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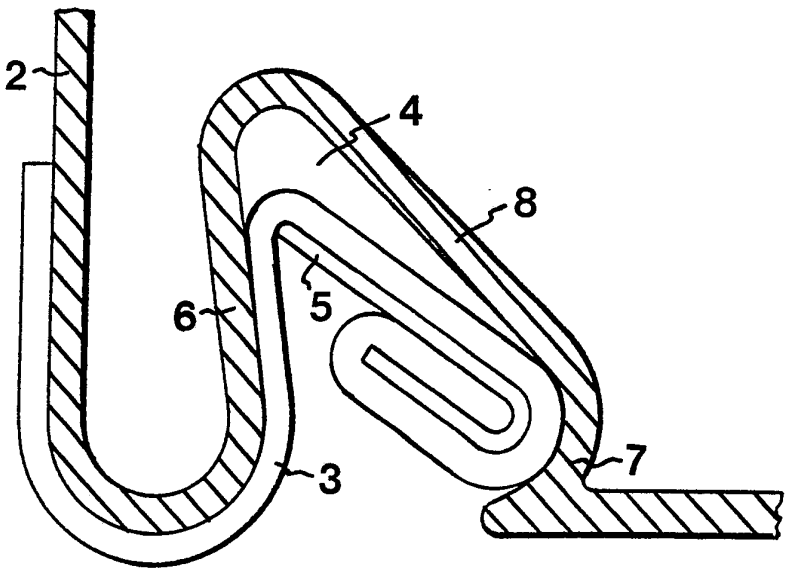

(57) Abstract

Framework, especially for furniture and other fittings and specifically for beds, but also for e.g. car seats. The framework comprises a frame (1) having a plurality of interconnected frame members (2), said frame preferably being adapted to accommodate a filling in the space defined by the frame members (2), and a cover (3) extending over the frame and the filling. The frame members (2) are formed with a longitudinal, undercut groove (4) in which a strip (5) is insertable. The strip (5) is adapted to secure an edge portion of the cover (3). After positioning the strip (5) in the groove (4), the cover (3) is secured to the groove by inclination of the strip (5) in the groove as the cover is being pulled. The frame members are provided with punched fastening tabs (9) for fixing the filling.

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FRAMEWORK, ESPECIALLY FOR FURNITURE AND OTHER FITTINGS

The present invention relates to a framework, especially for furniture and other fittings, comprising a frame having a plurality of interconnected frame members, said frame preferably being adapted to accommodate a filling in the space defined by the frame members, and a cover extending over the frame and the filling.

Securing of covers to furniture frameworks is traditionally carried out by nailing or tacking, frequently combined with gluing, which requires a yieldable framework material. If this material is metal, other solutions must be applied, which in many cases are time-consuming and necessitate a more complicated basic structure. Today, furniture frameworks are often made of wood. However, there is a tendency towards deterioration of the quality of wood from all over the world. The trade is alarmed at this fact, and therefore attempts are being made to produce an alternative to wooden frameworks.

DE-2,433,638 discloses a cover clamping device in which a strip is snapped into a groove. The strip as well as the groove are made of flexible plastic. One drawback of this device is the obvious risk that the strip falls out of the groove, if one pulls the cover so hard that the strip and/or the groove are deformed by deflection.

The object of the present invention is to provide a framework which makes it possible to readily and nicely secure a cover to a framework of an optional material.

The object is achieved in that at least two opposite frame members are formed with at least one longitudinal, undercut groove which has sides of different length and a bottom inclined relative to the plane of the groove opening and into which a strip is insertable the length of which approximately conforms to the length of the groove, and the width of which is greater than the width of the groove opening but smaller than the width of the groove

bottom and the thickness of which is substantially smaller than the width of the groove opening, an edge portion of said cover being disposable about said strip so as to cover at least part of one flat side of the strip and an edge side adjoining this flat side, whereby after positioning of the strip in said groove and as the cover is being pulled, the cover is secured to the groove by inclination of the strip in the groove and, thus, clamping of the edge portion between the strip and the wall of the groove.

One advantage obtained by the present invention is that the framework can now be made of an optional material, especially metal which can withstand higher loads than wood. Moreover, it is possible to define more accurate performance characteristics for the material, such as tensile yield limits and ultimate strength. A metal framework is also more hygienic and can be made with a lower weight.

A further advantage of the present invention is the use of a minimum of loose means of attachment both for mounting the frame proper and the filling and for securing the cover. As a result, the framework is quickly mounted and thus also inexpensive.

A still further advantage is that the design of fastening tabs on the frame members makes the mounting of the filling extremely well suited for automation, and in that case all fastening tabs are fixed simultaneously. This implies, of course, great savings.

An embodiment of the invention will now described in more detail with reference to the accompanying drawing in which

Fig. 1 is a cross-sectional view of a frame member according to the invention,

Fig. 2 is an enlarged view of the groove in the frame member, a strip with a cover secured thereto being arranged in the groove,

Figs. 3A-G show the same detail as Fig. 2, but the strip is illustrated in a number of conceivable positions,

Fig. 4 illustrates part of a mounted frame with a corner piece,

Fig. 5 illustrates a corner piece before mounting in the framework,

Fig. 6 illustrates a frame member and a bottom slat attached thereto, the frame member also being provided with fastening tabs,

Figs. 7A-H illustrate a number of possible embodiments of the fastening tabs, and

Fig. 8 shows an alternative embodiment of the strip with the cover secured thereto.

The drawing illustrates a framework for furniture and other fittings. The framework is preferably used for beds, but can also be used for car seats and for mounting of a fabric on e.g. exhibition screens or for domestic use as an alternative to wallpaper.

The framework comprises a frame 1 having a plurality of interconnected frame members 2, said frame preferably being adapted to accommodate a filling in the space defined by said frame members, and a cover 3 extending over the frame 1 and the filling. The frame member 2 which as shown in the drawing is appoximately rectangular in cross-section has, in its lower side, an undercut groove 4 adjacent the side of the frame member 2 which is intended to be directed outwards when mounted. This is best seen in Fig. 1. The undercut groove 4 has sides 6, 7 of different length and, consequently, an inclined bottom 8.

A strip or section 5 for securing the cover 3 is insertable in the groove 4. The section has a length approximately conforming to the length of the groove, a width greater than the width of the groove opening but smaller than the width of the groove bottom 8, and a thickness which is considerably smaller than the width of the groove opening. The section 5 is, in one embodiment,

J-shaped in cross-section with a long web and short flange. An outer edge of the cover 3 is clamped between the flange and web of the J, as shown in Figs. 2 and 3. The cover 3 covers at least part of one flat side of the section 5 and an edge side adjoining the flat side and is laid round the two edge sides of the section and the intermediate flat side formed by the outside of the web of the J.

The section 5 can be positioned in the groove 4 in various ways, as illustrated in Fig. 3. However, the section preferably is positioned in the groove as shown in Fig. 2. After positioning of the section in the groove and as the cover 3 is being pulled, the cover is secured to the groove by inclination of the section 5 in the groove 4 and, thus, clamping of the edge portion of the cover between the section and the wall of the groove.

In a preferred embodiment, the transition between the groove opening and the side of the frame member which is intended to be directed outwards when mounted, is gently rounded so that the cover can be nicely mounted and will not be worn off by any sharp edges.

This type of securing makes it extremely easy to replace the cover, which is very practical in case the cover gets soiled or one simply wants to exchange the cover for another of a different colour or material.

No loose means of attachment are required for securing the cover to the framework or for securing the cover to the section. If desired, the flange and web of the J can of course be upset at certain intervals for improved securing of the edge portion of the cover 3. Either the flange or the web of the J can also be provided with pins and mating holes or recesses in the other part of the J at certain intervals, so that on compressing the J, the cover will be forced by the pins into the holes or recesses.

The strip or section 5 can, of course, be designed in various ways. The essential thing is that it somehow secures the outer edge of the cover 3.

An example of a different embodiment of the strip is shown in Fig. 8. In this embodiment, the strip 5 is S-shaped in cross-section and, at 17, the cover 3 is sewn onto the strip. The cover can also be secured to the strip in some other way, e.g. by gluing.

The frame members 2 are, as shown in Fig. 4, connected to each other by corner pieces 10 which are insertable in the frame members. Fig. 4 illustrates an end frame member 15 and a longitudinal frame member 16 which are joined by a corner piece 10. The corner pieces are shown in Fig. 5 and are made of a sheet-metal L-section of which the short leg is formed with two V-shaped recesses 11 at a mutual distance a. The long leg is bent along lines extending at right angles to the short leg and through the points of the V recesses 11. The portion formed between the V recesses is secured in the portions extending outside the V recesses by upsetting. Thus, no loose means of attachment are required. The corner piece 10 is then inserted in two frame members 2 and fixed by means of blind rivet nuts 14.

Especially when using the framework as a bed frame, but also in certain other applications, bottom slats 13 are attached to the horizontal flange 12 which is provided at the lower part of the side of the frame members 2 which is directed to the centre of the bed, as appears from Fig. 6. The bottom slats 13 are preferably made of metal and attached to the flanges 12 on the long sides by e.g. upsetting.

In some prior art beds, the filling consists of a lower and sometimes also an upper spring assembly. According to the present invention, such spring assemblies are secured in an excellent way. The sides of the frame members 2, which are directed to the centre of the bed, and optionally also the upper sides of the frame members 2

and optionally also the upper sides of the frame members 2 are provided with punched fastening tabs 9. These tabs are best seen in Fig. 6. The upper spring assembly is fixed by means of the fastening tabs 9 in the upper side of the frame, and the lower spring assembly is fixed by means of the fastening tabs 9 in the side of the frame member 2 facing the centre of the bed. Since no loose means of attachement are required, such fixing operations are well suited for automation, and in that case all fastening tabs 9 are secured in a single operation. The appearance of the tabs may vary, some examples being shown in Fig. 7.

For stabilising the frame, plates extending diagonally across the corners can be mounted on the lower side of the frame. These plates can also be formed with recesses for mounting legs and possibly also for mounting bedsteads, lighting, bedside tables, and/or other fittings. Fastening means for fittings can also be arranged in the frame itself adjacent the corners, for example in the form of bores. The blind rivet nuts 14 for fixing the corner piece 10 in the frame members 2 can also be used as fastening means for various fittings.

CLAIMS

1. A framework, especially for furniture and other fittings, comprising a frame (1) having a plurality of interconnected frame members (2), said frame preferably being adapted to accommodate a filling in the space defined by said frame members (2), and a cover (3) extending over the frame and the filling, c h a r a c t e r - i s e d in that at least two opposite frame members are formed with at least one longitudinal, undercut groove (4) which has sides (6, 7) of different length and a bottom (8) inclined relative to the plane of the groove opening and in which a strip (5) is insertable the length of which approximately conforms to the length of the groove, and the width of which is greater than the width of the groove opening but smaller than the width of the groove bottom (8) and the thickness of which is substantially smaller than the width of the groove opening, an edge portion of said cover being disposable about said strip so as to cover at least part of one flat side of said strip (5) and an edge side adjoining said flat side, whereby after positioning of the strip (5) in said groove (4) and as said cover (3) is being pulled, the cover is secured to said groove by inclination of said strip (5) in the groove (4) and, thus, clamping of the edge portion between the strip and the wall (6) of the groove.

2. Framework as claimed in claim 1, c h a r a c - t e r i s e d in that said strip is a section (5) of S-shaped cross-section, the cover (3) being attached to said section.

3. Framework as claimed in claim 1, c h a r a c - t e r i s e d in that said strip is a section (5) of J-shaped cross-section, the outer edge of said cover (3) being clamped between the flange and the web of the J and the edge portion of said cover being laid round the two edge sides of said section and the intermediate flat side

of said section, formed by the outside of the web of the J and adapted to face the bottom of said groove (4) as said section (5) is inserted in the groove.

4. Framework as claimed in claim 1, 2 or 3, c h a r a c t e r i s e d in that said frame members (2) are made of roll-formed metal sheet.

5. Framework as claimed in claim 4, c h a r a c t e r i s e d in that said groove (4) is formed in the bottom of said frame member (2) adjacent the side of the frame member (2) which is directed outwards when mounted, the transition between the groove opening and the outwardly facing side of said frame member (2) being gently rounded.

6. Framework as claimed in any one of the preceding claims, intended for use as a bed frame, c h a r a c t e r i s e d in that the sides of the frame members (2) facing the centre of the frame, and optionally also the upper sides of the frame members (2) are provided with punched fastening tabs (9) for securing the filling.

7. Framework as claimed in any one of the preceding claims, intended for use as a bed frame, c h a r a c t e r i s e d in that said frame members (2) are connected with each other by means of corner pieces (10) of a sheet-metal L-section, the short leg of which is formed with two V-shaped recesses (11) spaced apart a distance a from one another and the long leg of which is bent along lines extending at right angles to said short leg and through the points of the V-shaped recesses (11), that the lower portion of said frame members (2) is provided with a horizontal flange (12) in the side facing the frame centre, for supporting bottom slats (13), and that said bottom slats (13) are made of metal and attached to the flanges (13) on the long sides, preferably by upsetting.

FIG.1

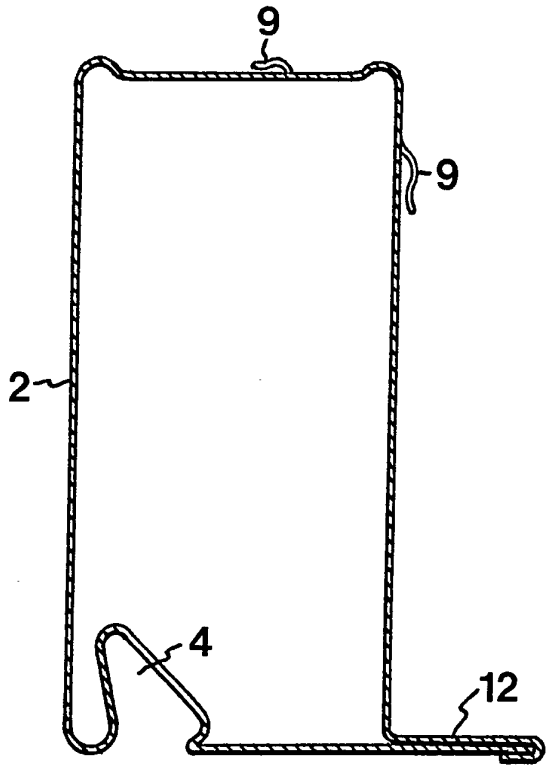


FIG.2

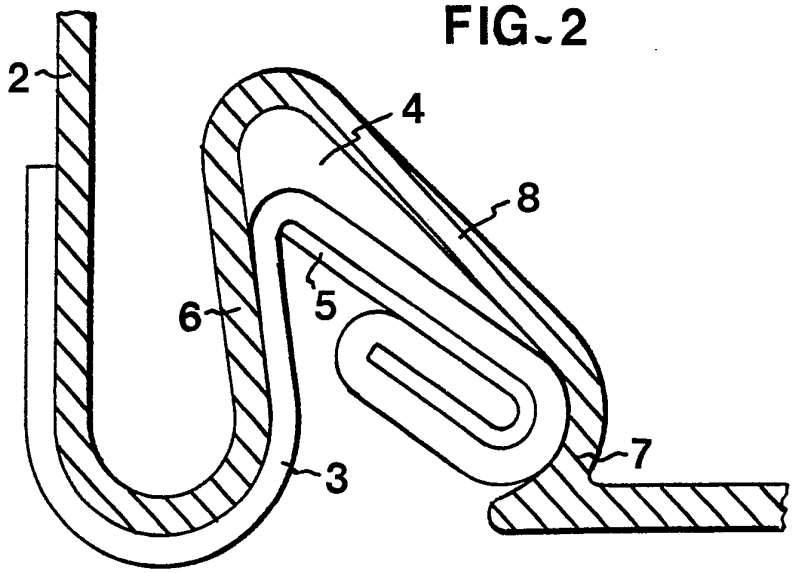


FIG.-3A-C

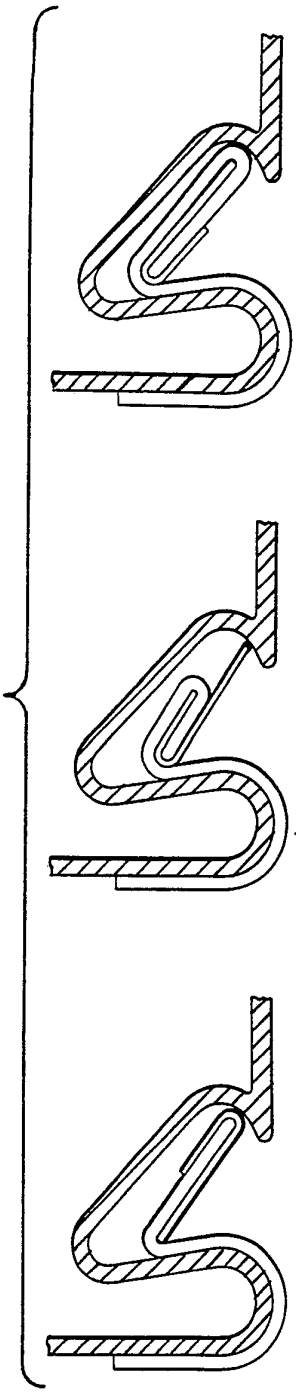


FIG.-3D-G

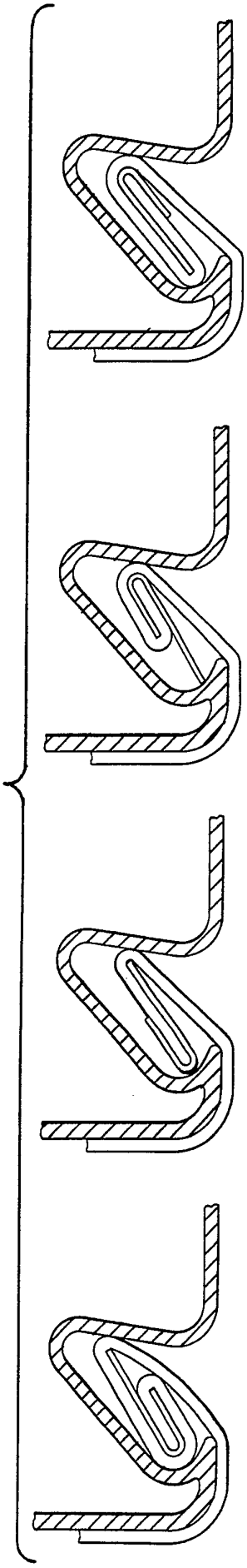


FIG.4

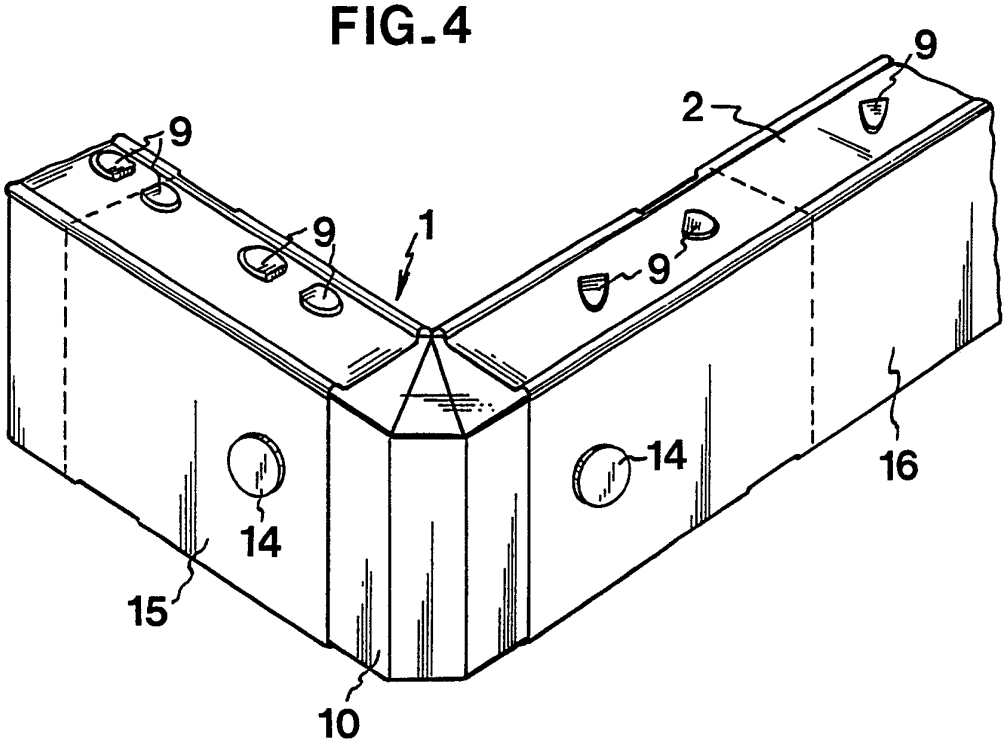


FIG.5

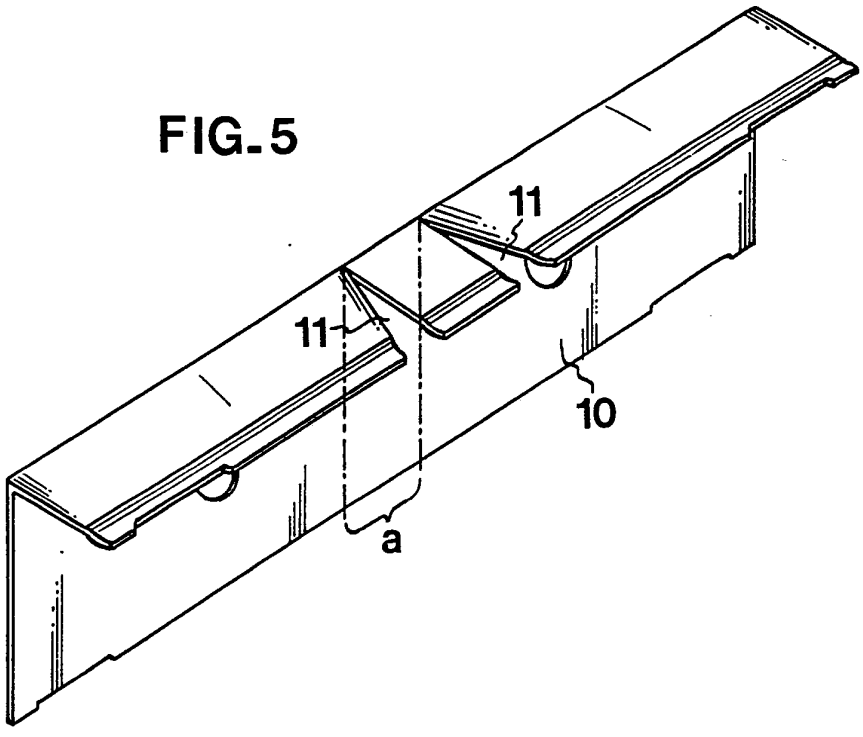
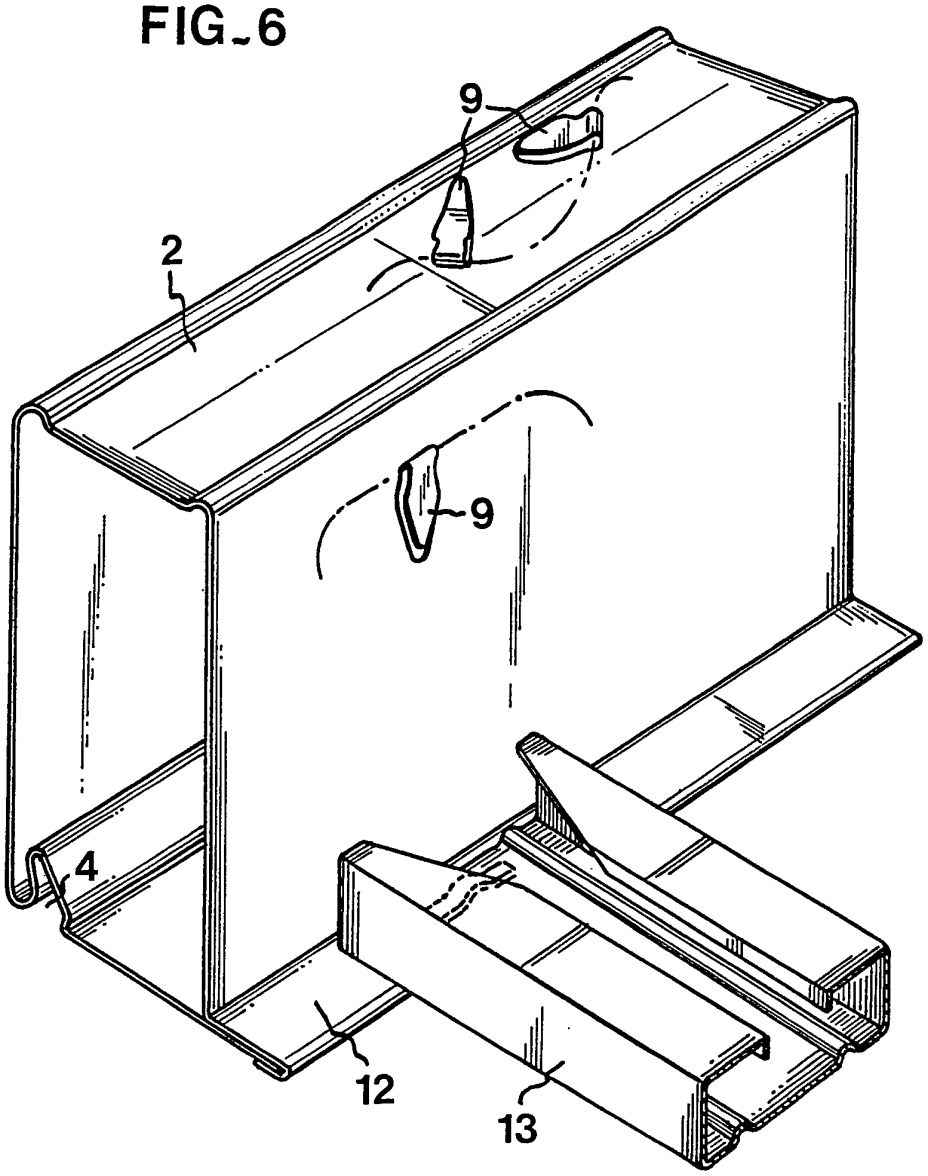


FIG_6



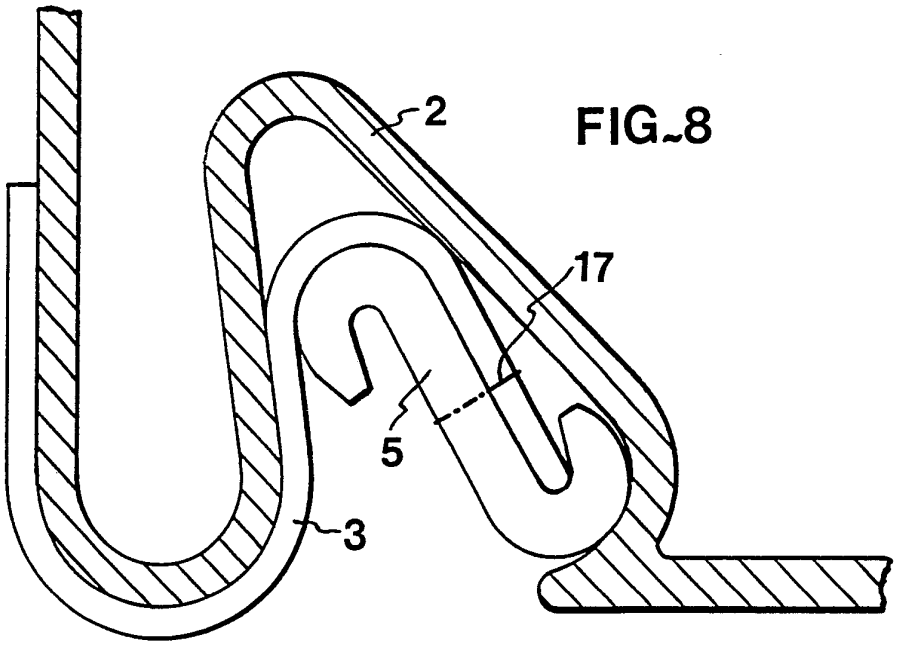


FIG_8

FIG_7E

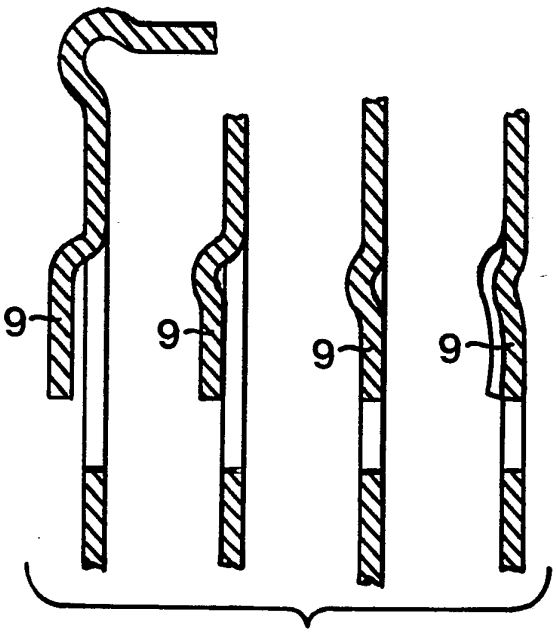


FIG_7A-D

FIG_7F

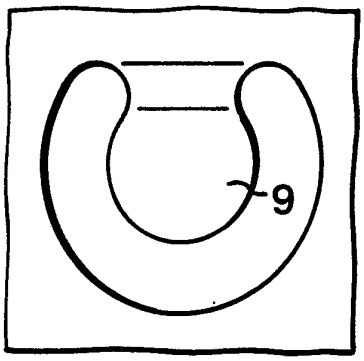


FIG_7H

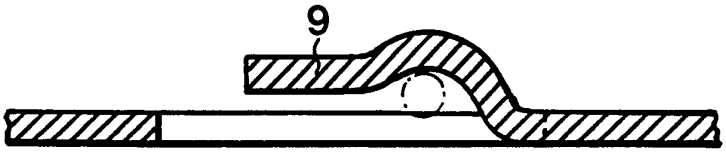
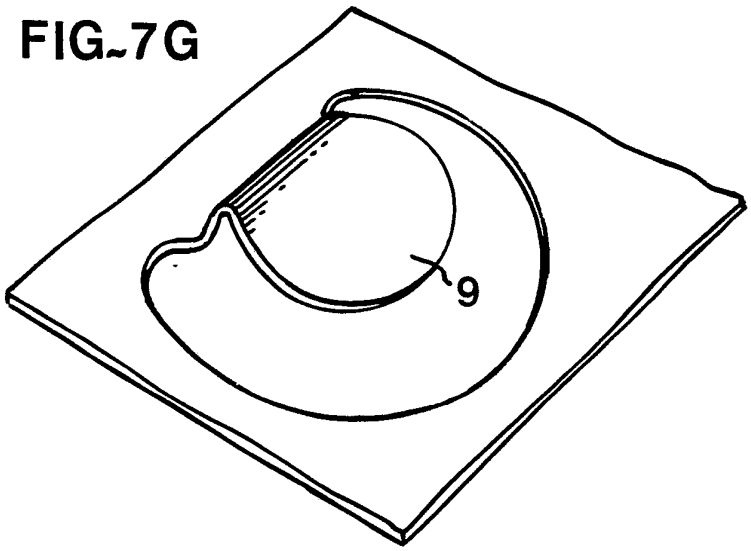


FIG_7G



INTERNATIONAL SEARCH REPORT

International Application No PCT/SE 90/00507

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all)[6]

According to International Patent Classification (IPC) or to both National Classification and IPC

IPC5: A 47 C 31/02//A 47 C 23/00

II. FIELDS SEARCHED

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Classification System	Classification Symbols
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Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in Fields Searched[8]

SE,DK,FI,NO classes as above

III. DOCUMENTS CONSIDERED TO BE RELEVANT[9]

Category *	Citation of Document,[11] with indication, where appropriate, of the relevant passages[12]	Relevant to Claim No.[13]
A	DE, A, 2433638 (PLANT PRODUCTS CO. LTD) 6 February 1975, see the whole document --	1
A	US, A, 780166 (C. G. FOSTER) 17 January 1905, see figures 3-6 --	1
A	US, A, 1132784 (C. H. MCGEE) 23 March 1915, see the whole document --	1,3
A	US, A, 3143165 (T. W. LEWIS ET AL) 4 August 1964, see figure 4 --	1
A	US, A, 4698863 (FRANK J MIS) 13 October 1987, see figures 15-18 --	7
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IV. CERTIFICATION

Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report
5th October 1990	1990 -10- 17
International Searching Authority	**Signature of Authorized Officer**
SWEDISH PATENT OFFICE	Nils Andersson

Form PCT/ISA/210 (second sheet) (January 1985)

ANNEX TO THE INTERNATIONAL SEARCH REPORT ON INTERNATIONAL PATENT APPLICATION NO.PCT/SE 90/00507

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report.
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE-A- 2433638	75-02-06	CA-A- 1005622	77-02-22
		FR-A-B- 2238078	75-02-14
		GB-A- 1469132	77-03-30
		JP-A- 50070767	75-06-12
		NL-A- 7409506	75-01-20
		US-A- 3893212	75-07-08
US-A- 780166	05-01-17	NONE	
US-A- 1132784	15-03-23	NONE	
US-A- 3143165	64-08-04	NONE	
US-A- 4698863	87-10-13	CA-A- 1240416	88-08-09
		US-A- 4597118	86-07-01