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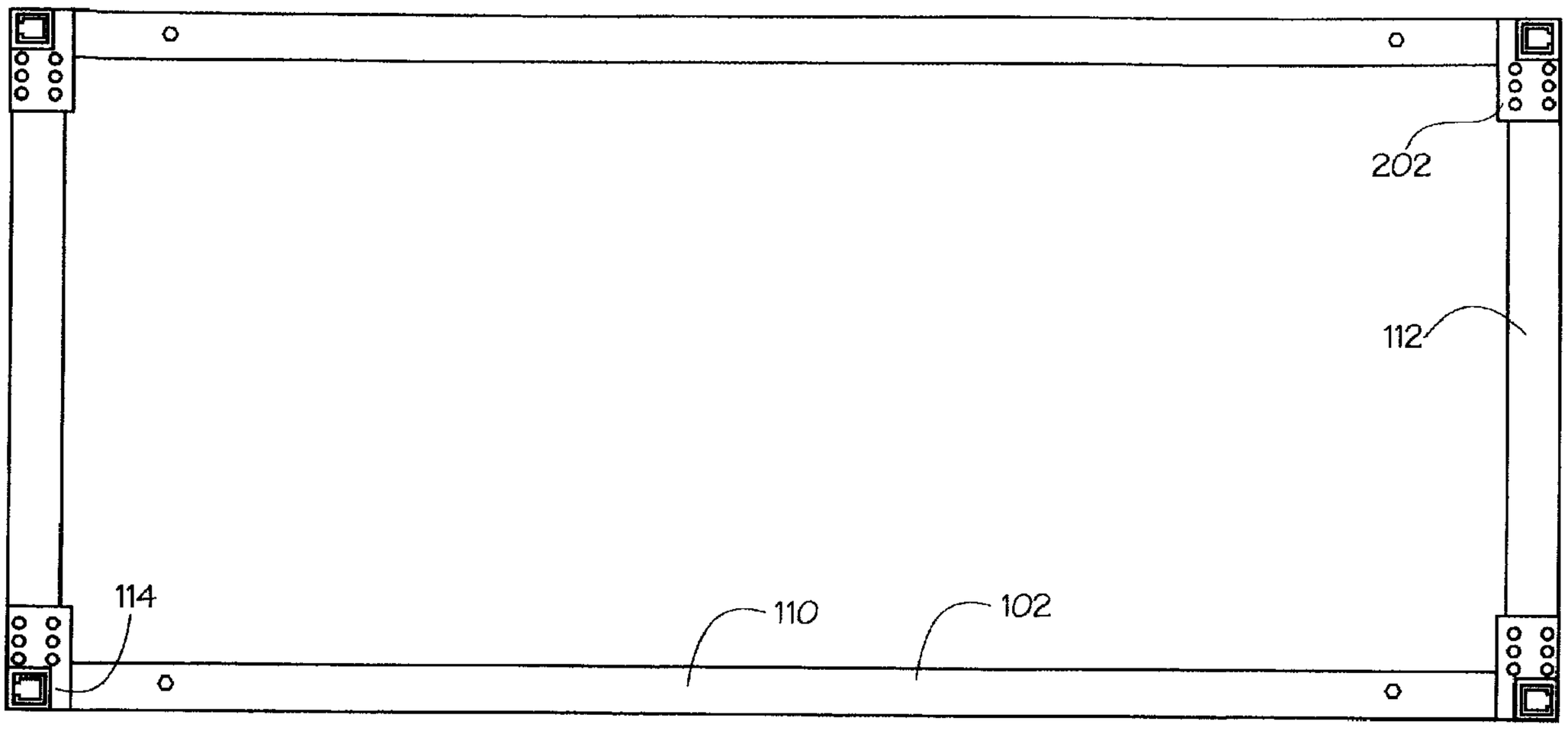
(54) Titre : ETAGERE DE JARDINAGE MODULAIRE PLIANTE
(54) Title: MODULAR COLLAPSIBLE GARDENING RACK



(57) Abrégé/Abstract:
The present device a modular collapsible gardening rack includes a base; vertical uprights demountably attached at one end to the base; cross members demountably attached at each end to the vertical uprights; and a flexible shelf connected at each side to one cross member thereby defining a shelf panel there between. The shelving material includes shelf pockets at preselected pocket spacings, the pockets for connecting the shelf to the cross members by inserting the cross members there through. Preferably in a collapsed position the demounted vertical uprights and the demounted cross members are rolled up inside the flexible shelf and into a storage position.

ABSTRACT

The present device a modular collapsible gardening rack includes a base; vertical uprights demountably attached at one end to the base; cross members demountably attached at each end to the vertical uprights; and a flexible shelf connected at each side to one cross member thereby defining a shelf panel there between. The shelving material includes shelf pockets at preselected pocket spacings, the pockets for connecting the shelf to the cross members by inserting the cross members there through. Preferably in a collapsed position the demounted vertical uprights and the demounted cross members are rolled up inside the flexible shelf and into a storage position.

File No: 1222p1

CANADA

Title: MODULAR COLLAPSIBLE GARDENING RACK

Inventor: Archie Vermeer

MODULAR COLLAPSIBLE GARDENING RACK

[0001] The present application claims priority from previously filed U.S. provisional patent application 61/324,488 titled Modular Collapsible Gardening Rack by Archie Vermeer on April 15, 2010.

Field of the Invention

[0002] The present device relates to gardening racks in particular relate to a modular and collapsible gardening rack that can be used for storage of goods typically sold in gardening centers.

Summary of the Invention

[0003] Currently gardening racks used in the gardening industry are made entirely of steel and are available with or without wheels for being able to roll the gardening rack from one location to the other.

[0004] The base and uprights typically are made of steel as are each individual shelf. Present day gardening racks can be partially disassembled in that the one-piece steel shelves can be removed from the vertical uprights such that one is able to disassemble the current state of the art gardening rack into individual rigid steel shelves as well as a base and vertical uprights for the purpose of transportation.

[0005] The disadvantages of the current state of the art gardening rack are firstly that these racks are extremely heavy in that they are made entirely of steel including the shelf material. The shelf panels are normally made of expanded steel mesh and/or steel plate type material.

[0006] Goods are typically stored onto the shelves of the gardening racks and transported from manufacturing locations and/or warehouse locations to the final retail outlets. Once the goods have been sold by the retailer the empty gardening racks are then partially disassembled and loaded back onto trucks for shipment back to the manufacturing facilities and/or the warehouses.

[0007] Current gardening racks are extremely heavy are not easily collapsible, break down into components which are fairly large and bulky and normally require two or more persons in order to put together the gardening rack and again disassemble the gardening rack.

[0008] There is a need for a gardening rack which is easily collapsible and modular in nature that can be easily assembled and disassembled by a single person which is much lighter in weight and less expensive to manufacture than, the current gardening racks and can be effectively used to store and move about gardening type items.

Brief Description of the Drawings

[0009] With the intention of providing demonstration of the characteristics of the device or method, an example is given below, without any restrictive character whatsoever, with reference to the corresponding figures, of a preferred embodiment of the device and method as follows;

Figure 1 is a top plan view of the base of the modular collapsible gardening rack

Figure 2 is a partial side elevational view of the base together with vertical uprights of the modular collapsible gardening rack

Figure 3 is a schematic perspective view of the base together with vertical uprights mounted thereon.

Figure 4 is a schematic perspective view of the base together with the vertical uprights together with the shelf cross members mounted thereon

Figure 5 is a partial top plan view of a portion of a shelf cross member.

Figure 6 is an end elevational view of the shelf cross member showing it's cross section.

Figure 7 is a side elevational view of a shelf cross member.

Figure 8 is a bottom plan view of a shelf cross member.

Figure 9 is a schematic partial perspective view of a shelf cross member.

Figure 10 is a schematic side perspective view of an entire shelf cross member.

Figure 11 is a schematic perspective view of an assembled modular collapsible gardening rack.

Figure 12 is a cross sectional view of a shelf together with cross members showing a tensed panel.

Figure 13 is a partial side elevational view of a modular collapsible gardening rack together with a plant placed on the tensed panel.

Figure 14 is a cross sectional view of a shelf mounted onto shelf cross members showing a deep panel.

Figure 15 is a partial side elevational view of the modular collapsible gardening rack showing plants resting on the deep panel.

Figure 16 is a cross sectional view of a shelf mounted onto shelf cross members showing a shallow panel.

Figure 17 is a partial cross sectional elevational view of the modular collapsible gardening rack showing a tray together with plants resting on a shallow panel.

Figure 18 is a side schematic perspective view of rolled shelving material.

Figure 19 is a schematic perspective view of a modular collapsible gardening rack together with shelving having end flaps.

Figure 20 is a schematic side perspective view of the base of the modular collapsible gardening rack.

Figure 21 is a schematic perspective view of the shelf cross members and the vertical uprights and the shelf material disassembled from the modular collapsible gardening rack.

Figure 22 is a schematic perspective view showing the vertical uprights the shelf cross members and the shelf material rolled up into a storage position.

Description of the Preferred Embodiments

[00010] Referring to Figure 11 the present device and method a modular collapsible gardening rack shown generally as 100 includes the following major components namely base 102, vertical uprights 104 and shelf 108. Shelf 108 is preferably made of flexible sheet or film material such as plastic or fabric for example.

[00011] Referring now to figures 11, 1 and 2 base 102 includes the following components namely longitudinal frame member 110 transverse frame members 112 bracket flanges 114 wheels 116 and wheel brackets 118.

[00012] Modular collapsible gardening rack 100 can be placed in an assembled position shown generally as 120 in figure 11 and in a collapsed position shown generally as 122 in figures 20, 21 and 22 for example. For clarification in the collapsed position 122 all of the components of the modular collapsible gardening rack 100 are shown in two separate figures namely figure 20 which includes the base 102 and figure 22 which shows the vertical uprights 104, shelf cross members 106, and the shelf 108 in a storage position 130.

[00013] It is apparent from drawings that in collapsed position 122, base 102 of modular collapsible gardening rack 100 is not further disassembled but rather the vertical uprights 104 are removed from base 102 and the shelf cross members 106 and the shelves 108 are also removed from the vertical uprights 104.

[00014] It is possible to disassemble base 102 further however in practice it is seldom done.

[00015] Vertical uprights 104 are manufactured from known sectional steel tubular material, which contains slots 132 for receiving a retainer portion 134 of an end of the shelf cross member 106.

[00016] Referring now to figures 5 through 10 inclusively shelf cross member 106 is preferably made from tubular steel type material of rectangular or square cross section as shown in figures 5 through 11 with each cross member end 138 including a notch 140 defined therein.

[00017] The notch 140 on each cross member end 138 of shelf cross member 106 includes a bearing surface 142 and a retainer portion 134.

[00018] In addition shelf cross member 106 includes a top portion 144 a bottom portion 146 and side portions 148.

[00019] Figure 6 shows the cross section 150 of shelf cross member 106. This is a typical cross section 150 however in practice many other cross sections 150 could also be used.

[00020] Referring now to figure 18 shelf 108 is made of shelving material 160, which preferably can be supplied in roll form shown in figure 18 as rolled shelving material 162. Shelving material 162 may have predefined shelf pockets 164 which are spaced at pocket spacing 166 shown as S1 and shown as 167 S2 in figure 18. In this manner the user could simply unroll rolled shelving material 162 to a predetermined distance and

simply cut off a preselected length of shelving material 160 from rolled shelving material 162 depending upon the width of the modular collapsible gardening rack 100. The shelving material 162 includes shelf pockets 164 at preselected pocket spacings 166, the pockets for connected the shelf 108 to the cross members 106 by inserting the cross members 106 there through.

[00021] Shelf 108 can be placed into either a tensed panel configuration 172 as shown in figure 12 in which the shelf panel 170 is placed under tension prior to placing any weight on the shelf thereby creating a tensed panel 172 as shown in figure 12. One could also select to place the shelf 108 into a deep panel 174 configuration as shown in figure 14 in which the depth D 173 is greater than one inch. One could also select to place the shelf 108 into a shallow panel 176 configuration as shown in figure 16 in which the depth D 173 is less than or equal to one inch.

[00022] Figure 13 shows a plant 180 placed onto a tensed panel 172 wherein there is a minimum of a deflection downwardly of shelf 108. Figure 15 on the other hand shows plants 108 placed into a deep panel 174 having depth D 171 and figure 17 shows a tray 182 placed onto a shallow panel 176 having depth D 173 wherein the tray then houses plants 180 thereon.

[00023] Shelf 108 could further include end flaps 190 as shown in figure 19 which can be placed in the display position shown as 192 in figure 19 and can be placed in an

upright position not shown in figure 19 for transportation of the goods, which are placed upon the shelves 108.

In Use

[00024] Referring first of all to figures 1 through 4, modular collapsible gardening rack 100 is assembled by taking a base 102 and inserting vertical uprights 104 into upright brackets 114 which are attached to base 102 via a bracket flange 202.

[00025] It is possible to disassemble base 102 by removing upright brackets 114 from each corner of base 102 by unbolting bracket flanges 202 from both the transverse frame members 112 and longitudinal frame members 110. In practice however as already indicated base 102 is left assembled since further collapsing of this portion of the modular collapsible gardening rack usually does not provide any further efficiencies.

[00026] Shelf 108 is attached at a first side 121 to a cross member 106 and at a second side 123 to another cross member 106. The material between the cross members 106 is a shelf panel 170. In the case the shelf material 160 is used having predefined shelf pockets 164 two shelf cross members 106 are inserted into individual shelf pockets 164 prior to positioning them onto vertical uprights 104. By selecting pocket spacing S1 and S2 one can choose to have either a tensed panel 172 or a deep panel 174 or a shallow panel 176. With each shelf pocket 164 in position over top of each shelf cross member 106 each shelf cross member 106 is then demountably placed into the desired slot 132 of the respective vertical upright 104.

[00027] Retainer portion 134 of shelf cross member 106 is inserted into slot 132 such that bearing surface 142 comes to rest to the bottom of each slot 132 thereby securely ensuring that shelf cross member 106 is demountably attached to vertical uprights 104. Retainer portion 134 of shelf cross member 106 prevents accidental removal of the shelf cross members 106 from vertical uprights 104.

[00028] Once the modular collapsible gardening rack 100 has been assembled one can place plants 180 and/or trays 182 containing plants 180 onto each of the shelves 108 of modular collapsible gardening rack 100.

[00029] One can select to have a number of different shelves 108 at various elevations thereby one can take advantage of all of the space circumscribed by the modular collapsible gardening rack 100. For example it may be desirable to have a deep panel 174 shelf near the bottom of modular collapsible gardening rack 100 and shallow panel 176 shelves 108 and/or tensed panel 172 shelves 108 approximate the upper portion of modular collapsible gardening rack in order to take advantage of all the space available on modular collapsible gardening rack 100.

[00030] In order to collapse modular collapsible gardening rack 100 the reverse of the assembly procedure is performed. Firstly shelf cross members are demounted from the vertical uprights 104 by slightly raising or lifting each shelf cross member end 138 such

that retainer portion 134 is clear of each slot 132 and can be easily removed from slot 132.

[00031] Once shelves 108 are removed thereafter, vertical uprights 104 can be slideably removed from each upright bracket 114.

[00032] Disassembled components are shown in figure 20 and 21. In figure 20 is depicted base102 in figure 21 is depicted 4 vertical uprights 104 and two shelf cross members 106 and one shelf 108.

[00033] In figure 22 the suggested storage position 130 is wherein the vertical uprights 104 and the shelf cross members 106 are rolled inside of shelf 108 as depicted in figure 22 schematically.

[00034] The shelving material 160 can be selected from a wide variety of materials that are flexible in nature. For example plastics, fabrics, reinforced flexible sheet materials can be used for shelving material 160. The shelving material 160 will be selected depending upon the strength requirements of the shelf. The advantages of using flexible material is among others the savings in weight, the ease of use, the reduction in collapsed size and the reduced cost to name a few.

[00035] It should be apparent to persons skilled in the art of various modification and adaptations of the structure described above are possible without departure from the spirit of the invention the scope of which is defined in the appended claims.

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED IS DEFINED AS FOLLOWS:

1. A modular collapsible gardening rack comprising:

a) a base;

b) vertical uprights demountably attached at one end to the base;

c) cross members demountably attached at each end to the vertical uprights;

d) a flexible shelf connected at each side to one cross member thereby defining a shelf panel there between;

e) wherein the shelving material includes shelf pockets at preselected pocket spacings, the pockets for connecting the shelf to the cross members by inserting the cross members there through.

2. The modular collapsible gardening rack claimed in claim 1 such that in a collapsed position the demounted vertical uprights and the demounted cross members are rolled up inside the flexible shelf and into a storage position.

3. The modular collapsible gardening rack claimed in claim 1 wherein the pocket spacing is selected to provide a tensed panel when the shelf is mounted onto the cross members.

4. The modular collapsible gardening rack claimed in claim 1 wherein the pocket spacing is selected to provide a deep panel when the shelf is mounted onto the cross members.

5. The modular collapsible gardening rack claimed in claim 1 wherein the pocket spacing is selected to provide a shallow panel when the shelf is mounted onto the cross members.

6. The modular collapsible gardening rack claimed in claim 1 wherein vertical uprights including numerous slots for connecting the cross member thereto by receiving cross member ends therein and thereby preselecting the height of the cross member.

7. The modular collapsible gardening rack claimed in claim 7 wherein the cross member ends including a notch and a retainer portion for demountably attaching the cross member end into a slot of the vertical upright.

8. The modular collapsible gardening rack claimed in claim 1 wherein the base including wheels for rollably moving the cart.

9. The modular collapsible gardening rack claimed in claim 1 wherein the base further including longitudinal members and transverse members connected with

uprights brackets, the upright brackets for receiving one end of the vertical uprights therein.

10. In combination a modular collapsible gardening rack and rolled shelving material, the combination comprising:

a) a base;

b) vertical uprights demountably attached at one end to the base;

c) cross members demountably attached at each end to the vertical uprights;

d) a flexible shelf cut from the rolled shelving material at a preselected length, the shelf connected at each side to one cross member thereby defining a shelf panel there between;

e) wherein the shelving material includes shelf pockets at preselected pocket spacings, the pockets for connecting the shelf to the cross members by inserting the cross members there through.

11. The combination claimed in claim 12 such that in a collapsed position the demounted vertical uprights and the demounted cross members are rolled up inside the flexible shelf and into a storage position.

12. The combination claimed in claim 1 wherein the pocket spacing is selected to provide a tensed panel when the shelf is mounted onto the cross members.

13. The combination claimed in claim 1 wherein the pocket spacing is selected to provide a deep panel when the shelf is mounted onto the cross members.

14. The combination claimed in claim 1 wherein the pocket spacing is selected to provide a shallow panel when the shelf is mounted onto the cross members.

15. A modular collapsible gardening rack comprising:

a) a modular collapsible gardening rack moveable between a collapsed position and an assembled position wherein in the assembled position the rack includes:

b) a base;

c) vertical uprights demountably attached at one end to the base;

d) cross members demountably attached at each end to the vertical uprights;

e) a flexible shelf connected at each side to one cross member thereby defining a shelf panel there between;

f) wherein in the collapsed position the vertical uprights and the cross members together with the flexible shelf are demounted and rolled up into the shelf into a storage position.

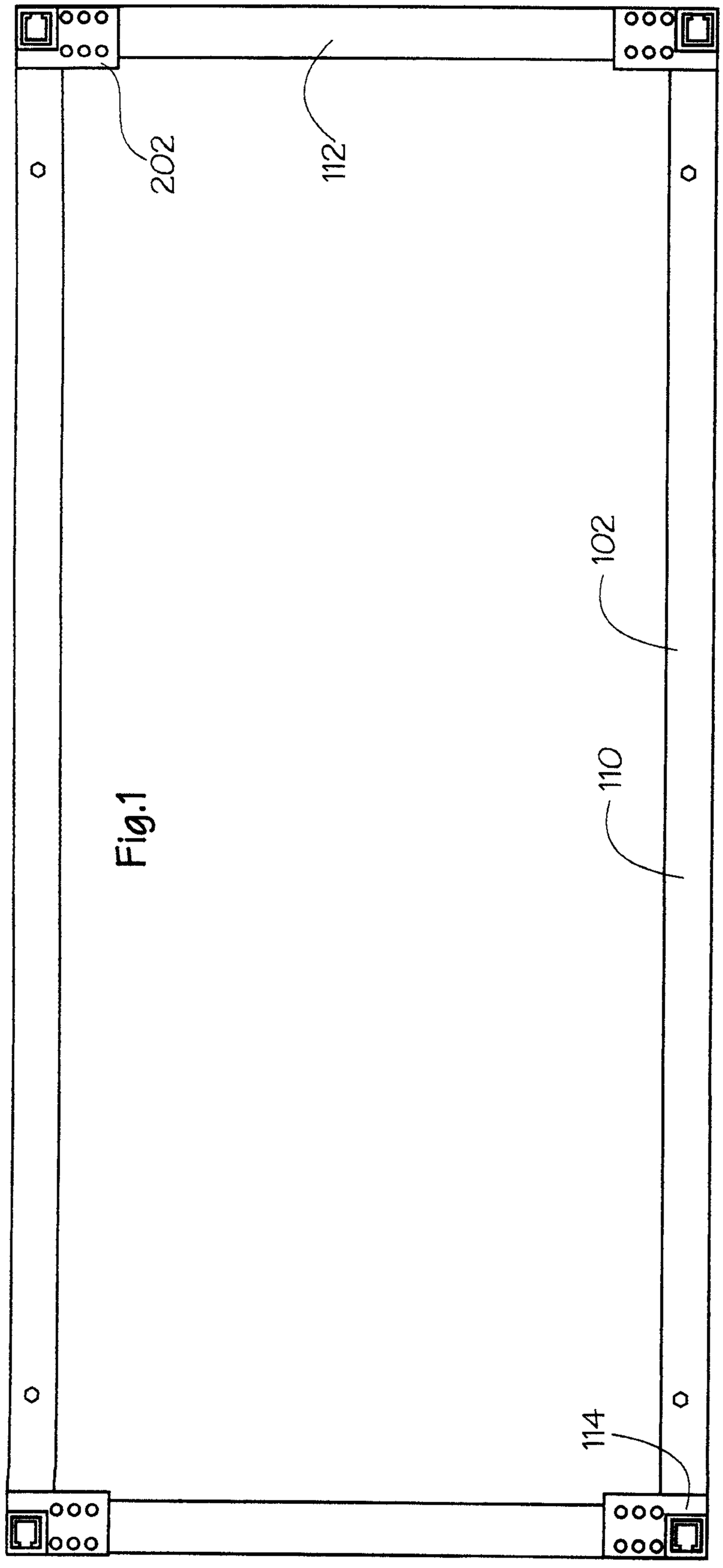


Fig.1

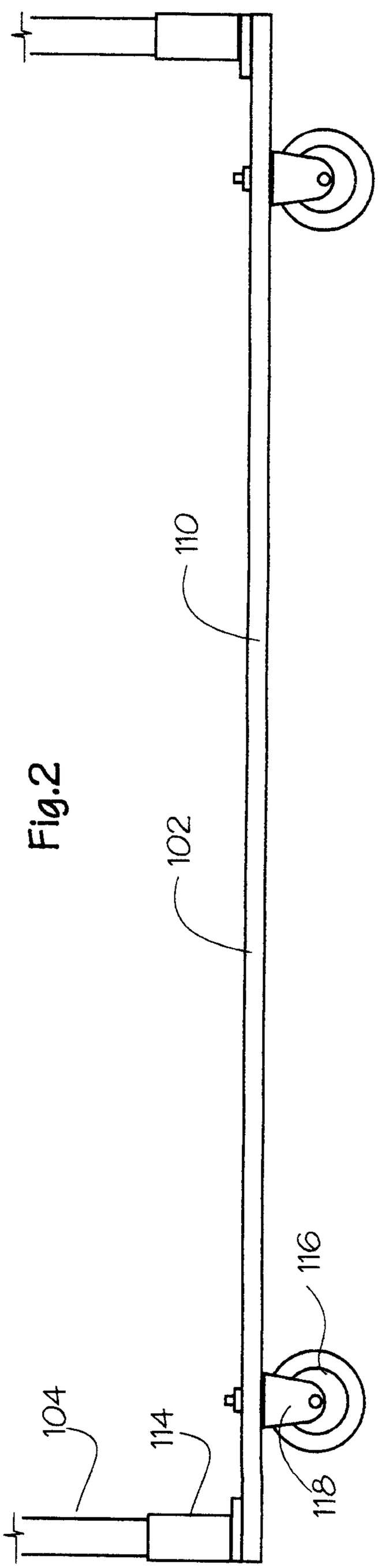


Fig.2

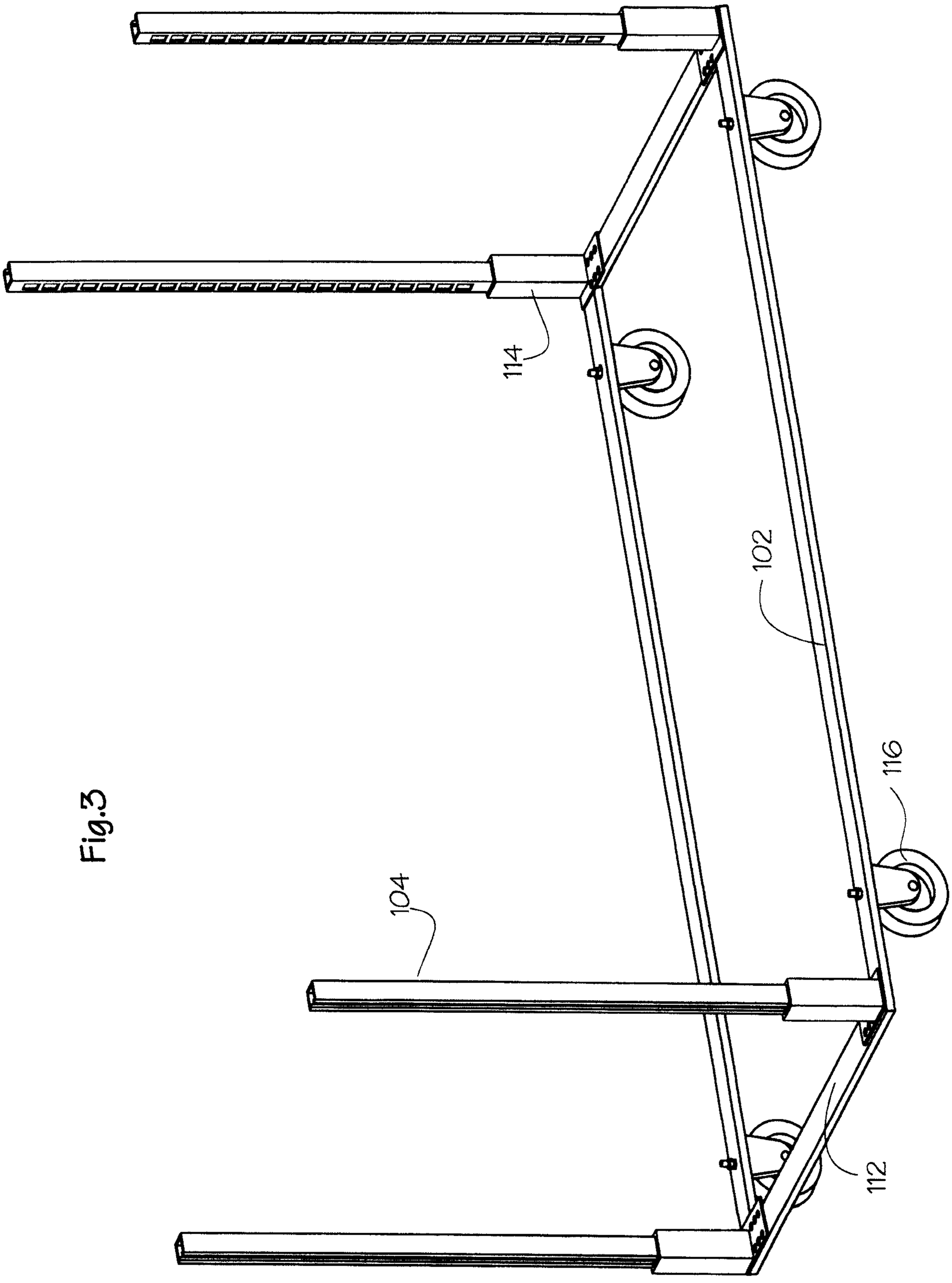


Fig.3

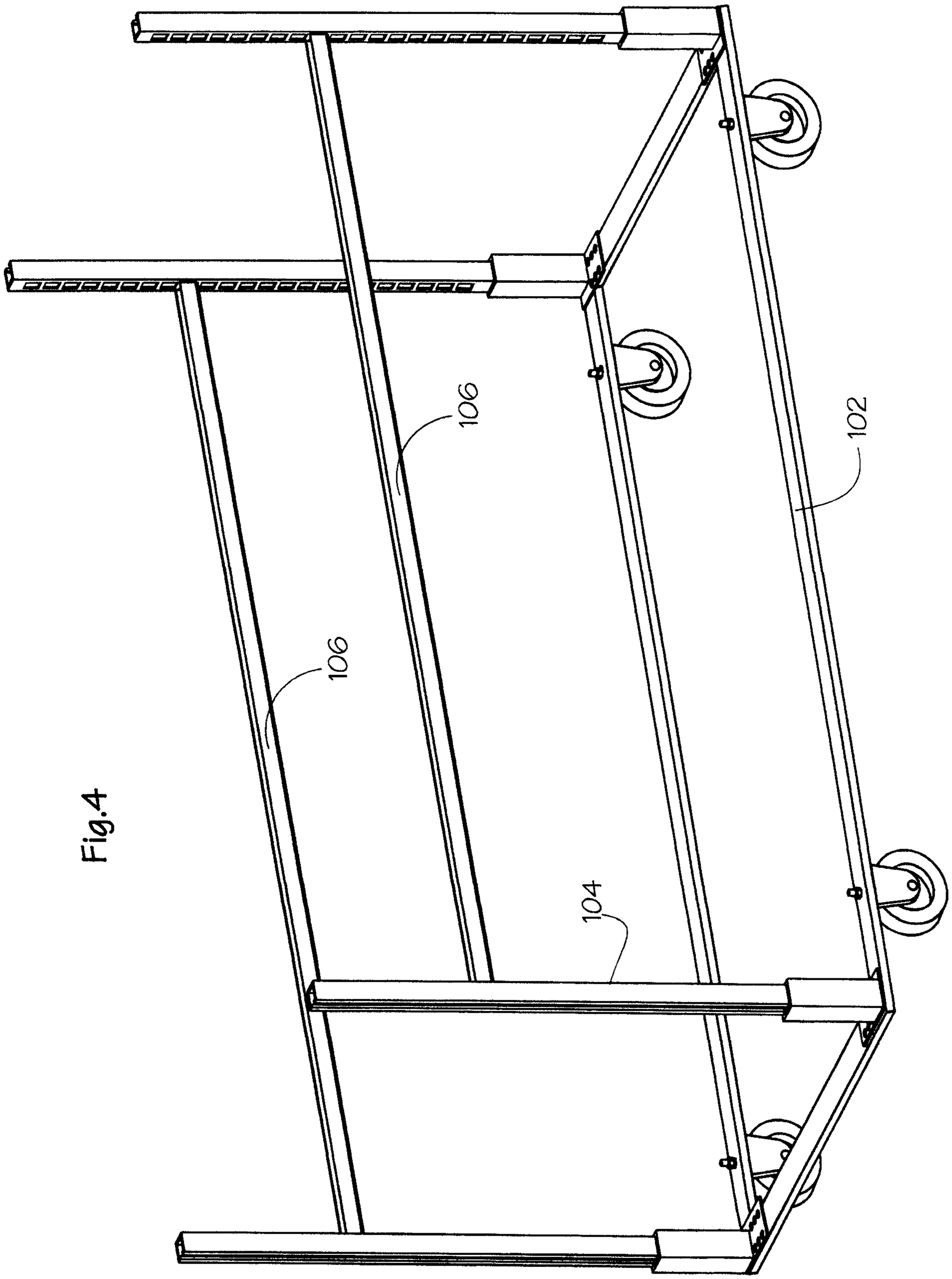


Fig.4

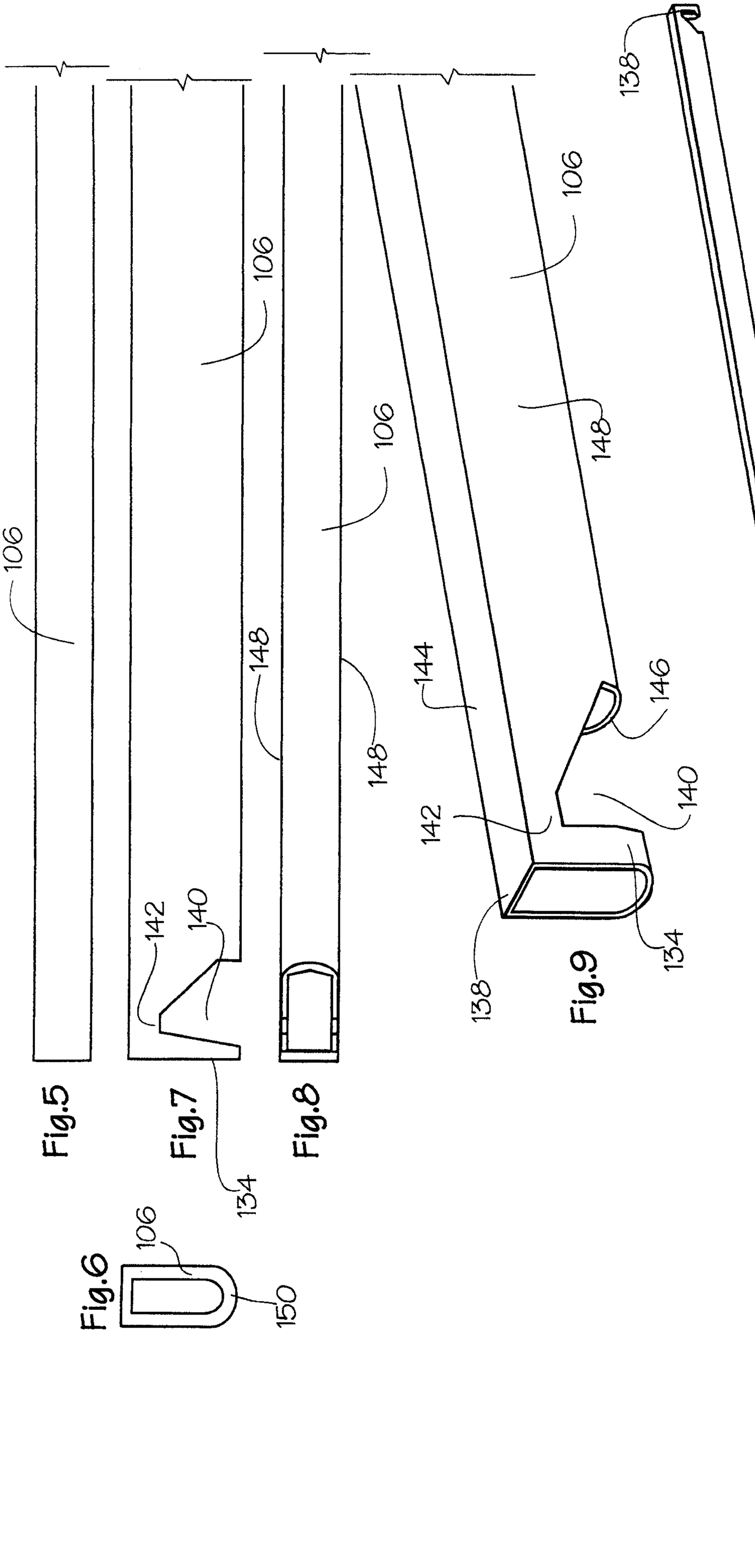


Fig.5

Fig.7

Fig.8

Fig.9

Fig.10

Fig.6

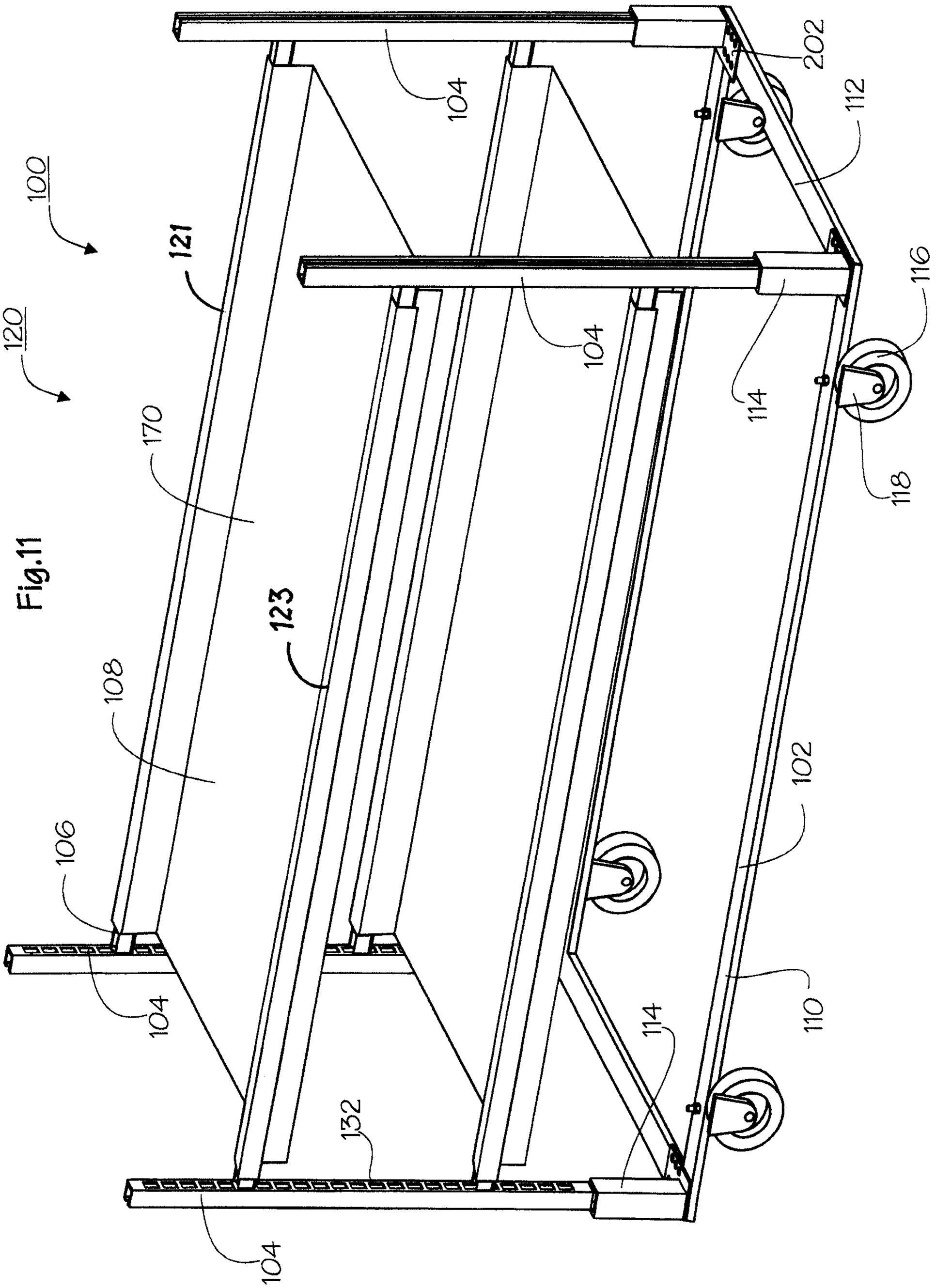


Fig.11

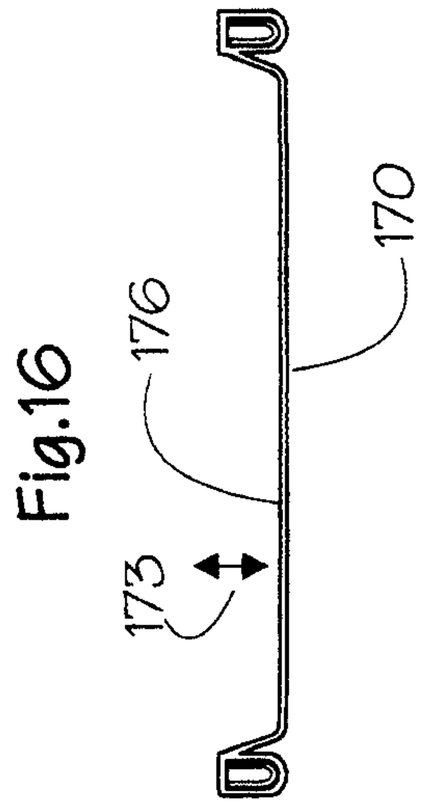


Fig.16

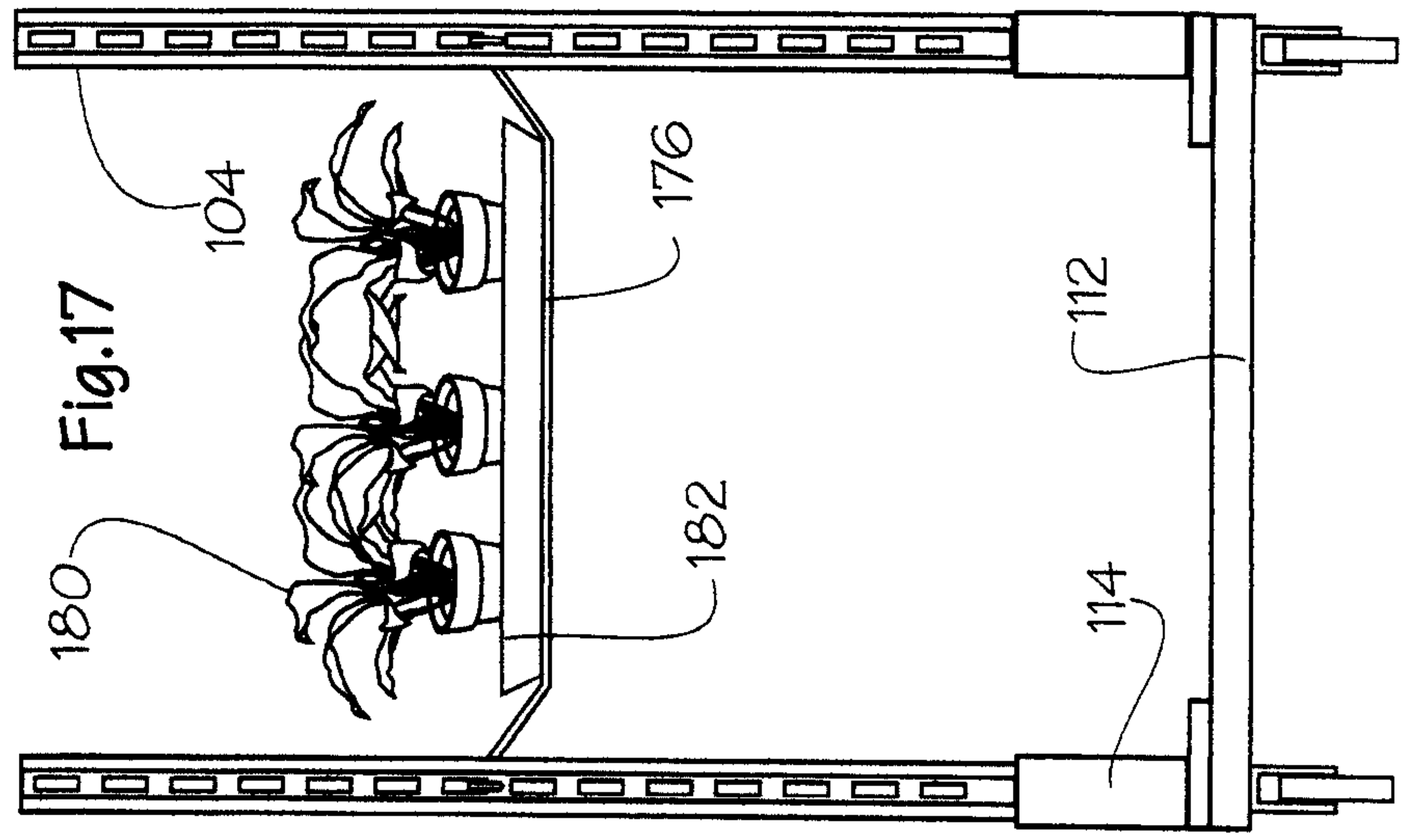


Fig.17

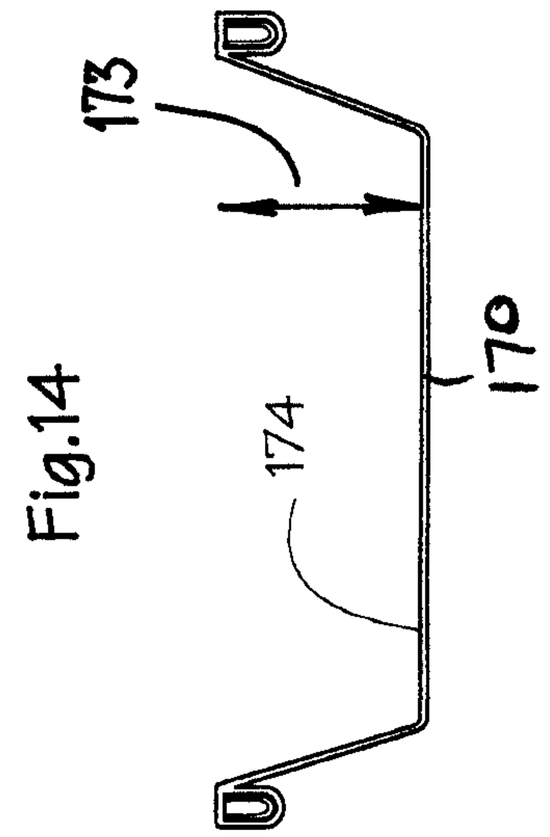


Fig.14

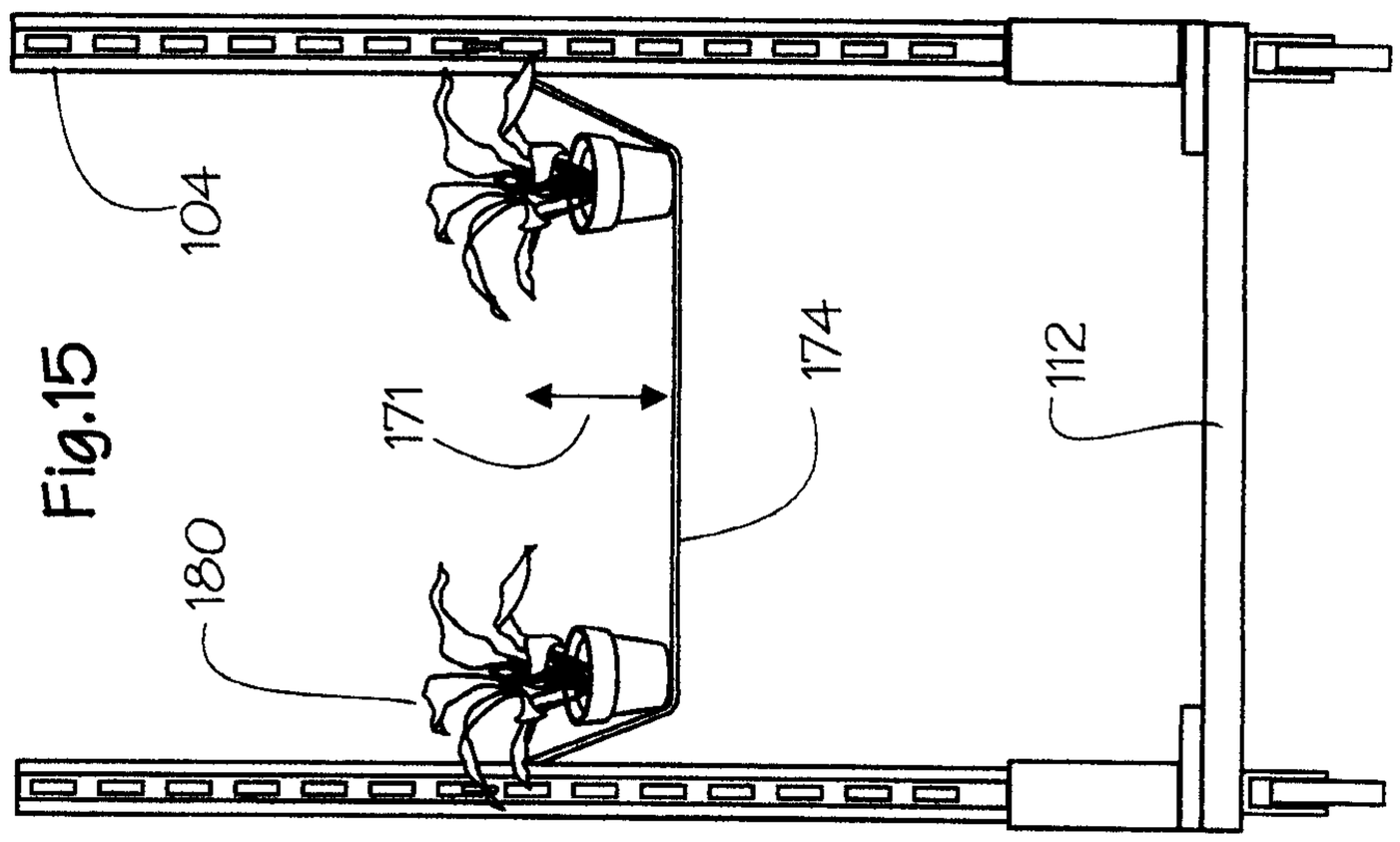


Fig.15

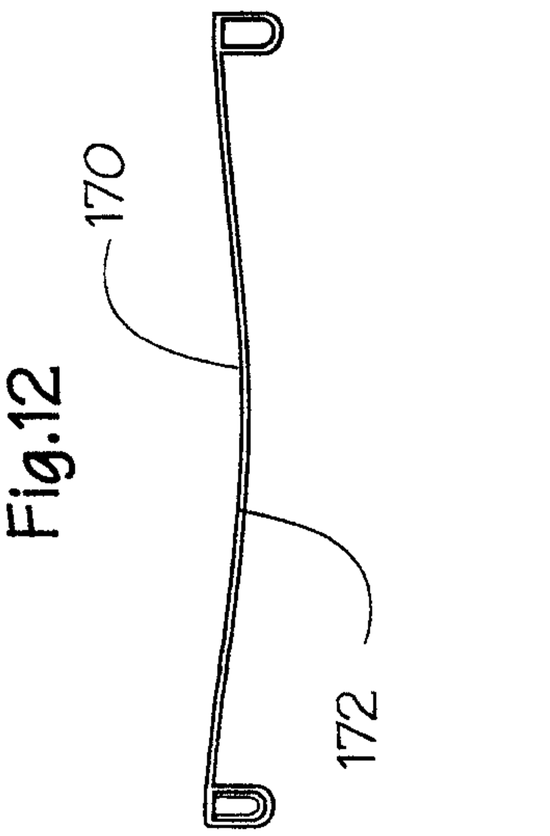


Fig.12

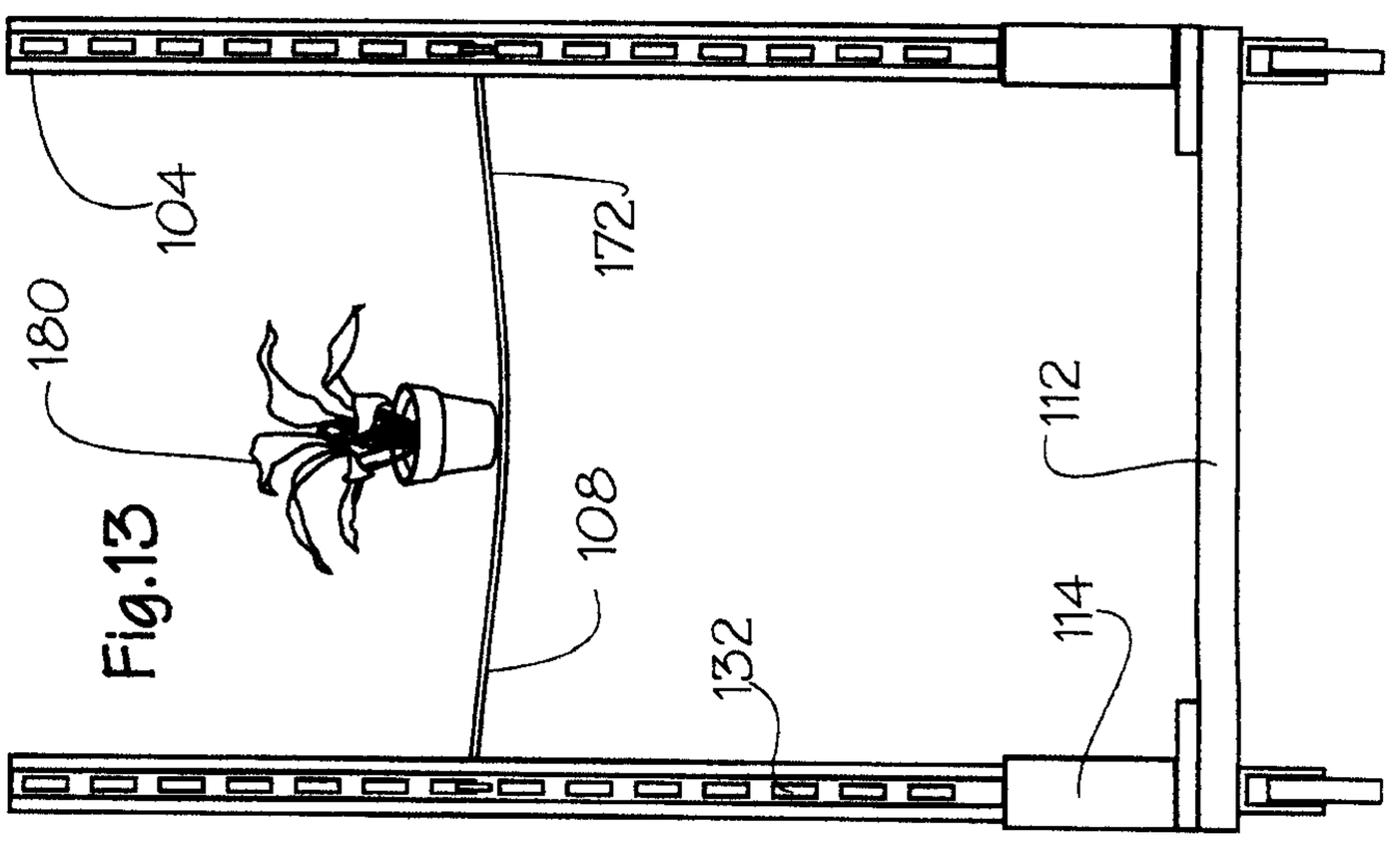


Fig.13

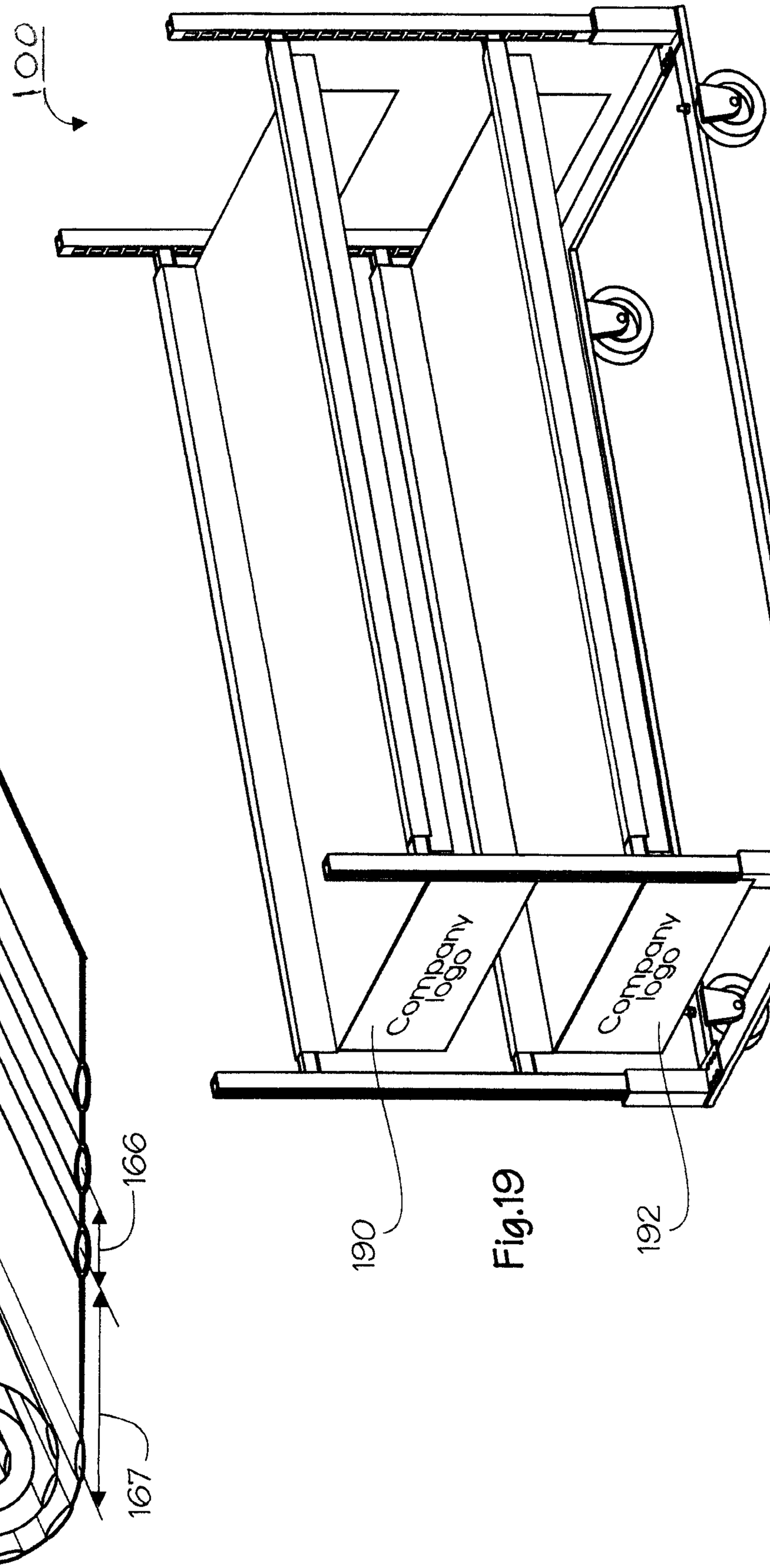


Fig.18

Fig.19

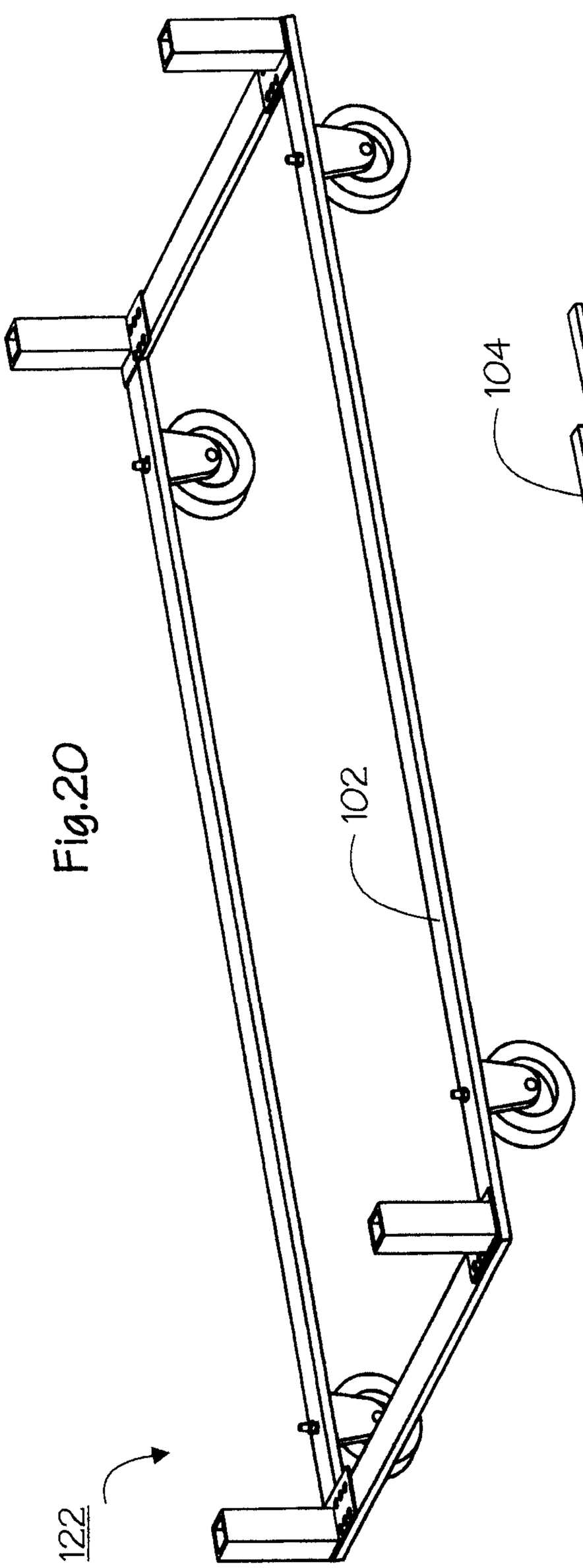


Fig.20

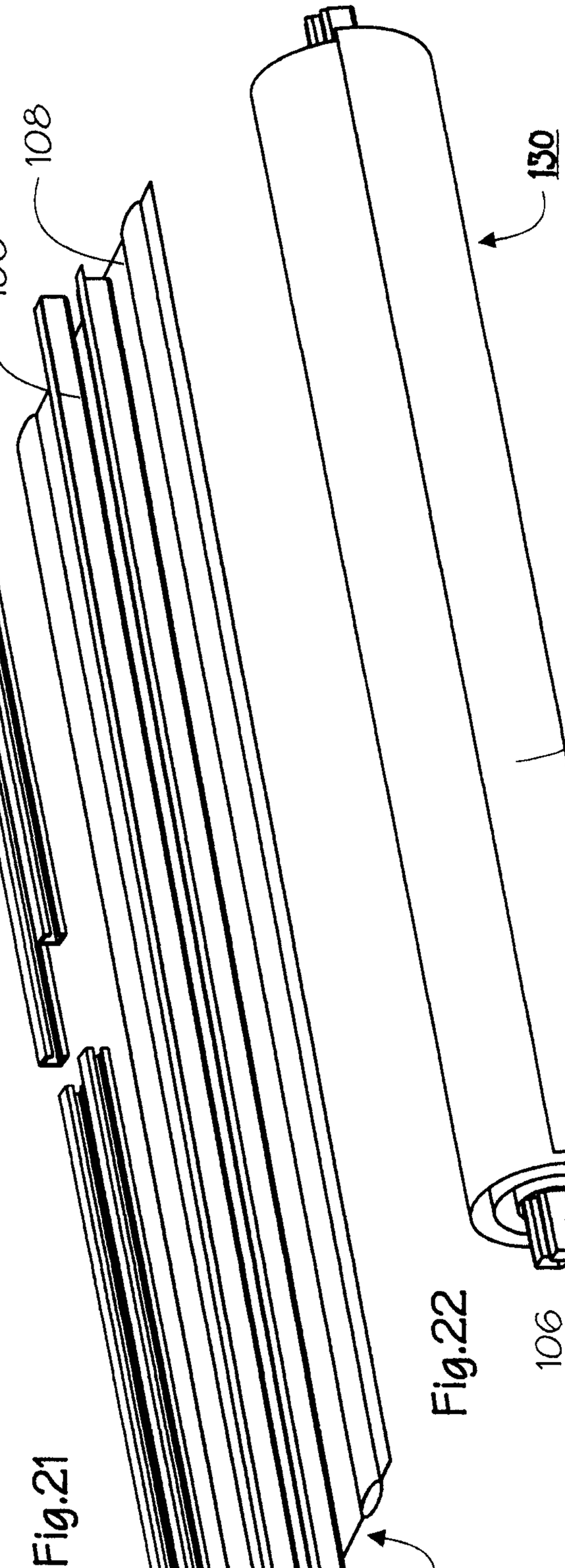


Fig.21

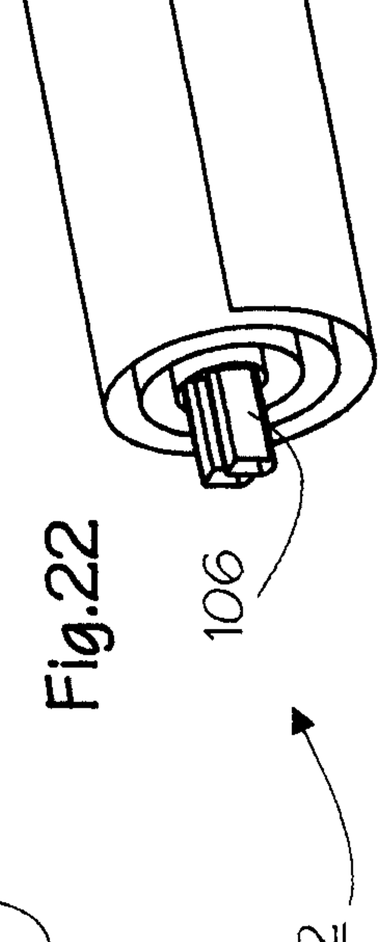
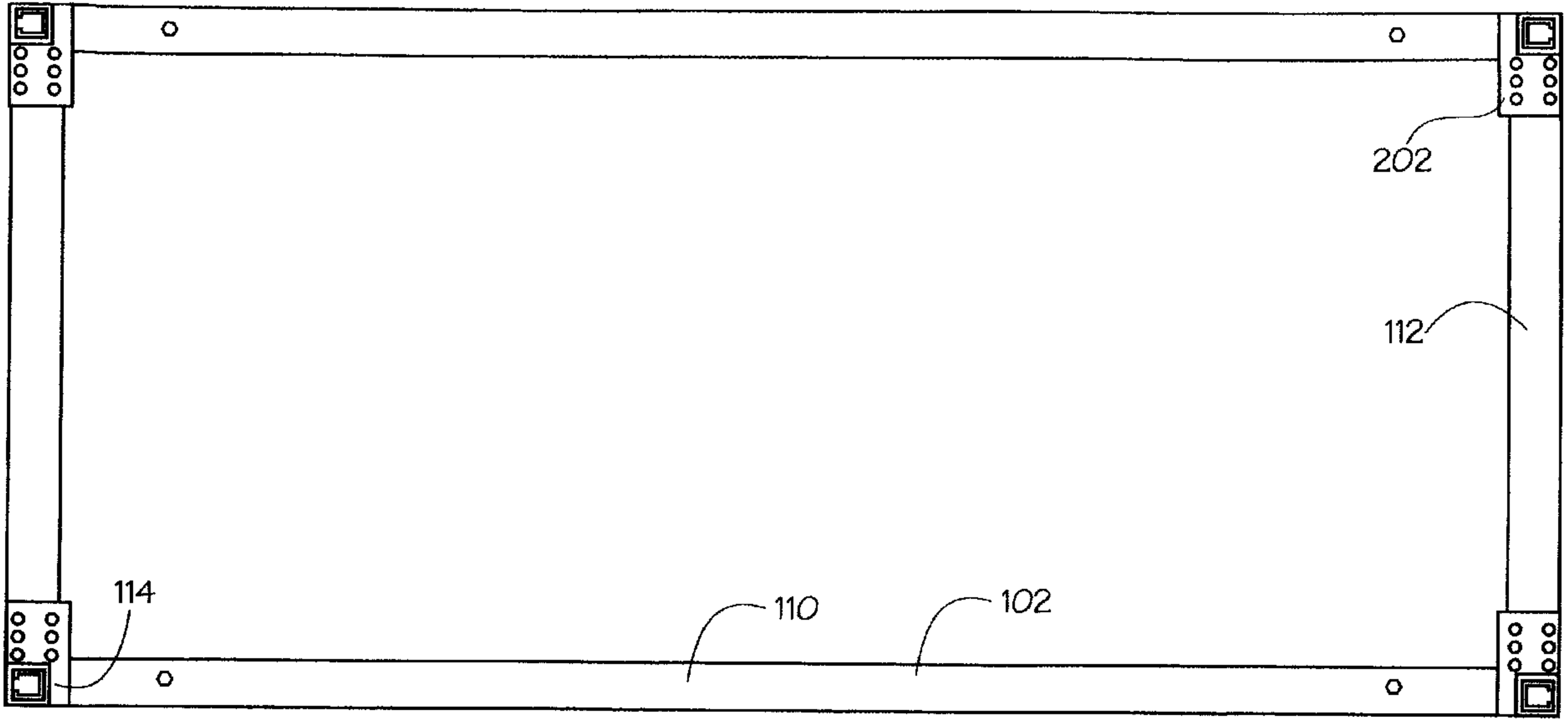


Fig.22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