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(71) Applicant: **Shipton, Bernard**
16 Cherry Blossom Court, Sultan Road
Buckland, Portsmouth, Hants: PO2 7TA(GB)

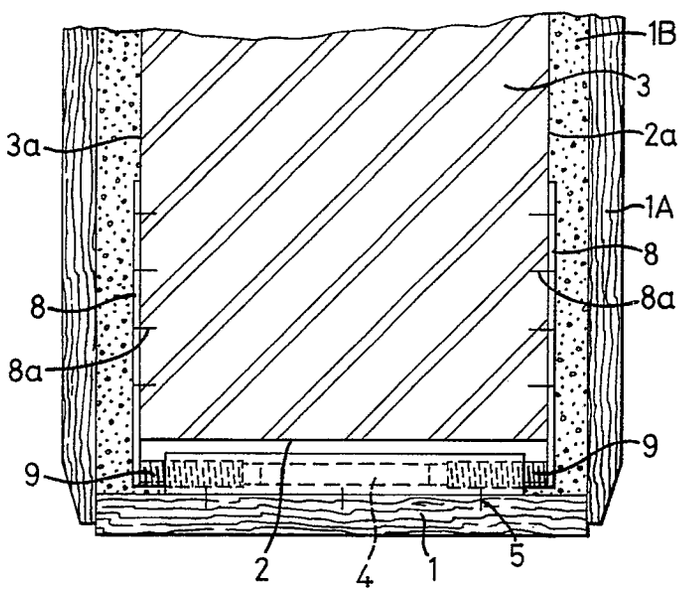
(72) Inventor: **Shipton, Bernard**
16 Cherry Blossom Court, Sultan Road
Buckland, Portsmouth, Hants: PO2 7TA(GB)

(74) Representative: **Smith, Norman Ian et al**
F.J. CLEVELAND & COMPANY 40-43
Chancery Lane
London WC2A 1JQ(GB)

(54) Method and device for securing a frame member to means defining an opening therefor.

(57) To secure a frame member (1) to a surface (2) of a wall (3) defining an opening in which the frame member (1) is to be located, a device comprises at least one internally threaded tubular member (4) fixed to the outer surface of the frame member (1) and a respective number of externally threaded members (9) secured to or formed integrally with a respective planar member (8) secured to a wall surface (8a) normal to that (2) to which the frame is fixed, relative rotation of the respective internally and externally threaded portion (4, 9) allowing the position of the frame member (1) with respect to the wall (3) and opening therein to be adjusted.

FIG.1



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METHOD AND DEVICE FOR SECURING A FRAME MEMBER TO MEANS DEFINING AN OPENING THEREFOR.

This invention relates to a method and means for securing a frame member such as a door frame or lining, window frame and the like to a wall or similar surface defining an opening for the frame member.

Internal door linings and window frames are normally fixed in place within openings defined by walls or similar surfaces, by means of any suitable securing means such as nails or screws, which are normally hammered or screwed through the frame into the wall or similar surface. Because of imperfections in construction of the wall or similar surface defining the opening, it is often necessary to pack any space or gaps between the frame and the wall face of the opening, with packing pieces of for example timber, to compensate for such imperfections in construction, thereby avoiding distortion of the frame or lining during the fixing process.

It is extremely difficult to ensure accurate, location of the frame or lining in the opening by this crude method of fixing. Adjustment of the frame or lining with respect to the wall defining the opening can also be a time consuming operation, and fixing of the frame or lining can sometimes result in damage to the frame or lining necessitating additional filling and finishing operations to be performed on the inside surfaces of the lining or frame member.

It is an object of the present invention to provide a method and means of securing a frame or lining to a wall or like surface defining an opening for the frame or lining incorporating a device which combines the operations of adjusting the frame or lining to the correct position with respect to the wall or similar surface, and secures the frame or lining in the adjusted position, to the wall or similar surface, rendering any further fixing or finishing operations unnecessary at the same time achieving greater accuracy than with previously known methods.

According to one aspect of the invention there is provided a frame member securing device serving the dual function of both adjusting the position of a frame member with respect to a wall surface defining an opening for the frame member, and of permanently fixing the frame to the wall surface, the device comprising at least one externally threaded member connected to or formed integrally with a planar member extending normal to the longitudinal axis of the or each externally threaded member, and arranged to engage in means formed in the frame member or secured to or formed integrally with the frame member, the or each planar member being arranged to be secured to a wall surface normal to the wall surface arranged to be fixed to the said frame member, and the or each externally threaded member engaging in said means such as to fix the frame member to the wall and allow the position of the frame member to be adjusted relative to the wall by relative movement of the or each externally threaded member and the means engaged thereby, the combination and interengagement of planar member, externally threaded member and said means allowing both the position of the frame member to be adjusted in two planes, and the frame member to be permanently secured to the wall surface.

According to another aspect of the present invention there is provided a frame member securing device for securing a frame member to a wall surface defining an opening for the frame member and comprising at least one open-ended tubular member internally threaded at at least one end and formed integrally with or arranged to be secured to the outer surface of the frame member intended to be fixed to the said wall surface, and a complementary externally threaded member for the or each internally threaded end of the at least one tubular member, the or each externally threaded member being connected to or formed integrally with a planar member extending normal to the longitudinal axis of the or each externally threaded member, the or each planar member being arranged to be secured to a wall surface normal to the wall surface arranged to be fixed to the said outer surface of the frame member, and the or each externally threaded member engaging in the respective internally threaded end of the respective tubular member such as to fix the frame member to the wall and allow the position of the frame member to be adjusted relative to the wall by rotation of the or each externally threaded member in the respective ends of the respective tubular member fixed to or formed integrally with the frame member.

In practice, at least three such tubular members would be fixed to the outer surface of the frame member allowing adjustment and fixing at the top, middle and bottom of the outer surface of the frame member.

According to a further aspect of the present invention there is provided a method of securing a frame member to a wall surface defining an opening for the frame member comprising the steps of securing at least one open-ended tubular member, internally threaded at at least one end, to an outer surface of the frame member, or forming the said at least one tubular member integrally therewith,

providing for the or each internally threaded end, an externally threaded member connected to or formed integrally with a respective planar member, locating the or each externally threaded member in its respective internally threaded end of the tubular member, securing the or each planar member to a surface of the wall extending normally to the surface of the wall arranged to abut the outer surface of the frame member, and adjusting the position of the frame member with respect to the wall by rotation of the or each externally threaded member in a respective internally threaded end of the tubular member to correctly align the frame member with respect to the wall and couple the frame member to the wall.

The invention will now be described by way of example only with particular reference to the accompanying drawings, wherein:

Figure 1 is a plan view of the fixing device of the present invention for fixing a frame member to a wall;

Figure 2 is a plan view of an externally threaded member and planar member of the device of the present invention;

Figure 3 is a side elevation of the externally threaded and planar members of Figure 2;

Figure 4 is a perspective view of one construction of an internally threaded member of the fixing device of the invention;

Figure 5 is a plan view of a different construction of internally threaded member; and

Figure 6 is a plan view of a modified form of fixing device in accordance with the present invention where the means formed in the frame is a pre-drilled hole.

Referring particularly to Figure 1, in order to secure a frame member 1 to a surface 2 of a wall 3 defining an opening in which the frame member is to be located, there is provided a tubular member 4 internally threaded at each end as shown in Figure 1 and arranged to be fixed to the outer surface of the frame member 1 by securing means 5. In Figure 1 an architrave for a door frame is shown at 1A and plaster 1B is shown between the architrave and wall surface 3. One form of internally threaded tubular member 4 is shown in Figure 4, wherein a rectangular section member 6 is provided with a tubular portion having an internal screw thread 7 at each end and provided with a series of holes 5a to accommodate fixing means (not shown) to allow the rectangular section member 6 to be secured to the outer surface of the frame member 1. A modified internally threaded member 4 is shown in Figure 5 in which the fixing means 5b are shown.

The second component of the frame fixing and adjustment device of the invention consists of an externally threaded member and associated planar member for each respective internally threaded end 7 of the tubular member 4. Thus, as shown in Figures 1 and 2 in particular, each planar member 8 is formed integrally with an externally threaded portion 9 arranged to engage in the respective internally threaded end 7 of the tubular member 4 as shown in Figure 1. By engaging the externally threaded members 9 in the respective internally threaded ends 7 of the tubular member 4, and rotating the externally threaded member with respect to the internally threaded member, the position of the frame member 1 with respect to the wall 3 can be adjusted and the frame member 1 fixed to the wall 3 in the correctly aligned adjusted position required.

To locate the frame member 1 in a correct aligned position with respect to the wall 3, it is first necessary, prior to placing the frame member 1 within the wall opening, to fix a plurality of said internally threaded members 4, preferably three, on the outer surface of the frame member intended to abut the surface of the wall adjacent the opening. The internally threaded members 4 are arranged parallel to and, preferably at the top, middle and bottom of the frame member. The length of each tubular member 4 is such that the ends thereof are slightly inset from the surfaces 2a, 3a, of the wall when the frame is affixed thereto as shown in Figure 1. The lining or frame 1 is placed as near as possible in the correct position in the opening and the externally threaded portions located in engagement with the complementary threaded portions 7 of the tubular members 4, secured to the frame or lining 1. The externally threaded members are screwed into the respective internally threaded members until the planar portion 8 associated with each externally threaded portion 9, is flush with the wall surfaces 2a, 3a.

The lining or frame 1 is then adjusted in two different planes. Firstly, the lining or frame is adjusted in a fore and aft plane to an intermediate position, following which the planar portions 8 are secured to the respective wall surfaces 2a, 3a, by securing means 8a such as masonry nails. Adjustment in the second or transverse plane is effected by adjusting the position of the externally threaded members in their respective female internally threaded counterparts, either by screwing or unscrewing the externally threaded member in their respective internally threaded members. The lining of frame 1 is thus firmly fixed to the wall by means of the planar members and by the interengagement of the internally and externally threaded members with adjustment in both planes to the correct aligned position required and without damage to the surfaces of the lining or frame members. It will be appreciated that the invention is applicable to the fixing of any planar member or surface to a second planar member or surface and is not limit-

ed to the fixing of door linings and window frames to walls. For instance, a first planar member or surface can be secured to a second planar member or surface by fixing at least one tubular member having at least one internally threaded end to the first planar member or surface, and by engaging an externally threaded member in a respective internally threaded end of said at least one tubular member, and securing the planar portion of the or each externally threaded member, to the second planar member or surface.

The advantages of the device of the present invention are that the frame member or lining can be fixed to a wall and adjusted to the correct aligned position with respect to the wall, and can be re-fixed in place if necessary without damage to the lining or frame member. The lining or frame can be adjusted to the correct aligned position with respect to the wall much more easily and with a greater degree of accuracy than with previously known arrangements, and the tubular members by acting as a brace across the width of the lining or frame member, serve to strengthen the lining or frame, which with previously known arrangements, often bows and twists during and after fixing and plastering of the wall.

Although the drawings illustrate the internally threaded tubular members 4 fixed to the outer surface of the frame 1 by securing means 5, it will be appreciated that the internally threaded tubular members may be formed integrally on the outer surface of the frame member.

Furthermore, the internally threaded tubular members may be dispensed with as shown in Figure 6. The frame member is pre-drilled to accept an externally threaded member, such as a screw incorporated within the planar member 8.

Although the drawings illustrate the tubular members as being internally threaded it will also be appreciated that the tubular members may be formed without threads but in such a manner that they will accept an externally threaded member such as a screw incorporated within the planar member 8.

Claims

1. Frame member securing device serving the dual function of both adjusting the position of a frame member with respect to a wall surface defining an opening for the frame member, and of permanently fixing the frame to the wall surface, the device comprising at least one externally threaded member connected to or formed integrally with a planar member extending normal to the longitudinal axis of the or each externally threaded member, and arranged to engage in respective means formed in the frame member or secured to or formed integrally with the frame member, the or each planar member being arranged to be secured to a wall surface normal to the wall surface arranged to be fixed to the said frame member, and the or each externally threaded member engaging in said means such as to fix the frame member to the wall and allow the position of the frame member to be adjusted relative to the wall by relative movement of the or each externally threaded member and the means engaged thereby, the combination and interengagement of planar member, externally threaded member and said means allowing both the position of the frame member to be adjusted in two planes, and the frame member to the permanently secured to the wall surface.

2. Frame member securing device for securing a frame member to a wall surface defining an opening for the frame member and comprising at least one open-ended tubular member internally threaded at at least one end and formed integrally with or arranged to be secured to the outer surface of the frame member intended to be fixed to the said wall surface, and a complementary externally threaded member for the or each internally threaded end of the at least one tubular member, the or each externally threaded member being connected to or formed integrally with a planar member extending normal to the longitudinal axis of the or each externally threaded member, the or each planar member being arranged to be secured to a wall surface normal to the wall surface arranged to be fixed to the said outer surface of the frame member, and the or each externally threaded member engaging in the respective internally threaded end of the respective tubular member such as to fix the frame member to the wall and allow the position of the frame member to be adjusted relative to the wall by rotation of the or each externally threaded member in the respective ends of the respective tubular member fixed to or formed integrally with the frame member.

3. A method of securing a frame member to a wall surface defining an opening for the frame member comprising the steps of securing at least one open-ended tubular member, internally threaded at at least one end, to an outer surface of the frame member, or forming the said at least one tubular member integrally therewith, providing for the or each internally threaded end, an externally threaded member connected to or formed integrally with a respective planar member, locating the or each

externally threaded member in its respective internally threaded end of the tubular member, securing the or each planar member to a surface of the wall extending normally to the surface of the wall arranged to abut the outer surface of the frame member, and adjusting the position of the frame member with respect to the wall by rotation of the or each externally threaded member in a respective internally threaded end of the tubular member to correctly align the frame member with respect to the wall and couple the frame member to the wall.

4. Frame member securing device as claimed in claim 1, wherein the frame member is provided with at least one drilled hole to accommodate the respective externally threaded member.

5. Frame member securing device as claimed in claim 2, wherein each tubular member is internally threaded at each end and is arranged to be fixed to the outer surface of the frame member, each threaded end of each tubular member cooperating with an externally threaded portion of the planar member, relative rotation of the externally threaded portion and the respective internally threaded portion allowing the position of the frame member to be adjusted with respect to the wall member.

6. Frame member securing device as claimed in claim 2, wherein each internally threaded tubular member comprises a rectangular section member provided with a tubular portion having an internal screw thread at each end to accommodate the respective externally threaded members and provided with a plurality of spaced holes to accommodate fixing means to allow the rectangular section member to be secured to the outer surface of the frame member.

7. Frame member securing device as claimed in claim 1, wherein the said means is so formed e.g. by means of an insert or pre-drilled hole to allow the position of the frame member to be adjusted relative to the wall by relative movement of the, or each externally threaded member and the means engaged thereby.

8. Method as claimed in claim 3, for use with the securing device claimed in claim 7, wherein the said means and the frame member is then adjusted in a fore and aft position, by adjusting the said planar members horizontally relative to the wall prior to securing the said planar members to the wall surface.

9. Frame member securing device as claimed in claim 7, wherein the said externally threaded member connected to or formed integrally with a planr member is engaged in the said means formed on each side of the frame member.

10. Method of securing a frame member to a wall surface as claimed in claim 3, wherein the said externally threaded member engages in the said means and the frame member is then adjusted in a fore and aft position by adjusting the said planar members horizontally relative to the wall prior to securing the said planar members to the wall surface.

11. Frame member securing device as claimed in any preceding claim wherein the said externally threaded member(s) together with the respective planar member(s) interengage with means formed in the frame so as to fix the frame to both surfaces of the wall.

12. Frame member securing device as claimed in any preceding claim, wherein the or each said planar member comprises two or more planar sections.

FIG. 1

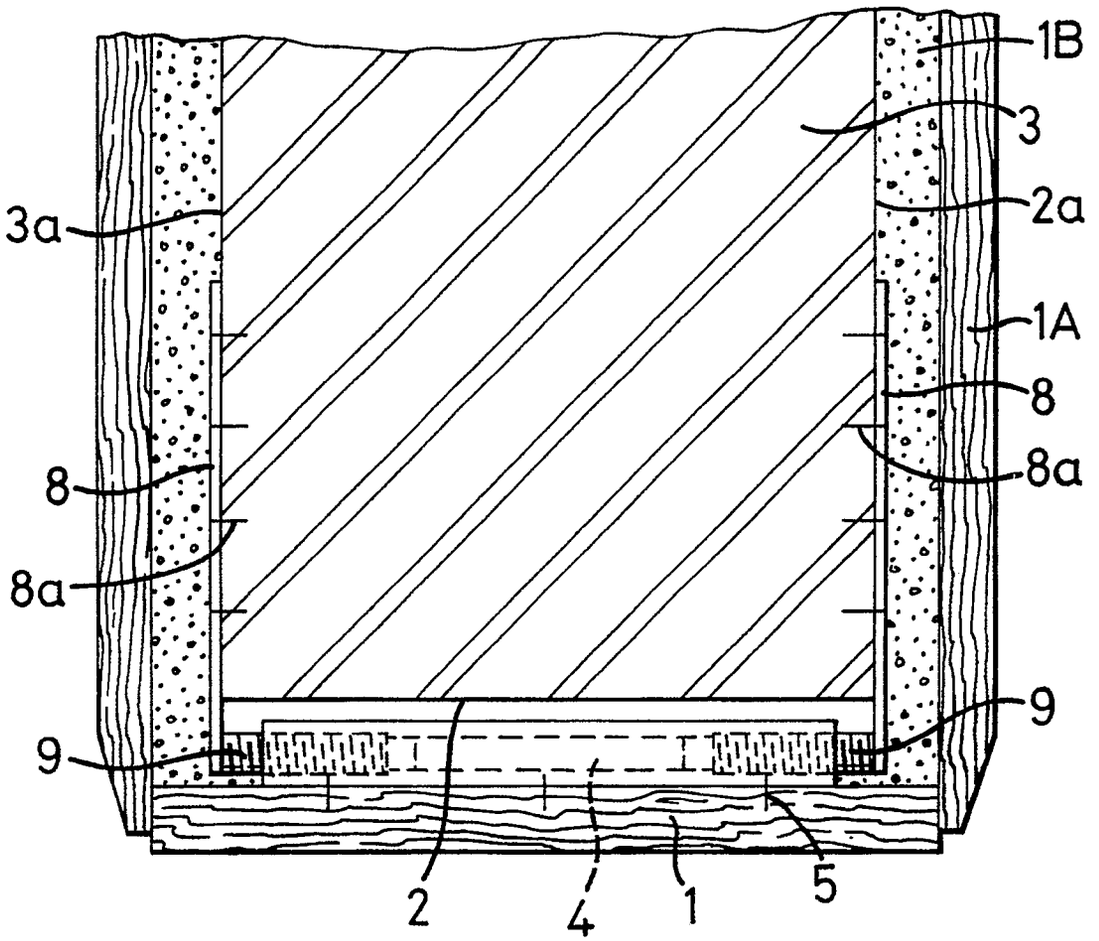


FIG. 2

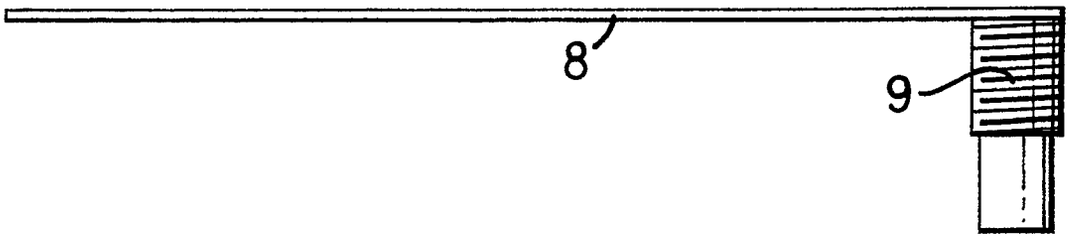


FIG. 3

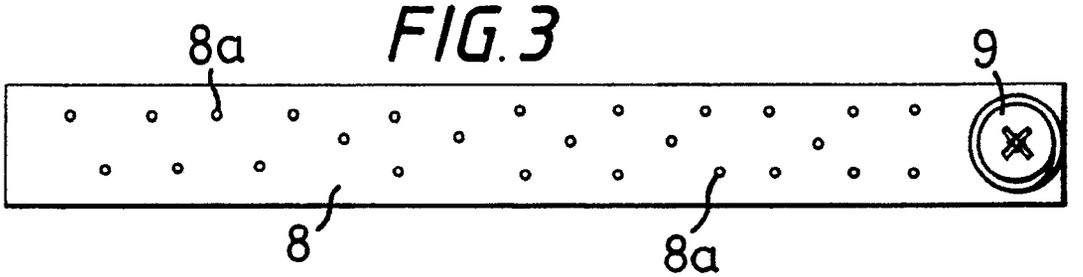


FIG. 4

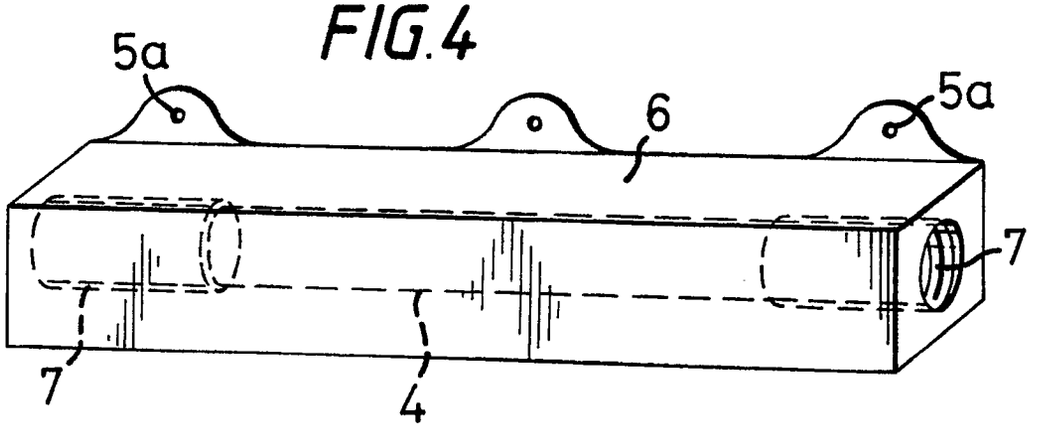


FIG. 5

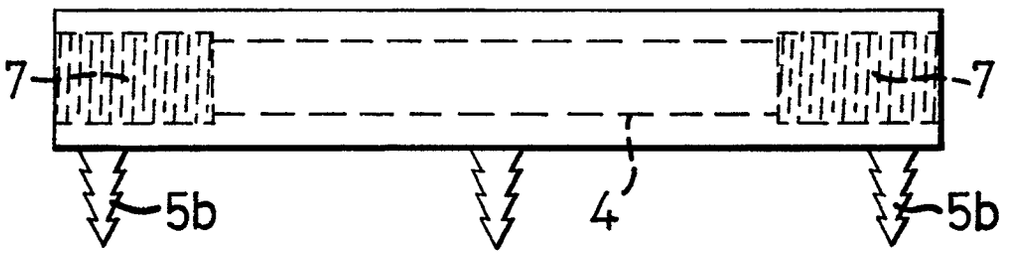
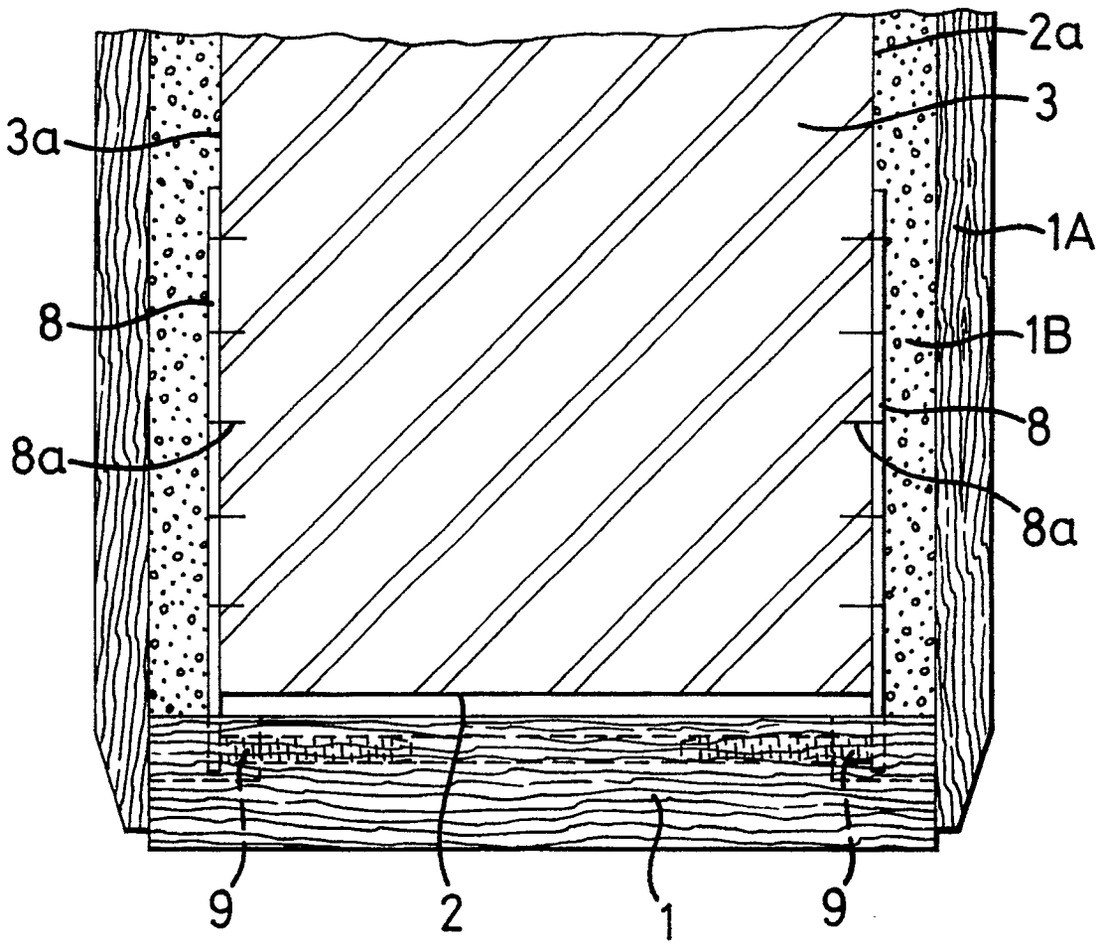


FIG.6



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EUROPEAN SEARCH REPORT

Application Number

EP 90 30 0933

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.5)
X	DE-A-1 920 604 (E. SCHMITT) * the whole document *	1-3,5,7,9,11,12	E 06 B 1/56
A	---	6	
X	DE-A-1 659 870 (W. FRITZ) * the whole document * -----	1-3	

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

E 06 B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
BERLIN	29-08-1990	KRABEL A.W.G.

CATEGORY OF CITED DOCUMENTS

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