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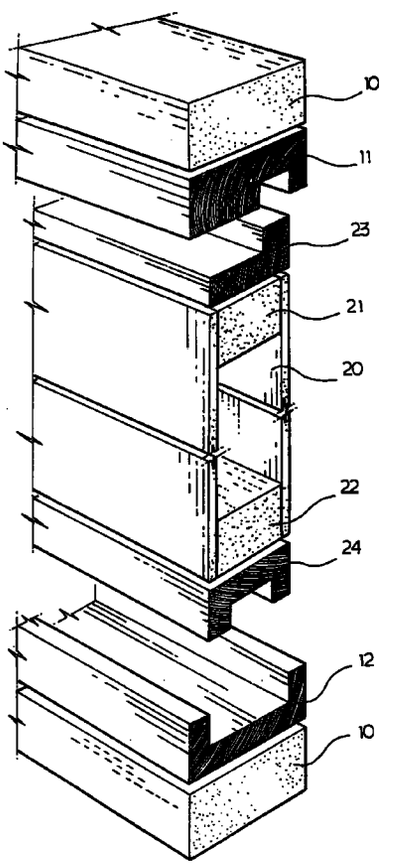
(54) Sliding door assembly

(57) A sliding door assembly, provided with changeable members at the frictional parts of both the sliding door and the doorframe, is disclosed. In the door assembly, the doorframe (10) has both a first changeable lower wood member (12) at the threshold and a first changeable upper wood member (11) at the upper beam. The sliding door (20) has upper and lower reinforcing wood members (21,22) at the top and bottom ends, a second changeable upper wood member (23) mounted to the top surface of the upper reinforcing wood member (21), and a second changeable lower wood member (24) mounted to the bottom surface of the lower reinforcing wood member (22). The door frame thus allows a user to change an existing frictional part with a new one without forcing the user to change an existing sliding door or doorframe with a new one when at least one of the frictional parts is abraded.

Fig.1



EP 0 955 435 A1

Description

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The present invention relates, in general, to a sliding door assembly including a sliding door and a doorframe and, more particularly, to a sliding door assembly provided with changeable members at the frictional parts of both the sliding door and the doorframe, thus allowing a user to change an existing frictional part with a new one without forcing the user to change an existing sliding door or doorframe with a new one when at least one of the frictional parts is abraded.

Description of the Prior Art

[0002] As well known to those skilled in the art, doors are typically classified into sliding doors, swinging doors, revolving doors, etc. Particularly, the sliding doors are individually designed for sliding along the threshold of a doorframe to the left or right, thereby improving the practical use of a space. Therefore, such sliding doors are effectively used as doors in limited areas, for example, such as room doors of restaurants with narrow passages or classroom doors of schools, etc.

[0003] However, when such a sliding door frequently and repeatedly slides along the threshold of a doorframe for a long time, the frictional parts of both the sliding door and the doorframe are abraded. That is, both the top and bottom ends of the sliding door may be abraded, thus allowing the sliding door to be easily fallen down and causing users to be seriously injured.

[0004] Therefore, such an abraded sliding door or doorframe has to be changed with a new one at a proper time so as to protect users from any injury. However, since it is necessary to change the abraded sliding door or doorframe with a new one, the repairing cost of the sliding door assembly is increased.

[0005] In an effort to solve the above problem, both the sliding door and the doorframe may be formed of a hard wood material. However, such a hard wood material is very expensive, so the material unexpectedly increases the production cost of the sliding door assembly. Therefore, in practical, both the sliding door and the doorframe are typically produced from a soft wood material such as a general wood even though such a soft wood material may be easily abraded and forces a user to change an existing sliding door or doorframe with a new one when the door or doorframe is abraded at the friction part.

SUMMARY OF THE INVENTION

[0006] Accordingly, the present invention has been made keeping in mind the above problems occurring in the prior art, and an object of the present invention is to provide a sliding door assembly, which comprises a sliding door and a doorframe and is provided with changeable members at the frictional parts of both the sliding door and the doorframe, thus allowing a user to change an existing frictional part with a new one without forcing the user to change an existing sliding door or doorframe with a new one when at least one of the frictional parts is abraded, and which reduces the repairing cost.

[0007] In order to accomplish the above object, the present invention provides a sliding door assembly, comprising: a doorframe provided with both a first changeable lower wood member mounted to a threshold and a first changeable upper wood member mounted to an upper beam; and a sliding door provided with upper and lower reinforcing wood members at top and bottom ends, a second changeable upper wood member mounted to a top surface of the upper reinforcing wood member, and a second changeable lower wood member mounted to a bottom surface of the lower reinforcing wood member.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] The above and other objects, features and other advantages of the present invention will be more clearly understood from the following detailed description taken in conjunction with the accompanying drawings, in which:

Fig. 1 is an exploded perspective view of a sliding door assembly in accordance with the primary embodiment of the present invention;

Fig. 2 is a cross sectional view of the sliding door assembly of Fig. 1;

Fig. 3 is an exploded perspective view of a sliding door in accordance with the second embodiment of the present invention; and

Fig. 4 is a perspective view showing the lower portions of the sliding door assembly in accordance with the primary embodiment of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0009] Figs. 1 and 2 are views illustrating the construction of a sliding door assembly in accordance with the primary embodiment of the present invention.

[0010] As shown in the drawings, the sliding door assembly comprises a doorframe 10 and a sliding door 20. The doorframe 10 comprises upper and lower beams, with the lower beam being called a threshold. In addition, a first changeable lower wood member 12 is fixed to the threshold of the doorframe 10 by screws, while a first changeable upper wood member 11 is fixed to the bottom surface of the upper beam of the doorframe 10 by screws. Such changeable wood members

11 and 12 are preferably made of a hard wood material capable of increasing durability of the sliding door assembly.

[0011] In this case, a groove is longitudinally formed on each of the two changeable wood members 11 and 12 of the doorframe 10 so as to receive each end of the sliding door 20. The door 20 thus easily and stably slides along the two grooves of the doorframe 10.

[0012] In order to detachably mount the two changeable wood members 11 and 12 to the doorframe 10, several means are proposed. Preferably, the two changeable wood members 11 and 12 are screwed to the doorframe 10. In such a case, it is easy to produce the two changeable wood members 11 and 12 and mount them to the doorframe 10.

[0013] The grooves, formed on the two changeable wood members 11 and 12, are similar to those of a prior art doorframe and further explanation is thus not deemed necessary.

[0014] Meanwhile, the sliding door 20, having a rectangular configuration, includes two reinforcing wood members: upper and lower reinforcing wood members 21 and 22, at its top and bottom ends. In the same manner as that described for the doorframe 10, a second changeable upper wood member 23 is fixed to the top surface of the upper reinforcing wood member 21 by screws, while a second changeable lower wood member 24 is fixed to the bottom surface of the lower reinforcing wood member 22 by screws as best seen in Fig. 2.

[0015] In order to slidably seat the door 20 in the doorframe 10, a rail part, formed on the second changeable upper wood member 23, is movably fitted into the groove of the first changeable upper wood member 11 of the doorframe 10. Also, at least two small wheels 25 are rotatably installed in a groove which is longitudinally formed on the bottom surface of the second changeable lower wood member 24 of the sliding door 20. Furthermore, a rail 13 is mounted in a groove of the first changeable lower wood member 12 of the doorframe 10 in such a manner that the small wheels 25 of the door 20 roll easily along the rail 13 of the doorframe 10. The sliding door 20 thus easily slides along the threshold of the doorframe 10. The lower portion of the above door assembly is shown in Fig. 4

[0016] Fig. 3 is an exploded perspective view of a sliding door in accordance with the second embodiment of the present invention.

[0017] In this embodiment, a sliding door 20 includes an upper reinforcing wood member 21 and a lower reinforcing wood member 22 at its top and bottom ends. In addition, an upper reinforcing cap 26 is put on the top end of the sliding door 20, with the upper reinforcing wood member 21, and is screwed to both side walls of the sliding door 20. In the same manner as that described for the upper reinforcing cap 26, a lower reinforcing cap 27 is put on the bottom end of the sliding door 20, with the lower reinforcing wood member 22, and is screwed to both side walls of the sliding door 20. Such upper and lower reinforcing caps 26 and 27 have the same shapes as those of both the top and bottom ends of the sliding door 20, respectively.

[0018] The above upper and lower reinforcing caps 26 and 27 are preferably formed of a metal plate through a pressing process, thus preventing the sliding door 20 from being easily abraded. Of course, the doorframe 10 may be provided with reinforcing caps, which are formed according to the same manner as described for the reinforcing caps 26 and 27 of the sliding door 20.

[0019] As mentioned above, the sliding door assembly of this invention comprises a sliding door and a doorframe and is provided with changeable wood members at the frictional parts of both the sliding door and the doorframe, thus allowing a user to change an existing frictional part with a new one without forcing the user to change an existing sliding door or doorframe with a new one when at least one of the frictional parts is abraded. The door assembly thus reduces the repairing cost. In addition, since the changeable wood members are made of a hard wood material, the door assembly has improved durability.

[0020] Although the preferred embodiments of the present invention have been disclosed for illustrative purposes, those skilled in the art will appreciate that various modifications, additions and substitutions are possible, without departing from the scope and spirit of the invention as disclosed in the accompanying claims.

Claims

1. A sliding door assembly, comprising:

   a doorframe provided with both a first changeable lower wood member mounted to a threshold and a first changeable upper wood member mounted to an upper beam; and
   a sliding door provided with upper and lower reinforcing wood members at top and bottom ends, a second changeable upper wood member mounted to a top surface of said upper reinforcing wood member, and a second changeable lower wood member mounted to a bottom surface of said lower reinforcing wood member.

2. The sliding door assembly as claimed in Claim 1, wherein each of the changeable wood members, provided on both the doorframe and the sliding door, is formed of a hard wood material.

3. The sliding door assembly as claimed in Claim 1, wherein upper and lower reinforcing caps are fitted over the top and bottom ends of said sliding door and are individually screwed to both side walls of said sliding door, said upper and lower reinforcing caps individually having a shape substantially

meeting an associated end of said sliding door, respectively.

Fig.1

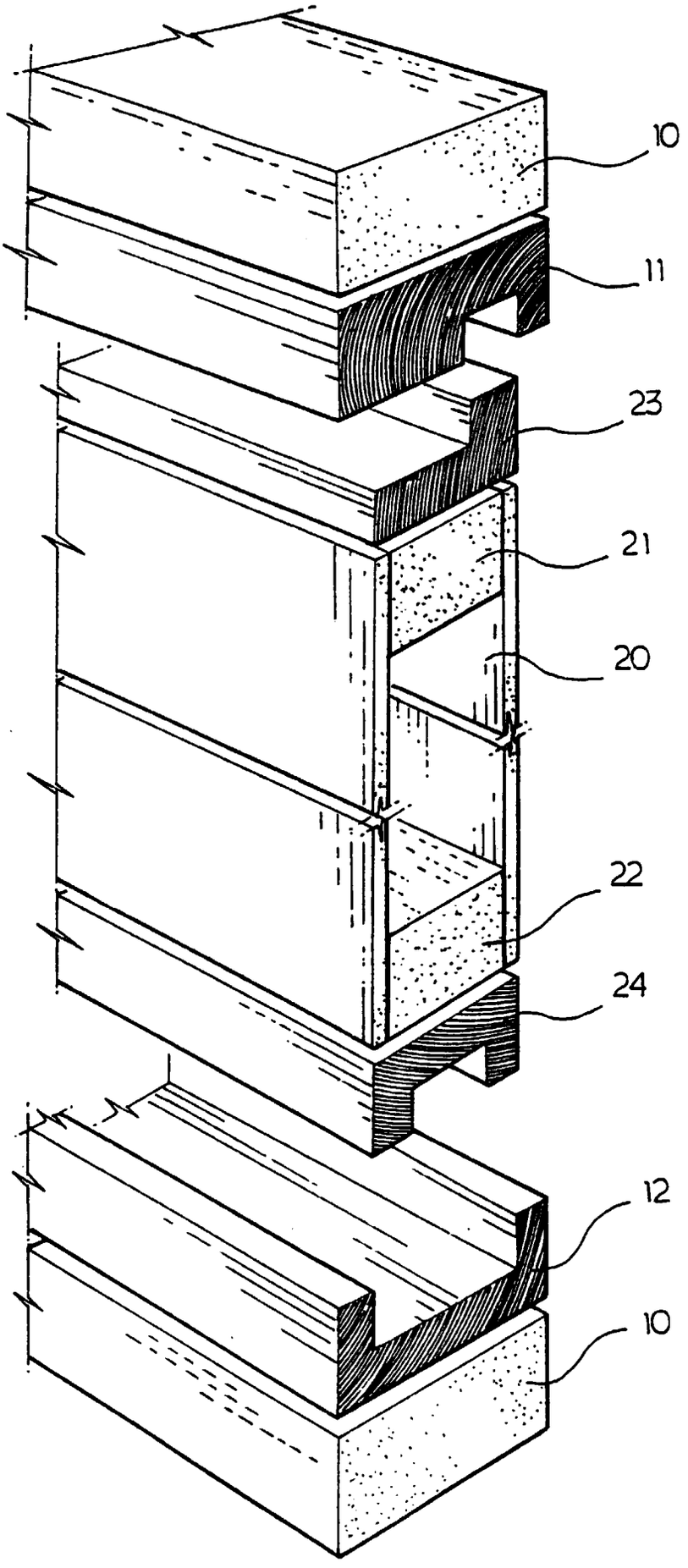


Fig.3

Fig.2

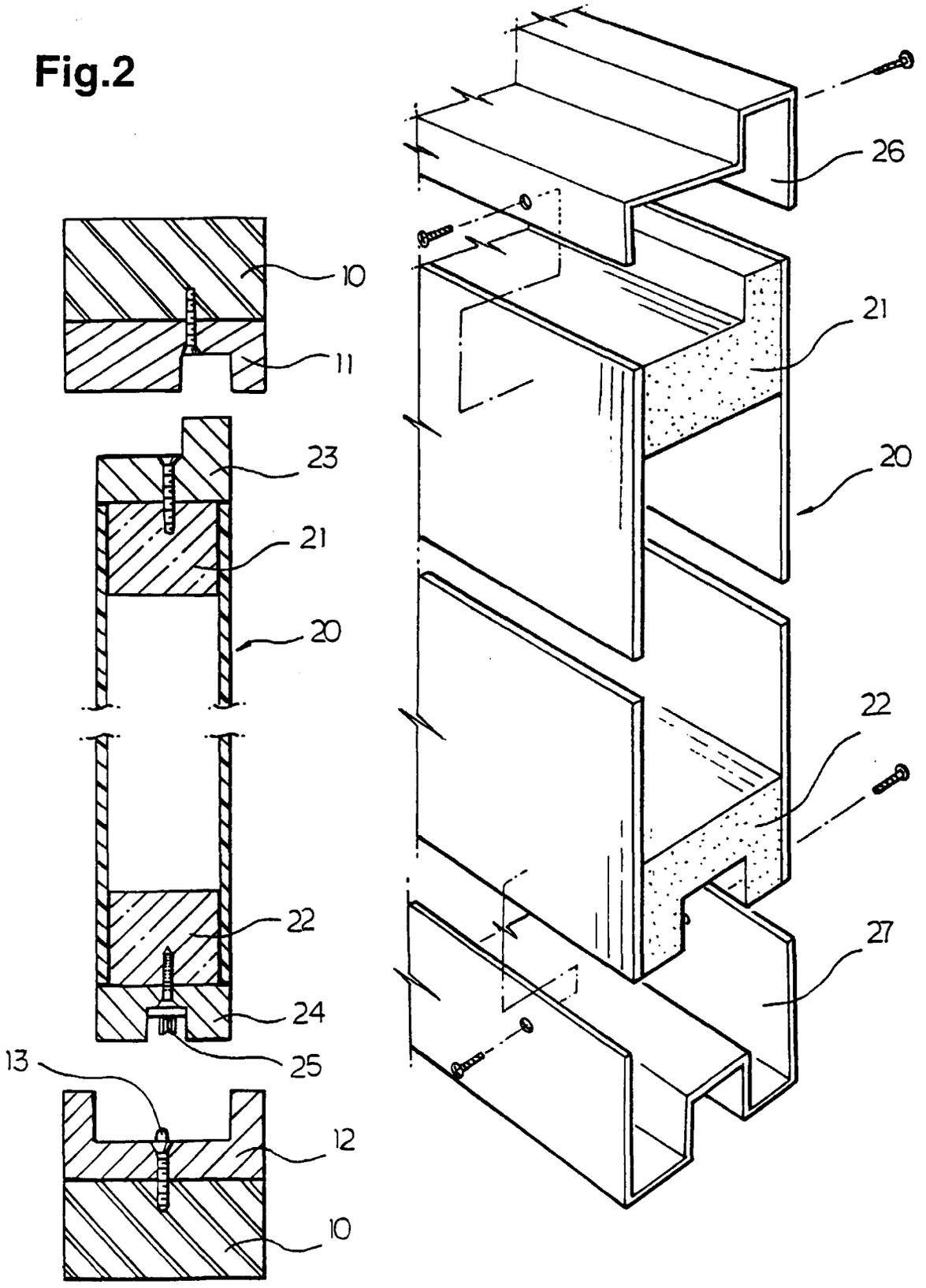
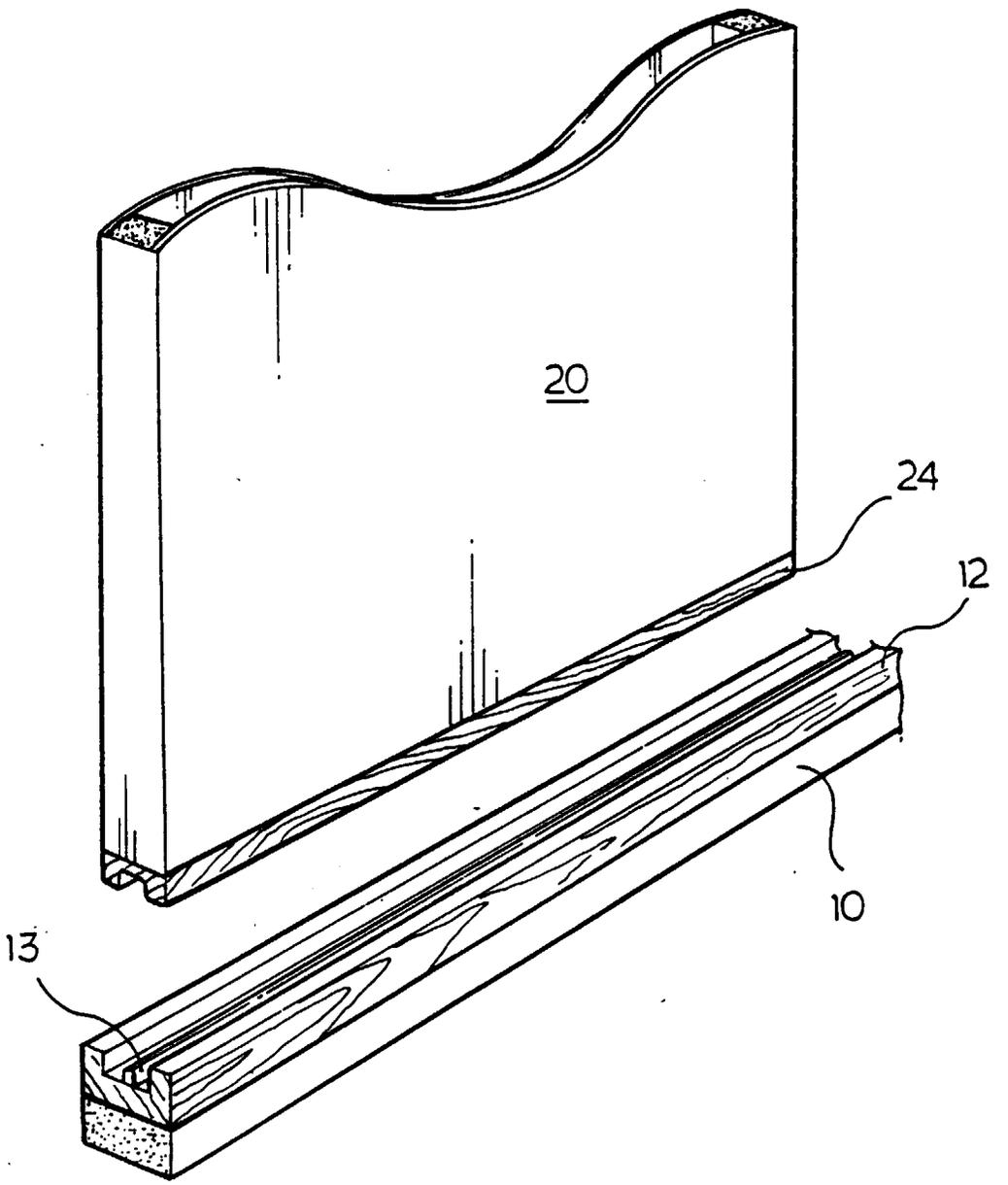


Fig.4



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EUROPEAN SEARCH REPORT

Application Number
EP 98 10 8452

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.6)
Y	GB 2 067 636 A (WHILLOCK A) 30 July 1981 * page 1, line 8 - page 2, line 12; figures *	1-3	E06B3/46
Y	CH 152 198 A (STICKEL & BLÄTTLER) 1 April 1932 * page 1, left-hand column, paragraph 2 - page 2, right-hand column, paragraph 1; figures *	1-3	
A	GB 876 581 A (HILLSON) 6 September 1961 * page 1, line 38 - line 43 * * page 2, line 3 - line 75 * * figures *	1	
A	FR 846 568 A (DÖRKEN & MANKEL) 19 September 1939 * the whole document *	1	
A	US 1 352 100 A (SURPRISE) 7 September 1920 * the whole document *	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
A	US 2 644 205 A (KARP) 7 July 1953 * column 2, line 31 - column 3, line 9; figures *	2	E06B E05D
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	5 October 1998	Depoorter, F

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 98 10 8452

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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05-10-1998

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82