

Oct. 11, 1927.

A. H. VAN DER WERFF

1,644,801

METHOD OF TREATING WOOD

Filed Sept. 5, 1925

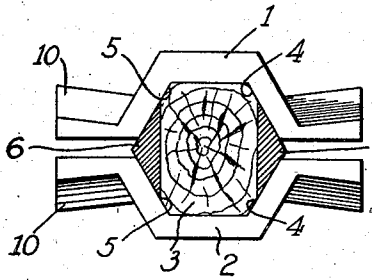


Fig-1-

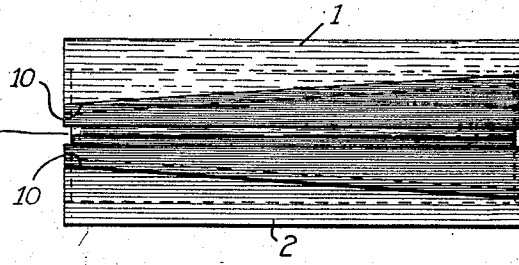


Fig-2-

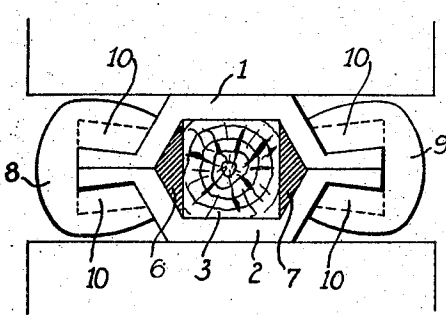


Fig-3-

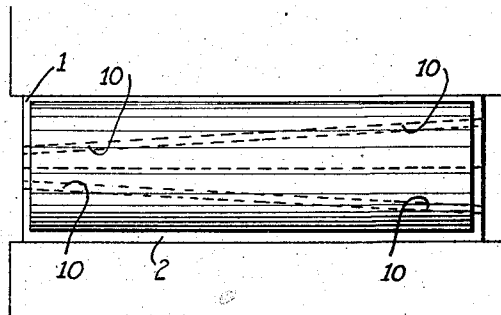


Fig-4-

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METHOD OF TREATING WOOD.

Application filed September 5, 1925. Serial No. 54,840.

My invention consists in a method of compressing wood, the method being practised in such a way, that the compression pressure is exerted uniformly and simultaneously on a number of sides of the wood substantially perpendicular to the length of the fibre. In practice, molds are used, which are so adjusted that the pressures occurring in one direction release the pressure effect in the still necessary other direction. In this way, the compression can be carried to extreme limits, and if the pressure is exerted as above stated, the lengths of the fibres are caused to approach one another without being bent or otherwise distorted.

By the method according to the present invention, it is possible to make molded wooden pieces of a predetermined shape, and having a predetermined density. The green or previously dried wood is cut into pieces. The wood can even be low grade, its measurements being determined according to the kind of wood used, its moisture content and the degree of pressure to which the wood must be subjected for obtaining pressed objects of the desired permanent final dimensions and having the desired density. The wood is pressed in a mold having a number of sides whose dimensions correspond to the final dimensions of the pressed object, and the pressure on the wood is exerted simultaneously in several directions, and then, the compressed wood is heated in the mold while still under pressure.

The extent of the pressure and the degree and duration of the subsequent heating are determined according to the kind of wood used, its moisture content, and the use for which the product is intended. As the heating is done, as long as the wood is under pressure, the heating can be carried much further than is ordinarily done, and the wood becomes visibly horny.

The pressed wood is especially suited as a material for the production of shuttles for the textile industry, showing a far greater hardness, tensile strength, etc., than molded pieces produced by previously known methods. It can be cut, turned or worked upon in any other way without any further mechanical or other intermediate treatment.

In the drawing, in which I have illustrated, by way of example, my novel method, Figs. 1 and 2 show the open mold respectively in end and side elevation prior to compression, whereas Figs. 3 and 4 respectively show the closed mold after the compression.

According to the illustration, the mold comprises members 1 and 2, which are placed on opposite sides of the cut piece of wood 3 to be compressed. The inner walls of the mold members are bevelled toward the outside as indicated at 4 and 5, forming guide surfaces for the lateral parts 6 and 7 of the mold.

The piece of wood is cut so that it corresponds to the cross-sectional shape of the mold, its compression being determined by the final position of the parts of the mold. After the placing of the wood into the mold, the same is subjected to opposing perpendicular pressures on the parts 1 and 2. The parts 6 and 7 will then automatically cause a pressure effect perpendicular to the first mentioned pressure, whereby a homogeneously compressed piece of wood is attained. When after the completed compression, the mold, according to Figs. 3 and 4 is closed, the parts 1 and 2 of the mold are held together by wedge-shaped clamps 8 and 9, which are moved along the correspondingly shaped laterally projecting portions 10 of the mold members 1 and 2 and in this position, the wood may be subjected to further treatment, such as heating, until the compressed piece is completely dried.

I claim:

1. A method of compressing wood, which consists in first cutting the wood into pieces of a size corresponding to the finished product and determined by the moisture content of the wood and the desired density of the finished product, then compressing the said pieces by means acting simultaneously transversely of the grain in at least two directions at substantially right angles to each other and toward the center of the piece to a point where, the wood cells are disintegrated while avoiding any pressure in or parallel to the fibers.

2. A method of compressing wood, which consists in first cutting the wood into pieces

of a size corresponding to the finished product and determined by the moisture content of the wood and the desired density of the finished product, then compressing the said
5 pieces by means acting simultaneously transversely of the grain in at least two directions at substantially right angles to each other and toward the center of the piece to a point where the wood cells are disintegrated, while avoiding any pressure in or
10 parallel to the fibers, and heating the wood while maintaining it under pressure.

In testimony whereof I affix my signature.

AUKE HERMANNUS van der WERFF.