



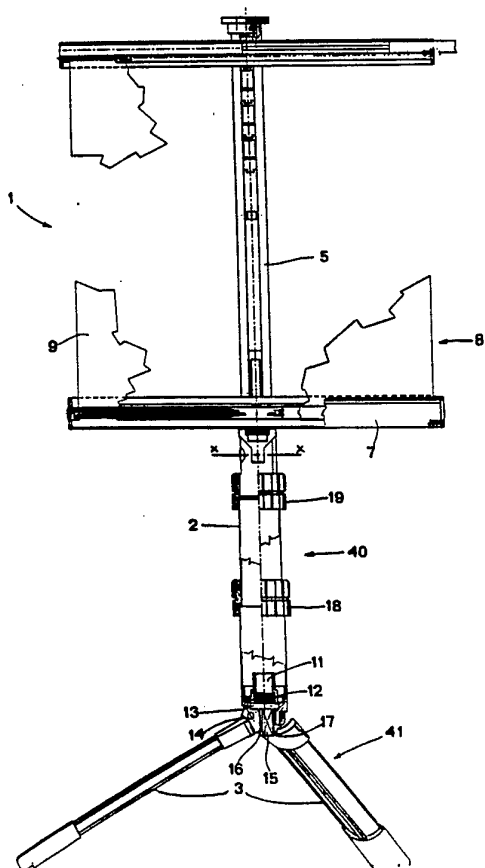
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<p>(21) International Application Number: PCT/IT93/00078 (22) International Filing Date: 20 July 1993 (20.07.93) (30) Priority data: PR92U000023 18 November 1992 (18.11.92) IT (71) Applicant (for all designated States except US): LISA DI MARCHIORI, Sandro [IT/IT]; Via Mazzini, 9/11, I-43052 Colorno (IT). (72) Inventor; and (75) Inventor/Applicant (for US only) : MARCHIORI, Sandro [IT/IT]; Via Don Luigi Sturzo, 19, I-26041 Casalmaggiore (IT). (74) Agent: DALLAGLIO, Fabrizio; Bugnion S.P.A., Via Garibaldi, 22, I-43100 Parma (IT).</p>		<p>(81) Designated States: CA, JP, US, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i></p>

(54) Title: A PORTABLE READING STAND

(57) Abstract

The invention relates to a portable readingstand, in particular of the type destined to support newspapers, musical scores and the like. It comprises a frame (40) to which rest means (8) are constrained, defining an inclined rest plane, and which are foldable internally to a tubular element (2) which is part of the frame (40). The said tubular element (2) is of dimensions which render it easily portable by hand.



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A Portable Reading Stand.Description.

The invention relates to a portable reading stand. The prior art embraces portable reading stands of the type comprising a frame equipped inferiorly with three support feet, foldable about the frame itself, and means which together provide a rest plane for newspapers, musical scores and the like, which means are foldable in such a way as to give rise to the least overall mass possible, and which are generally constituted by flat inter-hinged arm systems.

The drawback exhibited by reading stands of known type is that when folded into their smallest mass they are unstable and tend to open out, thus becoming impractical. This drawback of instability occurs also when the stand is open, and even the opening manoeuvre itself is somewhat difficult.

The principal aim of the present invention is to obviate the above-mentioned drawbacks by providing a portable reading stand which is practical to use and easily transportable in a compact shape.

An advantage of the invention is represented by the simplicity of the manoeuvres needed for folding and unfolding it as well as the speed with which these operations can be done.

05 Further characteristics and advantages of the present invention will better emerge from the detailed description that follows, of a preferred but non-exclusive embodiment here illustrated in the form of a non-limiting example in the
10 accompanying drawings, in which:

- figure 1 shows the reading stand in a closed transport position, in a partially sectioned longitudinal view;

- figure 2 shows the stand in open position in
15 frontal view;

- figures 3, 4 and 5 show three phases of the opening operation in a side view;

- figure 6 shows, in frontal view, the stand in an open position according to a further embodiment.

20 With reference to the figures, 1 denotes a portable reading stand comprising a frame 40 inferiorly equipped with stand organs 41. The frame 40 comprises a tubular element 2, a tube 4 telescopically coupled internally to the tubular
25 element 2 and a base element 5 housed internally

to the tube 4 and free to slide vertically. The stand organs 41 comprise three feet 3 hinged to the inferior end of the tubular element 2. The base element 5 bears a hollow body 7, rotatably coupled by means of a pivot 6 and internally provided with foldable rest means 8 which, once unfolded, define an inclined rest plane for newspapers, musical scores and the like. The rest plane is materially defined in the first embodiment, indicated in figures from 2 to 5, by a flexible sheet 9 tensed between two ends and in the second embodiment, in figures 6, by a flat hinged system of rods 10.

The three feet 3 are symmetrically arranged with respect to the tubular element 2 and are constrained to the said element 2 by means of cylindrical hinges of the fork type with rotation axis normal to the tubular element 2 itself. The rotation of a foot 3 is stopped in two predetermined positions, one a transport position and the other a support position. In the transport position, indicated in figure 1, the feet 3 are arranged contiguously to the external surface of the tubular element 2, while in the support position, indicated in figure 2, they are arranged

in such a way as to support the stand 1 by forming a tripod.

The blocking of the feet 3 in the two above-mentioned positions is effected by a stop 11
05 arranged inferiorly to the tubular element 2 and constrained to it by means of a sliding couple with interposition of a spring 12. The stop 11 is equipped with a contrast edge 13 able to engage with two specially shaped cavities 14 present in
10 each rod 3. The disengagement of the edge 13 of the cavity 14 is obtained by sliding the stop 11 upwards by compressing the spring 12 acting on the end 15 triangular in section, of the stop 11, which projects inferiorly from the tubular element
15 2. The stability of the above-mentioned support position is ensured by the surfaces 16 and 17, respectively belonging to the feet 3 and the stop 11, which come into reciprocal contact preventing further rotation of the feet 3.

20 The fixing of the tube 4 to the tubular element 2 and the fixing of the base element 5 slidably inside the tube 4, are done respectively using collars 18 and 19 which, by screwing in known ways, prevent any relative sliding by friction.

25 The regulation of the height of the reading stand

is achieved by loosening the grip by unscrewing the collars 18 and 19.

The base element 5 is constituted by a lower part 21 and an upper part 22, the latter comprising the rest means 8, rotatably coupled with rotation about a horizontal axis x-x parallel to the rest plane. The coupling between the two parts 21 and 22 comprises friction elements, constituted in the example by rotation surfaces 23, which ensure a grip between the parts, in a determined position, by friction or by jointing. The pivot 6, which permits the hollow body 7 to rotate with respect to the base element 5 about an axis normal to the rest plane, is housed in a seating made in a slide 24 which slides along a straight guide on the upper part 22 of the base element 5. An elastic stop 25, engaging in two notches 26 of the base element 5, stops the slide 24 and thus the hollow body 7 in two predetermined positions.

The sheet 9 can be wound on a cylindrical support 27 predisposed internally to the hollow body 7 and hinged to it. A torsion spring, not visible in the figures, acts on the support 27 forcing it to rotate in the winding direction of the sheet 9. The sheet 9 is connected on one edge to the

support 27 and on the opposite edge to a rod 28 provided with a recess 29 predisposed to couple with special projections 30 present on the base element 5, having the function of preventing the
05 rewinding of the sheet 9 by return effect of the spring, stopping the rod 28 in predetermined positions.

In a further embodiment, illustrated in figure 6, the rest means 8 are constituted by an inter-
10 hinged arm 10 system, connected to a rod 32 and a slider 31. The rod 32 is rotatably coupled to a slide 24' which is identical to the slide 24, slidable with respect to the base element 5, as is the slider 31. The arms 10 are conformed in such a
15 way as to be foldable against the rod 32 so as to enter the tube 4.

In the portable configuration, where the stand occupies the least possible space, the tube 4 and the base element 5 are contained internally to the
20 tubular element 2, against which external walls the feet 3 are folded flush. The use configuration is reached from the portable configuration by performing the following operations: bringing down the feet 3 into the support position, which is
25 done simply by pressing the end 15 of the stop 11

to the ground (or by manually rotating any one of the feet 3 which automatically unblocks the other two feet, permitting relative rotation); unscrewing the collars 18 and 19 as much as is necessary to loosen the grip and permit the sliding of the tube 4 and the base element 5; rotating by 90 degrees the hollow body 7 or the rod 32 and unfolding the rest means 8.

Claims.

1. A portable reading stand of the type comprising: a frame (40) inferiorly equipped with stand organs (41) foldable in such a way as to be positioned contiguously to the said frame (40); foldable rest means (8), constrained to said frame (40) and predisposed superiorly to the frame (40), conformed and arranged in such a way as to provide an inclined rest plane; characterised in that the frame (40) comprises at least one tubular element (2) and one base element (5) internally coupled to the tubular element (2) with reciprocal axial slidability; the said rest means (8) being constrained to said base element (5) and conformed and disposed in such a way that, in the folded configuration, they have transversal dimensions which are smaller than the internal section of said tubular element (2) into which they insert.

2. A portable reading stand as in claim 1, characterised in that the said stand organs (41) comprise:

- three feet (3) arranged symmetrically with respect to the said tubular element (2) and rotatably hinged to it about normal axes to the said sliding axis;
- a stop (11) slidably constrained, according to the said sliding axis, to said tubular element (2) with the interposition of an elastic element (12) acting in an axial direction; the said stop (11) being equipped with a contrast edge (13) destined to engage with two cavities (14) made on each of said feet (3) and conformed and arranged in such a way that by sliding the said stop (11) upwards by a predetermined distance the said contrast edge (13) is disengaged from the said cavities (14);
- an end (15) solidly connected to said stop (11) and projecting inferiorly from said tubular element (2).

3. A portable reading stand as in claim 1, characterised in that the said rest means (8) comprise:

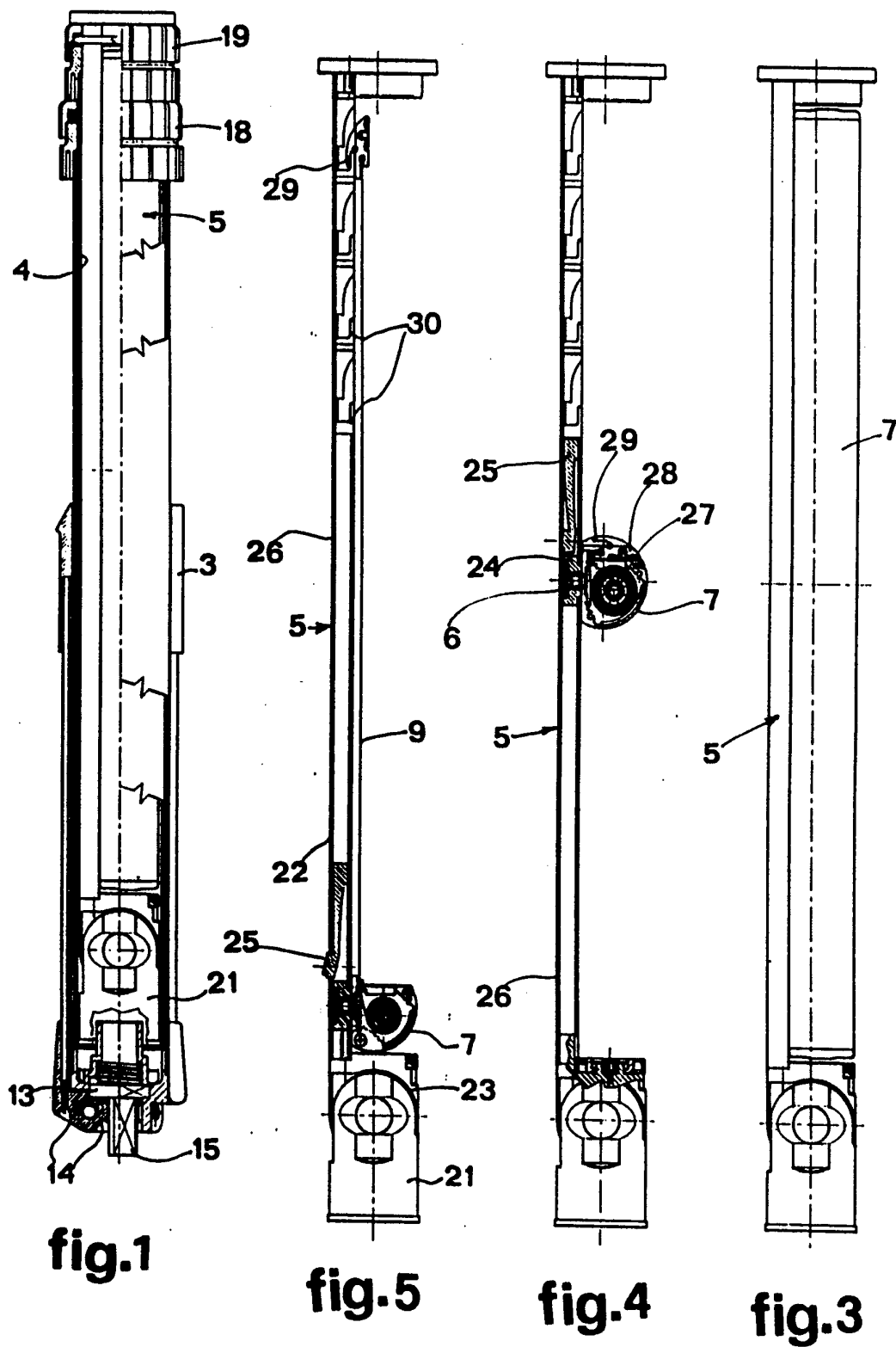
- a cylindrical support (27) constrained to said base element (5) with translatability in the direction of said sliding axis and rotatability about its own axis and about a perpendicular axis

to its own axis;

- a sheet (9), windable about the said cylindrical support (27) and fixed to it along one edge, and equipped, at its opposite edge, with constraining means for removable connection with said base element (5).

4. A reading stand as in claim 3, characterised in that the said cylindrical support (27) is internally predisposed to a hollow body (7) and is pivoted at ends of the same hollow body (7); the said hollow body (7) being rotatably coupled, with rotation possibility about a median axis, with a slide (24) slidable along a straight guide arranged above the said base element (5); a torsion spring also being provided and acting on the said cylindrical support (27) in the winding direction of the said sheet (9); said constraining means comprising at least one recess (29) predisposed on the said sheet (9) edge destined to couple with projections (30) made on the said base element (5).
5. A reading stand as in claim 1 characterised in that the said rest means (8) comprise a hinged arm

(10) system connected to a rod (32) and a slider (31) slidable along straight guides arranged on the said base element (5); the said rod (32) being rotatably coupled to a slide (24') slidable along said straight guides; said arm (10) system being conformed in such a way as to be foldable flush to the said rod (32).



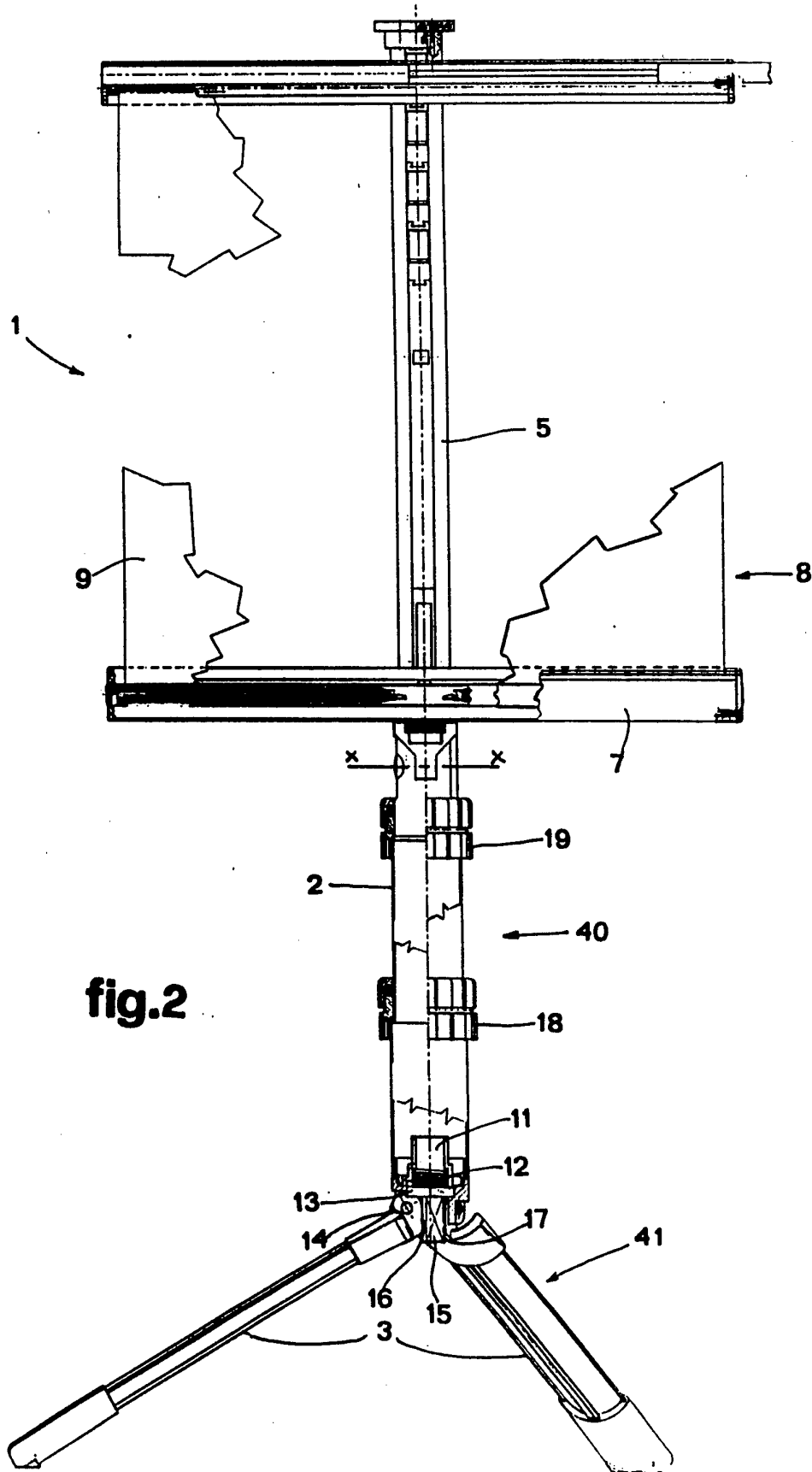


fig.2

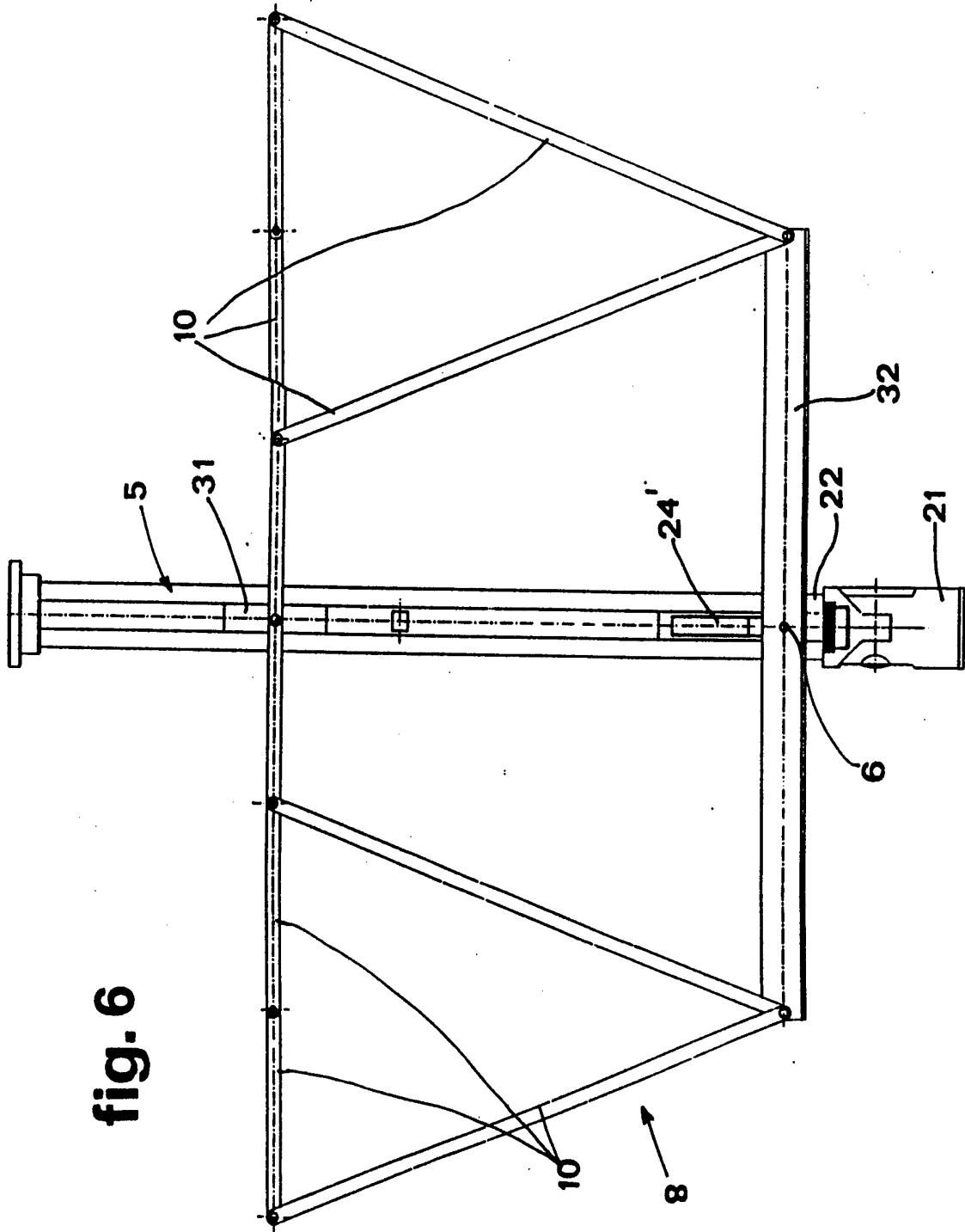


fig. 6

INTERNATIONAL SEARCH REPORT

Intern: 1 Application No
PCT/IT 93/00078A. CLASSIFICATION OF SUBJECT MATTER
IPC 5 A47B19/00

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)
IPC 5 A47B

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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US,A,4 813 644 (GOLDNER) 21 March 1989 see column 1, line 55 - column 9, line 60; figures 1-13 ---	1 2
A	US,A,4 923 156 (LINNÉUSSON) 8 May 1990 see figures 1-4 ---	2,5
A	DE,C,41 20 501 (LÜBBE) 9 July 1992 see figures 1-20 -----	1

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

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European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
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Information on patent family members

Intern. Application No
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US-A-4813644	21-03-89	NONE	
US-A-4923156	08-05-90	SE-B- 459444 SE-A- 8702774	03-07-89 07-01-89
DE-C-4120501	09-07-92	DE-U- 9102638	23-05-91