

F. V. TISCHER.  
VENEERING PROCESS.  
APPLICATION FILED MAY 8, 1913.

1,170,021.

Patented Feb. 1, 1916.

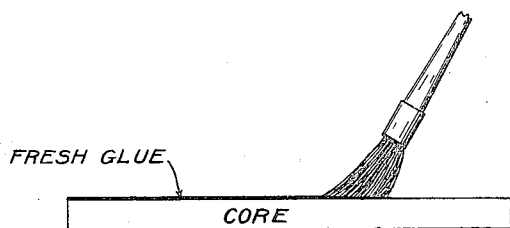


FIG. 1.

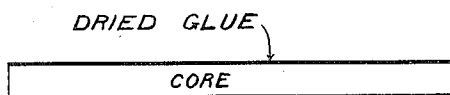


FIG. 2.

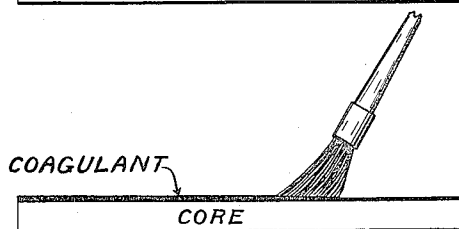


FIG. 3.

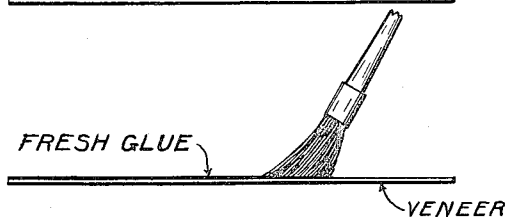


FIG. 4.

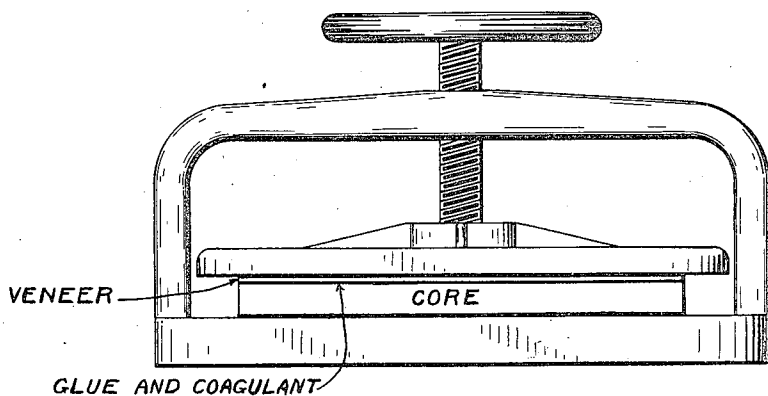


FIG. 5.

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Witnesses

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# UNITED STATES PATENT OFFICE.

FRANK V. TISCHER, OF DAYTON, OHIO.

## VENEERING PROCESS.

1,170,021.

Specification of Letters Patent.

Patented Feb. 1, 1916.

Application filed May 8, 1913. Serial No. 766,413.

*To all whom it may concern:*

Be it known that I, FRANK V. TISCHER, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented a new and useful Veneering Process, of which the following is a specification.

My present invention is an improvement on the process described in my Letters Patent of the United States, No. 1,064,789. It is in fact, in its preferred form, an extension of the process described in said patent since it utilizes the process there described in its entirety and simply adds one step to it, thereby producing a new result. The process described in the patent referred to is briefly this: The article to be veneered, which will hereinafter be called the core, is served with a coat of glue, which is allowed to dry. The veneer is then given a coat of glue and applied to the dried coated surface of the core, after which it is subjected to pressure, and heated cauls if desired, in the usual manner. While veneering done by this method is better in many respects than that done by other methods it is not proof against injury by excessive moisture, and the principal object of the present invention is to render the glue used in this process water-proof, thereby preventing the veneer being loosened if subjected to moisture, or even soaking in water.

In the accompanying drawing, Figure 1 represents fresh glue being applied to the core. Fig. 2 represents the core with dried glue upon it. Fig. 3 represents the core shown in Fig. 2 with a coating of coagulant being applied. Fig. 4 shows fresh glue being applied to the veneer. Fig. 5 shows the prepared veneer applied to the prepared core and in a press.

It is well known that certain chemicals will cause glue in solution to coagulate, or precipitate, and that glue so treated is insoluble in water. But heretofore it has been impossible to utilize this process because the chemicals which produce the desired result act too quickly. That is, adding the chemicals to the glue in the pot coagulates or precipitates the glue and converts it into a more or less solid mass before it can be spread upon the surfaces to be glued. To obviate this difficulty I resort to the following method: After the glue spread upon the core is dry I give the coated side of the core an application of a solution containing

a chemical or chemicals which are known to precipitate glue in solution. I then proceed as before, applying a coat of glue to the veneer and placing it on the prepared core. Obviously, the coagulant acts upon the fresh glue on the veneer just as it would upon glue in the pot. But it also acts upon the glue on the core. The water contained in the fresh glue softens the glue on the core and permits the amalgamation of the old and new glue as described in the application already referred to. Water contained in the coagulating solution no doubt contributes to this result. That this is true is shown by the fact that more or less satisfactory results are obtained if the coagulant is spread upon the veneer instead of the core, and no glue at all put upon the veneer. As a coagulant I have found a saturated solution of bi-chromate of potash satisfactory. I have also used a solution of formaldehyde of from twenty to forty per cent. potency. With a solution containing 200 grains of nitrate of silver to a pint of water I have found that I could obtain the desired results either when the solution was still wet on the core or after it had become perfectly dry. It is not essential that the coagulant be applied in solution; instead, tannic acid may be dusted over the fresh glue with satisfactory results.

Veneering is liable to be subjected at times to considerable moisture, and at other times to dry hot air. Articles of furniture in a furnace heated dwelling are in a very dry hot atmosphere during the winter, and later, when the spring rains set in, will be in a very damp atmosphere for a month or more, and in some cases covered by a film of moisture. These frequent changes and the alternate swelling and drying out of the wood subject the glue under the veneer to considerable strain. To toughen the glue and render it somewhat elastic I have found the following mixture effective:

Alcohol	1 oz.	
Saturated solution bi-chromate of potash	4 "	105
Glycerin	$\frac{1}{2}$ "	

and also the following:

Acetic acid	1 oz.	110
Saturated solution bi-chromate of potash	4 "	
Glycerin	$\frac{1}{2}$ "	
Water	4 "	

The first formula, used as above described, will make the glue quite water-proof and very tough. The latter makes the glue sufficiently water-proof for most purposes, and as tough as the first.

It is to be understood that the proportions mentioned in this application are not essential; neither is the quantity used limited to any particular amount. Variations in quantity or potency will result in varying results, but there is a wide range within which the results attained will be satisfactory.

While, as stated, the principal object of this invention is to water-proof glue used in my veneering process, this is not the only object. Since on one hand the core having a coating of dry glue may receive the coagulant, while the veneer receives a coat of fresh glue; and on the other hand the fresh glue may be omitted and the coagulant applied to the veneer instead, it is obvious that either the core or the veneer may receive a coat of fresh glue while the other receives the coagulant, the two being then put together and pressed in the usual manner. Manifestly, veneering so done will be water-proof though it lacks the qualities contributed by my old process. Furthermore, a core having a coating of dried glue may be treated to a coat of coagulant and the veneer applied without having received either glue or coagulant.

While the terms "core" and "veneer" have been used in referring to a couple I do not wish to be understood as limiting the use of my invention to veneering, for it may be used in any place where a water-proof glue joint is desired. These terms should, therefore, be accorded broad as well as specific meaning.

My knowledge of how or why certain chemicals coagulate glue is limited; but knowing they do and having discovered a way in which these properties of glue and chemicals may be utilized to produce a water-proof joint, I claim:

1. The process of veneering consisting of applying a coat of liquid adhesive substance to the core and permitting it to dry, after which the coated surface is covered with a solution containing a chemical adapted to coagulate said adhesive when in a liquid state; the veneer being then served with a coat of adhesive substance in liquid state, placed in contact with the core and subjected to pressure.

2. The process of veneering consisting of applying a coat of liquid adhesive substance to the core and permitting it to dry, after which the coated surface is covered with a coagulant; the veneer being then served

with a coat of liquid adhesive substance, placed in contact with the core and subjected to pressure; the adhesive applied to the core being such that when it is in a sufficiently liquid state it is capable of amalgamating with the adhesive on the veneer, the adhesive applied to the veneer containing an agent capable of acting upon the dried adhesive on the core and rendering it sufficiently liquid to amalgamate with that on the veneer, the coagulant being such as is capable of coagulating the adhesive placed on the core when in a liquid state, and also that applied to the veneer.

3. The process of veneering consisting of applying a coat of glue to the core and permitting it to dry, after which said glue coated surface is given a coat of solution containing a coagulant and the veneer is given a coat of glue, the core and veneer being then united and subjected to pressure, the glue applied to the core being such that when in a liquid state it is capable of amalgamating with the glue on the veneer, the glue on the veneer containing an agent capable of restoring the dried glue to a sufficiently liquid state to permit of such amalgamation, the coagulant being capable of coagulating the resulting compound.

4. The process of water-proofing a glue joint consisting of compounding glue and a coagulant; the glue and coagulant being applied separately to the members to be joined and combined by bringing said members together, the coagulant being applied immediately before the parts are united.

5. The process of making a waterproof glue joint, consisting of applying a coating of glue in a liquid state to each member, the glue applied to one member being permitted to dry before glue is applied to the other member, the dried glue being served with a coating of coagulant before the members are placed in contact.

6. The process of making a waterproof glue joint, consisting of applying to each of the members to be joined a coating of glue, one of the members being coated a long enough time before the other to permit the glue to dry, the dried glue being served with a coagulant before the other member is placed in contact with it, the coagulant or the glue, or both, containing an agent which will act upon the dried glue and render it capable of amalgamating with the glue or the other member and the coagulant.

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