April 16, 1935. M. E. MILLER 1,997,803

METHOD OF MANUFACTURING DECORATIVE WOODS

Filed Jan. 27, 1934

Fig. 1.

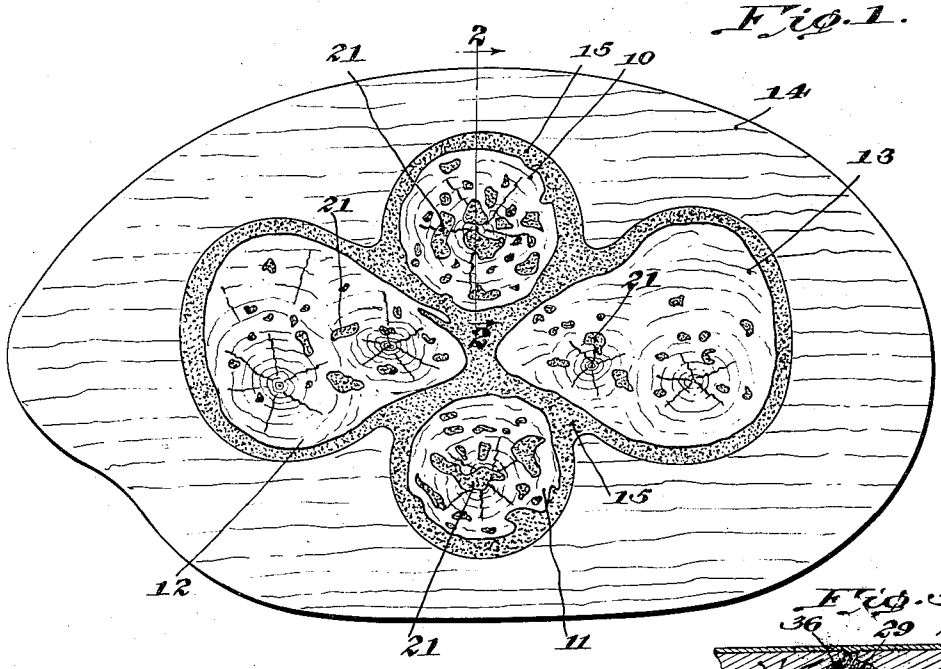


Fig. 5.

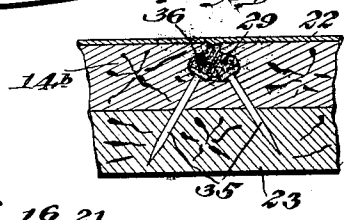


Fig. 2.

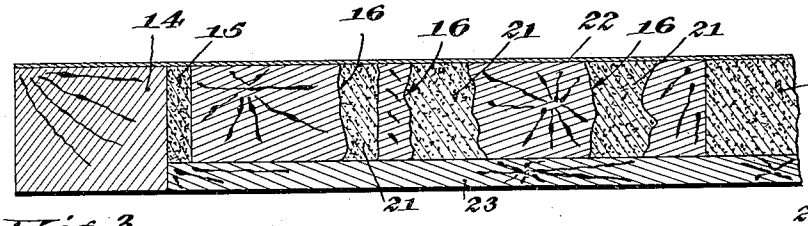
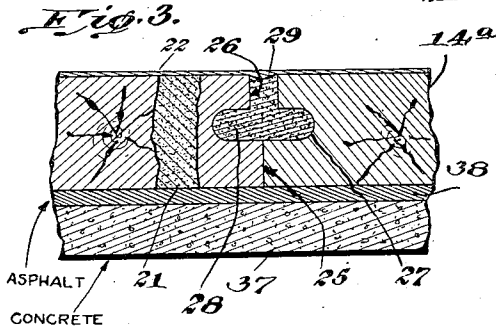
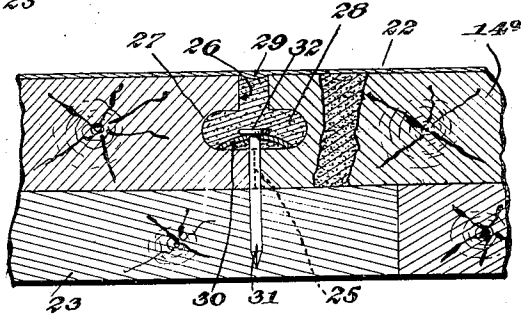


Fig. 4.

Fig. 3.





WITNESS

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METHOD OF MANUFACTURING DECORATIVE WOODS

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4 Claims. (Cl. 41—35)

This invention relates to a method of manufacturing decorative woods for building or cabinet purposes as described and claimed in applicant's earlier application Serial No. 341,460, filed Feb. 20, 1929.

An object of the invention is the provision of a process of treating woods which either have pockets formed therein mechanically or formed by fungus or bacterial action, in the last case the pockets being exposed to view when the logs are cut across the grain to form boards, a waterproofing coating being applied to the surface of the board after the surfaces of the boards have been sanded down or otherwise treated to provide a smooth surface, said pockets being then filled with a plastic cement which will harden, the surface of the wood together with the cementitious filling in the pockets being ground down to form a smooth surface which is treated in any well known manner to provide a highly polished covering.

A further object of the invention is the provision of a method of forming inlays in pockets in wood in which the pockets are either formed by bacterial or fungus action or by manual means, an essential feature of the process consisting of providing the surface of the wood with a waterproof coating, removing extraneous matter from the pockets, and filling the pockets with a cementitious material while preventing the materials from coming in direct contact with the surface.

A still further object of the invention is the provision of a method of forming inlays and pockets in pieces of wood which are filled with a cementitious material with the pieces of wood being connected together along their complementary edges by a hardened cementitious material filling complementarily disposed undercut grooves in the juxtaposed side edges of the pieces of wood when fitted together so that the hardened material will operate to secure the pieces of wood together while the outer exposed portion of the hardened material in the groove will act to provide further decorative elements in the wood.

This invention will be best understood from a consideration of the following detailed description, in view of the accompanying drawing forming a part of the specification; nevertheless, it is to be understood that the invention is not confined to the disclosure, being susceptible of such changes and modifications which shall define no material departure from the salient features of the invention as expressed in the appended claims.

In the drawing:

Figure 1 is a plan view showing a decorated board formed by my new and improved process,

Figure 2 is a transverse section of one form of the invention taken along the line 2—2 of Figure 1,

Figure 3 is a fragmentary vertical section of the decorative wood showing the method of securing strips of wood together,

Figure 4 is a fragmentary vertical section showing a modified form of a method of securing strips of the decorative wood together, and

Figure 5 is a fragmentary vertical section showing another modification of the form shown in Fig. 4.

Referring more particularly to the drawing, 10, 11, 12 and 13 designate sections of a piece of wood, preferably cypress, which have been set into a piece of wood 14 and held in place in said wood by a cement, designated at 16. This cement may be formed of any of the well known ingredients for the purpose and may consist of such elements as magnesite, putty, glue, saw dust, asbestos, sand, iron, or steel chips or filings and various types of finely divided particles of wood. Cement is frequently used for certain types of work. Any of the well known products for filling holes in wood now on market may be employed for the purpose. The cement is suitably colored to give a variety of effects in colors or design.

The type of wood selected belongs to that class which has longitudinal passages running for portions of the length of the trunk and which are normally filled with a finely granulated material caused by the destructive action of bacteria or fungus. However, I prefer to employ cypress which is especially acted upon by a fungus or bacteria after the tree has reached an age of approximately one hundred and twenty-five years. The logs are sawed across the grain into boards so that passages will appear through the boards which are filled with a finely granulated material. After the wood has been cut across the grain and has been sanded down a coating of shellac or other waterproof substance is applied to the surface of the wood before and after the pockets or passages are cleaned of the foreign material. These passages are shown more particularly at 16 in Fig. 2. After the waterproof coating has been applied to the surface and defines the peripheries of the ends of the passages opening into opposite faces of the board, the

foreign material is removed by means of blowing, washing, or by any other means well known in the art. Particular attention is paid to the removal of the material in order that the walls of the passages or pockets which may be formed in the wood are thoroughly cleaned and given a hard surface.

The passages or pockets formed in the wood are then filled with the plastic material which has been previously described and care is taken that the plastic material fits in the passages in such a manner that the outer ends of the passages will be entirely filled in to provide for a continuous surface at opposite faces of the boards. The waterproof coating such as shellac or an oil preparation which has been applied to the outer faces of the boards prevents staining or marring of the wood during the application of the cements and acts as a protective coating to prevent the cement from coming in contact with the surface and to prevent the wood from absorbing moisture. The cement is allowed to dry to a certain extent and is then scraped off and the whole surface of the board is sanded or rubbed down to provide a perfectly smooth finish. Any well known form of varnish, shellac or finishing coats may be applied to the surfaces of the board and such coats extend evenly over the outer end of the cement which has been filled into the passages. Suitable pigments are employed with the cement in order to give the desired color effects.

After the cement has been filled into the passages the outer surface of the board and the outer ends of the cement may be thoroughly sanded down in order to remove the application of the waterproof coating which has been applied for the purpose of preventing marring of the surface of the board.

The waterproofing is used at all times to protect the materials against the absorption of moisture in the construction of floors, furniture and all architectural woodwork for use inside and outside.

I have shown in the drawing a form in which sections of the cypress have been removed from the cross cuts and inserted within the board **14**. It will be appreciated that in the manufacture of floors and furniture the boards themselves may be cut in strips after having been filled with the cement and applied directly in position without the use of the frame shown in Figs. 1 and 2.

In the application of the cement to the passages a great deal of care is exercised in the proper selection of colors in order to provide for a uniform design and for harmony.

In those cases shown in Figs. 1 and 2 where it is desired to cut out a portion of the affected wood, as illustrated at **10**, **11**, **12**, and **13**, such pieces of wood are cut to a definite shape and arranged to form a uniform design after which they are set in a cement background with the cement appearing at the peripheries, as indicated at **15**. This cement is colored in order to conform to the coloring of the pieces of wood **10** to **13**, inclusive, and also to conform to the coloring of the fillers **21** in the pockets **16**.

While I have stated that the logs may be cut transversely or across the grain, varied effects may be had by cutting the log longitudinally or in other words, sawing the board from the length of the log in the usual manner. The cutting of the boards in this method will produce elongated passages and will, therefore, give a different effect from that where the logs are cut across grain.

The surface of the decorative woods, as shown at **22**, is treated with shellac or varnish suitable for the purpose or a specially prepared waterproof oil.

The wood is secured to a base member **23** in any approved manner.

In the form shown in Figs. 3 and 4 the method of filling the passages **16** which have been cleaned out after bacterial destruction are filled with the cementitious material, as shown at **21**, and strips of material, as shown at **14a**, are connected together along adjacent edges which are neatly trimmed so that there will be a snug fit.

In Fig. 3 a pair of complementary grooves **26** are formed in the side edges **25** and these grooves are provided with undercut portions, as shown at **27**, which extend in opposite directions from the alined edges **25** of the strips of wood **14a**. A cementitious material of substantially the same type as is used in filling the transverse passages **21** in the strips of wood is compactly filled into the grooves **26** and the undercut portions **28** and permitted to harden so that the strips are connected together by the undercut groove formed by the complementary grooves in the side edges of the strips **14a**. The outer surface of the strips of wood are treated in the same manner as has been previously described and a thin coating of waterproofing material is applied to the side walls of the grooves **16** and the undercut portions **27** in order to prevent any coloring matter which is used in the cementitious material from staining the wood where it is exposed to view and to prevent the wood from absorbing moisture. After the outer surface of the connected pieces of wood have been properly finished, a coating of shellac or varnish, as shown at **22**, is applied.

The construction shown in Figure 4 is substantially identical with that shown in Fig. 3 but a reinforcing member **30** having a centrally disposed opening is located in the undercut portions **27** of the groove **26** and a pin **31** is driven through the centrally disposed passage in the reinforcing member **30** until the head **32** of the pin rests upon the reinforcing member **30**. When the pin is forced downwardly it penetrates the base member **23** and aids in securing the strips **14a** together in connection with a hardened cementitious material **28** which is filled in the grooves **26** of the undercut portions **27** of the grooves. Thus it will be seen that the head **32** of the pin **31** and the reinforcing member **30** is imbedded in the cementitious material.

The cementitious material need not be filled to the extreme upper end of the complementary groove **26**, as shown at **29**, so that if desired the surface of the pieces **14a** of the wood may be planed sufficiently to bring it into the same plane with the upper end of the cementitious material. As has been explained, a coating of shellac or varnish is applied to the outer finished surface.

It will be seen by this modified form that the hardened cementitious material in the grooves in the side edges of the piece of wood not only aid in binding the strips of wood together but add further decoration to the surface of the wood.

While I have described the wood employed as being preferably cypress, it will be appreciated that many other types of wood may be employed. Any wood that splits or that has open knots caused by air or kiln drying may be used and the split portions and open knots may be filled in the manner described above. Old floors may be refinished and where the pieces of flooring have

separated at the joints or are otherwise defective caused by drying out of the lumber, may be treated in a manner described above so that when the separated joints are filled up with the cement and properly treated they will present an antique finish no matter what the type of wood was employed in the floors.

In Fig. 5 is shown a further modified form of the invention in which the wood is shown at **14b** and provided with an undercut groove filled with the cenentitious material described above after the sides of the groove have been lined with a shellac, a varnish, or a specially treated oil to prevent the absorption of moisture from the cement.

Before the cement is applied to the groove, nails are driven through the member **14b** and into the base member **23**, as shown at **35**. The heads **36** of these nails are located at the bottom of the groove and are hidden by the cement **29**.

In Fig. 3 the flooring or other type of decoration is laid upon an asphalt base **38** and this asphalt is supported by a cement floor or base member **37**.

I claim:

1. The method of manufacturing decorative woods which comprises cutting wood across the grain into lengths, the wood before being cut having longitudinal passages partially filled with matter formed from the bacterial destruction of the wood, grinding down the surfaces of the lengths of the wood, applying a waterproofing coat to the surface of the wood while defining the peripheries of the openings at opposite ends of the passages, then removing foreign material from the passages, filling the pockets with a cementitious material which will harden and thereafter grinding down and polishing the entire surface of the lengths of wood including the cement filled in the pockets and the waterproofing coat.

2. The method of manufacturing decorative woods which comprises selecting those types of wood which have been acted upon by bacteria or fungus to provide passages, sawing such wood into pieces of board so that the passages thus formed will be exposed to view through opposite faces of the boards, applying a waterproofing coat to the opposite faces of the boards, thoroughly cleaning said passages to remove foreign material, filling the pockets with a cementitious material which will harden and thereafter grinding the surface of the wood and the exposed surface of the cementitious material and then applying finishing coats to the surface of the wood and the exposed cementitious material.

3. The method of manufacturing decorative woods which comprises forming passages in a plurality of pieces of wood, the passages being disposed transversely of the wood, filling said passages with a cementitious composition which will harden, forming complementary undercut grooves along similar edges of the pieces of wood so that when said edges are placed in juxtaposition a unitary undercut groove is provided, then filling said groove with a cementitious composition which will harden to form with the filled transverse passages a decorative surface of irregular design.

4. A decorative wood comprising pieces of wood joined together along fitted edges, the pieces where fitted together having complementary undercut grooves of regular design opening into each other and through the outer surface of the pieces, the pieces of wood also having longitudinal passages of irregular design formed by bacterial destruction, the grooves and passages having a filling of cementitious material which when hardened will secure the pieces together and provide a decorative surface for the wood.

MARTIN E. MILLER.