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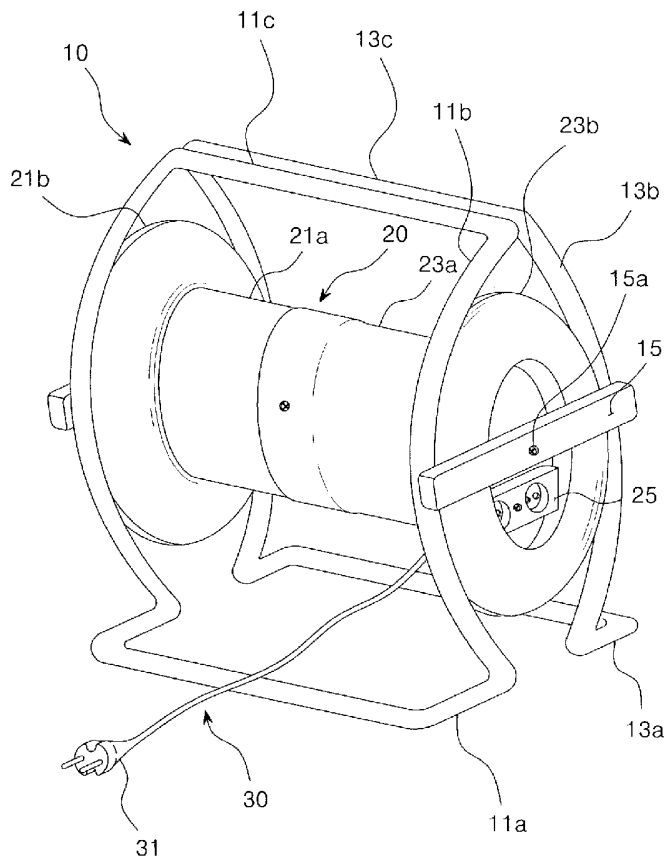
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: A REEL FOR WINDING AN ELECTRIC WIRE



(57) Abstract: A reel for winding an electric wire is disclosed. The reel for winding an electric wire characterized in that the supporting member having a pair of preventing frames, each of which surrounds each flange of the bobbin so that the wire may be prevented from getting out of the bobbin and being inserted between the flange and the preventing frame during the wire is wound into the bobbin or unwound from the bobbin.

Description

A REEL FOR WINDING AN ELECTRIC WIRE

Technical Field

- [1] The present invention relates to a reel for winding an electric wire, and in particular to an improved reel of which the wire is prevented from getting out of a bobbin and being inserted between the bobbin and the supporting member, and of which the wire is pressed up and fixed in a groove so that the wire may be prevented from unwinding.

Background Art

- [2] The wire for electric power supply is temporarily wired at the shop floor to make use of the electrically-drive instruments. Generally, a reel for winding an electric wire is used because it is easy to wiring temporarily and also to keep the wire.
- [3] Figure 6 is a side view of the conventional reel for winding an electric wire. As shown therein, the conventional reel for winding an electric wire comprises a supporting member 1, a bobbin 2 having a socket outlet 3 at the one side of a body, having a disklike flange 2a formed at each side of the said body, being installed at the said supporting member 1 so that the bobbin 2 rotates. The said bobbin 2 is pivoted on the bobbin supporting parts 1b each of which is fixed across each of the supporting frame 1a which is equipped each side of the said supporting member 1. The wire, to the one end of which a plug is electrically connected and the other end of which is electrically connected to the said socket outlet, is wound into the said bobbin 2.

Disclosure of Invention

Technical Problem

- [4] However, the conventional reel for winding an electric wire has the defect that the wire gets out of the bobbin during the wire is wound into the bobbin or unwound from the bobbin. Especially, the bobbin cannot rotate smoothly because the wire getting out of the bobbin is inserted between the supporting member and the flange.
- [5] Also, the conventional reel for winding an electric wire has the defect that it is inconvenient for the wire to fix because there is no means that fix the end of wire. For example, the end of wire is fixed by being wound around the wire which is wound into the bobbin. But it is inconvenient for the end of wire to wind around the wire which is wound into the bobbin, and the end of wire is unwound easily.
- [6] Accordingly, to overcome the problems encountered in the conventional art, it is an object of the present invention to provide a reel for winding an electric wire capable of preventing the wire from getting out of a bobbin and being inserted between the bobbin and the supporting member by preventing frames each of which surrounds each flange of the bobbin.

- [7] It is another object of the present invention to provide a reel for winding an electric wire capable of fixing the end of wire conveniently and the end of wire not being unwound easily by pressing up and fixing the end of wire in a groove formed on the plug.

Technical Solution

- [8] To achieve the above objects, in a reel for winding an electric wire comprising a supporting member, a bobbin, at the one side of which having an socket outlet and at each side of which a disklike flange being formed, being instaled at the said supporting member so that the bobbin rotates, and a wire, to the one end of which a plug is electrically connected and the other end of which is electrically connected to the said socket outlet, characterized in that: the said supporting member having a pair of prventing frames, each of which surrounds each flange of the said bobbin so that the w ire may be prevented from getting out of the said bobbin and being inserted between the said flange and the said preventing frame during the wire is wound into the bobbin or unwound from the bobbin.
- [9] In a reel for winding an electric wire according to th present invention, the said bobbin consits of a first bobbin part having a first body and a first flange formed at one side of the said first body, and a second bobbin part having a second body and a second flange formed at one side of the said second body, and the other side of the said second body is connected to the other side of the said first body.
- [10] The aboved-described bobbin is assembled easily by joining the first bobbin part and the second bobbin part. Accordingly, it is easy to wire in the bobbin, and the work to install the bobbin onto the supproting member is improved
- [11] In a reel for winding an electric wire according to th present invention, the reel of claim 1 or claim 2, wherein a groove is formed on the said plug of the wire so that the wire may be pressed up and fixed in the said groove.
- [12] The plug is fastened to the bobbin by pressing up and fixing the end of wire in a groove formed on the plug.

Advantageous Effects

- [13] As described above, in a reel for winding an electric wire according to the prsent invention, since the preventing frames each of which surrounds each flange of the bobbin is equipped, a reel for winding an electric wire according to the present invention is capable of preventing the wire from getting out of a bobbin and being inserted between the bobbin and the supporting member by preventing frames each of which surrounds each flange of the bobbin.
- [14] Also, in a reel for winding an electric wire according to the prsent invention, since the end of wire is pressed up and fixed in a groove formed on the plug, a reel for

winding an electric wire according to the present invention is capable of fixing the end of wire conveniently and the end of wire not being unwound easily.

Brief Description of the Drawings

- [15] The preferred embodiments of the present invention will be described with reference to the accompanying drawings.
- [16] Figure 1 is a perspective view illustrating a reel for winding an electric wire according to an embodiment of the present invention;
- [17] Figure 2 is a side view illustrating a reel for winding an electric wire according to an embodiment of the present invention;
- [18] Figure 3 is a front view illustrating a reel for winding an electric wire according to an embodiment of the present invention;
- [19] Figure 4 is a perspective view illustrating the plug of a reel for winding an electric wire according to an embodiment of the present invention;
- [20] Figure 5 is a perspective view illustrating the state that a plug is fixed in a reel for winding an electric wire according to an embodiment of the present invention;
- [21] Figure 6 is a side view of the conventional reel for winding an electric wire.

Mode for the Invention

- [22] The a reel for winding an electric wire according to the present invention will be described with reference to the accompanying drawings.
- [23] Figure 1 is a perspective view illustrating a reel for winding an electric wire according to an embodiment of the present invention, Figure 2 is a side view illustrating a reel for winding an electric wire according to an embodiment of the present invention, Figure 3 is a front view illustrating a reel for winding an electric wire according to an embodiment of the present invention, Figure 4 is a perspective view illustrating the plug of a reel for winding an electric wire according to an embodiment of the present invention, and Figure 5 is a perspective view illustrating the state that a plug is fixed in a reel for winding an electric wire according to an embodiment of the present invention.
- [24] As shown therein, a reel for winding an electric wire according to an embodiment of the present invention comprises a supporting member 10, a bobbin 20, and a wire 30.
- [25] The above-mentioned supporting member 10 is designed for the said bobbin 20 to be installed so that the bobbin 20 rotates. In the supporting member, a bobbin supporting part 15 having the axis on which the both end of the bobbin 20 is pivoted is equipped on the base part 11a, 13a supporting the reel. As described above, the present invention is characterized in that the reel has the construction to prevent the wire 30 from getting beyond the flange 21b, 23b and getting out of the bobbin 20. To achieve the above mentioned, the reel for winding an electric wire according to an embodiment of the present invention is characterized in that a pair of preventing frames 11b, 13b are

equipped at each side of the supporting member 10, each of which surrounds each flange 21b,23b so that the wire 30 may be prevented from getting out of the said flange 21b,23b during the wire 30 is wound into and unwound from the body 21a,23a of the bobbin 20. It is possible that the above-mentioned supporting member 10 is a single body which comprises the said base part 11a,13a, the preventing frame 11b,13b, and the bobbin supporting part 15. In the figure, the supporting member 10 is constructed into a single body by jointing the jointing part 11c,13c which is extended to the width direction on the above of the preventing frame 11b,13b which is formed halfly, and the bobbin supporting part 15 is across the preventing frame 11b,13b and the end of the bobbin supporting part 15 is fixed to the preventing frame 11b,13b.

[26] The above-mentioned bobbin 20 has the shape of a spool and is the part into which the wire 30 is wound. The bobbin 20 has the body 21a,23a onto which the wire 20 is wound. One or more socket outlet 25, in which the plug of the electrically-drive instruments is plugged, is equipped at one side of the body 21a,23b at least. And the disklike flange 21b,23b is formed at each side of the body 21a,23a to make the wire 30 wound into the body 21a,21b. The above-mentioned bobbin 20 is pivoted on axis of a bobbin supporting part 15. As described above, the socket outlet 25 is installed onto the bobbin 20, and the one end of the wire 30 is electrically connected to that socket outlet 25. Also, the bobbin 20 is installed on the supporting member 10 so that the flange 21b,23b of the bobbin 20 is positioned inside the preventing frame 11b,23b. In the present invention, it is desirable that the bobbin is made up of the first bobbin part and the second bobbin part by assembling the first bobbin part and the second bobbin part so that the work, connecting the wire 30 to the socket outlet 25 and installing the bobbin 20 into the supporting member 10, is convenient. As shown in the figures, the said bobbin 20 consists of a first bobbin part having a first body 21a and a first flange 21b formed at one side of the said first body 21a, and a second bobbin part having a second body 23a and a second flange 23b formed at one side of the said second body 23b, and the other side of the said second body 23b is connected to the other side of the said first body 23b.

[27] The above-mentioned wire 30 is wound onto the body 21a,23a of the bobbin 20. To the one end of the wire 20 a plug 31 plugged in the socket outlet equipped in the power supply is electrically connected, and the other end of the wire 30 is electrically connected to the said socket outlet 25. As described above, since the wire 30 is caught by and guided by the preventing frames 11b,13b during being wound into or unwound from the body 21a,23a of the bobbin 20, the wire 30 is prevented from getting out of the flange 21a,23a. And the groove 31a, in which the end of the wire 30 is pressed up and fixed in so that the plug 31 is fixed to the wire 30 wound onto the body 21a,23a of the bobbin 20, is formed on the plug 31.

Industrial Applicability

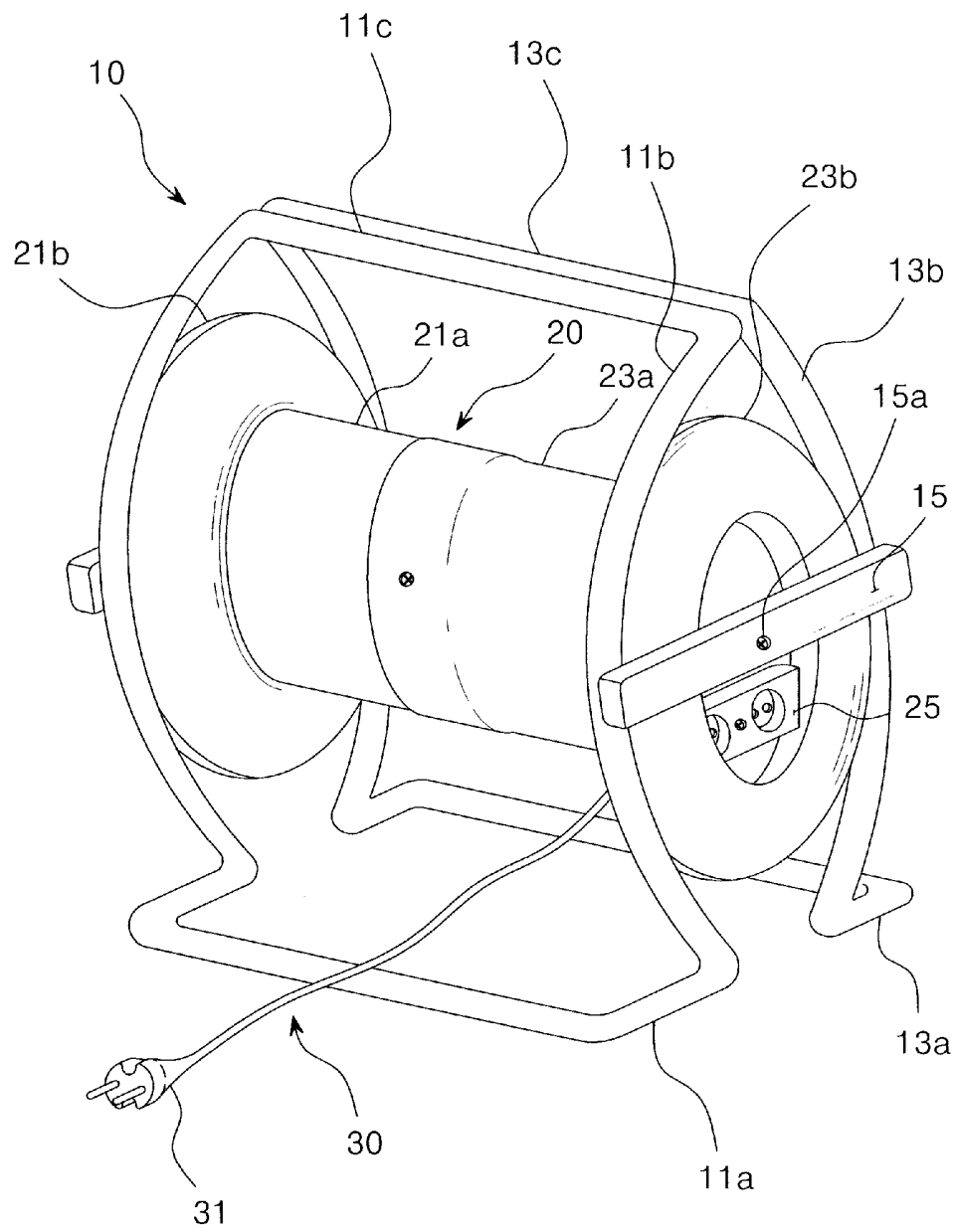
[28] With the above-described advantages and effects, the reel for winding an electric wire can be well adapted to a reel which prevent the wire from getting out of a bobbin and being inserted between the bobbin and the supporting member, and of which the wire is pressed up and fixed in a groove so that the wire may be prevented from unwinding.

[29] As the present invention may be embodied in several forms without departing from the spirit or essential characteristics thereof, it should also be understood that the above-described examples are not limited by any of the details of the foregoing description, unless otherwise specified, but rather should be construed broadly within its spirit and scope as defined in the appended claims, and therefore all changes and modifications that fall within the meet and bounds of the claims, or equivalences of such meets and bounds are therefore intended to be embraced by the appended claims.

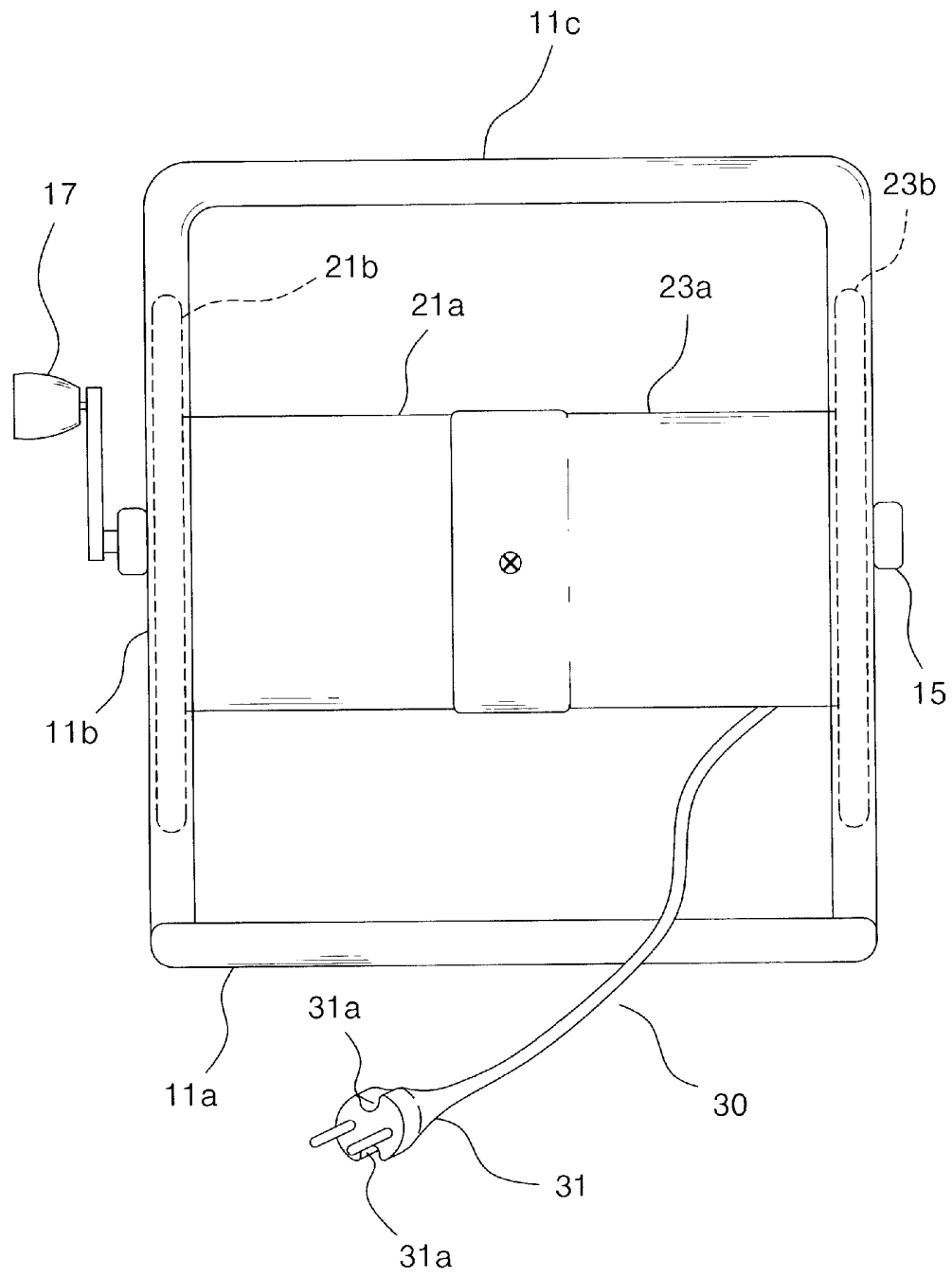
Claims

- [1] In a reel for winding an electric wire comprising a supporting member, a bobbin, at the one side of which having an socket outlet and at each side of which a disklike flange being formed, being instaled at the said supporting member so that the bobbin rotates, and a wire, to the one end of which a plug is electrically connected and the other end of which is electrically connected to the said socket outlet, characterized in that:
- the said supprorting member having a pair of prventing frames, each of which surrounds each flange of the said bobbin so that the wire may be prevented from getting out of the said bobbin and being inserted between the said flange and the said preventing frame during the wire is wound into the bobbin or unwound from the bobbin.
- [2] The reel of claim 1, wherein the said bobbin consits of a first bobbin part having a first body and a first flange formed at one side of the said first body, and a second bobbin part having a second body and a second flange formed at one side of the said second body, and the other side of the said second body is connected to the other side of the said first body.
- [3] The reel of claim 1 or claim 2, wherein a groove is formed on the said plug of the wire so that the wire may be pressed up and fixed in the said groove.

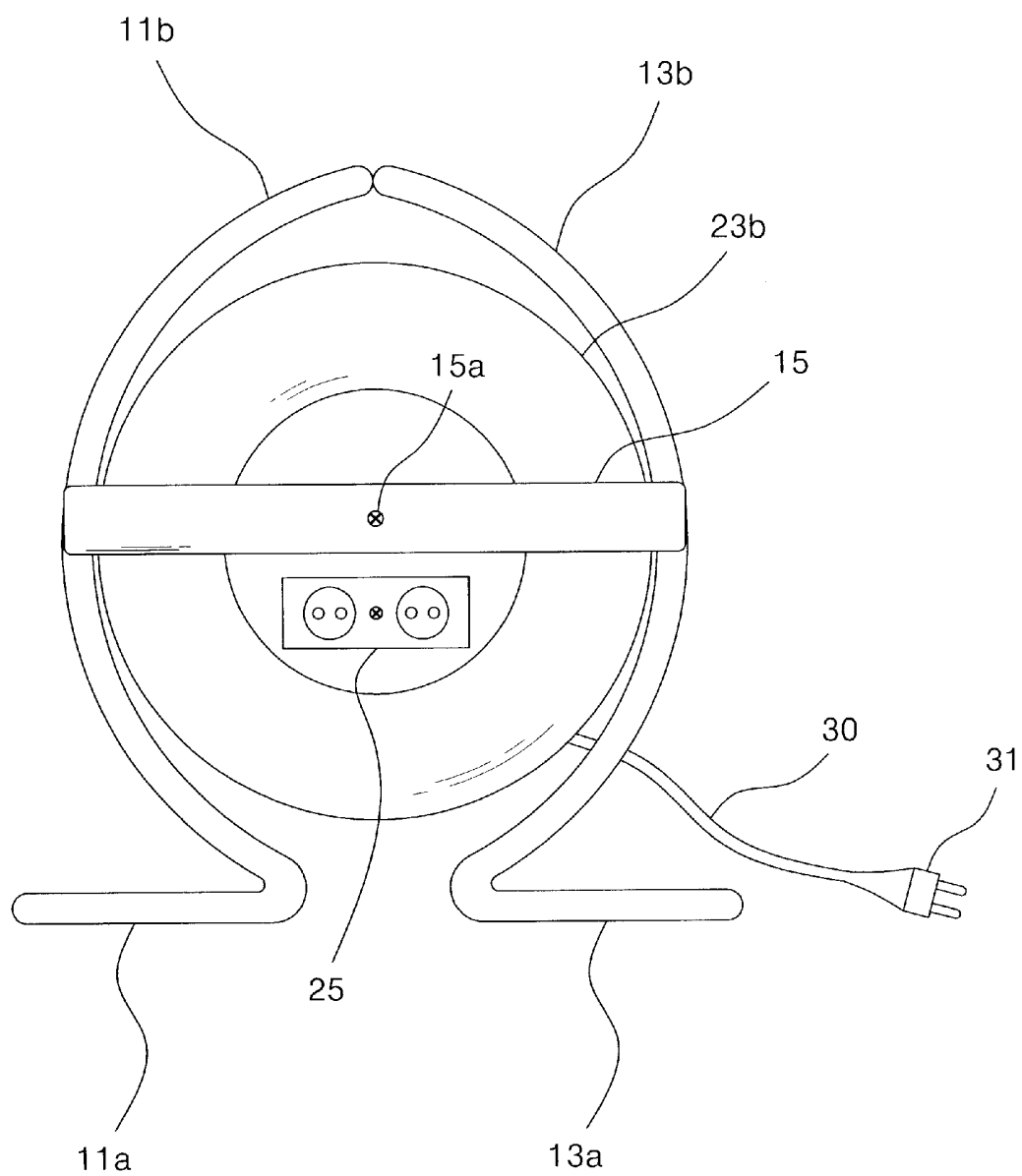
[Fig. 1]



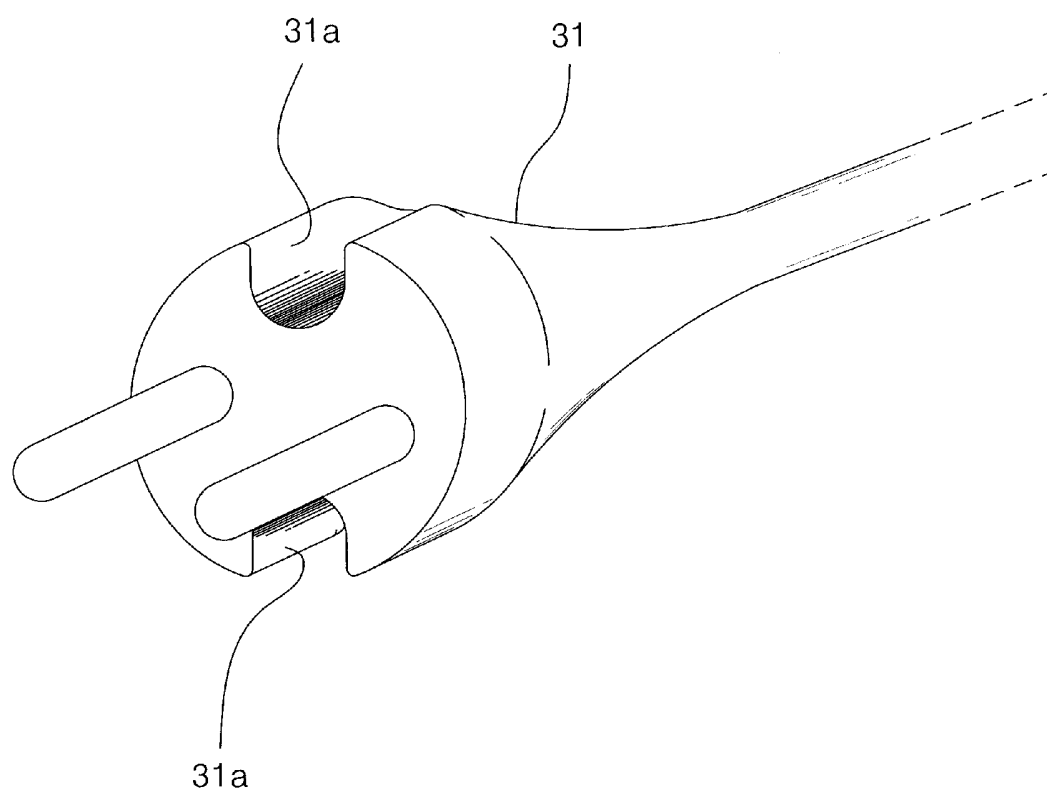
[Fig. 2]



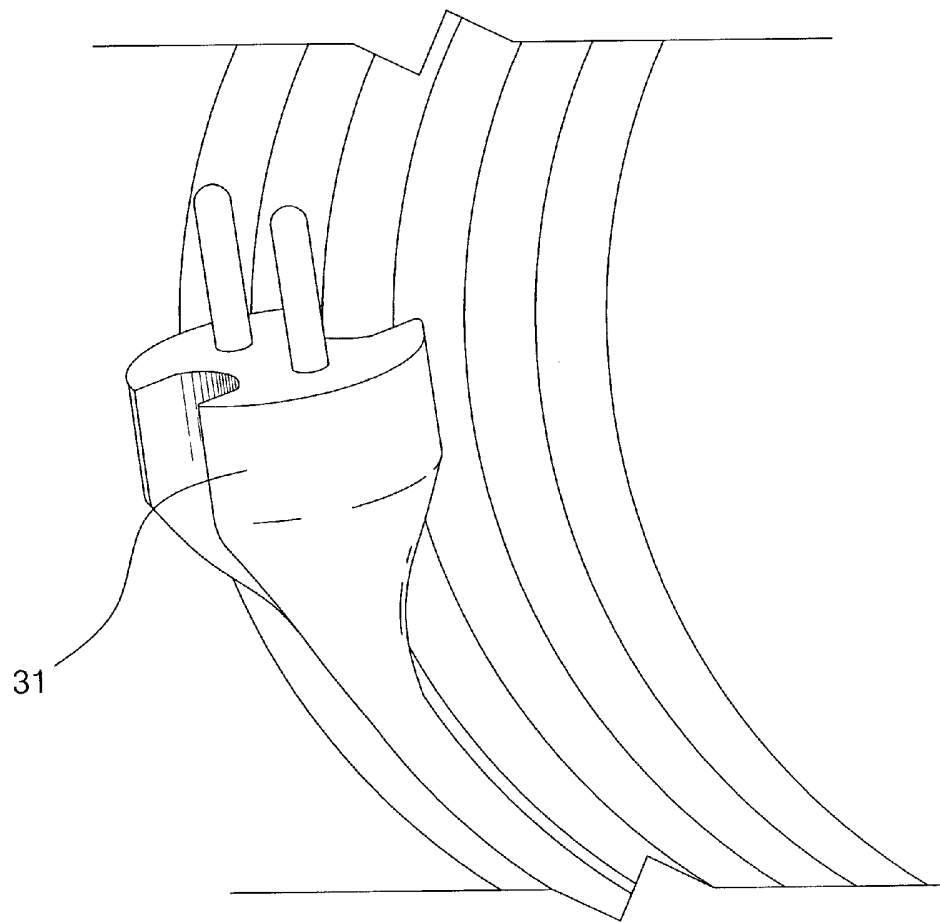
[Fig. 3]



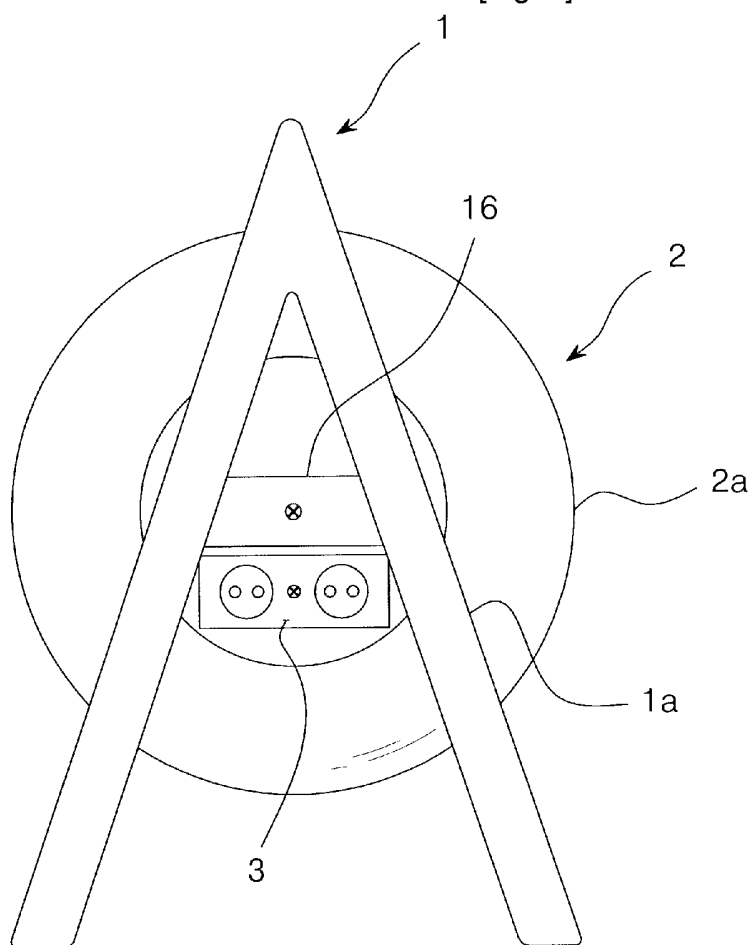
[Fig. 4]



[Fig. 5]



[Fig. 6]



INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2005/001062

A. CLASSIFICATION OF SUBJECT MATTER**IPC7 H02G 11/02**

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 B65H 75/34 , H02G 11/02

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

KR.JP : classes as above

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 55-020335 U(TOYO ENG CORP) 08 FEBRUARY 1980, See FIG1, Claim1	1-3
Y	KR 2002-284465 Y(KONG, HANG-KWEON) 23 JULY 2002, See Fig1	1-3
A	KR 2003-308993(KOREA POWER PLANT SERVICE CO., LTD.) 17 MARCH 2003, See Fig2, 5	1-3

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

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Date of the actual completion of the international search

27 JULY 2005 (27.07.2005)

Date of mailing of the international search report

05 AUGUST 2005 (05.08.2005)

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