

E. C. HISCOCK.
LAMINATED BOARD.
APPLICATION FILED MAY 20, 1910.

982,720.

Patented Jan. 24, 1911.

Fig. 1.

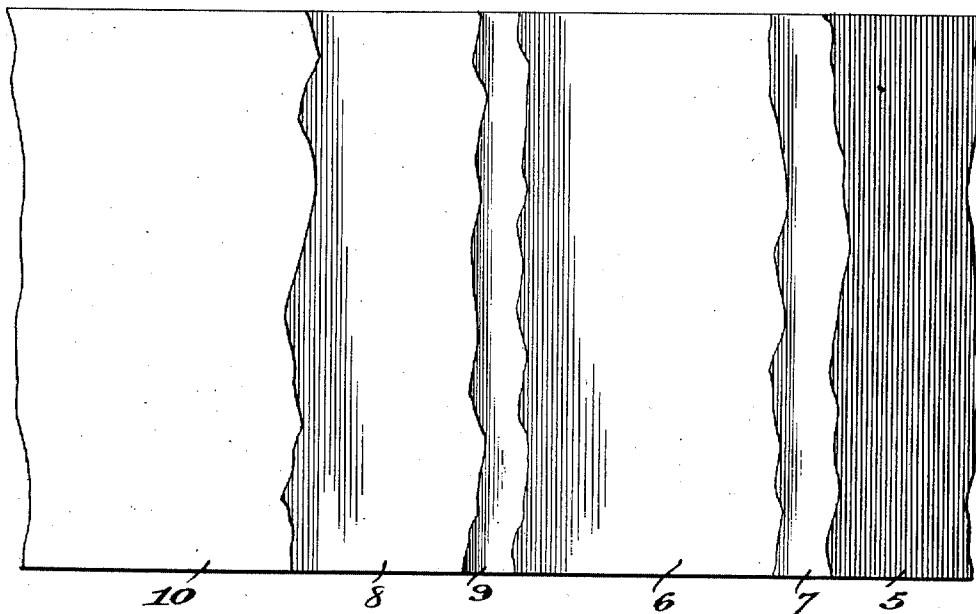
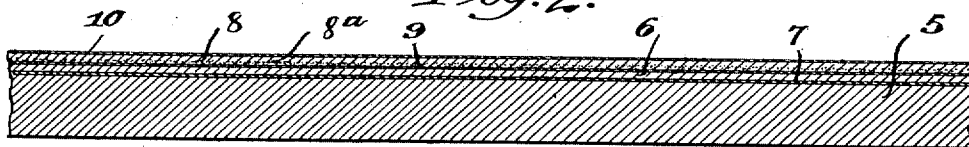


Fig. 2.



Witnesses,
S. S. Mann

Inventor,
Emory C. Hiscock

Nellie B. Dearborn

By

Offield, Towle, Graves & Offield.

Attw.

UNITED STATES PATENT OFFICE.

EMORY C. HISCOCK, OF CHICAGO, ILLINOIS.

LAMINATED BOARD.

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Specification of Letters Patent.

Patented Jan. 24, 1911.

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To all whom it may concern:

Be it known that I, EMORY C. HISCOCK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Laminated Boards, of which the following is a specification.

This invention relates to improvements in the art of veneering, and has reference more particularly to the production of veneered or laminated boards or similar structural parts such as are extensively used in the manufacture of articles of high grade furniture adapted to be varnished and polished.

15 Laminated board structures of this type manufactured under the generally prevailing practice of the present day comprise a body board or blind, an intermediate binder consisting of a thin sheet of wood cemented thereto with its grain crossing the grain of the blind, and a sheet of veneer cemented to said binder usually with its grain crosswise of the grain of the binder and parallel with that of the blind, although the veneer is sometimes applied with its grain parallel with that of the binder. The veneer is usually of some high grade and expensive wood, such as mahogany, walnut, and the like; and where it forms the exposed surface in prominent articles of furniture, such as pianos, tables, chairs, and the like, it is usually stained, varnished and highly polished. It has been found in practice that this polished surface deteriorates in brilliancy and general appearance after a short time owing to what is known as the crazing of the polished surface; that is, the formation of what look like very minute blisters or tiny eruptions all over the polished surface, these being more or less noticeable according to the angle at which the light may happen to strike the surface and be reflected to the eye of the observer. When this condition arises, careful repolishing will temporarily eliminate the defect, but the surface again rapidly deteriorates and resumes its former appearance. The above effects are observable in constructions where the veneer is laid with its grain at right angles to the grain of the wood binder. Where the veneer is laid with its grain parallel with the grain of the binder, the crazing effect is not so noticeable, but the veneer frequently presents minute splits or cracks lengthwise of its grain. Hence both constructions fall short of an ideally perfect construction with

reference to durable and lasting qualities of surface appearance, and for a long time the attention and efforts of manufacturers and experts in the art of veneered woods have been directed toward finding a satisfactory solution of the problems presented by these inherent defects. It has been generally supposed that the defect of crazing was due to the quality of the varnish or other surface finish applied to the veneer, and I have myself made many experiments with various varnishes and other wood dressings, with the result that I have finally discovered that the foundation cause of this defect lies, not in the varnish or other dressing, but in the character and behavior of the binder commonly employed between the veneer and the body or blind; the defect being due as I now believe to the working of the particles of the binder under the variations of temperature and moisture conditions of the atmosphere. Hence, I decided that the correct solution of the problem lay in the discovery of some material to serve as a binder which would be free from the defects of the various woods generally employed. After much experiment I discovered that the chief essential in a binder was a perfect homogeneity (or uniformity of structure) in all directions in the fibrous structure of the binder; that is, a grainless structure presenting equal and effective resistance to disruption both lengthwise and crosswise. After experimenting with various materials of this general character, I have discovered that the most perfect results are obtainable with the use, as a binder of vulcanized fiber in sheet form. This material is exceedingly hard and tough, presenting a high degree of resistance to disruptive strains in all directions, and it unites powerfully with adhesives such as are commonly employed in veneer work, and hence it most perfectly fulfils all of the various conditions required of a binder designed to prevent subsequent change in the condition of the veneer and its polished surface.

In order that my invention may be more fully and clearly understood, I have illustrated in the accompanying drawing a laminated board constructed in accordance with the invention, in which drawing—

Figure 1 is a top plan view of a section of such a board, with the several laminations thereof broken off at various points; and Fig. 2 is a vertical cross section thereof.

Referring to the drawing, 5 designates the body board or blind on which the veneered structure is built.

6 designates the binder, which preferably consists of a sheet of manufactured material commercially known as "vulcanized fiber", which binder is firmly adhered to the body 5 by a thin layer of glue or other cement indicated in somewhat exaggerated form at 7.

On the binder is then laid the veneer 8, being secured thereto by a thin layer of glue or other cement indicated at 9. Where the veneer is very thin under the present practice of applying the glue directly to the under side of the veneer, this glue works into the pores of the wood and sometimes shows objectionably from the outer side. To prevent this I apply to the under side of the veneer, before adhering the same to the binder, a suitable filler, such, for instance, as white lead, mixed with a highly volatile vehicle such as benzin and thoroughly rubbed into the wood. The vehicle rapidly evaporates, and this leaves the wood filled with a dry substance which does not cause any swelling, shrinking or working of the fibers of the wood, and which at the same time forms with the glue a good adhesive. I have herein indicated the presence of such a

filler in the lower side of the veneer strip 8 at 8^a. The outer side of the veneer is treated as usual according to the kind and character of finished surface; an ordinary polished varnish being herein indicated at 10.

I have found by test that a laminated structure constructed as described will retain the varnish or other surface finish in a perfect condition so far as the influence of any and all internal courses is concerned.

I claim:

1. A laminated board, comprising a body member, a grainless fibrous binder cemented thereto, and a veneer cemented to said binder, said veneer having incorporated therein from its underside a filler of white lead, substantially as described.

2. A laminated board comprising a body member, a binder of vulcanized fiber cemented thereto, a veneer cemented to said binder, said veneer having incorporated therein from its underside a filler of white lead, and a varnish finish on the outer side of said veneer, substantially as described.

EMORY C. HISCOCK.

Witnesses:

CHARLES J. SCHMIDT,
NELLIE B. DEARBORN.