



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
09.04.2008 Bulletin 2008/15

(51) Int Cl.:
E06B 9/36 (2006.01) A47H 15/00 (2006.01)

(21) Application number: **06020904.6**

(22) Date of filing: **05.10.2006**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR
Designated Extension States:
AL BA HR MK RS
(71) Applicant: **Chuang, Shan-Chi**
Wugu Township
T'ai pei (TW)

(72) Inventor: **Chuang, Shan-Chi**
Wugu Township
T'ai pei (TW)
(74) Representative: **Reichel, Wolfgang**
Reichel und Reichel
Parkstrasse 13
60322 Frankfurt (DE)

(54) **Head rail assembly for a vertical blind**

(57) A vertical blind includes a headrail (10), a fixing bracket (20), a plurality of juxtaposed movable brackets (30), a drive bracket (40), a plurality of driven blocks (23), a plurality of drive blocks (25), at least one fixing seat (50), a plurality of sliding seats (500), a plurality of shades

(70), a pull cord unit (60), and a magnetically positioning unit (80). Thus, the vertical blind contains multiple movable brackets movable between the fixing bracket and the drive bracket, so that the length of the vertical blind is expanded freely to fit the size of the window, thereby enhancing the versatility of the vertical blind.

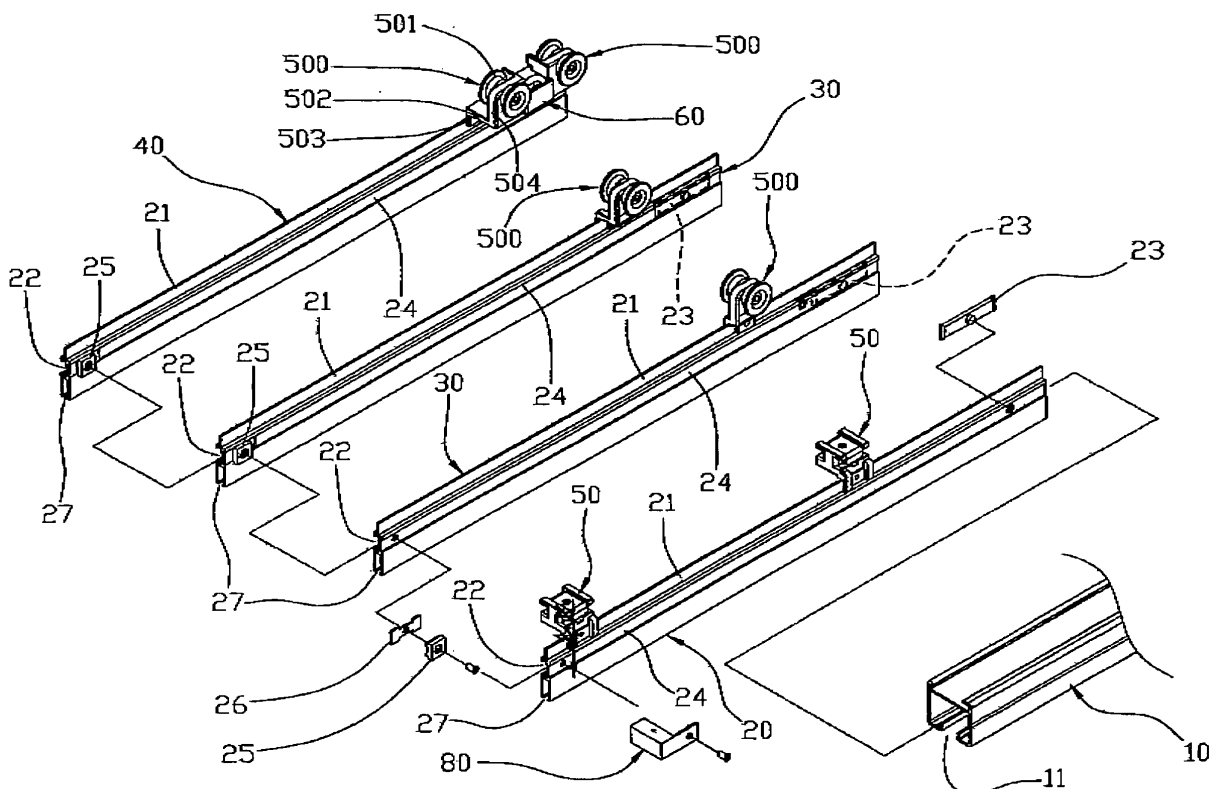


FIG. 2

Description

[0001] The present invention relates to a vertical blind and, more particularly, to a roller type vertical blind having multiple upright shades that are pushed and pulled piece by piece.

[0002] A conventional vertical blind in accordance with the prior art shown in Fig. 10 comprises a headrail 5, three carriers 1 movably mounted on the headrail 5 by roller seats 4, and three shades (not shown) each attached to a respective carrier 1. When in use, the carriers 1 are movable on the headrail 5 to expand or fold the shades. When the vertical blind contains more than three carriers 1, the roller seats 4 easily interfere with each other, so that the carriers 1 cannot be moved smoothly. Thus, the vertical blind contains three carriers 1 only and cannot be expanded to increase its length so that the length of the vertical blind is limited, thereby limiting the versatility of the vertical blind.

[0003] The primary objective of the present invention is to provide a vertical blind that is expanded and folded quickly and conveniently.

[0004] Another objective of the present invention is to provide a vertical blind, wherein the vertical blind comprises multiple movable brackets movable between the fixing bracket and the drive bracket, so that the length of the vertical blind is expanded freely to correspond to the size of the window, thereby enhancing the versatility of the vertical blind.

[0005] A further objective of the present invention is to provide a vertical blind, wherein the fixing seats of the fixing bracket and the sliding seats of the movable brackets and the drive bracket have different lengths to correspond to different positions of the fixing bracket, the movable brackets and the drive bracket, so that the movable brackets are movable between the fixing bracket and the drive bracket smoothly without interfering with each other, thereby facilitating operation of the vertical blind.

[0006] A further objective of the present invention is to provide a vertical blind, wherein the drive block is guided by the respective first mounting groove, and the driven block is guided by the respective second mounting groove, so that the movable brackets and the drive bracket are movable smoothly, thereby facilitating the user operating the vertical blind.

[0007] A further objective of the present invention is to provide a vertical blind, wherein the magnetically attractive metallic plate of each of the movable brackets is attracted magnetically by the magnet of the magnetically positioning unit, so that each of the movable brackets is positioned temporarily by the magnetically positioning unit to prevent the movable brackets from being drawn and moved freely during expansion of the vertical blind.

[0008] The above objectives are solved with a vertical blind with the features of claim 1 of the present invention. Preferred embodiments of the present invention are disclosed in the subclaims.

[0009] Further benefits and advantages of the present

invention will become apparent after a careful reading of the detailed description with appropriate reference to the accompanying drawings.

[0010] In the drawings:

Fig. 1 is a partially cut-away perspective view of a vertical blind in accordance with the preferred embodiment of the present invention.

Fig. 2 is a partially exploded perspective view of the vertical blind as shown in Fig. 1.

Fig. 3 is a partially exploded perspective view of the vertical blind as shown in Fig. 1.

Fig. 4 is a partially exploded perspective view of the vertical blind as shown in Fig. 1.

Fig. 5 is a side plan view of the vertical blind as shown in Fig. 1. Fig. 6 is a top plan cross-sectional view of the vertical blind as shown in Fig. 1.

Fig. 7 is a schematic operational view of the vertical blind as shown in Fig. 1.

Fig. 8 is a schematic operational view of the vertical blind as shown in Fig. 6.

Fig. 9 is a partially exploded perspective view of a vertical blind in accordance with another preferred embodiment of the present invention.

Fig. 10 is a partially exploded perspective view of a conventional vertical blind in accordance with the prior art.

[0011] Referring to the drawings and initially to Figs. 1-6, a vertical blind in accordance with the preferred embodiment of the present invention comprises a headrail 10, a fixing bracket 20 secured on the headrail 10, a plurality of juxtaposed movable brackets 30 movably mounted on the headrail 10 and movable relative to each other wherein a first one of the movable brackets 30 is movable relative to and limited by the fixing bracket 20, a drive bracket 40 movably mounted on the headrail 10 and movable to rest on a last one of the movable brackets 30 so as to pull the movable brackets 30, a plurality of driven blocks 23 mounted on the fixing bracket 20 and the movable brackets 30, a plurality of drive blocks 25 mounted on the movable brackets 30 and the drive bracket 40 and movable to rest on a respective driven block 23 to drive the respective driven block 23, at least one fixing seat 50 mounted on the fixing bracket 20 to attach the fixing bracket 20 to the headrail 10, a plurality of sliding seats 500 mounted on the movable brackets 30 and the drive bracket 40 to attach the movable brackets 30 and the drive bracket 40 to the headrail 10, a plurality of shades 70 mounted on the fixing bracket 20, the movable brackets 30 and the drive bracket 40, a pull cord unit 60 mounted on the drive bracket 40 to move the drive bracket 40, and a magnetically positioning unit 80 mounted on the fixing bracket 20.

[0012] The headrail 10 has an axially extending open slideway 11 to receive the fixing seats 50 of the fixing bracket 20 and the sliding seats 500 of the movable brackets 30 and the drive bracket 40.

[0013] Each of the fixing bracket 20, the movable brackets 30 and the drive bracket 40 has the same construction that is worked by an aluminum extruding process. Each of the fixing bracket 20, the movable brackets 30 and the drive bracket 40 has an upper portion formed with a fixing portion 21 and a lower portion formed with a mounting channel 27 for mounting the shades 70.

[0014] Each of the fixing bracket 20, the movable brackets 30 and the drive bracket 40 has a first side formed with a first mounting groove 22 and a second side formed with a second mounting groove 24, wherein each of the driven blocks 23 is secured in the respective first mounting groove 22 of each of the fixing bracket 20 and the movable brackets 30, and each of the drive blocks 25 is secured in the respective second mounting groove 24 of each of the movable brackets 30 and the drive bracket 40. Each of the fixing bracket 20, the movable brackets 30 and the drive bracket 40 has a first end and a second end, wherein each of the driven blocks 23 is located at the first end of each of the fixing bracket 20 and the movable brackets 30, and each of the drive blocks 25 is located at the second end of each of the movable brackets 30 and the drive bracket 40. The second mounting groove 24 of each of the movable brackets 30 is provided with a magnetically attractive metallic plate 26 juxtaposed to the respective drive block 25 and attached to the magnetically positioning unit 80.

[0015] The fixing bracket 20 is provided with two fixing seats 50 located at the first and second ends of the fixing bracket 20 respectively and secured to the headrail 10 so that the fixing bracket 20 is secured to the headrail 10 by the fixing seats 50, each of the movable brackets 30 is provided with a sliding seat 500 located at the first end of each of the movable brackets 30 and movable on the headrail 10 so that each of the movable brackets 30 is movable on the headrail 10 by the respective fixing seat 50, and the drive bracket 40 is provided with two spaced sliding seats 500 located at the first end of the drive bracket 40 and movable on the headrail 10 so that the drive bracket 40 is movable on the headrail 10 by the sliding seats 500.

[0016] Each of the fixing seats 50 of the fixing bracket 20 is substantially L-shaped and has a transverse cantilever 52 having a first end formed with an upward extending mounting block 51 secured to the headrail 10 and a second end formed with a downward extending fixing block 53 secured to the fixing portion 21 of the fixing bracket 20. The cantilevers 52 of the fixing seats 50 have different lengths.

[0017] Each of the sliding seats 500 of the movable brackets 30 and the drive bracket 40 is substantially L-shaped and has a transverse cantilever 502 having a first end formed with an upward extending mounting block 504 provided with two opposite rollers 501 rotatably mounted in the headrail 10 and a second end formed with a downward extending fixing block 503 secured to the fixing portion 21 of each of the movable brackets 30 and the drive bracket 40. The cantilevers 502 of the slid-

ing seats 500 have different lengths.

[0018] The pull cord unit 60 is located at the first end of the drive bracket 40 between the two spaced sliding seats 500 and movable on the headrail 10 by a pull action of a pull cord (not shown) so that the drive bracket 40 is driven by the pull cord unit 60 to move on the headrail 10.

[0019] Each of the shades 70 has a width the same as that of each of the fixing bracket 20, the movable brackets 30 and the drive bracket 40 and has an upper end formed with an enlarged locking strip 71 inserted into the mounting channel 27 of each of the fixing bracket 20, the movable brackets 30 and the drive bracket 40.

[0020] The magnetically positioning unit 80 is located at the second end of the fixing bracket 20 and includes a housing 82 secured to the fixing bracket 20, two metallic elates 84 mounted in the housing 82, and a magnet 83 mounted in the housing 82 and located between the metallic plates 84 to attract the magnetically attractive metallic plate 26 of each of the movable brackets 30. The housing 82 of the magnetically positioning unit 80 has an inside formed with a receiving recess 820 to receive the metallic plates 84 and the magnet 83 and has a side formed with a protruding locking plate 81 secured to the fixing bracket 20.

[0021] In assembly, the driven block 23 of the fixing bracket 20 is movable in the respective second mounting groove 24 of the first one of the movable brackets 30, and the drive block 25 of the first one of the movable brackets 30 is movable in the respective first mounting groove 22 of the fixing bracket 20. In addition, the driven block 23 of each of the movable brackets 30 is movable in the respective second mounting groove 24 of an adjacent movable bracket 30, and the drive block 25 of each of the movable brackets 30 is movable in the respective first mounting groove 22 of an adjacent movable bracket 30. In addition, the drive block 25 of the drive bracket 40 is movable in the respective first mounting groove 22 of the last one of the movable brackets 30, and the driven block 23 of the last one of the movable brackets 30 is movable in the respective second mounting groove 24 of the drive bracket 40.

[0022] In operation, referring to Figs. 1-8, when the vertical blind is folded, the sliding seat 500 of the first one of the movable brackets 30 is rested on the fixing seat 50 of the first end of the fixing bracket 20, the sliding seat 500 of each of the movable brackets 30 is rested on the sliding seat 500 of an adjacent movable bracket 30, and one of the sliding seats 500 of the drive bracket 40 is rested on the sliding seat 500 of the last one of the movable brackets 30 as shown in Fig. 1, so that the fixing bracket 20, the movable brackets 30 and the drive bracket 40 are juxtaposed to each other as shown in Fig. 6 to fold the vertical blind so as to expose the window.

[0023] At this time, the cantilevers 52 of the fixing seats 50 of the fixing bracket 20 have different lengths, and the cantilevers 502 of the sliding seats 500 of the movable brackets 30 and the drive bracket 40 have different lengths to correspond to different positions of the fixing

bracket 20, the movable brackets 30 and the drive bracket 40, so that the mounting blocks 51 of the fixing seats 50 of the fixing bracket 20 and the rollers 501 of the sliding seats 500 of the movable brackets 30 and the drive bracket 40 are located at the same horizontal line.

[0024] When the user wishes to expand the vertical blind, the pull cord unit 60 is operated by the pull cord to pull the drive bracket 40 rightward (or inwardly). When the drive block 25 of the drive bracket 40 is movable to rest on the driven block 23 of the last one of the movable brackets 30 as shown in Fig. 8, the last one of the movable brackets 30 is pulled by the drive bracket 40 to move rightward (or inwardly). Then, the drive block 25 of each of the movable brackets 30 is movable to rest on the driven block 23 of an adjacent movable bracket 30, so that the movable brackets 30 are in turn driven by the drive bracket 40 to move rightward (or inwardly). Finally, when the drive block 25 of the first one of the movable brackets 30 is movable to rest on the driven block 23 of the fixing bracket 20, the first one of the movable brackets 30 is stopped by the fixing bracket 20 so as to stop movement of the movable brackets 30 and the drive bracket 40, so that the vertical blind is fully expanded as shown in Fig. 7 so as to cover the window.

[0025] As shown in Fig. 6, the magnetically attractive metallic plate 26 of each of the movable brackets 30 is attracted magnetically by the magnet 83 of the magnetically positioning unit 80, so that each of the movable brackets 30 is positioned temporarily by the magnetically positioning unit 80 to prevent the movable brackets 30 from being drawn and moved freely during expansion of the vertical blind.

[0026] When the user wishes to fold the vertical blind, the pull cord unit 60 is operated by the pull cord to push the drive bracket 40 leftward (or outwardly). When one of the sliding seats 500 of the drive bracket 40 is movable to rest on the sliding seat 500 of the last one of the movable brackets 30, the last one of the movable brackets 30 is pushed by the drive bracket 40 to move leftward (or outwardly). Then, the sliding seat 500 of each of the movable brackets 30 is movable to rest on the sliding seat 500 of an adjacent movable bracket 30, so that the movable brackets 30 are pushed by the drive bracket 40 to move leftward (or outwardly). Finally, when the sliding seat 500 of the first one of the movable brackets 30 is movable to rest on the fixing seat 50 of the fixing bracket 20, the first one of the movable brackets 30 is stopped by the fixing bracket 20 so as to stop movement of the movable brackets 30 and the drive bracket 40, so that the vertical blind is fully folded as shown in Fig. 1 so as to expose the window.

[0027] As shown in Fig. 9, each of the shades 700 includes a connecting plate 701 attached to each of the fixing bracket 20, the movable brackets 30 and the drive bracket 40, and a shade cloth 702 removably mounted on the connecting plate 701. The connecting plate 701 of each of the shades 700 has an upper end formed with an enlarged locking strip 703 inserted into the mounting

channel 27 of each of the fixing bracket 20, the movable brackets 30 and the drive bracket 40 and a lower end formed with a bonding portion 704. The shade cloth 702 of each of the shades 700 has an upper end formed with a bonding section 705 detachably bonded onto the bonding portion 704 of the connecting plate 701.

[0028] Accordingly, the vertical blind comprises multiple movable brackets 30 movable between the fixing bracket 20 and the drive bracket 40, so that the length of the vertical blind is expanded freely to correspond to the size of the window, thereby enhancing the versatility of the vertical blind. In addition, the fixing seats 50 of the fixing bracket 20 and the sliding seats 500 of the movable brackets 30 and the drive bracket 40 have different lengths to correspond to different positions of the fixing bracket 20, the movable brackets 30 and the drive bracket 40, so that the movable brackets 30 are movable between the fixing bracket 20 and the drive bracket 40 smoothly without interfering with each other, thereby facilitating operation of the vertical blind. Further, the drive block 25 is guided by the respective first counting groove 22, and the driven block 23 is guided by the respective second mounting groove 24, so that the movable brackets 30 and the drive bracket 40 are movable smoothly, thereby facilitating the user operating the vertical blind. Further, the magnetically attractive metallic plate 26 of each of the movable brackets 30 is attracted magnetically by the magnet 83 of the magnetically positioning unit 80, so that each of the movable brackets 30 is positioned temporarily by the magnetically positioning unit 80 to prevent the movable brackets 30 from being drawn and moved freely during expansion of the vertical blind.

Claims

1. A vertical blind, comprising:

- a headrail (10);
- a fixing bracket (20) secured on the headrail (10);
- a plurality of juxtaposed movable brackets (30) movably mounted on the headrail (10) and movable relative to each other wherein a first one of the movable brackets (30) is movable relative to and limited by the fixing bracket (20);
- a drive bracket (40) movably mounted on the headrail (10) and movable to rest on a last one of the movable brackets (30) so as to pull the movable brackets (30);
- a plurality of driven blocks (23) mounted on the fixing bracket (20) and the movable brackets (30);
- a plurality of drive blocks (25) mounted on the movable brackets (30) and the drive bracket (40) and movable to rest on a respective driven block (23) to drive the respective driven block (23);
- at least one fixing seat (50) mounted on the fixing

- bracket (20) to attach the fixing bracket (20) to the headrail (10);
 a plurality of sliding seats (500) mounted on the movable brackets (30) and the drive bracket (40) to attach the movable brackets (30) and the drive bracket (40) to the headrail (10);
 a plurality of shades (70) mounted on the fixing bracket (20), the movable brackets (30) and the drive bracket (40);
 a pull cord unit (60) mounted on the drive bracket (40) to move the drive bracket (40).
2. The vertical blind in accordance with claim 1, wherein each of the fixing bracket (20), the movable brackets (30) and the drive bracket (40) has a first side formed with a first mounting groove (22) and a second side formed with a second mounting groove (24), wherein each of the driven blocks (23) is secured in the respective first mounting groove (22) of each of the fixing bracket (20) and the movable brackets (30), and each of the drive blocks (25) is secured in the respective second mounting groove (24) of each of the movable brackets (30) and the drive bracket (40), wherein each of the fixing bracket (20), the movable brackets (30) and the drive bracket (40) has a first end and a second end, each of the driven blocks (23) is located at the first end of each of the fixing bracket (20) and the movable brackets (30), and each of the drive blocks (25) is located at the second end of each of the movable brackets (30) and the drive bracket (40).
 3. The vertical blind in accordance with claim 2, wherein the fixing bracket (20) is provided with two fixing seats (50) located at the first and second ends of the fixing bracket (20) respectively and secured to the headrail (10) so that the fixing bracket (20) is secured to the headrail (10) by the fixing seats (50), each of the movable brackets (30) is provided with a sliding seat (500) located at the first end of each of the movable brackets (30) and movable on the headrail (10) so that each of the movable brackets (30) is movable on the headrail (10) by the respective fixing seat (50), the drive bracket (40) is provided with two spaced sliding seats (500) located at the first end of the drive bracket (40) and movable on the headrail (10) so that the drive bracket (40) is movable on the headrail (10) by the sliding seats (500), and the pull cord unit (60) is located at the first end of the drive bracket (40) between the two spaced sliding seats (500) and movable on the headrail (10).
 4. The vertical blind in accordance with claim 1, wherein each of the fixing bracket (20), the movable brackets (30) and the drive bracket (40) has an upper portion formed with a fixing portion (21), each of the fixing seats (50) of the fixing bracket (20) has a transverse cantilever (52) having a first end formed with an upward extending mounting block (51) secured to the headrail (10) and a second end formed with a downward extending fixing block (53) secured to the fixing portion of the fixing bracket (20), and each of the sliding seats (500) of the movable brackets (30) and the drive bracket (40) has a transverse cantilever (502) having a first end formed with an upward extending mounting block (504) provided with two opposite rollers rotatably mounted in the headrail (10) and a second end formed with a downward extending fixing block (503) secured to the fixing portion of each of the movable brackets (30) and the drive bracket (40).
 5. The vertical blind in accordance with claim 4, wherein the cantilevers (52) of the fixing seats (50) have different lengths, and the cantilevers (502) of the sliding seats (500) have different lengths to correspond to different positions of the fixing bracket (20), the movable brackets (30) and the drive bracket (40), so that the mounting blocks of the fixing seats (50) of the fixing bracket (20) and the rollers (501) of the sliding seats (500) of the movable brackets (30) and the drive bracket (40) are located at the same horizontal line.
 6. The vertical blind in accordance with claim 1, wherein each of the fixing bracket (20), the movable brackets (30) and the drive bracket (40) has a lower portion formed with a mounting channel (27) for mounting the shades (700).
 7. The vertical blind in accordance with claim 6, wherein each of the shades (700) has an upper end formed with an enlarged locking strip (703) inserted into the mounting channel (27) of each of the fixing bracket (20), the movable brackets (30) and the drive bracket (40).
 8. The vertical blind in accordance with claim 6, wherein each of the shades (700) includes a connecting plate (701) attached to each of the fixing bracket (20), the movable brackets (30) and the drive bracket (40), and a shade cloth (702) removably mounted on the connecting plate (701), wherein the connecting plate (701) of each of the shades (700) has an upper end formed with an enlarged locking strip (703) inserted into the mounting channel (27) of each of the fixing bracket (20), the movable brackets (30) and the drive bracket (40) and a lower end formed with a bonding portion, and the shade cloth (702) of each of the shades (700) has an upper end formed with a bonding section detachably bonded onto the bonding portion of the connecting plate (701).
 9. The vertical blind in accordance with claim 2, further comprising a magnetically positioning unit (80) mounted on the fixing bracket (20), wherein the sec-

ond mounting groove (24) of each of the movable brackets (30) is provided with a magnetically attractive metallic plate (26) juxtaposed to the respective drive block and attached to the magnetically positioning unit (80), so that each of the movable brackets (30) is positioned temporarily by the magnetically positioning unit (80) to prevent the movable brackets (30) from being drawn and moved freely. 5

10. The vertical blind in accordance with claim 9, wherein the magnetically positioning unit (80) is located at the second end of the fixing bracket (20) and includes a housing secured to the fixing bracket (20), two metallic plates mounted in the housing, and a magnet mounted in the housing and located between the metallic plates to attract the magnetically attractive metallic plate (26) of each of the movable brackets (30). 10 15

20

25

30

35

40

45

50

55

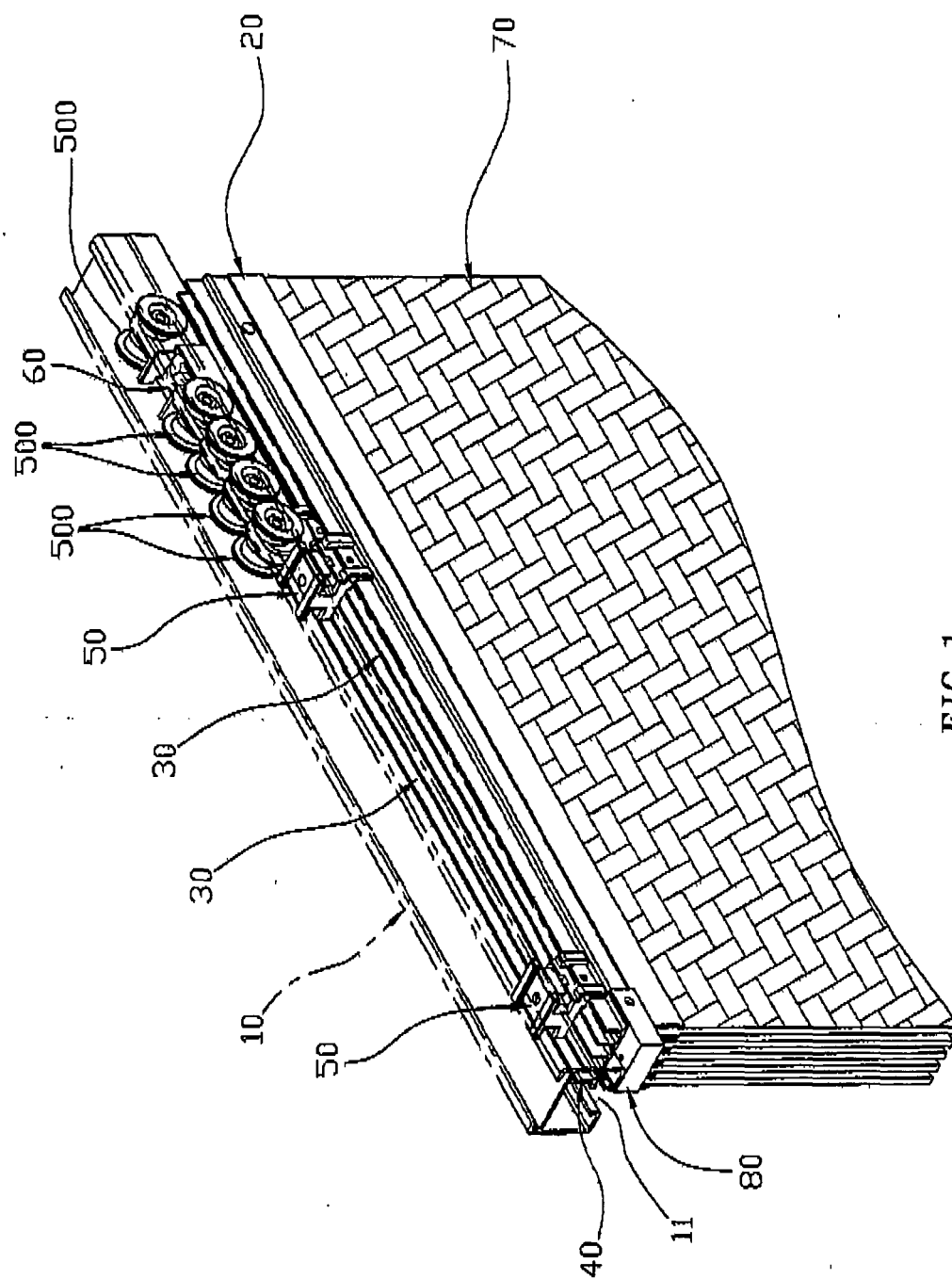


FIG. 1

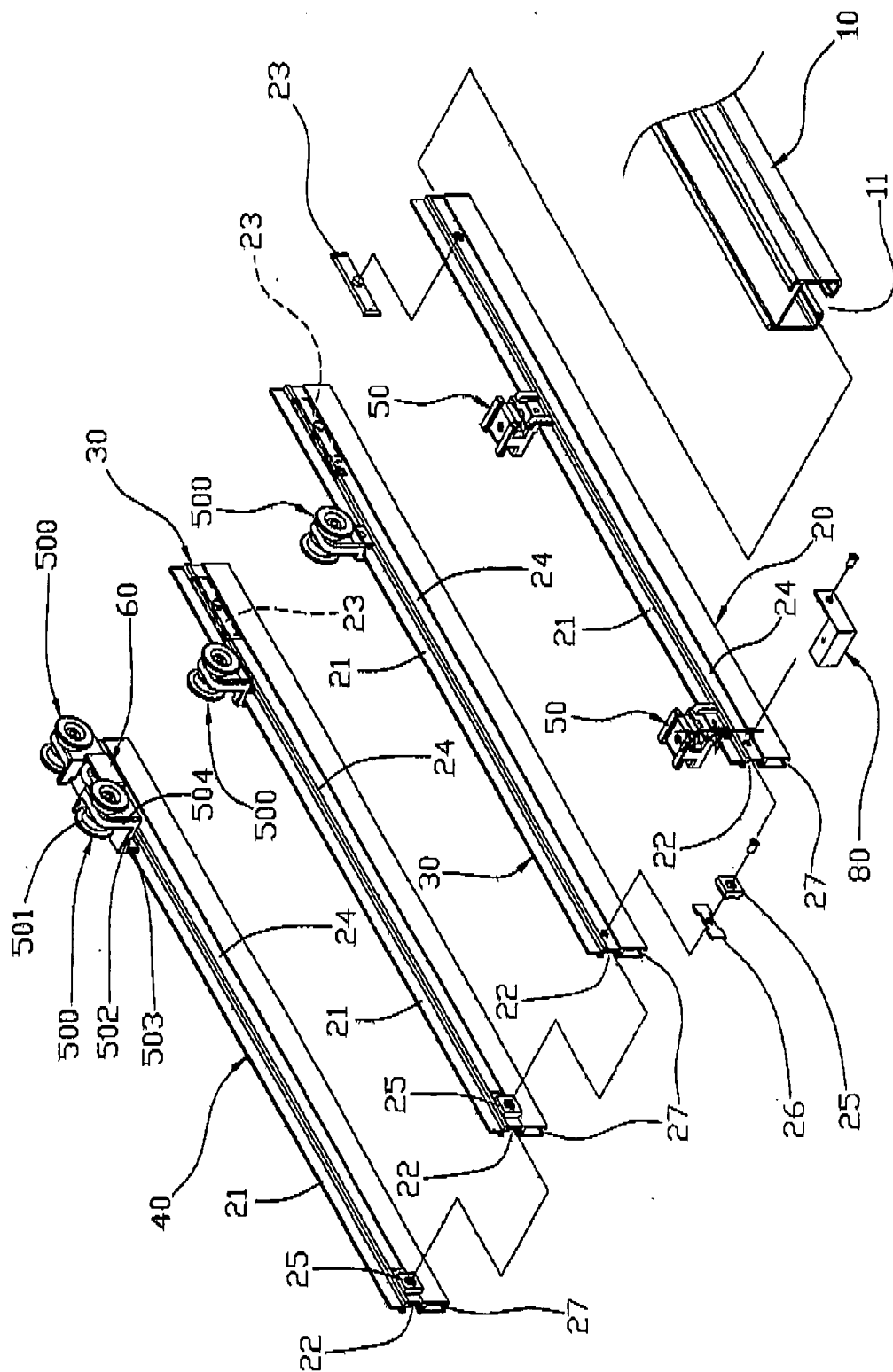


FIG. 2

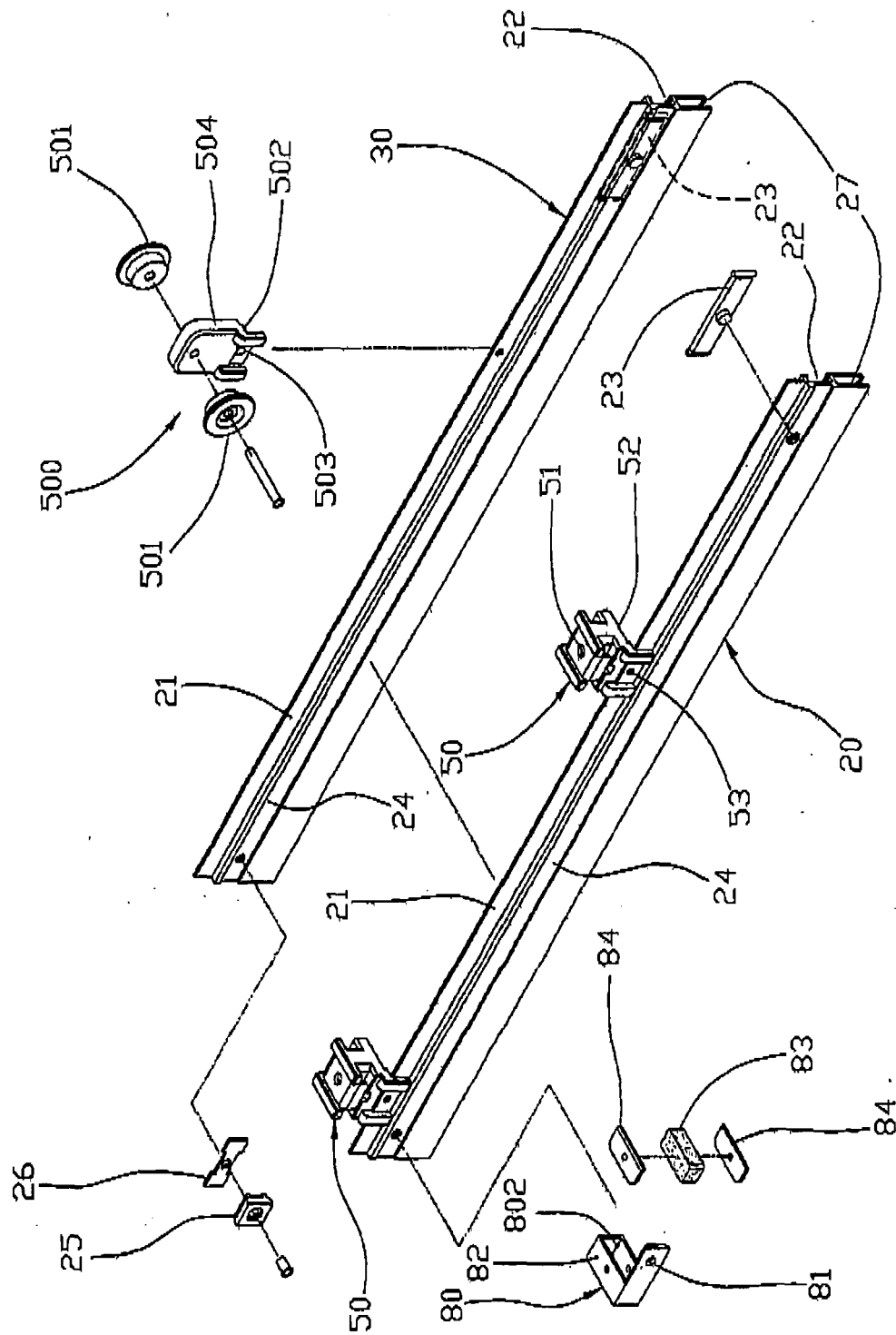


FIG. 3

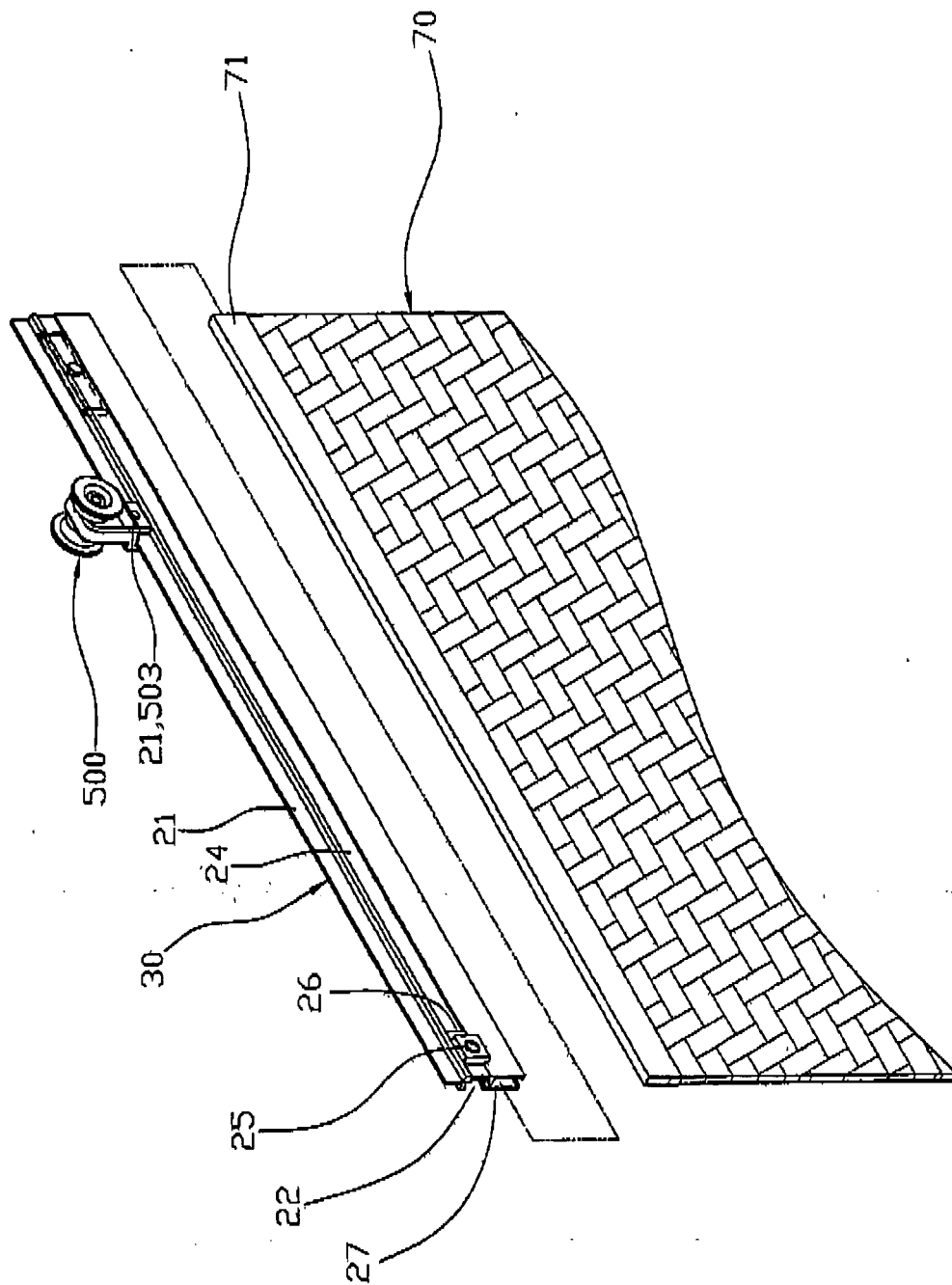


FIG. 4

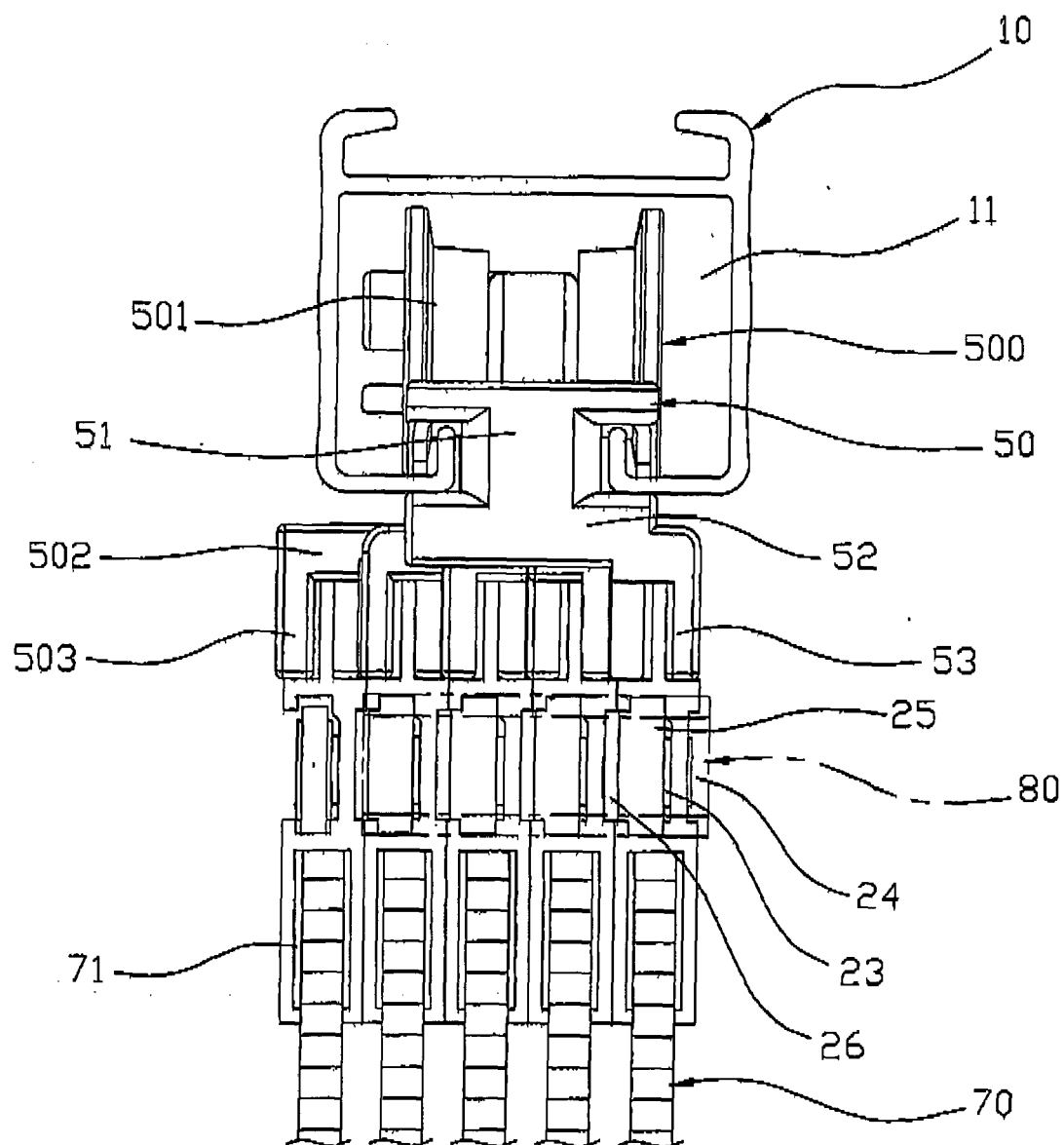


FIG. 5

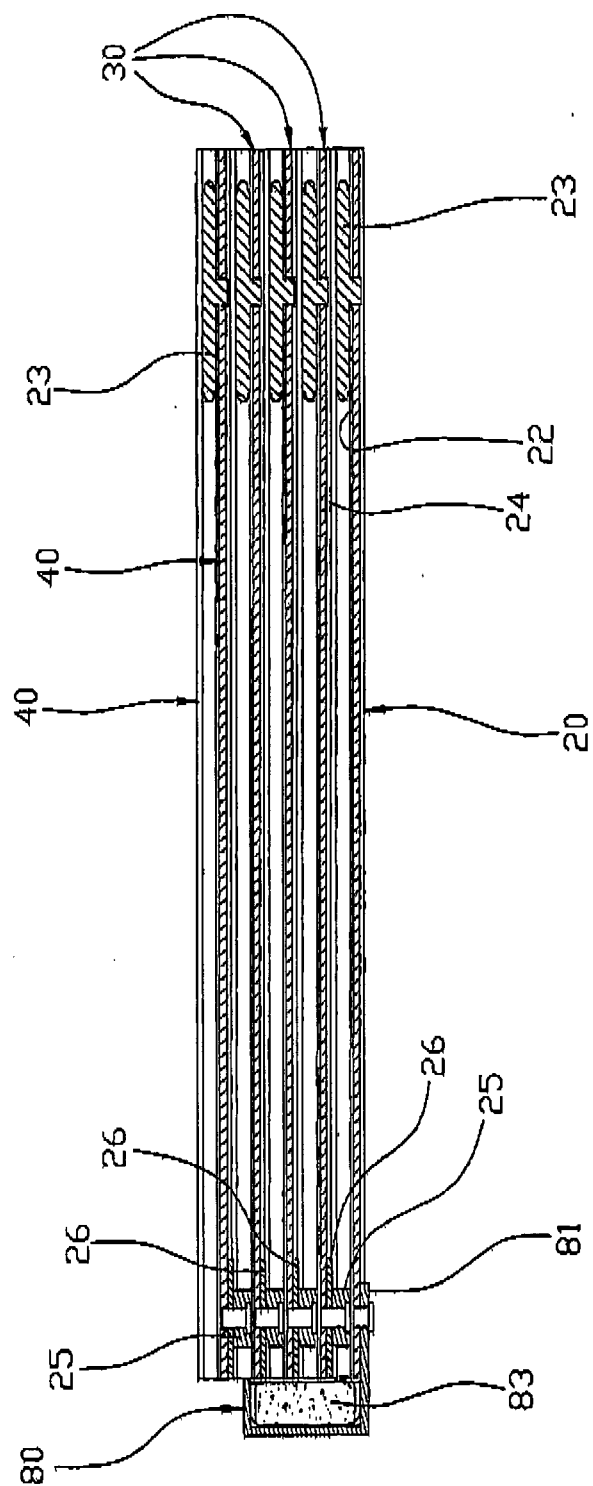


FIG. 6

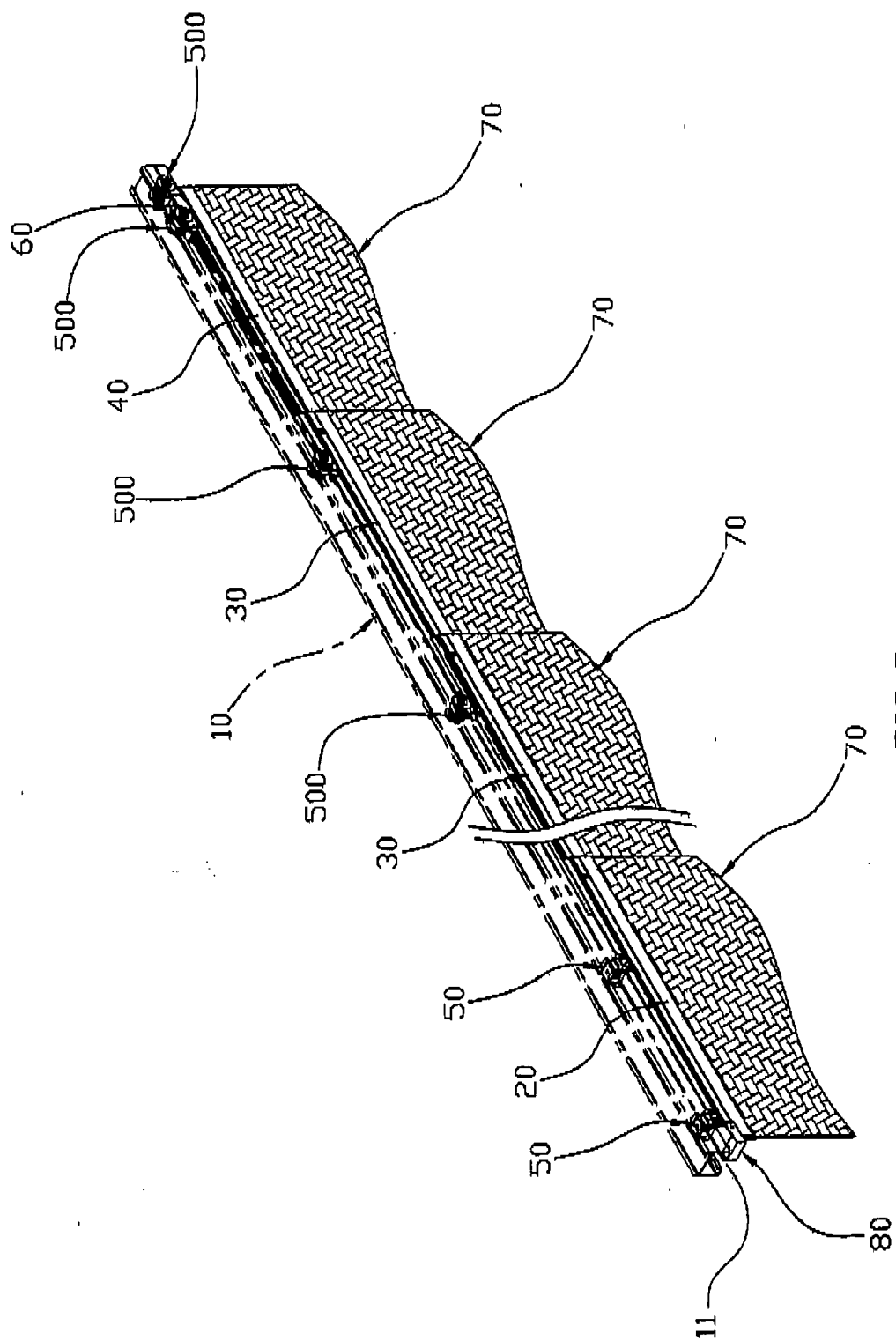


FIG. 7

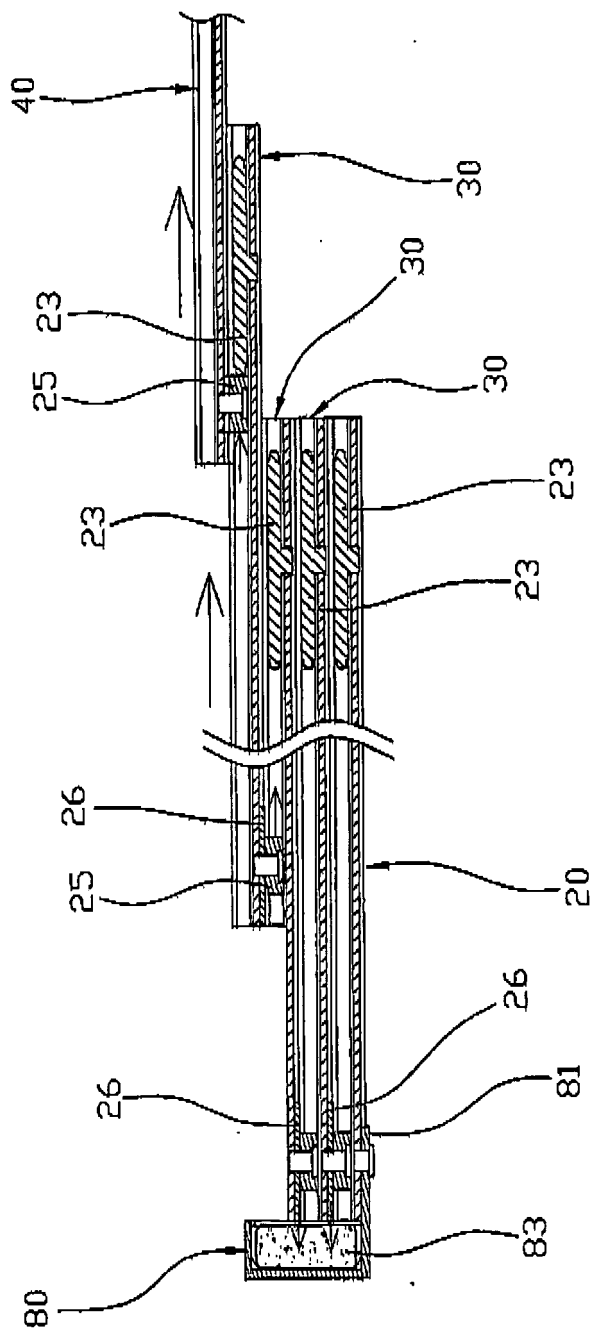


FIG. 8

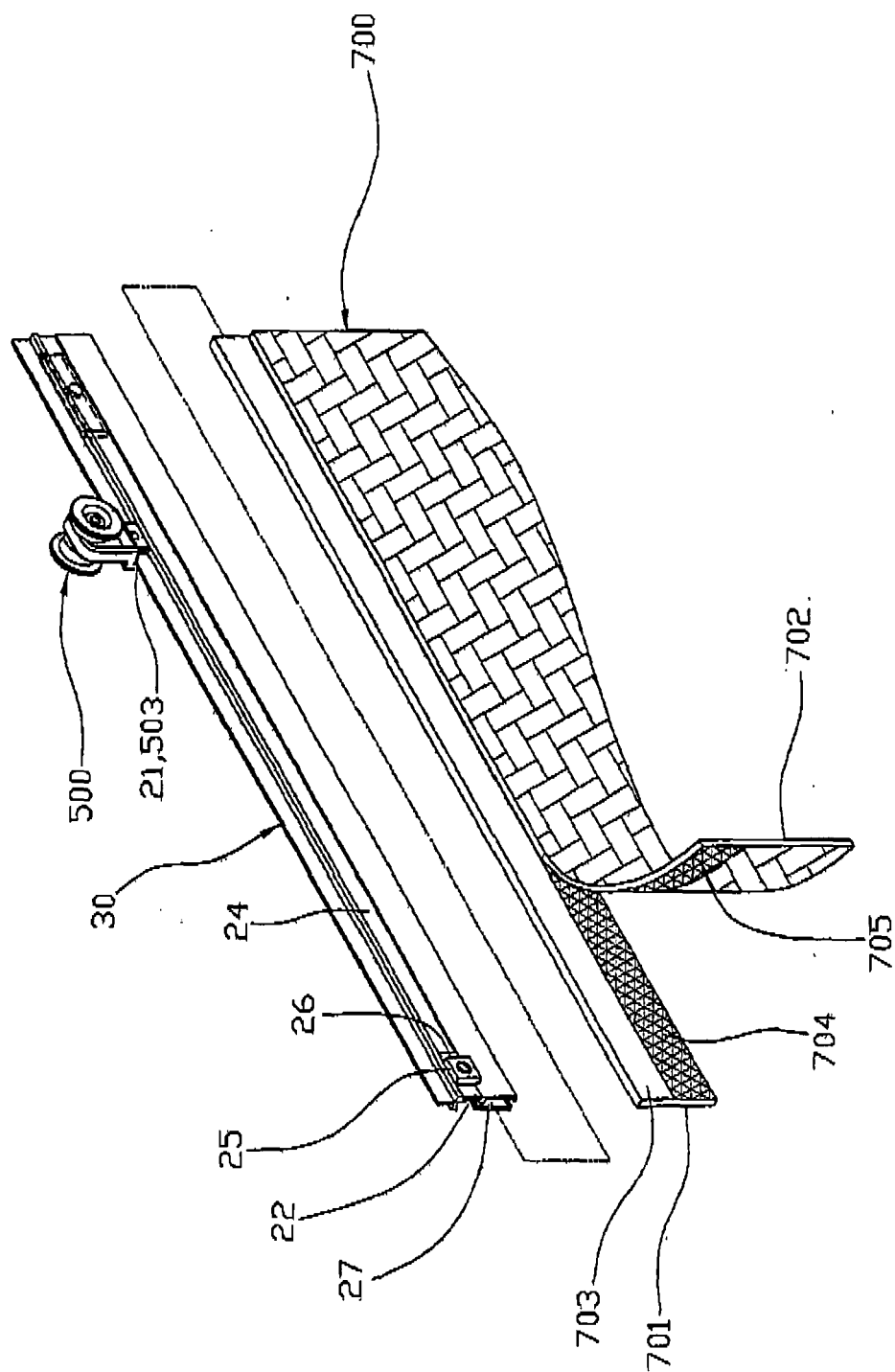


FIG. 9

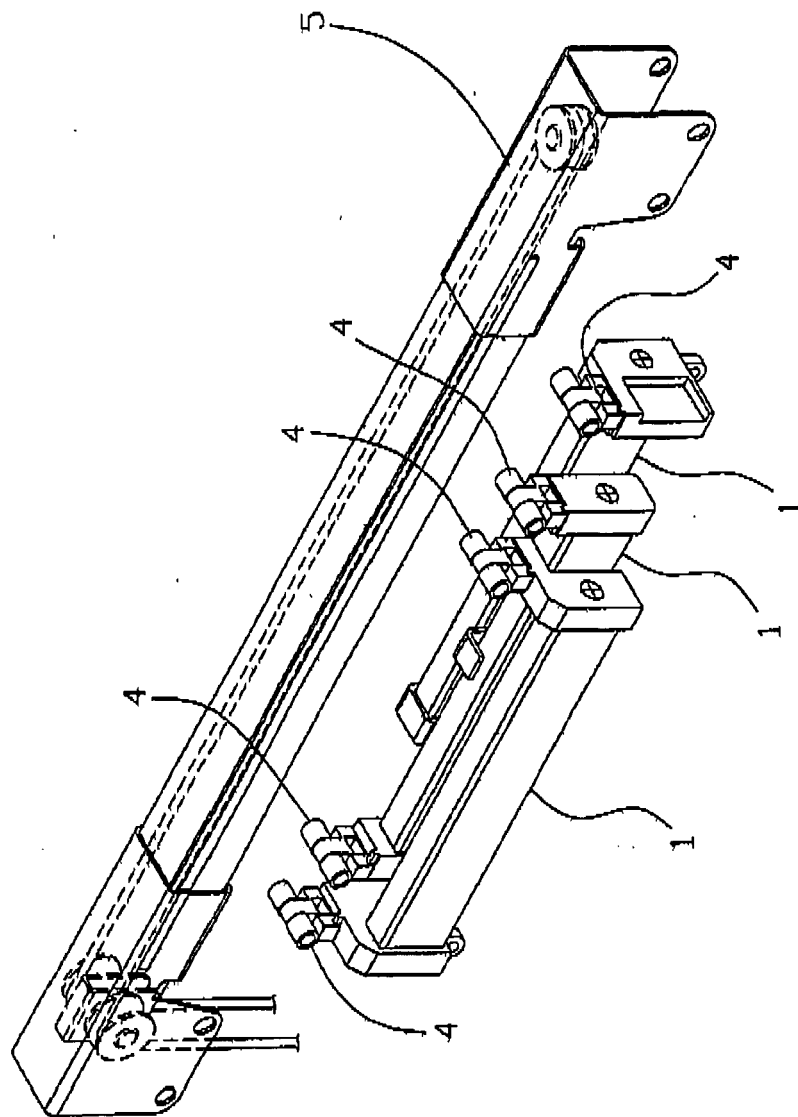


FIG. 10
PRIOR ART



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 06 02 0904

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 5 109 910 A (TORTORELLA OSMAR [US] ET AL) 5 May 1992 (1992-05-05) * claims 1,4 *	1-4,6,7	INV. E06B9/36 A47H15/00
Y	* figures 1-5 *	5,8-10	
X	US 3 348 603 A (FORD JAMES A) 24 October 1967 (1967-10-24) * claim 1 *	1	
Y	* column 4, lines 33-64 *	8	
Y	GB 2 416 983 A (CHUANG SHAN-CHI [TW]) 15 February 2006 (2006-02-15) * figures 1-5 *	5	
Y	EP 0 120 425 A2 (LEIBOWITZ MARTIN NICK) 3 October 1984 (1984-10-03) * claims 1,3-5,8 *	9,10	
Y	DE 20 2006 000953 U1 (LIN YA YIN [TW]) 13 April 2006 (2006-04-13) * figure 2 *	8	
Y	DE 102 03 576 A1 (MOOSBAUER CLAUS [DE]) 7 August 2003 (2003-08-07) * claims 12,13 *	8	
Y	WO 01/29359 A (EXACTOCRAFT PROPRIETARY LTD [ZA]; ROGERS PAUL EDWARD [ZA]) 26 April 2001 (2001-04-26) * page 11, lines 2-4 *	9,10	
Y	* page 12, lines 14,15 *		
Y	* page 13, lines 5,18,19 *		
Y	US 5 937 928 A (CHOU TSER-WEN [US]) 17 August 1999 (1999-08-17) * the whole document *	9,10	TECHNICAL FIELDS SEARCHED (IPC) E06B A47H
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 19 February 2007	Examiner Tänzler, Ansgar
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			

3
EPO FORM 1503 03.02 (P04C01)

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

EP 06 02 0904

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.

19-02-2007

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5109910	A	05-05-1992	NONE	
US 3348603	A	24-10-1967	NONE	
GB 2416983	A	15-02-2006	NONE	
EP 0120425	A2	03-10-1984	AU 2594984 A CA 1225582 A1	27-09-1984 18-08-1987
DE 202006000953	U1	13-04-2006	NONE	
DE 10203576	A1	07-08-2003	NONE	
WO 0129359	A	26-04-2001	AU 6116699 A	30-04-2001
US 5937928	A	17-08-1999	US 5848632 A	15-12-1998