O. TÖNJES.

METHOD OF MAKING COMPOSITE WOODEN BODIES.

APPLICATION FILED SEPT. 20, 1910.

1,010,706. Patented Dec. 5, 1911.

Fig. 1.

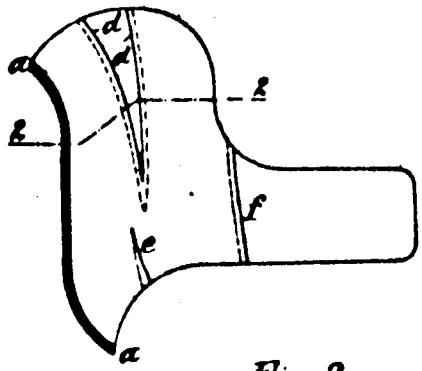
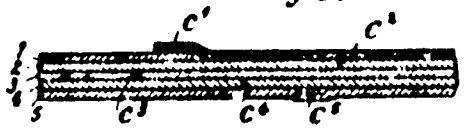


Fig. 2.

Fig. 3.



Witnesses

Inventor

1,010,706. METHOD OF MAKING COMPOSITE WOODEN BODIES. Carl Tönjes, Delmenhorst, Germany. Filed Sept. 20, 1910. Serial No. 582,812.

To all whom it may concern:

Be it known that I, Carl Tönjes, manufacturer, and a subject of the Grand Duke of Oldenburg, German Empire, and a resident of Mühlenstrasse 4, in the city of Delmenhorst, Grand Duchy of Oldenburg, and German Empire, have invented certain new and useful Improvements in Methods of Making Composite Wooden Bodies, of which the following is a specification.

This invention relates to improvements in a method of manufacturing spheroidal bodies from a plurality of superposed wood veneers. Bodies of this class are in extended use in the manufacture of coverings for the bodies of automobiles or the boxes of carriages, and the like, and they consist of a plurality of thin superposed wood veneers. In the manufacture of such bodies much difficulty is caused by the double curvatures of the same which render it difficult to get tight joints between adjacent veneers.

By my invention a strong, tight and practically invisible joint is produced which need not be coated with canvas before applying the varnish thereto. As is known in the art, before varnishing the surfaces a coating is applied thereto, and the said coating is afterward ground with water. In this operation the coating is ground through at various points, and when using canvas as a covering the said canvas imbibes the water used in grinding, whereby it is partly loosened. The method is also objectionable, because the materials are not uniformly dried, and because the materials are in different degrees expanded by heat. Thereby cracks and hollows are produced on the bodies, and the gaps between the adjacent veneers can be seen through the varnish.

The object of the improvements is to provide a method in which the use of canvas as a coating is dispensed with. For this purpose the outer veneers are not so disposed relatively to each other as to abut against each other with their ends, but so as to overlap each other, and the veneers are connected with each other with a water proof glue and under such pressure, that the overlapping ends of the veneers are in part pressed into each other. When afterward grinding the outer parts of the complete body no gaps whatever are visible. Such gaps can be observed, if at all, only by a slight change in the direction of the grain of the wood. Therefore the varnish can be directly applied to the veneer without using a coating of canvas, and no uneven parts or cracks appear on the joints. The number of the veneers used is different according to various conditions. Good results are obtained with three or five wood veneers of a thickness of one millimeter each. Where such bodies are made convex the outer veneer must necessarily gap at certain parts. At such places patch veneers can easily be used which are so cut according to the shape of the said portions, that their margins underlie the margins of such gaps. By gluing under pressure the parts of the wood are almost entirely forced into each other, so that a gap can not be seen even at such places. The overlapping margins of the veneers must not be tapered, but they must be used in their full thickness.

For the purpose of explaining the invention more in detail an example embodying the same has been shown in the accompanying drawing in which the same letters of reference have been used in all the views to indicate corresponding parts.

In said drawings:—Figure 1 is a perspective view of the corner of the body of an automobile which is curved in all directions so as to make a comfortable seat, back and arm support, and Fig. 2 is a sectional top view taken on the line 2—2 of Fig. 1 and Fig. 3 is an enlarged cross-section of the joint of the body shown in Figs. 1 and 2.

Referring more particularly to Fig. 1 the line *a—a* may be supposed to be located in the plane of the drawing. To the portion of the veneer indicated by the said line a central portion of the carriage body is connected. As shown the body consists of a plurality of wood veneers. In the detail view of Fig. 3 five layers are shown which number gives good results. While the inner veneers abut each other with their edges c^2,

c^3, and c^4, the margins of the outer layers c^1 and c^5 overlap with their margins the adjacent layers. At c^1 I have shown in what manner the margins are laid above each other, before gluing the same under pressure, and at c^5 I have shown the shape of the overlapping ends after applying pressure thereto. By this pressure, the hard portions of the fibrovascular bundles of one section are embedded within the soft portions formed between the corresponding hard portions of the other veneer section and vice versa. In this way a homogeneous mutually countersunk structure is formed at the joint of the veneer sections, so that after the completion of the subsequent grinding and polishing operations, no gap will show at said joint, while at the same time the strength of the jointed veneers is considerably increased.

Fig. 1 shows by way of example in what manner the improved method may be used in the manufacture of such bodies. As will readily be understood, by having the body curved in every direction the veneers must necessarily be split when forcing the same into a convex form. The line *d—d* indicates in a diagrammatical way, that the said split portion must be filled up by means of a plurality of patches. Of course, by grind-

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ing the surface of the joint the said line disappears. Similar conditions are indicated at the portion *e* of the body. But in this case the veneer does not form a gap, but as the adjacent portions of the veneer are curved toward each other, the veneer must be split, and the margins must be so arranged as to overlap each other, as is shown in the said figure. Also portions of this character are made invisible by the method described. The letter *f* illustrates an example in which two veneers are jointed to each other.

I claim:

Method of forming a spheroidal wooden body which consists in arranging a plurality of veneers into superposed layers, gluing said veneers, abutting the veneers of each of the inner layers, overlapping the unreduced edges of the veneers of the outer layers, and applying pressure to said overlapped edges, said pressure being of such a strength as to mutually countersink said edges into each other whereby the surface fibers of one of said edges are forced between the contiguous surface fibers of the other edge.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses,

CARL TÖNJES.

Witnesses:
FREDERICK HOYERMANN,
FERDINAND REICH.