(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 0 911 292 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
28.04.1999 Bulletin 1999/17

(51) Int. Cl.[6]: **B65H 75/40**, B65H 75/22

(21) Application number: **98115698.7**

(22) Date of filing: **20.08.1998**

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **23.10.1997 IT PN970041 U**

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(54) Irrigation hose winding cart

(57) Irrigation hose winding cart constituted by a minimum number of component parts that are preferably made of moulded plastic material and adapted to be snap-fitted together.

A single U-shaped support member (12) ensures the connection of the handlebar member (10) with the base member (11) and supports both the spool (13) and the wheels (16) of the cart.

The construction and the assembly of the cart are in this way made simpler, more convenient and cost-effective.

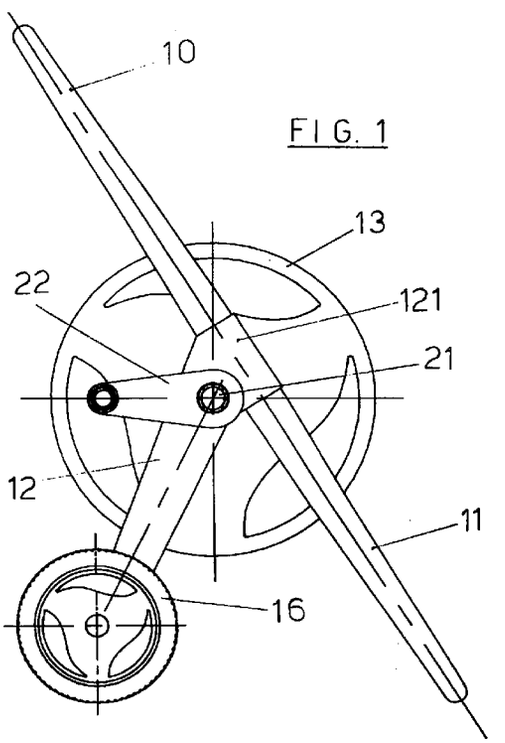

FIG. 1

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Description

[0001] The present invention refers to an irrigation hose winding cart, in particular for garden and lawn watering applications.

[0002] More specifically, the present invention refers to a hose winding cart which is substantially made of plastic material and is formed by a minimum number of component parts that are mouldable and assemblable in a simple and convenient manner.

[0003] The EP 0 243 884 publication discloses a hose winding cart concept in which most component parts are made of moulded plastic material and all such component parts are assemblable together by means of snap-fitting or press-fitting connection means. However, the hose winding cart according to such patent calls for the use of a number of component parts, among which a handlebar member and a base member, which are made of metal and are different from each other in their shape. Furthermore, the wheels are mounted at the end portions of a transversal bar, which is joined to the base member by welding, and the spool is made of two half-spools, each one of them integral with the respective side flange. The result of such a construction is that the hose winding cart according to the above cited patent requires extensive, complex and differentiated processing; in addition, it turns out to be rather bulky, ie. encumbering, in transport and storage.

[0004] It therefore is a main purpose of the present invention to provide an irrigation hose winding cart which is made up by a minimum number of component parts, all of which being preferably obtained by moulded plastic parts and are capable of being assembled together by snap-fitting or similar connection means.

[0005] A further proposal within the scope of the present invention is that the plastic parts that make up the hose winding cart are obtained with the use of the lowest possible number of moulds, from which said moulded parts should come out in clusters and connected to each other by means of elements that are easily broken when the cart is assembled.

[0006] In view of complying with particular needs or requirements the handlebar member and the base member of the cart may still be made of metal. However, in order to be able to reach one of the aims of the present invention, ie. the reduction in the number of component parts, said members shall be similar in both their shape and size.

[0007] According to the present invention, these and further aims are reached in an irrigation hose winding cart having the features and characteristics as recited in the appended claims.

[0008] The invention will anyway be more readily and clearly understood in its characteristics and advantages from the description that is given below by way of non-limiting example with reference to the accompanying drawings, in which

- Figure 1 is a side view of an irrigation hose winding cart according to the invention;
- Figure 2 is a front, partially sectional view of the irrigation hose winding cart illustrated in Figure 1;
- Figures 3 and 4 are views of the component parts making up the hose winding cart illustrated in Figure 1, so as they show up when removed from their production moulds.

[0009] The hose winding cart according to the present invention (Figures 1 and 2) has a structure which is substantially constituted by:

- a handlebar member 10 and a base member 11, which are similar to each other in both their shape and size;
- a support member 12 which connects the end portions of the handlebar member with the respective end portions of the base member by means of side coupling means 121;
- a hose winding spool 13, formed by two appropriately shaped cylindrical half-spools 14 and two side flanges 15 and is rotatably hinged on two studs 20 and 21; and
- two wheels 16 to enable the cart to move on the ground.

[0010] The handlebar member 10 and the base member 11 are substantially in the shape of a U with an internal cross-bar 17 provided for stiffening. In a preferred manner, these members are made of plastic material in the same way as all other component parts making up the hose winding cart. In particular circumstances, however, said handlebar member and base member may still be made of metal, provided that they keep being similar to each other as far as both their size and shape are concerned.

[0011] Also the support element 12 is substantially in the shape of a U, whose lower transverse leg, however, has extensions 25 on both sides for the attachment, by means of a snap-fitting connection, of the wheels 16. Both upper free ends of the support member 12 are provided with a through-hole that forms the seat accomodating the side coupling means 121 for the corresponding end portions of the handlebar member 10 and the base member 11.

[0012] The support member 12 is further provided, near each one of the upper free ends thereof, with a further through-hole 19, whose axis extends orthogonally with respect to the axis of the corresponding side coupling means 121. The through-holes 19 are aligned axially and serve the purpose of respectively accomodating the hollow stud 20 of the spool 13,

adapted to ensure connection with the water hoses (not shown), and enabling the solid stud 21 of a handle 22, provided to rotatably actuate the hose winding spool 13, to be inserted therein.

[0013] The hose winding cart according to the present invention is therefore made up by an extremely reduced number of basic parts, without of course neglecting all further advantages that are essentially aimed at with such a construction, ie. the possibility of reducing also the number of moulds required to produce the parts making up the cart, as well as reducing the size, ie. the space requirements of the cart when packaged for storage and transport.

[0014] In fact, as this is most clearly shown in Figures 3 and 4, all component parts used to build the cart can be moulded in clusters, ie. appropriately joined together.

[0015] For instance, as it can be seen in Figure 3, a number of parts, such as the handlebar member 10 (or the base member, which is similar to the handlebar element), a half-spool 14 and a flange 15 of the spool, as well as a wheel 16, can all be obtained with a single mould in a single moulding operation. It will of course be appreciated that, if it must be made of metal, the handlebar member (or the base member) will on the contrary be produced separately.

[0016] Figure 4 on the other hand illustrates how it is possible to obtain the support member 12, the stud 20 and the handle 22 with the stud 21 out of a second single mould.

[0017] The component parts that come in this way out of a single mould in a clustered form are connected to each other by means of plastic strips or tangs 30 that enable the assembly to keep its unitary character, according to a generally known moulding method that is largely used in other technical fields. As a result, the so produced assemblies can be packaged in a very simple, convenient and compact manner for storage and transport.

[0018] The moulding process itself can of course be either the traditional injection moulding one or the so-called gas-assisted injection moulding method, the latter enabling actually more strong parts to be produced with differing aesthetics.

[0019] When a so packaged cart is then bought, the user can most easily and conveniently separate the various parts from each other, by breaking off the connection strips 30, and then assemble the various component parts of the cart by snap-fitting them together.

Claims

1. Irrigation hose winding cart, whose structure essentially comprises a handlebar member (10) and a base member (11), the respective end portions of which are connected to each other by means of two side coupling means (121), a spool (13), which is constituted by two half-spools (14) and two flange elements (15) as is mounted rotatably on studs (20, 21), and two wheels (16) enabling it to move on the ground, said component parts being connectable to each other by means of snap-fitting means so as to assemble the cart at the moment of its actual use, **characterized in that** the handlebar member (10) and the base member (11) are similar in both their shape and size and the two side coupling means (121) are provided at the end portions of a single U-shaped support member (12), which is further provided with seats to accomodate the studs (20, 21) for the rotation of the spool (13) and with means for rotatably attaching the wheels (16) thereto.

2. Irrigation hose winding cart according to claim 1, **characterized in that** the seats (18, 19) for the studs (20, 21) supporting the spool (13) are formed by two through-holes provided near the end portions of the support member (12), said through-holes having their axes aligned and orthogonal to those of said side coupling means (121).

3. Irrigation hose winding cart according to claim 1 or 2, **characterized in that** the means for rotatably attaching the wheels (16) are constituted by respective side extensions (25) of the transversal leg of the U-shaped support member (12), said extensions (25) being provided with snap-fitting coupling means for the attachment of the wheels.

4. Irrigation hose winding cart according to any of the preceding claims 1 to 3, **characterized in that** the spool (13) is mounted rotatably on a hollow stud (20), to which the water hoses are connected, and on a solid stud (21) which is firmly joined with a handle (22) for rotatably actuating the spool.

5. Irrigation hose winding cart according to any of the preceding claims, **characterized in that** said component parts making up the cart, with the possible exception of the handlebar member (10) and the base mem,ber (11), are of plastic material moulded in clusters, wherein they are connected to each other by means of strips (30) that are broken off when the cart is actually assembled for use.

FIG. 1

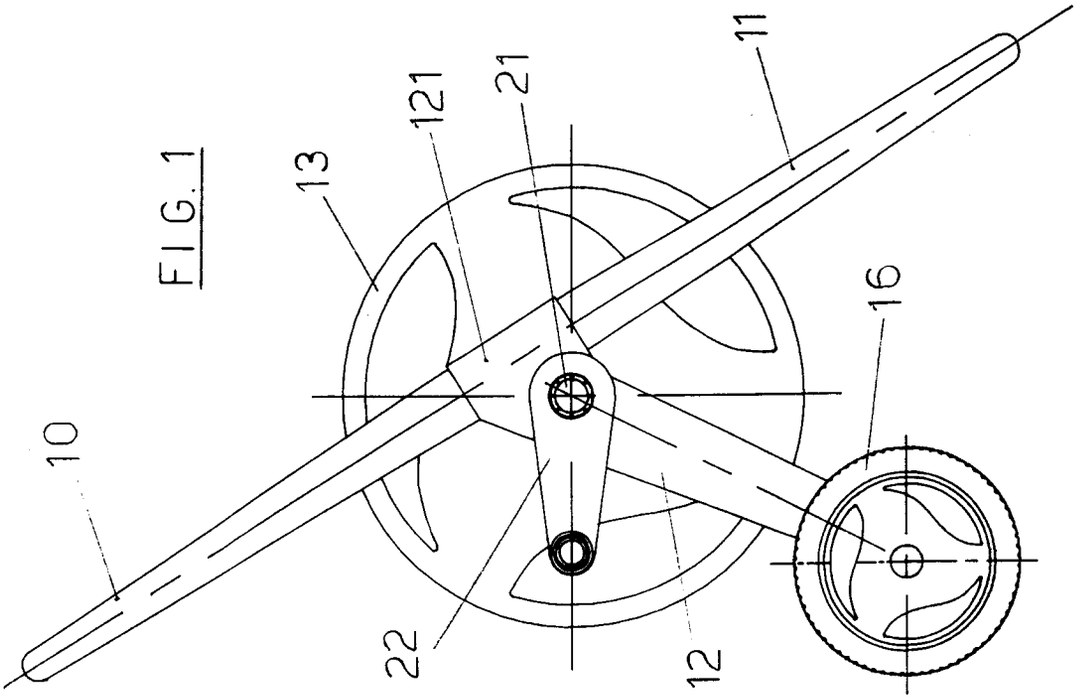
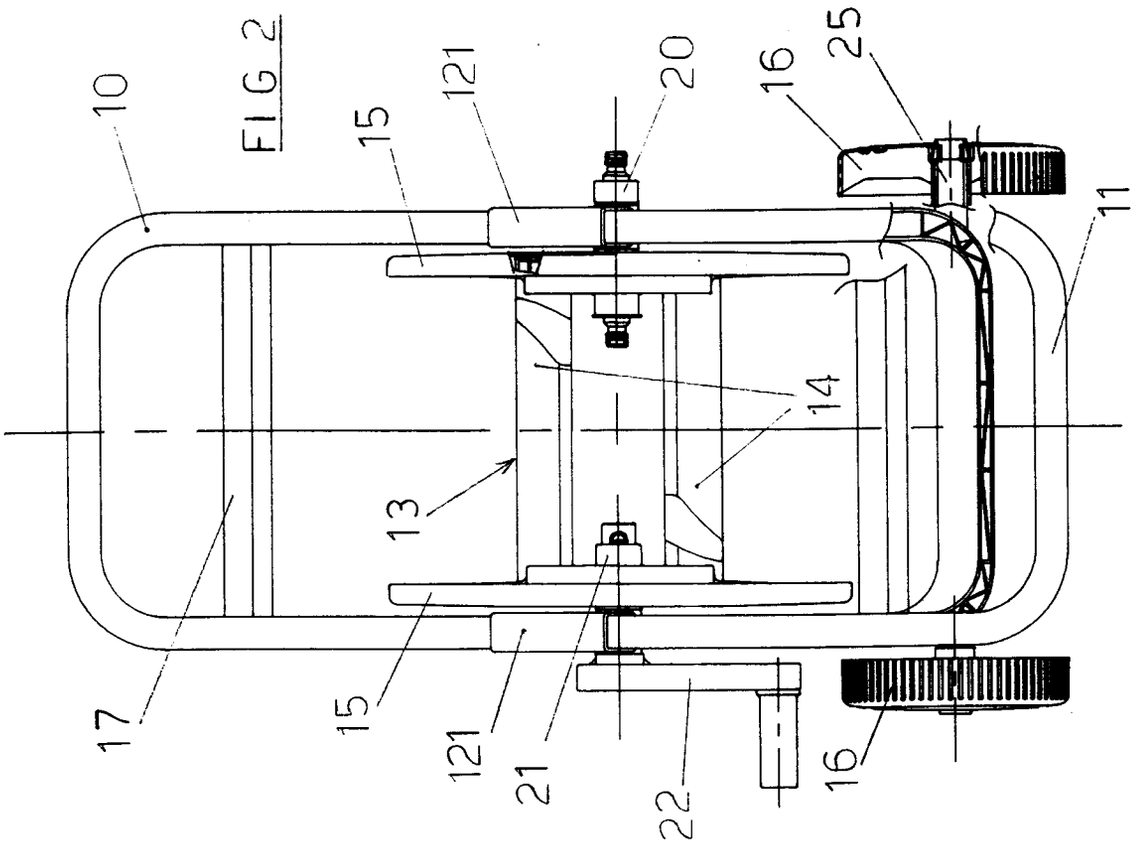


FIG 2



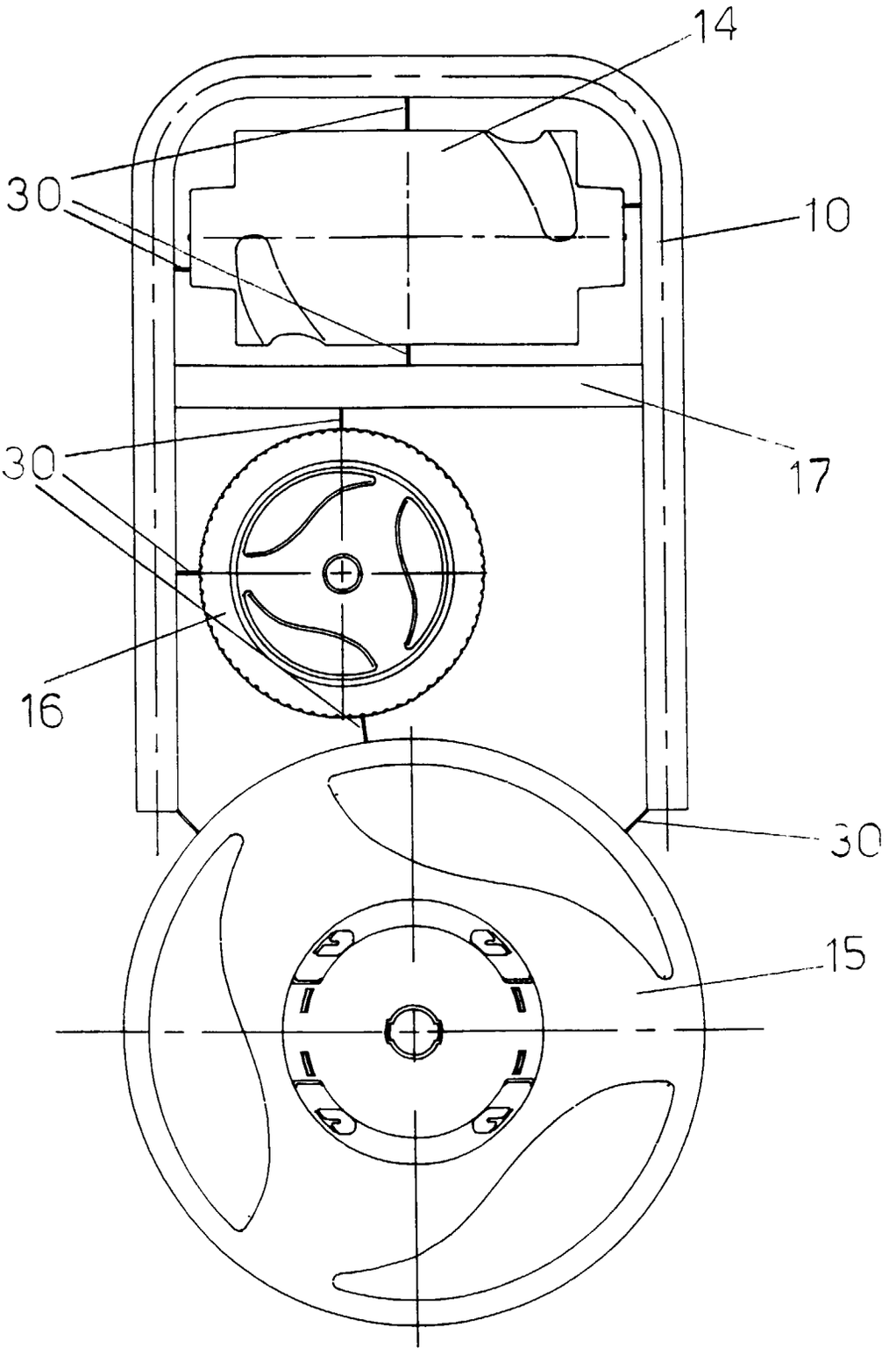


FIG.3

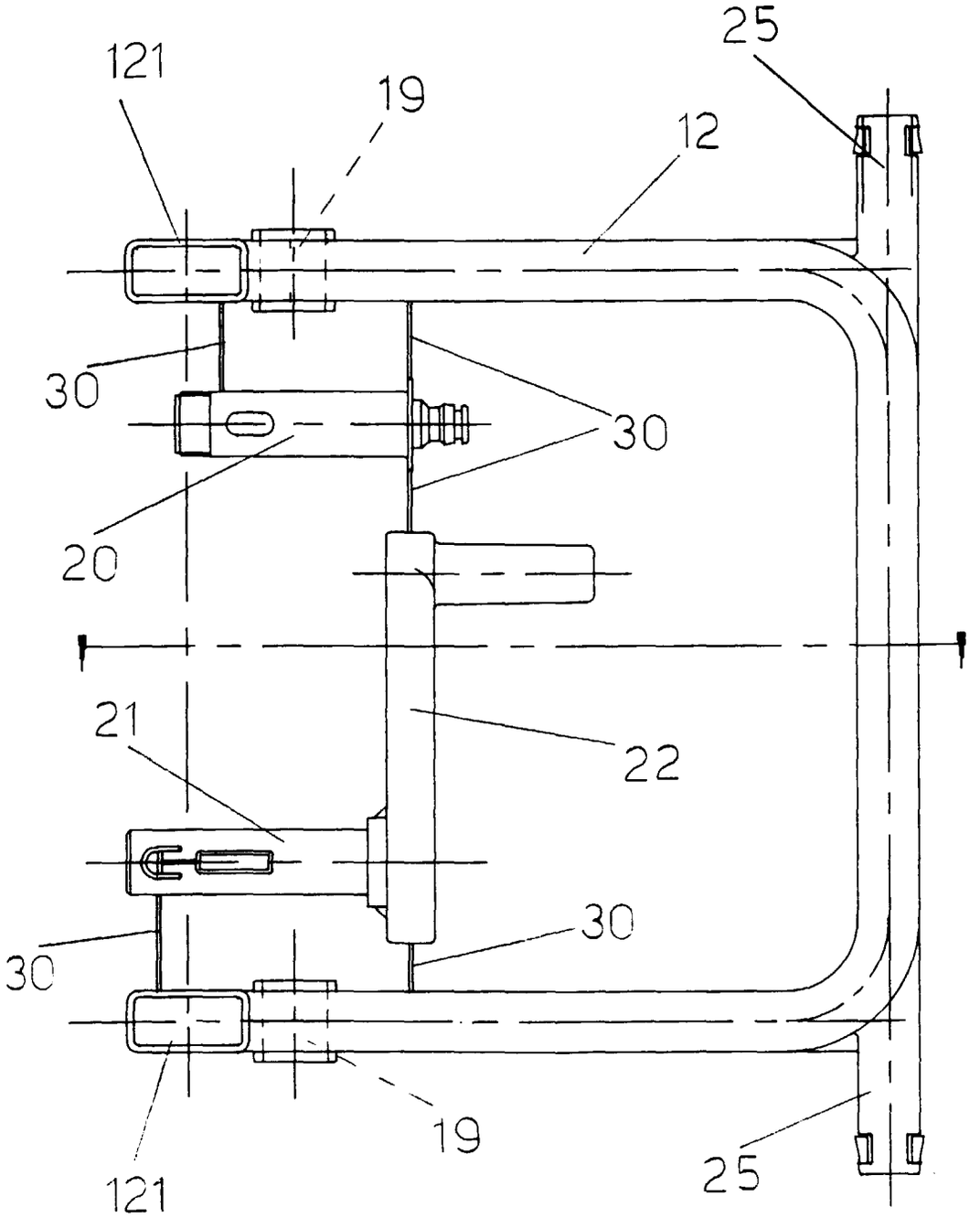


FIG. 4

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EUROPEAN SEARCH REPORT

Application Number
EP 98 11 5698

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.6)
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A	DE 86 16 352 U (CLAPER S.P.A.) 31 July 1986 * page 4, line 28 - page 5, line 35; figures *	1	
A	DE 94 01 104 U (SHING KAO CHEN) 10 March 1994 * page 4, line 3 - page 7, line 18; figures *	1	
A	DE 86 15 274 U (CLAPER S.P.A.) 7 August 1986 * page 3, line 26 - page 5, line 19; figures *	1	
D,A	EP 0 243 884 A (UNIFLEX UTILTIME SPA) 4 November 1987 * claim 1; figures 1,2 *	1	TECHNICAL FIELDS SEARCHED (Int.Cl.6) B65H

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
BERLIN	26 January 1999	David, P

CATEGORY OF CITED DOCUMENTS

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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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