

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets



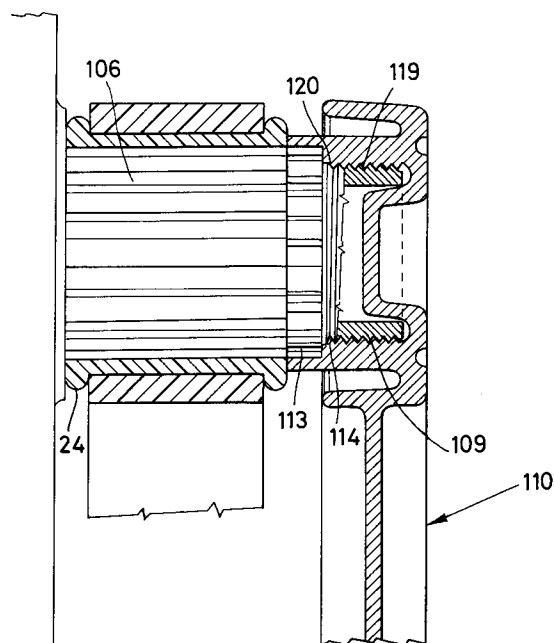
(11) Publication number:

0 525 875 A1

(12)

EUROPEAN PATENT APPLICATION(21) Application number: **92202221.5**(51) Int. Cl.⁵: **B65H 75/40, B65H 75/44**(22) Date of filing: **18.07.92**(30) Priority: **31.07.91 IT MI912133**(43) Date of publication of application:
03.02.93 Bulletin 93/05(84) Designated Contracting States:
AT BE CH DE DK ES FR GB GR IT LI NL PT SE(71) Applicant: **CLABER S.P.A.**
Via Pontebbana, 22
I-33080 Fiume Veneto Pordenone(IT)(72) Inventor: **Roman, Gianfranco**
Via Coletti, 24
I-33087 Pasiano (Pordenone)(IT)(74) Representative: **Mittler, Enrico et al**
c/o Marchi & Mittler s.r.l. Viale Lombardia, 20
I-20131 Milano(IT)(54) **Screw and saw-teeth connection between a hub of a hose winding drum and a handle for rotating the drum.**

(57) In a screw and saw-teeth connection between a hub of a hose winding drum and a handle for rotating the drum, the hub (106), starting from a corresponding flange (104) of the hose winding drum (103), has an externally grooved internal portion (113), an intermediate saw-toothed portion (114), an externally threaded end portion (109). The handle (110) consists of a connecting lever (116) between one end (117) provided with a handgrip (118) for rotating the drum (103) and one end (115) shaped like a ring nut with a threaded portion (119) suitable for being screwed on the end portion (109) and a saw-toothed portion (120) that can engage with the intermediate saw-toothed portion (114) for clamping the handle (110) on the hub (106).

**Fig. 6****EP 0 525 875 A1**

The present invention relates to a screw and saw-teeth connection between a hub of a hose winding drum and a handle for rotating the drum.

According to the known art, a cart for a hose winding drum consists essentially of a chassis constituted by a base element and by a handle element connected together at the free extremities by connecting elements, possibly in pairs, and also by a connecting shaft of a pair of wheels.

The elements, or pairs of connecting elements, in addition to form the overall structure of the cart, are suitable for rotatably supporting the hubs of the hose winding drum.

The above also holds in the case wherein a wall-mounted hose winder is considered, wherein, as is obvious, there is no connecting shaft of the pair of wheels and the handle element is replaced by a wall-support element.

In both cases, the drum is formed by a pair of lateral flanges connected by connecting links.

Two hubs protrude laterally from the flanges. One of the two hubs is engageable with a handle for rotating the drum.

Still according to the known art, the handle is formed by a lever provided with a head having an internally grooved hole for the passage of a corresponding externally grooved portion of a hub. After the handle has been inserted on the hub, an end threaded portion of the hub remains uncovered. A locking ring nut, suitable for preventing the handle from slipping off the hub, is screwed on this portion.

The use of a handle of the type illustrated above requires a ring nut to ensure that it is locked in position. But after a time the ring nut can unscrew itself and the handle can consequently disengage from the hub.

The object of the present invention is to accomplish a connection between a hub of a hose winding drum and a handle for rotating the drum, that prevents the handle from slipping off without requiring the use of an auxiliary locking ring nut.

According to the invention such object is attained through a connection between a hub of a hose winding drum and a handle for rotating the drum, characterized in that said hub, starting from one flange of the hose winding drum, has an externally grooved internal portion, an intermediate saw-toothed portion and an externally threaded end portion and said handle consists of a connecting lever between one end provided with a handgrip for rotating the drum and one end shaped like a ring nut with a threaded portion suitable for being screwed on said end portion and a saw-toothed portion that can engage with said intermediate saw-toothed portion for inseparably clamping the handle on the hub.

In this way the engagement between the inter-

mediate saw-toothed portion of the hub and the saw-toothed portion of the handle ensures a safe and definitive reciprocal lock without requiring the use of an additional locking ring nut.

The features of the present invention shall be made more clear by an embodiment thereof illustrated as a non-limiting example in the enclosed drawings, wherein:

Fig. 1 is an overall perspective view of a hose winding cart with a connection between a hub of a hose winding drum and an operating handle according to the present invention;

Fig. 2 is a front view of one of the two flanges of a hose winding drum;

Fig. 3 is a cross-sectional view taken along the line III-III of Fig. 2;

Fig. 4 is a front view of the detail related to a hub for rotatably supporting the drum;

Fig. 5 is a view from the rear of a handle for rotating the drum;

Fig. 6 is a cross-sectional view of the hub of Fig. 3 after the application of the handle of Fig. 5.

With reference to Fig. 1, a hose winding cart indicated as a whole with the numerical reference 100 comprises a structure formed by a metal tubular base element 101 and by a metal tubular gripping element 102 bent in a U shape and inserted at the free extremities in seats 7, 8, respectively obtained inside supporting sides 1 of a hose winding drum 103.

Each side 1 is accomplished in a trapeze-like form with a honeycomb-shaped plastic structure with slots 3 and has a pair of base and top sides 12, 11, respectively, and lateral sides 13, 14.

At the intersection between the top wall 11 and the side 14, as well as at the intersection of the base wall 12 and the side 13, there are seats 7, 8, identical with one another. The fact of positioning the seat 7 at an angle with respect to the top wall 11 and to the side 14 allows the use of single-curve U-shaped pipes for the gripping elements 102 instead of pipes with a further perpendicular bend. This fact appreciably simplifies the accomplishment of said elements during construction.

At the intersection between the base wall 12 and the side 14 there is a coupling 111 for a shaft 112 connecting the pair of wheels 113 inserted at the extremities and locked with locking plugs 130.

The hose winding drum 103 is in turn formed by a pair of flanges 104, with lightening elements 105, and by connecting elements 107 suitable for connecting together the flanges 104 themselves. A male connecting element 108 on which the female element of an irrigation hose is connected at its irrigation water inlet end protrudes toward the inside and laterally from one of the two flanges 104. Hubs 106 suitable for being supported, with the interposition of bushes 24, in suitable couplings 9

obtained in the sides 1 themselves, protrude laterally from the flanges 104

As better illustrated in Fig. 6, one of the two hubs 106 is formed by an externally grooved internal portion 113, by an intermediate saw-toothed portion 114 and by an externally threaded end portion 109, that can be clearly seen in Fig. 5. A handle 110 is screwed onto the externally threaded portion 109 through an end 115 thereof shaped like a ring nut. Said handle consists of a connecting lever 116 interposed between one end 117, on which there is a handgrip 118 for rotating the drum 103, and said end 115.

As can be seen clearly in Fig. 6, the end 115 has a threaded portion 119 suitable for being screwed on the externally threaded end portion 109 of the hub 106 and a saw-toothed portion 120 that can be engaged with the corresponding intermediate saw-toothed portion 114 of the hub 106 for locking the handle 110 on the hub 106.

During the assembling stage, the free ends of the gripping element 102 and of the base element 101 are inserted into seats 7, 8, respectively, and locked inside them thanks to the engagement of protrusions thereof with respective cavities in the gripping element 102 and in the base element 101.

The supporting shaft 112 of the pair of wheels 113 is snap-inserted in the couplings 111 and locked therein through the engagement of corresponding centering pins with holes obtained in the shaft itself. The wheels 113, subsequently locked with the locking plugs 130, are inserted on the shaft 112.

At the same time the drum 103 is positioned with the hubs 106 on the couplings 9, later locked in with a snap lock.

The handle 110 is then screwed with its threaded portion 119 on the externally threaded end portion 109 of the hub 106 and engaged with its saw-toothed portion 120 with the corresponding intermediate portion 114 of the hub 106 to be reciprocally locked.

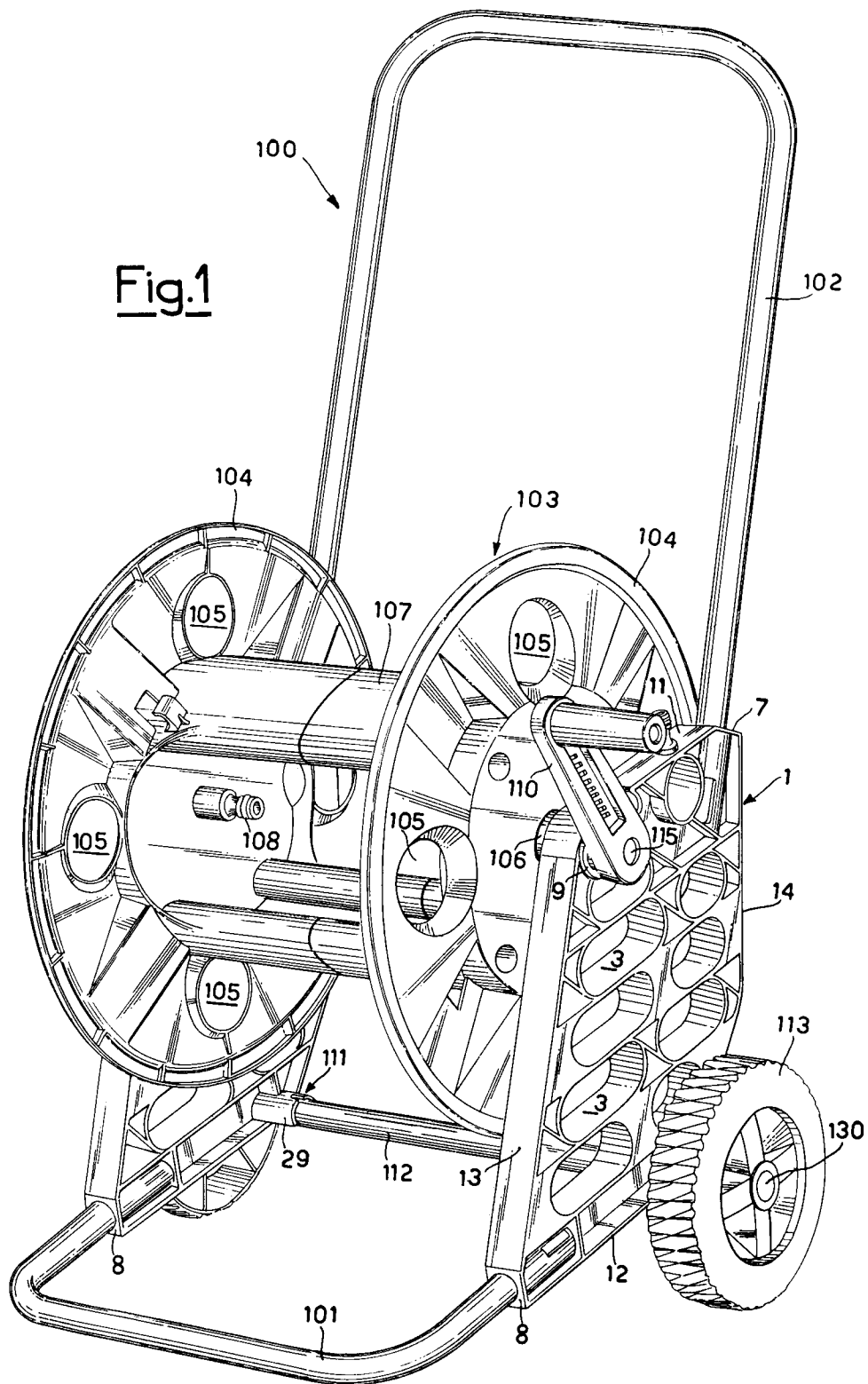
At this point, by acting on the handgrip 118, it is possible to rotate the drum 103 so that the flexible hose around it is wound/unwound.

drum (103) and one end (115) shaped like a ring nut with a threaded portion (120) suitable for being screwed on said end portion (109) and a saw-toothed portion (119) that can engage with said intermediate saw-toothed portion (114) for inseparably locking the handle (110) on the hub (106).

2. Connection according to claim 1, characterised in that said handle (110) has a lever (116) interposed between said end (117) provided with a handgrip (118) and said end (115) shaped like a ring nut (115).

Claims

1. Connection between a hub of a hose winding drum and a handle for rotating the drum, characterized in that said hub (106), starting from one flange (104) of the hose winding drum (103), has an externally grooved internal portion (113), an intermediate saw-toothed portion (114) and an externally threaded end portion (109) and said handle (110) consists of a connecting lever (106) between one end (117) provided with a handgrip (118) for rotating the



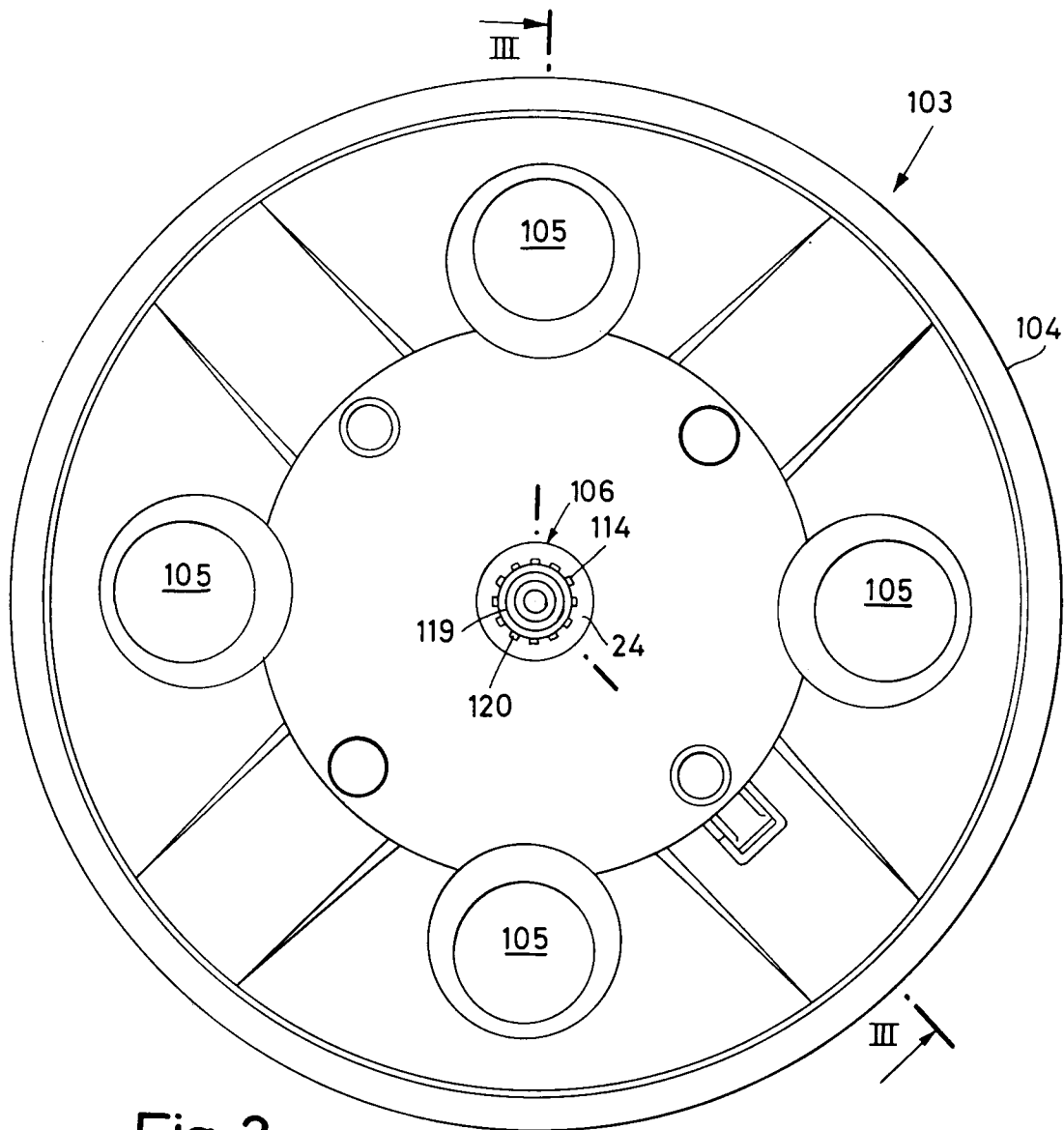


Fig. 2

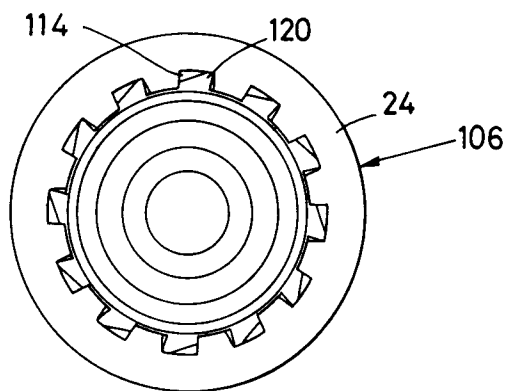


Fig. 4

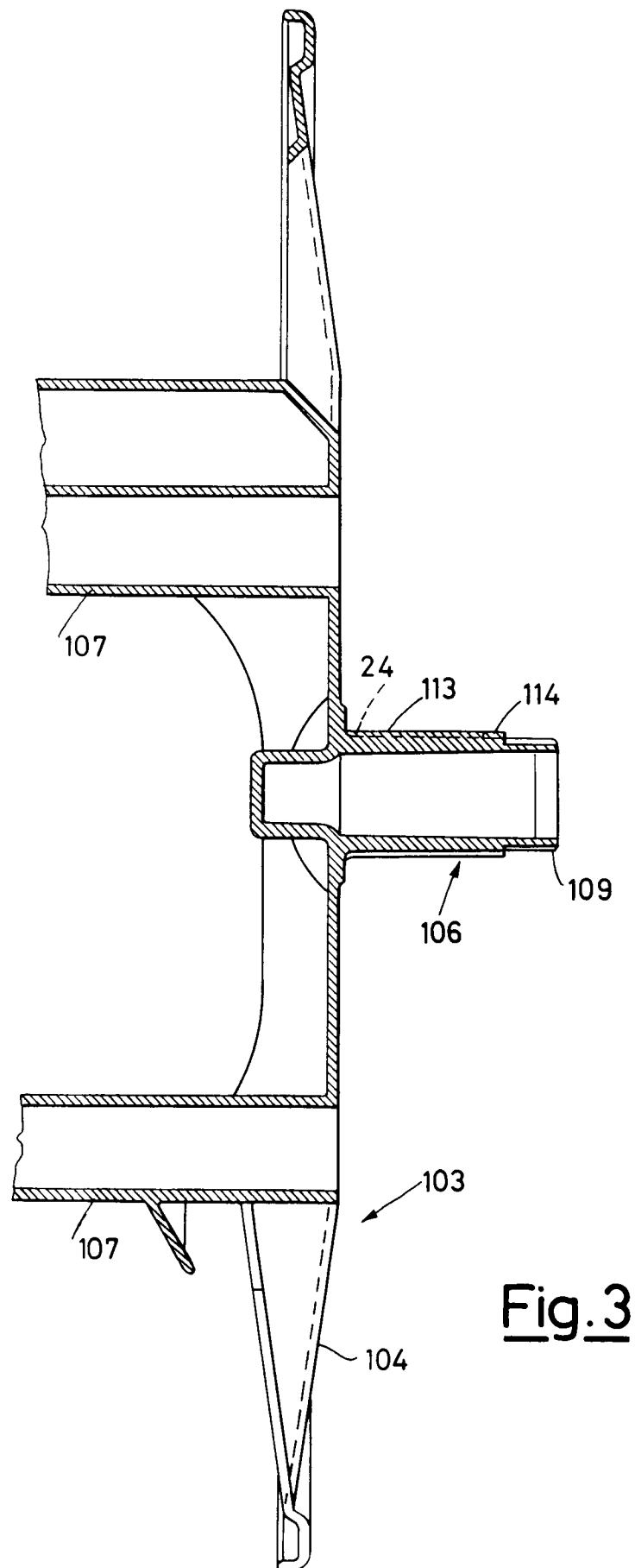


Fig. 3

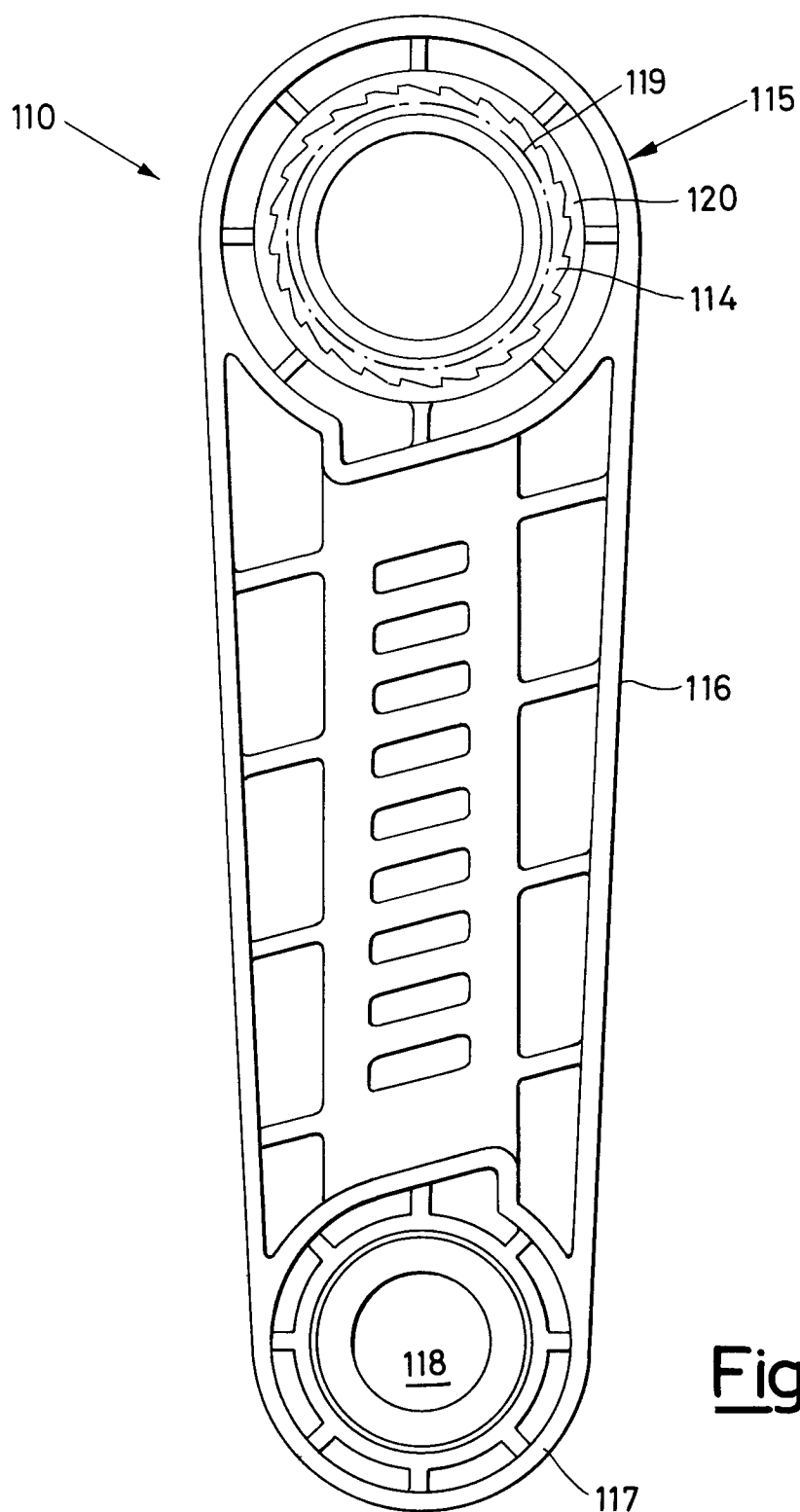


Fig. 5

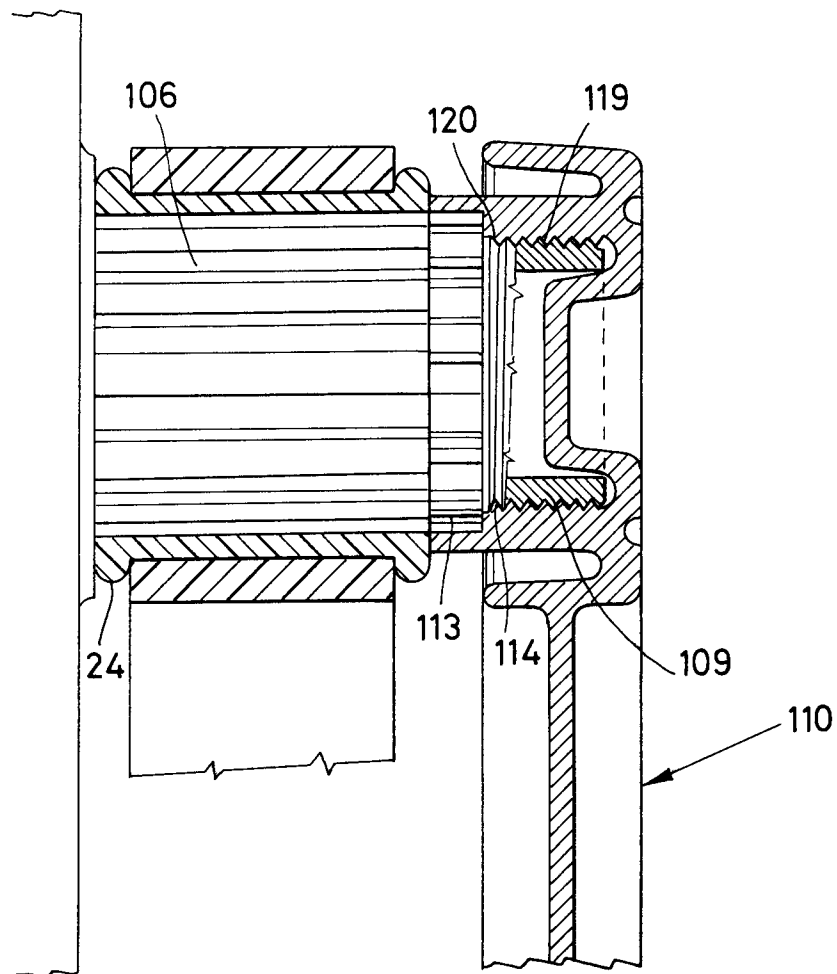


Fig.6



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

EP 92 20 2221

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.5)
A	US-A-4 512 361 (C.N.TISBO ET AL) * figures 1,11 * ---	1,2	B65H75/40 B65H75/44
A	US-A-3 125 237 (G.L.KITTERMAN) -----		
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			B65H B65D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 05 NOVEMBER 1992	Examiner GOODALL C.J.
CATEGORY OF CITED DOCUMENTS			
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		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	