

Description

Seat, in particular an office chair

- 5 The present invention relates to a piece of seating furniture, in particular an office chair, having a backrest with lumbar support.

10 The previous designs of lumbar supports fitted on backrests have the disadvantage of a comparatively low level of flexibility. Using lumbar supports consequently often results in uncomfortable pressure being applied to certain points of the seated individual's back. Furthermore, the known lumbar
15 supports can only be adjusted in height over a small adjustment range.

The object of the present invention is to improve the comfort and ease of use of a piece of seating
20 furniture. This object is achieved by a piece of seating furniture as claimed in claim 1.

A basic idea of the invention is to arrange the lumbar support in a height-adjustable manner on a flexible
25 guide strip. In contrast to those techniques of fastening lumbar supports which are known from the prior art, arranging the lumbar support on a guide strip has the advantage that, on the one hand, it is particularly easy to change the position of the lumbar
30 support. Thus, for example, if the lumbar support is clamped on the guide strip, it can be adjusted in height by straightforward displacement. On the other hand, the flexible configuration of the guide strip avoids the situation where the seated individual's back
35 is subjected to too much pressure. In other words, the lumbar support yields to the pressure applied by the seated individual, as a result of which comfort when seated is significantly improved.

Advantageous embodiments of the invention are explained in more detail hereinbelow with reference to an exemplary embodiment and with the aid of the figures,
5 in which:

figure 1 shows a side view of a backrest of an office chair with a lumbar support in section,
figure 2 shows a perspective illustration of the
10 lumbar support from figure 1,
figure 3 shows a side view of the lumbar support from figure 2 with the supporting body in section, and
figure 4 shows a perspective view of the backrest from
15 figure 1.

The lumbar support 1 essentially comprises a supporting body 2 and a strip holder 3 fastened thereon. The strip holder 3 serves for fixing the lumbar support 1 on a
20 guide strip 4. For reasons of clarity, figures 1 to 4, rather than depicting the entire supporting body 1, depict merely the retaining shell 5 provided for accommodating the actual lumbar cushion. Fastening elements 6 are provided on the retaining shell 5 for
25 the purpose of fixing the lumbar cushion.

On the concave rear side 7 of the supporting body 2, this rear side being located opposite the subsequent position of the lumbar cushion, the supporting body has
30 two essentially horizontally running and vertically spaced-apart clamping beads 8. On the rear side 7 of the supporting body 2, the strip holder 3 is fitted in the region of these clamping beads 8. The strip holder 3 comprises two vertically running lateral guide walls
35 9 which are connected to one another by a clamping crosspiece 10. The clamping crosspiece 10 here is spaced apart from the rear side 7 of the supporting body 2 such that the guide strip 4 can be introduced

into the strip holder 3 between the two clamping beads 8, on the one hand, and the clamping crosspiece 10, on the other hand. The guide strip 4, clamping beads 8 and clamping crosspiece 10 here are positioned in relation
5 to one another, and dimensioned, such that the guide strip 4 always butts against three points, namely against the clamping beads 8 and the clamping crosspiece 10. In other words, the clamping beads 8 and the clamping crosspiece 10 form a three-point clamping
10 arrangement. By virtue of this frictional clamping in the manner of a locking pawl, the lumbar support 1 is retained on the guide strip 4 and can be guided upward or downward on the guide strip 4 by straightforward displacement, this allowing adjustment in the vertical
15 direction 11.

The guide strip 4 is produced from a flexible plastic material. The hardness of the plastic material, and thus the flexibility of the guide strip 4, can be
20 adjusted in a variable manner during the production thereof. Depending on customer requirements, or in accordance with the type of padding used for the lumbar cushion, the guide strip 4 may be designed to be more or less hard or soft, so that, when it is subjected to
25 loading by a seated individual, it yields to a more or less pronounced extent in the direction of pressure 12.

The guide strip 4 is fastened on a backrest 13 of an office chair. The backrest 13 has a central carrier
30 element 14 which, at its bottom end, has mounting elements 15 for fastening on a seat element (not depicted). Two retaining arms 16 extending in the direction of the seat element are fitted on the carrier element 14. Above the retaining arms 16, a middle
35 carrier 17 extends from the carrier element 14 in the direction of the seat element, the bottom transverse strut 18 of a frame 19 being fastened as the end of the middle carrier. The bottom transverse strut 18 is

connected to a top transverse strut 21 via two lateral struts 20. The top transverse strut, in turn, is connected in the middle to the top end 23 of the central carrier element 14.

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Provided in the frame 19 are fastening elements 22 which serve for fastening a backrest material, for example a netting or padding element, on the frame 19 and thus for forming the actual backrest.

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The guide strip 4 is fastened on the central carrier element 14 of the backrest, between the middle carrier 17 and the top end 23 of the carrier element 14, at a top fastening point 24 and a bottom fastening point 25, which is spaced apart from the top fastening point. This secures the horizontal, lateral position of the supporting body 2. It is located, in accordance with the position of the central carrier element 14 of the backrest, in the middle in relation to a seated individual's back (not depicted).

A fixed-point, moveable fastening of the top end of the guide strip 4 on the carrier element 14 is provided at the top fastening point 24. For this purpose, the top fastening strut 26, which is provided at the top end of the guide strip 4, is connected in a rotatable manner to a holder 27 fixed on the carrier element 14. Conversely, the position of the bottom fastening point 25 of the guide strip 4 can be changed in the vertical direction 11 by an operating mechanism in the manner of a lock. In a fixed position of this lock, a bottom fastening strut 29, which is arranged at the bottom end of the guide strip 4, is clamped firmly, with the aid of a clamping jaw 30, against a clamping rest 31 fitted on the central carrier element 14. By virtue of a clamping lever 32 being released, this clamping action can be eliminated and the bottom fastening strut 29 can be transferred into one of the further, vertically

offset clamping grooves 33 of the clamping rest 31. It can be clamped there by renewed actuation of the clamping lever 32. In order to secure the guide strip 4, the bottom end of the latter is positioned in a kind of closed guide frame 34, which prevents the bottom end of the guide strip 4 from being removed from the lock when the clamping lever 32 is released.

The clamping lever 32 of the clamping mechanism, for altering the prestressing of the guide strip 4, is arranged in a vertically running recess 35 of the central carrier element 14. In the closed state here, the clamping-lever end 36 projects only minimally, if at all, beyond the rear side 37 of the carrier element 14, so that accidental release of the clamping mechanism is ruled out. Figures 1 to 3 each show only one of the side parts 38 of the carrier element 14 which bound the recess 35, while the other side part, including the guide frame and the holder arranged on the side part, is not depicted.

In all positions, the guide strip 4 is subjected to a certain amount of prestressing. This ensures, on the one hand, that the supporting body 2 is secured reliably on the guide strip 4 and, on the other hand, that, when a seated individual applies pressure to the supporting body 2, a sufficient opposing pressure can be built up. The level of prestressing can be set by changing the spacing between the two fastening points 24, 25 of the guide strip 4 on the carrier element 14 with the aid of the operating mechanism 28, and thus by changing the radius of the guide strip 4. In other words, the contact pressure of the supporting body 2 can be adapted individually to the seated individual's requirements by virtue of the prestressing of the guide strip 4 being altered. By virtue of the curved shape of the guide strip 4, height adjustment of the supporting body 2 in the vertical direction 11 simultaneously

brings about a change in the inclination of the supporting body.

5 A further embodiment of the invention, which is not illustrated, provides an undulating profile on the front side and/or rear side of the guide strip 4 such that, during height adjustment of the supporting body 2, clamping beads 8 and/or clamping crosspiece 10 move along the undulating profile and multi-step adjustment,
10 of which the user is aware, takes place.

Using the basic inventive idea and the embodiments of the invention which have been explained in the description, a person skilled in the art will arrive at
15 a large number of further exemplary embodiments, although these cannot be described in detail here. It should be pointed out, in this context, that all of the features illustrated in the description, the claims and the drawings may be pertinent to the invention both
20 individually and in any desired combination with one another.

List of designations

	1	Lumbar support
	2	Supporting body
5	3	Strip holder
	4	Guide strip
	5	Retaining shell
	6	Fastening element
	7	Rear side
10	8	Clamping bead
	9	Guide wall
	10	Clamping crosspiece
	11	Vertical direction
	12	Direction of pressure
15	13	Backrest
	14	Carrier element
	15	Mounting element
	16	Retaining arm
	17	Middle carrier
20	18	Bottom transverse strut
	19	Frame
	20	Side strut
	21	Top transverse strut
	22	Fastening element
25	23	Top end
	24	Top fastening point
	25	Bottom fastening point
	26	Top fastening strut
	27	Holder
30	28	Operating mechanism
	29	Bottom fastening strut
	30	Clamping jaw
	31	Clamping rest
	32	Clamping lever
35	33	Clamping groove
	34	Guide frame
	35	Recess
	36	Clamping-lever end

- 37 Rear side
- 38 Side part

Claims

1. A piece of seating furniture, in particular office
chair, having a height-adjustable lumbar support (1)
5 arranged on a flexible guide strip (4).

2. The piece of seating furniture as claimed in
claim 1, characterized in that the lumbar support (1)
is fastened on the guide strip (4) by means of a
10 clamping connection (8, 10).

3. The piece of seating furniture as claimed in
claim 1 or 2, characterized in that the guide strip (4)
is fitted on a central carrier element (14) of the
15 backrest (13) of the piece of seating furniture.

4. The piece of seating furniture as claimed in one
of claims 1 to 3, characterized in that the guide strip
(4) is prestressed.
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5. The piece of seating furniture as claimed in
claim 4, characterized in that it is possible to alter
the prestressing of the guide strip (4).