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(54) An adjustable bookstand

(57) An adjustable bookstand that is small and compact, which can be adjusted in width and height to accept books or folders of any size, and which can be adjusted to provide an angle of inclination favourable to the user. Pages holders are provided to retain the book in an open position without causing damage or marking to the book or its individual pages.

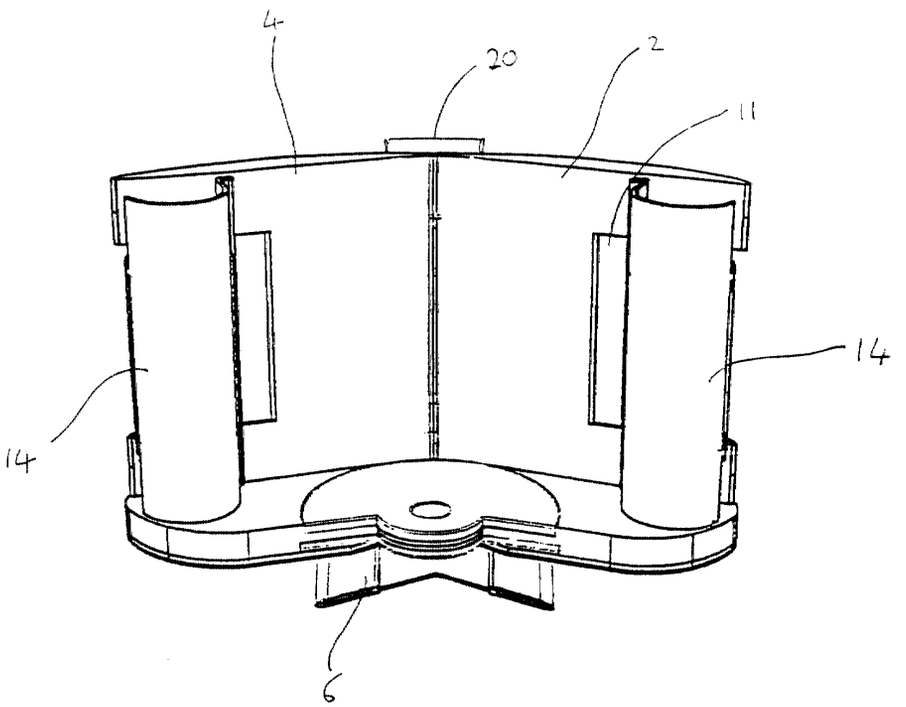

Fig. 1

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Description

[0001] The present invention relates to an adjustable bookstand, and in particular to a bookstand which allows a book, or a similar object, to lie open, at an angle of incline favourable for a person who wishes to read the book.

[0002] When reading or studying with books, it is difficult, particularly when books are new, to keep them open at the right page and prevent the pages from turning over, without the need to hold the book open with hands or to place heavy objects on the open pages of the book. A reader's hands tend to leave marks on the pages of the book adding to the gradual deterioration of the book and its individual pages. Books placed on, for example, a table take up considerable space, especially when they are lying open. This is of particular concern during study where several books may be open at once, leaving little space for study.

[0003] The positioning of a book during reading can be problematic, and is often difficult to find a suitable inclination and reading angle to provide long-term comfort. Eye strain, muscular pain and back ache are all symptoms that can quite easily develop due to the reader reading in discomfort.

[0004] Existing bookstands are large, cumbersome and relatively expensive. They tend to be bulky and are difficult to store when not in use. Furthermore, existing bookstands do not provide flexibility with respect to angles of inclination, page holders and the space in which the book rests. Inclination, for example is, in the majority of cases, limited to a number of positions which severely restricts the users viewing preference. Pages holders are seldom strong, or long, enough to hold the page of a large book efficiently. Each bookstand tends to be limited to a particular size of book and will not be able to accept books of a larger or smaller size efficiently. Existing bookstands, for example, are unable to accept a folder, unless they have been specifically designed for that purpose.

[0005] The present invention seeks to alleviate the problems associated with existing bookstands by providing a bookstand that is small and compact, and which can be extended in width to accept books of all sizes, and which can be adjusted to provide an angle of incline favourable to the user. Page holders are provided to retain the book in an open position without causing damage or marking to the book or its individual pages.

[0006] Accordingly, there is provided an adjustable bookstand comprising support means pivotally attached to a base member, the support means having a page retaining means such that, in use, a book can be placed on the support means and retained in an open position using the page retaining means.

[0007] Preferably, the support means is extendible in width and/or height.

[0008] Advantageously, the support means comprises at least two support members hingedly attached to one another so to be able to move relative to one another.

[0009] It is preferred that each support member is pivotally attached to a spine member, the spine member being pivotally attached to the base. It is also advantageous that the spine member is pivotally attached to the base about a pivot member located between two locking members upstanding from the base.

[0010] Each locking member, preferably, has an arched portion, and has a plurality of radial slots within the arched portion.

[0011] Preferably still, each resting member has an outward protrusion formed in its surface, the protrusion being engageable with a radial slot of the associated locking member.

[0012] The bookstand is preferably collapsible, the bookstand being in a collapsed state when the spine member is pivoted back so as to lie against the base.

[0013] Advantageously, each page retaining means comprises a resilient U-shaped spring member, one arm being attached to, and the other arm being biased towards, the associated support member.

[0014] An embodiment of the present invention will now be described, by way of example, with reference to the accompanying Figures in which :

Figure 1 is a front perspective view of a bookstand constructed in accordance with the present invention;

Figure 2 is a view of a resting member of the bookstand of Figure 1;

Figure 3 is a front perspective view of the bookstand of Figure 1 inclined at a slight angle;

Figure 4 is a rear perspective view of the bookstand of Figure 3;

Figure 5 is a front perspective view of a the bookstand of Figure 3 in its extended state;

Figure 6 is a rear perspective view of the bookstand of Figure 5; and

Figure 7 is a perspective view of the bookstand of Figure 1 in its fully collapsed state.

Figure 8 is a perspective view of the bookstand of Figure 1 with a light attached thereon.

[0015] Referring first to Figure 1, the bookstand comprises two resting members 2, 4 attached to a base 6. The bookstand is preferably made from a plastics, or similarly lightweight, material.

[0016] Construction of the support members 2, 4 will now be described with reference to Figure 2, which shows only the support member 2 and, as such, only

that support member will be described. It is clear, however, that the construction of both support members 2 and 4 are the same and the support members are symmetrical when in use. Although the embodiment described refers to the bookstand having two support members it is envisaged that only one support member could be used which may, for example, have a line of weakness along its middle allowing the ends to move relative to each other.

[0017] Referring to the Figure, the support member 2 comprises a back member 8 attached to, and upstanding from, a base plate 10. The base plate 10 is integral with the back member 8, and extends perpendicularly from the bottom of the back member. The back member 8 has an extension part 12 slidable within the back member, and capable of extending outwards from the back member in order to extend the width of the back member. A similar extension part may be provided to extend the height of the support member. The bookstand in its extended form can be clearly seen in Figures 4 and 5. Although not shown, means are provided to prevent the extension part 12 from disengaging entirely from the back member 8 accidentally when the extension part is fully extended. Such means may comprise a simple catch mechanism, such that the extension part 12 may be removed intentionally, for example, if a folder is to be placed on the bookstand and the extension parts are not required. The free end the extension part 12 is provided with page retaining means comprising a resilient elongate spring member 14 hingedly attached, at one of its ends, to the extension part, the other end of the spring member being biased back towards, and against, the back member 8 (see Figure 1). Means may be provided on the back of the support member 2 to house the disengaged extension part 12 when it is not required. Alternatively, for example, the dis-engaged extension part 12 may be turned over before being slidably replaced back into the support member 2 such that the page retaining means is located behind the support member.

[0018] The back member 8 has an indented middle region 11 which allows the extension part 12 to slide fully into the back member (see Figure 1), so that a very small book can be placed and held on the bookstand, and that the amount to which the extension part can slide into the back member is not limited by the page retaining means.

[0019] Furthermore, the indented region 11 allows easier accessibility to the extension part 12 and the associated page retaining means when they are being moved by hand within the back member 8.

[0020] In use, a book is placed on the base plates 10 of the support member 2, 4, the book resting against the back members 8 of the support members. The book can be retained in an open position by the spring member 14 retaining the pages(s) of the book between it and the back member 8. Each back member 8 is slightly curved or angled such that the spine of the book is directed towards the middle of the bookstand, and such that each page retaining means is able to retain an equal share of the associated page of the book.

[0021] The base plate 10 has an indented portion 15, the corner of which is formed as circular region 16 having an aperture 18 through its centre.

[0022] The support members 2, 4, are attached to, and held together by, a spine member 20. The spine member 20 has a base 22 extending perpendicularly from its bottom edge. The spine member 20 has an aperture 23 near its bottom edge. The base 22 is formed as a planar part-circle, shaped to coincide with the base plate 10 of each support member 2, 4. The base 22 of the spine member 20 is formed as two parallel, spaced-apart base plates 24, 26 (see Figure 2) with an aperture 28 formed therethrough. The bottom plate 26 of the spine member 20 has two outward protrusions at each end (protrusion 29 is only shown in Figure 2). The base plate 10 of each support member 2, 4 is capable of being received between the parallel base plates 24, 26 of the base 22 of the spine member 20. A pivot member 30 is placed through the apertures 18, 28 so to retain the base plate 10 of each support member 2, 4 between the base plates 24, 26 of the spine base 22, but allowing partial rotational movement of each support member 2, 4, around the spine 20. The indent portion 15 formed in the base plate 10 of each support member 2, 4 coincides with the base 22 of the spine 20 so to provide an overall smooth surface on which, in use, a book (not shown) can stand (see Figure 2). Furthermore, the indented portion 15 provides a limitation to the rotation of the associated support member 2, 4. The circular region 16 on the base plate 10 of the support member 2 is indented to be slightly lower than that of the other support member 4 (not shown in Figure 2), such that the base plates 10 of the support members are able to be received between the parallel base plates 24, 26 of the spine base 22. A further holding base plate 32 is provided to hold all the base plates in place. Each holding base plate 32 has an outward protrusion 33 which, in use, acts as a catch to engage with the associated outward protrusion 29 on the bottom base plate 26.

[0023] The base 6 has two upstanding locking members 36, slidable along the length of the base. The top of each locking member 36 is formed as an arch (see Figure 6). A plurality of radial slots 38 are formed within each locking member 36. The locking members 36 are spaced apart such that the spine member 20 can be placed therebetween. Each locking member 36 has an aperture 40 through its centre which corresponds to the aperture 23 formed in the spine member 20. A further pivot member (not shown) is placed through the apertures 40 of the locking members 36 and the aperture 23 of the spine member 20 to retain the spine member in place between the locking members, whilst allowing rotational movement of the spine member about the pivot member.

[0024] Each support member 2, 4, has an outward protrusion 42 formed on its back surface. Each protrusion 42 is shaped so as to engage with one of the radial

slots 38 formed in the associated locking member 36.

[0025] In use, the angle of incline of the support members 2, 4 can be chosen by pivoting the spine member 20 about the pivot member located between the two locking members 36. When the desired angle of inclination is found, the support members 2, 4 are locked in position by engaging the protrusions 42 with the corresponding radial slots 38.

[0026] Although, in the described embodiment, the locking members are fixed, and the angle of inclination available is limited to the number of radial slots 38 formed in the locking members 26, it is envisaged that the locking members may themselves be rotatable thereby providing further angles of inclination of the support members 2, 4.

[0027] When not in use, the spine member 20 can be pivoted back to such an extent that it lies against the base 6 of the bookstand. This is clearly shown in Figure 6. At the same time, the support members 2, 4 are pivoted to abut one another. The support members 2, 4 are retained in abutment by means of the engaging protrusions 29, 33 formed on the bottom base plate 26 of the spine 20 and the holding base plates 32 respectively. To provide stability to the bookstand in its collapsed state, the support members 2, 4, when in abutment, are angled slightly towards one another due to the curvature and shape of the support members and their associated base plates 10. Furthermore, the locking members 36 are able to slide along the base 6 to a location allowing stability of the entire bookstand in its collapsed state, as well as when the bookstand is in use. In its collapsed state, the bookstand is small, compact and easily stored. Alternatively, the bookstand may be left on a desk for future use, as the space which it takes up in its collapsed state is minimal.

[0028] A U-shaped supporting member 44 is provided to add support to the base 6 to prevent the bookstand from toppling over, particularly while the inclination is being adjusted. The locking members 36 are slidable relative to the U-shaped member 44 in order to distribute the weight of the bookstand and thus to provide stability thereto.

[0029] In a further embodiment, shown in Figure 8, the top of the spine member 20 is provided with an adapter to receive, for example, a light 50 to provide light over the support members 2, 4. Alternatively, means can be provided on the spine to receive a stationary container or the like.

[0030] The structure and design of the bookstand of the present invention, and in particular, the cantilever arrangement of the support means 2, 4 in relation to the base 6 is such that plenty of space is provided underneath, and in the immediate surrounding area of the support means, in which to work, when the bookstand is in use or when it is in its collapsed state.

Claims

1. An adjustable bookstand comprising support means pivotally attached to a base member, the support means having page retaining means such that, in use, a book can be placed on the support means and retained in an open position using the page retaining means, wherein the support means and base are pivotally attached together in a cantilever arrangement.

2. A bookstand according to claim 1, wherein the support means is extendible in width and/or height.

3. A bookstand according to claim 1 or claim 2, wherein the support means comprises support members hingedly attached to one another so to be able to move relative to one another.

4. A bookstand according to claim 3, wherein the support members are curved or angled.

5. A bookstand according to claim 4, wherein each support member is pivotally attached to a spine member, the spine member being pivotally attached to the base.

6. A bookstand according to claim 5, wherein the spine member is pivotally attached to the base about a pivot member located between two locking members upstanding from the base.

7. A bookstand according to claim 6, wherein each locking member has an arched portion, and has a plurality of radial slots within the arched portion.

8. A bookstand according to claim 7, wherein each support member has an outward protrusion formed in its surface, said protrusion being engageable with a radial slot of the associated locking member.

9. A bookstand according to claim 8, wherein the bookstand is collapsible, the bookstand being in a collapsed state when the spine member is pivoted back so as to lie against the base.

10. A bookstand according any preceding claim, wherein the or each page retaining means comprises a resilient U-shaped spring member, one arm being attached to, and the other arm being biased towards, the associated resting member.

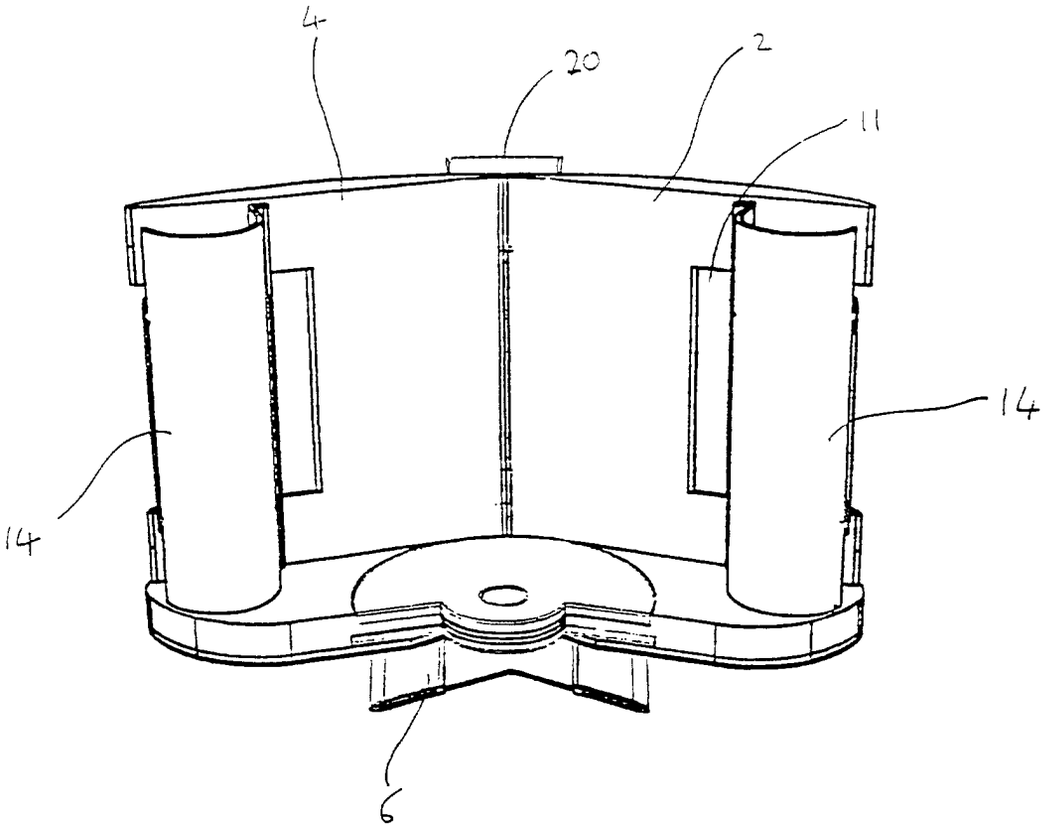

Fig. 1

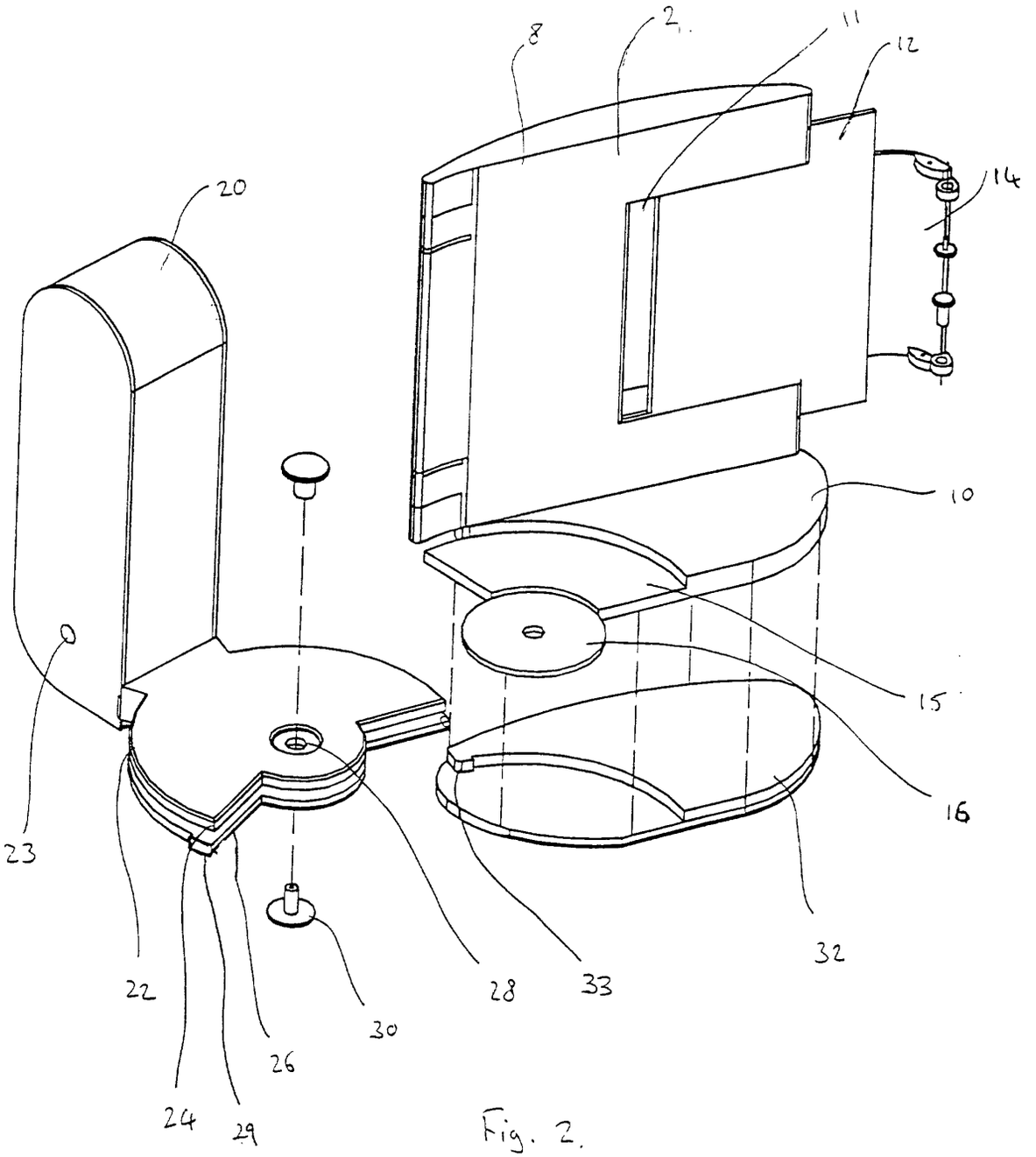

Fig. 2.

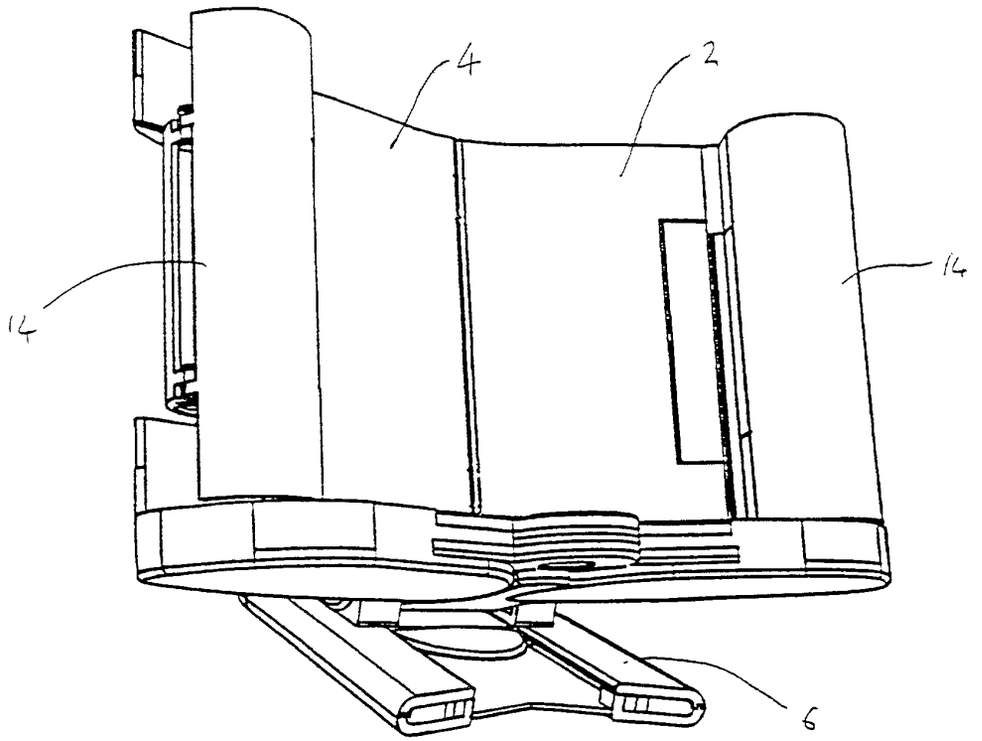

Fig. 3.

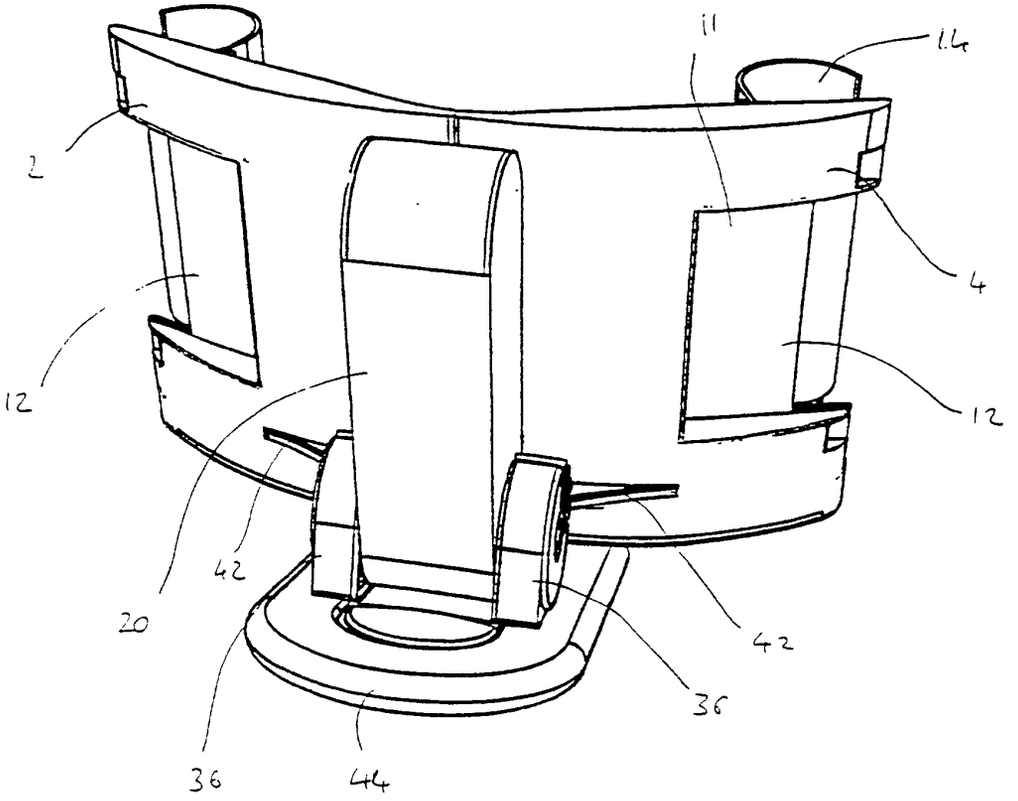

Fig 4

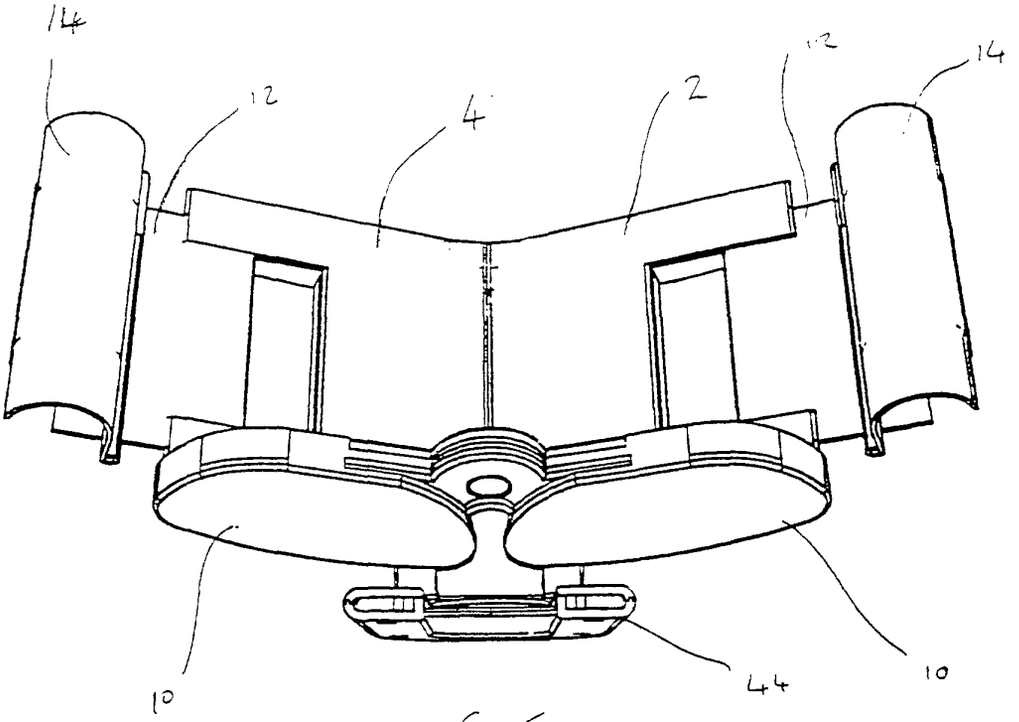

Fig. 5

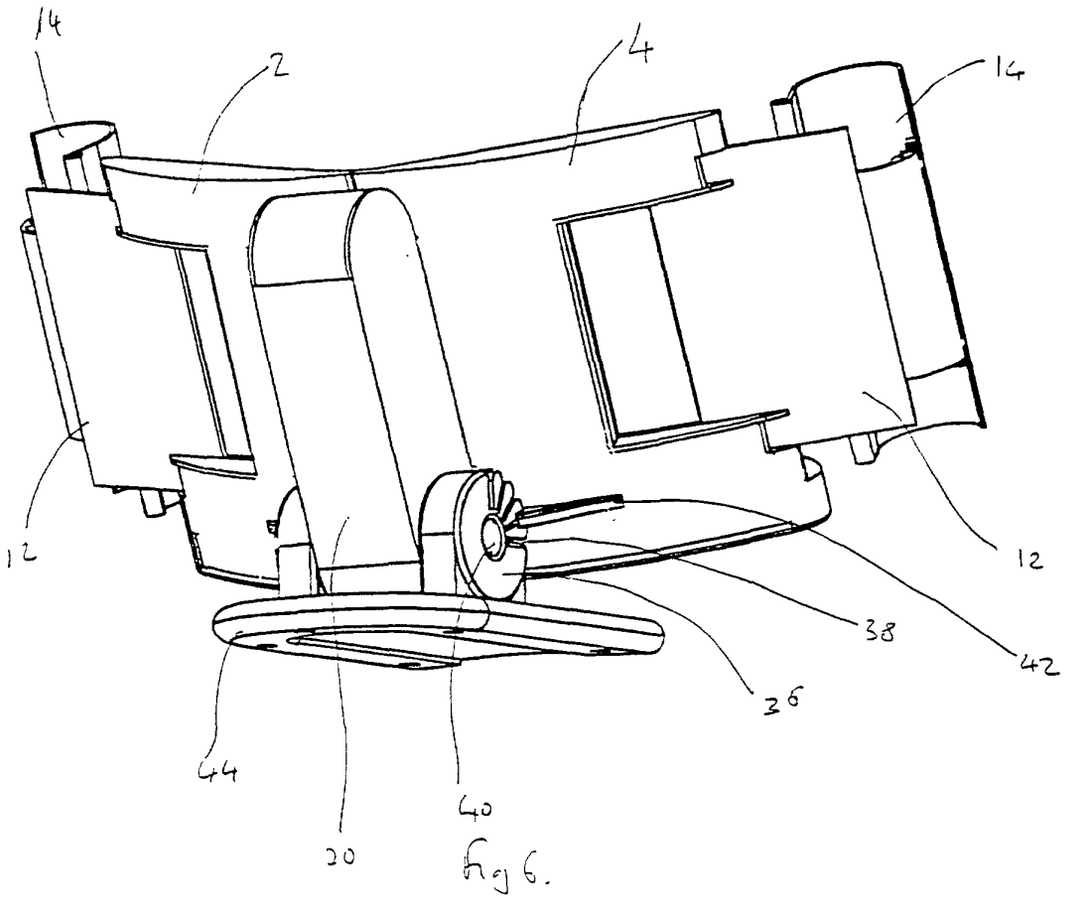

Fig 6.

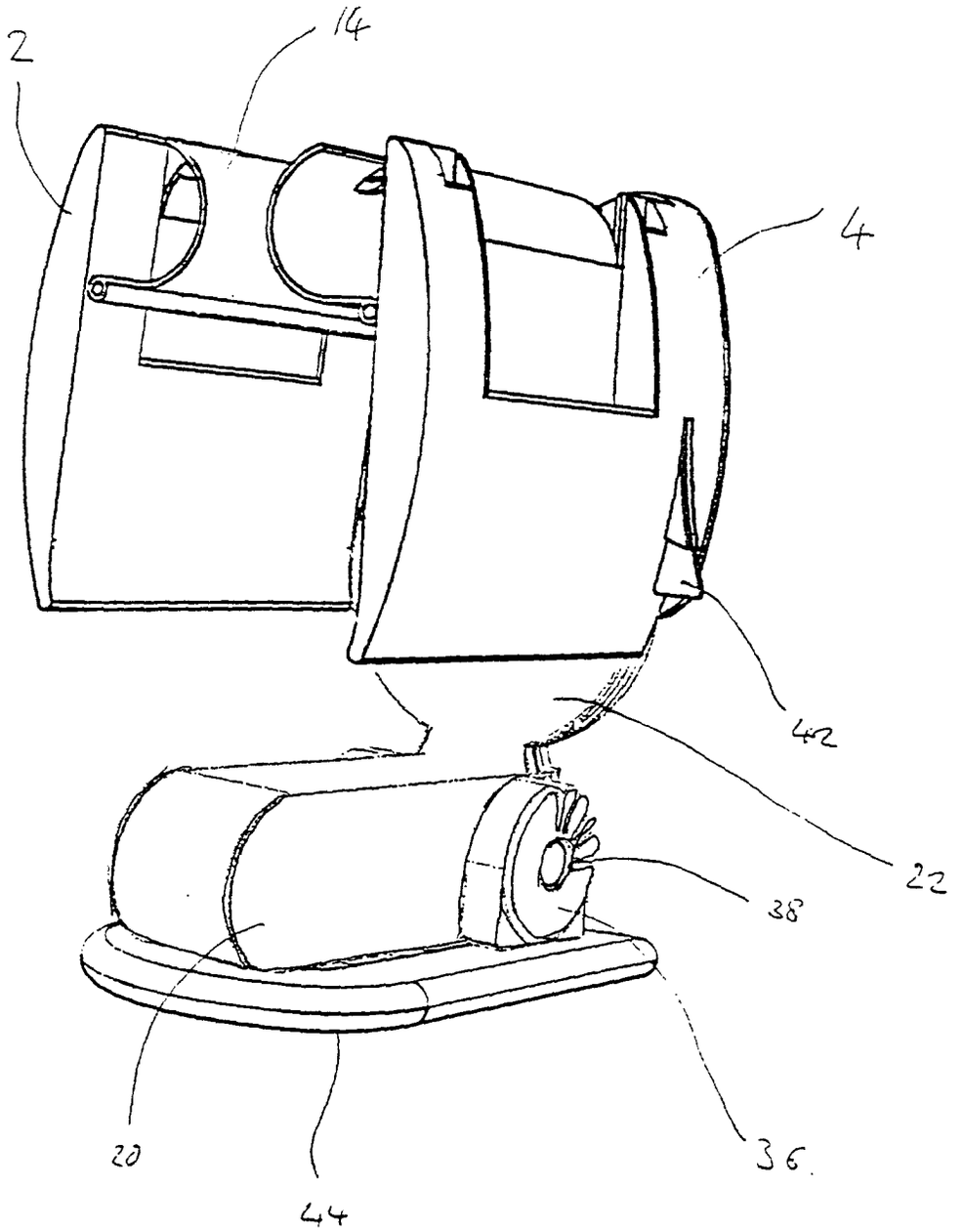

Fig. 7.

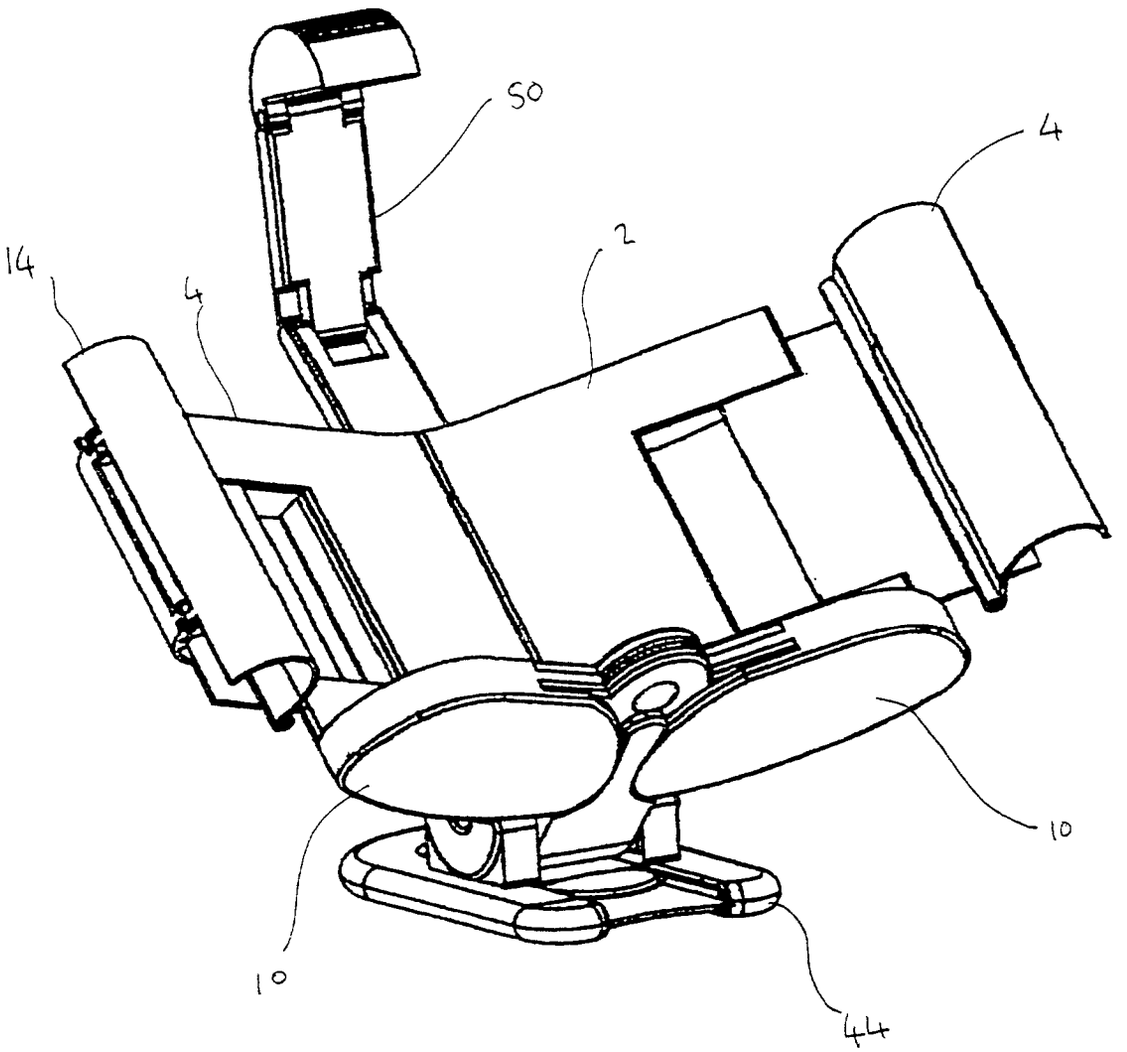

Fig. 8.

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EUROPEAN SEARCH REPORT

Application Number
EP 01 30 6316

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)
Y	US 5 037 057 A (ANDREWS KIM N) 6 August 1991 (1991-08-06) * abstract * * column 2, line 64 - column 4, line 6 * * figures *	1,2,10	A47B23/04
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A	US 6 015 129 A (HARRIGAN CHRISTOPHER L) 18 January 2000 (2000-01-18) * abstract; figures *	1-10	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7) A47B B41J

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	28 September 2001	Ottesen, R

CATEGORY OF CITED DOCUMENTS

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28-09-2001

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