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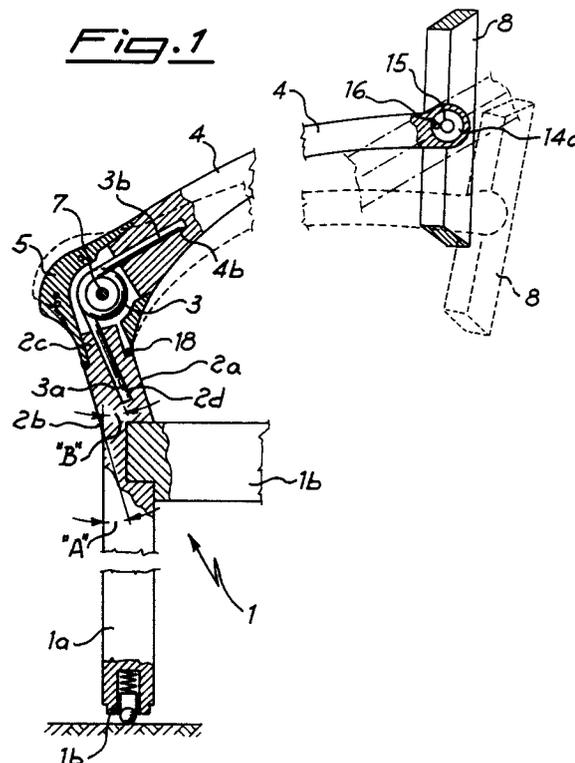
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**Armchair with cantilever arms and suspension adjustable in relation to the front legs and swivelling back.**

An armchair or the like having arms (4) made integral in cantilever with front legs (1a) through means (3) of articulation equipped with means (7) of adjustment of the relative friction, the opposite free end of such arms supporting back (8) through means (13, 9a, 11) with adjustable friction, such articulating (7) and hinged (13, 9a, 11) means being capable of allowing the suspension of arms (4) and the swivelling of back (8) around its own transverse axis both independently of and dependently upon one another with flexibility preselected by the user.



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The object of this invention is an armchair or the like with arms having one end hinged to the front legs by means of devices with adjustable suspension and the opposite end carrying the adjustable-setting back.

It is known that there is increasingly requested by users the possibility of being able to have chairs which are comfortable and capable of assuming different positions during the period of use; in particular there is felt the need to be able to assume at least one upright working position and at least one reclined position of active rest.

In engineering there are known some developments which make possible the effective transformation of an armchair or the like into a deck chair or the like by means of lengthening; such solutions are, however, difficult to use and complicated to operate.

There is therefore posed the technical problem of providing an armchair, chair or the like which enables the user to assume different positions during the use thereof without altering or reducing the overall conditions of comfort and without making it necessary to assume inappropriate seating positions.

Within the scope of the aforesaid problem, a further object of this invention is to provide an armchair or the like equipped with arms and back with variable tilting and adjustable in a continuous manner so as to impart conditions of maximum comfort in any position.

Such technical problems are resolved according to this invention by an armchair or the like which has arms made integral in cantilever with the front legs through means of articulation equipped with means of adjustment of the relative friction, the opposite free end of such arms supporting the back through means with adjustable friction, such articulating and hinged means being capable of allowing the suspension of the arms and the swivelling of back (8) around its own transverse axis both independently of and dependently upon one another, with flexibility preselected by the user.

According to this invention, such means of articulation are preferably comprised of a pair of coil springs located around a horizontal axis and having free ends respectively attached to appropriate inserts in the arms and front legs and maintained transversally in position by means of shaped bodies which in turn have transverse inserts for attachment to appropriate locating pins.

Such shaped bodies have furthermore, respectively, a further through insert and an insert with a female thread respectively for the passage and engagement of a screw capable of adjusting the clamping of the bodies by increasing or reducing the friction of suspension of the arms with respect to the legs.

According to a preferred form, such hinged means for the swivelling of the back in relation to the arms are preferably comprised of a pair of bushes respectively made integral with the arms and with the flanks of the back and capable of rotating in relation to one another around a pin consisting of a screw passing through such bushes and capable of engaging the internal thread of a coaxial member, provided with an external thread for the stable link with the back.

According to this invention there are also provided means for limiting the rotation of the back, preferably consisting of a washer, provided with a cavity the end walls of which are capable of entering into contact with a pin integral with the bushes to determine the length of angular travel of the back.

Further details and features will become more apparent from the description of an example of implementation of the armchair according to this invention, given with reference to the attached set of drawings which show:

- In fig. 1 : a partial cross-section according to a vertical plane of the chair according to the invention;
- In fig. 2 : an exploded view of the components of the adjustable articulation and suspension device of the armchair in fig. 1;
- In fig. 3 : a partial front view with parts in cross-section of the armchair in fig. 1;
- In fig. 4 : the components, in exploded view, of the device for articulation of the back.

As shown in the figures, the armchair according to the invention comprises a supporting frame 1 formed by legs 1a and support 1b of seat 1c.

Upper end-part 2a of front legs 1a has a connection zone 2b which determines an angle "A" of inclination toward the front part of such end 1a, which has a free end-segment 2c of substantially square section within which are provided two inserts 2d of substantially circular section extending into such end-part 2a substantially throughout its length and forming an angle "B" with the vertical axis of front leg 1a. Such inserts 2d are capable of accommodating lower ends 3a of a pair of coil springs 3 located around an orthogonal axis relative to that of inclined end 2a of leg 1a and the other ends 3b of which are capable of being attached to appropriate inserts 4b like those 2d of legs 1a and provided axially in arms 4 of the said armchair.

Such arms are therefore connected in a substantially hinged manner to legs 1a, the stable link between them being provided by means of two shaped lateral bodies 5 provided with appropriate transverse inserts 5a capable of accommodating

locating and holding pins 6 which are capable of allowing perfect coupling and linking of the articulation between the front legs and the arms.

Such lateral bodies 5 also have further inserts 5b and 5c respectively, the first of which is a through insert and the second is provided with thread 5d for the insertion and operation of suitable means of adjustment of the friction and of the return action of the spring capable of increasing or reducing the hardness of the articulation and therefore of increasing or reducing the degree of suspension of the arm relative to the leg.

In the example of implementation illustrated, such means of adjustment are represented by an adjusting screw 7 which, on engaging female thread 5d determines the increase or reduction of compression of shaped bodies 5 and therefore of springs 3.

At the free end opposite that of articulation, arms 4 are made integral with back 8 via a device 9 substantially of hinged type consisting of a bush 9a of substantially tubular shape, at one end of which is provided a flange 9b which is secured, by means of screws 10a within the lateral thickness of back 8, coaxially to a member 11 with external thread and internal thread also inserted in the flank of the back; the hinge joining the arm and the back is completed on the part of the arm by a second bush 12 of substantially "H" form drilled transversally to allow the passage of a screw 13 which, on passing also through bush 9a, engages the internal thread of threaded member 11 to operate the holding link between arm 4 and back 8 which is, however, free to rotate around its own transverse axis in order allow the change of orientation thereof upon varying from the inclination of the support of the user and/or from the position of the arms.

The hinge is then completed by protection and covering members 14a, 14b and 14c which are self-evident to an expert and are therefore only illustrated but not described in detail.

As shown in dotted outline in fig. 1, the arms and back can assume different positions of use either independently of one another or in relation to one another, ensuring also a suspension action thereof for the greater comfort of the user.

In the example of implementation illustrated there are also provided means for adjusting the length of angular travel of the back, substantially consisting of a cavity 15, provided in washer 14c, the end walls of which are capable of engaging a pin 16 integral with flange 9b of bush 9a.

Also in the case of the connecting hinge between arms 4 and back 8 there may be provided means for adjusting the relative friction, consisting for example of packing made of friction material the greater or lesser action of which determines an increase or reduction of the degree of hardness of

rotation.

The armchair according to the invention also has a floor-support end on leg 1a equipped with a spherical member 1b pressing on the floor by the action of a spring 15 capable of supporting the weight of the armchair and of becoming compressed under the pressure resulting from the load exerted by the user when seated; in this way the armchair may be easily moved when not in use but is stably supported on the rectangular section of leg 1a when the user is seated.

The armchair according to the invention also has means for cushioning the impact of the front surfaces of the arms and front legs, preferably consisting of a rubber ring (18) located around the upper end of leg (1a), such ring also being capable of preventing the accidental insertion of foreign matter between such surfaces.

Numerous variants may be introduced to the constructional implementation of the structural members comprising the armchair according to the invention without thereby departing from the substantial features forming the object of the following claims.

## Claims

1. An armchair or the like, characterized in that it has arms (4) made integral in cantilever with front legs (1a) through means (3) of articulation equipped with means (7) of adjustment of the relative friction, the opposite free end of such arms supporting back (8) through means (13,9a,11) with adjustable friction, such articulating (7) and hinged (13,9a,11) means being capable of allowing the suspension of arms (4) and the swivelling of back (8) around its own transverse axis both independently of and dependently upon one another with flexibility preselected by the user.
2. An armchair or the like according to claim 1, characterized in that such means of articulation are preferably comprised of a pair of coil springs located around a horizontal axis, the free ends (3a,3b) of which are respectively attached to appropriate inserts (4b,3a) of arms (4) and front legs (1a) and maintained transversally in position by means of shaped bodies (5).
3. An armchair or the like according to claim 1, characterized in that such shaped bodies (5) have transverse inserts (5a) for attachment to appropriate locating pins (6), as well as a further through insert (5c) and an insert (5c) with a female thread (5d) respectively for the passage and engagement of a screw (7) capable

of adjusting the clamping of bodies (5) by increasing or reducing the friction of suspension of the arms with respect to the legs.

4. An armchair or the like according to claim 1, characterized in that such hinged means for the swivelling of the back in relation to the arms are preferably comprised of a pair of bushes (12,9a) respectively made integral with arms (4) and with the flanks of back (8) and capable of rotating in relation to one another around a pin consisting of a screw (13) passing through such bushes and capable of engaging the internal thread of a coaxial member (11), provided with an external thread for the stable link with back (8). 5  
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5. An armchair or the like according to claim 1, characterized in that it provides means for limiting the rotation of the back, preferably consisting of a washer (14c), provided with a cavity (15), the end walls of which are capable of entering into contact with a pin (16) integral with bushes (9a) to determine the length of angular travel of the back. 20  
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6. An armchair or the like according to claim 1, characterized in that it has means (18) for cushioning the impact of the front surfaces of the arms and front legs, preferably consisting of a rubber ring (18) located around the upper end of leg (1a), such ring also being capable of preventing the accidental insertion of foreign matter between such surfaces. 30  
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Fig. 1

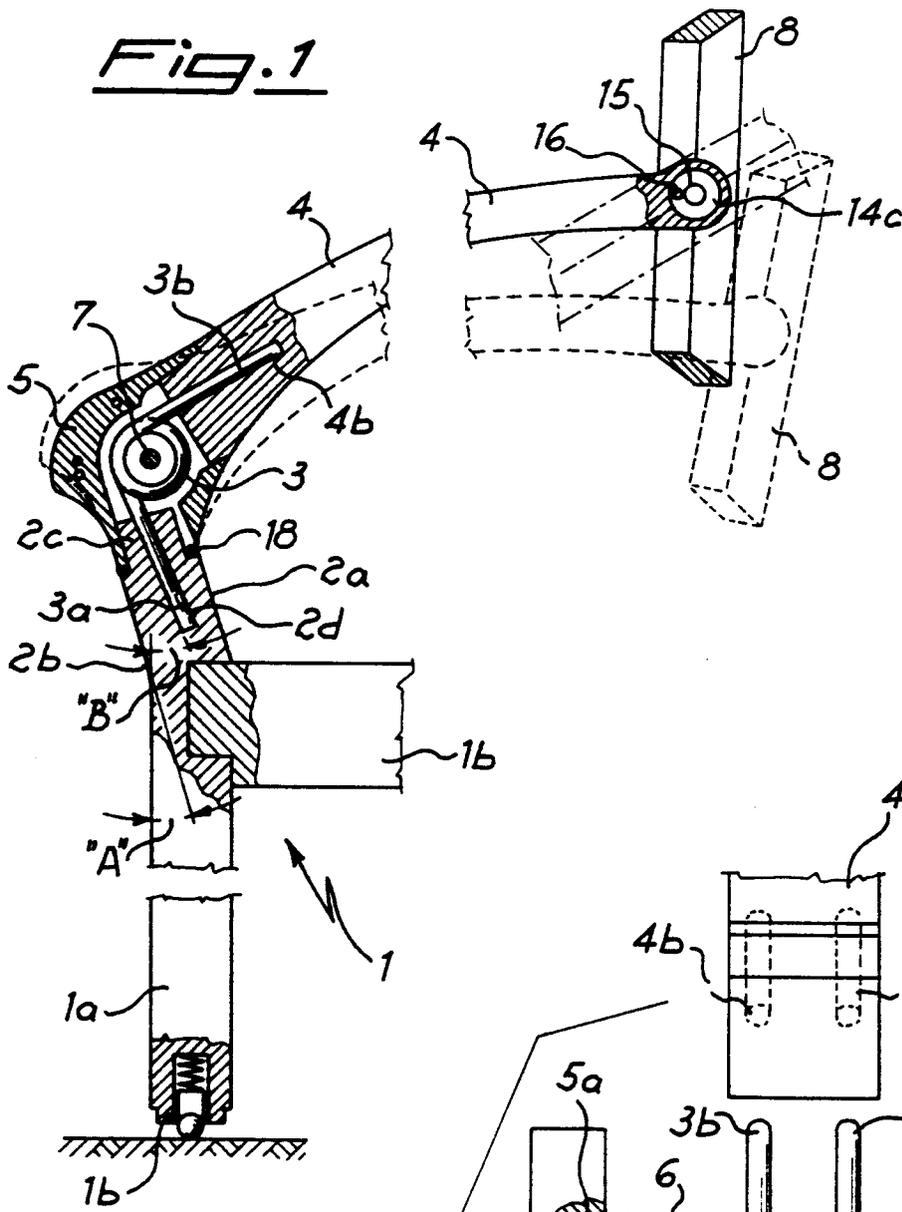
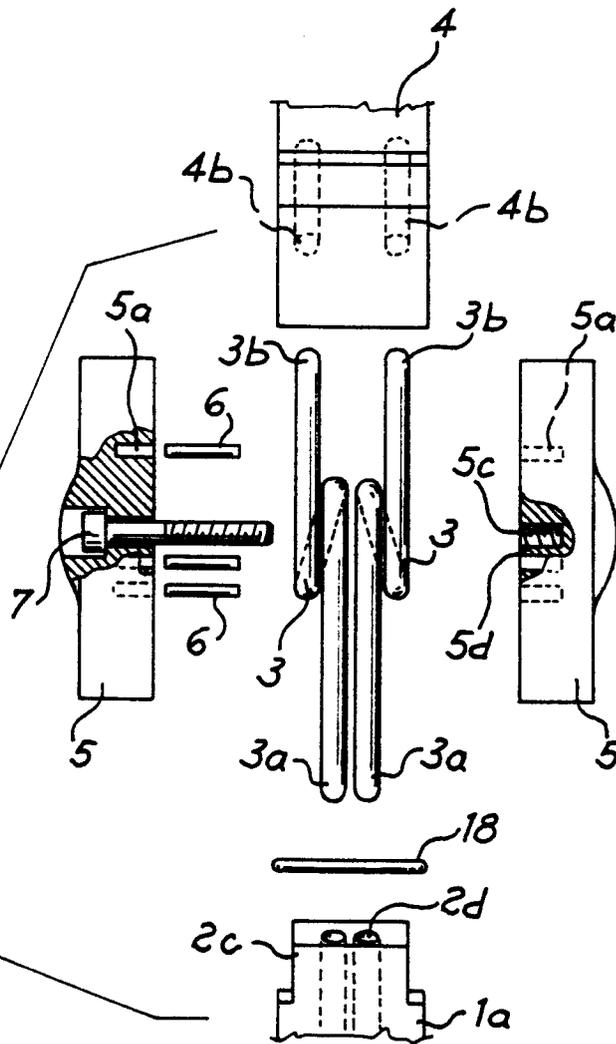
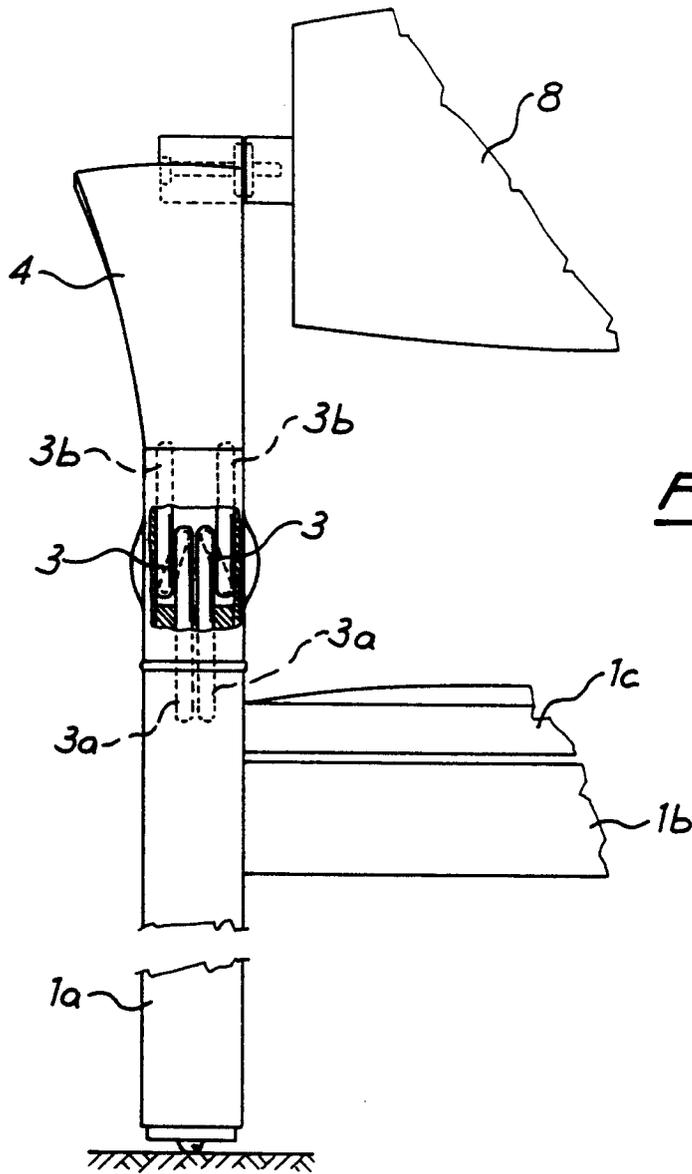
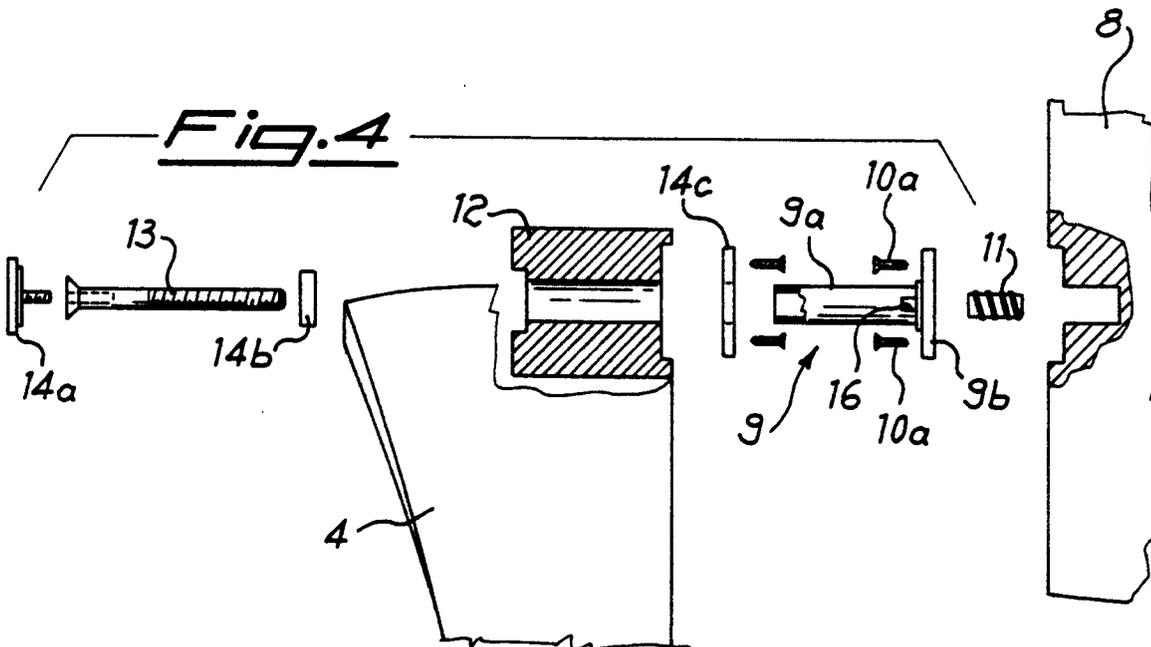


Fig. 2





*Fig. 3*



*Fig. 4*



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EUROPEAN SEARCH REPORT

Application Number

EP 93 20 0537

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.5)
A	AT-B-381 013 (SOCIETE ANONYME DES USINES CHAUSSON ASNIERES) * the whole document * ---	1	A47C7/44 A47C7/54
A	CH-A-673 567 (INTERCOLLECTION DEVELOPMENT S.A.) * the whole document * -----	2	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			A47C
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 01 JUNE 1993	Examiner MYSLIWETZ W.P.
<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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  .....  &amp; : member of the same patent family, corresponding document</p>			

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