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(54) **Mounting device for use on a stand**

(57) A mounting device for use on a stand in the form of a frame, the device comprising a main body (6) with an object to be mounted on the frame attached thereto. The main body has a recess (12) capable of receiving

a first generally elongate frame member (18), and having a downwardly facing surface (8) which abuts a second generally elongate frame (2) member to retain the mounting device stably on the frame to prevent pivoting.

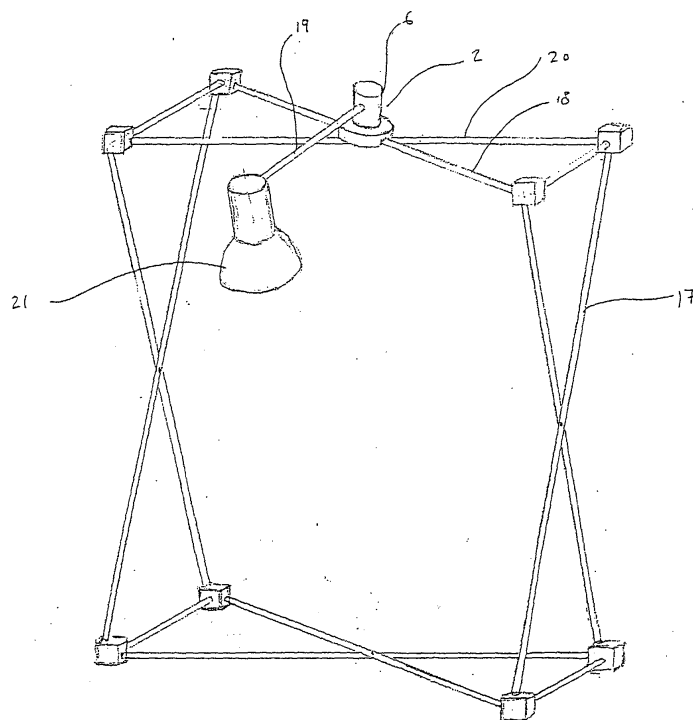


Fig. 7

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Description

[0001] The present invention relates to a mounting device for use on a stand, and in particular for use on a so-called "pop-up" stand.

[0002] A known display stand used in showrooms, at exhibitions and the like is of the "pop-up" type. Such pop-up stands comprise a plurality of tubular arms that are linked together through an arrangement of hubs and scissor joints in such a manner that the stand is able to expand and contract in a scissoring fashion. Pop-up stands of this type can expand from a reasonably flat ("collapsed") state to up to six to eight feet tall.

[0003] In order to provide the scissoring-type mechanism, the top two tubes of the display stand are connected together by means of a scissors joint. The scissors joint can be right-handed or left-handed. In other words the top scissors tube may extend from top left position to bottom right position and the tube underneath from top right position to bottom left position, or alternatively the top tube may extend from top right position to bottom left position and the underneath tube extend from top left position to bottom right position.

[0004] The diameters of the tubes may vary from as much as 8 mm to 11 mm and as such, there is no standard size of tube used in the display stand.

[0005] The aforementioned factors present a difficulty in mounting an object on a stand.

[0006] There are lamps that are capable of being connected to a display stand to provide light to the display. One such a lamp includes a light source located at one end of a tubular arm. The other end of the arm is attached by a screw clamp to a tube of the display stand once it has been erected. As the stands are typically six to eight feet tall, it is often necessary to bring something to stand on in order to be able to attach the light in the desired position at the top of the stand. Furthermore, the weight of the lamp located at the end of the arm tends to make the lamp pivot downwards against the display stand so reducing the illumination effect provided over that area of the display stand.

[0007] In another known arrangement, the lamp is arranged to be pivotally attached to one top hub while the arm on which the lamp is located slides within another top hub to provide support for the lamp to secure it in position. In such a device though, the arm on which the lamp is located has to be long due to the fact that the two hubs mounting the lamp are a substantial distance apart when the stand is in its compact state. This arrangement also means that the lamp, and thus the light it emits, is offset to one side of the display, therefore resulting in the necessity of the provision of at least one further lamp to ensure that the entire display is illuminated.

[0008] According to a first aspect of the present invention there is provided a pop-up stand carrying an object which can be attached when the stand is collapsed and is retained on the frame during the period in which the

frame is opened to its fully extended state.

[0009] In this way, the present invention alleviates the aforementioned disadvantages by providing a light, or other object, that can be mounted centrally on the display stand, and which can be maintained mounted on the display stand whilst the stand is in its compact state through to when the stand is in its fully-expanded state to avoid the need to stand on something in order to mount the light.

[0010] The object is preferably mounted at the upper central scissor joint of the stand. The object is preferably connected through a mounting means which defines a recess to receive the upper elongate frame member of the central scissor joint and further defines a foot arranged to rest upon the lower elongate frame member of the central scissor joint on the same side of the frame as the object.

[0011] According to a second aspect of the present invention there is provided a mounting device for use on a stand in the form of a frame, the device comprising a main body with an object to be mounted on the frame attached thereto, the main body defining a recess, the recess being suitable for receiving a first generally elongate frame member, the main body defining a downwardly facing surface arranged to abut a second generally elongate frame member to retain the mounting device stably on the frame to prevent pivoting.

[0012] The recess is preferably U-shaped and is suitable for receiving an elongate tubular frame member.

[0013] Preferably the object to be mounted on the frame is a light source. It is, however, clearly envisaged that the object could be any number of things, for example, a loud speaker, or a further display sign.

[0014] Preferably, the object is located on an elongate arm, the arm being attached to the main body of the mounting device. The arm may be hingedly attached to the main body.

[0015] According to a third aspect of the present invention, there is provided a pop-up stand according to the first aspect of the invention, having a mounting device according to the second aspect of the invention mounted thereon.

[0016] According to a fourth aspect of the present invention, there is provided a stand in the form of a plurality of linked generally elongate frame members, the stand carrying a mounting device, the device comprising a main body with an object to be mounted on the stand attached thereto, the main body defining a recess, the recess being suitable for receiving a first frame member, the main body defining a downwardly facing surface arranged to abut a second frame member to retain the mounting device stably on the stand to prevent pivoting.

[0017] One 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 perspective view from above of a mounting device constructed in accordance with

the present invention;

Figure 2 is a perspective view from below of the mounting device of Figure 1;

Figure 3 is a perspective view of the mounting device of Figures 1 and 2 when mounted on a frame;

Figure 4 is a side perspective view of the mounting device in use;

Figure 5 is a view of Figure 4 from a different side;

Figure 6 is a plan view of the mounting device in use; and

Figure 7 is a perspective view of the mounting device being used to mount a lamp on a display frame.

[0018] Referring first to figures 1 and 2, the mounting device 2 comprises a main body 4 with a limb 6 upstanding therefrom. The main body 4 and the limb 6 are generally circular in shape, the diameter of the main body 4 being greater than the diameter of the upstanding limb 6.

[0019] The main body 4 has two arms 8, 10 defining a generally U-shaped recess 12 extending across the entire diameter of the main body 4. The end surface 14, 16, or in other words, the underside, of each respective arm 8, 10 is substantially flat.

[0020] The limb section 6 of the main body 4 has means to attach thereon an object to be mounted on a frame 17 (see Figure 7). The object may be attached to one end of a further arm 19, the other end which, in turn, is attached to the limb section 6 of the mounting device 2. Figure 7 shows the mounting device, wherein the object mounted thereon is a lamp 21.

[0021] Figures 3 to 5 show the mounting device in use. The figures show two tubular members 18, 20 that are located at the top of the display stand frame 17 of the "pop-up" type as hereinbefore described, when the stand is in its fully extended state.

[0022] The tubular members 18, 20 are linked in the middle by means of a scissors joint 22 such that one tubular member 18 lies above and across the other tubular member 20.

[0023] The width of the recess 12 within the main body 4 of the mounting device 2 is determined by the diameter of the top tubular member 18 which, in use, is received in a press-fit engagement within and along the recess 12.

[0024] The arms 8, 10 of the main body 4 have flat end surfaces 14, 16 such that, when the top tubular member 18 is received within the recess 12 of the main body 4, the end surfaces 14, 16 rest on the surface of the lower tubular member 20 (see Figure 4 in particular).

[0025] The mounting device 2 can be placed on the tubular members 18, 20 of the display stand 17 when

the display stand 17 is in its collapsed state. When the scissors action of the two top tubular members 18, 20 takes place to erect the display stand 17 the end-surfaces 14, 16 of the arms 8, 10 of the main body 4 are able to slide along the lower tubular member 20 to allow the display stand 17 to be erected while retaining mounting device 2 on the stand. Once the display stand 17 is fully erected, the lower tubular member 20 supports the mounting device 2 to prevent the main body 4 from pivoting around the top tubular member 18.

[0026] The fact that both arms 8, 10 of the main body 4 of the mounting member 2 have flat undersides 14, 16, allows the mounting device 2 to be capable of being located and retained on a display stand 17 whether the scissors joint of the top tubular members is right-handed or left-handed (as explained in the introduction of this specification).

[0027] It is envisaged, however, that mounting devices designed specifically for a right-handed or left-handed scissors joint need only one flat sliding surface on one arm of the main body.

[0028] As can be seen in Figure 7, the mounting device 2 can be used to mount a lamp 21 centrally on the a display frame 17.

Claims

1. A mounting device for use on a stand in the form of a frame, the device comprising a main body (4), and means to mount an object, the main body defining a downwardly facing recess (12), the recess being suitable for receiving a first generally elongate frame member (18), the main body defining a downwardly facing surface (8), the surface being arranged to abut a second generally elongate frame member (20) to retain the mounting device stably on the frame to prevent pivoting, **characterised in that** the downwardly facing surface is below the level of the recess and the mounting means is located on an elongate arm (19), the arm being attached to the main body of the mounting device
2. A mounting device according to claim 1, wherein the main body has a downwardly facing surface below and on both sides of the recess.
3. A mounting device according to claim 1 or 2, wherein the recess is U-shaped.
4. A mounting device according to any of claims 1 to 3, wherein the arm is hingedly attached to the main body.
5. The combination of a mounting device according to any preceding claim and an object mounted by the mounting means.

6. The combination according to claim 5, wherein the object to be mounted on the frame is a light source.
7. The combination according to claim 5, wherein the object to be mounted on the frame is a loud speaker. 5
8. The combination according to claim 5, wherein the object to be mounted on the frame is a display sign.
9. A pop-up stand having a mounting device according to any of claims 1 to 4 or a combination according to any of claims 6 to 8, mounted thereon. 10
10. A pop-up stand carrying an item which can be attached when the stand is collapsed and is retained on the frame during the period in which the frame is opened to its fully extended state. 15
11. A pop-up stand according to claim 10, wherein the item is mounted at an upper central scissor joint of the stand. 20
12. A pop-up stand according to claim 10 or 11, wherein the item is connected through a mounting means which defines a recess to receive the upper elongate frame member of the central scissor joint and further defines a foot arranged to rest upon the lower elongate frame member of the central scissor joint on the same side of the frame as the item. 25
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13. A pop-up stand according to claim 10, 11 or 12, wherein the item comprises a mounting device as claimed in any of claims 1 to 4 or a combination according to any of claims 5 to 12. 35
14. A stand in the form of a plurality of linked generally elongate frame members, the stand carrying a mounting device, the device comprising a main body (4) with an object (21) to be mounted on the stand attached thereto, the main body defining a recess (12), the recess being suitable for receiving a first frame member (18), the main body defining a downwardly facing surface (8) arranged to abut a second frame member (20) to retain the mounting device stably on the stand to prevent pivoting. 40
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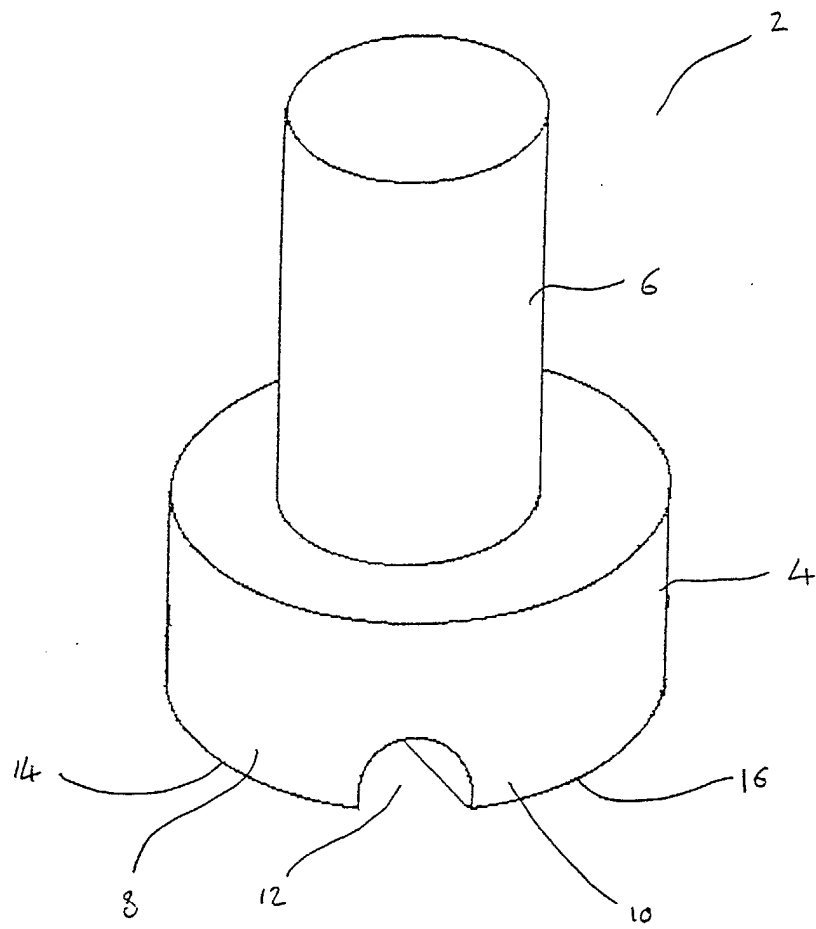


Fig. 1

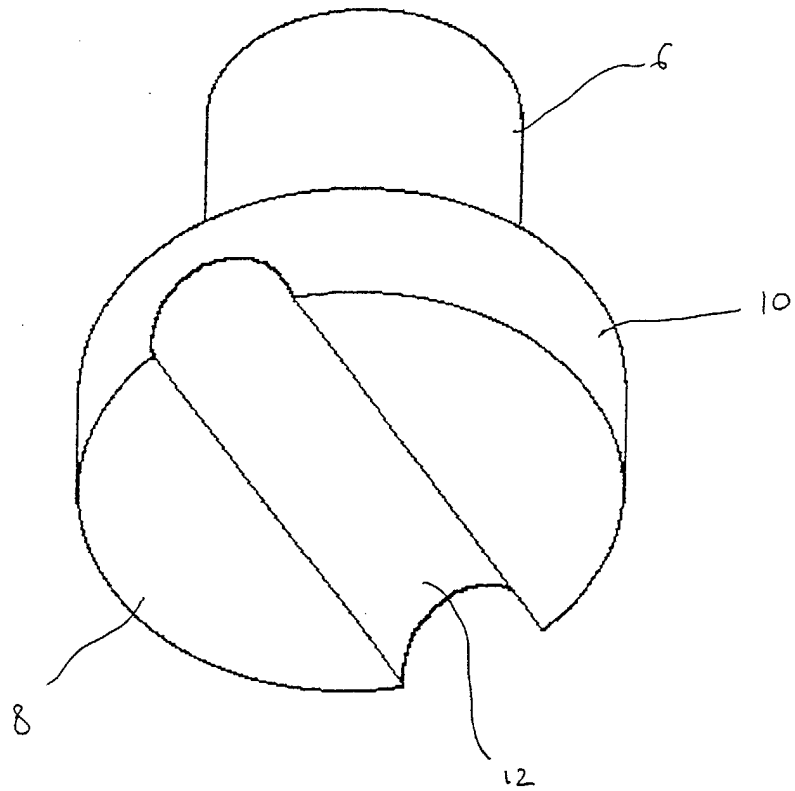


Fig. 2.

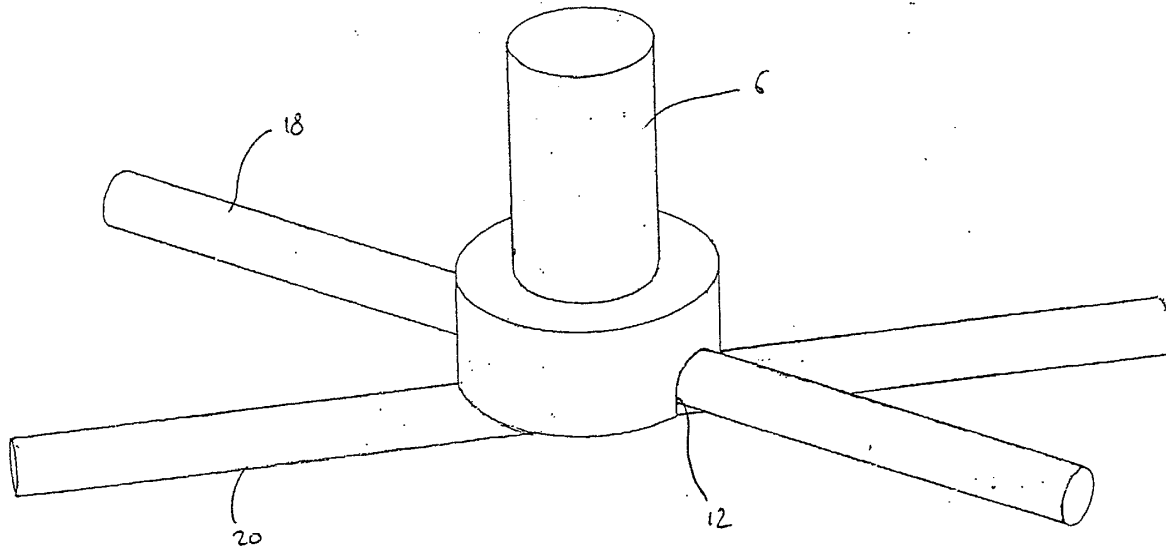


Fig. 3.

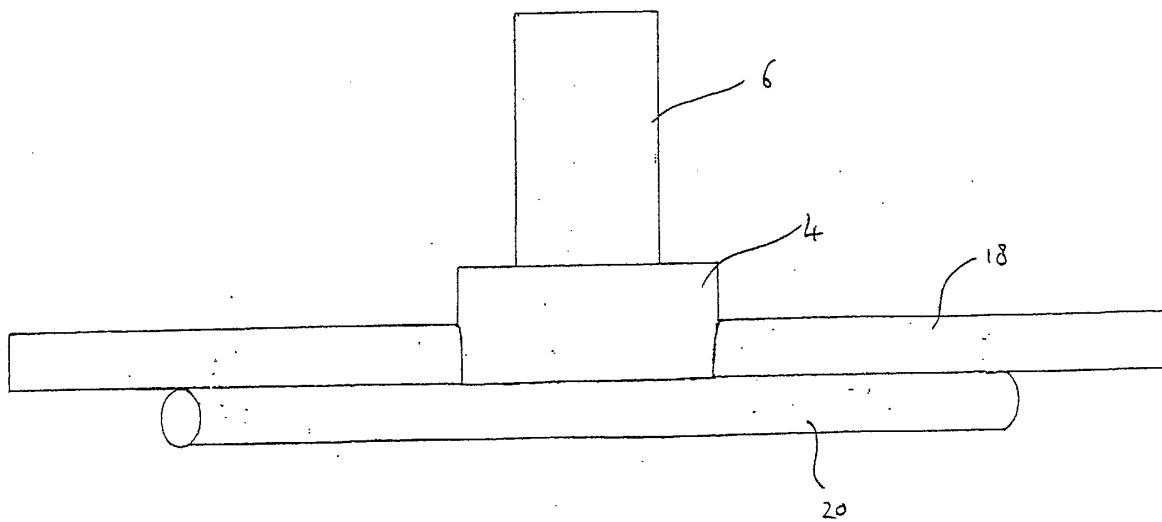
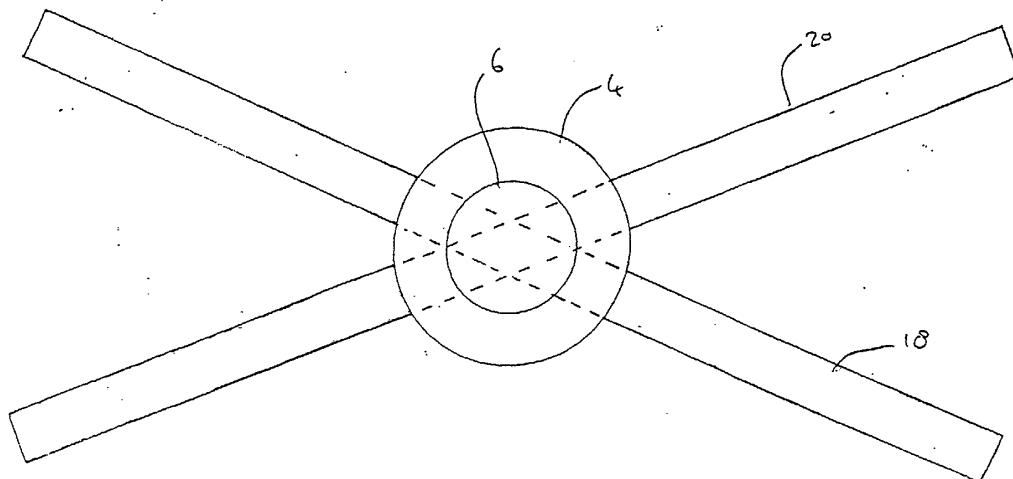
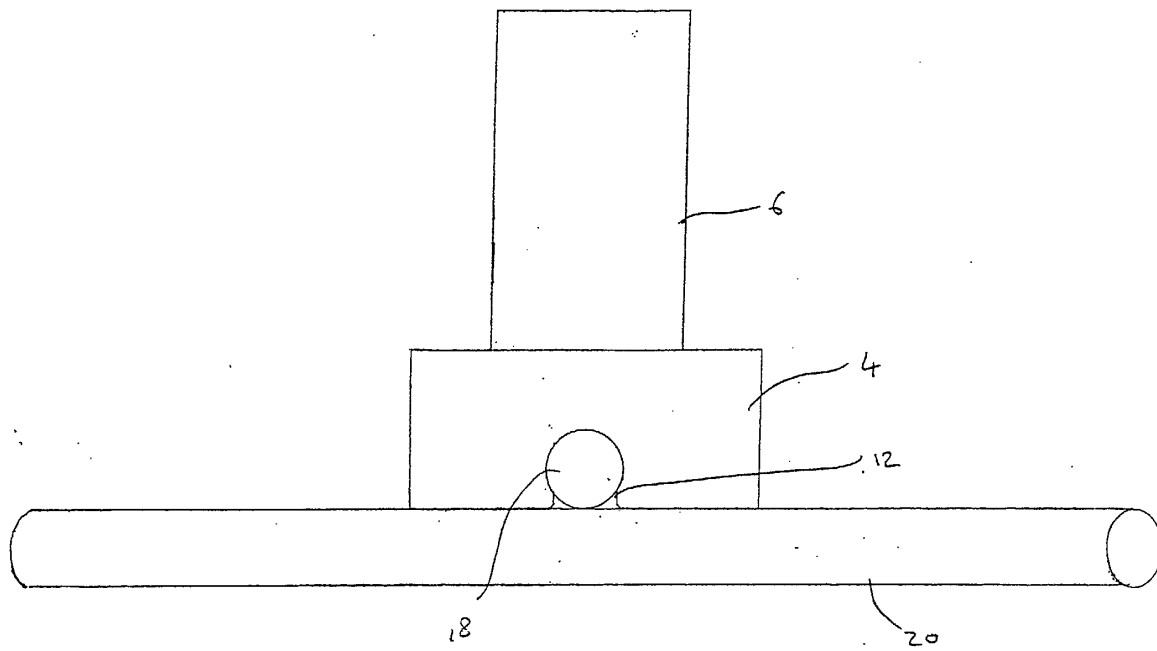


Fig. 4



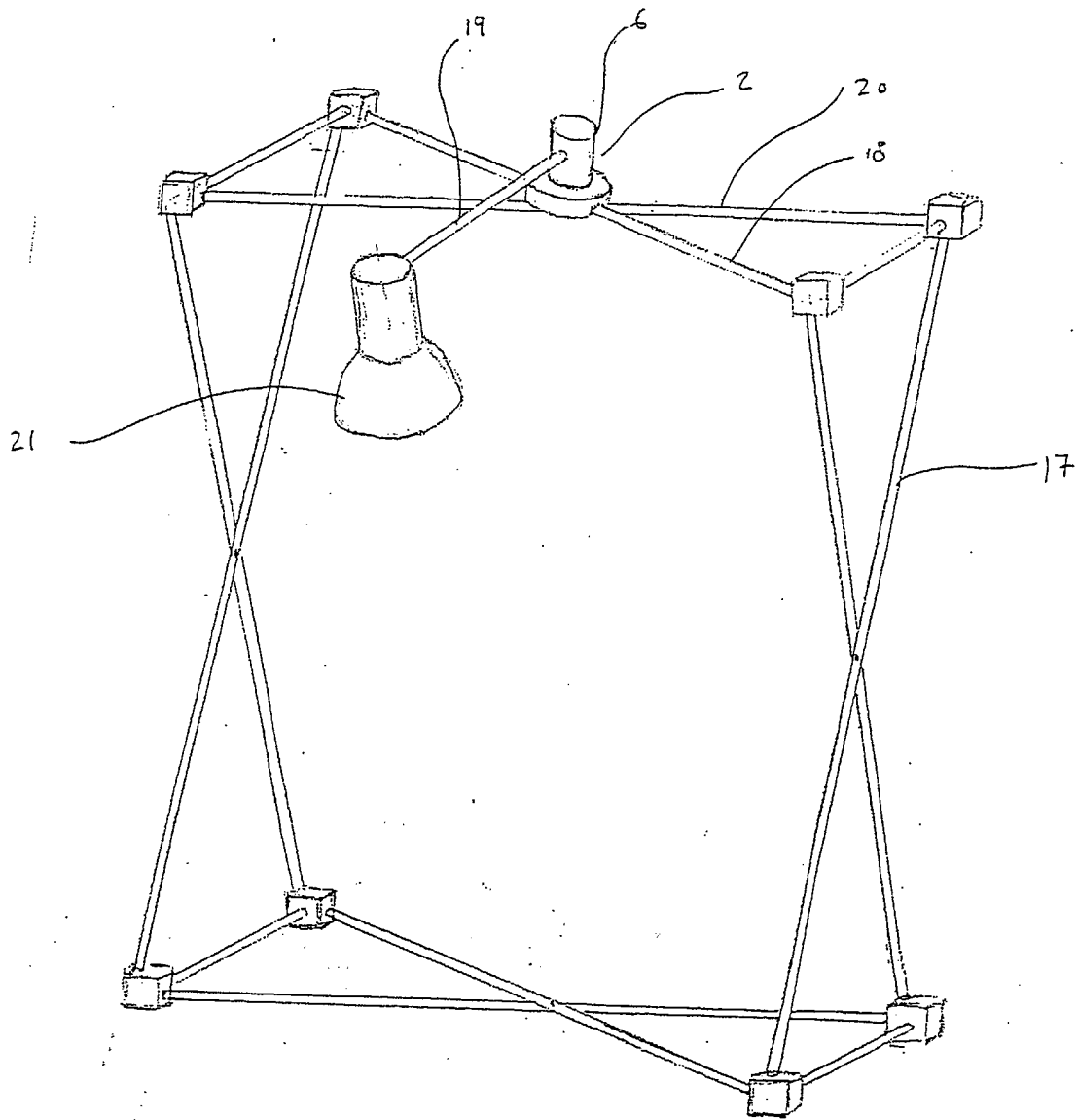


Fig. 7



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EUROPEAN SEARCH REPORT

Application Number
EP 03 25 0599

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	DE 34 04 950 A (HUWIL WERKE GMBH) 14 August 1985 (1985-08-14) * the whole document *	10, 11	A47F5/13 E04H1/12 G09F15/00
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			A47F E04H G09F A47D E04B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 16 May 2003	Examiner Neiller, F
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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