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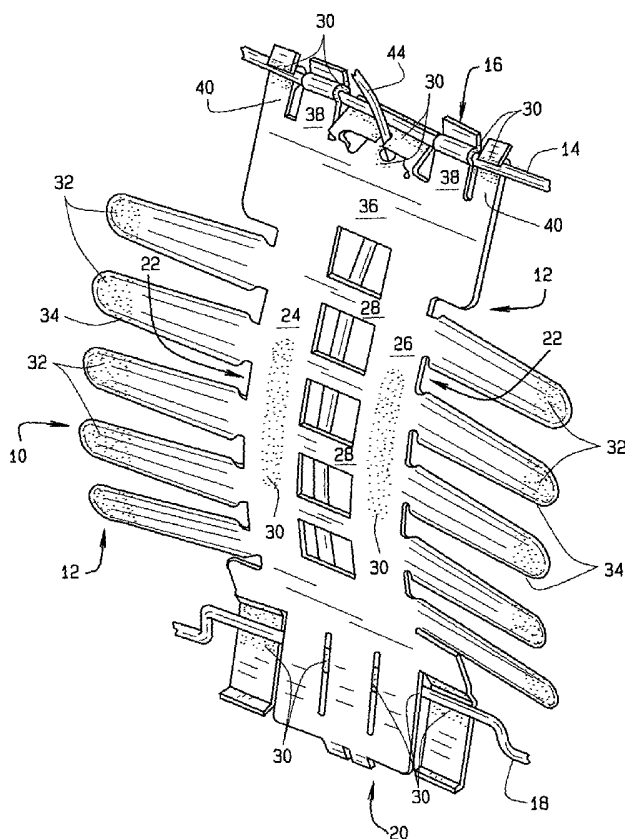
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(75) Inventors/Applicants (*for US only*): **LIGON, James, T.** [US/US]; 800 South Main Street, Almont, MI 48003 (US).

[Continued on next page]

(54) Title: IMPROVED VARIABLE LUMBER SUPPORT FOR A BACK REST

(57) Abstract: Improvements in a flexible back support (36) for use in seats such as automobile seats or office chairs.



WO 03/015583 A3



ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK,
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INTERNATIONAL SEARCH REPORT

national Application No
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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A47C7/46 B60N2/66

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)
IPC 7 A47C B60N

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 practical, search terms used)

WPI Data, EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 518 294 A (PATRIAS JR ANDREW L ET AL) 21 May 1996 (1996-05-21) cited in the application figure 1	1
X	figures 3,4 ---	5,6
X	US 5 791 733 A (BRANIN JR GORDON L ET AL) 11 August 1998 (1998-08-11) figure 1 ---	2
X	US 4 630 865 A (AHS WILGOT) 23 December 1986 (1986-12-23) figures 1-4 ---	3
X	EP 0 131 334 A (COLLINUCCI LUIGI) 16 January 1985 (1985-01-16) figure 5 --- -/--	4

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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- * & * document member of the same patent family

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INTERNATIONAL SEARCH REPORT

International Application No
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 227 618 B1 (PRENDERGAST WILLIAM M ET AL) 8 May 2001 (2001-05-08) cited in the application figure 10 -----	6

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 02/26275

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5518294	A	21-05-1996	AU 2644695 A	18-12-1995
			CA 2189347 A1	30-11-1995
			DE 29522317 U1	13-09-2001
			DE 69519568 D1	11-01-2001
			DE 69519568 T2	31-05-2001
			EP 0759715 A1	05-03-1997
			ES 2153036 T3	16-02-2001
			JP 10500596 T	20-01-1998
			WO 9531918 A1	30-11-1995
US 5791733	A	11-08-1998	NONE	
US 4630865	A	23-12-1986	SE 445799 B	21-07-1986
			DE 3340718 A1	24-05-1984
			GB 2130483 A , B	06-06-1984
			SE 8206689 A	25-05-1984
EP 0131334	A	16-01-1985	CH 655910 A5	30-05-1986
			CH 653626 A5	15-01-1986
			DE 3466497 D1	05-11-1987
			EP 0131334 A1	16-01-1985
US 6227618	B1	08-05-2001	US 5984407 A	16-11-1999
			US 5609394 A	11-03-1997
			US 6045185 A	04-04-2000
			EP 0957716 A1	24-11-1999
			WO 9730613 A1	28-08-1997