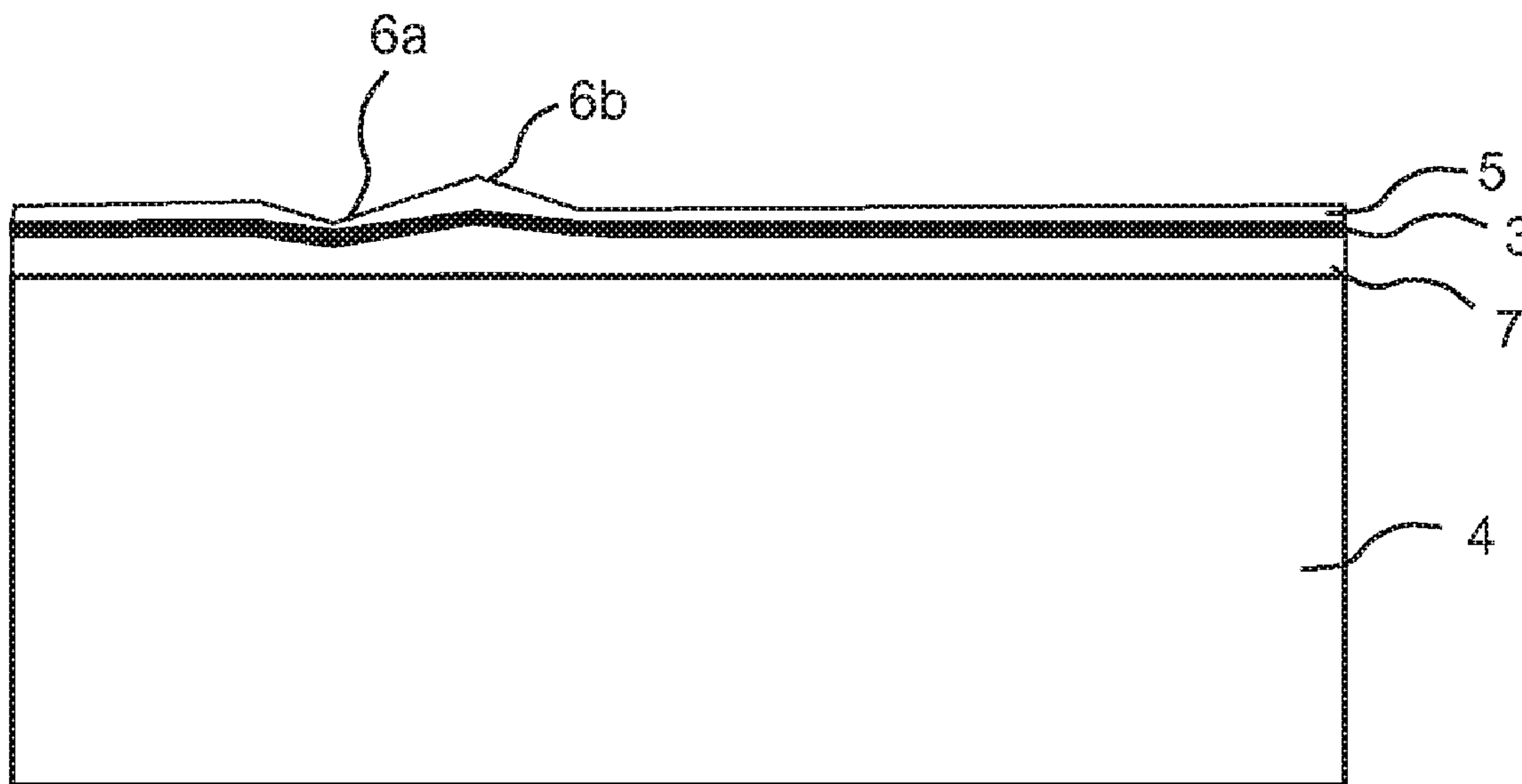


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Fig. 2



(57) Abrégé/Abstract:

A method is disclosed of manufacturing a transparent wear resistant surface layer (1). The method comprising the steps of, applying a decorative material on a carrier, applying a dry powder layer comprising a mix of processed wood fibres, binder and wear resistant particles above the decorative layer, curing the mix to a decorative surface, comprising the transparent wear resistant layer, by applying heat and pressure on the mix. In a preferred embodiment the method comprises the step of pressing the mix against an embossed matrix to create an embossed decorative surface with high wear resistance.

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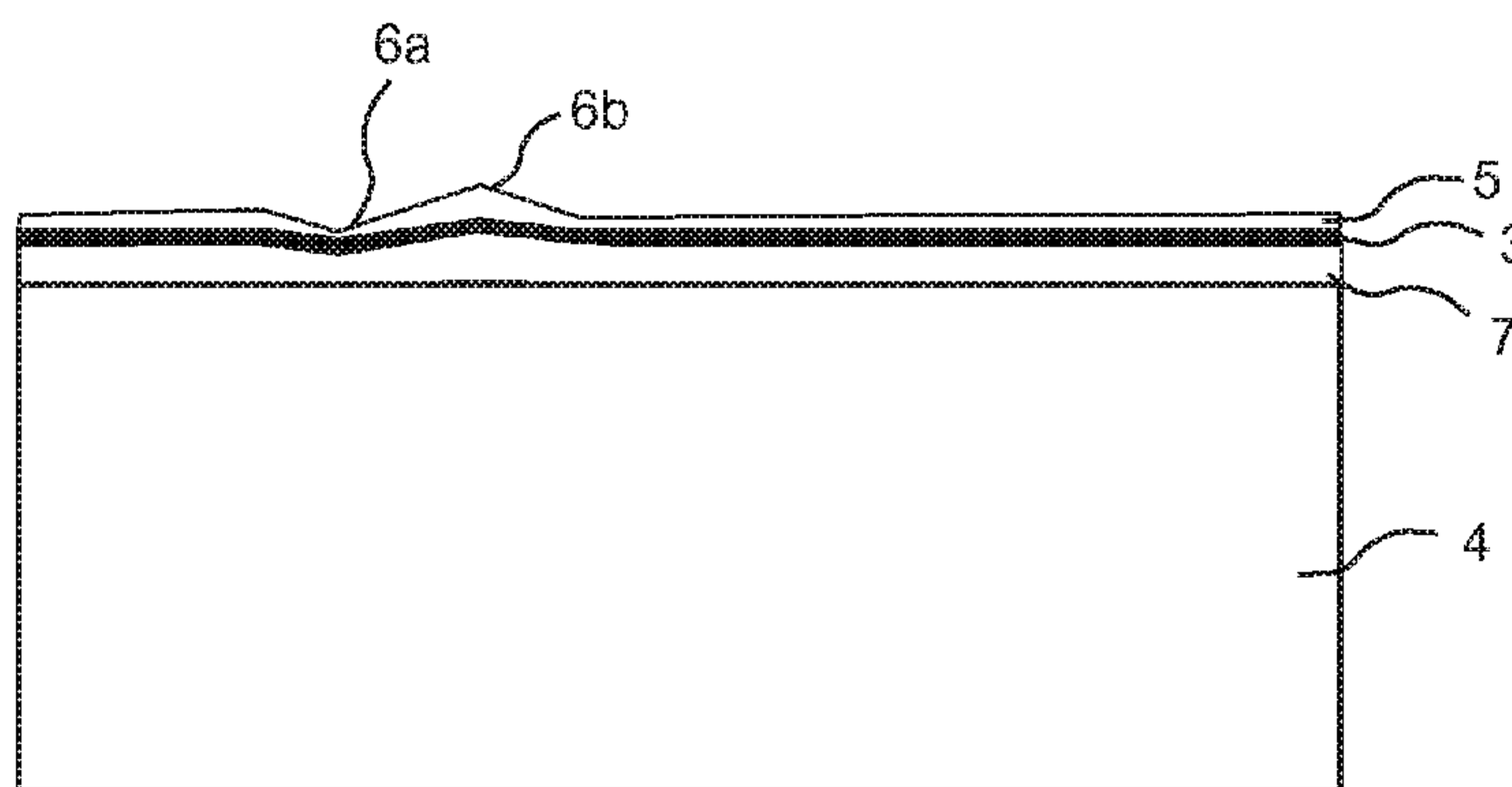
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(54) Title: METHOD FOR MANUFACTURING A BUILDING PANEL COMPRISING A POWDER OVERLAY

Fig. 2



(57) Abstract: A method is disclosed of manufacturing a transparent wear resistant surface layer (1). The method comprising the steps of, applying a decorative material on a carrier, applying a dry powder layer comprising a mix of processed wood fibres, binder and wear resistant particles above the decorative layer, curing the mix to a decorative surface, comprising the transparent wear resistant layer, by applying heat and pressure on the mix. In a preferred embodiment the method comprises the step of pressing the mix against an embossed matrix to create an embossed decorative surface with high wear resistance.

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METHOD FOR MANUFACTURING A BUILDING PANEL COMPRISING A POWDER OVERLAY

Technical Field

The disclosure generally relates to the field of fibre-based panels with wear resistant surfaces for building panels, preferably floor panels. The disclosure relates to building
5 panels with such wear resistance surface and to production methods to produce such panels.

Field of Application

Embodiments of the present invention are particularly suitable for use in floating floors,
10 which are formed of floor panels with a wood fibre core and a decorative wear resistant surface. The following description of technique, problems of known systems and objects and features of the invention will therefore, as a non-restrictive example, be aimed above all at this field of application and in particular at floorings which are similar to traditional floating wood fibre based laminate floorings. Embodiments of the invention do not exclude floors that are glued down to a sub floor.

15 It should be emphasized that embodiments of the invention can be used as a panel or as a surface layer, which is for example glued to a core. The disclosure can also be used in applications as for example wall panels, ceilings, and furniture components and similar. It could also be used in floorings with optional surface materials such as cork or wood, in order to improve wear and design properties

20 Background

Wood fibre based direct pressed laminated flooring usually comprises a core of a 6-12 mm fibre board, a 0.2 mm thick upper decorative surface layer of laminate and a 0.1-0.2 mm thick lower balancing layer of laminate, plastic, paper or like material.

A laminate surface generally comprise two paper sheets, a 0.1 mm thick printed
25 decorative paper and a transparent 0.05-0.1 mm thick overlay paper applied over the decorative paper and intended to protect the decorative paper from abrasion. The print on the decorative non-transparent paper is only some 0.01 mm thick. The transparent overlay, which is made of refined fibres (e.g. α -cellulose fibres), comprises small hard and transparent aluminium oxide particles. The refined fibres are rather long, about 2-5

CLAIMS

1. A method of manufacturing a building panel, wherein the method comprises the steps of:
 - applying a decorative layer on a carrier;
 - applying a dry powder layer, comprising a mix of processed wood fibres, binder and wear resistant particles, on the decorative layer; and
 - curing the mix by applying heat and pressure to obtain a decorative surface layer (1) comprising a transparent wear resistant layer.
2. The method as claimed in claim 1, wherein the panel is a floor panel.
3. The method as claimed in claim 1 or 2, wherein the carrier is a wood based board, preferably a HDF or MDF board.
4. The method as claimed in any one of the preceding claims, wherein the wear resistant particles are aluminium oxide.
5. The method as claimed in any one of the preceding claims, wherein the decorative layer is a printed paper.
6. The method as claimed in any one of the preceding claims, wherein the curing step comprises pressing mix is against an embossed matrix.
7. The method as claimed in claim 6, wherein the pressing against the embossed matrix creates an embossing depth that exceeds a thickness of the decorative layer.
8. The method as claimed in claim 6, wherein the pressing against the embossed matrix creates an embossing depth that exceeds the combined thickness of the decorative layer and the transparent wear layer.
9. The method as claimed in any one of the preceding claims, wherein the decorative layer comprises a transparent paper based overlay comprising aluminium oxide.
10. The method as claimed in in any one of the preceding claims, wherein the decorative layer comprises a transparent paper based overlay comprising aluminium oxide applied over a lower dry powder layer, the lower dry powder layer comprising wood fibres and a binder.

11. The method as claimed in any one of the preceding claims, wherein the processed wood fibres are essentially all smaller than 1.0 mm.

12. The method as claimed in any one of the preceding claims, wherein the processed wood fibres are essentially all smaller than 0.5 mm.

13. The method as claimed in any one of the preceding claims, wherein the heat and pressure is applied during 5-200 seconds.

14. The method as claimed in any one of the preceding claims, wherein heat and pressure is applied during 5-30 seconds.

15. The method as claimed in any one of the preceding claims, wherein the heat applied is in the range of about 140 °C to about 200 °C, preferably in the range of about 160 °C to about 180 °C.

16. The method as claimed in any one of the preceding claims, wherein the pressure applied is in the range of about 20 to about 60 kg/cm², preferably about 40 kg/cm².

17. The method as claimed in any one of the preceding claims, wherein the thickness of the transparent surface layer exceeds the thickness of the decorative layer.

18. The method as claimed in any one of the preceding claims, wherein the decorative surface layer is embossed and the thickness of the transparent surface layer varies such that the thickness in an upper portion exceeds a thickness of a lower portion.

19. A method of manufacturing a building panel, wherein the method comprises the steps of:

- applying a decorative layer on a carrier;
- applying a dry powder layer, comprising a mix of a thermoplastic material and wear resistant particles, on the decorative layer; and
- applying heat and pressure on the powder layer to obtain a decorative surface layer comprising a transparent wear resistant layer.

20. The method as claimed in claim 20, wherein the wear resistant particles comprise aluminium oxide and/or silica.

21. The method as claimed in claim 20, wherein the mix comprises processed wood fibres.

Fig. 1

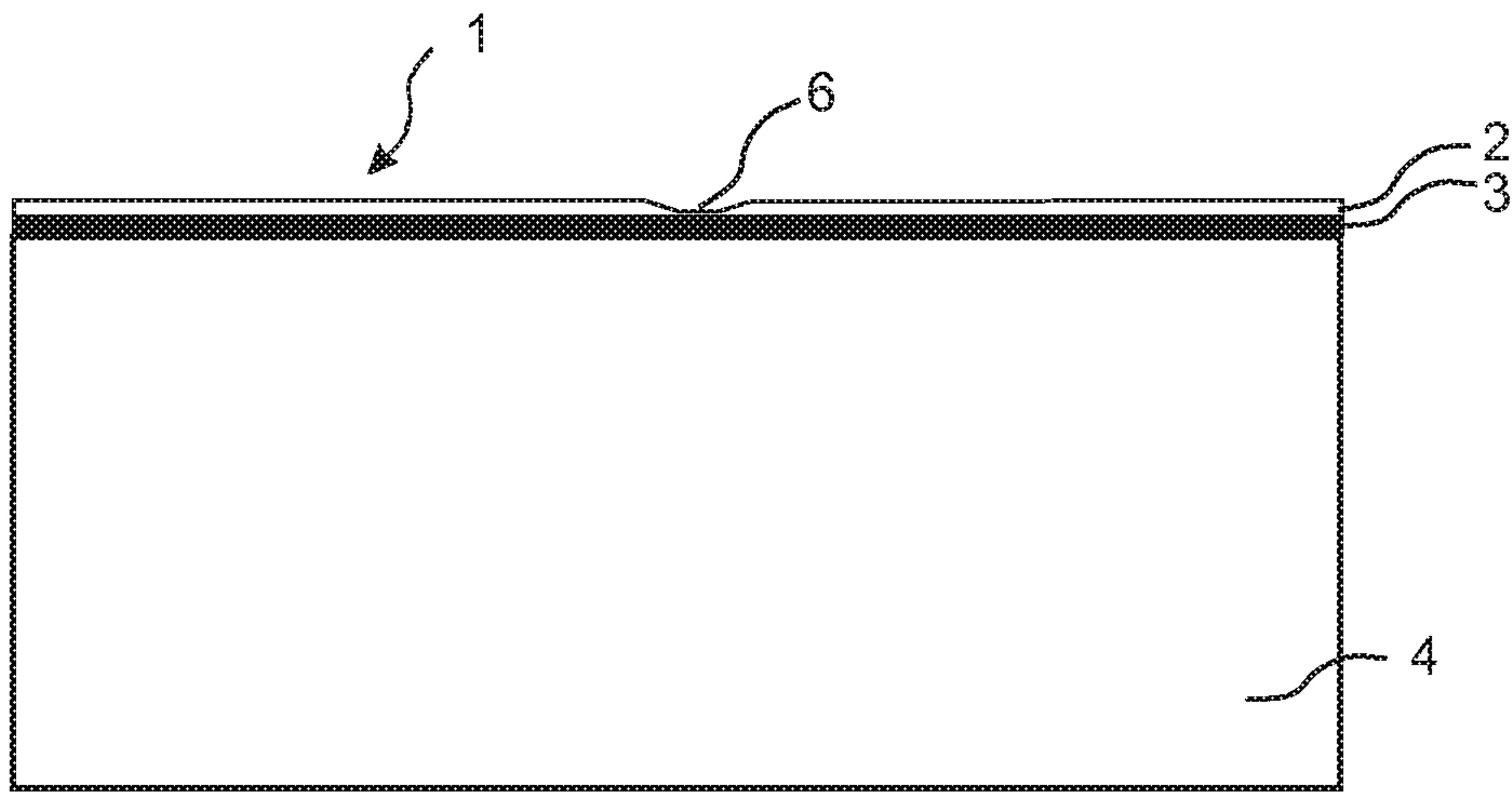


Fig. 2

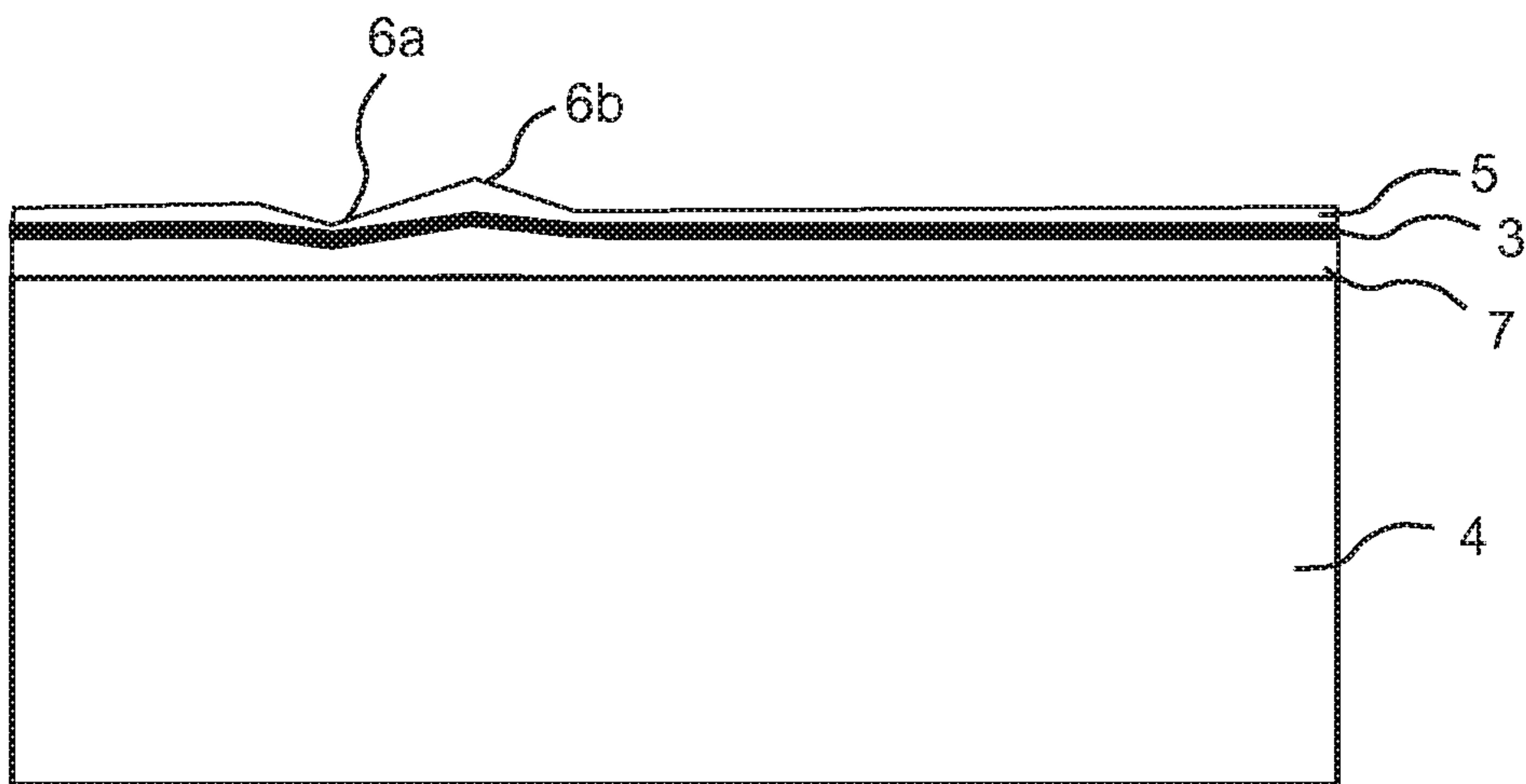


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