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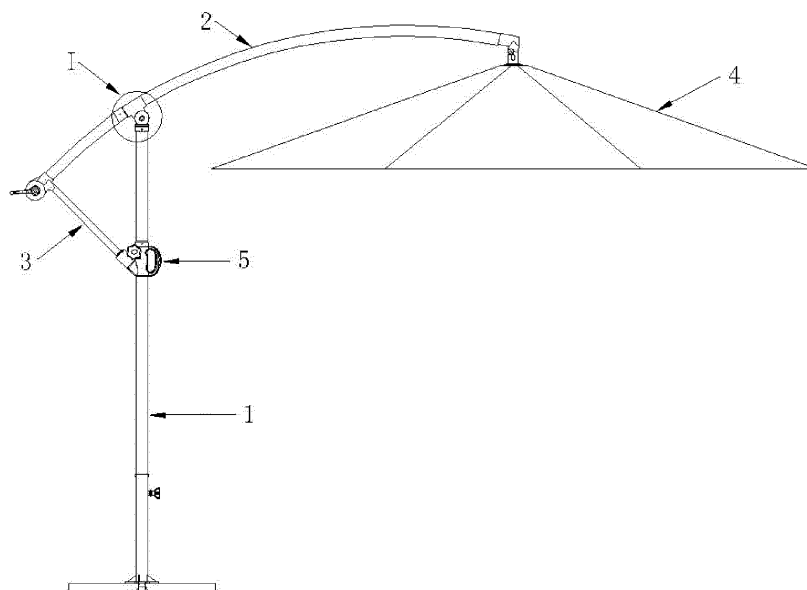
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(54) Hanging umbrella and rotating mechanism for such an umbrella

(57) A hanging umbrella with a 360-degree rotating mechanism is claimed; a sliding sleeve (5) is sleeved on a pipe body of a vertical pipe (1); the top end of an arched pipe (2) is connected to an umbrella roof, and the tail end is in shaft connection to the upper end of an arm pipe (3); the lower end of the arm pipe (3) is in shaft connection to the sliding sleeve (5), wherein a shaft sleeve (13) is

arranged at the top end of the vertical pipe (1); the lower part (11') of a rotating shaft (11) is rotatably connected with the shaft sleeve (13), and the upper part (11'') of the rotating shaft is in shaft connection to a supporting pipe sleeve (15) sleeved on the pipe body of the arched pipe (2). Further a rotating mechanism for such an umbrella is claimed.

**FIG. 1****EP 2 952 116 A1**

Description

Technical Field:

[0001] The invention refers to an umbrella, especially to a sun umbrella, in particular to a hanging umbrella with a 360-degree rotating mechanism. Further the invention refers to an according rotating mechanism.

Background Technology:

[0002] Shielding area of sun umbrella changes as sun-light offsets, at which time user expects to rotate umbrella surface to regulate the shielding area of the umbrella. Straight-rod umbrella and hanging umbrellas have entered into the current market, and they generally rotate by 360 degrees on base. For example, a rotating support base (patent No. is 00211064.4) for hanging umbrella and straight-rod umbrella is disclosed by Chinese patent publication, which comprises a chassis and a fixing element which is arranged on the chassis and used for fixing and inserting an umbrella supporting rod, wherein the chassis is further provided with a rotating mechanism for rotating the supporting rod, and the rotating mechanism is rotatably supported on a rotating sleeve in the chassis through a bearing. Meshing teeth are arranged around the outer surface of the rotating sleeve. Lock teeth of lock tooth blocks each of which has a certain distance of travel in a longitudinal direction are meshed or not meshed with the meshing teeth of the rotating sleeve. A reset spring is arranged between the lock tooth blocks. The product is complex in structure, high in cost and troublesome to operate, and the product not only increases cost and packaging size but also avoids inconvenience of customers in carrying by setting the 360-degree rotating unit on the base.

Problem:

[0003] The invention aims at providing a hanging umbrella surface 360-degeree rotating mechanism which is simple in structure, relatively small in size, low in production cost and convenient to use.

[0004] The invention adopts a solution as follows:

A sliding sleeve is sleeved on the pipe body of a vertical pipe. The top end of an arched pipe is connected to an umbrella roof, and the tail end is in shaft connection to the upper pipe end of an arm pipe. The lower end of the arm pipe is in shaft connection to the sliding sleeve. A shaft sleeve is arranged at the top end of the vertical pipe. The lower part of a rotating shaft is rotatably matched with the shaft sleeve, and the upper part of the rotating shaft is in shaft connection to a supporting pipe sleeve sleeved on the pipe body of the arched pipe.

A tooth socket is arranged between the rotating shaft

and the shaft sleeve. A snap spring buckled on the rotating shaft is arranged at the bottom of the shaft sleeve. An outer convex ring is arranged on a periphery of the top end of the shaft sleeve, and an inner convex ring is arranged in an inner cavity of the bottom end. Outer diameter of the outer convex ring is more than inner diameter of the vertical pipe. Inner diameter of the inner convex ring is less than outer diameter of the tooth socket. The sliding sleeve is of a bolt-locked hoop structure.

[0005] The invention has the following advantages:

The umbrella surface can be rotated since sliding sleeve knob is loosened because two bearing parts of the sliding sleeve at the top end of the umbrella are rotatable.

Thus improving rotating way of a conventional base and easily regulating position of the umbrella surface. The base is not large in size, which makes it convenient to package and carry. The invention is simple in structure, concise and nice in appearance, low in cost and simple to operate.

Brief Description of the Drawings:

[0006]

There are several ways how to design, construct and further develop the teaching of the present invention in an advantageous way. To this end, it is to be referred to the patent claims subordinate to patent claim 1 and 5 on the one hand and to the following explanation of preferred examples of embodiments of the invention, illustrated by the drawing on the other hand. In connection with the explanation of the preferred embodiments of the invention by the aid of the drawing, generally preferred embodiments and further developments of the teaching will be explained.

[0007] In the drawing

Fig. 1 is a schematic diagram of vertical pipe of a hanging umbrella according to the invention.

Fig. 2 is an enlarged drawing of FIG. 1 on part I and

Fig. 3 is explosive drawing of partial components in FIG. 2.

Description of the Embodiments:

[0008] As shown in FIG. 1, according to the embodiment, the bottom of a hanging umbrella vertical pipe 1 is fixed with a base, and the top is connected to the middle of an arched pipe 2 through a rotating device; the top end of the arched pipe 2 is connected to an umbrella roof and

the tail end is in shaft connection to an arm pipe 3. A sliding sleeve 5 is sleeved in the pipe body of a vertical pipe 1, and the lower end of the arm pipe 3 is connected to the sliding sleeve 5. The sliding sleeve 5 is of a bolt-locked hoop structure, and the arm pipe 3 can rotate or be fastened relative to the vertical pipe 1 through regulating a bolt knob. The sliding sleeve 5 is of a conventional part. It will not make detailed description here.

[0009] As shown in FIG. 2 and FIG. 3, lower part 11' of a rotating shaft 11 is respectively sleeved with a tooth socket 12 and a shaft sleeve 13, and a snap spring 14 is buckled on the lower part 11' of the rotating shaft, so as to fix the shaft sleeve 13. The rotating shaft 11 sleeved with the shaft sleeve 13 is inserted in the top end of a vertical pipe 1, and the tooth socket 12, the shaft sleeve 13 and the vertical pipe 1 are fixed through screws 16, thus forming a rotating matching structure.

[0010] A convex ring is arranged in the middle of the rotating shaft 11, and the outer diameter of the convex ring is more than the inner diameter of the shaft sleeve 13, so as to limit axial displacement of the shaft sleeve 13 upwards. An outer convex ring is arranged on a periphery of the top end of the shaft sleeve 13 and an inner convex ring is arranged in an inner cavity at the bottom end, and the outer diameter of the outer convex ring is more than the inner diameter of the vertical pipe 1, so as to prevent the shaft sleeve 13 from sliding into the vertical pipe 1. The inner diameter of the inner convex ring is less than the outer diameter of the tooth socket 12, and the tooth socket 12 is limited in the shaft sleeve 13. A supporting sleeve 15 is sleeved in the arched pipe 2, and the bottom is in shaft connection to upper part 11" of the rotating shaft. Axial convex ribs are arranged in the tooth socket 12 to reduce friction between the rotating shaft 11 and the tooth socket 12; the tooth socket 12 is made from nylon, so that the tooth socket is difficult to be worn and low in friction, and is long in service life.

[0011] The vertical pipe 1 and the arched pipe 2 are in a rotating matching structure, and the sliding sleeve 5 of a bolt-locked hoop structure is arranged between the vertical pipe 1 and the arm pipe 3, so that the arc pipe 3 can rotate around the vertical pipe 1 and the arm pipe 3 and the arched pipe 2 can rotate the umbrella surface 4 since the bolt knob is loosened.

[0012] The invention, compared to the prior art, changes a conventional base knob way and easily regulate a shielding position, so that the base is simple, small in volume, convenient to package, and light and easy to carry. The invention is simple in structure, concise and nice in appearance, low in cost and simple to operate.

[0013] Many modifications and other embodiments of the invention set forth herein will come to mind the one skilled in the art to which the invention pertains having the benefit of the teachings presented in the foregoing description and the associated drawings. Therefore, it is to be understood that the invention is not to be limited to the specific embodiments disclosed and that modifications and other embodiments are intended to be included

within the scope of the appended claims. Although specific terms are employed herein, they are used in a generic and descriptive sense only and not for purposes of limitation.

Claims

1. Hanging umbrella with a 360-degree rotating mechanism; a sliding sleeve (5) is sleeved on a pipe body of a vertical pipe (1); the top end of an arched pipe (2) is connected to an umbrella roof, and the tail end is in shaft connection to the upper end of an arm pipe (3); the lower end of the arm pipe (3) is in shaft connection to the sliding sleeve (5), wherein a shaft sleeve (13) is arranged at the top end of the vertical pipe (1); the lower part (11') of a rotating shaft (11) is rotatably connected with the shaft sleeve (13), and the upper part (11") of the rotating shaft is in shaft connection to a supporting pipe sleeve (15) sleeved on the pipe body of the arched pipe (2).
2. Umbrella according to claim 1, wherein a tooth socket (12) is arranged between the rotating shaft (11) and the shaft sleeve (13); and a snap spring (14) buckled on the rotating shaft (11) is arranged at the bottom of the shaft sleeve (13).
3. Umbrella according to claim 1 or 2, wherein an outer convex ring is arranged on a periphery of the top end of the shaft sleeve (13), and an inner convex ring is arranged in an inner cavity of the bottom end; outer diameter of the outer convex ring is more than inner diameter of the vertical pipe (1); and inner diameter of the inner convex ring is less than outer diameter of the tooth socket (12).
4. Umbrella according to claims 1 to 3, wherein the sliding sleeve (5) is of a bolt-locked hoop structure.
5. Rotating mechanism for an umbrella according to one of claims 1 to 4, **characterized in that** a sliding sleeve (5) is sleeved on a pipe body of a vertical pipe (1); the top end of an arched pipe (2) is connected to an umbrella roof, and the tail end is in shaft connection to the upper end of an arm pipe (3); the lower end of the arm pipe (3) is in shaft connection to the sliding sleeve (5), wherein a shaft sleeve (13) is arranged at the top end of the vertical pipe (1); the lower part (11') of a rotating shaft (11) is rotatably connected with the shaft sleeve (13), and the upper part (11") of the rotating shaft is in shaft connection to a supporting pipe sleeve (15) sleeved on the pipe body of the arched pipe (2).
6. Rotating mechanism according to claim 5, **characterized in that** a tooth socket (12) is arranged between the rotating shaft (11) and the shaft sleeve

(13); and a snap spring (14) buckled on the rotating shaft (11) is arranged at the bottom of the shaft sleeve (13).

7. Rotating mechanism according to claim 5 and 6, ⁵
characterized in that an outer convex ring is arranged on a periphery of the top end of the shaft sleeve (13), and an inner convex ring is arranged in an inner cavity of the bottom end; outer diameter of the outer convex ring is more than inner diameter of the vertical pipe (1); and inner diameter of the inner convex ring is less than outer diameter of the tooth socket (12). ¹⁰
8. Rotating mechanism according to one of claims 5 to 7, ¹⁵
characterized in that the sliding sleeve (5) is of a bolt-locked hoop structure.

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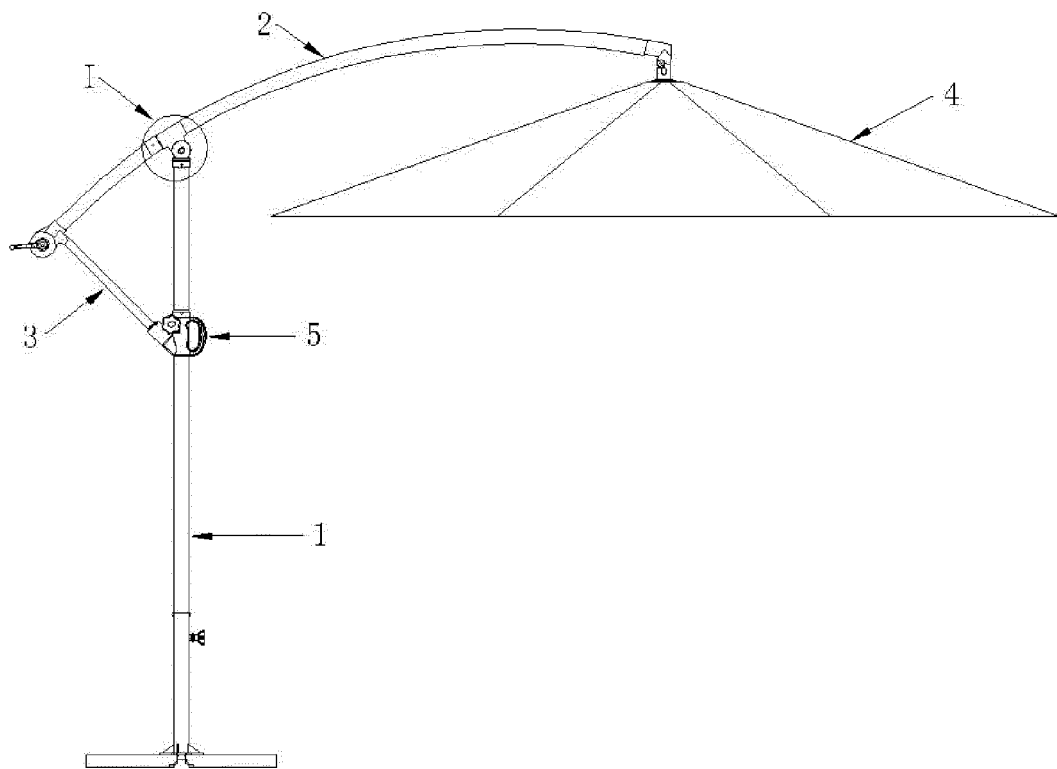


FIG. 1

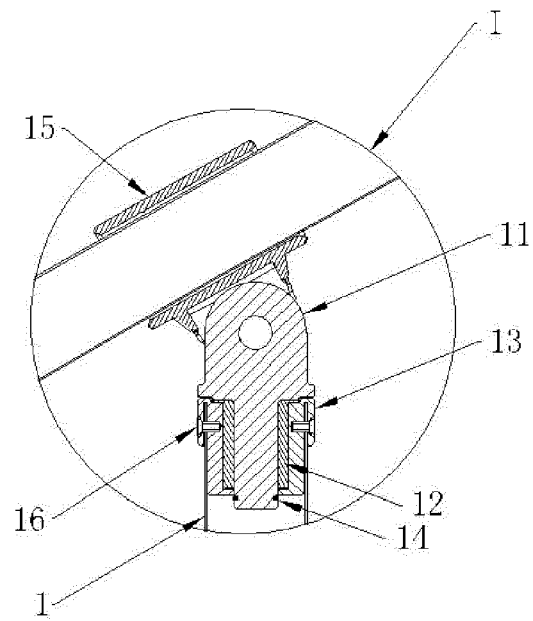


FIG. 2

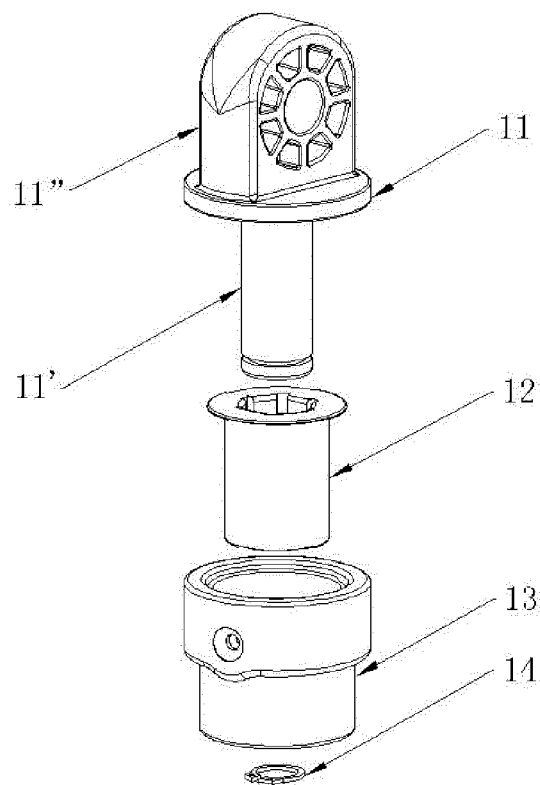


FIG. 3



EUROPEAN SEARCH REPORT

Application Number
EP 14 17 1365

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	CN 200 997 967 Y (ZHEJIANG YONGQIANG GROUP CO [CN]) 2 January 2008 (2008-01-02) * claims 1-3; figures 1-3 * -----	1-8	INV. A45B23/00
X	WO 2008/098557 A2 (YOTRIO GROUP CO LTD [CN]; LIU KAI [CN]) 21 August 2008 (2008-08-21) * abstract; figures 1,2a,2b * -----	1,2,4-6, 8	
			TECHNICAL FIELDS SEARCHED (IPC)
			A45B
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		30 October 2014	Longo dit Opeti, T
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ON EUROPEAN PATENT APPLICATION NO.**

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30-10-2014

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
CN 200997967 Y	02-01-2008	NONE	
-----	-----	-----	-----
WO 2008098557 A2	21-08-2008	CA 2673185 A1	21-08-2008
		DE 102007021400 A1	28-08-2008
		EP 2134206 A2	23-12-2009
		US 2010037929 A1	18-02-2010
		WO 2008098557 A2	21-08-2008
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- CN 00211064 [0002]