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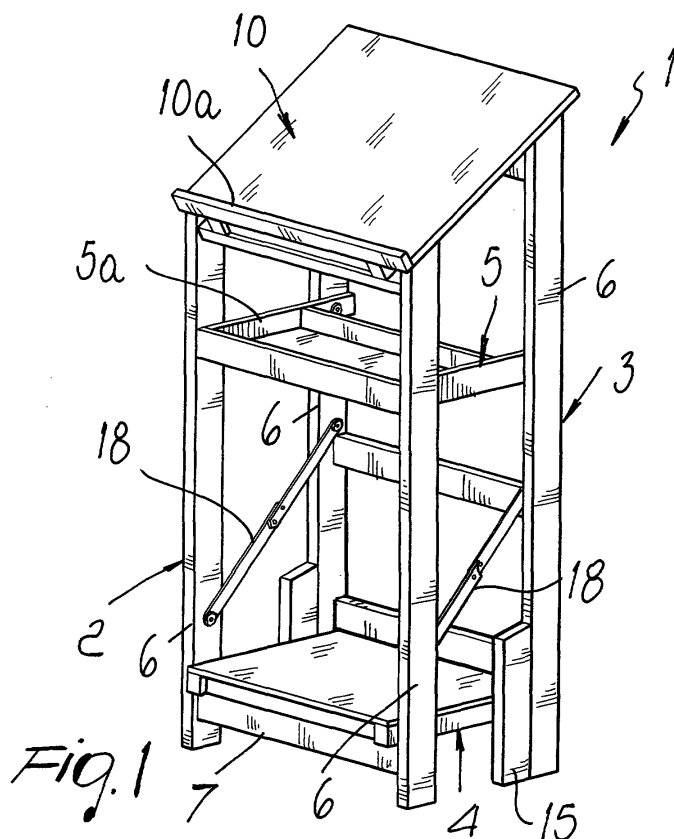
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(54) Collapsible reading desk with size compaction means

(57) A collapsible reading desk with size compaction means, comprising a front frame (2) and a rear frame (3) joined by shelves (4,5) which form an articulated-parallelogram connection. The rear frame (3) is taller than the front frame (2) in order to arrange at an

angle, in the active position, a reading desk surface (10). The reading desk surface (10) is connected to the front frame (2) and the rear frame (3) by way of linkages (11) for tilting the reading desk surface (10) when the reading desk (1) is in the collapsed position.



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Description

[0001] The present invention relates to a collapsible reading desk with size compaction means.

[0002] Several types of reading desks are already commercially available and are usually produced specifically according to their use.

[0003] In particular, pedestal-type reading desks are already known which are used for meeting and assemblies, where the user remains standing; tabletop reading desks which must be rested on a table and in practice do not have a specific supporting structure are also known.

[0004] Among collapsible reading desks, mention must be made of those with an adjustable rod, which are mostly used by musicians; from the above described situation it is evident that reading desks for home use are currently not provided, and therefore the aim of the invention is to solve such drawback by providing a collapsible reading desk with size compaction means that constitutes a tool for facilitating reading to people wherever they are, in any room of their home, but most of all is designed for the bathroom, where statistical research has shown that most people read.

[0005] Within this aim, a particular object of the invention is to provide a reading desk that, in order to cope with domestic requirements, can be produced with small dimensions that allow easy placement anywhere and easy use for people comfortably sitting in an armchair or in any case on seats that are lower than an ordinary chair.

[0006] Another object of the present invention is to provide a collapsible reading desk that thanks to its particular constructive characteristics is capable of giving the greatest assurances of reliability and safety in use.

[0007] Another object of the present invention is to provide a collapsible reading desk that can be easily obtained starting from commonly commercially available elements and materials and is also competitive from a merely economical standpoint.

[0008] This aim and these and other objects that will become better apparent hereinafter are achieved by a collapsible reading desk with size compaction means, according to the invention, characterized in that it comprises a front frame and a rear frame which are joined by shelves which form an articulated-parallelogram connection, said rear frame being taller than said front frame in order to arrange at an angle, in the active position, a reading desk surface which is connected to said front frame and said rear frame by means of linkages for tilting said reading desk surface when the reading desk is in the collapsed position.

[0009] Further characteristics and advantages will become better apparent from the description of two preferred but not exclusive embodiments of a collapsible reading desk with size compaction means, illustrated only by way of non-limitative example with the aid of the accompanying drawings, wherein:

Figure 1 is a perspective view of a first embodiment of the reading desk;

Figure 2 is a view of the reading desk of Figure 1 in the collapsed position;

Figure 3 is a sectional view, taken along a central vertical plane, of the reading desk in the active position;

Figure 4 is a sectional view, taken along a central vertical plane, of the reading desk in the collapsed position;

Figure 5 is a perspective view, in the active position, of a second embodiment of the collapsible reading desk;

Figure 6 is a view of the reading desk of Figure 4 in the collapsed position;

Figure 7 is a sectional view of the reading desk, taken along a central vertical plane;

Figure 8 is a sectional view, taken along a central vertical plane, of the reading desk in the closed position;

Figure 9 is a schematic view of the reading desk with means for increasing the size of the reading desk surface.

[0010] With reference to the figures, and particularly to Figures 1 to 4, the reading desk, generally designated by the reference numeral 1, comprises a front frame 2 and a rear frame 3, which are connected by a first shelf 4 and by a second shelf 5, which in practice form an articulated-parallelogram connection.

[0011] In greater detail, the frames 2 and 3 are constituted by vertical posts 6 joined by cross-members 7 which allow to give stability to the assembly.

[0012] The posts 6 of the front frame are shorter than the posts 6 of the rear frame 3, and therefore the reading desk surface 10 is inclined in the active position.

[0013] The reading desk surface is connected to the ends of the posts 6 of the front frame and of the rear frame by way of tilting linkages 11, which allow to provide an articulated connection that allows the reading desk surface 10 to fold and be arranged laterally adjacent to the frames 2 and 3, which in the folded position are arranged side by side by way of the parallelogram connection provided by means of the shelves 4 and 5.

[0014] For the sake of completeness in description, it should be noted that the post 6 of the rear frame 3 has, at its lower end, a wider portion 15, which corresponds to the extent by which the front frame 6 is raised when it is arranged in the folded position.

[0015] The front frame 2 and the rear frame 3 are joined one another by means of compass - or caliper-like elements 18, which further stiffen the assembly and also act as a lateral containment element for placing on the shelf 4 magazines and the like, which are retained not only by the calipers 18 but also by the cross-members 7 of the rear frame 3.

[0016] The second shelf 5 is advantageously provided with sides 5a, which constitute a tray-like structure

for containing objects, while the reading desk surface is provided with the typical lower containment lip, designated by the reference numeral 10a.

[0017] According to what is shown in Figures 5 to 8, a collapsible reading desk is provided which is generally designated by the reference numeral 20 and is formed by an outer or rear frame 21 and by an inner or front frame 22, which are mutually articulated by means of horizontal pivots 23 provided at a central portion.

[0018] The frames 21 and 22 are provided by means of longitudinal members 24 which are joined by lower cross-members 25 and upper cross-members 26.

[0019] One of the two frames, more specifically the outer frame 21, has an upper portion that is taller than the upper portion of the inner frame 22, so that the reading desk surface 30 is inclined.

[0020] In a downward region, the frames 21 and 22 are joined by a folding shelf, designated by the reference numeral 31, which is constituted by two shelf halves 31a and 31b joined one another by the conventional shelf connection hinge 32, which allows to arrange the shelf halves as an extension of each other or so that they mutually overlap.

[0021] The reading desk surface 30 is articulated directly, by means of an upper pivot 35, to the end of the outer frame 21 and is connected to the end of the inner frame 22 by means of linkages 36 which connect the front end of the reading desk surface 30 to the upper end of the front frame, so as to allow to place the reading desk surface 30 laterally adjacent to the frames, which are folded so that one lies inside the other, as shown in Figure 6.

[0022] Particularly with reference to the embodiment shown in Figures 1 to 4, it is possible to provide extension means that allow to increase the useful size of the reading desk surface. Such means provide for a pair of secondary frames 60, preferably made of metal rod, which form a border portion by way of angular arms 60a, which are arranged laterally adjacent and externally with respect to two perpendicular sides of the reading desk surface 10. The angular arms 60a end, at one end, with a transverse portion 60b, which can be inserted in holes formed in longitudinal ribs 10b for supporting the reading desk surface 10, and, at the other end, with a longitudinal portion 60c, which can be inserted in holes formed in transverse ribs 10c for supporting the reading desk surface.

[0023] The secondary frames 60 can optionally be removed when the reading desk is folded.

[0024] With the above described reading desks, therefore, it is possible to have a small piece of furniture that is particularly functional and allows to have available shelves for resting magazines or objects of any kind and furthermore can be folded easily and rapidly when it is to be stored.

[0025] It should be noted that the reading desks can be made in any shape, of any material and any size, since the specific and contingent embodiment is dictat-

ed by the specific conditions of use.

[0026] The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims.

[0027] All the details may further be replaced with other technically equivalent elements.

[0028] The materials used, as well as the contingent shapes and dimensions, may be any according to requirements.

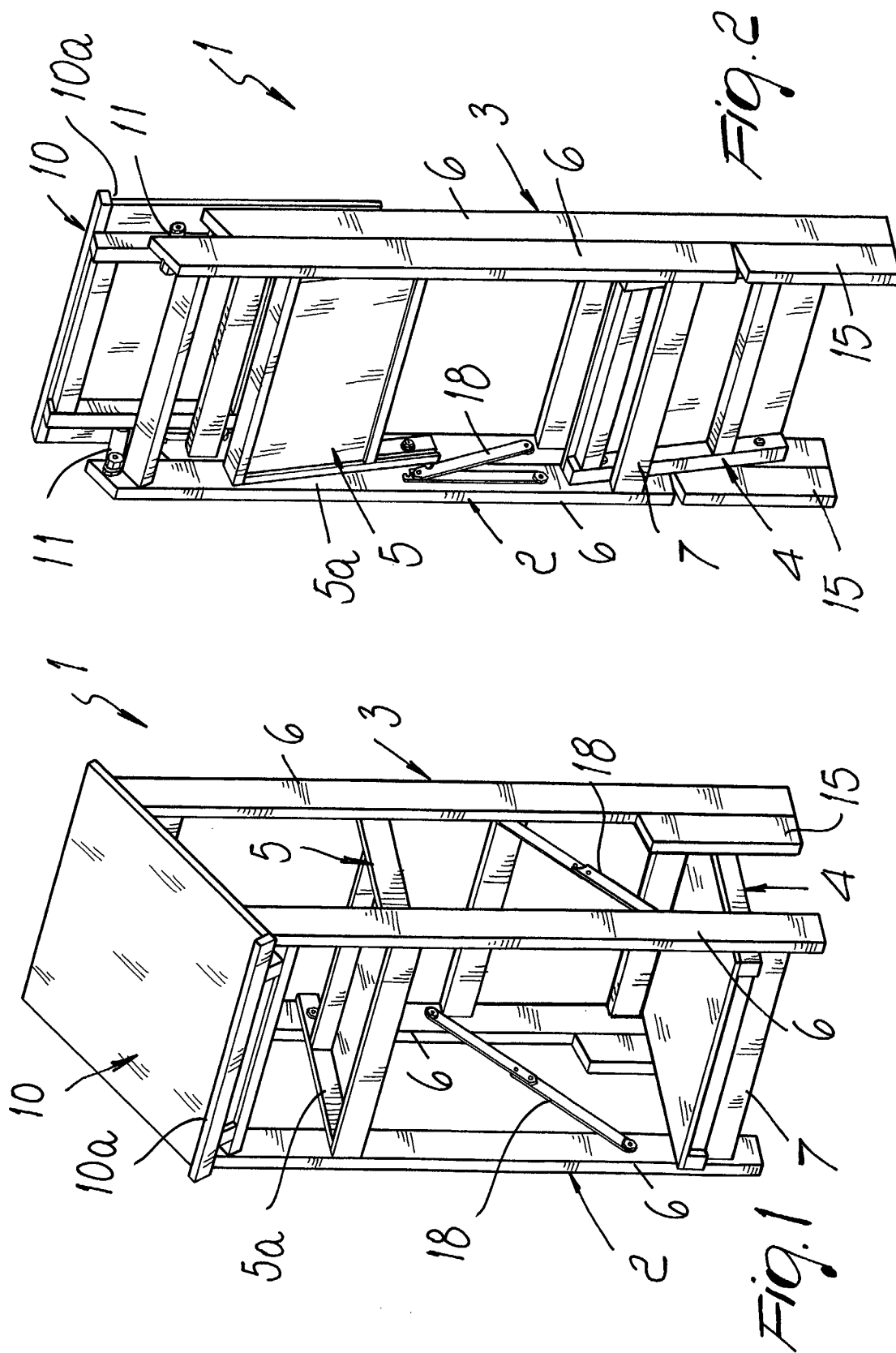
[0029] The disclosures in Italian Patent Application No. MI2001A002405 from which this application claims priority are incorporated herein by reference.

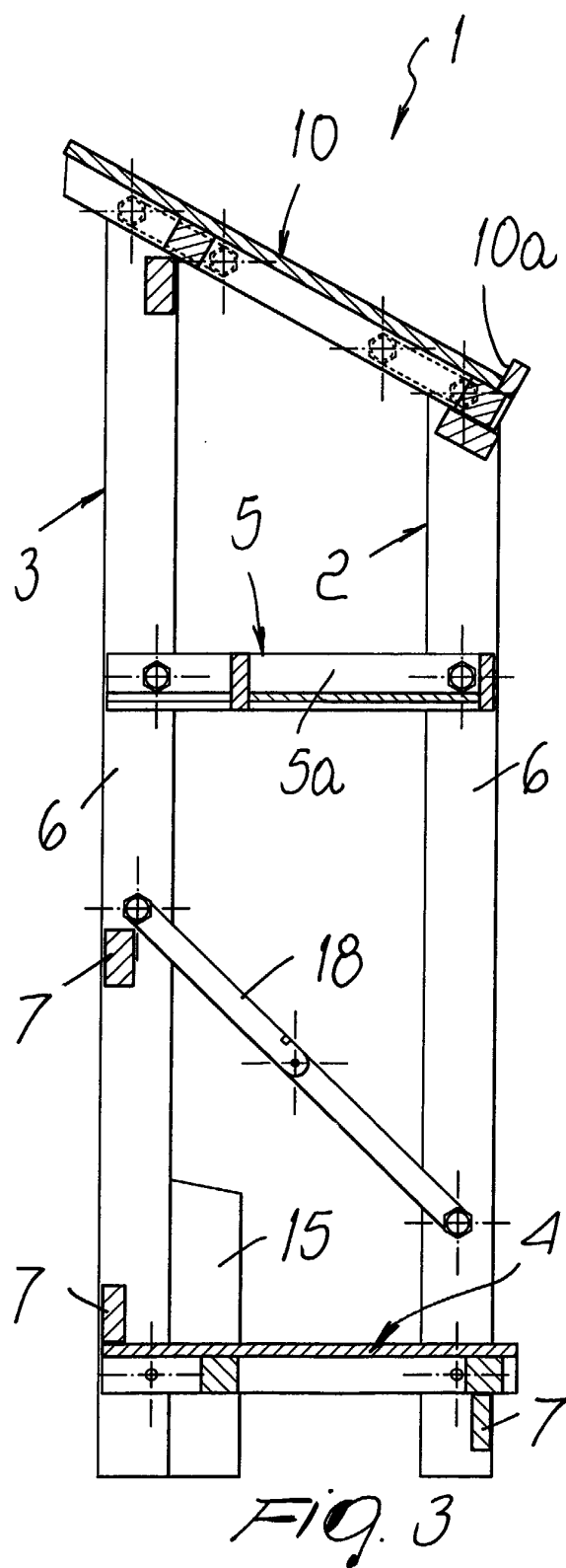
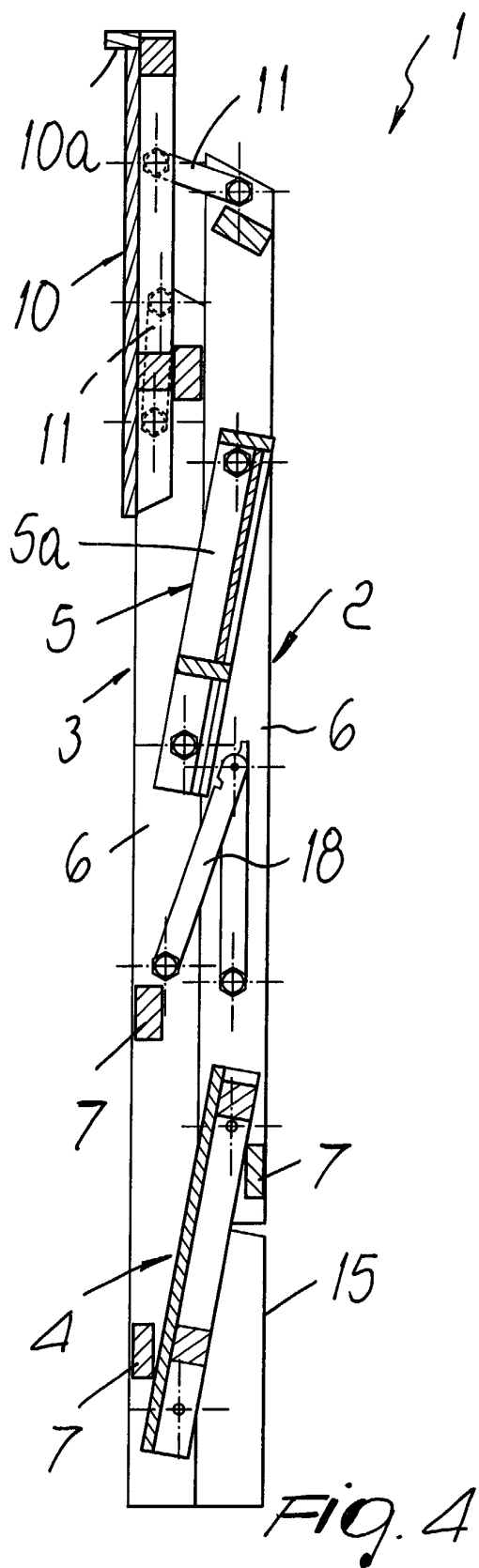
[0030] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

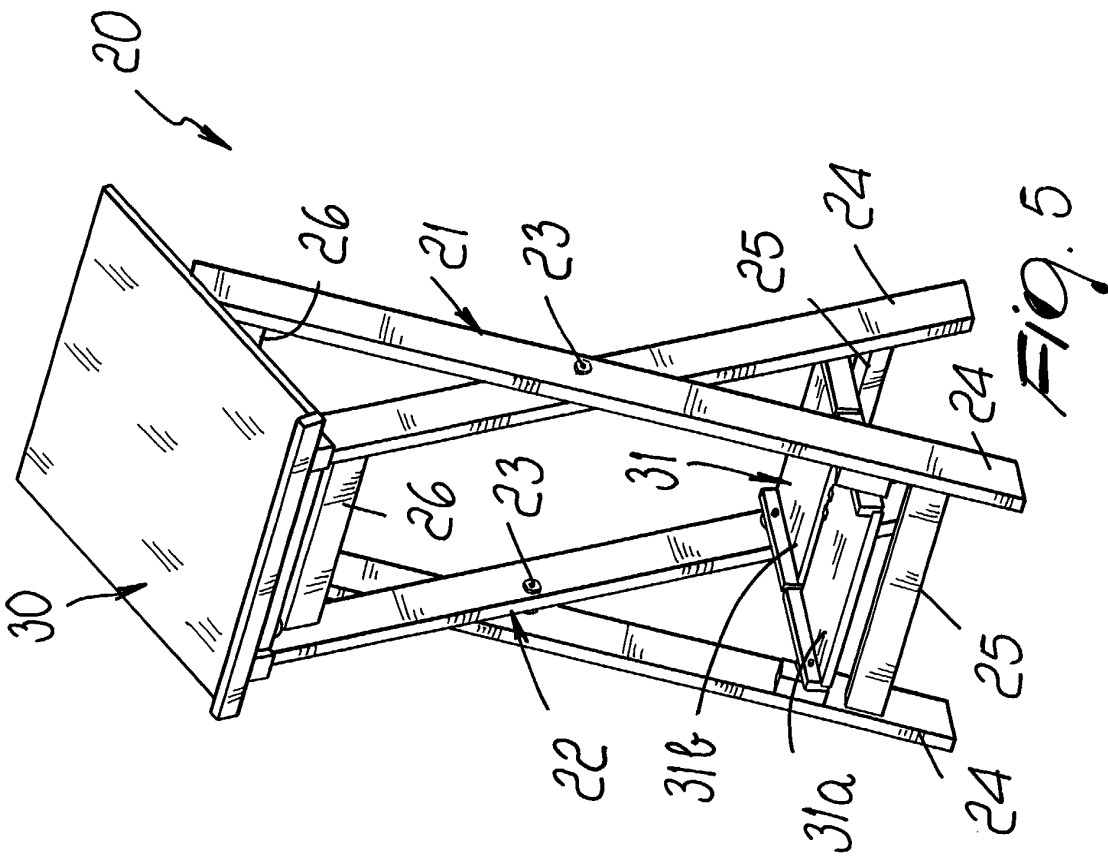
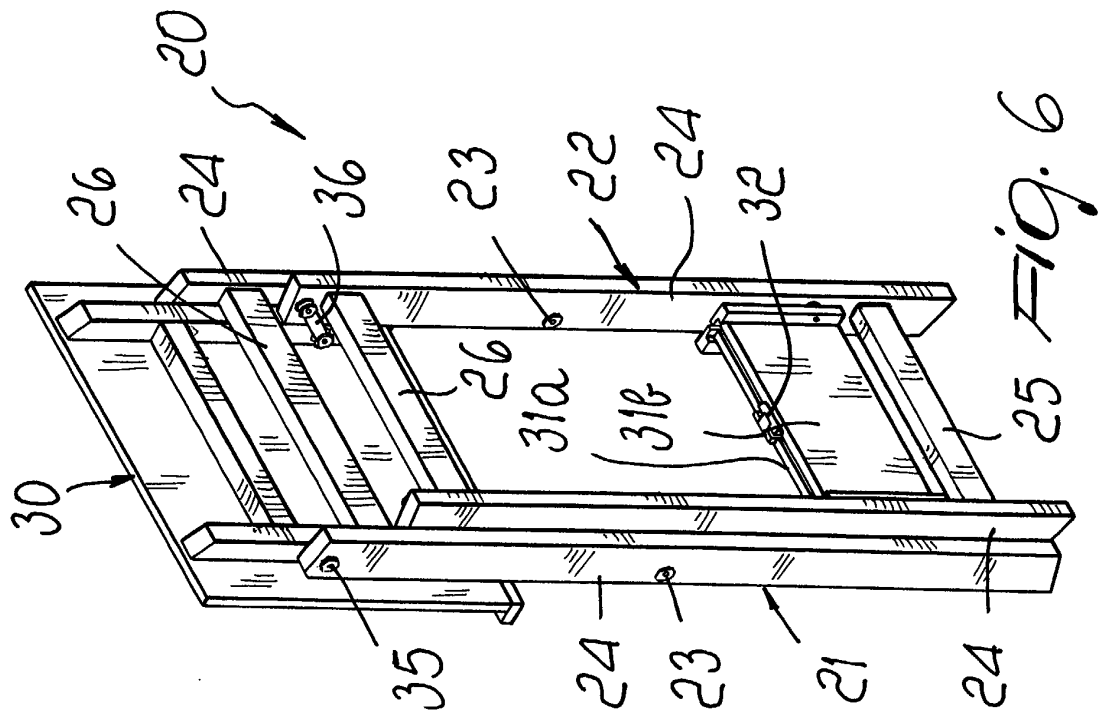
Claims

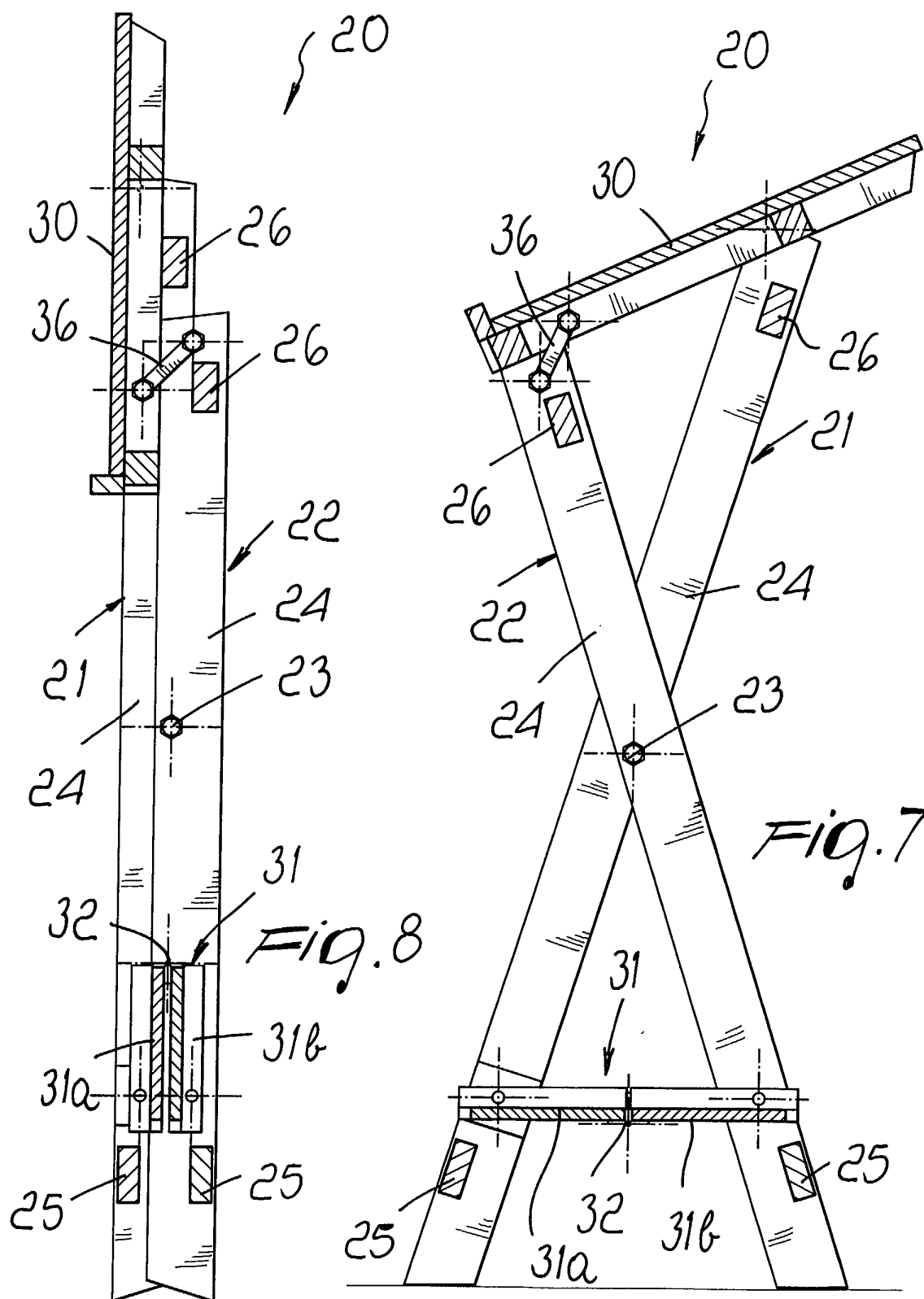
1. A collapsible reading desk with size compaction means, **characterized in that** it comprises a front frame (2) and a rear frame (3) which are joined by shelves (4,5) which form an articulated-parallelogram connection, said rear frame (3) being taller than said front frame (2) in order to arrange at an angle, in the active position, a reading desk surface (10) which is connected to said front frame (2) and said rear frame (3) by way of linkages (11) for tilting said reading desk surface (10) when the reading desk (1) is in the collapsed position.
2. The collapsible reading desk according to claim 1, **characterized in that** said front frame (2) and said rear frame (3) are connected by a first shelf (4) and by a second shelf (5) which are spaced one another.
3. The collapsible reading desk according to one or more of the preceding claims, **characterized in that** said frames (2,3) comprise vertical posts (6) which are joined by cross-members (7), the posts (6) of said front frame (2) being shorter than the posts (6) of said rear frame (3).
4. The collapsible reading desk according to one or more of the preceding claims, **characterized in that** it comprises, at the lower end of said rear frame (3), a wider portion (15) that corresponds to the extent by which said front frame (2) is raised in the collapsed position.
5. The collapsible reading desk according to one or more of the preceding claims, **characterized in that** it comprises caliper elements (18) that interconnect said front frame (2) and said rear frame (3).

6. The collapsible reading desk according to one or more of the preceding claims, **characterized in that** said caliper elements (18), in addition to stiffening the structure, are suitable to act as a lateral containment element for placing magazines and the like on said first shelf (4). 5
7. The collapsible reading desk according to one or more of the preceding claims, **characterized in that** said second shelf (5) comprises sides (5a) for forming a tray-like structure for containing objects. 10
8. The collapsible reading desk (20) with size compaction means, **characterized in that** it comprises an outer or rear frame (21) and an inner or front frame (22) which are articulated to each other in a central portion (23) and are connected in a downward region by a folding shelf (31), a reading desk surface (30) being connected in an upward region, said reading desk (30) surface being arrangeable so that it is inclined in the active position and is laterally adjacent to said inner (22) and outer (21) frames in the collapsed position. 15 20
9. The collapsible reading desk according to claim 8, **characterized in that** said inner (22) and outer (21) frames comprise longitudinal members (24) which are joined by lower cross-members (25) and upper cross-members (26). 25 30
10. The collapsible reading desk according to one or more of claims 1 and 8,9, **characterized in that** said outer frame (21) has an upper portion that is taller than the upper portion of said inner frame (22) in order to arrange said reading desk surface (30) at an angle. 35
11. The collapsible reading desk according to one or more of claims 8-10, **characterized in that** said folding shelf (31) comprises two shelf halves (31a, 31b) which are mutually joined by a connecting hinge (32) which allows to arrange said shelf halves (31a,31b) as a continuation of each other or so that they are mutually superimposed. 40 45
12. The collapsible reading desk according to one or more of the preceding claims, **characterized in that** it comprises an upper pivot (35) for the pivoting of the ends of said outer frame (21) to said reading desk surface (30), said reading desk surface (30) being connected to the end of said inner frame (22) by means of linkages (36) in order to arrange said reading desk surface (30) laterally adjacent to said frames (21,22), folded one inside the other. 50 55
13. The collapsible reading desk according to one or more of the preceding claims, **characterized in that** it comprises extension means (60) for extending the useful size of said reading desk surface (30).
14. The collapsible reading desk according to one or more of the preceding claims, **characterized in that** said extension means comprise two secondary frames (60) which form a border portion with angular arms (60a) that end with a transverse portion (60b) that can be inserted in holes (5) formed by longitudinal ribs (10b) and with a longitudinal portion (60c) that can be inserted in transverse ribs (10c).









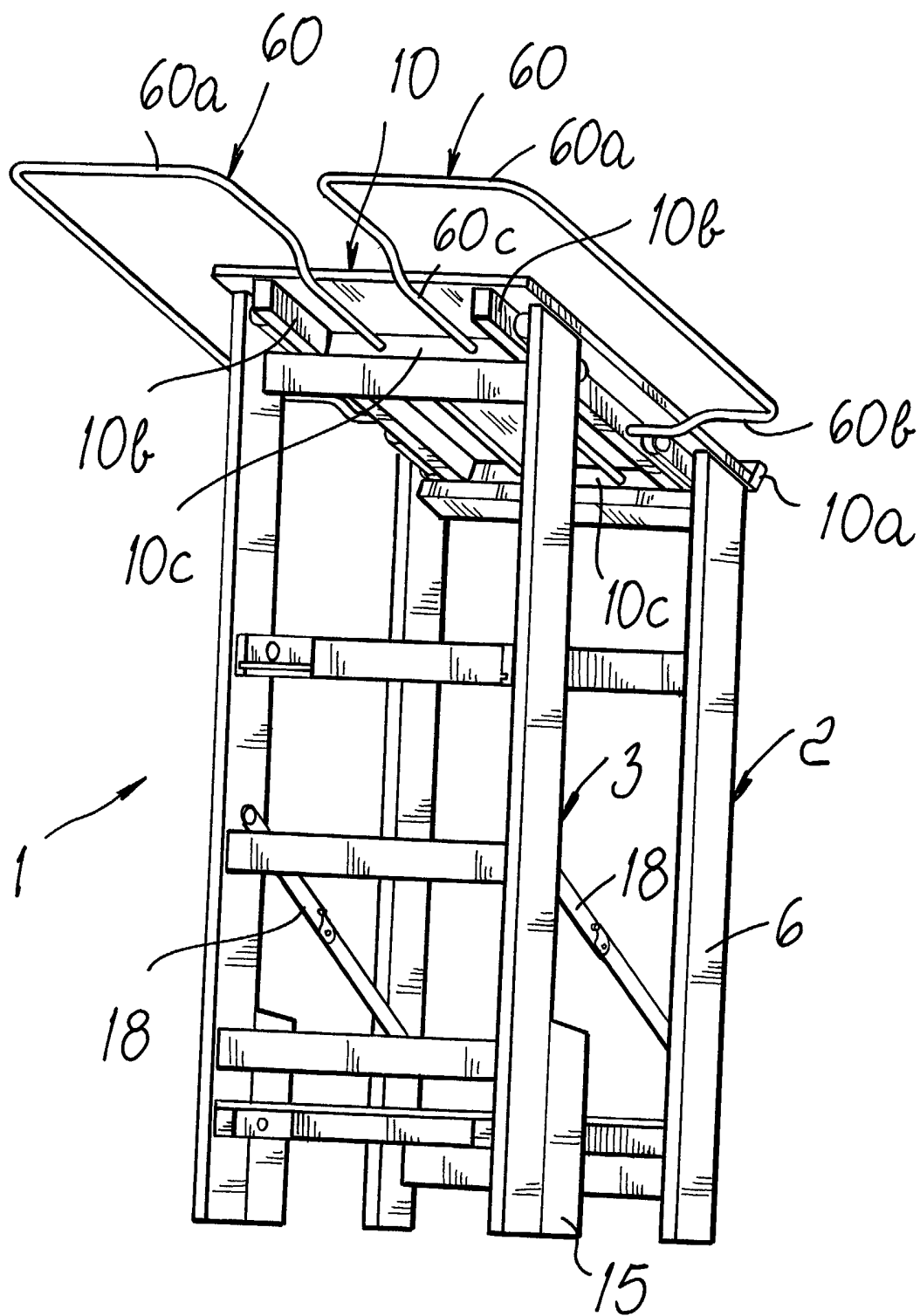


Fig. 9



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EUROPEAN SEARCH REPORT

Application Number
EP 02 00 6543

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	US 3 365 072 A (HILL) 23 January 1968 (1968-01-23) * column 2, line 34 - column 5, line 21; figures 1-4 *	1,2,8-10	A47B19/08
A	US 1 427 293 A (HOLLIDAY) 29 August 1922 (1922-08-29) * page 2, column 1, line 39 - line 55; figures 1-5 *	1,3	
A	GB 2 148 705 A (OWEN) 5 June 1985 (1985-06-05) * page 1, column 69 - page 2, column 13; figures 1-4 *	1,8	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			A47B E06C
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		5 March 2003	Noesen, R
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			

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

EP 02 00 6543

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
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05-03-2003

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 3365072	A	23-01-1968	NONE	
US 1427293	A	29-08-1922	NONE	
GB 2148705	A	05-06-1985	NONE	

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