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(71) Applicant *(for all designated States except US)*: **TEC CON AS** [NO/NO]; Mekjarvik 14, N-4070 Randaberg (NO).

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: **JOHNSEN, Jan, K.** [NO/NO]; Ryfylkegt. 61A, N-4014 Stavanger (NO).

(74) Agent: **HÅMSØ, Gunnar**; c/o Håmsø Patentbyrå Ans, Vågsgaten 43, N-4306 Sandnes (NO).

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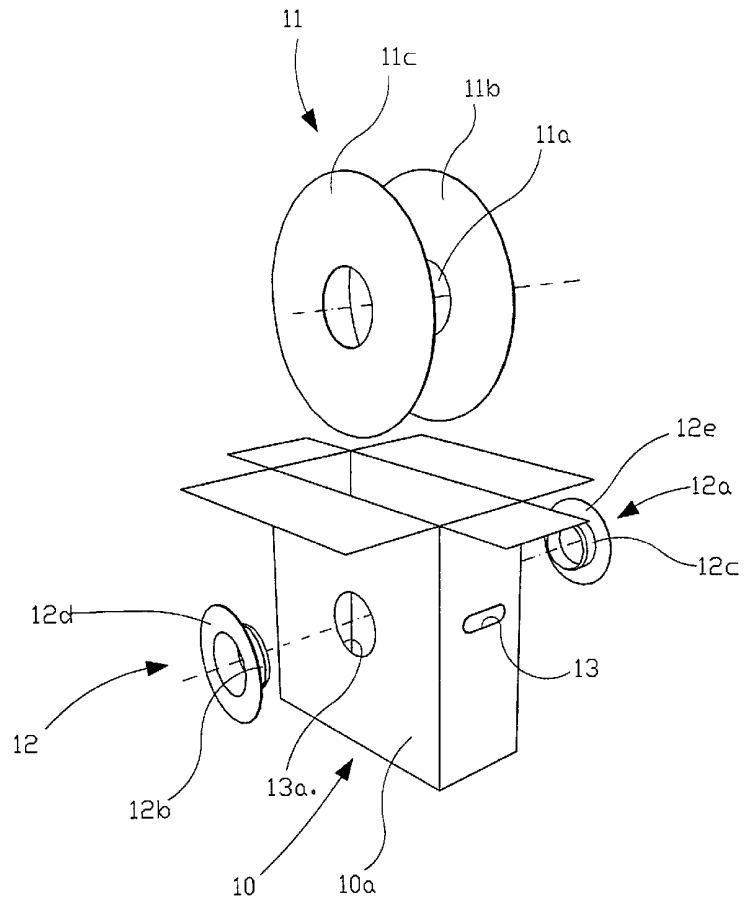
(54) Title: ANTITWIST BOX



(57) Abstract: A box-like support (10) with a supporting device for a rotating drum-like reel (11) that can be positioned therein, for wound-on electrical wire (15), flexible hoses or similar, the box-like support (10) having at least one dispensing opening (13) for electrical wire (15) etc. to be pulled out in an orderly manner during concurrent rotation of the drum-like reel (11) inside the box-like support (10), the supporting device being formed of sleeve-shaped portions (12b, 12c) of two coaxial end pieces (12, 12a), together forming a non-through axle for the drum-like reel (11), and the sleeve-shaped portions (12b, 12c) of the end pieces (12, 12a) being provided with at least one circumferential, possibly discontinuous, barb-like portion (12f, 12g) bearing on the inner surface of the support (10).

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patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

ANTITWIST BOX

This invention relates to a device for packing and unreeling of long reelable rope-like objects, for example electrical wire.

Packaging for long reelable objects is selected on the basis of requirements of protection of the product during transport and storage, cost, and also from a wish that the object/ product should be allowed to be removed easily and appropriately from its packaging at the site of use. Typically electrical wires and plastic pipes, for example, have conventionally been packed in lying coils. In use, the object is pulled out from within the coil and thereby becomes twisted during unreeling. Devices for overcoming the twisting problem as wire is being unreeled from its packaging are known. Closest to the present invention, in terms of embodiment, is NO 1999171 which discloses a box-like support with a drum-like reel which can be placed inside for wound-on electrical wire, there being, rotational in the centre openings of the reel, through openings in the opposite side walls of the support, sleeves which form a non-through axle.

The invention has the object of further simplifying and developing the packaging and unreeling functions for electrical wire and other coilable objects.

The object is realised according to the invention through a reduction of the number and complexity of the incorporated components, the main components being formed so that they fill several functions important to the device. In a box-like support a reel-like drum is arranged with electrical wire or another coilable object wound thereon. The reel-like drum comprises a tubular centre part which is provided with radially projecting end flanges. The reel is suspended rotationally and fixed in the support in that two loose end pieces are positioned in openings extending through opposite support walls and together with the internal surface of the tubular centre part of the reel form a rotary bearing. The external end portions of the end pieces are formed with a radially projecting annular flange. Further, at a distance from the inner surface of the end flange of the end piece, corresponding to the material thickness of the support wall, the external sleeve portion of each end piece is provided with a circumferential, possibly discontinuous, barb-like portion.

In a preferred embodiment the drum-like reel is mounted inside the support box by means of the end pieces last mentioned, the end pieces being forced through the corresponding openings in the two side walls of the support box into the tubular centre part of the reel. In the position of use, the end flanges of the end pieces bear on the external surface of the side wall of the support box, whereas the barb-like portion bears on the internal surface of the

side wall of the support box, thereby preventing the end piece from working itself out of position in use.

A further development of the invention consists in the fact that the centre opening extending through the reel is replaced by a cup-shaped coaxial cylindrical countersunk hollow in each end portion, complementarily matching the internal end portions of the end pieces.

In the following is described a non-limiting example of a preferred embodiment, which is visualized in the accompanying drawings, in which:

Fig. 1 shows a perspective split view of a box-like support and a drum-like reel for an electrical wire to be wound on;

Fig. 2 shows a perspective view of a fully assembled box-like support, with a piece of an electrical wire taken out through a dispensing opening in the box-like support;

Fig. 3 shows, on a larger scale, a section III - III of Fig. 2; and

Fig. 4 is a view of a detail in Fig. 3, on a larger scale, and shows the right-hand middle portion of Fig. 3;

Fig. 5 shows an alternative embodiment of the support of the drum-like reel.

In the drawings the reference numeral 10 indicates a box in the shape of a parallelepiped, which forms a box-like support, known in itself, for receiving in its interior and

rotationally supporting a drum-shaped reel 11 in the form of an integral moulding, or an assembly of a central cylindrical pipe element 11a with radially projecting side flanges 11b, 11c mounted thereon. The drum-shaped reel 11 will normally have an electrical wire 15 wound thereon, Fig. 2, and taken out through the dispensing opening 13 of the support box 10.

In the assembling the reel-like drum 11 is inserted into the supporting box 10 until the opposite ends of the pipe element 11a of the drum 11 are each in the area of a through wall opening 13a, 13b in opposite box walls 10a, 10b. With the drum 11 in this position, two end pieces 12, 12a are pressed into the wall openings 13a, 13b and further into the ends of the pipe element 11a. The end pieces 12, 12a thereby form a discontinuous axle which the drum 11 rotates on. Each end piece 12, 12a has an axial ring/sleeve-shaped portion 12b, 12c, which may possibly extend with its outer surface tapering conically towards its free end, whereas the opposite outer end is provided with a radially projecting annular flange 12d, 12e. The external diameter of the sleeve portion 12b, 12c is somewhat smaller than the internal diameter of the reel pipe element 11a. At a distance from the inner surface of the flange 12d, 12e, preferably corresponding to the thickness of the box wall 10a, 10b, there is provided, on the external surface of the sleeve portion 12b, 12c, a circumferential barb 12f, 12g which is formed to bear on the inner surfaces of the box walls 10a, 10b. In an alternative embodiment, see Fig. 5, the cylindrical pipe element 11a of the reel may be replaced by two coaxial cylindrical countersunk hollows 11d.

An antitwist box according to the invention provides a

simple, reasonable and adequate packaging and dispensing device for electrical wire and other reelable objects.

C l a i m s

1. A box-like support (10) with a supporting device for a rotating drum-like reel (11), that may be positioned therein, for wound-on electrical wire (15), flexible hoses or similar, the box-like support (10) having at least one dispensing opening (13) for electrical wire (15) etc. to be pulled out in an orderly manner by concurrent rotation of the drum-like reel (11) inside the box-like dispenser (10), and the supporting device being formed of sleeve-shaped portions (12b, 12c) of two coaxial end pieces (12, 12a), together forming a non-through axle for the drum-like reel (11), c h a r a c t e r i z e d i n that the sleeve-shaped portions (12b, 12c) of the end pieces (12, 12a) are provided with at least one circumferential, possibly discontinuous, barb-like portion (12f, 12g) preferably bearing on the internal surface of the support (10).

2. A box-like support (10) according to claim 1, c h a r a c t e r i z e d i n that the end portions of the end pieces (12, 12a), external in the position of use, are provided with a radially projecting annular flange (12d, 12e).

3. A box-like support (10) according to one or more of the preceding claims, c h a r a c t e r i z e d i n that the supporting surface of the drum-like reel (11) facing the sleeve-shaped portion (12b, 12c) of the end pieces (12, 12a) is formed of two non-through cup-like coaxial cylindrical countersunk hollows (11d) in the end portions of the drum-like reel (11).

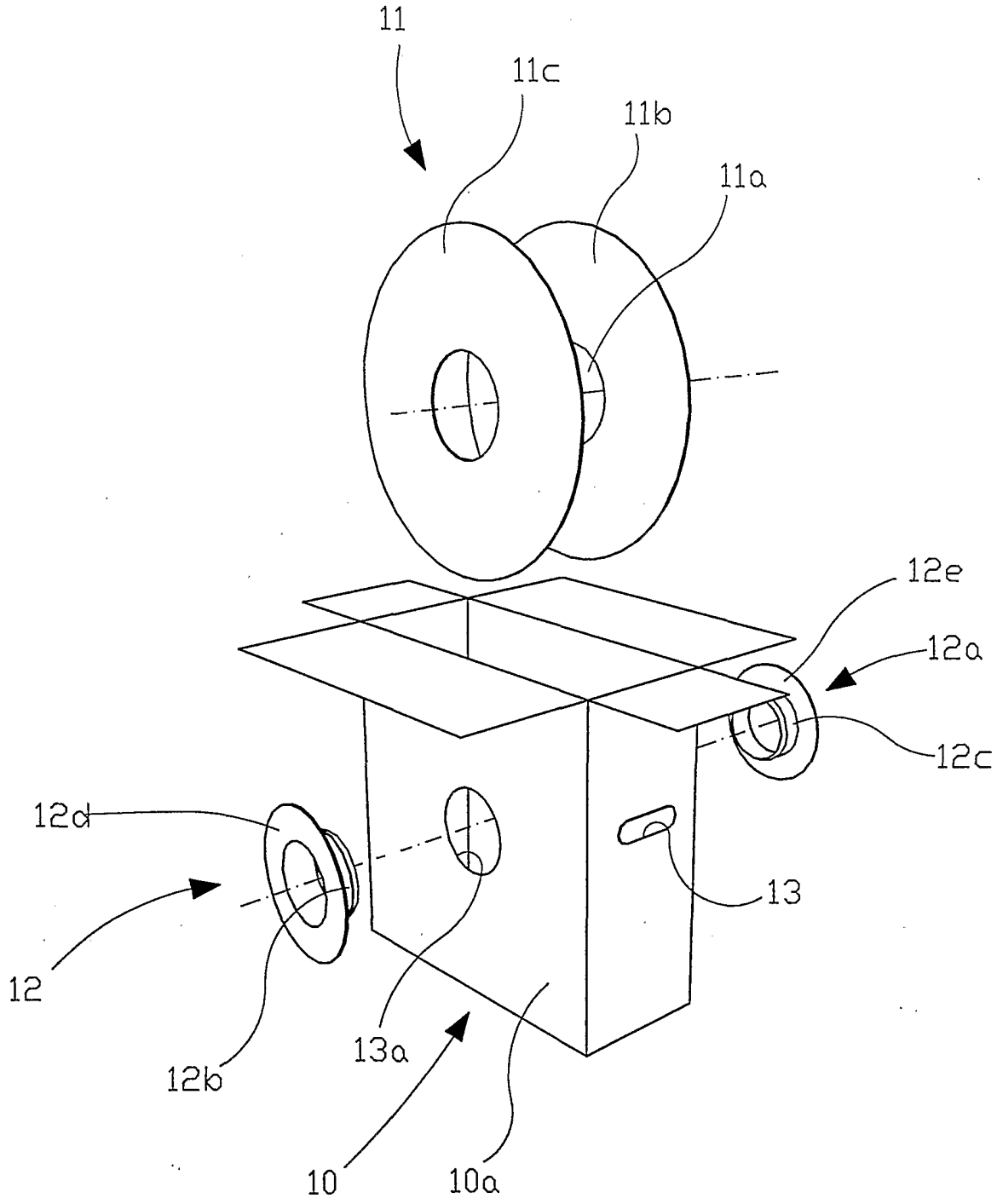

FIG. 1

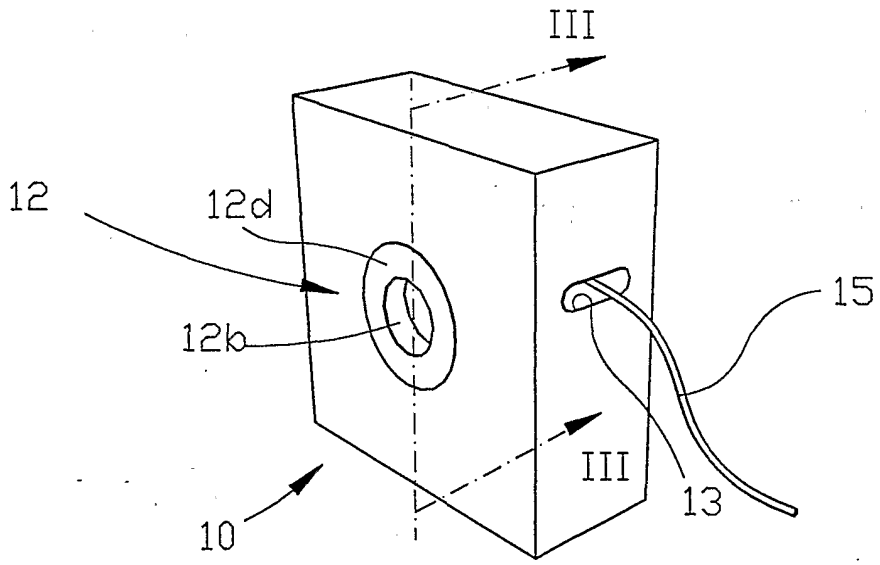

FIG. 2

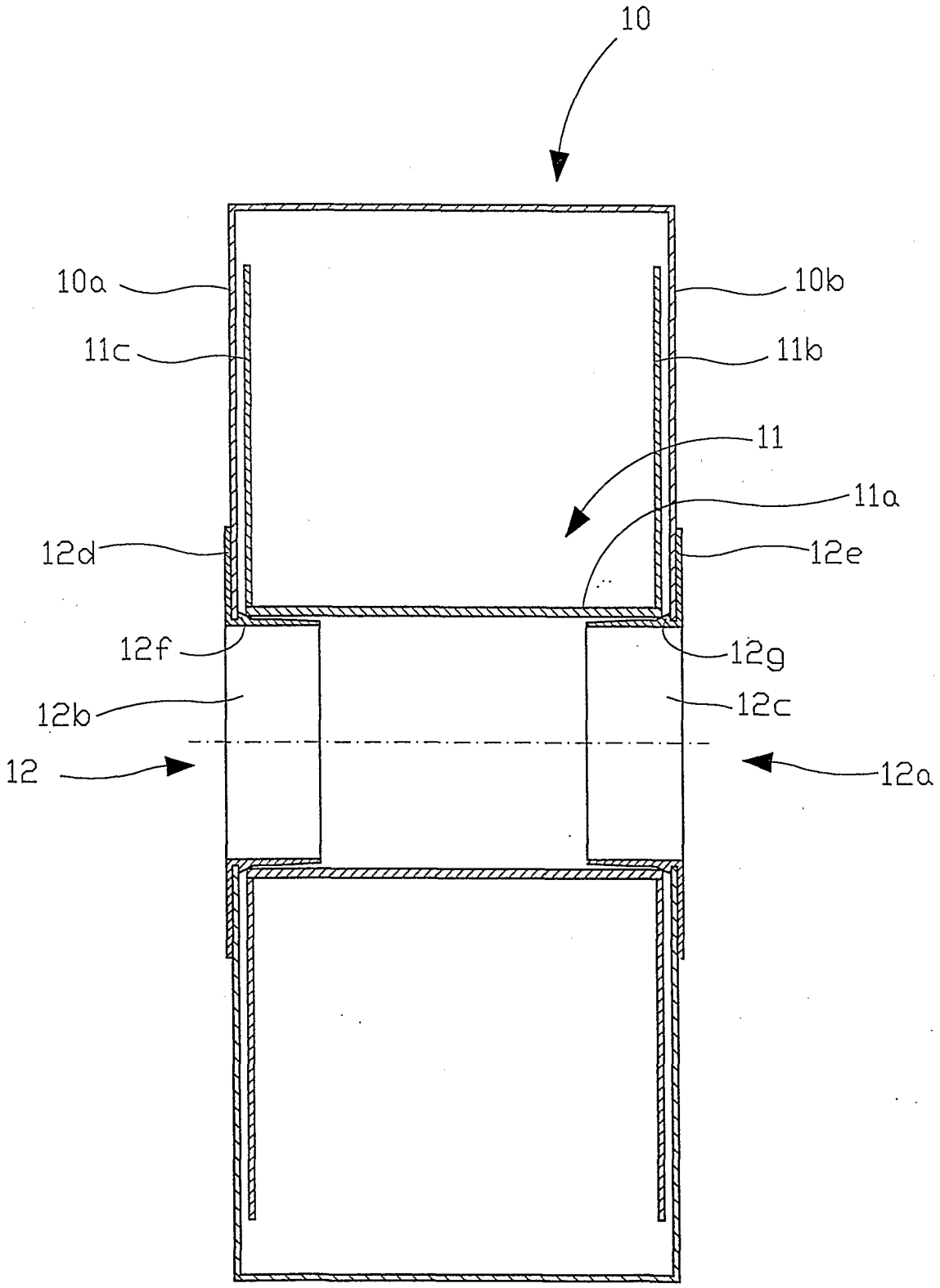

FIG. 3

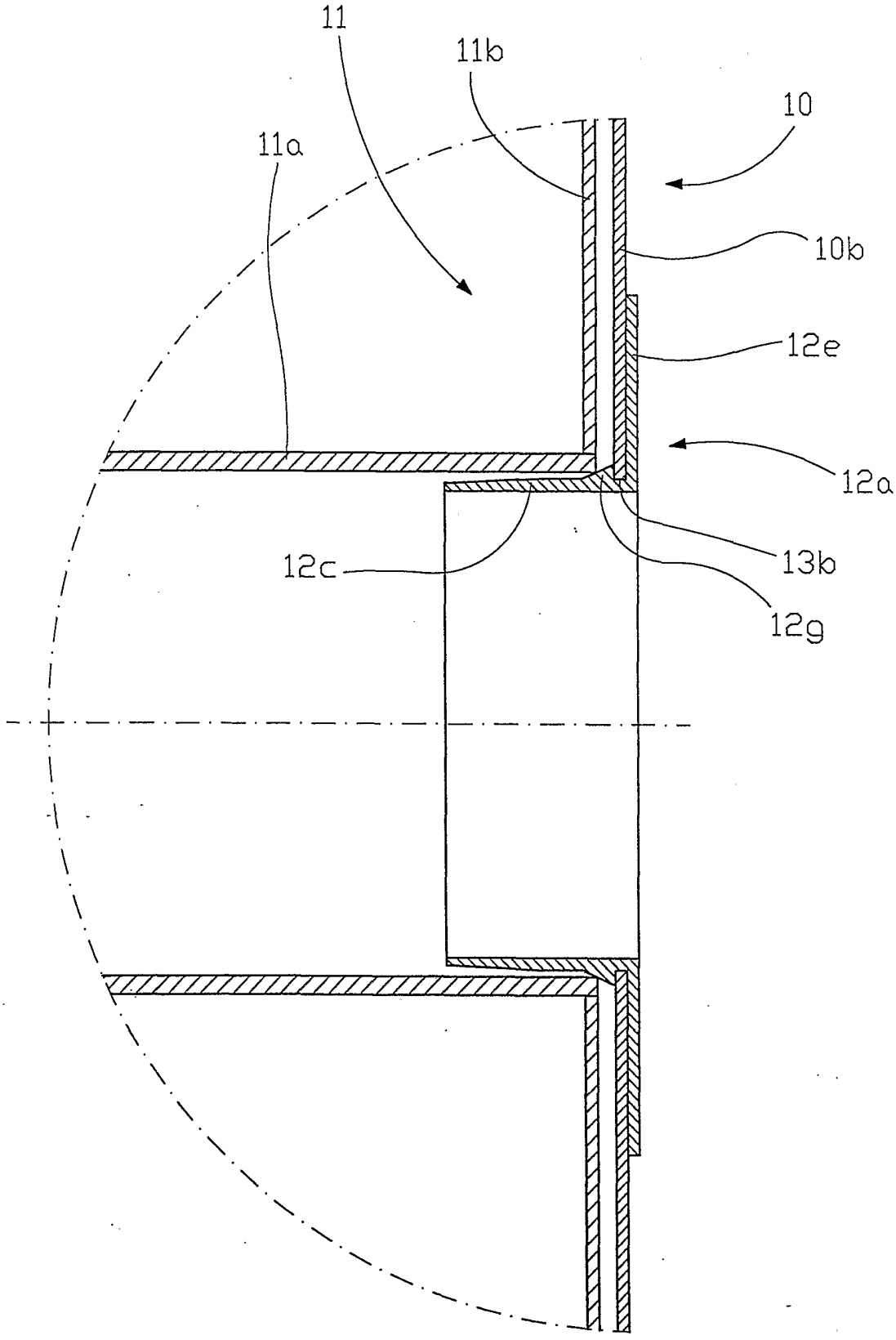

FIG. 4

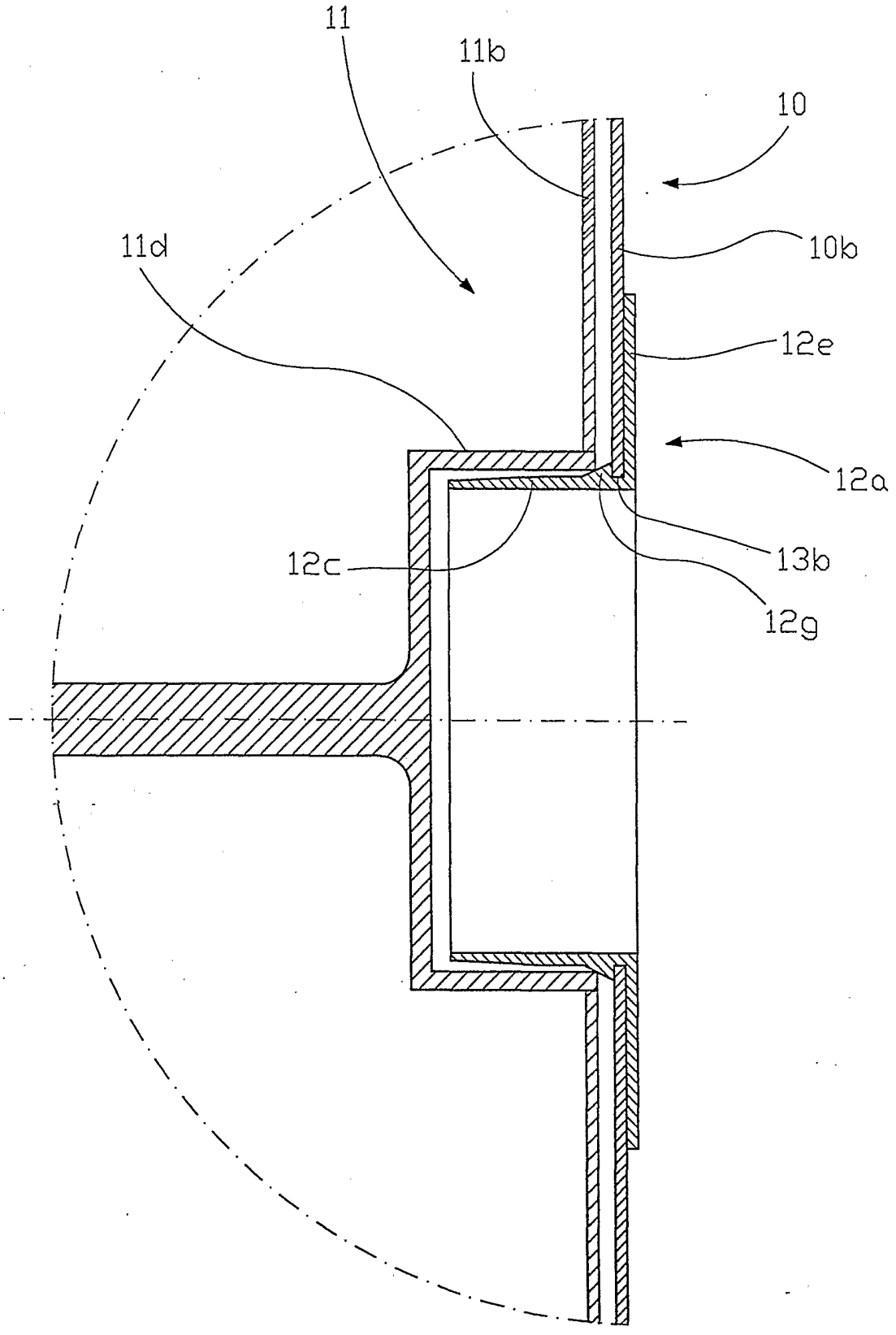

FIG. 5

INTERNATIONAL SEARCH REPORT

International application No.
PCT/NO 01/00263

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: B65D 85/04, B65H 49/02, B65H 75/14, B65H 75/18
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: B65D, B65H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI DATA, EPO-INTERNAL, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3587840 A (W.M. HULTBERG), 28 June 1971 (28.06.71), column 1, line 58 - column 2, line 3, figures --	1,2
P,X	WO 0044661 A1 (TEC-CON AS), 3 August 2000 (03.08.00), page 8, line 1 - line 14, figures --	1,2
A	US 4667824 A (N.J. DITCHFIELD), 26 May 1987 (26.05.87) --	1-3
A	US 4060444 A (E.S. SCHWEIG, JR. ET AL), 29 November 1977 (29.11.77) --	1-3

[X] Further documents are listed in the continuation of Box C. [X] See patent family annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
27 Sept 2001	28 -09- 2001
Name and mailing address of the ISA/ Swedish Patent Office Box 5055, S-102 42 STOCKHOLM Facsimile No. +46 8 666 02 86	Authorized officer Teija Kurki / MRo Telephone No. +46 8 782 25 00

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International application No.
PCT/NO 01/00263

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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INTERNATIONAL SEARCH REPORT

Information on patent family members

03/09/01

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