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(54) **Electrical rotatable display shelf**

(57) An electrical rotatable display shelf has a central tube (10), a plurality of upright partitions (21) provided around the central tube (10), a plurality of lateral shelves (23) supported by pins fixed on the upright partitions (21), and a base (40) with an electrical motor (400) and a rotary connecting device (50) provided therein; wherein the central tube (10) has a plurality of power sockets (13) provided thereon with relative electrical wires (31) received therein connecting all the power sockets (13). Thereby exhibition products arranged on the display shelf can be supplied with power safety and efficiency to give a dynamic effect of both the display shelf and the exhibition products.

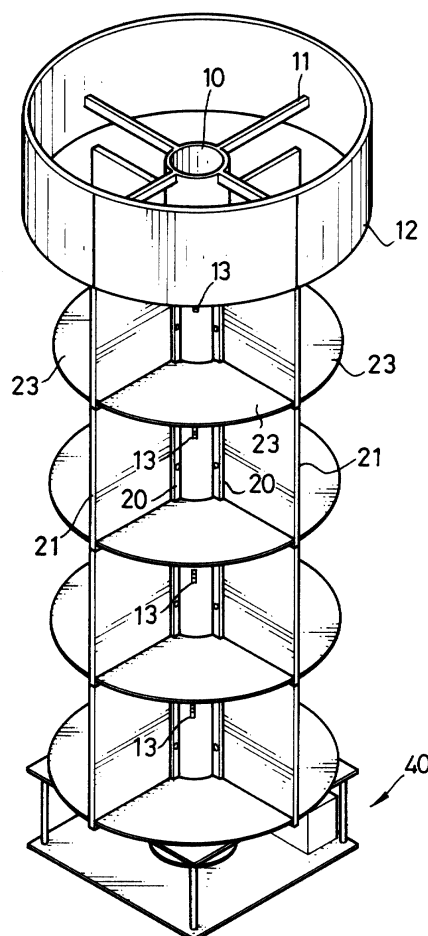


FIG. 1

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Description

1. Field of the Invention

[0001] The present invention relates to an electrical rotatable display shelf comprising a central tube, which has a plurality of power sockets provided thereon with relative electrical wires received therein parallel connecting all the power sockets.

2. Description of Related Art

[0002] Most display cases or shelves are stationary, and only a few of them presented at exhibitions are rotatable. However, conventional rotatable display shelves normally do not have a power socket provided thereon, because if such a shelf is provided with a power socket, electrical wires connected with the socket will certainly become entwined due to a rotation of the display shelf thereby causing a dangerous short circuit situation

[0003] Therefore it is an objective of the invention to provide a rotatable displayshelf to mitigate and/or obviate the aforementioned problems.

[0004] The main object of the invention is to provide an electrical rotatable display shelf, which comprises a central tube having a plurality of power sockets provided thereon with relative electrical wires received therein connecting the power sockets, a plurality of upright partitions and a plurality of space-apart lateral shelves provided around the central tube, and a base with an electrical motor and a rotary connecting device provided therein; whereby the display shelf of the invention gives dynamic effects of both the rotation of the display shelf and the operation of the exhibition products, such as lighting, sound, etc.

[0005] Other objects, advantages and novel features of the invention will become more apparent from the following detailed description when taken in conjunction with the accompanying drawings.

In the drawings:

[0006]

Fig. 1 is a perspective view of an electrical rotatable display shelf in accordance with the invention;

Fig. 2 is an exploded perspective view of the electrical rotatable display shelf in accordance with the invention;

Fig. 3 is a side view of the electrical rotatable display shelf in accordance with the invention;

Fig. 4 is a cross sectional view of the electrical rotatable display shelf shown in Fig. 3 along line 4-4;

Fig. 5 is an enlarged partial cross sectional view of a base of the electrical rotatable display shelf in accordance with the invention;

Fig. 6 is a perspective view of a rotary connecting

device provided in the base of the display shelf in accordance of the invention; and

Fig. 7 is a perspective schematic view of one embodiment of the electrical rotatable display shelf with exhibition products arranged thereon.

[0007] As shown in Figs. 1 and 2, an electrical rotatable display shelf in accordance with the present invention particularly comprises a central tube (10), a plurality of upright partitions (21), a plurality of spaced-apart lateral horizontal shelves (23) and a base (40).

[0008] Referring to Figs. 3 and 4, the central tube (10) standing upright on the base (40) has a top end thereof forming a cross-shaped bracket (11) to securely support an annular advertisement board (12) therearound. One preferred embodiment as shown in the figures has four of the upright partitions (21) provided around the central tube (10) in a cross-like configuration. Each partition (21) has an inner end thereof fixed between two fixing bars (20) which are secured on the central tube (10). Each lateral shelf (23) consists of four fan-shaped plates, which are respectively supported by a set of pins (22) fixed on the partitions (21). The display shelf is then partitioned into a plurality of areas to arrange exhibition products therein, and each such area of the display shelf has a power socket (13) provided on the central tube (10) to supply power to the exhibition product.

[0009] As best seen in Fig. 5, the base (40) is composed of a top and bottom, between which a plurality of posts is provided. Furthermore, an electrical motor (400) and a rotary connecting device (50) are respectively provided in the base (40). The electrical motor (400) first drives a belt (41) to run a belt roller (42) and a lateral driving shaft (43) secured with the belt roller (42). A first bevel gear (44) securely mounted around an end portion of the drive shaft (43) is engaged with a corresponding second bevel gear (45) secured around an upright driven hollow shaft (46). The first and second bevel gears (44, 45) are rotatably supported by an upper and a lower bearing (47) respectively provided on the top and the bottom of the base (40). A top end of the hollow shaft (46) is extended through the top of the base (40) and secured with a bottom end of the central tube (10). The sockets (13) are parallel connected by first electrical wires (31) extending thereamong. A pair of second electrical wires (532) has a top end thereof connected with the socket (13) and a bottom end thereof extended through the hollow shaft (46) to electrically connect with the rotary connecting device (50).

[0010] As clearly illustrated in Figs. 5 and 6, the connecting device (50) includes a platform (51) supported on a plurality of stands (52), a rotary disc (53) with two isolated metal rings (530) provided there-around, two connecting terminals (520) respectively contacting with the metal rings (530) and two power lines (522) respectively connected with the connecting terminals (520). When the electricity supply of the display shelf is switched on, the central tube (10) rotates along with the

hollow shaft (46), which is driven by the motor (400) via the first and second bevel gears (44, 45), the driving shaft (43), the belt roller (42) and the belt (41). The pair of second electrical wires (532) has the bottom end thereof extended through the hollow shaft (46) and respectively soldered with the metal rings (530), whereby the power sockets (13) provide a supply of electric current. Because the rotary disc (53) is securely mounted around the shaft (46), it rotates together with the shaft (46), the central tube (10) and the second electrical wires (532), so that entwinement of the second electrical wires (532) will never occur, whereby the safety of the electrical rotatable display shelf of the invention is ensured.

[0011] Figure 7 shows that exhibition products (30), such as various lamps are respectively arranged on the lateral shelves (23) of the display shelf. It is efficient and convenient to take advantage of the power sockets (13) provided on the shelves for the exhibition products (30), whereby dynamic exhibition effects of both the rotation of the shelf and the operation of the products (30) are realized.

[0012] It is to be understood, however, that even though numerous characteristics and advantages of the present invention have been set forth in the foregoing description, together with details of the structure and function of the invention, the disclosure is illustrative only, and changes may be made in detail, especially in matters of shape, size, and arrangement of parts within the principles of the invention to the full extent indicated by the broad general meaning of the terms in which the appended claims are expressed.

Claims

1. An electrical rotatable display shelf comprising an upright central tube (10) with a plurality of upright partitions (21) and a plurality of spaced apart lateral shelves (23) provided therearound, and a base (40) provided at a bottom end of the central tube (10); wherein the improvements comprise:

the central tube (10) has a plurality of sockets (13) provided thereon with relative electrical wires (31) received therein;

the base (40) is composed of a top and a bottom between which a plurality of posts is provided, an electrical motor (400) provided therein to rotate the central tube (10) of the shelf, and a rotary connecting device (50) provided therein connected with a pair of electric cables (532) parallel connected with all the sockets (13).

2. The electrical rotatable display shelf as claimed in claim 1, wherein a top end portion of the central tube (10) is formed as a cross-shaped bracket (11) mounted with an annular advertisement board

there-around.

3. The electrical rotatable display shelf as claimed in claim 1, wherein each of the upright partitions (21) has an inner end thereof fixed between two fixing bars (20), and the fixing bars are secured on the central tube (10).
4. The electrical rotatable display shelf as claimed in claim 1, wherein each one of the lateral shelves (23) consists of four fan-shaped plates, which are respectively supported by pins (22) fixed on the upright partitions (21).
5. The electrical rotatable display shelf as claimed in claim 1, wherein the motor (400) drives a belt (41) to run a belt roller (42) and a lateral driving shaft (43) secured with the belt roller (42); a first bevel gear (44) securely mounted around one end portion of the drive shaft (43) and engaged with a corresponding second bevel gear (45) securely mounted around an upright driven hollow shaft (46), the first and second bevel gears (44, 45) rotatably supported by an upper and a lower bearing (47) provided on the top and the bottom of the base (40); and a top end of the hollow shaft (46) is extended through the top of the base (40) and secured with the bottom end of the central tube (10).
6. The electrical rotatable display shelf as claimed in claim 1, wherein the connecting device (50) includes a platform (51) supported on a plurality of stands (52), a rotary disc (53) with two isolated metal rings (530) provided there-around, two connecting terminals (520) respectively contacting with the metal rings (530) and two power lines (522) respectively connected with the connecting terminals (520).

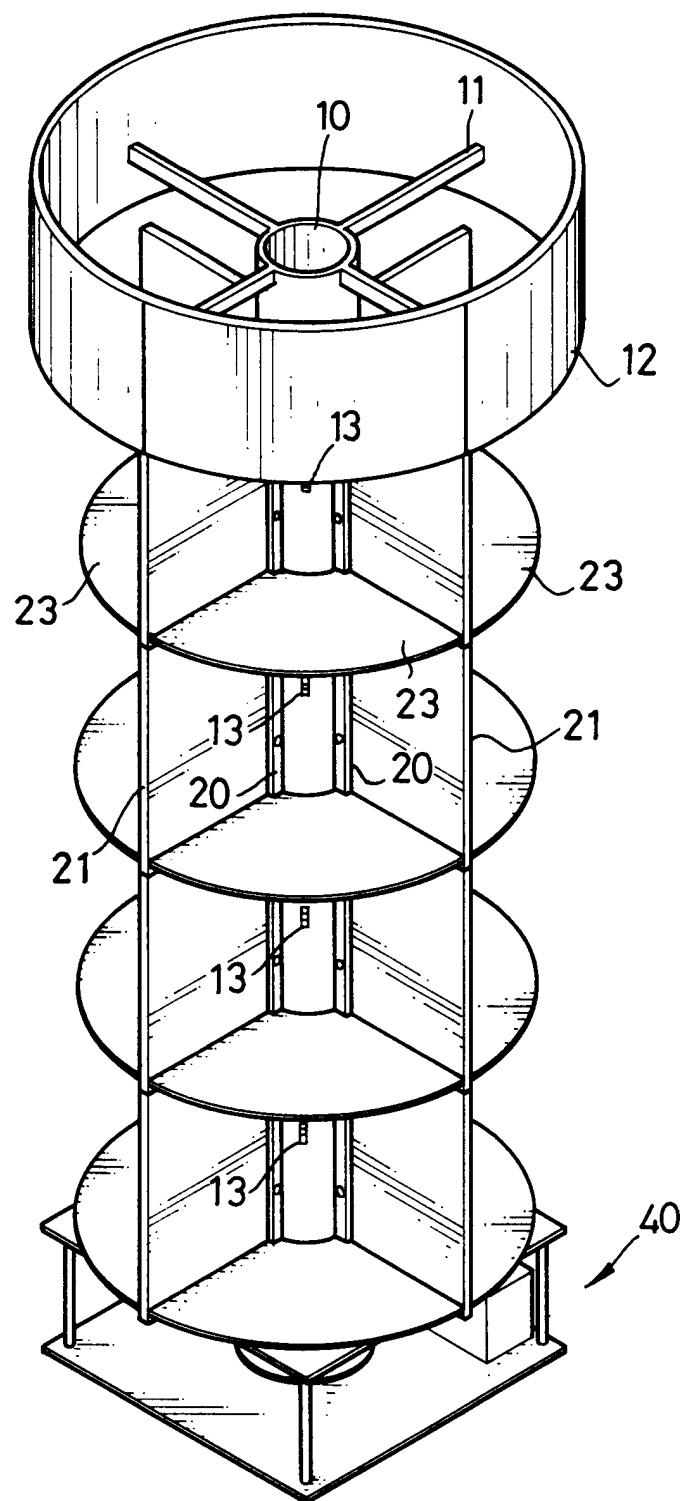


FIG. 1

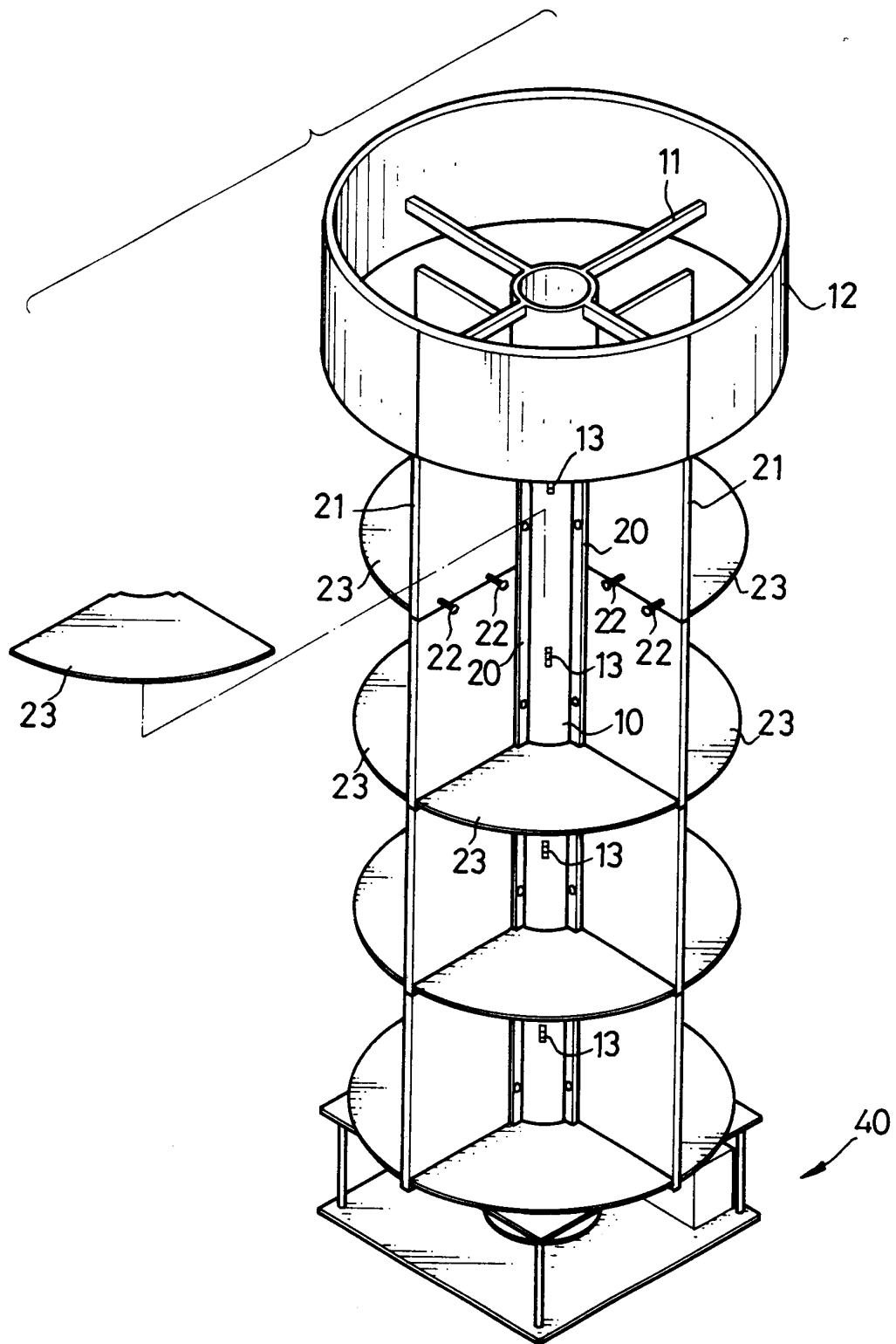


FIG. 2

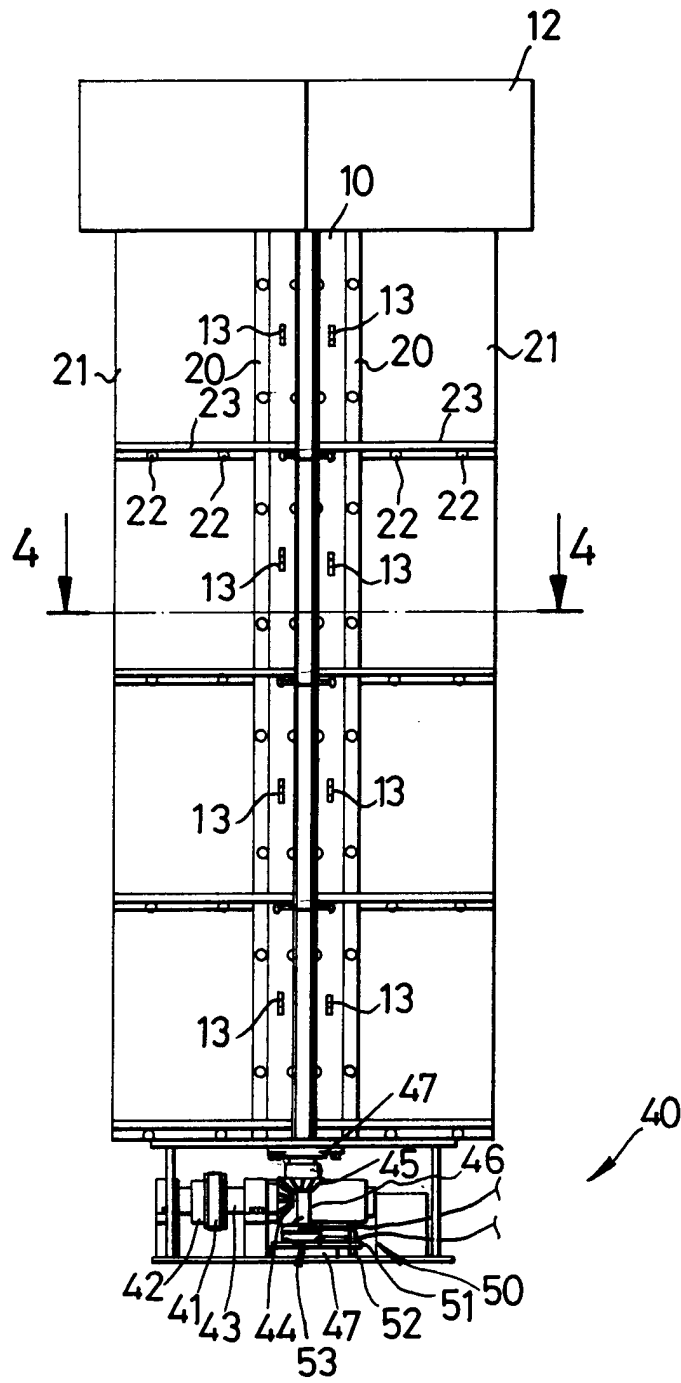


FIG. 3

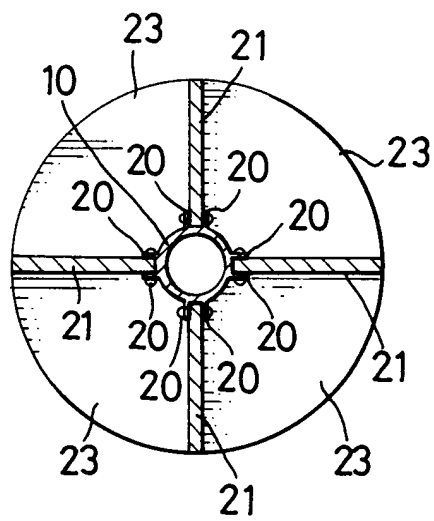


FIG.4

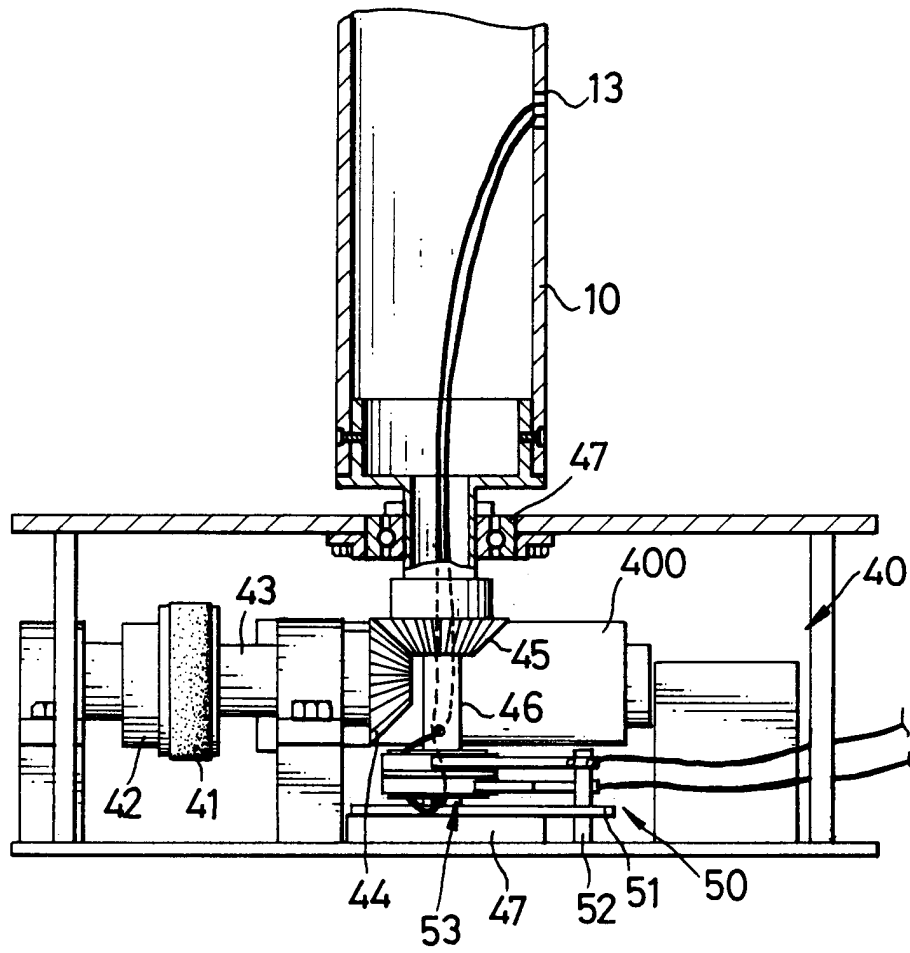


FIG.5

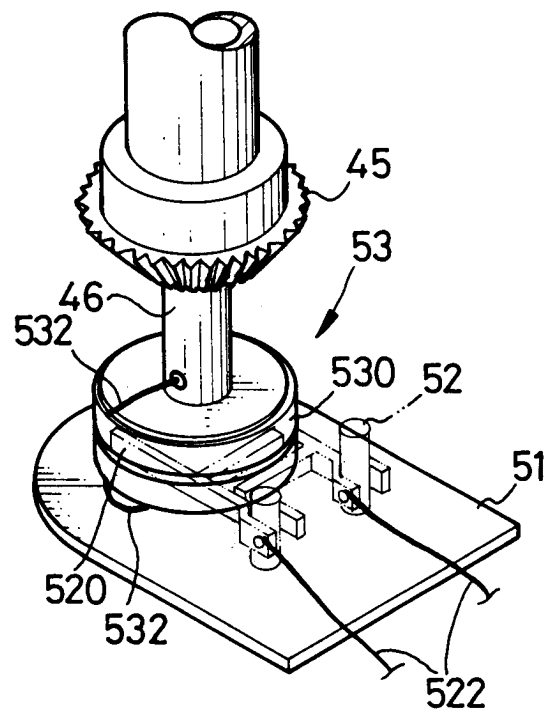


FIG.6

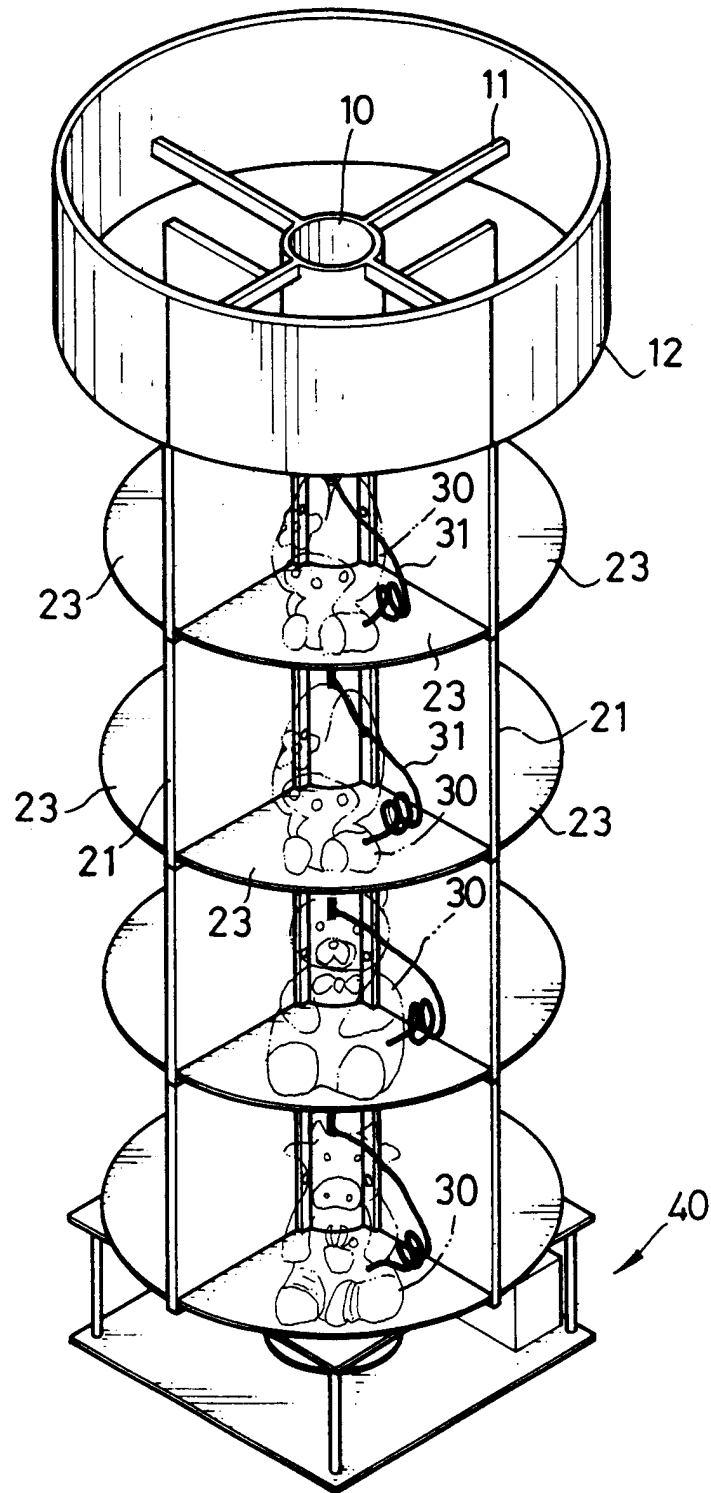


FIG.7



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EUROPEAN SEARCH REPORT

Application Number
EP 99 12 4047

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.7)
A	EP 0 667 111 A (GERKINSMEYER) 16 August 1995 (1995-08-16) * abstract *	1,5	A47F5/025
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			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
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The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		12 May 2000	Pineau, A
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			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 99 12 4047

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12-05-2000

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82