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(54) **DEVICE FOR ADJUSTING THE INCLINATION AND CONSEQUENTLY THE HEIGHT OF THE ARMS WITH RESPECT TO THE PLANE OF THE SEAT OF A CHAIR**

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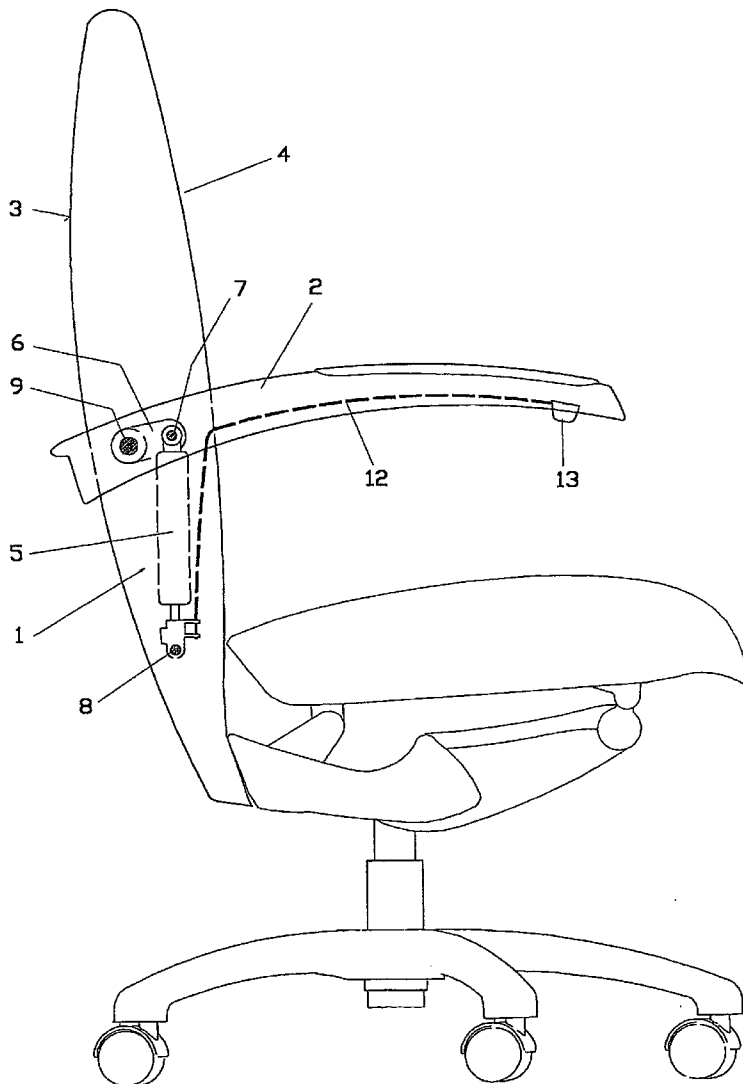
(57) **ABSTRACT**

The invention concerns a device for adjusting the inclination and, consequently, the height of the arms (2) with respect to the plane of the seat of a chair. Such a device is suitable for being applied in particular to office chairs and is characterized in that it consists of a gas spring (5), coupled with a lever arm (6), so as to form a link mechanism fitted between the arm and the back.

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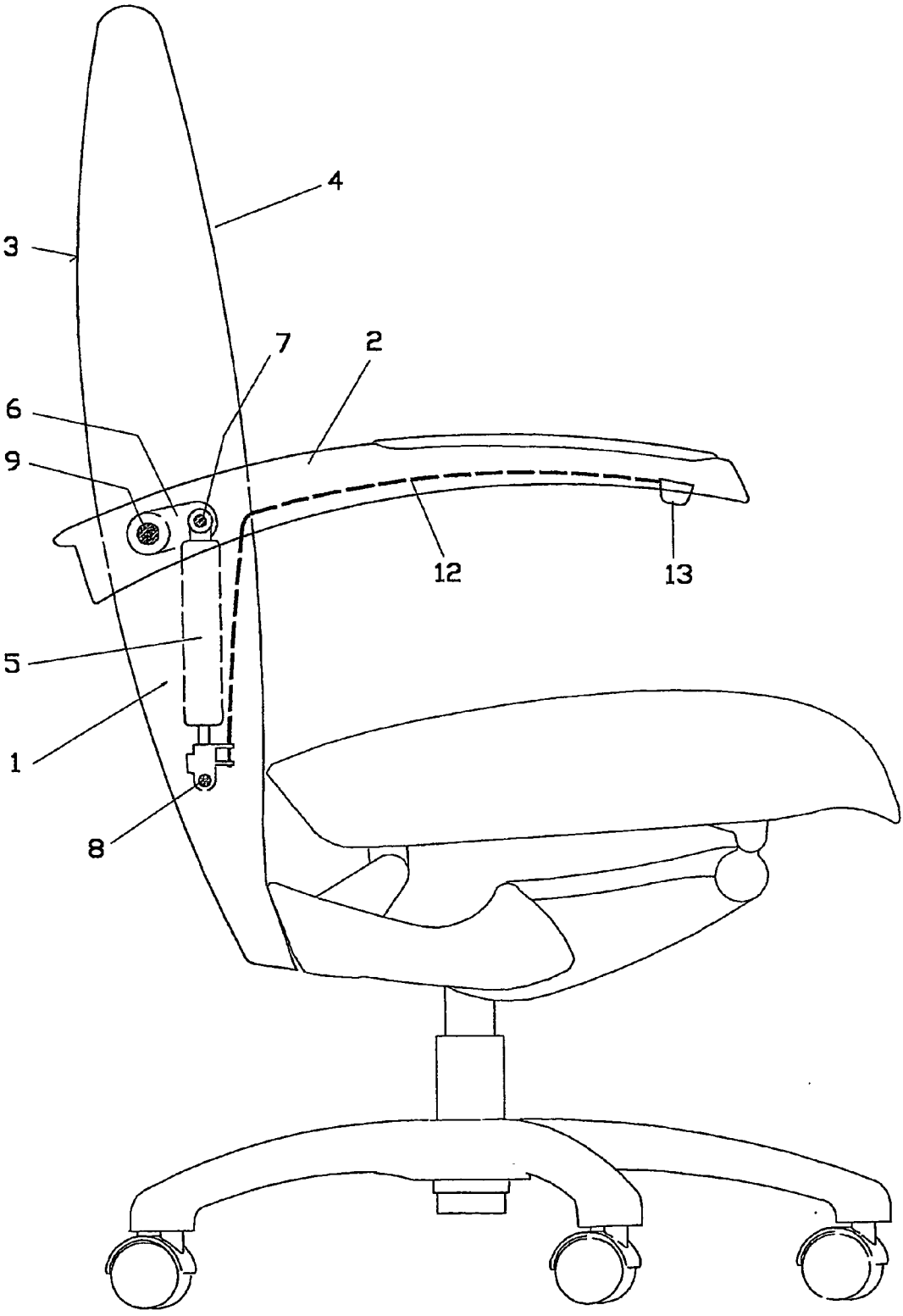


FIG.1

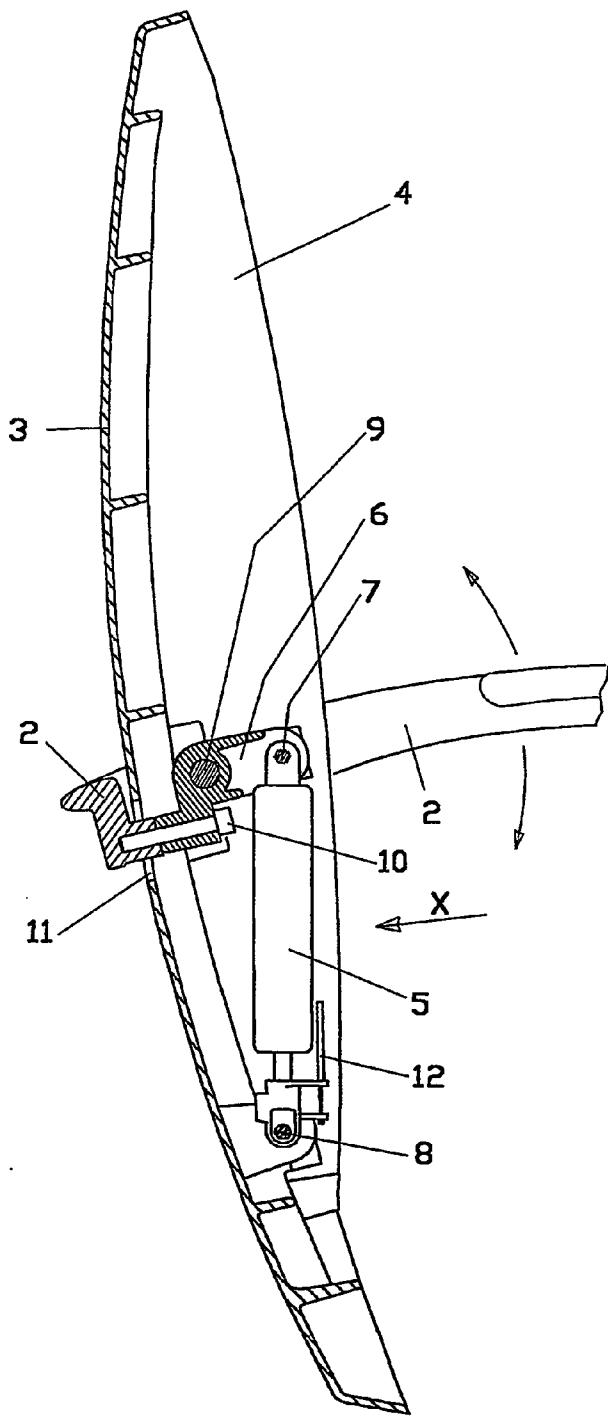


FIG.2

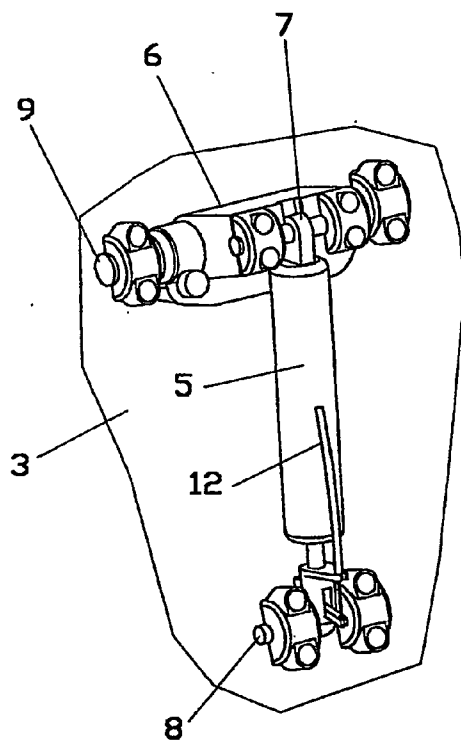


FIG.3

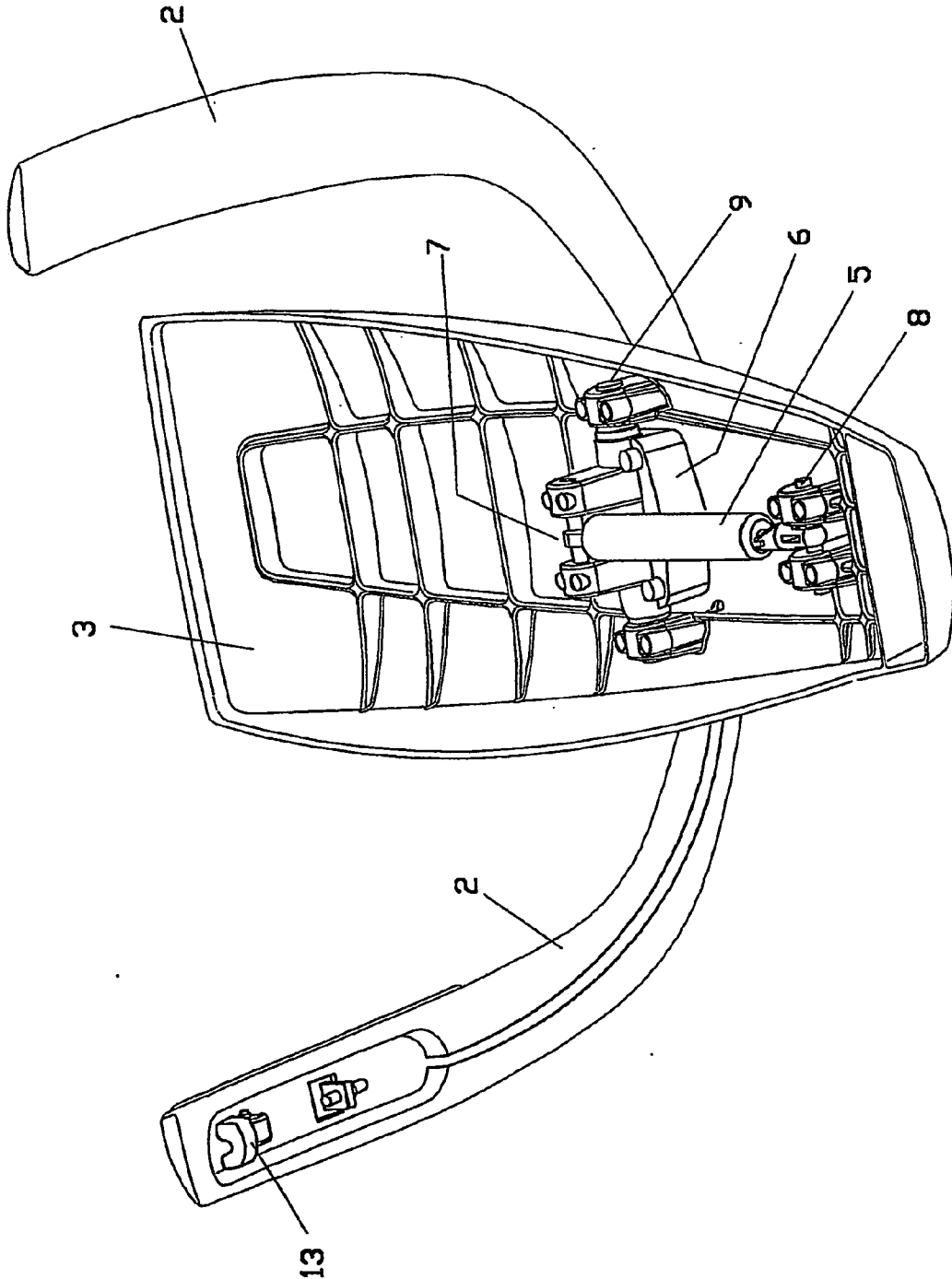


FIG.4

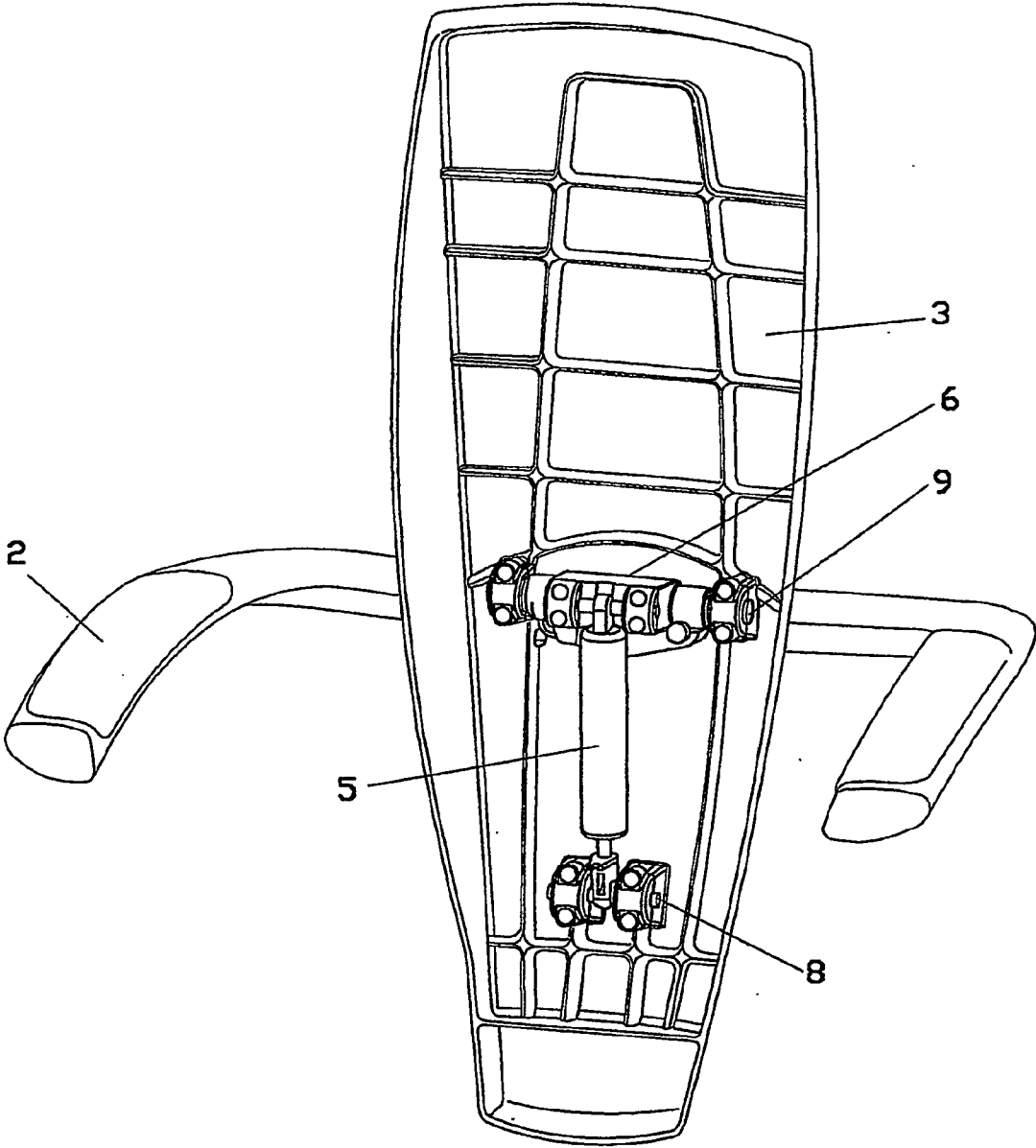


FIG.5

DEVICE FOR ADJUSTING THE INCLINATION AND CONSEQUENTLY THE HEIGHT OF THE ARMS WITH RESPECT TO THE PLANE OF THE SEAT OF A CHAIR

[0001] The present finding concerns a device for adjusting the inclination and, consequently, the height of the arms with respect to the plane of the seat of a chair.

[0002] Seats for office use or for resting, equipped with devices that are used to increase the comfort of the user are well known.

[0003] In the current state of the art such devices are applied to the chair with the function of adjusting the inclination of the back whereas, usually, the arms remain fixed to the seat and whilst being height-adjustable, they are integral with the seat and, consequently, with the support frame of the chair itself.

[0004] Such a construction, in chairs with variable inclination of the back, gives the drawback of a variation in the angle defined between the resting zone of the forearm and the person's back, to the great detriment of comfort.

[0005] To overcome such a drawback various mechanisms have been devised including, for example, patent document no. VI2002A000227, filed on 22, Oct. 2002, to the same applicant, where a chair is described equipped with a device for moving the arms consisting of a bracket, applied to the back, on which are idly fitted a block that supports the structure of the arms and a threaded pin that that engages with a threaded bush idly inserted onto the body of said block: said two elements are hinged together at an articulation point consisting of a sleeve idly mounted on said block and on which the shank of said pin is screwed.

[0006] The purpose of the present finding is that of making a chair in which the arms can be adjusted in height with respect to the plane of the seat and in which it is possible to keep the angle formed between the forearm and the back of the person unchanged as the inclination of the back varies; the relative moving device must be simple to construct, it must be made up of a limited number of elements and it must not require any maintenance.

[0007] Such a purpose is obtained with a device that simply consists of a gas spring, coupled with a lever arm, so as to form a link mechanism between the arm and the back.

[0008] Operatively, with the variation in stroke of the gas spring, carried out by the user through a manual command, of the mechanical or electronic type, the rotation of the link mechanism and therefore the rotation/inclination of the arm is determined.

[0009] The small size of the entire device allows it to be positioned on the back without compromising the seating comfort of the person sat down.

[0010] The characteristics of the finding shall become clearer through the description of a possible embodiment thereof, given only as a non-limiting example, with the help of the attached tables of drawings, where:

[0011] FIG. 1 (Table I) represents an overall view of a chair equipped with the device according to the finding;

[0012] FIG. 2 (Table II) represents a front elevated section view of the back equipped with the device according to the finding;

[0013] FIG. 3 represents a detailed view, according to the direction "X" of FIG. 2;

[0014] FIG. 4 (Table III) represents a lower perspective view of the back according to FIG. 2;

[0015] FIG. 5 (Table IV) represents a front perspective view of the back according to FIG. 2.

[0016] As can be seen in the figures, the device according to the finding, wholly indicated with reference numeral 1, supports the arched structure 2 of the arms and is applied to the inner part of the rigid wall 3 of the back 4.

[0017] The device 1 is in the form of an articulated link mechanism made up of a gas spring 5 and a lever arm 6 hinged together at their end points 7; said link mechanism is idly fitted onto the wall 3, with the pin 8, at the spring and with the pin 9 at the lever arm, respectively.

[0018] Moreover, on the lever arm 6, in a position opposite the spring 5, the arched structure 2 is applied and supported, outside the wall 3 and partially penetrating into the back through the opening 11 made on said wall.

[0019] Operatively, as can easily be seen by observing the figures, with the variation in stroke of the spring 5, i.e. with the variation in distance between the two pivot points 7 and 8 of the spring itself, the rotation of the lever arm 6 on the pin 9 and therefore the desired inclination of the arms 2 is carried out.

[0020] The actuation of the gas spring 5 can, in a preferred embodiment, be obtained mechanically through a flexible wire 12 connected to a button 13, arranged on one of the arms.

[0021] Of course, embodiments that are different from the one described are possible, according to the size and type of back of the chair, without, for this reason, departing from the scope of the claims, defined hereafter.

1. Device for adjusting the inclination and, consequently, the height of the arms with respect to the plane of the seat of a chair, to be applied in particular to office chairs, consisting of a gas spring, coupled with a lever arm, so as to form a link mechanism fitted between the arm and the back, said two elements being hinged together at their end points (7), the device wherein the pins (8, 9) of said two elements are idly fitted on the rigid wall (3) of the back (4).

2. Device, according to claim 1, wherein it supports the arched structure (2), which supports one or both of the arms.

3. Device, according to claim 2, wherein the arched structure (2) is applied and supported on the lever arm (8), in a position opposite the spring (5) through the screws (10), outside the wall (3) and partially penetrating into the back through the opening (11) made on said wall.

4. Device, according to claim 3, wherein with the variation in stroke of the spring (5), i.e. with the variation in distance between the two pivot points (7, 8) of the spring itself, the rotation of the lever arm (6) on the pin (9) and therefore the desired inclination of the arms (2) is carried out.

5. Device, according to claim 1, wherein the actuation of the gas spring (5) is obtained mechanically through a flexible wire (12) connected to a button (13), arranged on one of the arms.

6. Device, according to claim 1, wherein the actuation of the gas spring (5) is carried out with an electronic command.