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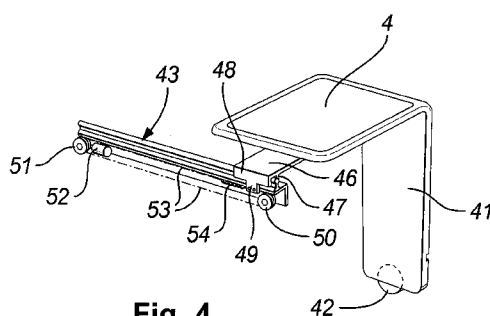


Fig. 4

(57) Abstract: An aircraft seat cubicle (1) has a seat (2) convertible to a bed, a foot rest or ottoman (3), a table (4) and a light (6), each movable lengthways L of the cubicle. The table has a leg (41), with a wheel (42) for support of one side of the table off the floor (7) of the cubicle. On the other side, the cubicle has a shelf (9) with a track (43) for support of this side of the table set inside a side panel (10) at a slot (11). The track has a rail (44) mounted on a support angle (45). The table has a tongue (46), which extends into the slot to the track, with a bearing extrusion (47) of low friction material engaged on the rail. It has a drive connection flange (48) fixed on its side away the slot. The flange has a depending lug (49). At the end of the support angle remote from the seat, a free running pulley (50) is provided with its top in line with the lug. At the opposite end of the support angle, a further pulley (51) is provided with a reduction drive motor (52). The motor is connected to a controller and is operated by a user via a control panel (11). A drive cable (53) passes around the two pulleys and is attached to the lug (49). The table can be driven towards or away from the seat. When the motor is stopped, the reduction gearing associated with the motor keeps the table in position. However, a tension spring (54) is connected in line with the cable at the lug (49), between the lug and the motor pulley (51). This arrangement is such that pushing of the table away from the seat stretches the spring, with concomitant relaxing of the tension in the run of the cable to the other pulley (50) and back to the return side of the pulley (51). This relaxation releases the capstan effect on the cable, with the result that the cable can slip on the pulley. Thus the table can be pushed away from the seat.



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MOVABLE FURNITURE

The present invention relates to movable furniture for an aircraft convertible seat cubicle.

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The object of the present invention is to provide improved movable furniture for an aircraft convertible seat cubicle.

According to the invention there is provided movable furniture for an aircraft
10 convertible seat cubicle comprising:

- an item of furniture movable lengthways of the cubicle;
- a lengthways track at one side of the cubicle for the furniture;
- a runner attached to the furniture and received on the track;
- a capstan at one end of the track for driven movement of the item of furniture;
- 15 • a pulley at the other end of the track; and
- a cable passing around both the capstan and the pulley and attached at its ends to the runner and/or the item of furniture for moving the latter by means of the capstan.

20 In the preferred embodiment, the line has a spring in its extent towards the seat, whereby pushing of the furniture away from the seat tends to extend the spring and release tension in the line, allowing the line to slip on the capstan.

Where the item of furniture is of a size to extend at least substantially across
25 the width of the cubicle, it preferably has a wheel for rolling on the floor opposite from the track and sharing the weight of the furniture with the track. Such item can be can be a table or an ottoman/foot rest.

Where the item of furniture is provided at or towards the track side of the
30 cubicle, the track in co-operation with the runner preferably provides restraint against rotation of the item about an axis parallel with the track. Such an item can be a lamp.

To help understanding of the invention, a specific embodiment thereof will now be described by way of example and with reference to the accompanying drawings, in which:

Figure 1 is a perspective view from one side of an aircraft convertible seat cubicle having furniture movable in accordance with the invention;

Figure 2 is a similar view from the other side;

Figure 3 is a perspective view of a movable table for the seat of Figure 1, together with its support track;

Figure 4 is a similar perspective view of the table from another direction;

Figure 5 is a similar perspective view of a light and its support track.

Referring to the drawings, a cubicle 1 has a seat 2 convertible to a bed. The seat has a mechanism, which is the subject of another application filed on the same day as this application under Nigel Brooks reference 2769.

The cubicle also has a foot rest or ottoman 3, a table 4 and a light 6, each movable lengthways L of the cubicle.

The mechanism for moving the table will be described first. The table has a leg 41, with a wheel 42 for support of one side of the table off the floor 7 of the cubicle on an access side 8 thereof. On the other side, the cubicle has a shelf 9 with a track 43 for support of this side of the table set inside a side panel 10 at a slot 11.

The track has a rail 44 mounted on a support angle 45. The table has a tongue 46, which extends into the slot to the track, with a bearing extrusion 47 of low friction material engaged on the rail. The extrusion is of a length to guide the table without risk of jamming. It has a drive connection flange 48 fixed on its side away the slot. The flange has a depending lug 49.

At the end of the support angle remote from the seat, a free running pulley 50 is provided with its top in line with the lug. The pulley has a revolution counter (not shown) for transducing to a controller (also not shown) the position of the table. At the opposite end of the support angle, a further pulley 51 is provided with a reduction drive motor 52. The motor is connected to the controller and is operated by a user via

a control panel 11. A drive cable 53 passes around the two pulleys and is attached to the lug 49.

5 The table can be driven towards or away from the seat. When the motor is stopped, the reduction gearing associated with the motor keeps the table in position. However, a tension spring 54 is connected in line with the cable at the lug 49, between the lug and the motor pulley 51. This arrangement is such that pushing of the table away from the seat stretches the spring, with concomitant relaxing of the tension in the run of the cable to the other pulley 50 and back to the return side of the
10 pulley 51. This relaxation releases the capstan effect on the cable, with the result that the cable can slip on the pulley. Thus the table can be pushed away from the seat.

On the other hand, the table cannot be pulled towards the seat and must be driven under control of the panel 11. This one way action is likely to be convenient to
15 a passenger in that quick and easy pushing of the table away for a visit to the lavatory or when preparing to sleep will be appreciated, whereas driving the table back for eating or working is unlikely to be thought an a disadvantage. Further in an emergency, the table will free run away from the passenger but will not free run back towards the passenger.

20

The ottoman has an exactly analogous arrangement at a further panel slot 12. This will not be described in repetitive detail.

The light 60 has a similar arrangement, but with differences. At a slot 14 in
25 the shelf 9, a leg 61 of the light extends up from a carrier 62 bearingly mounted on a pair of rods 63 mounted beneath the slot on a sub-frame 64. This has a front, free-running pulley 65 and a motor driven rear pulley 66. A cable 67 passes from the carrier, around one pulley, to the other and back to the carrier. A spring can be provided in the run of the cable to either pulley allowing the light to be pushed freely
30 in the direction extending the spring. However, it will generally be adequate to allow the light to be driven in either direction of the slot 14 by its motor under control from the panel 11.

CLAIMS:

1. Movable furniture for an aircraft convertible seat cubicle comprising:

- an item of furniture movable lengthways of the cubicle;
- a lengthways track at one side of the cubicle for the furniture;
- 5 • a runner attached to the furniture and received on the track;
- a capstan at one end of the track for driven movement of the item of furniture;
- a pulley at the other end of the track; and
- a cable passing around both the capstan and the pulley and attached at its ends to the runner and/or the item of furniture for moving the latter by means of the
- 10 capstan.

2. Movable furniture as claimed in claim 1, wherein the line has a spring in its extent towards a seat in the cubicle, whereby pushing of the item of furniture away from the seat tends to extend the spring and release tension in the line, allowing the line to slip on the capstan for movement of the item of furniture.

15 3. Movable furniture as claimed in claim 1 or claim 2, wherein the item of furniture is of a size to extend at least substantially across the width of the cubicle and it has a wheel for rolling on a floor of the cubicle opposite from the track and sharing the weight of the furniture with the track.

4. Movable furniture as claimed in claim 3, wherein the item of furniture is a table.

20 5. Movable furniture as claimed in any preceding claim, wherein the item of furniture, or an additional item of furniture, is an ottoman/foot rest.

6. Movable furniture as claimed in any preceding claim, wherein the item of furniture, or an additional item of furniture, is provided at or towards the track side of the cubicle, the track in co-operation with the runner providing restraint against

25 rotation of the item about an axis parallel with the track.

7. Movable furniture as claimed in claim 6, wherein the item of furniture, or the additional item of furniture is a lamp.

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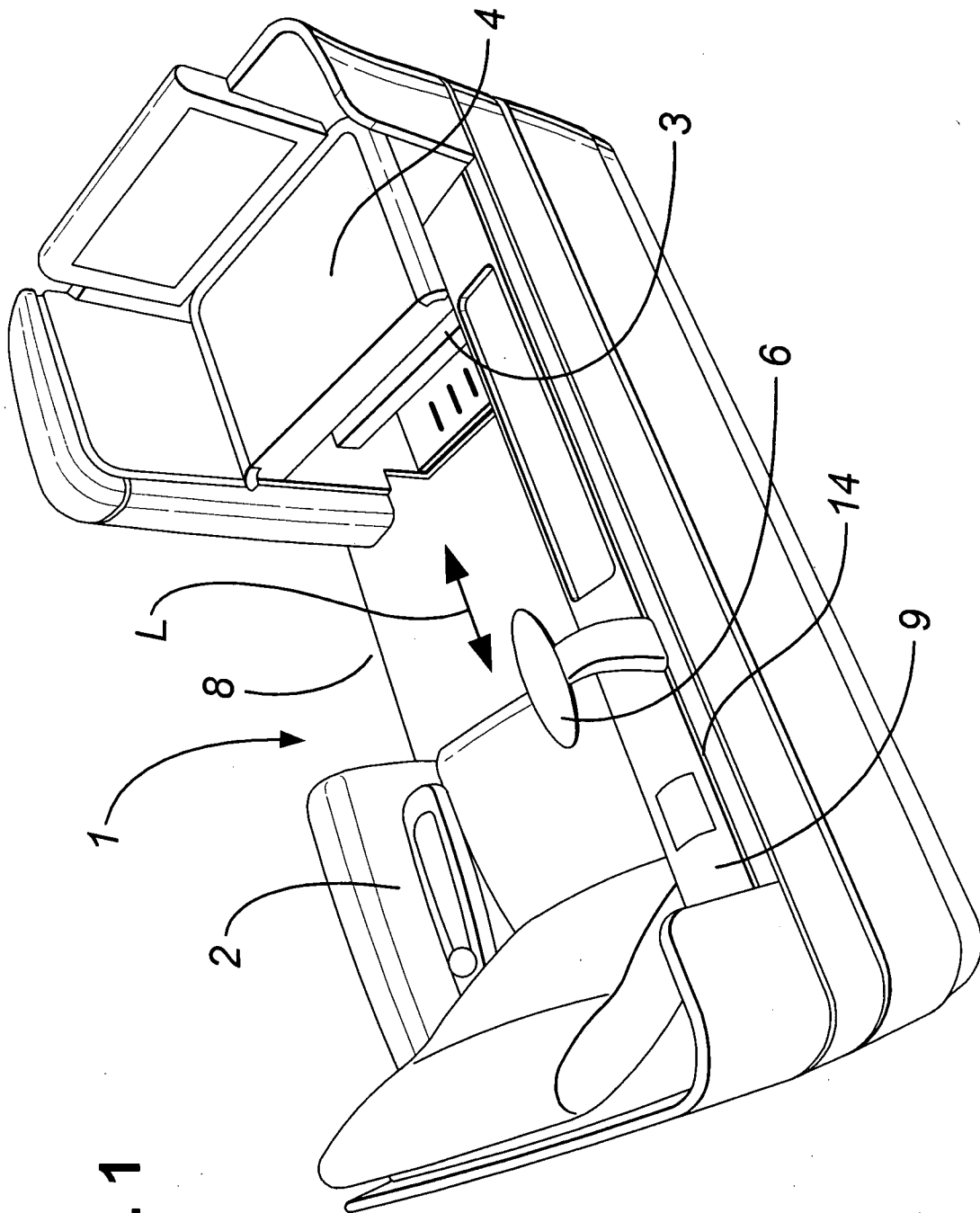


Fig. 1

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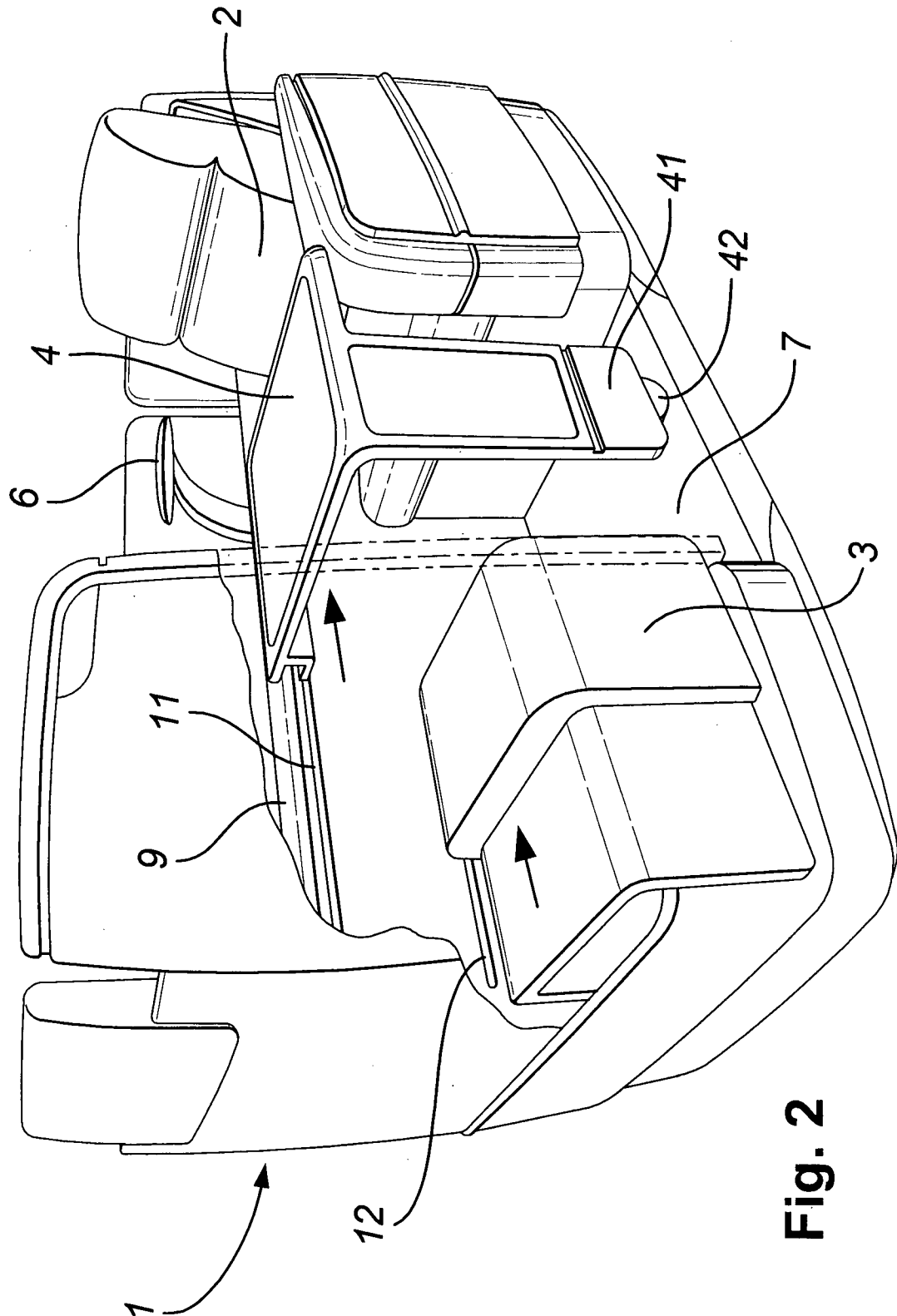
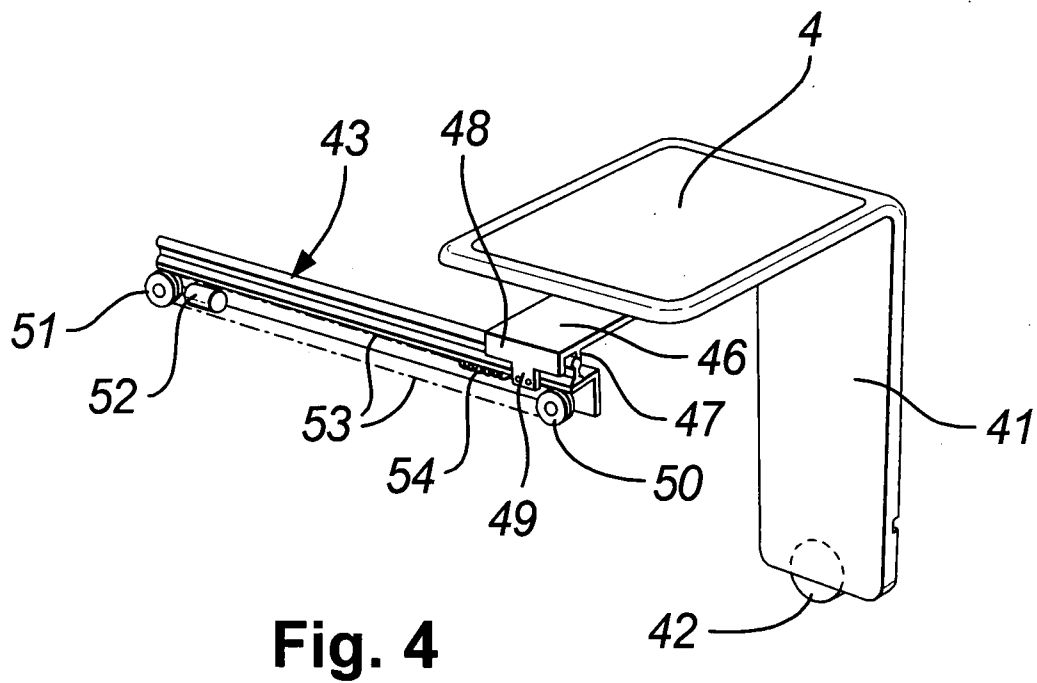
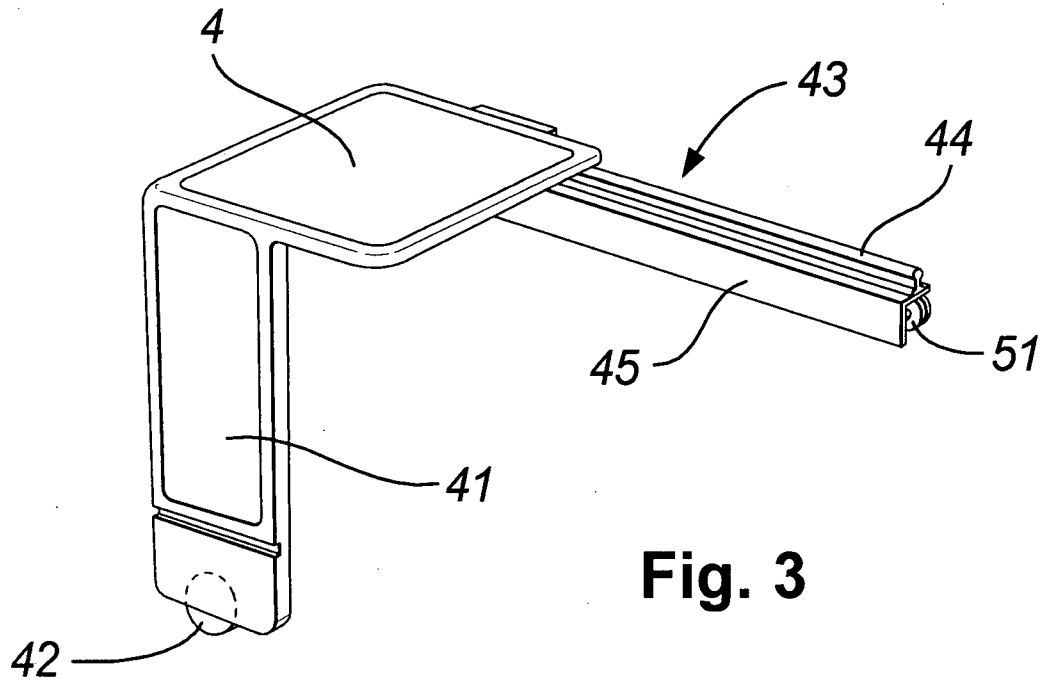


Fig. 2

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4/4

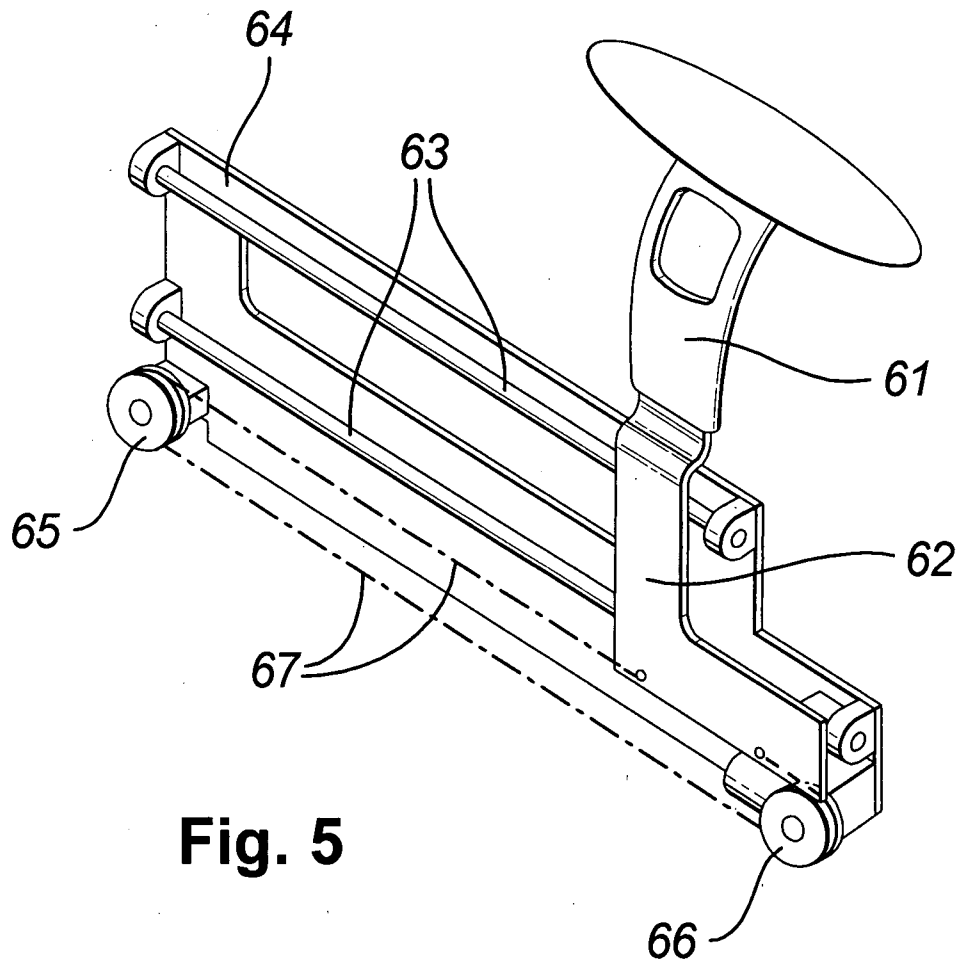


Fig. 5

INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER
INV. B64D11/06 F16H19/06

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)
F16H B64D

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)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2007/009135 A (BLUM GMBH JULIUS [AT]; HUBER EDGAR [AT]) 25 January 2007 (2007-01-25) page 6, line 32 - page 7, line 2 page 7, lines 5-9 figures 3,4b,5	1-7
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A	EP 0 227 251 A (BURROUGHS CORP [US]) 1 July 1987 (1987-07-01) column 1, lines 1-5 column 1, line 46 - column 2, line 43 column 3, line 15 - column 5, line 12 figure 1	1
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☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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INTERNATIONAL SEARCH REPORT

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

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INTERNATIONAL SEARCH REPORT

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