(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 142 517 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
10.10.2001 Bulletin 2001/41

(51) Int Cl.[7]: **A47F 3/00**, A47F 3/04

(21) Application number: **00830363.8**

(22) Date of filing: **19.05.2000**

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **06.04.2000 IT PD000081**

(71) Applicant: **CRIOSBANC S.p.A.**
35038 Torreglia (PD) (IT)

(72) Inventors:
- **Romio, Daniele**
  35129 Padova (IT)
- **Vanin, Luigi**
  31100 Treviso (IT)

(74) Representative: **Cantaluppi, Stefano et al**
Jacobacci & Partners S.p.A.,
Via Berchet, 9
35131 Padova (IT)

(54) An improved display counter

(57) A display counter having a bearing structure, at least one pane of glass (4, 7) and at least one corresponding support (20), the pane of glass being mounted on the bearing structure to be pivotable relative to the support (20), wherein there are provided a foot (27) which projects from the support (20) to constitute an abutment for the pane of glass, and also adjusting means for varying the projection of the foot (27) from the support (20) and the consequent position of the support (20) and the pane of glass (4, 7) relative to one another.

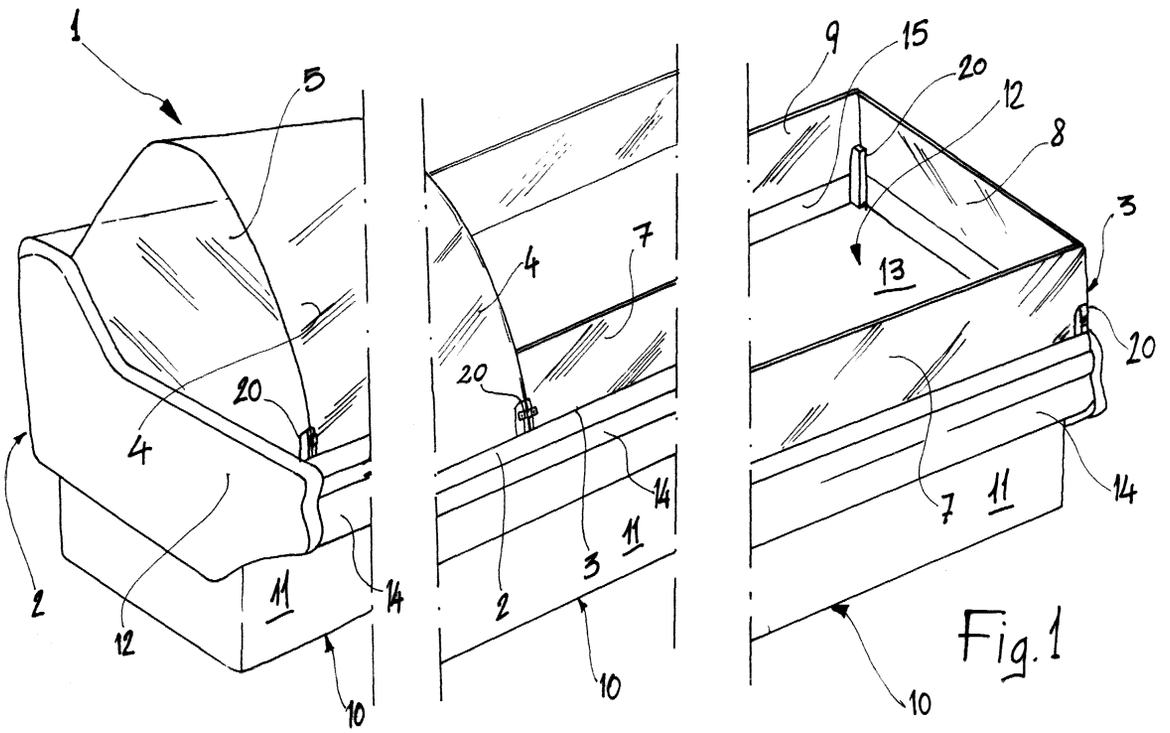


Fig. 1

EP 1 142 517 A1

Description

[0001] The present invention relates to a display counter of the type produced in accordance with the preamble of the main claim.

[0002] Counters of that type are widely used, particularly in the refrigerated version, in a multiplicity of commercial businesses for the display and sale of food products. They are divided into counters for direct service, when they are provided with relatively low panes of glass which enable customers to gain easy access to the inside of the counter to select and remove directly the goods displayed, and counters for shopkeeper service in which a pane of glass which is generally higher and prevents direct access to the counter is provided on the customer's side.

[0003] In both cases it is necessary to pivot the panes in the direction of opening the counter in order to clean them and the display shelf of the counter but it is equally necessary to be able to restrain them in the normal operative position, which is closed, in order to prevent them from tilting outwards by accident, thus endangering persons standing nearby.

[0004] It is also necessary to be able to adjust the position of the panes when several display counters are arranged side by side to form a counter which is composite and/or in various combinations.

[0005] According to the prior art in the field of display counters, the panes are normally supported by uprights which make up the bearing structure of the counter. Although that structural system for counters is strong and secure, it normally makes it necessary for the panes to be hinged to the upper bearing structure of the counter, along the upper side of the panes. That presents the clear disadvantage that the panes are awkward to open, can be adjusted only slightly or not at all and are not suitable for being mounted with hinging at the base, along the lower side of the pane, because no efficient means are provided for preventing them from tilting open accidentally.

[0006] The problem underlying the present invention is to provide a display counter which is designed structurally and functionally to prevent all the disadvantages discussed with reference to the mentioned prior art.

[0007] The problem is solved by the invention by means of a display counter produced in accordance with the claims which follow.

[0008] The characteristics and advantages of the invention will become clearer from the detailed description of some of its embodiments which are illustrated by way of nonlimiting example in the appended drawings in which:

- Figure 1 is a partial perspective view of a refrigerated display counter produced in accordance with the present invention;
- Figures 2 and 4 are perspective views on an enlarged scale of respective details of the counter of Figure 1;
- Figure 3 is a partially sectioned view on an even larger scale of the detail of Figure 2;
- Figures 5 and 6 are views in partial section and in perspective, respectively, of the detail of Figure 4;
- Figure 7 is a diagrammatic cross-sectional view of the counter of the previous Figures;
- Figures 8 and 9 are views in perspective and in section, respectively, of a further detail of the counter (securing of the side panel to the shelf).

[0009] In Figure 1 a refrigerated display counter produced in accordance with this invention is generally indicated 1. The counter 1 comprises two or more adjacent modules, for example a module of the type for shopkeeper service 2 arranged next to a module for direct service 3. That combination is given purely by way of example in order better to demonstrate the potential of the invention, it being more usual in practice to combine identical modules in alignment with one another. Other combinations, known per se, are of course possible.

[0010] The module 2 for shopkeeper service comprises a pane of glass 4 at any height and a side panel 5 with a pane of glass (Figures 8 and 9). The module 3 for direct service comprises side panes 7, 8, 9 of reduced height, the front side pane 7 being aligned in longitudinal extension with the pane 4 of the module 2. The whole is supported by identical bearing structures 10 including a base 11 and a container 12.

[0011] In its turn, the container 12 comprises a display shelf 13 along the longitudinal sides of which respective walls 14, 15 are erected.

[0012] The two front panes are both hinged to the base on the front wall 14 in such a manner that they can pivot towards the outside of the counter. Hinging is effected by the rotatable coupling of a sectional member 16 having a cylindrical head 17, which sectional member 16 is fitted to the lower edge of all the panes that can be opened (in the example illustrated, the panes 4, 7, 9) and the head 17 of which is accommodated in a sectional member 18 which has a cylindrical groove 19 and which is fitted to the corresponding front 14 and rear 15 walls.

[0013] A plurality of supports 20 rise from the bearing structure 10 to project beyond the walls 14, 15 at the location of the longitudinally opposite ends of the openable panes. Where two openable panes are adjacent to one another (joining of modules 2 and 3 at the location of the front wall 14), a single support 20 is provided for both.

[0014] The supports 20 have a curved rod-like shape, are secured to the bearing structure of the counter 1 and have, in the vicinity of the upper free end, a threaded hole 21.

[0015] If a single support is used for two adjacent panes, it is provided with a cross-member 22 which is secured to project symmetrically from both sides of the

support by means of a screw 23 engaged in the hole 21. The cross-member 22 has respective threaded holes 25 at its opposite ends. The threaded shaft 26 of a foot 27, the head 28 of which, widened relative to the shaft, constitutes an adjustable abutment for supporting the pane 4, 7 and is protected by a cap 29 of elastomeric material, is adjustably engaged in each hole 25. In an entirely analogous manner, where adjacent panes are not provided, or where the adjacent pane is not adjustable in position relative to the support 20 (Figures 2 and 3), a single foot 27 is screwed by means of its shaft 26 into the hole 21 in order to constitute an adjustable abutment for the pane 4, 7.

[0016] In order to prevent the accidental tilting of the pane 7, and even more so of the pane 4, the weight of which can reach and exceed several tens of kilograms, a restraining member which, in the version for a single foot (Figures 2 and 3), is marked 31 and, in the version for a double foot (Figures 4 - 6), is marked 32, is provided between the pane and the support. The restraining member 31 comprises a bracket, for example produced from bent sheet metal, which can be coupled to the free edge of the pane 4 or 7 and, at the same time, to the widened head 28 of the corresponding foot 27. The bracket comprises a groove 33 defined between two wings 34a, b, the first being capable of surrounding the pane surface that is on the outside relative to the counter and the second being provided with a notch 35 and being capable of surrounding the head 28 of the foot 27 in order to hold closely against the cap 29 the pane surface that is on the inside of the counter. It will be appreciated that the notch 35 extends parallel with the groove 33, or the free edge of the corresponding pane, in such a manner as to enable the bracket to slide parallel with the above-mentioned edge from an operative position locking the pane, in which the pane is prevented from pivoting in the opening direction (Figures 2 and 3) and a non-operative position (broken line in Figure 4) in which the pane is freely pivotable in the opening direction, for example for cleaning operations. It will be appreciated that, with the pane placed against the foot, that is to say, in the closed position, the bracket 31 tends to fall back by gravity into the operative locking position when it is released.

[0017] The restraining member 32 is identical in design to the previous restraining member and the only difference is that the bracket is in double form, the two portions having a reflectively symmetrical shape. The bracket therefore has two grooves 33, delimited between respective wings 34a, b, and as many notches 35 which are each arranged to receive the shaft of the corresponding foot.

[0018] In the case of angular counters, the adjacent modules of which are arranged with a given angulation between each other, the two grooves are angled relative to one another by the same angulation that exists between the adjacent panes.

[0019] The invention thus solves the problem set, obtaining numerous advantages, including efficient and secure locking of the pane in the closed position, the possibility of easy mounting of panes articulated along their base side to the bearing structure of the counter and the possibility of easy access to the counter for cleaning operations.

Claims

1. An improved display counter comprising a bearing structure, at least one pane of glass (4, 7) extending from the bearing structure (10), at least one corresponding support (20) for the pane of glass (4, 7), the pane of glass being mounted on the bearing structure to be pivotable relative to the support, **characterized in that** it comprises at least one foot (27) projecting from the support (20) to constitute an abutment for the pane of glass (4, 7), adjusting means being provided to vary the projection of the foot (27) from the support (20) and the consequent position of the support (20) and the pane of glass (4, 7) relative to one another.

2. A display counter according to claim 1, wherein a restraining member (31, 32) is provided between the pane of glass (4, 7) and the support (20) and is capable of releasably coupling the pane of glass to the support by means of the foot (27) in order to prevent the accidental opening thereof.

3. A display counter according to claim 2, wherein the restraining member comprises a bracket (31, 32) capable of being coupled to a free edge of the pane of glass (4, 7) and, at the same time, of being coupled to the foot (27).

4. A display counter according to claim 3, wherein the foot (27) has a shaft (26) secured to the support (20) and a head (28) facing the pane of glass (4, 7) and widened relative to the shaft, the bracket (31, 32) including a groove (33) defined between two wings (34a, b), the first being capable of surrounding a surface of the pane of glass (4, 7) that is on the outside of the counter and the second being capable of surrounding the head (28) of the foot (27) in order to hold there closely the surface of the pane of glass that is on the inside of the counter.

5. A display counter according to one or more of the preceding claims, wherein the support (20) is arranged at at least one of the two opposite longitudinal ends of the pane of glass (4, 7).

6. A display counter according to claim 5, wherein a single support (20) is provided at the location of two adjacent panes of glass, the support (20) having two feet (27) which each acts on the corresponding

pane of glass.

7. A display counter according to claim 6, wherein the restraining member comprises a single bracket (32) which is capable of surrounding both of the adjacent panes of glass (4, 7) and the associated feet (27).

8. A display counter according to one or more of claims 4 to 7, wherein a notch (35) is provided in the second wing (34a, b) of the bracket in order to couple the bracket (31, 32) to the foot (27).

9. A display counter according to claim 8, wherein the notch (35) extends parallel with the groove (33).

10. A display counter according to one or more of the preceding claims, wherein the shaft (26) of the foot (27) is threaded.

11. A display counter according to one or more of the preceding claims, wherein two panes of glass (5, 6) that are substantially angled relative to one another are provided and wherein, in order to anchor the panes of glass to one another, a second bracket is provided which includes two integral grooves which are angled relative to one another with an angulation corresponding to that of the panes of glass and each of which is capable of surrounding the corresponding pane of glass along two opposite surfaces.

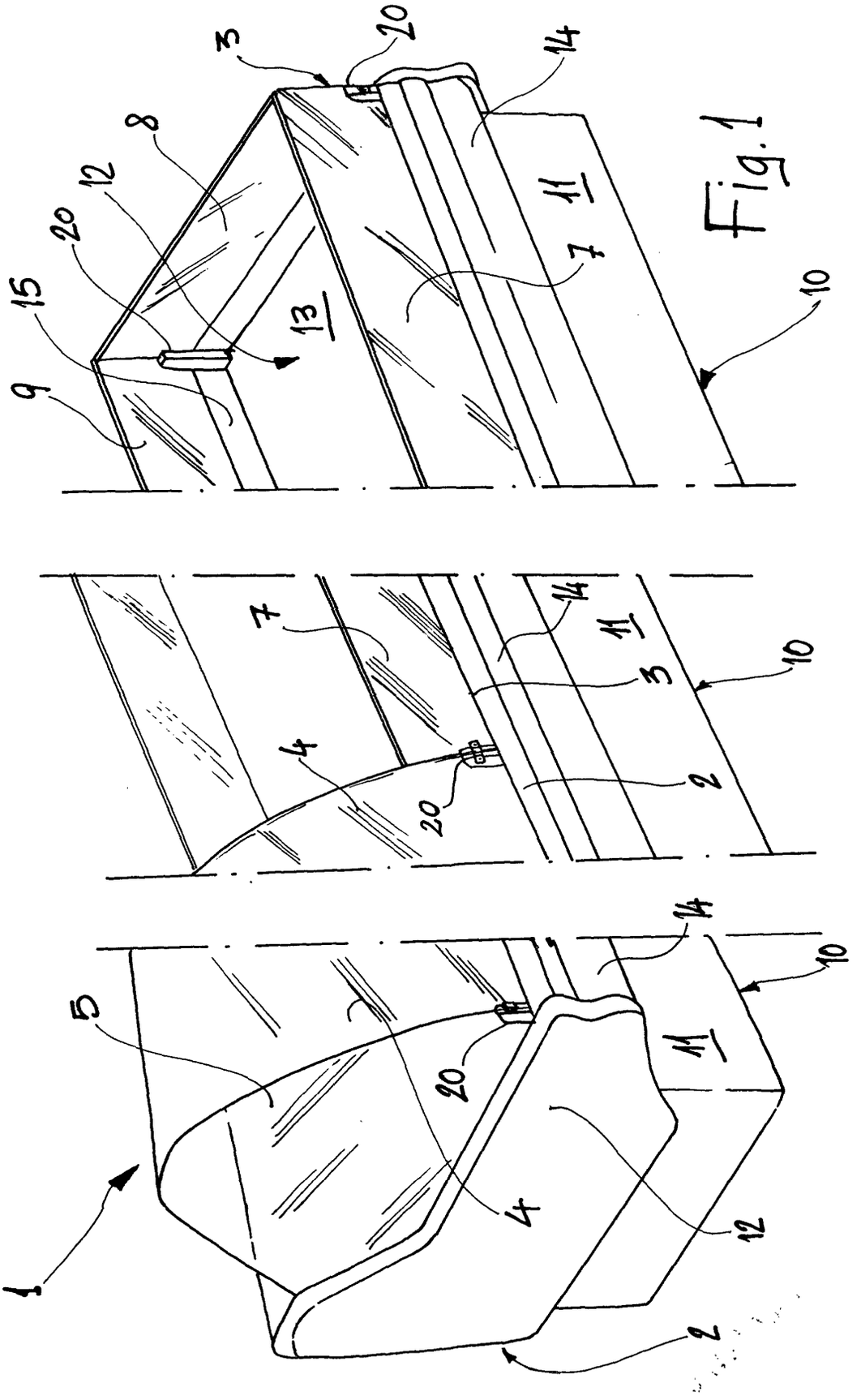


Fig. 1

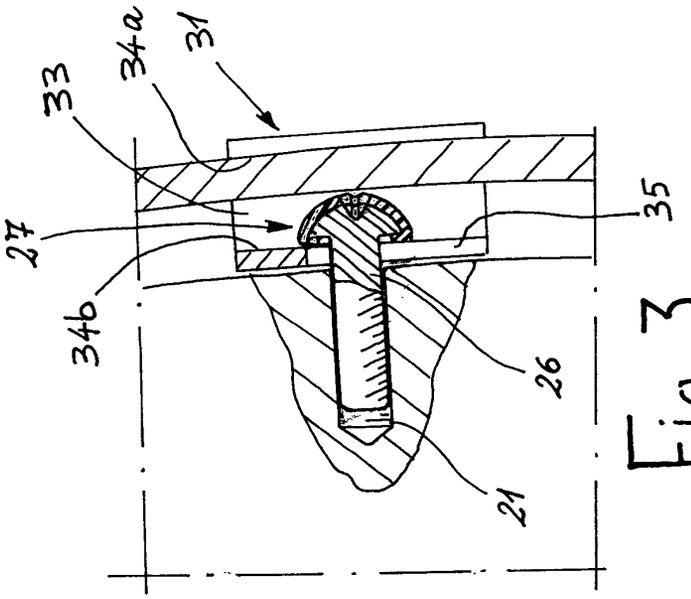


Fig. 3

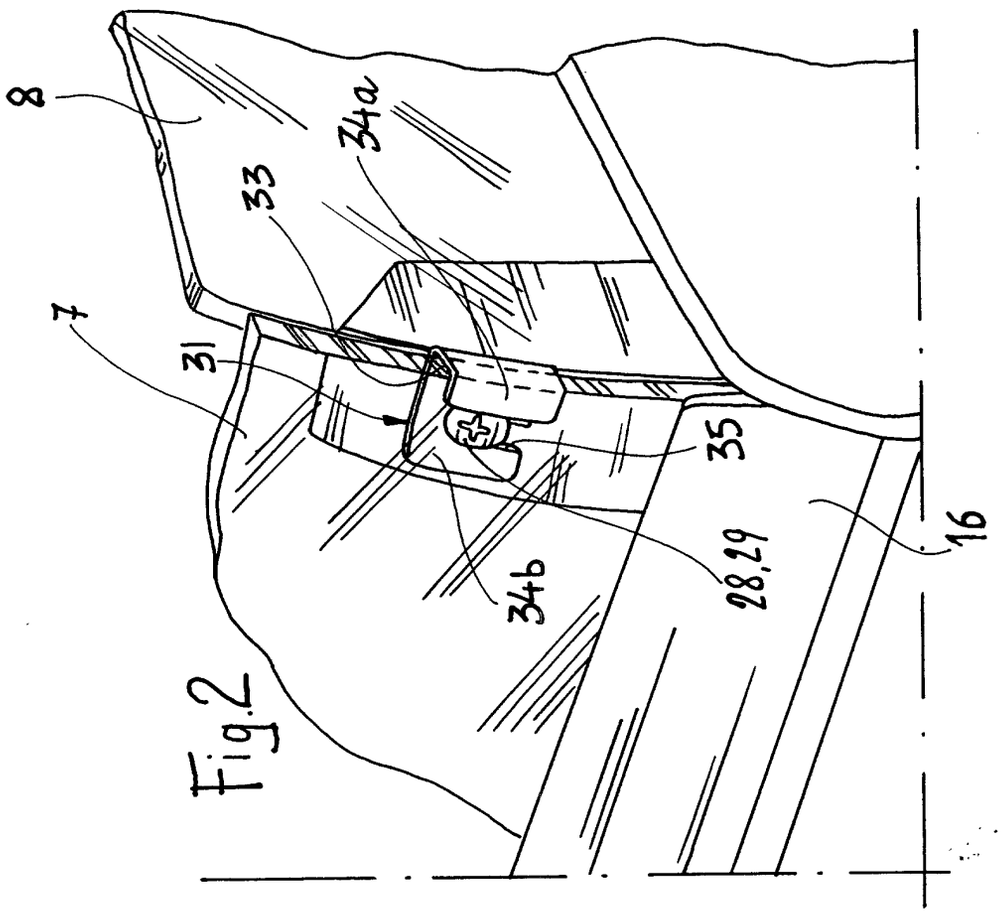


Fig. 2

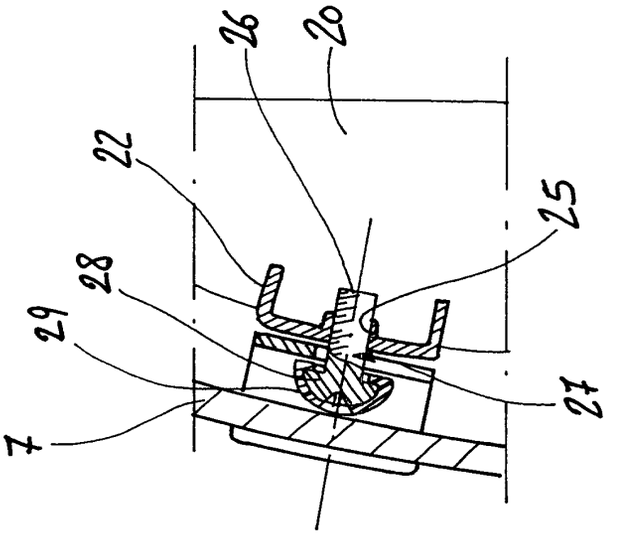


Fig. 5

Fig. 4

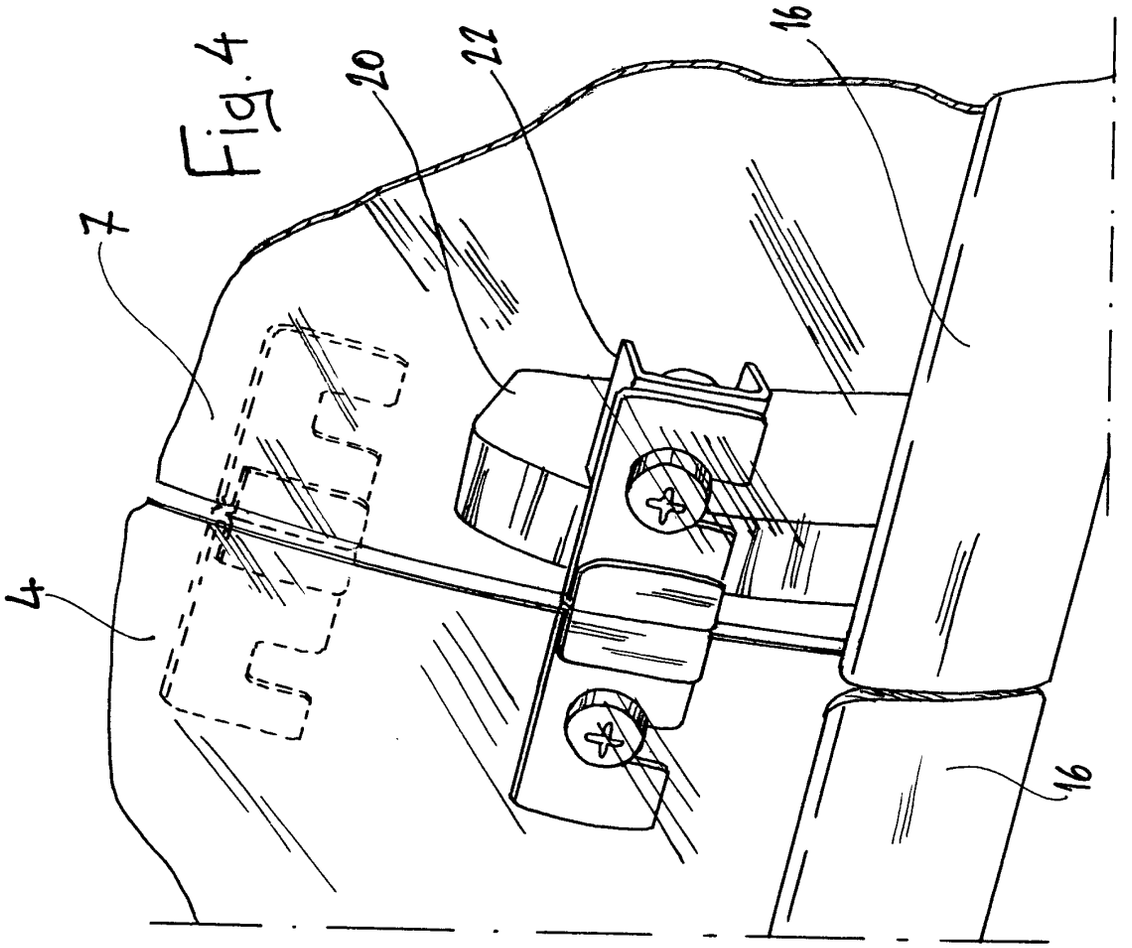
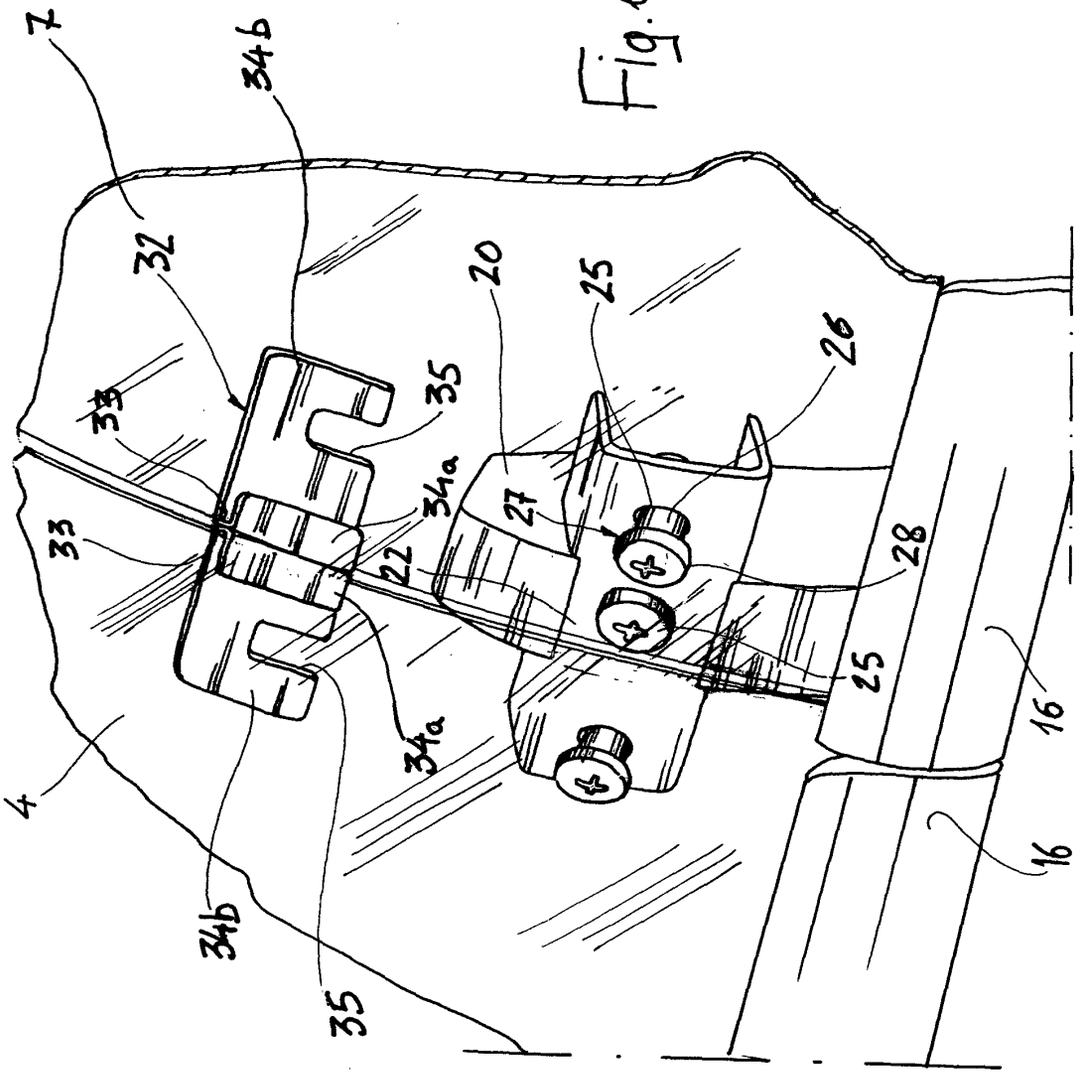


Fig.6



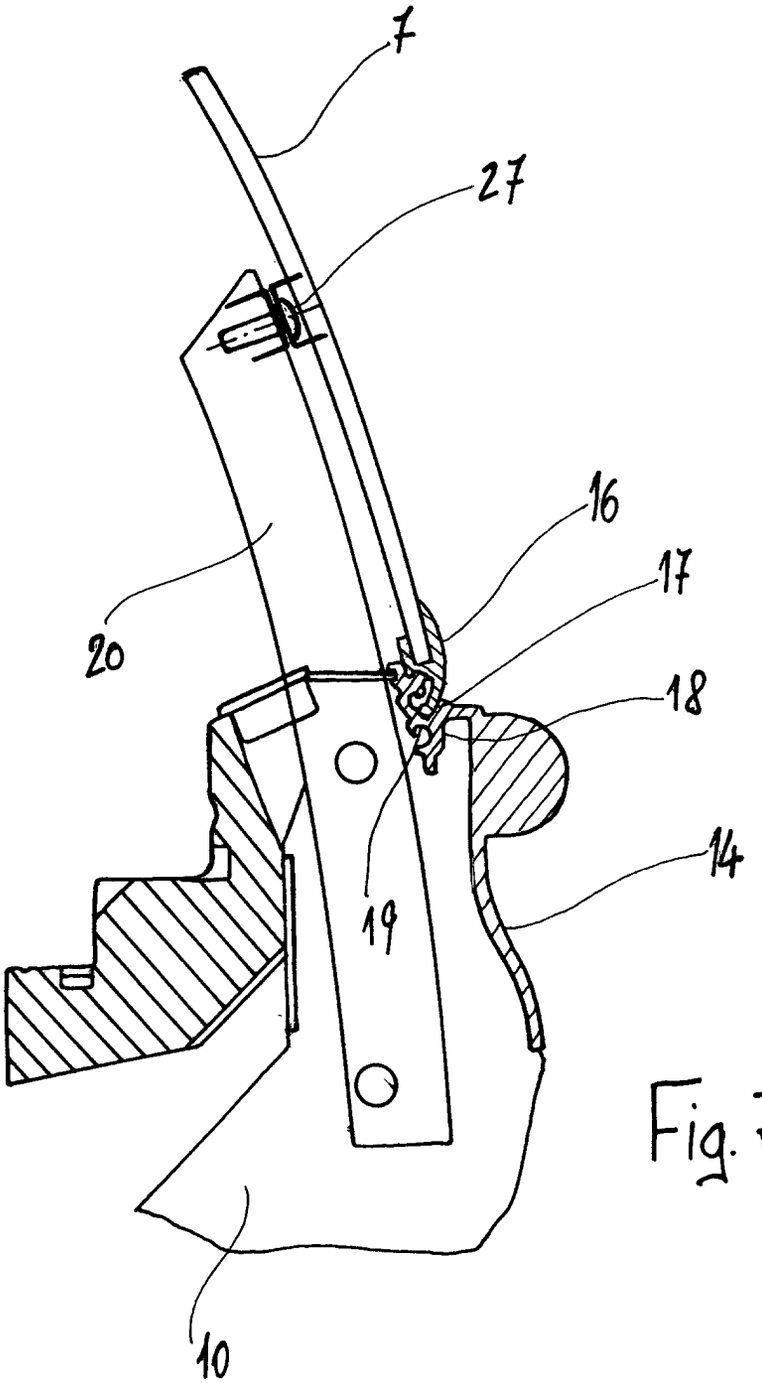


Fig. 7

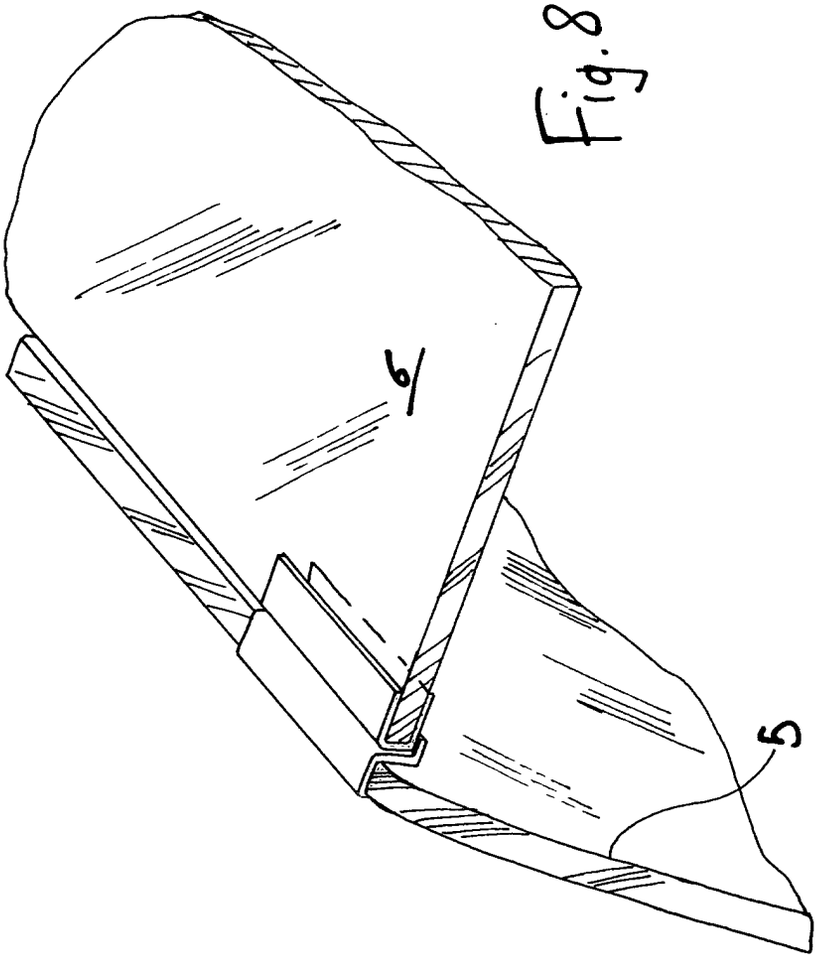


Fig. 8

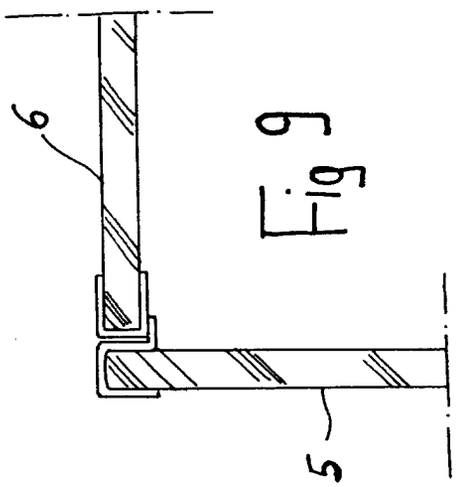


Fig 9

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 00 83 0363

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.7)
X	DE 28 41 657 A (SCHAUB ALOIS E) 10 April 1980 (1980-04-10) * page 9, line 17 - page 11, line 5 *	1	A47F3/00 A47F3/04
A	* page 12, line 17 - page 13, line 3; figure 1 *	4,10	
A	DE 89 06 665 U (WESCHO-LADENBAU GMBH & CO KG) 13 July 1989 (1989-07-13) * page 7, line 10 - page 9, line 16; figures *	2,3	

TECHNICAL FIELDS SEARCHED (Int.Cl.7)

A47F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	13 July 2001	Pineau, A

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

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 00 83 0363

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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

13-07-2001

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 2841657 A	10-04-1980	NONE	
DE 8906665 U	13-07-1989	NONE	

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