



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) **EP 1 020 612 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
09.01.2002 Bulletin 2002/02

(51) Int Cl.7: **E06B 9/30**, E06B 9/32,
E06B 9/307, E06B 9/308

(43) Date of publication A2:
19.07.2000 Bulletin 2000/29

(21) Application number: **00300138.5**

(22) Date of filing: **11.01.2000**

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE**
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **11.01.1999 US 115393 P**

(71) Applicant: **HUNTER DOUGLAS INDUSTRIES B.V.**
3071 EL Rotterdam (NL)

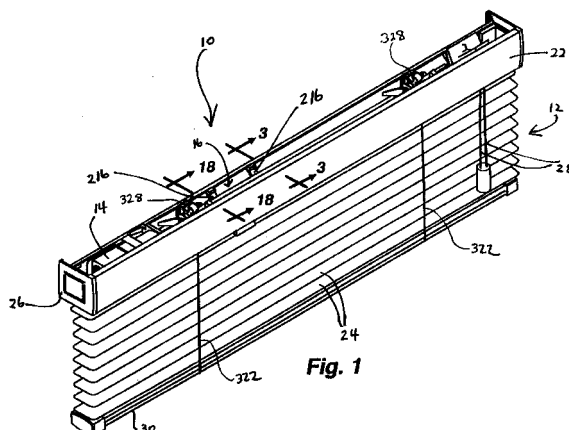
(72) Inventors:
• **Anderson, Richard N.**
Whitesville, KY 42378 (US)
• **Fraser, Donald E.**
St. Petersburg, FL 33705 (US)
• **Coleman, Everett S.**
Owensboro, KY 42303 (US)

(74) Representative: **Smith, Samuel Leonard**
J.A. Kemp & Co., 14 South Square, Gray's Inn
London WC1R 5JJ (GB)

(54) **Headrail and control system for powered coverings for architectural openings**

(57) A headrail designed for powered coverings for architectural openings comprises a housing defining an interior that conveniently hides a battery holder, a signal-receiving system, and an electric motor used to adjust the configuration of the covering. The headrail also hides improved hardware for mounting the motor and, in the case of coverings comprising tiltable elements, improved hardware for mounting a tilt rod. Additionally, in the case of coverings comprising tiltable elements, the headrail hides improved hardware for adjustably attaching the tiltable elements to the tilt rod in a manner that prevents over-rotation of the tiltable elements. The battery holder may comprise a battery magazine or a battery carrier removably mounted in the headrail hous-

ing. The batteries may be inserted into or extracted from the battery holder through an opening in a bottom wall of the headrail housing. A swingably mounted trap door may selectively cover or uncover the opening. The battery carrier slidably engages, through the opening in the bottom of the headrail housing, a battery carrier housing that is mounted within the headrail housing. The signal-receiving system includes an exposed signal receiver for receipt of remote-control signals. The present invention also provides a tilt control system with an inexpensive and effective clutch to prevent over-winding of cords onto a control shaft (e.g., a tilt rod) used to control tiltable elements of the covering. The preferred tilt control system also minimizes torque on the motor or other mechanism used to drive the control shaft.



EP 1 020 612 A3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 00 30 0138

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.7)
X	EP 0 838 574 A (HUNTER DOUGLAS INTERNATIONAL NV) 29 April 1998 (1998-04-29) * abstract *	1,2,12	E06B9/30 E06B9/32 E06B9/307 E06B9/308
A	* column 6, line 21 - column 10, line 20; figures 1,2,8 *	3-11, 13-31	
X	EP 0 843 068 A (HUNTER DOUGLAS INDUSTRIES B.V.) 20 May 1998 (1998-05-20) * abstract *	1,16	
A	* page 1, line 10 - line 22; claims 1,10-13; figures 1,4B *	2-15, 17-26	
X	EP 0 273 719 A (SHARP KABUSHIKI KAISHA ET AL.) 6 July 1988 (1988-07-06) * abstract *	1,16, 32-35	
A	* column 3, line 2 - column 4, line 14 * * column 5, line 36 - column 6, line 12; figures 1,2 *	36-42	
X	DE 15 09 540 A (KUENTZ & CIE AG) 11 September 1969 (1969-09-11)	32-35	TECHNICAL FIELDS SEARCHED (Int.Cl.7)
A	* claims 1-4; figures 1-3 *	1,27-31, 36-42	E06B
X	US 3 289 739 A (ERICH EMIL HENSEL) 6 December 1966 (1966-12-06)	32-35	
A	* column 2, line 39 - line 53; figures 1-4 *	1,36-42	
X	GB 1 187 214 A (HUNTER DOUGLAS INTERNATIONAL LIMITED) 8 April 1970 (1970-04-08)	32-35	
A	* page 2, line 112 - page 3, line 19; figures 1-4 *	1,36-42	
-/--			
The present search report has been drawn up for all claims			
Place of search BERLIN		Date of completion of the search 15 November 2001	Examiner Cuny, J-M
CATEGORY OF CITED DOCUMENTS 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		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 & : member of the same patent family, corresponding document	

EPO FORM 1503 03.82 (Pd4C01)



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 00 30 0138

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.7)
A	WO 91 14848 A (SMEDERÖD TRADING AB) 3 October 1991 (1991-10-03) * abstract; claims 1-4; figures 1,2 * -----	1,32-42	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
The present search report has been drawn up for all claims			
Place of search BERLIN		Date of completion of the search 15 November 2001	Examiner Cuny, J-M
CATEGORY OF CITED DOCUMENTS 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 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 & : member of the same patent family, corresponding document			

EPO FORM 1503 03/82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 30 0138

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

15-11-2001

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
EP 0838574	A	29-04-1998	US	5793174 A	11-08-1998
			AU	727009 B2	30-11-2000
			AU	3686897 A	12-03-1998
			CA	2214191 A1	06-03-1998
			EP	0838574 A2	29-04-1998
			US	5990646 A	23-11-1999
			US	6057658 A	02-05-2000
			US	6181089 B1	30-01-2001
			US	6259218 B1	10-07-2001
EP 0843068	A	20-05-1998	EP	0843068 A2	20-05-1998
			US	5909093 A	01-06-1999
EP 0273719	A	06-07-1988	JP	4016591 B	24-03-1992
			JP	63304892 A	13-12-1988
			JP	1983387 C	25-10-1995
			JP	4016587 B	24-03-1992
			JP	63167880 A	11-07-1988
			JP	2727317 B2	11-03-1998
			JP	63167885 A	11-07-1988
			JP	4016592 B	24-03-1992
			JP	63167886 A	11-07-1988
			JP	1777957 C	28-07-1993
			JP	4061954 B	02-10-1992
			JP	63167887 A	11-07-1988
			JP	2079575 C	09-08-1996
			JP	4016588 B	24-03-1992
			JP	63167881 A	11-07-1988
			JP	1861465 C	08-08-1994
			JP	5072515 B	12-10-1993
			JP	63167882 A	11-07-1988
			JP	4016589 B	24-03-1992
			JP	63167883 A	11-07-1988
			JP	2079576 C	09-08-1996
			JP	4016590 B	24-03-1992
			JP	63167884 A	11-07-1988
			AU	604201 B2	06-12-1990
			AU	8303987 A	30-06-1988
			CA	1283471 A1	23-04-1991
			DE	3768928 D1	02-05-1991
			EP	0273719 A2	06-07-1988
			KR	9210268 B1	21-11-1992
			US	4856574 A	15-08-1989
DE 1509540	A	11-09-1969	CH	400816 A	15-10-1965
			DE	1509540 A1	11-09-1969

EPO FORM P0489

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 30 0138

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

15-11-2001

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 3289739 A	06-12-1966	CH 429108 A	31-01-1967
		DE 1509439 A1	13-02-1969
		GB 1081975 A	06-09-1967
GB 1187214 A	08-04-1970	NL 6609993 A	16-01-1968
		AT 296581 B	15-01-1972
		BE 701077 A	08-01-1968
		CH 454417 A	15-04-1968
		DE 1683007 A1	11-11-1971
		ES 343040 A1	01-10-1968
		FR 1531134 A	31-10-1968
WO 9114848 A	03-10-1991	SE 467117 B	25-05-1992
		AU 7583791 A	21-10-1991
		IL 97634 A	25-01-1994
		PL 167634 B1	31-10-1995
		SE 9001088 A	27-09-1991
		WO 9114848 A1	03-10-1991
		US 5921306 A	13-07-1999

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82