

AUSTRALIA
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657855

NOTICE OF ENTITLEMENT

I **SIMON DESANTA**

of **Schloßallee 18, 33829 BORGHOLZHAUSEN, FEDERAL REPUBLIC OF GERMANY**

being the Applicant and Nominated Person, in respect of PCT Application No. PCT/EP93/00644, nominating Australia as a designated state, entitled 'Office Chair', state the following:

I am the actual inventor of the invention the subject of the Application.

I am the applicant of the application listed in the declaration under Article 8 of the PCT.

Convention priority is claimed from the following basic application referred to in the declaration under Article 8 of the PCT:

Basic Applicant	Application Number	Application Date	Country	Country Code
SIMON DESANTA	P 42 09 066	20 March 1992	Germany	DE

The basic application referred to in the declaration under Article 8 of the PCT was the first application made in a Convention country in respect of the invention the subject of the Application.

DATED this 17th day of January 1994

SIMON DESANTA
By his Patent Attorneys



GRIFFITH HACK & CO



AU9337501

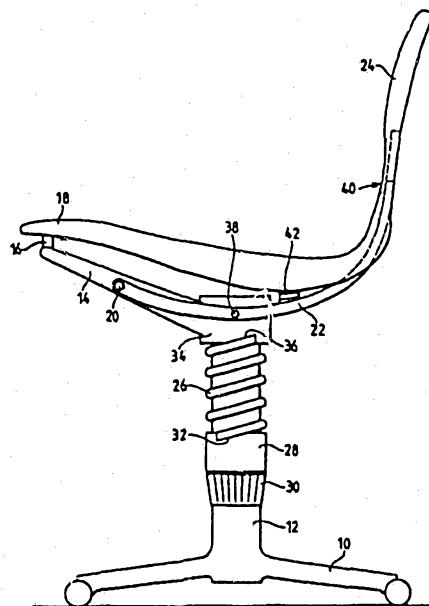
(12) PATENT ABRIDGMENT (11) Document No. AU-B-37501/93
(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 657855

- (54) Title
OFFICE CHAIR
- International Patent Classification(s)
(51)⁵ A47C 009/02 A47C 003/025 A47C 003/026
- (21) Application No. : 37501/93 (22) Application Date : 18.03.93
- (87) PCT Publication Number : WO93/18687
- (30) Priority Data
- (31) Number (32) Date (33) Country
4209066 20.03.92 DE GERMANY
- (43) Publication Date : 21.10.93
- (44) Publication Date of Accepted Application : 23.03.95
- (71) Applicant(s)
SIMON DESANTA
- (72) Inventor(s)
SIMON DESANTA
- (74) Attorney or Agent
GRIFFITH HACK & CO. , GPO Box 4164, SYDNEY NSW 2001
- (56) Prior Art Documents
EP 271962
US 4641885
US 3053571
- (57) Claim

1. An office chair, comprising a vertical column rising from a pedestal, a seat, a back rest and a bracket projecting forwards from the top end of the column, the seat being pivotally supported to the front end of the bracket for pivoting, around a first transverse axis, characterised in that a support member is journaled in a second transverse pivot axis arranged in a central portion of the bracket, the support member extending below the seat up to the back rest and carrying the back rest, the support member being resiliently supported by the column and the bracket, the rear end portion of the seat being shiftably supported on the support member.



(51) Internationale Patentklassifikation ⁵ : A47C 9/02	A1	(11) Internationale Veröffentlichungsnummer: WO 93/18687 (43) Internationales Veröffentlichungsdatum: 30. September 1993 (30.09.93)
(21) Internationales Aktenzeichen: PCT/EP93/00644 (22) Internationales Anmeldedatum: 18. März 1993 (18.03.93) (30) Prioritätsdaten: P 42 09 066.0 20. März 1992 (20.03.92) DE (71)(72) Anmelder und Erfinder: DESANTA, Simon [DE/DE]; Schloßallee 18, D-4867 Borgholzhausen (DE). (74) Anwalt: STEINMEISTER, Helmut; Artur-Ladebeck-Str. 51, D-4800 Bielefeld 1 (DE). (81) Bestimmungsstaaten: AU, CA, JP, US, europäisches Patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).		Veröffentlicht <i>Mit internationalem Recherchenbericht.</i> 657855
(54) Title: OFFICE CHAIR (54) Bezeichnung: BÜROSTUHL (57) Abstract An office chair has a column that extends vertically from a foot, a seating plate, a back and a bracket that extends forward from the upper end of the column and on whose front end the seating plate is supported in a first transverse swivelling axis (16). A support (22) mounted in a second transverse swivelling axis (20) in the central area of the bracket (14) extends below the seating plate (18) up to the back (24) and carries the latter. The support is elastically supported on the column (12) and/or the bracket (14). The rear edge of the seating plate is movably mounted on the support (22) close to the bending line. (57) Zusammenfassung Ein Bürostuhl umfaßt eine von einem Fußgestell ausgehende senkrechte Säule, eine Sitzplatte, eine Rückenlehne und einen vom oberen Ende der Säule nach vorne vorspringenden Ausleger, an dessen vorderem Ende die Sitzplatte in einer ersten quergerichteten Schwenkachse (16) abgestützt ist. Ein im Mittelbereich des Auslegers (14) in einer zweiten quergerichteten Schwenkachse (20) gelagerter Träger (22) ist unter der Sitzplatte (18) entlang bis zur Rückenlehne (24) geführt und trägt diese. Der Träger ist an der Säule (12) und/oder dem Ausleger (14) federnd abgestützt. Der hintere Rand der Sitzplatte ist angrenzend an die Knickeinie verschiebbar auf dem Träger (22) abgestützt.		



OFFICE CHAIR

The invention relates to an office chair comprising a vertical column rising from a pedestal, a seat, a back rest and a bracket projecting forwards from the top end of the column, the seat being pivotally supported to the front end of the bracket for pivoting around a first transverse axis.

Office chairs of this kind are known in various embodiments.

On the market there is an increasing need for stable, substantially wear resistant chairs complying with the ergonomic requirements. In this connection, there is also a need, inter alia, for comparatively simple chairs which can be produced at relatively low cost for manufacturing and assembling, the number of parts, particularly movable parts of which is as small as possible, arranged in a compact construction concept.

According to one aspect of the present invention there is provided an office chair, comprising a vertical column rising from a pedestal, a seat, a back rest and a bracket projecting forwards from the top end of the column, the seat being pivotally supported to the front end of the bracket for pivoting, around a first transverse axis, characterised in that a support member is journaled in a second transverse pivot axis arranged in a central portion of the bracket, the support member extending below the seat up to the back rest and carrying the back rest, the support member being resiliently supported by the column and the bracket, the rear end portion of the seat being shiftably supported on the support member.

The function of an office chair of this kind is substantially based on the pivotal support member and the spring supporting the support member with respect to the column. The support member supports the rear end portion of the seat and the back rest and allows a simultaneous movement of the seat and the back rest in case of the deflection of the spring in an ergonomically suitable ratio.



For resiliently supporting the support member, the chair preferably comprising a helical spring surrounding the column in the upper portion thereof. The support member carries a sleeve vertically shiftable on the column which sleeve is supported by the helical spring. The lower end of the helical spring is supported by a support ring which is height adjustable on the column, the support ring may be a threaded ring rotatable on the column or may comprise a threaded ring. By height adjustment of the supported ring the spring force may be varied.

The sleeve and/or the support ring may be provided with a helical recess on the sides facing each other which receives the related end of the helical spring. Thus, the helical spring is fixed in its position, and it is not necessary to bend the ends of the helical spring down to the next turn of the spring for obtaining flat end faces.

The support member comprises at least in the front and central portion of the chair two arms extending identically along both sides of the bracket and the column or the sleeve, respectively. The arms may be connected in the rear portion of the chair.

The first transverse pivot axis connecting the bracket and the front end portion of the seat may be formed by rubber pads allowing a sufficiently formation for pivoting the seat and moreover having a damping effect.

A preferred embodiment of the present invention will now be described by way of example only with reference to the Figure which shows a side view of a chair according to the preferred embodiment of the present invention.

A column 12 projects vertically from a pedestal 10. At the upper end portion of the column there is a bracket 14 projecting forwards and slightly upwards fixed to the column. Terms like front, rear, lateral etc. refer in the present context to the normal sitting position of a person sitting on the chair.



A first horizontal transverse pivot axis 16 connecting the bracket 14 and the seat 18 is positioned in the front end portion of the bracket 14. Thus, the front portion of the seat is pivotally supported by the
5 bracket. The pivot axis 16 may e.g. be formed by rubber pads providing a sufficient deformation in view of the small pivot angle of the seat 18.



A curved support member 22 is starting from a second, horizontal, transverse pivot axis 20 provided in the central portion of the bracket 14 and extends below the seat 18 to the back and from there upwards to the back of the back rest 24. The support member 22 consists of two arms in the front and central portion of the chair. One each of the two identic arms being pivotally supported by the axis 20 extends on either side of the bracket 14 and the upper portion of the column 12. Behind the column 12 the arms may be connected.

The support member 22 is resiliently supported by a helical spring 26 surrounding the column 12. The helical spring 26 is supported at its lower end by a support ring 28 surrounding the column. The support ring itself is supported by a rotatable threaded ring 30 engaging a thread on the column and surrounding the column. Thus the height of the helical spring 26 with respect to the column 12 may be adjusted. The support ring 28 has a helical recess 32 on its upper side receiving the lower end of the helical spring 26. Thus the position of the helical spring is fixed, and it is not necessary to bend the last turn of the helical spring to the preceding turn by an additional working step.

The column 12 is surrounded in the upper portion thereof by a shiftable sleeve 34 supported by the upper end of the helical spring 26. The sleeve 34 has on its ^{front}~~lower~~ face a recess (not shown) through which the bracket 14 extends. Moreover, the sleeve 34 has on the lower side a helical recess 36 corresponding to the recess 32 of the lower support ring 28, for receiving the upper end of the helical spring 26. The two arms of the support member 26 extend along either side of the sleeve 34 and are connected with the sleeve by a third, horizontal, transverse pivot axis 38. Thus the support member 22 is supported by the helical spring 26 through the sleeve 34.

The rear end of the seat 18 is shiftable supported by the support member 22. The seat 18 and the back rest 24 are flexibly connected above the rear end of the seat 18 along a connection line 40. Moreover, the rear portion of the seat 18 is supported through a guiding and shifting mechanism 42 on the support member 22. Thus the seat and the back rest achieve a certain movability with respect to the remaining part of the chair mechanism by which blocking of the movements of the chair mechanism is excluded and a comfortable movability of the chair is obtained even in the fixed position.



CLAIMS

1. An office chair, comprising a vertical column rising from a pedestal, a seat, a back rest and a bracket projecting forwards from the top end of the column, the
5 seat being pivotally supported to the front end of the bracket for pivoting, around a first transverse axis, characterised in that a support member is journaled in a second transverse pivot axis arranged in a central portion of the bracket, the support member extending
10 below the seat up to the back rest and carrying the back rest, the support member being resiliently supported by the column and the bracket, the rear end portion of the seat being shiftably supported on the support member.

2. An office chair as claimed in claim 1,
15 characterised in that a sleeve shiftable on the column is connected to the support member for supporting the support member, the sleeve resting on a helical spring surrounding the column.

3. An office chair as claimed in claim 2,
20 characterised in that the lower end of the helical spring is supported by a height adjustable support ring provided on the column.

4. An office chair as claimed in claim 3,
25 characterised in that the support ring comprises or is connected with a rotatable threaded ring in threaded engagement with the column.

5. An office chair as claimed in one of claims 2 -
4, characterised in that the sleeve and/or the support ring are provided with a helical recess for receiving the
30 respective ends of the helical spring.

6. An office chair as claimed in one of the preceding claims, characterised in that the support member provides two identical arms in the front and central portion of the chair, either one of the arms
35 extending from opposite sides of the bracket along opposite sides of the sleeve.

7. An office chair as claimed in one of the preceding claims, characterised in that the first



transverse pivot axis is formed by rubber pads connecting the bracket and the lower side of the seat.

8. An office chair as claimed in one of the preceding claims, characterised in that the rear end
5 portion of the seat and the lower end portion of the back rest are connected through a flexible bending line.

9. An office chair substantially as hereinbefore described with reference to the accompanying drawings.

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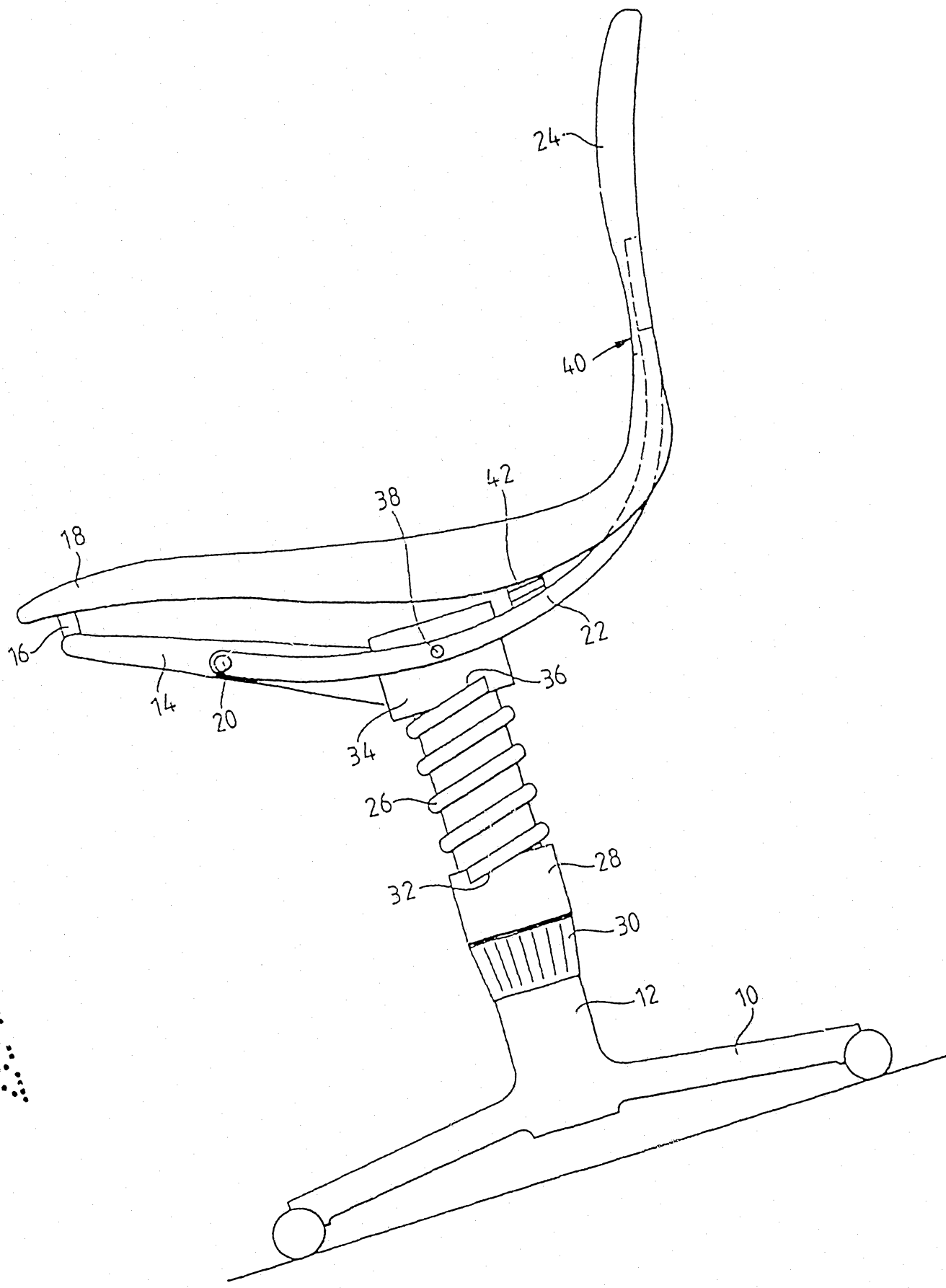


ABSTRACT

- An office chair comprises a column projecting from a pedestal, a seat, a back rest and a bracket projecting from the upper end of the column forwards.
- 5 The seat is supported by the front end of the bracket in a first transverse pivot axis (16). A support member (22) is supported in the central portion of the bracket (14) by a second transverse pivot axis (20) and extends below the seat (18) up to the back rest (24) which is carried by the support member. The support member is resiliently supported by the column (12) and/or the
- 10 bracket (14). The rear end portion of the seat is shiftably supported by the support member (22).



FIG. 1



INTERNATIONAL SEARCH REPORT

International application No.

PCT/EP 93/00644

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. 5 A47C 9/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int. Cl. 5 A47C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP, A2, 0 271 962 (AHREND-CIRKEL B.V.), 22 June 1988 (22.06.88), column 3, line 42 - column 4, line 9 ---	1-8
Y	US, A, 3 053 571 (M.FOX), 11 September 1962 (11.09.62), Column 2, line 58 - column 3, line 14, figures 2,6 ---	1-6
Y	US, A, 4 641 885 (BRAUNING), 10 February 1987 (10.02.87), column 2, line 62 - column 3, line 16, figures 1,4 ---	8
Y	US, A, 4 871 208 (HODGDON), 3 October 1989 (03.10.89), column 2, line 61 - column 3, line 5, figure 2 ---	7
A	EP, A1, 0 049 310 (WILKHAHN WILKENING + HAHNE GMBH + CO.), 14 April 1982 (14.04.82), page 9, line 18 - page 12, line 9, figures 1,2 -----	1-8

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

10 June 1993 (10.06.93)

Date of mailing of the international search report

8 July 1993 (08.07.93)

Name and mailing address of the ISA/
European Patent Office

Authorized officer

Facsimile No.

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INTERNATIONAL SEARCH REPORT
Information on patent family members

30/04/93

International application No.
PCT/EP 93/00644

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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INTERNATIONALER RECHERCHENBERICHT

Internationales Aktenzeichen

PCT/EP 93/00644

A. KLASSIFIZIERUNG DES ANMELDUNGSGEGENSTANDES

IPC5: A47C 9/02

Nach der Internationalen Patentklassifikation (IPK) oder nach der nationalen Klassifikation und der IPK

B. RECHERCHIERTE GEBIETE

Recherchierter Mindestprüfstoff (Klassifikationssystem und Klassifikationssymbole)

IPC5: A47C

Recherte, aber nicht zum Mindestprüfstoff gehörende Veröffentlichungen, soweit diese unter die recherchierten Gebiete fallen

Während der internationalen Recherche konsultierte elektronische Datenbank (Name der Datenbank und evtl. verwendete Suchbegriffe)

C. ALS WESENTLICH ANGESEHENE UNTERLAGEN

Kategorie*	Bezeichnung der Veröffentlichung, soweit erforderlich unter Angabe der in Betracht kommenden Teile	Betr. Anspruch Nr.
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☒ Weitere Veröffentlichungen sind der Fortsetzung von Feld C zu entnehmen.☒ Siehe Anhang Patentfamilie.

* "A" Veröffentlichung, die den allgemeinen Stand der Technik definiert, aber nicht als besonders bedeutsam anzusehen ist * "E" älteres Dokument, das jedoch erst am oder nach dem internationalen Anmeldedatum veröffentlicht worden ist * "L" Veröffentlichung, die geeignet ist, einen Prioritätsanspruch zweifelhaft erscheinen zu lassen, durch die das Veröffentlichungsdatum einer anderen im Recherchenbericht genannten Veröffentlichung belegt werden soll oder die aus einem anderen besonderen Grund angegeben ist (wie ausgeführt) * "O" Veröffentlichung, die sich auf eine mündliche Offenbarung, eine Benutzung, eine Ausstellung oder andere Maßnahmen bezieht * "P" Veröffentlichung, die vor dem internationalen Anmeldedatum, aber nach dem beanspruchten Prioritätsdatum veröffentlicht worden ist	* "T" Spätere Veröffentlichung, die nach dem internationalen Anmeldedatum oder dem Prioritätsdatum veröffentlicht worden ist und mit der Anmeldung nicht kollidiert, sondern nur zum Verständnis der der Erfindung zugrundeliegenden Prinzipien oder der ihr zugrundeliegenden Theorie angegeben ist * "X" Veröffentlichung von besonderer Bedeutung: die beanspruchte Erfindung kann allein aufgrund dieser Veröffentlichung nicht als neu oder auf erfindenderischer Tätigkeit beruhend betrachtet werden * "Y" Veröffentlichung von besonderer Bedeutung: die beanspruchte Erfindung kann nicht als auf erfindenderischer Tätigkeit beruhend betrachtet werden, wenn die Veröffentlichung mit einer oder mehreren Veröffentlichungen dieser Kategorie in Verbindung gebracht wird und diese Verbindung für einen Fachmann naheliegend ist * "&" Veröffentlichung, die Mitglied derselben Patentfamilie ist
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Datum des Abschlusses der internationalen Recherche

Absenddatum des internationalen Recherchenberichts

10 Juni 1993

08 -07- 1993

Name und Postanschrift der Internationalen Recherchenbehörde

Bevollmächtigter Bediensteter



Europäisches Patentamt, P.B. 5818 Patentlaan 2
NL-2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-2016

Jesper Stenström

INTERNATIONALER RECHERCHENBERICHT

Internationales Aktenzeichen

PCT/EP 93/00644

C (Fortsetzung). ALS WESENTLICH ANGESEHENE UNTERLAGEN		
Kategorie*	Bezeichnung der Veröffentlichung, soweit erforderlich unter Angabe der in Betracht kommenden Teile	Betr. Anspruch Nr.
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INTERNATIONALER RESEARCHBERICHT

Angaben zu Veröffentlichungen, die zur selben Patentfamilie gehören
30/04/93

Internationales Aktenzeichen

PCT/EP 93/00644

Im Recherchenbericht angefurtes Patentedokument	Datum der Veroffentlichung	Mitglied(er) der Patentfamilie	Datum der Veroffentlichung
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