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WOODEN DECK COVERING ON SHIPS

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4 Claims. (Cl. 114—85)

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The present invention refers to a wooden deck covering on ships which consists of comparatively long and narrow boards fixed to transversally extending beams supporting the deck covering.

In wooden deck coverings of this kind previously known the grooves between the individual boards are filled with fibre material and some plastic material so as to make the grooves elastic. In a wooden deck covering according to the present invention most of the grooves lying between the long and narrow boards are filled with glue and thus rigid whereas only a few of the grooves are filled with fibre material and thus elastic. These few elastic grooves of the deck covering according to the invention are sufficient for protecting the deck covering from any deformations which may occur during its use owing to bending actions in the supporting beams. The adaptation of the deck covering to the support is effected according to the invention by means of a special method of production of the deck covering which method is described hereinafter.

According to this method of production, the deck covering is built up with the individual boards in the very place where it is to be used, the boards being exposed to lateral pressure when glued together and the addition of each further board taking place in a new stage of the working process. At first only two boards are fixed on the transversally extending beams supporting the deck covering and are inserted between two angle irons which are also fixed to said beams. Then, during the gluing together of the boards, a lateral pressure is exerted upon these boards by means of the two angle irons and by a wedge inserted between one of the angle irons and the board adjacent to this angle iron. The successive addition of further boards takes place in such a way that one of the angle irons is displaced for each board to be added, by the breadth of that board, whereupon the new board is glued to the last board in the same way as was the case with the first boards. Thus the wooden deck covering is adapted to the support, which would not be possible if a ready-made deck covering having most of its grooves between the individual boards filled with glue and thus rigid was used.

Further details of the invention are shown in the accompanying drawing which shows two embodiments of the invention. Figure 1 is a cross section of a deck covering according to one form of the invention. Figure 2, too, is a cross section of the same deck covering but also of the means used for its building up. Figure 3 shows

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schematically another embodiment of the deck covering according to the invention.

Each of the individual boards is, as is shown in Figure 1, composed of five layers. The upper wearing layer 1 consists of a harder and generally more valuable kind of wood than the core layer 2. Besides these two layers there is a comparatively thin lower covering layer 3 lying under the core layer 2. Between the upper wearing layer 1 and the core layer 2 there is a veneer layer 4 and between the core layer 2 and the lower covering layer 3 there is a veneer layer 5. The veneer layers 4 and 5 have a transversal run of grain. The upper wearing layer 1 consists of lengths 8 and the core layer 2 of lengths 10. The lengths 8 of the layer 1 and the lengths 10 of the layer 2 are mutually glued together. Similarly, the individual layers of the boards are mutually glued together. The grooves between the individual boards are numbered 11 and 13. The two grooves 11 on the right and on the left of Figure 1 are filled with glue and thus rigid, while the groove 13 in the middle of Figure 1 is filled with fibre material and some plastic material and thus elastic.

The grooves 11 filled with glue have their upper parts 12 enlarged and filled with some plastic jointing material, the oblique walls of these upper parts 12 being preferably ribbed. The grooves 13 which are enlarged more gradually than the grooves 11 are also filled in their upper parts with a plastic jointing material protecting the grooves from influence of moisture as is also the case with the grooves 11 with respect to the plastic jointing material in the upper parts 12.

At the lower ends of the grooves 11 and 13 the adjoining parts of the lower covering layers are rounded off so that there is formed a pattern at the ceilings of the rooms lying under the deck covering.

The deck covering is fixed to the transversally extending beams 20 supporting the deck covering and generally consisting of iron by means of the bolts 14, the washers 15 and the nuts 16. The fixing points of the individual boards lie about in their midst in transversal direction. At the fixing points of the individual boards cylindrical incisions are made in the wearing layers which incisions are afterwards closed by the properly shaped stoppers 9. These stoppers are of such depths that there remain empty spaces 17 admitting the washers 15 and the nuts 16. The bolts 14 are so long that they penetrate through the lower covering layer 3, the core layer 2, the

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two veneer layers 4 and 5 and the lower part of the wearing layer 1.

The method of production of the new deck covering on ships is illustrated in Figure 2. The boards which are to be mutually glued together are inserted between the angle irons 18. The deck covering is built up in the very place where it is to be used in such a way that first only two boards are inserted between the angle irons 18 which are fixed to the beams 20 by means of the screws 19. By the aid of the angle irons 18 and a wedge 21 inserted between one of the angle irons 18 and the adjacent board a lateral pressure is then exerted upon the two boards while they are glued together. Before the addition of each new board one of the angle irons 18 is displaced for each board to be added by the breadth of that board. Then the new board is glued to the other boards under lateral pressure exerted by the angle irons 18 and the wedge 21. The breadths of the angle irons i. e. the distances between the screws 19 and the bending abutting side of the angle irons are preferably equal to half the breadths of the boards so that the same holes in the beams 20 can be used for fixing the boards and for inserting the angle irons.

In the embodiment of the invention shown in Figures 1 and 2 the individual boards are of equal breadths. Figure 3 shows an embodiment of the invention with boards of unequal breadths. In the example shown the boards B are twice as broad as the boards A. The boards B lie each adjacent to one of the grooves 13 which are filled with fibre material and thus elastic. In order to obtain regular patterns the boards B having the double breadths are provided with incisions C in the midst of their upper and lower sides.

The following dimensions of the single parts of the deck covering according to the invention may serve as an example, but the invention is not restricted to these dimensions:

The boards have a length of several meters preferably corresponding to the length of the room lying under the covering or the section of the deck in question. The breadth of the boards in Figures 1 and 2 is 12 cm. The broader boards in Figure 3 have a breadth of 24 cm. and the narrower boards have a breadth of 12 cm. The depth of the upper wearing layer is $1\frac{1}{2}$ to 2 cm. The depth of the core layer is 4 cm., the depth of the lower covering layer is 0.5 cm. and the depth of the two veneer layers is 0.1 to 0.2 cm.

In comparison with previously known deck coverings on ships the deck covering according to the invention excels in greater simplicity and greater cheapness of its production.

I claim:

1. In a ship, a floor structure comprising a series of supporting beams arranged transversally of the ship and a wooden deck covering composed of comparatively long and narrow boards

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with grooves between them and fixed to the upper surfaces of the beams, a filling of glue in the majority of the grooves between the long and narrow boards and a filling of fibrous material having an elastic action in the remaining grooves between the boards, the number of which grooves is only a small fraction of the grooves filled with glue.

2. Wooden deck covering on ships according to claim 1, the individual boards being composed of several layers, namely, an upper wearing layer consisting of comparatively hard wood, a core layer, a lower covering layer and two veneer layers having a run of grain transversal to the longitudinal extension of the boards and one of which lies between the wearing layer and the core layer, and the other of which lies between the core layer and the lower covering layer.

3. Wooden deck covering on ships according to claim 1, the individual boards being composed of several layers, namely, an upper wearing layer consisting of comparatively hard wood and composed of a plurality of lengths substantially parallel to one another, a core layer composed of a plurality of lengths substantially parallel to one another, a lower covering layer and two veneer layers having the run of grain transversal to the longitudinal extension of the boards, and one of which lies between the wearing layer and the core layer and the other of which lies between the core layer and the lower covering layer.

4. A wooden deck covering on ships in accordance with claim 1 in which some of the boards are broader than the other boards and each of the broader boards lying adjacent to one of the grooves filled with fibrous material and thus elastic.

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