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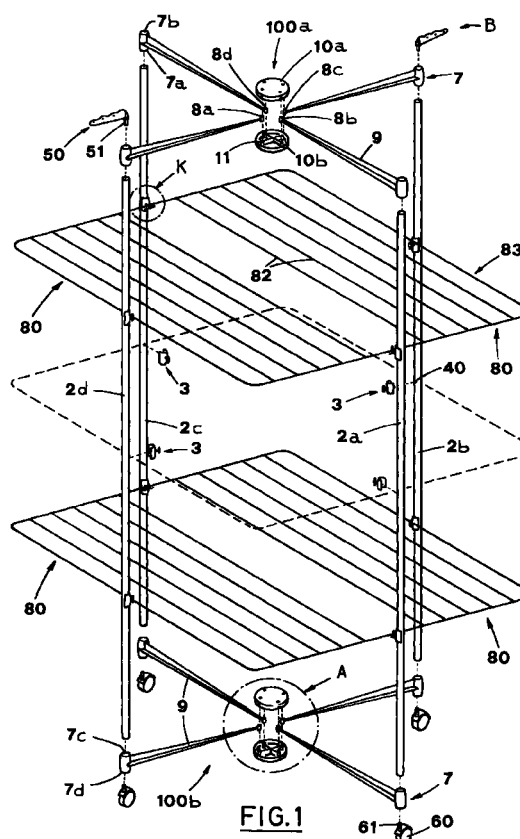
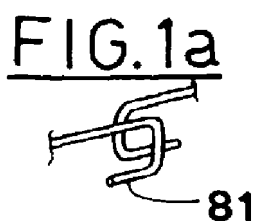
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(54) **Clothes drying rack**

(57) A clothes drying rack includes four tubular rods (2a,2b,2c,2d), a first cross journal (100a), which connects and stiffens the upper ends of these rods, a second cross journal (100b) which connects and stiffens the lower ends of these rods, a plurality of frames (80) for supporting clothes or like articles to be dried. Each of these frames is attached, in horizontal position, to the rods by supporting elements (3,300) attachable to these rods.



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Description

[0001] The present invention relates to devices for drying clothes. In winter, washed clothes are dried indoors, in dry and warm environment, which results in a need for a drying rack which has acceptable drying space and requires a minimal of room for storage when not in use.

[0002] Drying racks have heretofore been provided, as constituted by two metallic tubular structures, which have rectangular form with rounded corners and which are hinged to each other. These structures removably support grate frames situated horizontally thereto.

[0003] These grates, used for suspending thereon washed clothes, are supported by attaching elements fastened to the structure vertical sides.

[0004] However, this particularly functional solution is obtained by very expensive techniques. Moreover, the assembling time is too long for such a simple device.

[0005] The object of the present invention is to propose a clothes drying rack, which is obtained by cheap elements and whose assembly is simple and rapid.

[0006] Another object of the present invention is to propose a clothes drying rack of reduced dimensions when it is packaged.

[0007] The above mentioned objects are obtained in accordance with the contents of claims.

[0008] The characteristic features of the invention are pointed out in the following, with reference to the enclosed drawings, in which:

- Figure 1 is an exploded schematic view of the proposed clothes drying rack;
- Figure 1a is an enlarged view of a particular K of Figure 1;
- Figures 2a, 2b are plan views of the element indicated with A in Figure 1, in two different configurations;
- Figure 3 is a top view of an attaching element, according to a second embodiment, when open;
- Figure 4 is the same view of the element of Figure 3, when closed;
- Figure 5 is a lateral view of the particular B of Figure 1, enlarged with respect to previous figures;
- Figure 6 is a prospective schematic view of the proposed clothes drying rack.

[0009] With reference to the above mentioned figures, the proposed clothes drying rack is indicated with 1.

[0010] This clothes drying rack 1 extends vertically and includes four tubular rods 2a, 2b, 2c, 2d, respectively, a first cross journal 100a and a second cross journal 100b, identical with each other.

[0011] These first and second cross journals connect and stiffen respectively the upper and lower ends of these rods.

[0012] Each cross journal includes a member 10

connecting the inner ends of four identical arms 9.

[0013] The connecting member 10 is composed of two half-shells 10a, 10b, each of which features four seats 11, made therein for receiving small vertical rolls 8a, 8b, 8c, 8d extending from the inner ends of the arms 9.

[0014] After having been coupled with the relative seats 11, two rolls 8a, 8c are located on the same diametric line and constitute, together with the half-shells walls, attaching and aligning points for the corresponding arms.

[0015] The remaining rolls 8b, 8d, define, together with the relative seats, two hinges which allow the corresponding arms to rotate by 90°.

[0016] This is possible due to a particular arrangement of the edges 180 of the half-shells, which from one side stabilise the position of two arms, and from the other side, allow the rotation of the other two arms.

[0017] A rotation move the arms from a non-operative position I, shown in Figure 2a, in which the device is ready to be packed, to an operative position O, in which the arms are arranged at 90° with respect to each other, as shown in Figure 2b.

[0018] The outer ends of the arms feature, integral therewith, sleeves 7, identical in both cross journals 100a, 100b.

[0019] The lower parts 7a of the sleeves 7 of the first cross journal 100a, are connected to the relative upper ends of the tubular rods, while the upper parts 7b of these sleeves 7 can couple with joints 51.

[0020] These joints 51 are integral with triangular elements 50 or clothes hangers holders, featuring a scalloped part 52, as shown in Figure 5.

[0021] The upper parts 7c of the sleeves 7 of the second cross journal 100b are coupled with the lower ends of the tubular rods, while their lower parts 7d couple with joints 61, carried by corresponding pivot wheels 60.

[0022] A series of holes 40 (e.g. three for each rod, as shown in Figure 1), are made along the tubular rods, arranged along a vertical line and equispaced. These holes are made in the same position on each rod.

[0023] Each hole is connected to a corresponding supporting element 3, 300. According to a first embodiment (Figure 1), on its outer side, this element 3 is formed by a strip and on its inner side, this element 3 features a pin, which enters the hole 40 thus fastening the element 3 to the rod. Consequently, the strip fits the rod.

[0024] According to another embodiment, this supporting element 300 includes an open circular portion 32, with a stake 33, integral therewith and extending radial from its central inner part.

[0025] Two protrusions 30a, 30b extend from the ends of this circular portion and form, in their terminal part, complementary elements 31a, 31b which are snap coupled.

[0026] Before being fitted to the tubular rod, the

described supporting element 300 is open, as shown in Figure 3.

[0027] This element 300 is fastened to the bar by removable introducing of the stake 33 into a corresponding hole 40.

[0028] As a result, the complementary elements 31a, 31b are snap coupled, so that the protrusions 30a, 30b are drawn to each other thus closing this element 300, as shown in Figure 4.

[0029] These joined together protrusions 30a, 30b define a rest 35.

[0030] The rests 35 are attached to the frames 80.

[0031] Each frame 80 includes an external U-shaped member 83, two hooks 81 obtained by folding the ends of this external member 83, and a plurality of stiffening cross bars 82.

[0032] A grate frame is obtained in this way.

[0033] The clothes drying rack 1 is obtained by assembling the above described elements.

[0034] By rotating about the rolls 8b, 8d hinged to the respective seats 11, the arms 9 are moved from the inoperative position I, shown in Figure 2a, to the operative position O of Figure 2b, in which these arms 9 are arranged at 90° with respect to each other.

[0035] First and second cross journals are obtained due to these rotations.

[0036] Afterwards, the tubular rods 2a, 2b, 2c, 2d are introduced first to the lower parts of the sleeves 7 of the first cross journal 100a, and then to the upper parts of the sleeves 7 of the second cross journal 100b, or otherwise, thus defining the vertical structure of the clothes drying rack 1.

[0037] During the next assembly step, the supporting elements 300 are attached to the rods, thus forming the rests 35, by which the frames 80 are attached to the rods.

[0038] Due to their conformation, the frames 80 are attached to three tubular rods in two attaching points constituted by hooks 81 (particular K of Figure 1) and in a third point, defined on a third rod along the outer structure of the frame 80.

[0039] This way, two frames are attached to two tubular rods close to the rests 35, in a removable way due to the hooks 81 form.

[0040] These hooks 81 allow the frame 80 to pass from a stationary horizontal position to a movable vertical position, by unhooking the frame 80 from the third attaching point.

[0041] The lower ends of the sleeves 7 of the lower cross journal 100b are connected to the above mentioned pivot wheels 60, which allow the clothes drying rack 1 to be easily moved, while into the upper ends of the sleeves 7 of the upper cross journal 100a clothes hangers holders 50 can be introduced, during the clothes drying rack use.

[0042] The above described clothes drying rack is formed by tubular rods, cross journals and frames which have advantageous features and can be obtained in a

simple way.

[0043] The use of a plurality of simple elements which can be assembled reduces the production costs.

[0044] Moreover, the proposed clothes drying rack is simple to assemble.

[0045] The use of this plurality of elements facilitates packaging, since the rods are put together, the frames are stacked and the cross journals, in non-operative configuration, paired.

[0046] The dimension of the detached components of the clothes drying rack is reduced, therefore it requires minimal space for storage.

Claims

1. Clothes drying rack characterised in that it includes:

four tubular rods (2a,2b,2c,2d);
a first cross journal (100a), which connects and stiffens the upper ends of these rods;
a second cross journal (100b) which connects and stiffens the lower ends of these rods;
a plurality of frames (80) for supporting clothes or like articles to be dried;
each of said frames being attached, in horizontal position, to said rods by supporting elements (3,300) attachable to said rods.

2. Clothes drying rack, according to claim 1, characterised in that it includes pivot wheels (60) featuring relative joints (61), which can be coupled with the lower ends of said tubular rods.

3. Clothes drying rack, according to claim 1, characterised in that each of said first and second cross journals includes four arms, arranged along the diagonals of an ideal rectangle, with each of said arms forming, on its outer end, a sleeve (7), which can be coupled with the upper end of a relative tubular rod, said first and second cross journals including also a connecting member (10), to which the inner ends of said arms are coupled.

4. Clothes drying rack, according to claim 3, characterised in that each connecting member (10) is formed by two half-shells defining corresponding seats for receiving relative inner ends of said arms.

5. Clothes drying rack, according to claim 4, characterised in that two of said arms are aligned and their relative inner ends are coupled with said seats made in said half-shells and in that the inner ends of the other two arms, together with the relative seats, form two hinges.

6. Clothes drying rack, according to claim 5, characterised in that the edges (180) of said half-shells define the two positions of said arms hinged to said

connecting members, respectively, the operative position (O), in which the sleeves of the arms are coupled with the relative bars, and non-operative (I), in which each arm is drawn to a corresponding stationary arm.

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7. Clothes drying rack, according to claim 6, characterised in that the arrangement of said edges put said arms in operative position (O), in which said arms are arranged at 90° with respect to each other.

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8. Clothes drying rack, according to claim 1, characterised in that each support element (300) includes:

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an open circular portion (32) which encircles the relative rod;

a stake (33), integral with said circular portion and extending in a radial direction from its central inner part, said stake removably coupling with a corresponding hole made in said bars;

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two protrusions (30a,30b) extending from the ends of said circular portion and forming complementary elements (31a,31b) which are dovetail coupled, so as to stabilise the mutual joining of said protrusions.

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9. Clothes drying rack, according to claim 1, characterised in that it includes at least one clothes hangers holder formed by a triangular element (50), which features a scalloped profile (52) and a joint (51), which can be coupled with the upper part of a corresponding sleeve.

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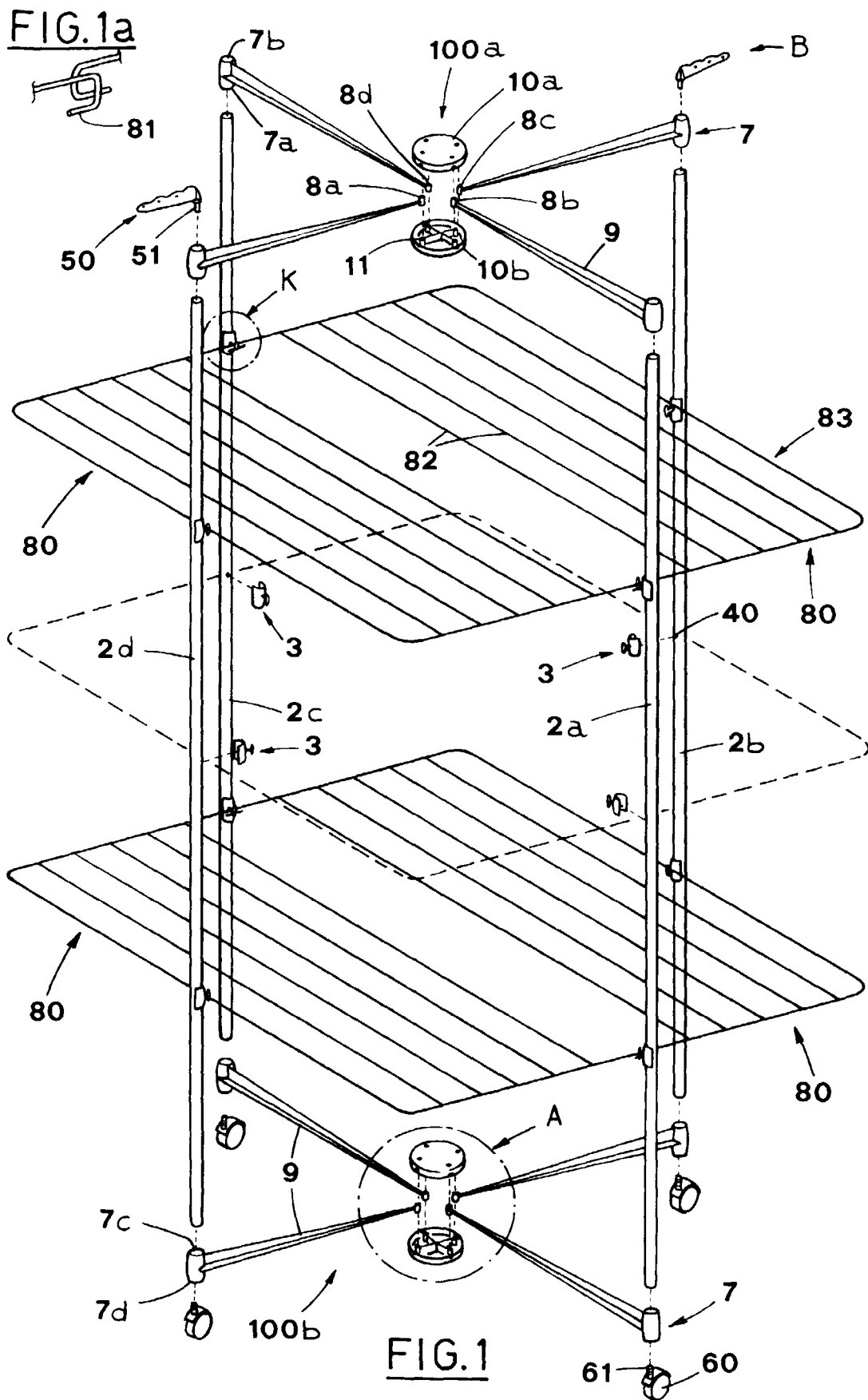


FIG. 2a

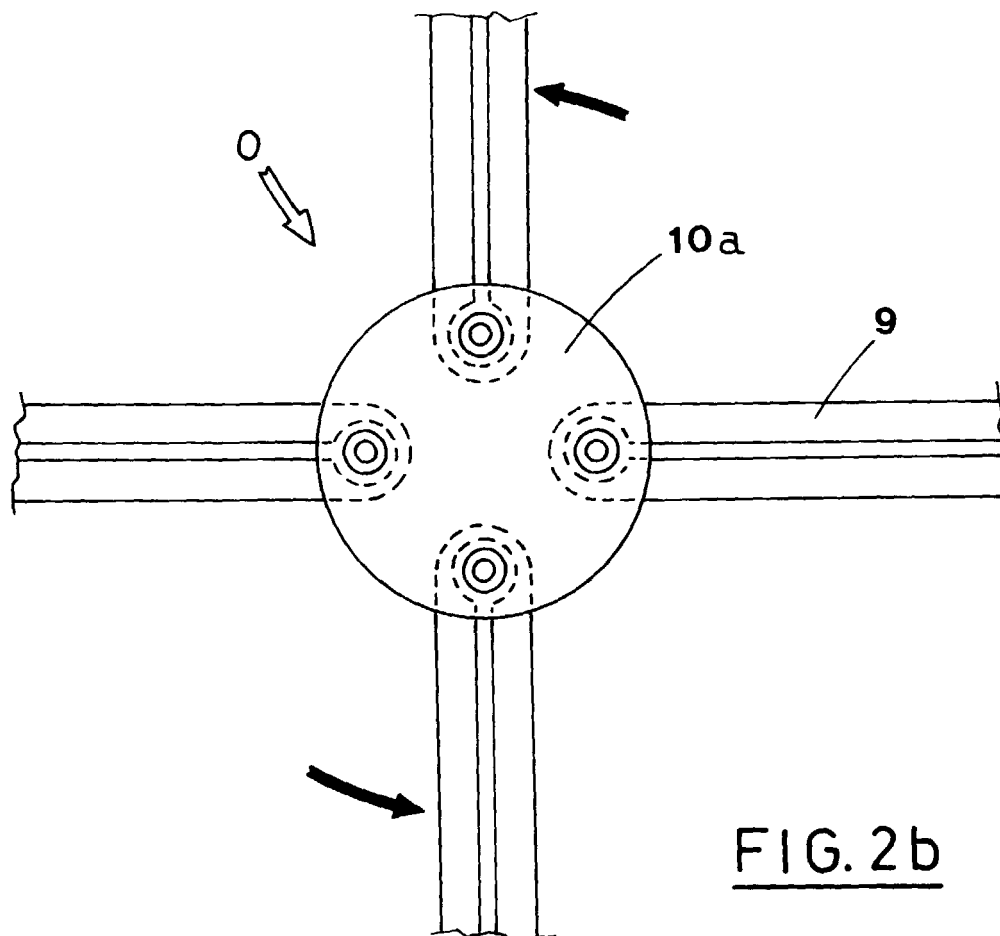
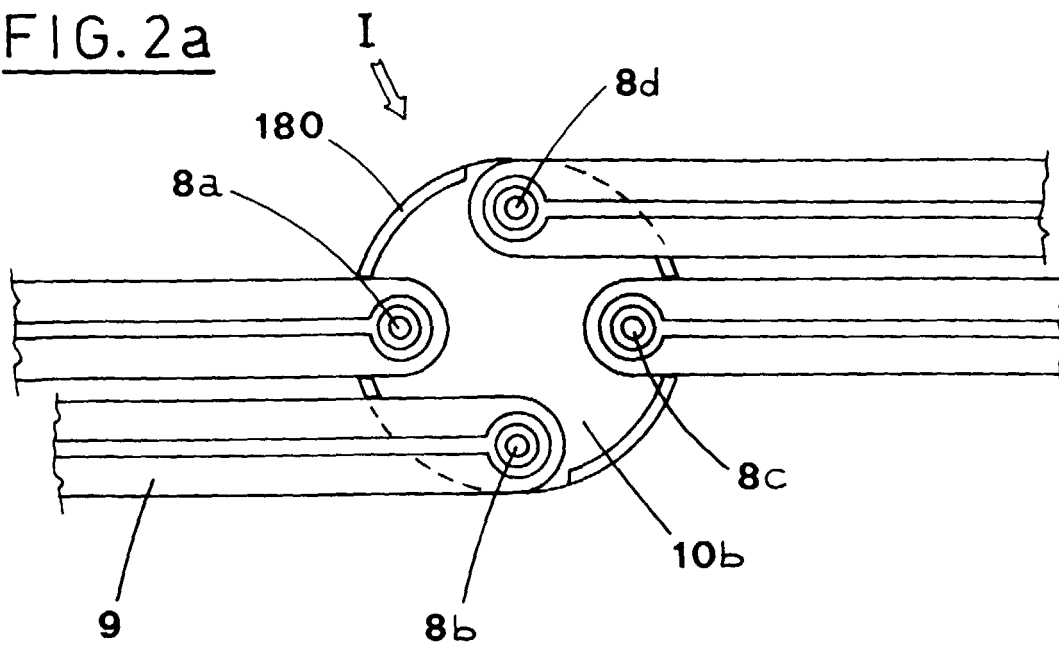
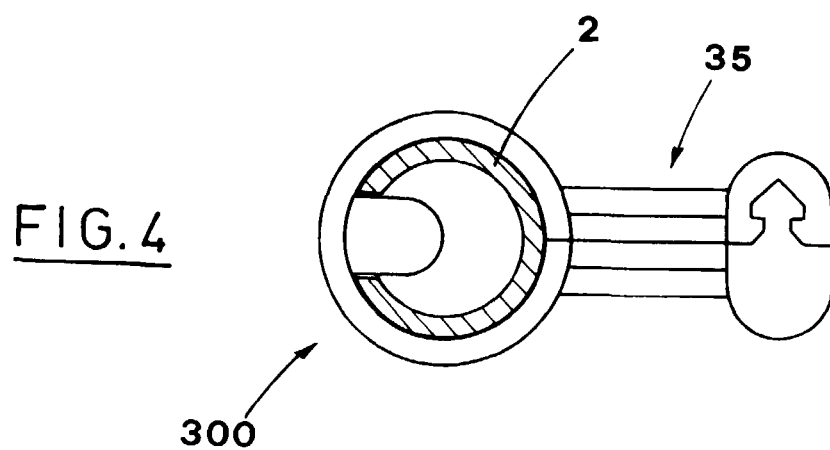
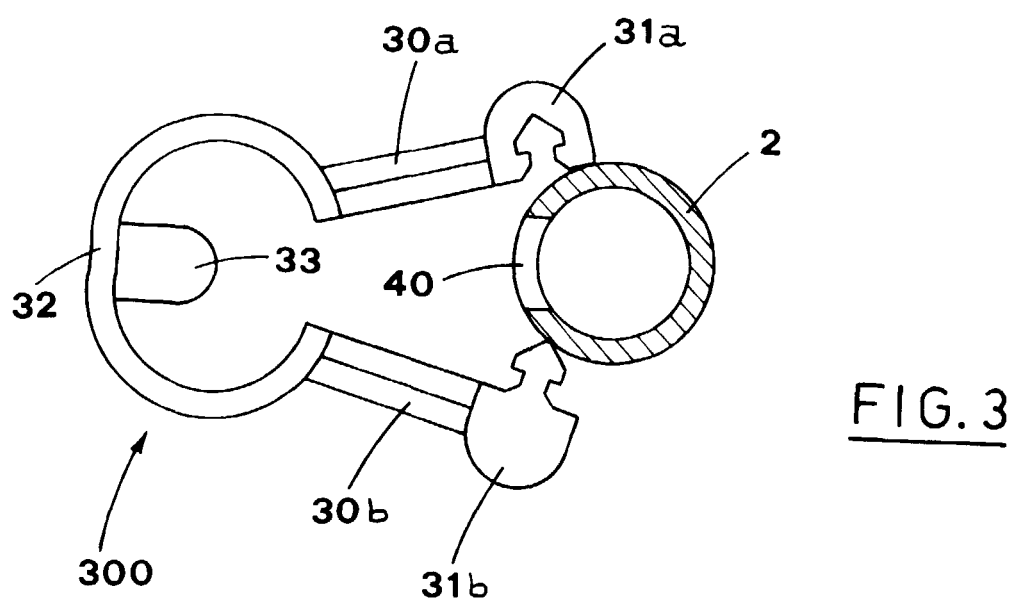
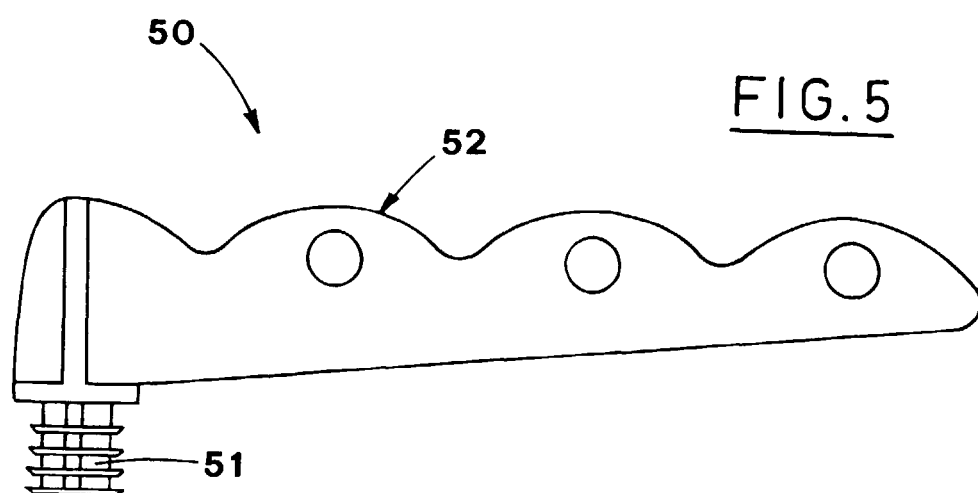
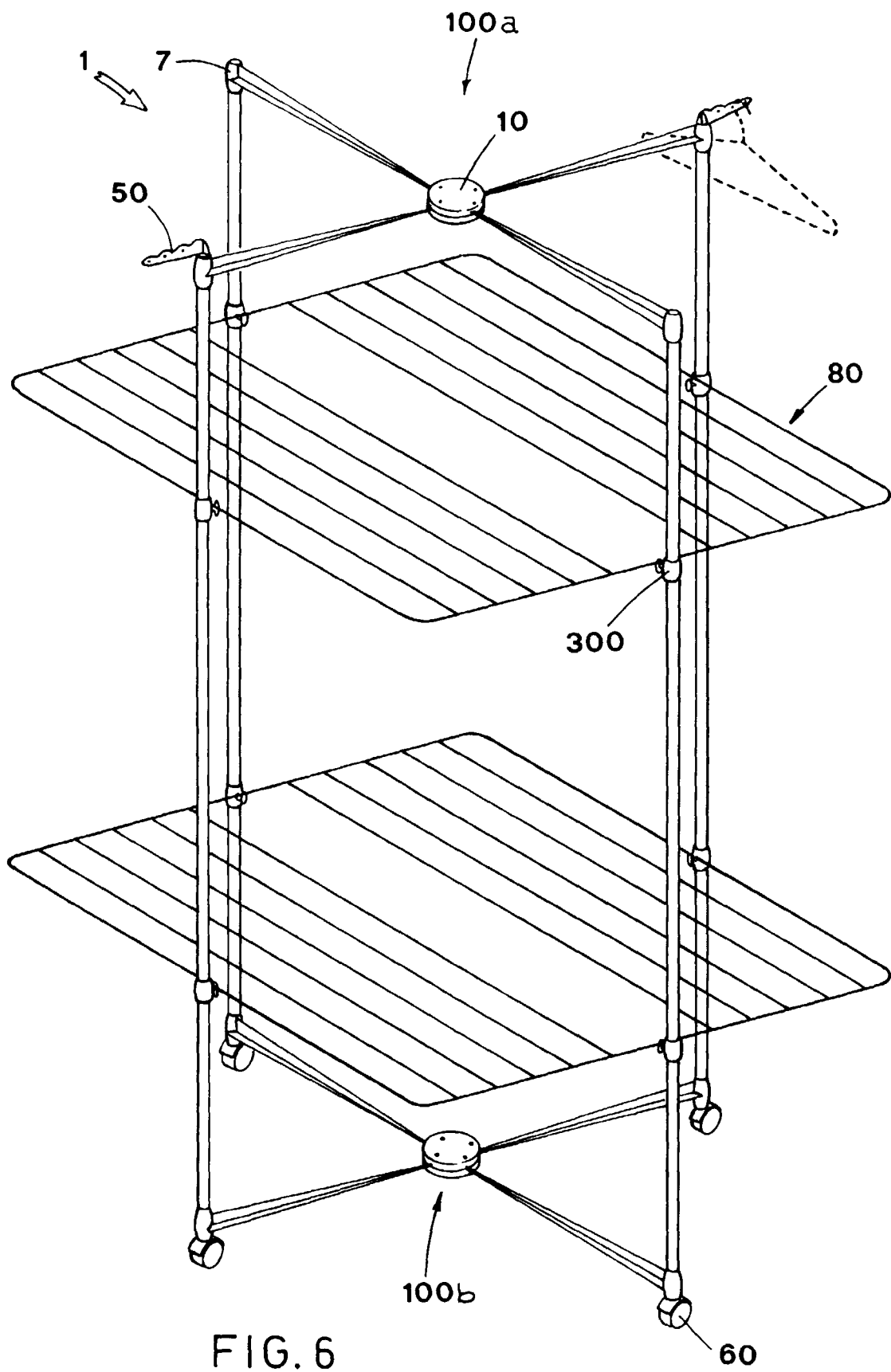


FIG. 2b







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EUROPEAN SEARCH REPORT

Application Number
EP 99 10 4021

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)
P,X	FR 2 763 967 A (METALTEX SPA) 4 December 1998 (1998-12-04) * the whole document *	1-7	D06F57/06 D06F57/08
X	FR 2 718 163 A (COMPAGNUCCI SPA) 6 October 1995 (1995-10-06) * the whole document *	1,2,9	
A		3-8	
A	DE 15 85 580 A (BREMSHEY & CO) 1 April 1971 (1971-04-01) * figure 2 *	8	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			D06F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 21 February 2000	Examiner Debard, M
<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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</p>			

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

EP 99 10 4021

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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21-02-2000

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
FR 2763967	A	04-12-1998	IT	MI970383 U	30-11-1998
FR 2718163	A	06-10-1995	IT	MC940007 U	02-10-1995
DE 1585580	A	01-04-1971	NONE		