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(71) Applicant: **RIETER SCRAGG LIMITED**
Langley
Macclesfield Cheshire, SK11 0DF(GB)

(72) Inventor: **Kelly, Ian Forster**
32 Sherwood Road
Macclesfield, Cheshire, SK11 7RR(GB)

(74) Representative: **Graves, Ronald et al**
Rieter Scragg Limited Langley
Macclesfield Cheshire, SK11 0DF(GB)

(54) **Textile apparatus.**

(57) A package holder (13) for use in a creel (15) of a textile machine, comprises a tubular body part (19) adapted to fit onto a creel peg (12) and having a number, for example four, of spaced formations (24), which may be in the form of T-shaped slots, extending longitudinally of the outer surface (25). Retained in each slot (24) is a correspondingly shaped fin member (27) which extends radially outwardly of the body part (19) so that the fin members (27) can grip the bore (30) of a package tube (11) to locate the package (10) coaxially on the creel peg (12). For tubes (11) of differently sized bores (30) and/or lengths, the fin members (27) may be readily replaced by other fin members (27) of different heights, it being less costly to provide and store stocks of differently sized fin members (27) than differently sized package holders having fins integral with the tubular body as was previously the case.

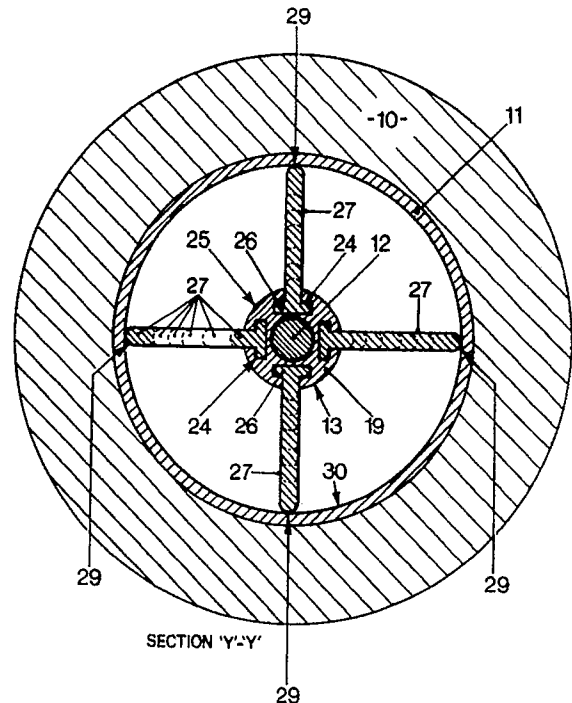


FIG. 2

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THIS INVENTION RELATES TO PACKAGE HOLDERS FOR USE IN A CREEL OF A TEXTILE MACHINE.

Conventionally packages, which are wound on package tubes, are mounted on creel pegs in the creel of a textile machine, so as to provide a supply of yarn for that textile machine. Each yarn is taken from its supply package to a yarn guide provided on the creel or machine framework, and it is desirable that the length of the yarn from each package to the respective yarn guide, or balloon length, is substantially equal, in order that each yarn supplied to the textile machine has substantially the same tension therein. To provide that successive packages are positioned substantially coaxially on a creel peg, a package holder, which is a close fit on the creel peg and which is a close fit within the bore of the package tube, can be used. However since package tubes are available with a large range of sizes of internal diameter, each size requires a matching size of package holder to ensure the desired coaxial location of the package on the creel peg. Conventionally a package holder comprises a tubular body having a plurality of fins on its outer surface, the fins extending along the tubular body and radially outwardly thereof. Such a package holder may be of a moulded plastics material, and four such fins may be provided, equi-angularly spaced around the periphery of the tubular body. With such a package holder the axially extending free edges of the fins contact the bore of a package tube. It is therefore necessary for a textile machine operator, who uses a variety of package tube sizes, to have large stocks of differently sized package holders in order that he can accurately position any supply package in his creel, irrespective of the bore of the package tube on which that supply package is wound. The abovementioned package holders are relatively costly, and hence having a large stock of such holders, of which only a small proportion are in use at any given time is undesirable. It is an object of the present invention to minimise the above described disadvantage.

In addition, since the yarn is withdrawn from that end of a package remote from the end which abuts the mounting structure provided on the creel, unless a spacer is fitted the use of packages of differing length also results in differing balloon lengths, and hence differing yarn tensions. It is a further object to minimise this additional disadvantage.

The invention provides a package holder comprising a tubular body part and a plurality of fin members, the body part defining a cylindrical outer surface having a plurality of formations spaced therearound, each of which formations is adapted to engage a cooperating formation provided on one

of the fin members, whereby in use, the fin members are removably retained on the body part to extend therealong and outwardly of the cylindrical outer surface when the cooperating formations are mutually engaged.

Preferably the fin members extend substantially radially outwardly of the outer surface, and the members may also extend substantially axially of the body part, when the cooperating formations are mutually engaged. Preferably the formations of the body part are substantially equi-angularly spaced around the cylindrical outer surface. Four body part formations may be provided.

The formations may comprise cooperating male and female formations. Each of the female formations may comprise a slot and each of the male formations may comprise a rib. Each slot, may have a transverse dimension at the opening thereof which is less than the transverse dimension at the base of the slot, in which case the slots and the ribs may be of cooperating T-shaped configuration. Each of the female formations may be provided on the body part and one male formation may be provided on a longitudinal edge of each of the fin members.

The fin members may be of a plastics material, for example a rigid p.v.c. material which may be black in colour. The body part may be of an aluminium material.

The invention will now be further described with reference to the accompanying drawings in which :-

Fig 1 is a longitudinal section of one embodiment

Fig 2 is a section on line Y-Y of Fig 1, and

Fig 3 is a longitudinal section of a second embodiment.

Referring now to Figs 1 and 2 there is shown a yarn package 10 wound on a package tube 11, and which is intended to provide a supply of yarn to a textile machine (not shown). The package 10 is mounted on a creel peg 12 of a creel 15 by means of a package holder 13. The creel peg 12 is retained, by means of a retaining pin 18, in a through-bore 16 of a cast mounting member 14 which is part of the creel 15. A shoulder 17 of the creel peg 12 contacts washer 23 which abuts the mounting member 14.

The package holder 13 comprises a tubular body part 19, the bore 20 of which is dimensioned so as to be a close fit on the creel peg 12, and a nut 21 and washer 28 on a screw-threaded end 22 of the creel peg 12 serves to retain the body part 19 on the creel peg 12. The body part 19 has four formations 24 on the cylindrical outer surface 25

thereof, each of the formations 24 being in the form of a T-shaped slot extending longitudinally over the full length of the body part 19. Retained in each slot 24 is a T-shaped rib 26 of a fin member 27 so that each fin member 27 extends longitudinally, and radially outwardly, of the body part 19. The outer free edges 29 of the four fin members 27 contact the inner surface 30 of the package tube 11 so as to coaxially locate the package 10 on the creel peg 12.

When the package 10 is exhausted a new package 10 must be placed on the creel peg 12. The empty package tube 11 is therefore slid from the package holder 13 and a new package 10 on its package tube 11 is slid onto the package holder 13. This operation is straightforward if the new package tube 11 has the same internal bore as the empty package tube 11. However, if a different yarn type is to be used, and since such bores can be in a range of at least to 170mm, there is a strong possibility that the new package tube 11 either will not fit onto the package holder 13, or it will be oversized so that the new package would not be coaxially located on the creel peg 12. In either case, the retaining pin 18 may be removed and the creel peg 12 withdrawn from the mounting member 14. The washer 23 may then be taken off the creel peg 12, and the fin members 27 withdrawn from the slots 24 in the body part 19. Alternative fin members 27, of different height from those just removed, can then be inserted in the slots 24, and the washer 23, creel peg 12 and retaining pin 18 restored to their original locations as shown in Fig 1. The alternative fin members 27 are chosen so that their outer surfaces 29 contact the inner surface 30 of the new package tube 11, thereby ensuring that the new package 10 is coaxially located on the creel peg 12.

The fin members 27 will be less costly than a complete, integrally formed package holder 13 as used heretofore, and therefore it will be less costly for a machine operator to retain a stock of fins of differing sizes to accommodate package tubes within the abovementioned range of available sizes. Twelve such sizes of fin members 27 could be retained to cater for each 10mm diameter range of package tube diameters in the overall 50 to 170mm diameter range. Six such fin member size alternatives are illustrated in Fig 2 at the left hand fin member 27 thereof.

Referring now to Fig 3, there is shown an embodiment of the invention which caters for a package tube 32 of shorter length than that illustrated in the previous embodiment. In this case fin members 31, of height appropriate to the internal diameter of the package tube 11, but of shorter length corresponding with the shorter length of the package tube 32 by comparison with that shown in

Fig 1, are inserted in the slots 24 in the body part 19. Four "oversize" fin members 33, ie whose height is such that they will extend radially beyond the package tube 32, are then inserted in the slots 24 so as to abut the fin members 31, which in turn abut the washer 28. The washer 23 is then placed on the creel peg 12, which is replaced in the mounting member 14 and retained by the retaining pin 18. By this means the end of the package 10 remote from the mounting member 14, and from which the yarn is withdrawn, will be substantially in the same location in the case of the short length package as it was in the case of the longer length package shown in Fig 1.

By this means it is possible to arrange that the package is concentrically located on a creel peg 12 with its yarn withdrawal end consistently located relative to the creel 15 and the respective yarn guide, irrespective of the length or internal diameter of the package tube 11 on which it is wound, using a stock of relatively inexpensive fin members instead of relatively costly package holders. Alternative embodiments of the invention will be readily envisaged by persons skilled in the art. For example a number greater or less than four fin members may be provided, and the fin members may extend from the body part at an angle to a radius thereof and/or at an angle to the longitudinal axis thereof, for example helically around the body part. The formations may comprise a plurality of holes and cooperating spigots, or the grooves and ribs may be of dovetail configuration or other cooperating cross-sectional configuration. The body part may be of other suitable metallic or plastics material if preferred. The female formations may be provided on the fin members and the male formations on the body member if preferred. The body part 19 may be retained on the creel peg 12 by means of a screw and washer 28, which screw is secured in a tapped hole in the end of the creel peg 12.

Claims

1. A package holder comprising a tubular body part and a plurality of fin members, the body part defining a cylindrical outer surface, characterised in that the body part (19) has a plurality of formations (24) spaced therearound, each of which formations (24) is adapted to engage a cooperating formation (26) provided on one of the fin members (27), whereby in use the fin members (27) are removably retained on the body part (19) to extend therealong and outwardly of the cylindrical outer surface (25) when the cooperating formations (24,26) are mutually engaged.
2. A package holder according to claim 1 characterised in that each of the fin members (27) ex-

tends substantially radially outwardly of the outer surface (25) when the formations (24,26) are mutually engaged.

3. A package holder according to claim 1 or claim 2 characterised in that each of the fin members (27) extends substantially axially of the body part (19) when the cooperating formations (24,26) are mutually engaged. 5

4. A package holder according to any one of claims 1 to 3 characterised in that the formations (24) of the body part (19) are substantially equally spaced around the cylindrical outer surface (25). 10

5. A package holder according to claim 4 characterised in that four body part formations (24) are provided. 15

6. A package holder according to any one of claims 1 to characterised in that the formations (24,26) of the body part (19) and of the fin members (27) are cooperating male and female formations, and in that each female formation comprises a slot (24) and each male formation comprises a rib (26). 20

7. A package holder according to claim 6 characterised in that each slot (24) has a transverse dimension at the opening thereof which is less than the transverse dimension at the base of the slot (24). 25

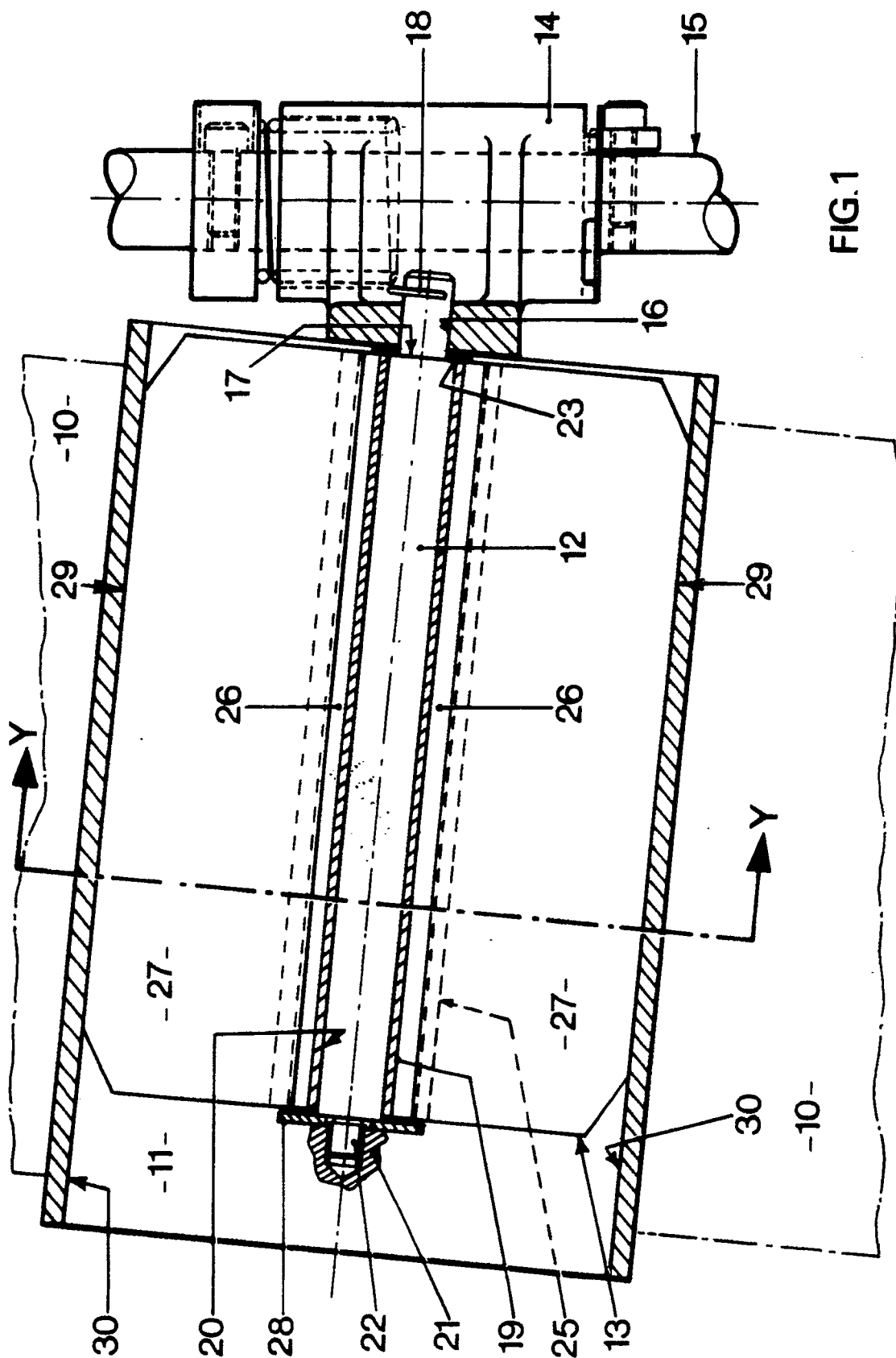
8. A package holder according to claim 7 characterised in that the slot (24) and ribs (26) are of cooperating T-shaped configuration.

9. A package holder according to any one of claims 6 to 8 characterised in that the female formations (24) are provided on the body part (19) and one male formation (26) is provided on a longitudinal edge of each of the fin members (27). 30

10. A package holder according to any one of claims 1 to 9 characterised in that each formation (24) of the body part (19) has cooperating therewith two fin members (31,33), a first fin member (31) extending longitudinally of the body part (19) from a first end thereof and extending to a first radial height above the cylindrical surface (25), and a second fin member (33) extending longitudinally of the body part (19) from the opposed end thereof to abut the first fin member (31) and extending to a second radial height above the cylindrical surface (25). 35 40 45

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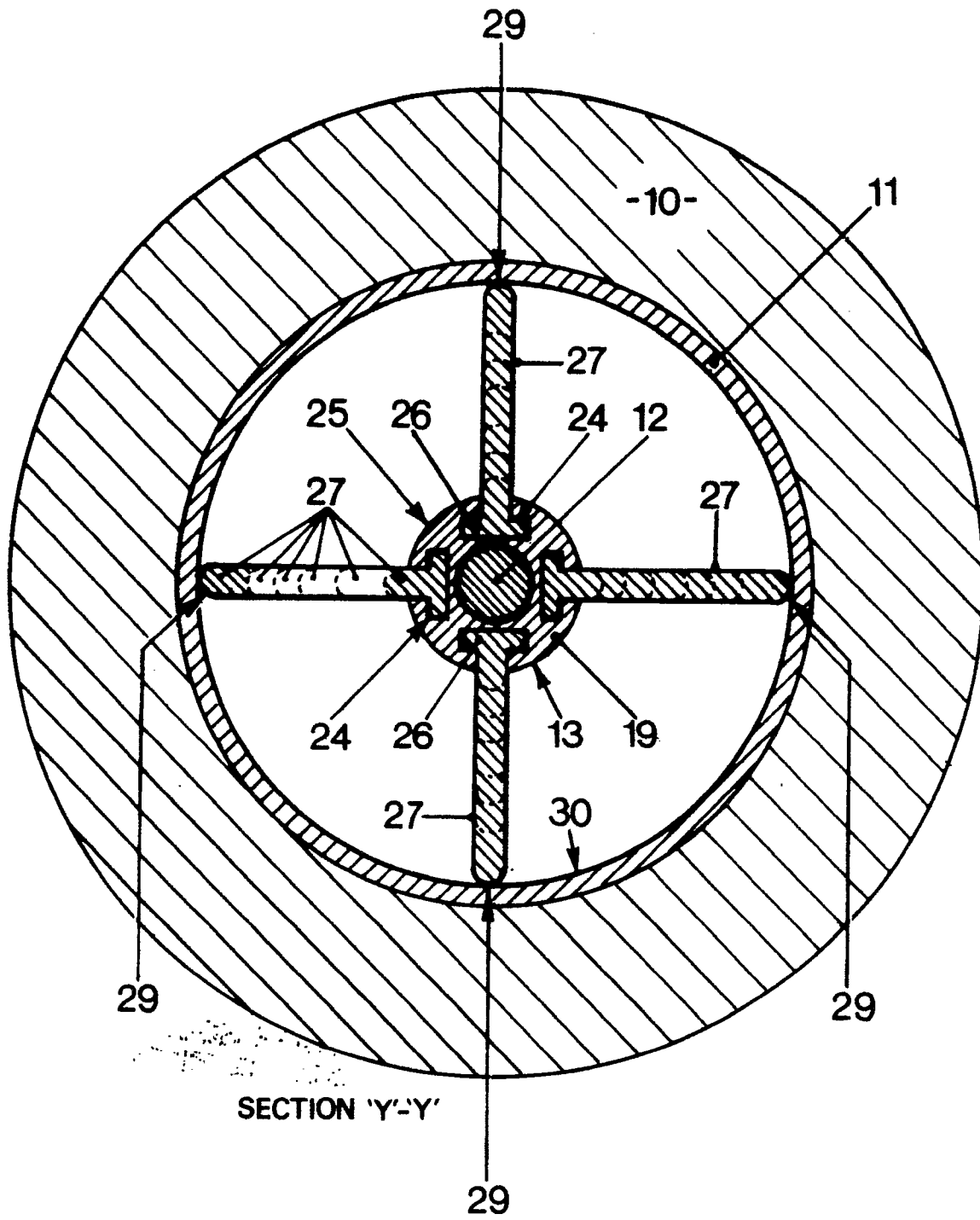
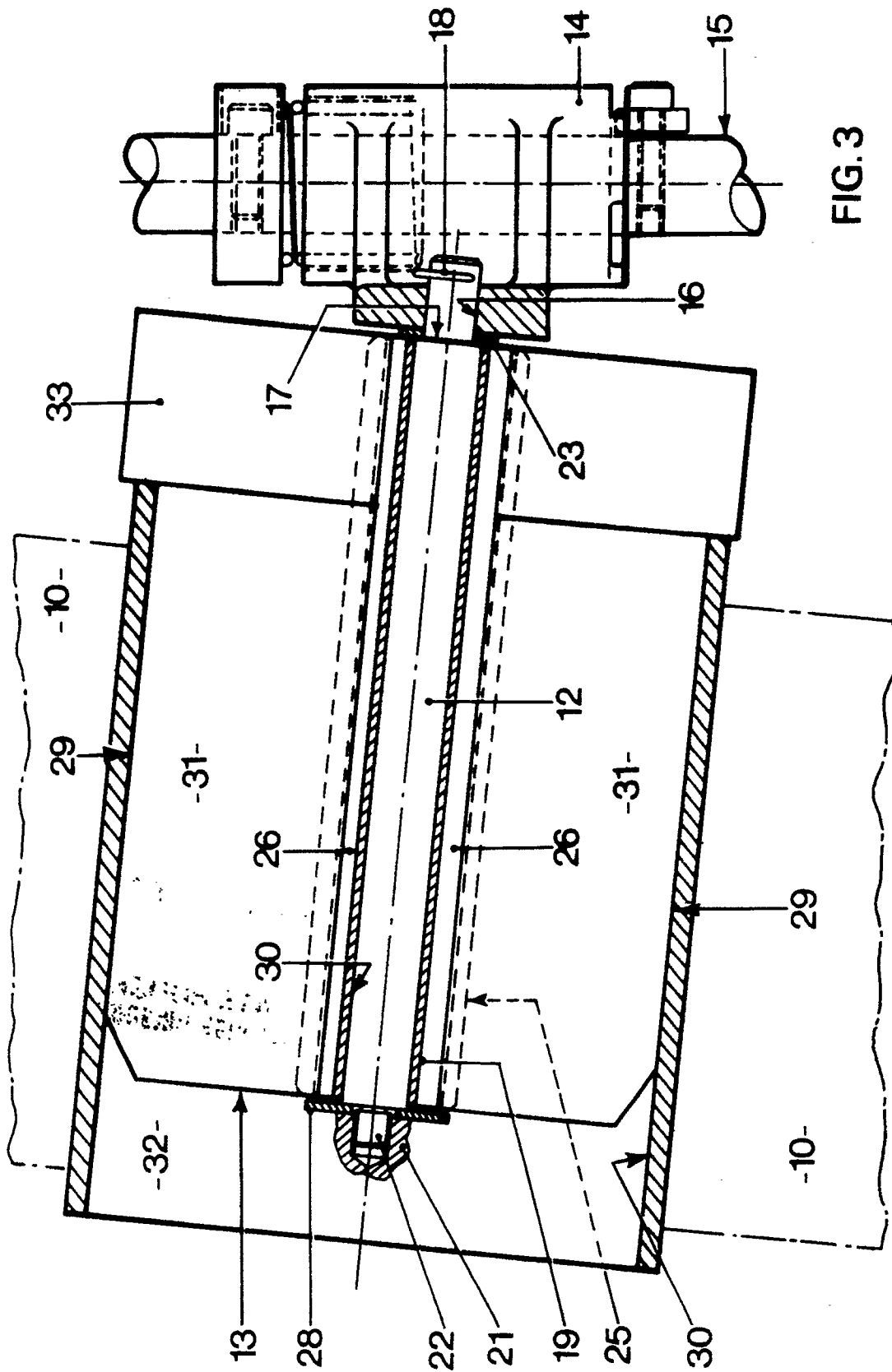


FIG. 2





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EUROPEAN SEARCH REPORT

Application Number

EP 90 31 1201

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)														
X	US-A-1 918 518 (R.H. CARTER) * page 1, lines 28 - 89; figures 1-3 * - - -	1-9	B 65 H 49/06														
X	DE-A-1 909 548 (GMÖHLING & CO) * page 5, line 24 - page 6, line 12; figures 3-6 * - - -	1-9															
X	US-A-1 985 026 (C. EPPS) * figures 1-5 * - - -	1-4															
X	US-A-2 416 785 (W.E.D. WELCH) * figures 1-4 * - - - - -	1-4															
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)														
			B 65 H														
The present search report has been drawn up for all claims																	
Place of search The Hague		Date of completion of search 06 February 91	Examiner REBIERE J-L.														
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