

(19)



(11)

EP 2 386 225 A2

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
16.11.2011 Bulletin 2011/46

(51) Int Cl.:
A47C 7/40 (2006.01) A47C 7/48 (2006.01)

(21) Application number: **11163373.1**

(22) Date of filing: **21.04.2011**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

(71) Applicant: **Frigerio Poltrone e Divani S.r.L.**
20036 Meda (Monza Brianza) (IT)

(72) Inventor: **Frigerio, Gianfranco**
20831, Seregno (Milan) (IT)

(74) Representative: **Lunati & Mazzoni S.r.L.**
Via Carlo Pisacane, 36
20129 Milano (IT)

(30) Priority: **12.05.2010 IT MI20100148 U**

(54) Seat with mobile backrest

(57) It is provided a seat (1) with mobile backrest adapted to define a sitting base for at least one person and comprising a supporting structure (2) suitable to support said person in said sitting position; at least one vertical cushion (5) placed upon said supporting structure

(2) and adapted to define a rest for at least part of the back and including a kidney-rest (6) and an upper portion (7) that can be moved relative to each other so as to selectively define an included position and a position of mutual overlapping.

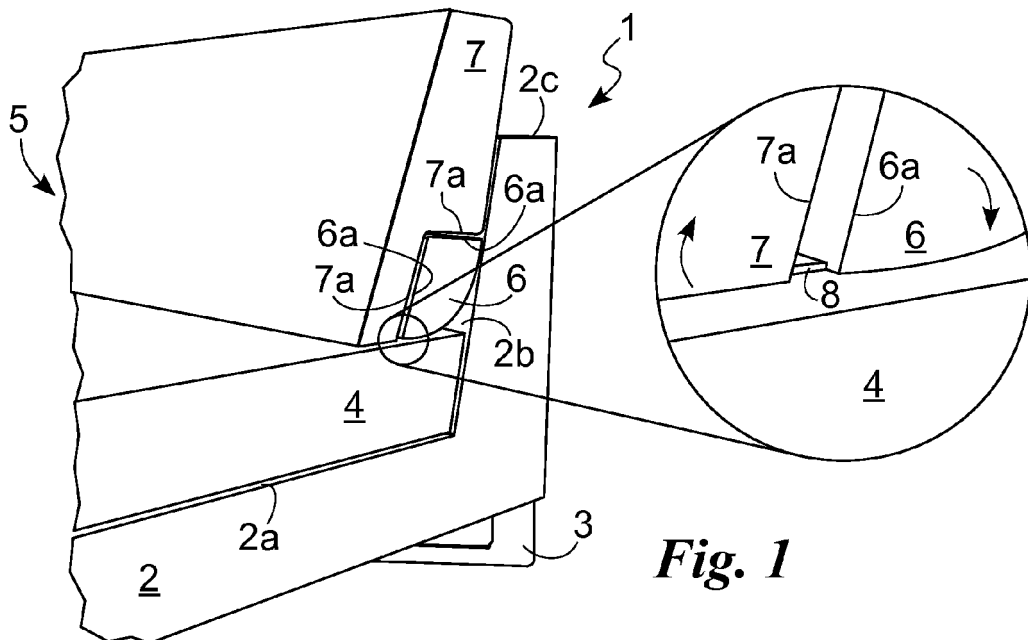


Fig. 1

EP 2 386 225 A2

Description

[0001] The present invention relates to a seat with mobile backrest of the type pointed out in the preamble of the first claim.

[0002] In particular, the invention pertains to a padded seat usually provided with armrests adapted to receive one or more people simultaneously in a comfortable manner. In greater detail, the seat with backrest consists of an armchair or a sofa. It is known that a padded seat is made up of a supporting structure defining the seat shape, a series of cushions, disposed either horizontally so as to make sitting more comfortable or vertically in order to define a comfortable rest surface for the back. In some cases the seat can further contemplate the presence of one or more armrests confining the bounds of the seat itself and on which the arms can rest.

[0003] Presently, sizes, shape and materials of the components of a seat are uniquely defined by the purchaser at the purchase moment, based on his/her aesthetic tastes and depending on the purchaser's particular sitting requirements. For instance, the backrest sizes are selected based on the purchaser's build, so that a tall person will like better a high backrest than a short person. In addition, a short person will prefer a shorter sitting base so as to be able to reach a more comfortable position with the lower limbs.

[0004] The known art mentioned above has some important drawbacks.

[0005] In fact, armchairs and sofas are adapted to fully meet the comfort requirements belonging to individual persons with a particular build. Therefore, a seat that is comfortable for a person may not be so for another person.

[0006] In addition, these restrictions to the seat adaptability may lead a person to take an incorrect sitting position and, as a result, pains or similar problems may arise. Under this situation, the technical task underlying the present invention is to conceive a seat capable of substantially obviating the mentioned drawbacks. Within the scope of this technical task, it is an important aim of the invention to produce a seat that is suitable for persons with different builds.

[0007] In particular, an important aim of the invention is therefore to enable different persons to take a comfortable and correct sitting position.

[0008] The technical task mentioned and the aims specified are achieved by a seat with mobile backrest as claimed in the appended Claim 1.

[0009] Preferred embodiments are highlighted in the sub-claims.

[0010] The features and advantages of the invention are hereinafter clarified by the detailed description of a preferred embodiment of same, with reference to the accompanying drawings, in which:

Fig. 1 shows a portion of the seat with backrest;
Fig. 2 illustrates the portion seen in Fig. 1, with the

invention in a second configuration;

Fig. 3a shows a detail of the seat;

Fig. 3b shows the detail seen in Fig. 3a in a second configuration; and

Fig. 4 emphasises a further view of the seat.

[0011] With reference to the drawings, the seat according to the invention is generally identified with reference numeral **1**.

[0012] It comprises a supporting structure **2** adapted to support at least one person.

[0013] The supporting structure **2** is preferably made up, in known manner, of a framework at right angles adapted to define two rest surfaces: a first horizontal surface **2a** almost parallel to the ground, which is advantageously placed to a given height from the ground; and a second inclined surface **2b**. Surface **2b** is perpendicular to, or preferably inclined relative to the horizontal surface **2a**.

[0014] The supporting structure **2** can be provided with a plurality of legs **3** adapted to keep the same raised from the ground.

[0015] Cushions are advantageously disposed on structure **2** and, more specifically, at each surface **2a** and **2b**; they are adapted to make the sitting base comfortable. Among them, it is possible to distinguish at least one horizontal cushion **4**, which is placed on the horizontal surface **2a** and is adapted to support at least part of the lower limbs, and at least one vertical cushion **5** placed at the inclined surface **2b** and preferably adapted to partly overlap the horizontal cushion **4**. In particular, seat **1** is provided with a number of horizontal **4** and vertical **5** cushions equal to the number of persons that seat **1** is adapted to receive.

[0016] At least one of the vertical cushions **5** comprises two distinct components that can be moved relative to each other: a kidney-rest **6** and an upper portion **7**. Preferably, each vertical cushion **5** of a seat **1** has said two elements.

[0017] The relative movement between the kidney-rest **6** and the upper portion **7** defines a closed position and an open position of the vertical cushion **5**. In the closed or included position shown in Fig. 1, almost the whole of the kidney-rest **6** is enclosed between the upper portion **7** and the supporting structure **2**. More specifically, in such a position the upper portion **7** has a cavity inside which the kidney-rest **6** is placed and is in contact with the horizontal cushion **4** and the inclined surface **2b**.

[0018] In the open or overlapped position, shown in Fig. 2, the upper portion **7** remains in contact with the inclined surface **2b**, while the kidney-rest **6** takes an interposed position between the horizontal cushion **4** and the upper portion **7**, placing said portion **7** at a raised position relative to the one taken in the closed or included position.

[0019] The vertical cushion **5** therefore is advantageously able to vary its height and, more specifically, to take two different heights. In the closed or included po-

sition, it is defined by the upper portion 7 alone, while in the open or overlapped position its height is determined by the height of the upper portion 7 plus that of the kidney-rest 6.

[0020] In addition, as viewed in Figs. 1 and 2, with passage from the closed to the open position, not only the rest surface for the back is increased, but also the surface for the lower limbs is much more extended due to the lack of overlapping between the upper portion 7 and kidney-rest 6.

[0021] Preferably, the kidney-rest 6 has a prismatic shape having a side face 6a made up of two planes almost parallel to the horizontal surface 2a and the vertical surface 2b.

[0022] The upper portion 7 preferably has a substantially prismatic shape too, the base of which is characterised by the presence of the aforesaid cavity enabling the kidney-rest 6 to be received therein. In detail, the cavity has a counter-shaped surface 7a substantially reproducing the profile of the side face 6a. This counter-shaped surface 7a is therefore adapted to match the side face 6a when the vertical cushion 5 is in the closed position (Fig. 1) and the upper part of the supporting structure 2 when cushion 5 is in the open position (Fig. 2). More specifically, in the open position the counter-shaped surface matches the upper face 2c, i.e. the face defining the upper edge of the inclined surface 2b.

[0023] The particular placement of the upper portion in the open position is made possible due to the specific sizes given to the kidney-rest 6 which has a height calculated in a direction parallel to the inclined surface 2b substantially corresponding to half the height belonging to the inclined surface 2b itself, as shown in Fig. 5. In conclusion, the side face 6a and the counter-shaped surface 7a have a height substantially corresponding to half the height of the inclined surface 2b.

[0024] Therefore, when the upper portion 7 is superposed on the kidney-rest 6, the part of the counter-shaped portion 7a parallel to the horizontal surface 2a substantially has the same height as that of the inclined surface 2b, thus enabling the upper portion 7 to be placed on the higher face 2c as shown in Fig. 2.

[0025] Finally, the upper portion 7 and the kidney-rest 6 are mutually secured through connecting means 8 enabling said two components to be simultaneously and mutually moved during passage between the closed position and the open position. The connecting means 8 is adapted to link the two above mentioned components at the contact region between the counter-shaped surface 7a and the side face 6a.

[0026] This means 8 consists, as shown in Fig. 3, of a strip of fabric, suitably joined to the upper surface 7 and the kidney-rest 6 through seams or, alternatively means 8 contemplates the presence of another arrangement enabling the vertical cushion 5 to move from the closed position to the open position.

[0027] Finally, the seat with backrest 1 can be advantageously provided with at least one armrest, not shown

in the figure, where each armrest is adapted to define a support for an upper limb.

[0028] Operation of the seat with backrest 1 described above as regards structure, is the following.

[0029] At the beginning, seat 1 is placed with the vertical cushion 5 in the closed position, i.e. with the kidney-rest 6 enclosed between the upper portion 7, horizontal cushion 4 and inclined surface 2b, the side face 6a and the counter-shaped surface 7a being in mutual side by side relationship, as shown in Fig. 1.

[0030] When the vertical cushion 5 is wished to be moved to the open position, the upper portion 7 is lifted thus causing rotation of the kidney-rest 6, due to the connecting means 8. In particular, in moving from the closed position to the open position, the kidney-rest 6 carries out a rotation of substantially 180° and the upper portion 7 is moved upwards by a height almost equal to that of the kidney-rest 6.

[0031] In greater detail, during this movement the counter-shaped surface 7a bears against the higher face 2c while the side face 6a comes into contact with the horizontal cushion 4 and the inclined surface 2b, as shown in Fig. 2.

[0032] When return to the closed position is wished, it is sufficient to move the upper portion 7 in substantially the opposite way with respect to that described above thus causing an opposite rotation of the kidney-rest 6.

[0033] In particular, the counter-shaped surface 7a is raised from the higher face 2c and moved away from the supporting structure 2 and the upper portion 7 is brought into contact with the horizontal cushion 4. This movement causes a simultaneous rotation, opposite to the preceding one, of the kidney-rest 6 relative to the upper portion 7 leading to superposition of the counter-shaped surface 7a on the side face 6a.

[0034] Finally, if seat 1 contemplates the presence of several horizontal cushions 4, it is possible to individually modify these horizontal cushions 4 and therefore have part of the vertical cushions 5 in the closed position and part in the open position.

[0035] The invention achieves important advantages.

[0036] In fact, the described invention, due to the possibility of moving cushion 5 causing it to change from the closed position to the open position, allows the height of seat 1 to be varied.

[0037] A further advantage is given by the possibility of varying the sizes of the lower rest surface, thanks to the particular vertical cushion 5. In particular, if cushion 5 is in the closed position, a comfortable sitting base is created for people of short height. In fact, the superposition of the upper portion 7 on the kidney-rest 6 offers not only a smaller rest surface for the lower part of the back, but also a smaller rest surface for the lower limbs. On the contrary, in the open position seat 1 is adapted to receive a tall person in a comfortable manner.

[0038] In addition, the possibility of modifying the state of a vertical cushion 5 alone relative to those present in the rest of seat 1 allows a seat provided with several

cushions 5 to be obtained which is simultaneously suitable for people of different heights.

[0039] The invention is susceptible of variations falling within the scope of the inventive idea. All of the details can be replaced by equivalent elements and the materials, shapes and sizes can be of any nature and magnitude.

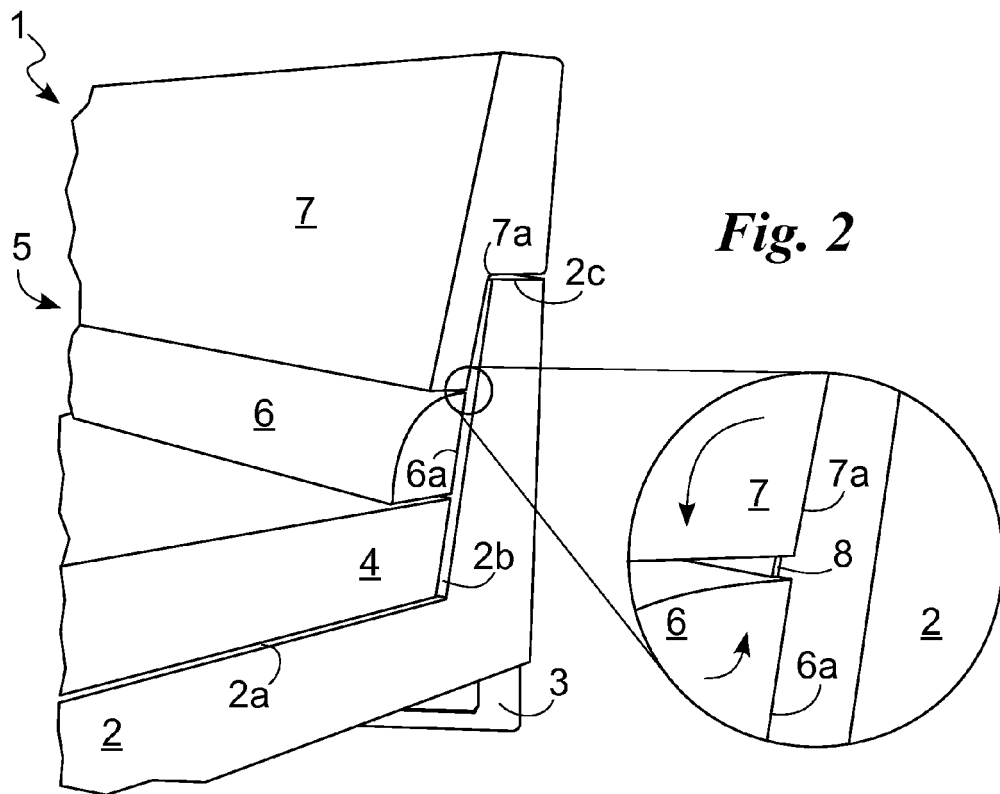
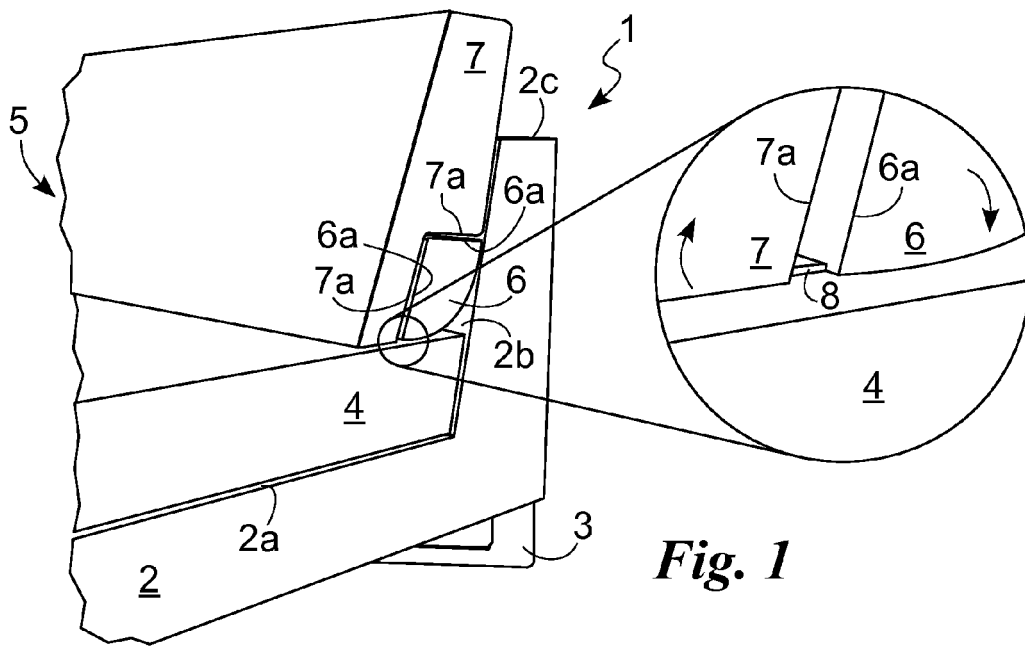
Claims

1. A seat (1) with mobile backrest comprising a supporting structure (2) adapted to support a person in a sitting position, at least one vertical cushion (5) placed upon said supporting structure (2) and adapted to define a rest for at least part of the back, **characterised in that** said vertical cushion (5) comprises a kidney-rest (6) and an upper portion (7) relative to said kidney-rest (6), said upper portion including an inner cavity counter-shaped to said kidney-rest (6) and being adapted to be moved in a substantially vertical direction relative to said kidney-rest (6) so as to selectively define an included position and an overlapped position between said kidney-rest (6) and said upper portion (7). 5
2. A seat (1) as claimed in claim 1, wherein in said included position said kidney-rest (6) is substantially fully enclosed between said upper portion (7) and said supporting structure (2). 10
3. A seat (1) as claimed in one or more of the preceding claims, wherein in said overlapped position said upper portion (7) is placed on said kidney-rest (6). 15
4. A seat (1) as claimed in one or more of the preceding claims, wherein said supporting structure (2) in the upper part thereof has a higher face (2c) and wherein in said overlapped position said upper portion (7) is adapted to rest on said higher face (2c). 20
5. A seat (1) as claimed in one or more of the preceding claims, wherein said kidney-rest (6) has a side face (6a) and wherein said upper portion (7) in said inner cavity has a surface (7a) counter-shaped to said side face (6a), said counter-shaped surface (7a) matching said side face (6a) in said included position. 25
6. A seat (1) as claimed in one or more of the preceding claims, wherein said upper portion (7) and said kidney-rest (6) can be mutually rotated. 30
7. A seat (1) as claimed in claim 6, wherein said kidney-rest (6) is adapted to carry out a 180° rotation when said vertical cushion (5) moves from said included position to said overlapped position and vice versa. 35
8. A seat (1) as claimed in one or more of the preceding

claims, wherein said upper portion (7) and said kidney-rest (6) are linked to each other by connecting means (8) adapted to enable movement from said included position to said overlapped position and vice versa. 40

9. A seat (1) as claimed in claim 8, wherein said connecting means (8) comprises a strip of fabric and seams suitable to connect said strip of fabric to said upper portion (7) and said kidney-rest (6). 45

10. A seat (1) as claimed in one or more of the preceding claims, wherein all vertical cushions (5) comprise a kidney-rest (6) and an upper portion (7) that can be moved relative to each other. 50



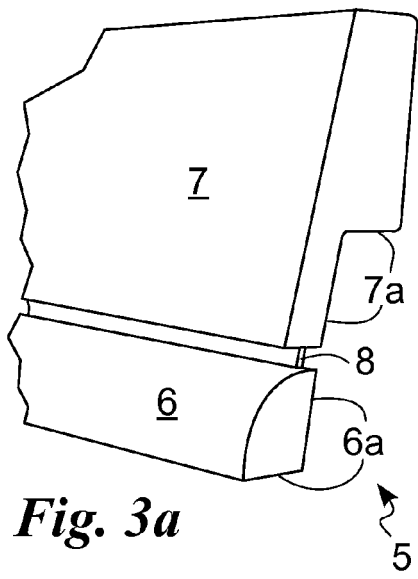


Fig. 3a

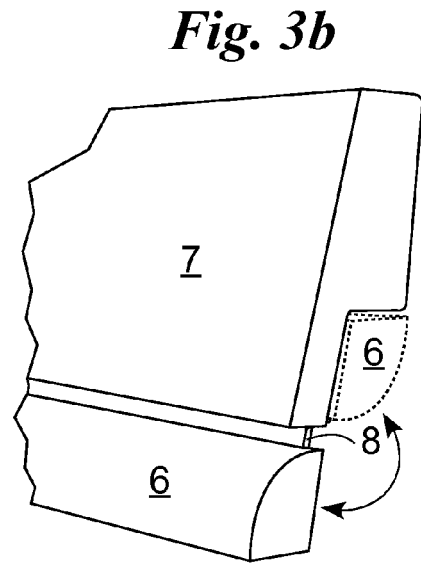


Fig. 3b

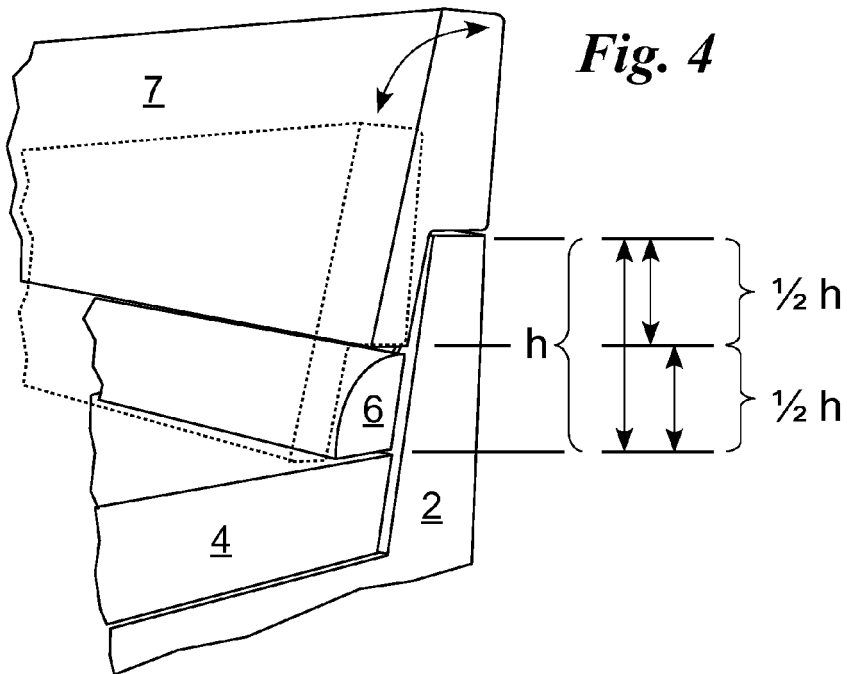


Fig. 4