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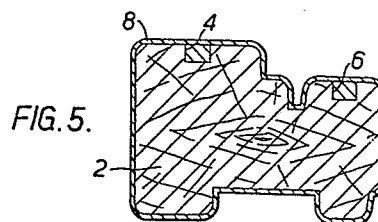
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(54) **Timber impregnation.**

(57) An elongate softwood timber member [2] has two spaced longitudinal grooves [4, 6] extending along its length. A viscous liquid or paste liquid bearing impregnating medium containing a chemical preservative is located in each groove [4, 6] and the timber member [2] is encased in an extruded casing [8] of plastics material. At normal atmospheric temperatures, after the timber member [2] has been encased in the plastics material the timber member [2] becomes totally impregnated with the impregnating medium within a few days. The casing [8] prevents the impregnating medium from being leached out of the timber member [2] by moisture or rain.



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TITLE

"Timber Impregnation"

TECHNICAL FIELD

The present invention relates to a method of impregnating timber which is coated with a plastics material. The invention is particularly applicable to but not restricted to impregnating plastics coated softwood timber used in the construction of window frames. By suitably choosing the impregnating material it is possible to resist the effect of rot and insects on the impregnated timber.

BACKGROUND ART

Previously proposed impregnation techniques using organic solvents as the impregnating medium include:-

(1) totally immersing the timber in the impregnating medium for a period of two to three minutes at normal ambient temperatures.

(2) deluging the timber with the impregnating medium, and

(3) immersing the timber in an impregnating preservative medium contained in an autoclave, and subjecting the immersed timber to alternately high and reduced pressure.

In the aforementioned methods there is a degree of permanence because the impregnating chemicals are used in combination with organic solvents. In consequence the active ingredients are not readily leached out by moisture or by rain. A disadvantage of these methods is the lack of depth of penetration of the impregnating preservative into the timber, thereby resulting in incomplete and reduced protection under certain circumstances. It is technically possible to obtain almost complete penetration by using the autoclave method, but in general the length of time required to obtain complete penetration renders the method uneconomical for most applications, such as for example when preserving joinery timber.

In another previously proposed impregnating technique, the timber is treated with chemicals in aqueous solution, and the chemicals are allowed to diffuse through the timber over a prolonged period of time at normal atmospheric temperature and pressure. Disadvantages of this method are the initially high moisture content required of the timber, the required duration of the method (up to six weeks) and a tendency for the chemicals eventually to leach out under certain wet conditions. Another disadvantage is the tendency of certain of the chemicals used eventually to corrode metal fixings which may be attached when assembling the final product, such as for example a window or door.

Another previously proposed method comprises using chemicals in a water medium in an autoclave process. Although this method completely impregnates the timber, the method is not favoured for use with joinery timber because it hardens the timber and makes it brittle and more difficult to machine.

STATEMENT OF INVENTION AND ADVANTAGES

The aforementioned disadvantages of the previously proposed impregnation techniques also apply to impregnating timber components coated with a plastics material. It is an aim of the invention to alleviate these aforementioned disadvantages, and accordingly there is provided a method of impregnating timber; said method comprising depositing a liquid bearing impregnating medium containing a chemical preservative in a localised part of a timber member, and encasing the timber member in a casing of non-porous plastics material resistant to the impregnating medium.

At normal atmospheric temperatures, after the timber member has been encased in the plastics material the timber member becomes totally impregnated with the impregnating medium within a few days or more according to the thickness of the timber member. A particular advantage of the method of this invention is the fact that the limited time required to achieve total impregnation takes place within the normal duration of the manufacturing, transportation and storage process of the timber member after it has been encased in the plastics material.

The aforementioned plastics coated timber members are particularly suitable for use in the manufacture of window frames and allied products where previously it has been difficult or costly to achieve a satisfactory total preservative impregnation of the timber member.

FIGURES IN THE DRAWINGS

Embodiments of the invention will now be described by way of example with reference to the accompanying illustrative drawings in which:-

FIGURE 1 is a cross section of one impregnated timber member of the invention,

FIGURE 2 is a cross section of another impregnated timber member of the invention,

FIGURE 3 and FIGURE 4 are cross sections of laminated timber members of the invention, and

FIGURE 5 is a cross section of the timber member of Figure 1 encased in a plastics casing.

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DETAILED DESCRIPTION OF DRAWINGS

10 Referring to Figure 1, an elongate softwood timber member 2 has two spaced longitudinal grooves 4 and 6 extending along its length.

Referring to Figure 5, the timber member 2 is encased in an extruded casing 8 of plastics material. A suitable plastics material is an unplasticised polyvinyl chloride or modified polyvinyl chloride.

15 Figure 2 illustrates a cross-section of a softwood timber member 2 having the same cross-section as the member 2 of Figure 1. The member 2 of Figure 2 has only a single longitudinal groove 4 extending along its length.

20 Figure 3 illustrates a cross-section of a laminated softwood timber member 10 made up of four separate timber pieces 12, 14, 16 and 18. This timber member 10 has therein the same longitudinal grooves 4 and 6 as the aforementioned timber members 2 of Figures 1 and 2. However in the case of the timber member 10, the four timber pieces 12 to 18 are
25 glued together so that a part of one of the grooves 4 and 6 is located in each timber piece.

30 Figure 4 illustrates a cross-section of a laminated softwood timber member 20 having two spaced longitudinal grooves 22 and 24 extending along its length. The timber member 20 is made up of three separate timber pieces 26, 28 and 30, which are glued together so that a part of one of the grooves 22 and 24 extends into each of the three pieces 26 to 30.

A suitable liquid bearing impregnating medium which may be in viscous liquid or paste form, is located in each one of the grooves 4, 6, 22 and 24, and the timber members 2, 10 and 20 are encased in a casing of suitable plastics material as illustrated in Figure 5.

Suitable solvents, constituting the liquid part of the liquid bearing impregnating medium, are aliphatic hydrocarbons, isoparaffin or ethylene glycol. Standard gelling agents, such as hydrogenated castor oil or a bentonite may be used if the liquid bearing impregnating medium is to be used in paste form.

The size of the grooves 4, 6, 22 and 24 is determined by experiment to provide a sufficient volume of preservative to fully saturate the timber member when impregnation is complete.

An example of a suitable chemical preservative is tributyltin oxide.

CLAIMS

1. A method of impregnating timber comprising depositing a liquid bearing impregnating medium containing a chemical preservative in a localised part of a timber member, and encasing the timber member in a casing of non-porous plastics material resistant to the impregnating medium.
2. A method as claimed in Claim 1, including forming a longitudinal groove extending along the length of an elongate timber member, and depositing the impregnating medium in the groove.
3. A method as claimed in Claim 2, including forming a plurality of transversely spaced longitudinal grooves to extend along the length of an elongate timber member, and depositing the impregnating medium in each groove.
4. A method as claimed in Claim 2 or Claim 3, including forming the timber member by securing together a plurality of separate timber pieces which are shaped and arranged so that part of a groove is located in each timber piece.
5. An encased impregnated timber constructed by the method of any preceding Claim.
6. A timber as claimed in Claim 5, in which the impregnating medium is in viscous liquid or paste form.
7. A timber as claimed in Claim 6, in which the impregnating medium is in paste form, and includes a gelling agent.
8. A timber as claimed in Claim 7, in which the gelling agent is selected from hydrogenated castor oil or a bentonite.
9. A timber as claimed in any one of Claims 5 to 8, in which the liquid part of the impregnating medium is selected from aliphatic hydrocarbons, isoparaffin or ethylene glycol.

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FIG.1.

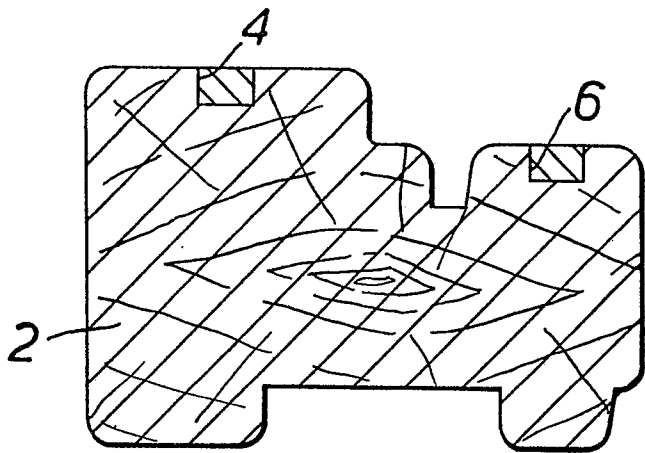


FIG.2.

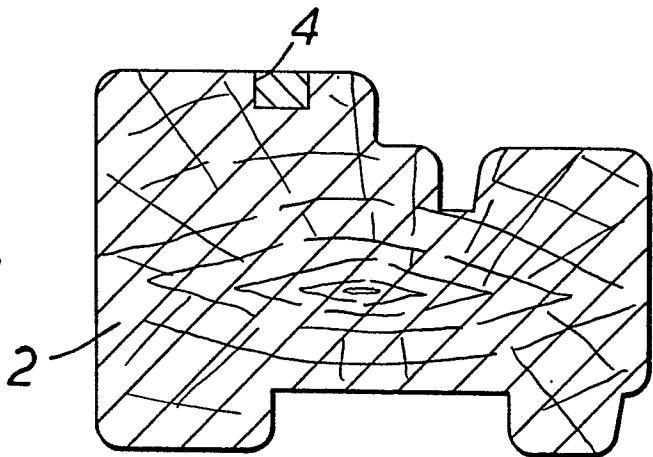
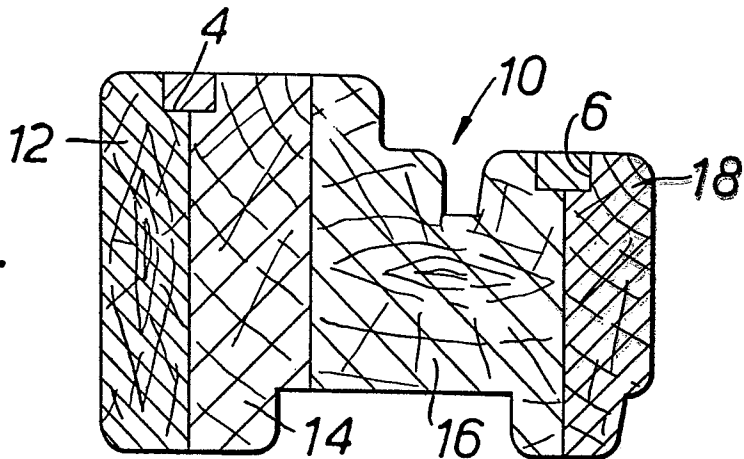
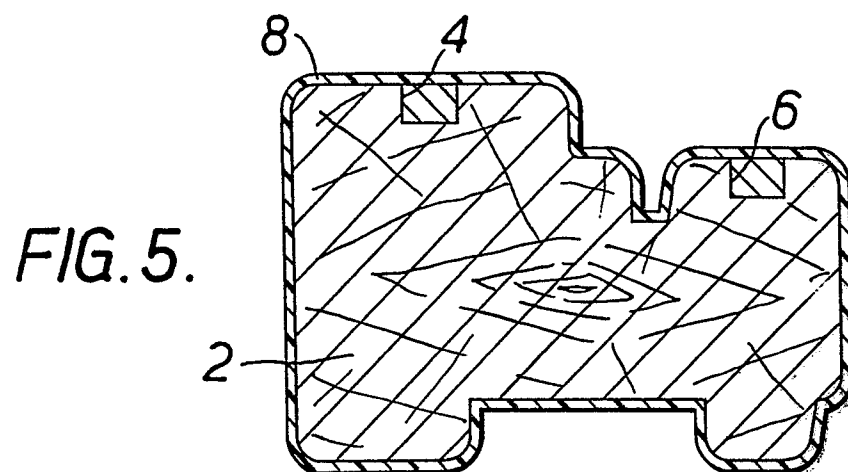
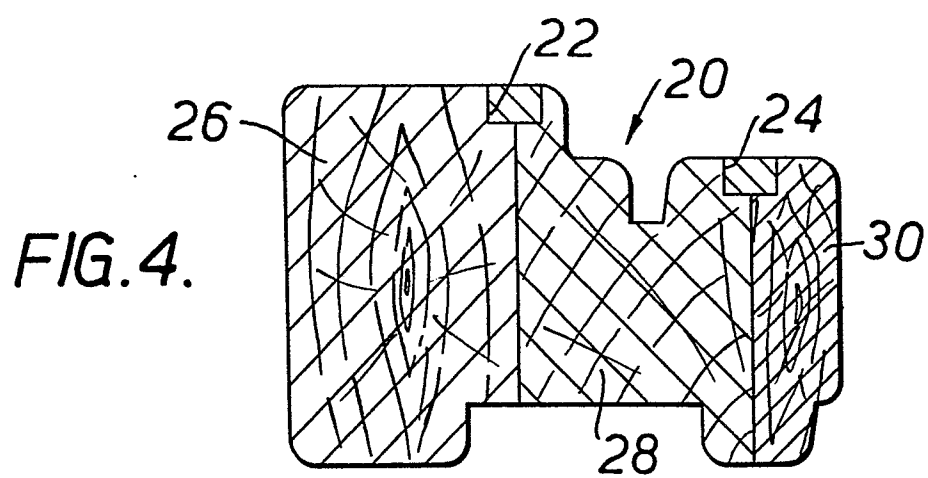


FIG.3.



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European Patent
Office

EUROPEAN SEARCH REPORT

0058499

Application number

EP 82 30 0609

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 3)
X	FR-A-2 385 506 (HOEKA SIERPLEISTERS EN MUURVERVEN) *Claims 1,15* & GB - A - 1 602 883	1	B 27 K 3/02 E 06 B 3/30
X	CA-A-1 058 353 (KRZYZEWSKI) *Claims 19-24*	1	
X	CH-A- 351 097 (OSMOSE HOLZIMPRAGNIERUNG CARL SCHMITTUTZ) *Page 2, lines 38-42*	1	
			TECHNICAL FIELDS SEARCHED (Int. Cl. 3)
			B 27 K
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 26-05-1982	Examiner DECORTE D.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	