

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
30 October 2008 (30.10.2008)

PCT

(10) International Publication Number
WO 2008/129568 A1

(51) International Patent Classification:
A47C 17/04 (2006.01) A47C 7/48 (2006.01)

(21) International Application Number:
PCT/IT2007/000288

(22) International Filing Date: 18 April 2007 (18.04.2007)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant (for all designated States except US): SOCI-
ETA' VETRARIA BIANCADESE SAS [IT/IT]; Via
Paris Bordone 82, I-31030 Biancade (Treviso) (IT).

(72) Inventor; and

(75) Inventor/Applicant (for US only): LUCATELLO, Ric-
cardo [IT/IT]; Via Ca'Morelli, 41, I-31030 Biancade (Tre-
viso) (IT).

(74) Agents: DRAGOTTI, Gianfranco et al.; Dragotti & As-
sociati Srl, Via Paris Bordone 9, I-31100 Treviso (IT).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH,
CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES,
FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN,
IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR,
LS, LT, LU, LY, MA, MD, MG, MK, MN, MW, MX, MY,
MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS,
RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL,
PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv))

Published:

— with international search report

(54) Title: FURNITURE FOR SITTING AND LAYING

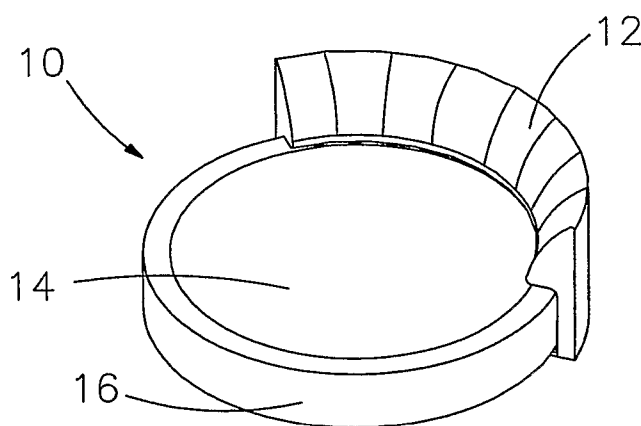


Fig. 1

(57) Abstract: Furniture piece (10) comprising
a support frame (18), preferably equipped with
one or more elements in soft material (such as
pillows, cushions, mattresses, stuffing, padding,
etc.) on which a person can sit or lie down, and
at least one vertical support element (12) asso-
ciated with the frame perimeter, characterised in
that the at least one vertical support element (12)
is mounted horizontally slidable on the support
frame (18).



WO 2008/129568 A1

FURNITURE FOR SITTING AND LAYING

5 The present invention regards a furniture piece for sitting and/or lying down, such as a bed, a couch or an armchair. As an example, below a bed is considered.

In addition to the more common single or larger-size beds of rectangular or square plant, beds are known on the market with particular forms, for example circular, heart-shaped or still others.

10 A person who wishes to sit down on a round-shaped bed would not be able, however, to comfortably support his back, since usually beds of this form are arranged at the centre of a room, or in any case even if they are up against a wall, the bed portion adjacent to the wall itself would be very small.

15 A circular shape bed, due to its form, tempts one to lie down in every direction. If the bed is provided with a headboard for supporting the back, one element of comfort is added but another is taken away, since one loses the particular feature of being able to change at will the direction in which one lies down, without having to orient the bed. Moreover, the headpiece requires that one turns their back on a same side of the bed, which is difficult for two or more people.

20 The main object of the invention is to provide a furniture piece for sitting and/or lying down which is easy to use.

25 These and other objects are attained by a furniture piece comprising a support frame, preferably equipped with one or more elements in soft material (such as pillows, cushions, mattresses, stuffing, padding etc.) on which a person can sit or lie down, and at least one vertical support element associated with the frame perimeter, characterised in that the at least one vertical support element is mounted horizontally slidable on the support frame.

The support element can in this manner be moved along the edge of the frame of the furniture piece and/or around it so to be arranged in the desired position, where the user most wishes it to be. By providing several movable support elements, the furnishing of the invention becomes highly configurable and convenient.

30 Advantageously, the furnishing piece comprises guide means associated with the support element to make it slide as stated.

Advantageously, such guide means can use rolling elements mounted between the support element and the support frame, to reduce the friction, and also to provide an adjustment mechanism for regulating the tilt or positioning of the support element. A guide

- 2 -

or track fixed to the frame can be made, on which the rolling elements can roll and also be moved on this without permanent mechanical constraints. A favourable variant is had if the rolling elements and the entire support element rest on said guide or track but can be lifted from it since they are not retained along a vertical direction. Thus the support element results easily detachable from the frame by simple lifting, with great mounting/dismantling and maintenance ease.

Advantageously, the furnishing piece can comprise motor means for moving the support element without manual intervention, and an electronic control unit which drives the motor means, so to automate and/or program the movement of the support element or elements.

Advantageously, the support element can be different from a headboard, for example a holder trolley which the user can move around the furniture piece into the desired position.

The features and advantages of the present invention will be more evident from the following description, given as merely exemplifying.

The case is considered of a round bed, even if the bed or furniture piece of the invention can be of any other form, like the support element. The circular form is preferred for geometric reasons and for manufacturing ease, though a polygonal plan is also possible (for the support frame), limiting the movement of the support element to one side of the polygon or providing an adequate spacing from the frame to permit going beyond the corners or providing extraction means on the support element to remove it as required to move beyond the corner (for example a radial guide).

In the attached drawings:

- Figure 1 is an axonometric schematic view of the bed according to the invention;
- Figures 2, 3 are respectively schematic top views and side views of the bed of Figure 1;
- Figure 4 is a section view along a vertical plane of one side of the bed of Figure 1;
- Figure 5 is an enlarged view of the detail of Figure 4 comprised in the rectangle Q;
- Figures 6 and 7 are respectively a front view and a lateral view of a holder.

A bed 10 comprises a mattress 14 con an annular padding 16, covered for example in leather or fabric, which protects the lateral surface of the mattress 14. The mattress 14 and the padding 16 are arranged on a support frame 18, better seen in figure 4, to which a curved headboard 12 is associated.

The support frame 18 comprises

- a load-bearing surface 42 from which a vertical shoulder 24 extends in perpendicular

- 3 -

direction, above which the annular padding 16 is engaged;

- a circular plan base 28 with ground support feet which sustains the surface 42 and on the perimeter of which a metal vertical plate 30 is rigidly fixed, arranged on the edge of the base 28 so to project slightly above it by a certain jutting section. This jutting section creates a rail 31 with circular course, on which a trolley 20 can slide which bears the headboard 12. In the case of several movable headboards, several trolleys are employed. A vertical panel 24 is rigidly fixed to the trolley 20, and the headboard 12 is in turn mounted on the vertical panel 24.

As in figures 5, 6 and 7, the trolley 20 comprises a substantially "U" folded rigid structure 22 having a horizontal plate 21 whose ends are respectively integral with two vertical plates 40, 23. To avoid undesired bending or yielding under force, the plates 21, 23, 40 are constrained by lateral reinforcement tabs 80, 81 and 82.

A horizontal plate 90 is placed projecting towards the centre of the bed 10 at the opposite end of the plate 40, and fixed to the lower part of plate 90, at about the centre point of its length, is a vertical disc 92.

A roller 36 with vertical axes Y is pivoted with bearing in a known manner to the free end of the plate 90. A roller 34 with horizontal rotation axis X is pivoted with bearing in a known manner to the disc 92 and to the plate 40.

The two rollers 34, 36 therefore rotate with axes orthogonal to each other, and the mutual arrangement of the rollers 34, 36 is such that they are across from each other and have a very close edge.

Flanking the plate 21, a bracket 26 is mounted which has an elongated horizontal slot 39 within which two known fixing means 38, integral with the plate 21, can tighten the bracket 26 in the desired position. At the end of the bracket 26 opposite the plate 23, a roller 32 is rollingly pivoted which has a vertical rotation axis Y2 and is opposite the roller 36, with respect to which it lies in a lower position. It results that the bracket 26, and thus the roller 32, can assume a horizontally adjustable position, projecting from the plane of the plate 40 towards the roller 36.

As seen in figure 5, the rollers 32, 34, 36 are arranged to go into abutment and slide along the plate 30. In particular, the roller 34 transfers the weight of the trolley 20 and of the headboard 12 on the top of the rail 31, while the other two rollers 32, 36, working in opposition, one from one side and one from the other side of the plate 31, transfers on the plate 30 the moment of the trolley 20 and headboard 12 weight, preventing that these overturn. It is noted that the reciprocal arrangement of the rollers 32, 34, 36 is such to permit

- 4 -

their simultaneous contact with the plate 30 (the distance between the rolling surfaces of the rollers 32, 36 is substantially equal to the thickness of the plate 30).....

By moving the bracket 26 horizontally (direction XX) one can

5 - adjust the tilt of the structure 22 and thus of the trolley 20 with respect to the plate 30, and consequently that of the headboard 12 with respect to the frame 18;

- facilitate the mounting of the bed 10.

It is also noted that the arrangement of the bearings 32, 34, 36 permit an easy removal of the trolley 20 from the plate 30: it in fact suffices to lift the same trolley 20 and subsequently move it outwardly from the bed.

10 From that described, one understands how the headboard 12 is movably mounted on the frame 18 and can be moved around the mattress 12 along a circular course (direction F, fig. 2). Known locking means (not shown) can lock it in the desired position.

The headboard 12 can of course be sustained by one or more trolleys 20, based on its weight and size.

15 According to one variant of the invention, a bed comprises, slidable around the mattress perimeter, a trolley which instead of the headboard sustains a holder element which can consequently be positioned anywhere along the edge of the mattress.

Claims

1. Furniture piece (10) comprising a support frame (18), preferably equipped with one or more elements in soft material, such as pillows, cushions, mattresses, stuffing, padding, etc., on which a person can sit or lie down, and at least one vertical support element (12) associated along the frame perimeter, characterised in that the at least one vertical support element (12) is mounted horizontally slidable on the support frame (18).

2. Furniture piece according to claim 1, comprising guide means (20, 30) associated to the support element (12) to make it slide along the frame (18).

3. Furniture piece according to claim 2, wherein the guide means (20, 30) comprise rolling elements (32, 34, 36) mounted between the support element (12) and the support frame (18).

4. Furniture piece according to claim 2 or 3, comprising an adjustment mechanism (26, 28, 29) for adjusting the tilt or positioning of the support element (12).

5. Furniture piece according to any one of the claims 2 - 4, wherein the guide means (20, 30) comprise a guide or track fixed to the frame (18) on which the rolling elements (32, 34, 36) can roll or move without permanent mechanical constraints.

6. Furniture piece according to claim 5, characterised in that it has a support frame with polygonal plan.

7. Furniture piece according to claim 6, comprising extraction means on the support element to remove it as required in order to move beyond a corner of the support frame.

8. Furniture piece according to claim 5, characterised in that it has a support frame of circular plan.

9. Furniture piece according to claim 8, wherein the support frame comprises a load-bearing surface (42) and a base (28) which sustains said surface (42), a vertical plate (30) being fixed on the perimeter of the base (28), plate (30) arranged so to project above the base (28) by a certain jutting section and to form a rail (31) with circular course, on which at least one trolley (20) can slide which bears the support element (12).

10. Furniture piece according to claim 9, wherein the trolley (20) comprises at least three rollers (32, 34, 36) arranged to go in abutment and slide on the plate (30), where one roller (34) with horizontal rotation axis (Y) transfers the weight of the trolley (20) on the top of the rail (31), while the other two rollers (32, 36), with vertical rotation axis (Y, Y2) and working in opposition, one from one side and one from the other side of the plate (31), transfers on the plate (30) the moment of the trolley (20) weight.

11. Furniture piece according to claim 10, wherein the trolley (20) comprises a rigid

- 6 -

structure (22) substantially "U" folded and having a horizontal plate (21) whose ends are respectively integral with two vertical plates (40, 23).

5 12. Furniture piece according to claim 11, wherein on one end of a vertical plate (40) of the trolley (20), a horizontal plate (90) is placed projecting towards the centre of the furniture piece (10), and fixed to the lower part of plate (90), at about the centre point of its length, is a vertical disc (92), a roller (36) with vertical rotation axis (Y) being pivoted to the free end of the plate (90) and a roller (34) with horizontal rotation axis (X) being pivoted to the disc (92) and to said vertical plate (40).

10 13. Furniture piece according to any one of the claims 10 - 12, wherein the trolley (20) comprises a horizontally movable bracket (26) at the end of which one of the rollers (32) with vertical axis (Y2) is rollingly pivoted, the movement of the bracket (28) permitting to adjust the tilt of the trolley (20) with respect to the plate (30).

14. Furniture piece according to any of the preceding claims, comprising motor means for moving the support element (12) without manual intervention.

15 15. Furniture piece according to claim 14, comprising an electronic control unit, so to automate and/or program the movement of the support element or elements (12) by means of control of the motor means.

1/4

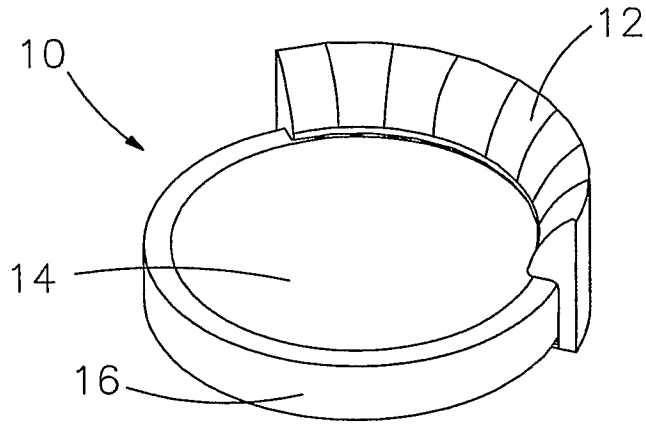


Fig. 1

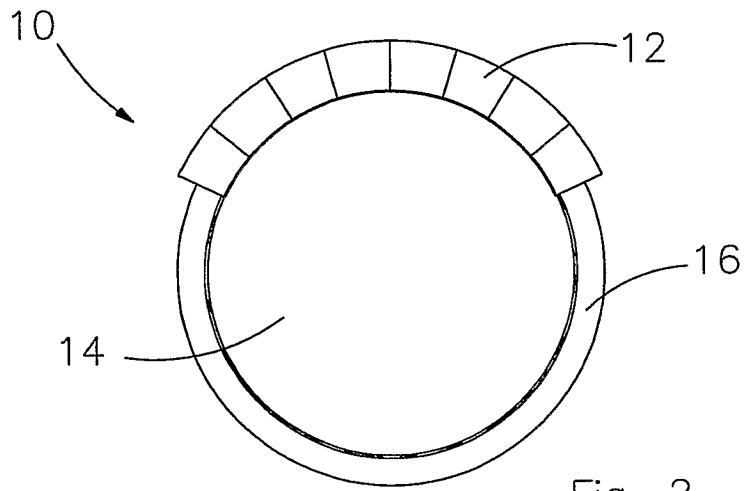


Fig. 2

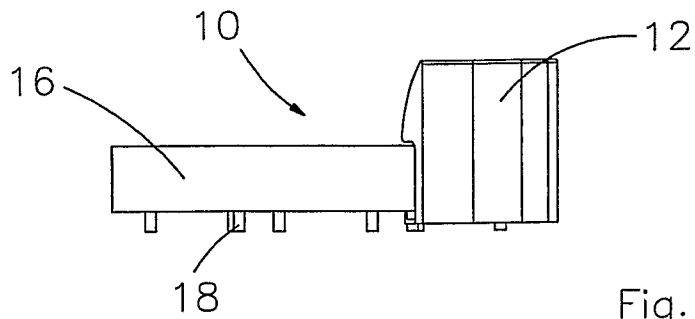
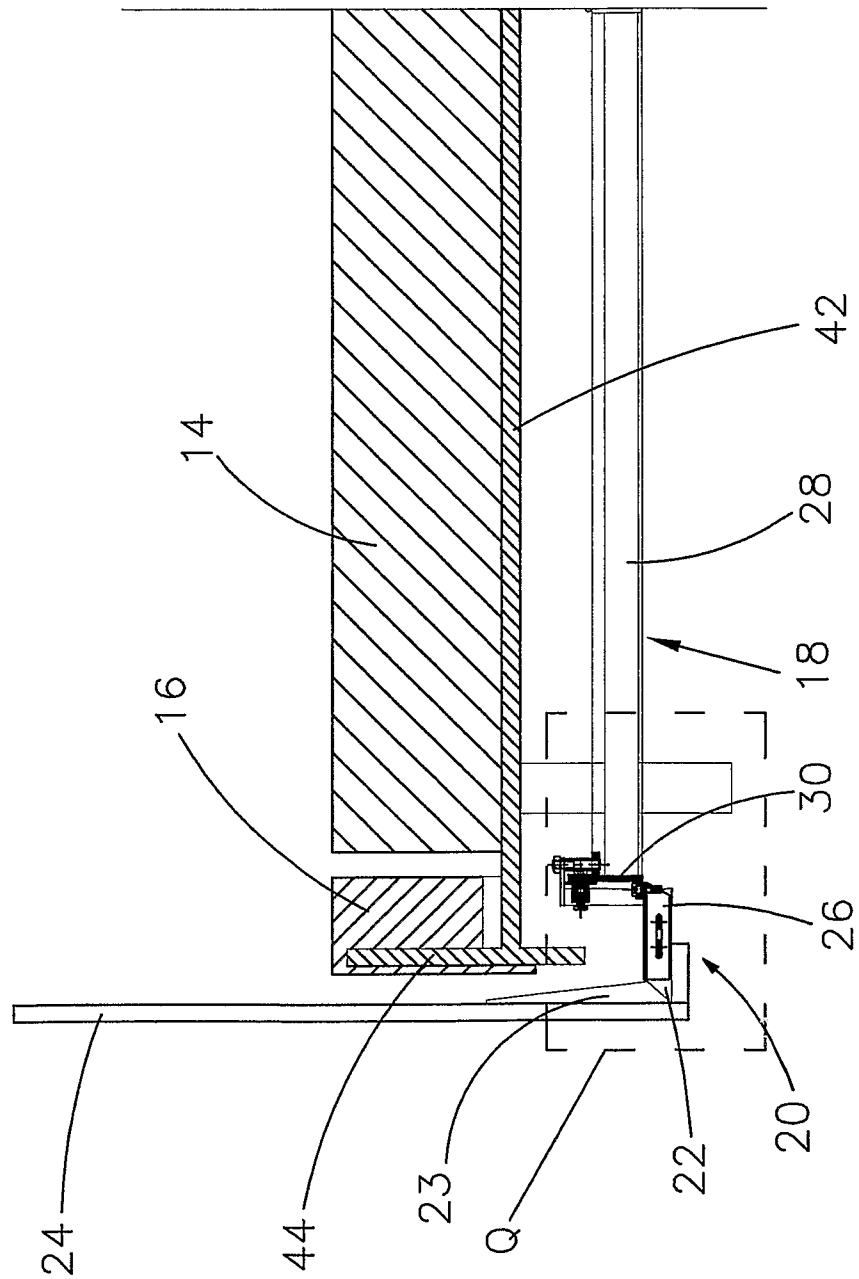


Fig. 3

2/4

Fig. 4



3/4

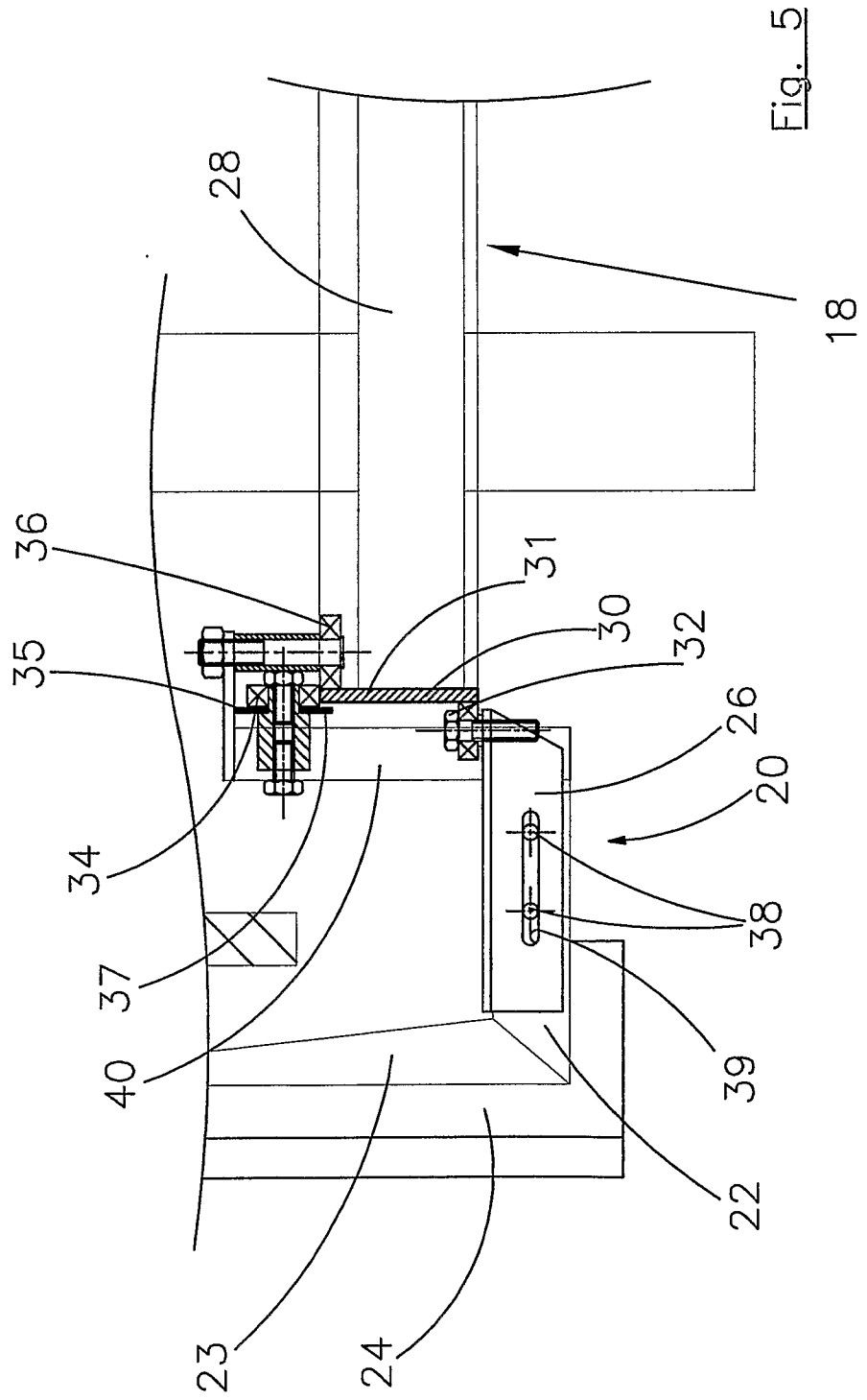
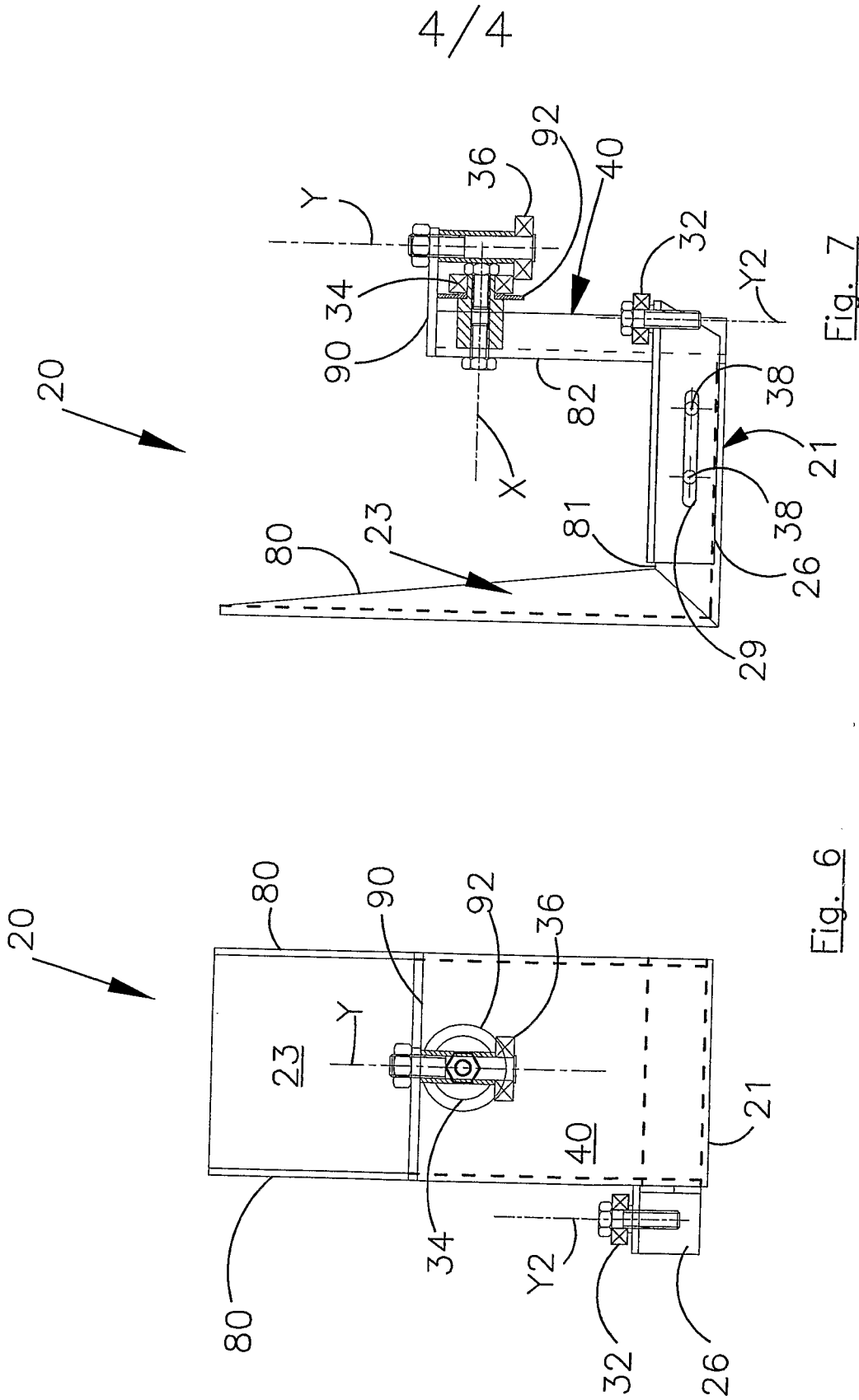


Fig. 5



INTERNATIONAL SEARCH REPORT

International application No
PCT/IT2007/000288

A. CLASSIFICATION OF SUBJECT MATTER INV. A47C17/04 A47C7/48		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) A47C A63G		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, WPI Data		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2005/058097 A (DE SEDE AG) 30 June 2005 (2005-06-30) page 9, lines 4-14; figures	1-5,8,9
X	US 4 195 882 A (DASWICK ET AL) 1 April 1980 (1980-04-01) claim 1; figures 1,2,19	1-5,8,9
X	US 5 935 012 A (COHN ET AL) 10 August 1999 (1999-08-10) figures	1-5,8,9, 14,15
X	NL 93 463 C (AKTIEBOLAGET) 15 September 1959 (1959-09-15) the whole document	1-7
-/--		
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents :		
A document defining the general state of the art which is not considered to be of particular relevance *E* earlier document but published on or after the international filing date *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. *&* document member of the same patent family	
Date of the actual completion of the international search	Date of mailing of the international search report	
23 January 2008	30/01/2008	
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Kis, Pál	

INTERNATIONAL SEARCH REPORT

International application No

PCT/IT2007/000288

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 203 11 752 U1 (STELLA MOEBELWERK GMBH & CO KG) 2 October 2003 (2003-10-02) figures -----	1-3,5
X	EP 1 591 042 A (ROLF BENZ AG & CO KG) 2 November 2005 (2005-11-02) claim 4; figures -----	1,2
X	DE 84 00 885 U1 (BMP - WOHNCOLLECTION ROLF BENZ GMBH & CO) 3 May 1984 (1984-05-03) claims; figures -----	1,2
A		6,7

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/IT2007/000288
--

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
WO 2005058097	A	30-06-2005	AU 2003286075 A1	05-07-2005
			CN 1886075 A	27-12-2006
			EP 1699319 A1	13-09-2006
			JP 2007514453 T	07-06-2007
			US 2007176468 A1	02-08-2007
<hr style="border-top: 1px dashed black;"/>				
US 4195882	A	01-04-1980	NONE	
<hr style="border-top: 1px dashed black;"/>				
US 5935012	A	10-08-1999	NONE	
<hr style="border-top: 1px dashed black;"/>				
NL 93463	C		NONE	
<hr style="border-top: 1px dashed black;"/>				
DE 20311752	U1	02-10-2003	NONE	
<hr style="border-top: 1px dashed black;"/>				
EP 1591042	A	02-11-2005	DE 202004006858 U1	12-08-2004
<hr style="border-top: 1px dashed black;"/>				
DE 8400885	U1	03-05-1984	NONE	
<hr style="border-top: 1px dashed black;"/>				