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D E C I S I O N
of 29 May 2002

Case Number: T 0719/01 - 3.2.4

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Title of invention:
Office Chair

Patentee:
HERMAN MILLER, INC.

Opponent:
Interstuhl Büromöbel GmbH & Co. KG

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56, 123

Keyword:
"Novelty (yes)"
"Inventive step (yes)"

Decisions cited:
-

Catchword:
-



Case Number: T 0719/01 - 3.2.4

D E C I S I O N
of the Technical Board of Appeal 3.2.4
of 29 May 2002

Appellant: Interstuhl Büromöbel GmbH & Co. KG
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Respondent: HERMAN MILLER, INC.
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 12 April 2001
rejecting the opposition filed against European
patent No. 0 645 976 pursuant to Article 102(2)
EPC.

Composition of the Board:

Chairman: C. A. J. Andries
Members: R. E. Gryc
C. Holtz

Summary of Facts and Submissions

- I. The appellant (opponent) lodged an appeal, received at the EPO on 12 June 2001, against the decision of the Opposition Division rejecting the opposition dispatched on 12 April 2001.

The appeal fee was paid simultaneously and the statement setting out the grounds of appeal was received at the EPO on 10 August 2001.

- II. The opposition was filed against the patent as a whole and based on lack of novelty and inventive step of its subject-matter (Article 100(a) EPC) mainly in view of the following documents:

D1: EP-B-0 242 140

D2: DE-A-3 834 614

D3: DE-C-3 817 761

D4: CH-A-663 713.

The Opposition Division held that the grounds for opposition did not prejudice the maintenance of the patent as granted and rejected the opposition.

- III. In his statement setting out the grounds of appeal, the appellant contended mainly that the kinematic model of the linkage assembly of the pivotable chair disclosed in Figures 31 and 32 of D1 was similar to the model of the chair claimed in Claim 1. He pointed out that the L-formed element of the model of D1 was also pivotably mounted about a pivot axis located above the seating surface of the chair for avoiding the pull-effect on the user's clothing in the same way as the invention. The appellant was therefore of the opinion that the

subject-matter of claim 1 was not new against D1.

The appellant contended also that, in case it would be objected that the model shown in Figures 31 and 32 of D1 was just a model disclosing no concrete chair anticipating the chair of claim 1, the invention could not be considered as inventive in comparison with a combination of the teaching of D1 with that of either D2 or D3.

As regards the second independent claim (i.e. claim 6), the appellant contended that its subject-matter was not inventive in view of D1 because, in his opinion, each structural element of Claim 6 had an equivalent in D1 and also because D1 explicitly taught that different synchrotilt rates could be achieved by varying the spatial relationship between the different pivot axis.

The respondent (proprietor of the patent) contradicted the appellant's argumentation and pointed out that the construction of the chair disclosed by D1 was different from the kinematic model shown in Figures 31 and 32 and that, for its operation, it relies on a three bar slide mechanism instead of a four bar mechanism as according to the invention. In his opinion D2 and D3 were incompatible with D1 since moving the seat axis to a position closer to the hip joints of the user was in direct contrast to the teaching of both D2 and D3. Consequently, for the respondent, the two independent claims of the patent in suit involved an inventive step over a combination of the teaching of D1 with either that of D2 and D3 or that of D4.

With its letter dated 29 April 2002 in response to the summons to oral proceedings, the respondent filed a

main request and a first auxiliary request based on amended sets of claims each comprising a new amended Claim 1.

IV. Oral proceedings took place on 29 May 2002.

The appellant did not dispute novelty of the subject-matter of the two independent claims of the opposed patent.

He considered that the state of the art closest to the subject-matter of Claim 1 was disclosed by D2 which stated the problem of the pulling effect and gave the basic informations and that D1 offered the solution to said problem by locating above the seat the pivot axis of both the seat and the back of the chair.

The appellant was also of the opinion that to connect one extremity of the restraining link to the rear of the seat instead of to the front as shown in Figures 1 and 2 of D2 was ordinary practice for the skilled person.

The appellant presented the same argumentation against Claim 6 and contended that the subject-matter of both independent claims was not inventive.

In reply, the respondent argued in particular that the teachings of D1 and D2 were incompatible to each other so that it would be unlikely that the skilled person would combine them.

He contended also that, even if the skilled person would do this, several features of claims 1 and 6 would still be missing in the resulting chair.

The respondent requested that some errors and mistakes in the description of the patent be corrected and filed new amended pages 2 to 6 complying with the new claims filed with letter of 29 April 2002.

- V. At the end of the oral proceedings the appellant requested that the decision under appeal be set aside and that the European patent be revoked.

The respondent requested that the decision under appeal be set aside and that the patent be maintained on the basis of either claims 1 to 16 of the main request or claims 1 to 15 of the auxiliary request, both filed with letter of 29 April 2002.

- VI. Claim 1 of the main request reads as follows:

"A tiltable chair (30) comprising: a base member (38,42,44); a seat (32) having a seating surface; a back(34); and a linkage assembly (40) connecting the seat(32) and back (34) to the base member (38,42,44), said linkage assembly (40) adapted to allow the seat (32) and back (34) to tilt downwardly and rearwardly and comprising a pair of link members (50,56) pivotally mounted to the base member (38,42,44) and a restraining link (70), each of said link members(50,56) being connected to the back (34) and pivotally attached to a lateral portion (52) of the seat (32) at a pivot axis (54) above the seating surface of said seat(32) so as to be substantially in alignment with the hip joints of a user whereby rearward tilting by a user causes the seat (32) and back (34) to pivot about said pivot axis (54) thereby reducing shear forces and also causes tilting movement of the link members (50,56) relative to the base member (38,42,44), the restraining link

(70) having one end (74) pivotally attached to a rear portion of the seat (32) and another end (72) pivotally attached to the base member (38,42,44) to limit tilting of the seat (32)."

Claim 6 of the main request reads as follows:

"A tiltable chair (30) comprising: a base member(38,42,44); a seat (32); a back (34); and a linkage assembly (40) between the base member (38,42,44), seat (32) and back (34), said linkage assembly (40) comprising a link member (50,56) and a restraining link(70), said link member (50,56) having one end (66) pivotally connected to a forward portion of the base member (38,42,44), said link member (50,56) extending upwardly and rearwardly from said base member (38,42,44) to a lateral portion (52) of the seat (32) wherein said link member (50,56) is pivotally connected to the seat (32) at said lateral portion (52), said link member (50,56) having another end (58) extending rearwardly from said pivotal connection and being attached to the back (34), said restraining link (70) having one end (74) pivotally connected to a rear portion of the seat (32) and another end (72) pivotally connected to said base member (38,42,44), wherein said linkage assembly (40) is adapted to allow the seat (32) and back (34) to tilt downwardly and rearwardly such that the seat (32) tilts about an effective pivot point (68) substantially at the ankles of a user having feet resting on a floor, said linkage assembly (40) also being adapted to allow the back (34) and the seat (32) to pivot relative to each other about an axis (54) in substantial alignment with the hip joints of a user such that the angle between the back (34) and seat (32) increases as the seat (32) and back (34) tilt

downwardly and rearwardly."

Reasons for the Decision

1. *Admissibility of the appeal*

The appeal is admissible.

2. *Main request*

2.1 Modifications of the opposed patent (Article 123(2) EPC)

2.1.1 Modifications of claim 1 as granted.

Claim 1 as granted has been modified by the addition of the following features (see page 16 of the specification):

(a) line 13, between the reference signs (38, 42, 44) relating to the base member and the word "each", the following feature has been added:
"and a restraining link (70)"

(b) at the end of line 13 and the beginning of line 14, between the words "being" and "pivotally", the following feature has been added:
"connected to the back (34) and"

(c) lines 15-16, the sentence: "to allow pivotal movement of the seat (32) about said pivot axis (54) to reduce shear forces" has been replaced by the following:
"whereby rearward tilting by a user causes the

seat (32) and back (34) to pivot about said pivot axis (54) thereby reducing shear forces".

(d) at the end of Claim 1 as granted, after the words "shear forces", the following sentence has been added:

"and also causes tilting movement of the link members (50,56) relative to the base member (38,42,44), the restraining link (70) having one end (74) pivotally attached to a rear portion of the seat (32) and another end (72) pivotally attached to the base member(38,42,44) to limit tilting of the seat (32)."

Counterparts of these features (a) to (d) can be found in the international application WO-A-93/25121 from line 26 of page 9 to line 7 of page 10 and also in Figures 8 to 10.

Since these modifications do not add any new matter to the opposed patent and reduce the protection conferred by the claim, they fulfil the requirements of Article 123(1) and (2) EPC and are therefore admissible.

2.1.2 Modification of the description

New pages 2 to 6 of the description filed during the oral proceedings have been amended solely to correct errors and mistakes the correction of which was obvious in the sense stated in Rule 88 EPC, second sentence. These modifications are therefore allowable.

2.2 Interpretation of claim 6

On page 37 filed with letter of 29 April 2002, the

following sentences of Claim 6:

"said link member (50,56) is pivotally connected to the seat (32) at said lateral portion (52)" (see lines 11 to 13) and

"adapted to allow the back (34) and the seat (32) to pivot relative to each other about an axis (54)" (see lines 25, 26),

must be interpreted as referring to the same pivoting axis (54) for the link member (50, 56), the seat (32) and the back (34) of the chair.

This interpretation is supported by the description (see in particular page 5, lines 42 to 51) and by Figures 3, 4 and 8 to 10 of the patent specification and was accepted by the respondent as being the sole reasonable interpretation.

2.3 Novelty of the subject-matter of claims 1 and 6
(Article 54 EPC)

Lack of novelty was objected by the appellant neither in his statement setting out the grounds of appeal nor at the oral proceedings. Since moreover the Board has, a priori, no particular reason to doubt novelty, the subject-matter of Claim 1 and of Claim 6 is novel in the meaning of Article 54 EPC.

2.4 The state of the art closest to the subject-matter of claims 1 and 6

2.4.1 The Board is of the opinion that the starting state of the art for assessing inventive step cannot be a

theoretical model but should be a concrete, real piece of prior art. Therefore, the Board considers that the kinematic model shown in Figures 31, 32 of D1 is not appropriate for assessing inventive step in particular since too much guessing is still needed to imagine a proper chair.

As regards the actual chair of D1, the Board can neither consider it as the closest prior art since its construction is based on the use of slide assemblies i.e. a mechanical concept which is totally different from the use of a real pivot axis according to the invention.

Since, on the contrary, D2 relies on a problem similar to that according to the invention (i.e. to inhibit shear forces from pulling the clothing on the body of a user when the backrest of the chair tilts relative to the seat - see D2: column 2, lines 58 to 62) and discloses a chair comprising a linkage assembly based on the use of real and simple pivots as according to the chair of Claim 1, the Board considers that the closest state of the art is therefore described by said document. The same considerations remain valid as regards the chair claimed in Claim 6.

2.4.2 The tiltable chairs according to claims 1 and 6 both differ from the chair disclosed by D2 in that :

- (a) in order to reduce shear forces, each of the lateral link members of the linkage assembly is pivotally attached to the seat (32) at a pivot axis located above the seating surface so as to be substantially in alignment with the hip joints of a user and

- (b) the restraining link has one end pivotally attached to a rear portion of the seat. The chair claimed in Claim 6 differs from the chair of D2 additionally in that its seat tilts about an effective pivot point located substantially at the ankles of a user having his feet resting on the floor.

2.5 Problems and solutions

Starting from the real embodiment disclosed by D2 and taking into account the differences mentioned in section 2.4.2 above, the problem to be solved by the skilled person as regards the chair claimed in Claim 1 is mainly to find an alternative to the chair configuration of D2 for reducing the shear forces acting on the clothing of the user i.e. the so-called pulling effect (see for example the patent specification: page 2, lines 21 to 27 or page 6, lines 2-3). As regards the chair claimed in Claim 6, the problem is to improve additionally the comfort of the user so that he can tilt rearwardly with little effort without lifting the feet off the floor (see for example the patent specification: page 2, lines 28 to 31 and page 6, lines 11 to 15).

The Board is satisfied that the combinations of features claimed in claims 1 and 6 do solve these problems.

2.6 Inventive step (Article 56 EPC)

- 2.6.1 The conception of the linkage assembly of the chair according to D2 is based essentially on the use of simple and real pivot axes for pivotably attaching the

link members to lateral portions of the seat (see Figures 1 and 2 of D2) and the solution proposed by D2 for avoiding the so-called pulling effect is to combine the action of the link members upon the back rest on the one hand with the opposite action of the restraining levers upon the seat on the other hand in order to bring the back and the seat closer together. Therefore, it is clear from D2 that the solution can only result from a mutual cooperation of the link members with the restraining levers.

2.6.2 The linkage assembly of the real specific chair disclosed by D1 is based on a different structural concept characterised by the creation of a virtual pivoting common axis for the rotation of the seat and the back rest with respect to each other and also by the lack of restraining links between the seat and the base member i.e. a linkage assembly which is completely different from that of D2.

2.6.3 Therefore, the skilled person starting from D2 would have, a priori and without any hint, no reason for combining the teachings of D1 and D2 concerning the respective pivoting axes, let alone to assimilate the virtual synchrotilt axis of D1 with the real axis of D2 and to position the last one substantially in alignment with the hip joints of the user. Moreover, the chair of D1 having no restraining link, the skilled person could not learn from this document that the rear end of the restraining link of D2 should be connected to the rear of the seat. Therefore, even if the skilled person would combine the teachings of D1 and D2, the resulting tiltable chair would still not comprise all the features of either Claim 1 or Claim 6 and he would therefore not arrive at the invention.

- 2.6.4 The structure of the chair disclosed by D3 being similar to that of the chair according to D2, the skilled person would not learn from D3 anything which could lead him to a chair according to Claim 1 or Claim 6.
- 2.6.5 For the aforementioned reasons, the Board considers that an improvement of the chair of D2 according to the teaching of either Claim 1 or Claim 6 does not follow plainly and logically from the other cited prior art and that therefore the subject-matter of said claims 1 involves an inventive step in the meaning of Article 56 EPC.
- 2.7 Therefore, the opposed European patent Nr. 0 645 976 complies with the requirements of the EPC and can be maintained in the amended version of the main request as submitted with letter of 29 April 2002.

3. *Auxiliary request*

Since the version of the opposed patent corresponding to the main request has been accepted, there is no need to examine the auxiliary request.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to maintain the patent in accordance with the

following:

- claims 1 to 16 of the main request filed with letter of 29 April 2002,
- pages 2 to 6 of the description as filed in the oral proceedings and pages 7 to 16 of the description as granted and
- Figures 1 to 56 as granted.

The Registrar:

The Chairman:

G. Magouliotis

C. Andries