(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 1 486 136 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
27.05.2009 Bulletin 2009/22

(51) Int Cl.:
A45B 25/22 *(2006.01)*

(21) Application number: **03253756.5**

(22) Date of filing: **12.06.2003**

(54) **Umbrella with a rotatable canopy**

Regenschirm mit drehbarer Kappe

Parapluie avec une structure couvrante rotative

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR

(43) Date of publication of application:
15.12.2004 Bulletin 2004/51

(73) Proprietor: **Wang, Max**
Tai-Ping City,
Taichung Hsien (TW)

(72) Inventor: **Wang, Max**
Tai-Ping City,
Taichung Hsien (TW)

(74) Representative: **Oxley, Robin John George et al**
Marks & Clerk LLP
90 Long Acre
London
WC2E 9RA (GB)

(56) References cited:
WO-A-00/22951
US-A- 4 998 551
US-A- 5 020 557
US-B1- 6 314 976

EP 1 486 136 B1

Description

[0001] This invention relates to an umbrella, more particularly to an umbrella with a canopy which is rotatable relative to a stem when subjected to a relatively strong force.

[0002] Referring to Fig. 1, a conventional umbrella 1 is shown to include a stem 1, a notch member 2 secured on a top of the stem 1, a runner 3 slidably sleeved on the stem 1 to connect pivotally with a stretch assembly 4 for supporting a rib assembly 6 disposed on the underside of a canopy 5. The runner 3 is movable between an upper position for stretching the rib assembly 6 and a lower position for collapsing the same. During use, when the umbrella is subjected to a strong wind or when it accidentally comes into a forceful contact with a person or object nearby, the canopy 5, which is in a spread-out state, is likely to be twisted to result in breaking of the stretcher assembly 4 and the stem 1, and sharp tips of the rib assembly 6 may hurt those that come into therewith.

[0003] It would be desirable to provide an umbrella in which a canopy is forced to rotate relative to a stem upon being subjected to relatively strong force or upon a forceful contact with a person or object nearby so as to reduce risks of damage to the stem and to avoid hurting people nearby.

[0004] An umbrella with canopy rotator joint disclosed in U.S. Patent No. 4,998,551 includes a canopy, a center pole, a runner slidably mounted on the center pole, and a plurality of outer ribs and intermediate ribs extending outwardly from the top of the pole and forming a frame for the canopy. A rotational joint includes a sleeve and a hub fixed to the center pole and a handle by two pins, respectively. The sleeve has an annular inner notch to engage a mating annular recess so as to be rotatably mounted to the hub.

[0005] Another rotating canopy umbrella disclosed in U.S. Patent No. 5,020,557 has a central post, a plurality of ribs surrounding the post and pivotally connected to a rotating hub surrounding the post near its upper end, an end cap located on the post to confine the hub, a rotating runner surrounding and free to slide along the post, a plurality of struts pivotally connected to the runner and ribs so that moving the runner upwardly opens the ribs and a canopy attached thereto, and a movable stop limiting the movement of the runner down the length of the post. The construction of this umbrella has a large number of necessary components, necessitating a complicated and inconvenient assembling process.

[0006] The present invention provides an umbrella as set forth in claim1. accompanying drawings, in which:

Fig. 1 is a fragmentary schematic view of a conventional umbrella in a spread-out state; and
Figs. 2 to 12 are respectively fragmentary sectional views of the first to eleventh embodiments of an umbrella according to this invention, except Fig. 6.

[0007] Before the present invention is described in greater detail, it should be noted that same reference numerals have been used to denote like elements throughout the specification.

[0008] Referring to Fig. 2, the first preferred embodiment of an umbrella according to the present invention is shown to comprise an elongate stem 10, a notch member 20, first and second coupling members 22,13, a retaining means (14, 23), a canopy 42, a rib assembly 41, a tubular runner 30, and a stretcher assembly 90.

[0009] The stem 10 extends along an axis (L), and has an upper stem end portion 11 and a runner sliding portion 16 which extends downwardly from the upper stem end portion 11 along the axis (L). The upper stem end portion 11 is tubular, and has a surrounding wall surrounding the axis (L) to define a hole 111.

[0010] The notch member 20 is disposed on and is aligned with the upper stem end portion 11 along the axis (L), and has upper and lower end portions opposite to each other along the axis (L).

[0011] In this embodiment, the first coupling member 22 is formed integrally with the notch member 20, and is configured as a protrusion. The first coupling member 22 has an upper secured end which extends downwardly from the lower end portion of the notch member 20, and a lower coupling end 221 which is disposed opposite to the upper secured end along the axis (L). The retaining means includes a first retaining portion 23 which is formed integrally with and which extends radially and outwardly from the lower coupling end 221 of the first coupling member 22.

[0012] The second coupling member 13 is configured as a tube which is received in the hole 111. The second coupling member 13 has a lower secured end which is secured to the surrounding wall of the upper stem end portion 11 by a fastening pin 12 that extends through the surrounding wall and the lower secured end in a direction radial to the axis (L), and an upper coupling end 131 which is opposite to the lower secured end along the axis (L). Thus, the first coupling member 22, which is configured as the protrusion, is inserted into the second coupling member 13, which is configured as a tube, downwardly and in a longitudinal direction parallel to the axis (L) such that the lower coupling end 221 of the first coupling member 22 is swivelable and is frictionally rotatable relative to the upper coupling end 131 of the second coupling member 13 about the axis (L).

[0013] The retaining means further includes a second retaining portion 14 which is formed integrally with and which extends radially and inwardly from the upper coupling end 131 of the second coupling member 13 and which is superimposed upon the first retaining portion 23 so as to permit slidable contact therebetween during frictional rotation of the upper coupling end 131 relative to the lower coupling end 221, thereby preventing displacement of the lower coupling end 221 relative to the upper coupling end 131 along the axis (L).

[0014] Preferably, the first coupling member 22 has a

slit 223 which is formed in the lower coupling end 221 so as to facilitate insertion of the first coupling member 22 into the second coupling member 13.

[0015] The canopy 42 is mounted on the upper notch end portion of the notch member 20.

[0016] The rib assembly 41 includes a plurality of ribs, each of which has a proximate rib end that is pivoted to the lower notch end portion of the notch member 20, and a distal rib end that extends from the proximate rib end radial to the axis (L) and that is disposed at an underside of the canopy 41 to support the canopy 41 in a spread-out position and in a collapsed position.

[0017] The tubular runner 30 is slidably sleeved on the runner sliding portion 16 of the stem 10, and is movable between upper and lower positions which correspond respectively to the spread-out and collapsed positions of the canopy 41.

[0018] The stretcher assembly 90 is disposed to interconnect the rib assembly 41 and the runner 30 so as to stretch or retract the rib assembly 41, thereby placing the canopy 42 in the spread-out position or the collapsed position when the runner 30 is moved to the upper position or the lower position, respectively, and thereby permitting the runner 30 to be rotated with the lower coupling end 221 of the first coupling member 22.

[0019] Since the canopy 42, the rib assembly 41, the runner 30 and the stretcher assembly 90 are similar to those in the conventional umbrella, a detailed description thereof is dispensed with herein for the sake of brevity.

[0020] When the canopy 42 of this embodiment is in the spread-out position during use, and is subjected to a relatively strong force, such as the wind or comes into a forceful contact with an object or a person, the canopy 42 is forced to rotate with the notch member 20, the first coupling member 22 and the runner 30 relative to the stem 10 about the axis (L), thereby reducing the risks of damage to the stem 10 and the rib assembly 41. As such, the service life of the umbrella can be prolonged, and injury to nearby people and objects can be avoided.

[0021] Fig. 3 shows the second preferred embodiment of an umbrella according to the present invention, which is similar to the first preferred embodiment in construction, and which is shown to comprise an elongate stem 10', a notch member 20, first and second coupling members 22,13', a retaining means with first and second retaining portions 23,14', a canopy (not shown), a rib assembly (not shown), a tubular runner (not shown) and a stretcher assembly (not shown). The difference resides in that the second coupling member 13' is formed integrally with and extends upwardly from the upper stem end portion 11' of the stem 10'. Thus, there is no need for a fastening pin to secure the second coupling member 13' to the stem 10'.

[0022] Fig. 4 shows the third preferred embodiment of an umbrella according to the present invention, which is similar to the first preferred embodiment in construction. In this embodiment, the lower coupling end of the first coupling member 22" is configured as a tube which surrounds the axis (L). The upper coupling end 131" of the second coupling member 13" is configured as a protrusion which is inserted into the tube upwardly and in the longitudinal direction to permit the first and second retaining portions 23" ,14" to be superimposed upon each other. Preferably, the second retaining portion 14" has a frusto-conical cross section for facilitating insertion of the protrusion into the tube. More preferably, the protrusion has a slit 132 so as to be able to be press-fitted into the tube.

[0023] In addition, the lower secured end 133 of the second coupling member 13" is secured on the upper stem end portion 11 of the stem 10 by a fastening pin 12" which extends through the lower secured end 133 and the upper stem end portion 11 in a direction radial to the axis (L).

[0024] Fig. 5 shows the fourth preferred embodiment of an umbrella according to the present invention. In this embodiment, the second coupling member and the second retaining portion are configured as a screw bolt 140 which includes a threaded shank 160 that engages threadedly the upper stem end portion 11 of the stem 10 along the axis (L) and that serves as the second coupling member, and a head 150 that extends from the threaded shank 160 upwardly to be distal from the upper stem end portion 11, and that cooperates with the threaded shank 160 to define a shoulder 141 serving as the second retaining portion. The first coupling member and the first retaining portion are configured as a sleeve 230 which is formed integrally with the notch member 20. The sleeve 230 has an inner wall 231 that is sleeved on the threaded shank 160, and an upper annular edge 232 that extends radially and outwardly from the inner wall 231 and that engages frictionally the shoulder 141 so as to serve as the first retaining portion.

[0025] Fig. 6 shows the fifth embodiment of an umbrella, not in accordance with the present invention, which is similar to the first preferred embodiment in construction, except that the first coupling member 512 is a separate part from the notch member 20, and is secured to the notch member 20 by a fastening pin 513 which extends therethrough in a direction radial to the axis (L).

[0026] Fig. 7 shows the sixth preferred embodiment of an umbrella according to the present invention, which is similar to the third preferred embodiment in construction, except that the lower secured end 134 of the second coupling member 130 extends into the upper stem end portion 11 of the stem 10 along the axis (L), and is secured to the upper stem end portion 11 by a fastening pin 135 which extends therethrough in a direction radial to the axis (L).

[0027] Fig. 8 shows the seventh preferred embodiment of an umbrella according to the present invention. As shown, the upper stem end portion 11 of the stem 10 has a surrounding wall surrounding the axis (L) to define a hole 111. The second coupling member 610 is formed integrally with the surrounding wall and extends upwardly from the surrounding wall along the axis (L). In this em-

bodiment, the second coupling member 610 is punched radially and inwardly relative to the axis (L) to form an annular protrusion 611 that serves as the second retaining portion. The first coupling member 620 is inserted into the second coupling member 610 in the longitudinal direction, and is formed with an annular concave portion 622 that serves as the first retaining portion and that frictionally and rotatably engages the protrusion 611.

[0028] Alternatively, in the eighth preferred embodiment of an umbrella according to this invention as shown in Fig. 9, the second retaining portion 611' is curved radially and outwardly from the second coupling member, and the first retaining portion 622' proj ects radially and outwardly relative to the axis and mates with the second retaining portion 611' so as to frictionally and rotatably engages the second retaining portion 611'.

[0029] Fig. 10 shows the ninth preferred embodiment of an umbrella according to the present invention, which is similar to the seventh preferred embodiment in construction. The difference resides in that the first coupling member 722 is configured as a tube which is sleeved securely on the notch member 20 and which is formed with an annular concave portion 723 to serve as the first retaining portion.

[0030] Alternatively, in the tenth preferred embodiment of an umbrella according to this invention as shown in Fig. 11, the second retaining portion 711' is curved radially and outwardly from the second coupling member, and the first retaining portion 723' projects radially and outwardly relative to the axis and mates with the second retaining portion 711' so as to frictionally and rotatably engage the second retaining portion 711'.

[0031] Fig. 12 shows the eleventh preferred embodiment of an umbrella according to the present invention. In this embodiment, the second coupling member 810 is configured as a tube which extends upwardly from the upper stem end portion 11 of the stem 10 along the axis, and which has two diametrically opposite through holes 811. The first coupling member 822 is configured as a sleeve which is sleeved rotatably on the tube and which has a surrounding convex portion 823 that surrounds the axis and that covers the through holes 811 to serve as the first retaining portion. The second retaining portion includes two rollers 814 which are respectively received in the through holes 811 and which rollably and frictionally engage the surrounding convex portion 823, and a spring 813 which is disposed to bias the rollers 814 towards the surrounding convex portion 823.

[0032] As illustrated, in the umbrella of this invention, since the canopy 42 can be forced to rotate with the notch member 20, the first coupling member 22 and the runner 30 relative to the stem 10,10' about the axis (L) once the canopy 42 is subjected to a force from the wind, or comes into a forceful contact with a person or an object nearby, damage to the stem 10, 10' and the rib assembly 41 can be reduced to help prolong the service life of the umbrella, and possible injuries to people and obj ects that come into contact therewith can be avoided.

Claims

1. An umbrella comprising:

an elongate stem (10;10') extending along an axis (L), and having an upper stem end portion (11;11') and a runner sliding portion (16) extending downwardly from said upper stem end portion (11;11') along the axis (L);

a notch member (20) aligned with said upper stem end portion (11;11') along the axis (L), and having upper and lower end portions opposite to each other along the axis (L);

a canopy (42) mounted on said upper end portion of said notch member (20);

a rib assembly (41) including a plurality of ribs, each of which has a proximate rib end that is pivoted to said lower notch end portion of said notch member (20), and a distal rib end that extends from said proximate rib end radial to the axis (L) and that is disposed at an underside of said canopy (42) to support said canopy (42) in a spread-out position and in a collapsed position;

a tubular runner (30) slidably sleeved on said runner sliding portion (16) of said stem (10;10'), and movable between upper and lower positions which correspond respectively to the spread-out and collapsed positions of said canopy (42); and

a stretcher assembly (90) disposed to interconnect said rib assembly (41) and said runner (30) so as to stretch or retract said rib assembly (41), thereby placing said canopy (42) in the spread-out position or the collapsed position when said runner (30) is moved to the upper position or the lower position, respectively;

a first coupling member (22; 22"; 230; 620; 722; 822) having an upper secured end, which is secured to said lower end portion of said notch member (20), and a lower coupling end (221), which is disposed opposite to said upper secured end along the axis (L);

a second coupling member (13; 13'; 13"; 160; 130; 610; 810) having a lower secured end (133; 134), which is secured to said upper stem end portion (11; 11'), and an upper coupling end (131; 131"), which is opposite to said lower secured end (133; 134) along the axis (L) and which is disposed to be swivelable and frictionally rotatable relative to said lower coupling end (221) about the axis (L) so as to permit said runner (30) to be rotated with said lower coupling end (221) when said runner (30) is in the upper position; and

a retaining means (14, 23; 14', 23"; 141, 232; 611, 622; 611', 622'; 611, 723; 711', 723'; 814, 823) disposed to prevent displacement of said lower coupling end (221) relative to said upper

coupling end (131; 131") along the axis (L) during frictional rotation of said upper coupling end (131; 131") relative to said lower coupling end (221);

characterized in that at least one of said upper and lower secured ends is integrally formed with a respective one of said lower end portion of said notch member (20) and said upper stem end portion (11; 11'), said retaining means being disposed between said upper and lower secured ends.

2. The umbrella of claim 1, **characterized in that** one of said upper and lower coupling ends is sleeved on the other one of said upper and lower coupling ends along the axis (L) so as to be swivelable relative thereto about the axis (L), said retaining means including first and second retaining portions which are disposed on said lower and upper coupling ends, respectively, and which extend in a direction radial to the axis (L) such that said first and second retaining portions are superimposed upon each other so as to permit slidable contact therebetween when said upper and lower coupling ends are forced to frictionally rotate relative to each other.

3. The umbrella of Claim 2, **characterized in that** said first and second retaining portions are formed integrally with said lower and upper coupling ends respectively, and are configured to mate with each other so as to frictionally and rotatably engage each other in a longitudinal direction parallel to the axis (L).

4. The umbrella of Claim 3, **characterized in that** said upper stem end portion (11;11') has a surrounding wall surrounding the axis (L) to define a hole (111), said second coupling member (13;13') being configured as a tube which is received in said hole (111) and being secured to said surrounding wall, said first coupling member (22;22") being configured as a protrusion which is inserted into said tube downwardly and in the longitudinal direction to permit said first and second retaining portions (23,14/14') to be superimposed upon each other.

5. The umbrella of Claim 4, **characterized in that** said second coupling member (13') is formed integrally with said upper stem end portion (11') and extends upwardly from said upper stem end portion (11').

6. The umbrella of Claim 4, **characterized in that** said protrusion has a slit (223) formed in said lower coupling end (221) so as to facilitate insertion of said protrusion into said tube.

7. The umbrella of Claim 3, **characterized in that** said lower coupling end of said first coupling member (22") is configured as a tube which surrounds the axis (L), said upper coupling end (131") being configured as a protrusion which is inserted into said tube upwardly and in the longitudinal direction to permit said first and second retaining portions (23",14") to be superimposed upon each other.

8. The umbrella of Claim 7, **characterized in that** said protrusion has a slit (132) so as to facilitate insertion of said protrusion into said tube.

9. The umbrella of Claim 7, **characterized in that** said lower secured end (133) of said second coupling member (13") is sleeved on said upper stem end portion (11), said umbrella further comprising a fastening pin (12") which extends through said second coupling member (13") and said upper stem end portion (11) in a direction radial to the axis (L) so as to secure said second coupling member (13") to said upper stem end portion (11).

10. The umbrella of Claim 7, **characterized in that** said lower secured end (134) extends into said upper stem end portion (11) along the axis (L), said umbrella further comprising a fastening pin (135) which extends through said lower secured end (134) and said upper stem end portion (11) in a direction radial to the axis (L) so as to secure said lower secured end (134) to said upper stem end portion (11).

11. The umbrella of Claim 3, **characterized in that** said second coupling member (160) and said second retaining portion (141) are configured as a screw bolt (140) which includes a threaded shank (160) that engages threadedly said upper stem end portion (11) along the axis (L) and that serves as said second coupling member (160), and a head (150) that extends from said threaded shank (160) upwardly and distal from said upper stem end portion (11), and that cooperates with said threaded shank (160) to define a shoulder (141) serving as said second retaining portion (141), said first coupling member and said first retaining portion being configured as a sleeve (230) which has an inner wall (231) that is sleeved on said threaded shank (160), and an upper annular edge (232) that extends radially and outwardly from said inner wall (231) and that frictionally engages said shoulder (141) so as to serve as said first retaining portion (232).

12. The umbrella of Claim 3, **characterized in that** said upper stem end portion (11) has a surrounding wall surrounding the axis (L) to define a hole (111), said second coupling member (610) being formed integrally with said surrounding wall and extending upwardly from said surrounding wall along the axis (L).

13. The umbrella of Claim 12, **characterized in that** said second coupling member (610) is punched radially

and inwardly relative to the axis (L) to form a protrusion (611) that serves as said second retaining portion (611), said first coupling member (620) being inserted into said second coupling member (610) in the longitudinal direction and being formed with an annular concave portion (622) that serves as said first retaining portion (622) and that frictionally and rotatably engages said protrusion (611).

14. The umbrella of Claim 2, **characterized in that** said second coupling member (810) is configured as a tube which extends upwardly from said upper stem end portion (11) along the axis (L), and which has two diametrically opposite through holes (811), said first coupling member (822) being configured as a sleeve which is sleeved rotatably on said tube and which has a surrounding convex portion (823) that surrounds the axis (L) and that covers said through holes (811) to serve as said first retaining portion (823), said second retaining portion (813,814) including two rollers (814) which are respectively received in said through holes (811) and which rollably and frictionally engage said surrounding convex portion (823), and a spring (813) which is disposed to bias said rollers (814) towards said surrounding convex portion (823).

Patentansprüche

1. Schirm, der aufweist:

einen länglichen Schaft (10; 10'), der sich längs einer Achse (L) erstreckt, und der einen oberen Schaftendabschnitt (11; 11') und einen Läuferschiebeabschnitt (16) aufweist, der sich vom oberen Schaftendabschnitt (11; 11') längs der Achse (L) nach unten erstreckt;
ein Kerbenelement (20), das mit dem oberen Schaftendabschnitt (11; 11') längs der Achse (L) ausgerichtet ist, und das einen oberen und unteren Endabschnitt einander entgegengesetzt längs der Achse (L) aufweist;
eine Kappe (42), die am oberen Endabschnitt des Kerbenelementes (20) montiert ist;
eine Rippenbaugruppe (41), die eine Vielzahl von Rippen umfasst, von denen eine jede ein proximales Rippenende, das schwenk am unteren Kerbenendabschnitt des Kerbenelementes (20) ist, und ein distales Rippenende aufweist, das sich vom proximalen Rippenende radial zur Achse (L) erstreckt, und das an einer Unterseite der Kappe (42) angeordnet ist, um die Kappe (42) in einer ausgebreiteten Position und in einer zusammengeklappten Position zu tragen;
einen rohrförmigen Läufer (30), der verschiebbar auf dem Läuferschiebeabschnitt (16) des Schaftes (10; 10') hülsenartig angeordnet und zwischen einer oberen und unteren Position beweglich ist, die jeweils der ausgebreiteten und der zusammengeklappten Position der Kappe (42) entspricht; und
eine Spannbaugruppe (90), die angeordnet ist, um die Rippenbaugruppe (41) und den Läufer (30) so zu verbinden, dass die Rippenbaugruppe (41) gespannt oder zurückgezogen wird, wodurch die Kappe (42) in der ausgebreiteten Position oder in der zusammengeklappten Position angeordnet wird, wenn der Läufer (30) jeweils in die obere Position oder in die untere Position bewegt wird;
ein erstes Verbindungsglied (22; 22"; 230; 620; 722; 822) mit einem oberen gesicherten Ende, das am unteren Endabschnitt des Kerbenelementes (20) gesichert ist, und einem unteren Verbindungsende (221), das entgegengesetzt dem oberen gesicherten Ende längs der Achse (L) angeordnet ist;
ein zweites Verbindungsglied (13; 13'; 13"; 160; 130; 610; 810) mit einem unteren gesicherten Ende (133; 134), das am oberen Schaftendabschnitt (11; 11') gesichert ist, und einem oberen Verbindungsende (131; 131"), das dem unteren gesicherten Ende (133; 134) längs der Achse (L) entgegengesetzt ist, und das so angeordnet ist, dass es relativ zum unteren Verbindungsende (221) um die Achse (L) schwenkbar und reibschlüssig drehbar ist, um das Drehen des Läufers (30) mit dem unteren Verbindungsende (221) zu gestatten, wenn der Läufer (30) in der oberen Position ist; und
ein Haltemittel (14, 23; 14', 23"; 141, 232; 611, 622; 611', 622'; 611, 723; 711', 723'; 814, 823), die angeordnet ist, um die Verschiebung des unteren Verbindungsendes (221) relativ zum oberen Verbindungsende (131; 131") längs der Achse (L) während der reibschlüssigen Drehung des oberen Verbindungsendes (131; 131") relativ zum unteren Verbindungsende (221) zu verhindern;
dadurch gekennzeichnet, dass mindestens einer der oberen und unteren gesicherten Enden mit einem jeweiligen des unteren Endabschnittes des Kerbenelementes (20) und des oberen Schaftendabschnittes (11; 11') zusammenhängend ausgebildet ist, wobei das Haltemittel zwischen dem oberen und dem unteren gesicherten Ende angeordnet wird.

2. Schirm nach Anspruch 1, **dadurch gekennzeichnet, dass** einer der oberen und unteren Verbindungsenden auf dem anderen der oberen und unteren Verbindungsenden längs der Achse (L) hülsenartig angeordnet ist, um so relativ dazu um die Achse (L) schwenkbar zu sein, wobei das Haltemittel einen ersten und zweiten Halteabschnitt umfasst, die je-

weils auf dem unteren und dem oberen Verbindungsende angeordnet sind, und die sich in einer Richtung radial zur Achse (L) so erstrecken, dass der erste und der zweite Halteabschnitt aufeinander so überlagert werden, dass ein Gleitkontakt dazwischen gestattet wird, wenn das obere und das untere Verbindungsende dazu gezwungen werden, sich relativ zueinander reibschlüssig zu drehen.

3. Schirm nach Anspruch 2, **dadurch gekennzeichnet, dass** der erste und der zweite Halteabschnitt mit jeweils dem unteren und dem oberen Verbindungsende zusammenhängend ausgebildet sind, und dass sie so ausgebildet sind, dass sie zueinander passen, um so reibschlüssig und drehbar in einer Längsrichtung parallel zur Achse (L) miteinander in Eingriff zu kommen.

4. Schirm nach Anspruch 3, **dadurch gekennzeichnet, dass** der obere Schaftendabschnitt (11; 11') eine umgebende Wand aufweist, die die Achse (L) umgibt, um ein Loch (111) zu definieren, wobei das zweite Verbindungsglied (13; 13') als ein Rohr ausgebildet ist, das im Loch (111) aufgenommen wird, und das an der umgebenden Wand gesichert wird, wobei das erste Verbindungsglied (22; 22") als ein Vorsprung ausgebildet ist, der in das Rohr nach unten und in der Längsrichtung eingesetzt wird, damit der erste und der zweite Halteabschnitt (23, 14/14') aufeinander überlagert werden können.

5. Schirm nach Anspruch 4, **dadurch gekennzeichnet, dass** das zweite Verbindungsglied (13') mit dem oberen Schaftendabschnitt (11') zusammenhängend ausgebildet ist und sich vom oberen Schaftendabschnitt (11') nach oben erstreckt.

6. Schirm nach Anspruch 4, **dadurch gekennzeichnet, dass** der Vorsprung einen Schlitz (223) aufweist, der im unteren Verbindungsende (221) gebildet wird, um so das Einsetzen des Vorsprunges in das Rohr zu erleichtern.

7. Schirm nach Anspruch 3, **dadurch gekennzeichnet, dass** das untere Verbindungsende des ersten Verbindungsgliedes (22") als ein Rohr ausgebildet ist, das die Achse (L) umgibt, wobei das obere Verbindungsende (131") als ein Vorsprung ausgebildet ist, der in das Rohr nach oben und in der Längsrichtung eingesetzt wird, damit der erste und der zweite Halteabschnitt (23", 14") aufeinander überlagert werden können.

8. Schirm nach Anspruch 7, **dadurch gekennzeichnet, dass** der Vorsprung einen Schlitz (132) aufweist, um so das Einsetzen des Vorsprunges in das Rohr zu erleichtern.

9. Schirm nach Anspruch 7, **dadurch gekennzeichnet, dass** das untere gesicherte Ende (133) des zweiten Verbindungsgliedes (13") auf dem oberen Schaftendabschnitt (11) hülsenartig angeordnet ist, wobei der Schirm außerdem einen Befestigungsstift (12") aufweist, der sich durch das zweite Verbindungsglied (13") und den oberen Schaftendabschnitt (11) in einer Richtung radial zur Achse (L) erstreckt, um so das zweite Verbindungsglied (13") am oberen Schaftendabschnitt (11) zu sichern.

10. Schirm nach Anspruch 7, **dadurch gekennzeichnet, dass** sich das untere gesicherte Ende (134) in den oberen Schaftendabschnitt (11) längs der Achse (L) erstreckt, wobei der Schirm außerdem einen Befestigungsstift (135) aufweist, der sich durch das untere gesicherte Ende (134) und den oberen Schaftendabschnitt (11) in einer Richtung radial zur Achse (L) erstreckt, um so das untere gesicherte Ende (134) am oberen Schaftendabschnitt (11) zu sichern.

11. Schirm nach Anspruch 3, **dadurch gekennzeichnet, dass** das zweite Verbindungsglied (160) und der zweite Halteabschnitt (141) als ein Schraubenbolzen (140) ausgebildet sind, der einen Gewindeschaft (160), der verschraubbar mit dem oberen Schaftendabschnitt (11) längs der Achse (L) in Eingriff kommt, und der als das zweite Verbindungsglied (160) dient, und einen Kopf (150) umfasst, der sich vom Gewindeschaft (160) nach oben und distal vom oberen Schaftendabschnitt (11) erstreckt, und der mit dem Gewindeschaft (160) zusammenwirkt, um einen Absatz (141) zu definieren, der als der zweite Halteabschnitt (141) dient, wobei das erste Verbindungsglied und der erste Halteabschnitt als eine Hülse (230) ausgebildet sind, die eine Innenwand (231), die auf dem Gewindeschaft (160) hülsenartig angeordnet ist, und einen oberen ringförmigen Rand (232) aufweist, der sich radial und nach außen von der Innenwand (231) erstreckt, und der mit dem Absatz (141) reibschlüssig in Eingriff kommt, um so als der erste Halteabschnitt (232) zu dienen.

12. Schirm nach Anspruch 3, **dadurch gekennzeichnet, dass** der obere Schaftendabschnitt (11) eine umgebende Wand aufweist, die die Achse (L) umgibt, um ein Loch (111) zu definieren, wobei das zweite Verbindungsglied (610) mit der umgebenden Wand zusammenhängend ausgebildet ist und sich von der umgebenden Wand längs der Achse (L) nach oben erstreckt.

13. Schirm nach Anspruch 12, **dadurch gekennzeichnet, dass** das zweite Verbindungsglied (610) radial und nach innen relativ zur Achse (L) gestanzt ist, um einen Vorsprung (611) zu bilden, der als der zweite Halteabschnitt (611) dient, wobei das erste Verbindungsglied (620) in das zweite Verbindungsglied

(610) in der Längsrichtung eingesetzt wird und mit einem ringförmigen konkaven Abschnitt (622) ausgebildet ist, der als der erste Halteabschnitt (622) dient, und der reibschlüssig und drehbar mit dem Vorsprung (611) in Eingriff kommt.

14. Schirm nach Anspruch 2, **dadurch gekennzeichnet, dass** das zweite Verbindungsglied (810) als ein Rohr ausgebildet ist, das sich vom oberen Schaftendabschnitt (11) längs der Achse (L) nach oben erstreckt, und das zwei diametral entgegengesetzte Durchgangslöcher (811) aufweist, wobei das erste Verbindungsglied (822) als eine Hülse ausgebildet ist, die drehbar auf dem Rohr hülsenartig angeordnet ist, und die einen umgebenden konvexen Abschnitt (823) aufweist, der die Achse (L) umgibt, und der die Durchgangslöcher (811) bedeckt, um als der erste Halteabschnitt (823) zu dienen, wobei der zweite Halteabschnitt (813, 814) zwei Rollen (814), die jeweils in den Durchgangslöchern (811) aufgenommen werden, und die rollbar und reibschlüssig mit dem umgebenden konvexen Abschnitt (823) in Eingriff kommen, und eine Feder (813) umfasst, die angeordnet ist, um die Rollen (814) in Richtung des umgebenden konvexen Abschnittes (823) vorzuspannen.

Revendications

1. Parasol (parapluie), comprenant:

un mât allongé (10'; 10'), s'étendant le long d'un axe (L), et comportant une partie d'extrémité supérieure de mât (11 ; 11') et une partie de glissement d'un curseur (16) s'étendant vers le bas à partir de ladite partie d'extrémité supérieure du mât (11 ; 11'), le long de l'axe (L) ;
un élément d'encoche (20) aligné avec ladite partie d'extrémité supérieure du mât (11 ; 11') le long de l'axe (L), et comportant des parties d'extrémité supérieure et inférieure opposées l'une à l'autre le long de l'axe (L) ;
une toile (42) montée sur ladite partie d'extrémité supérieure dudit élément d'encoche (20) ;
un assemblage de baleines (41), englobant plusieurs baleines, comportant chacune une extrémité de baleine proximale pivotée vers ladite partie d'extrémité inférieure de l'encoche dudit élément d'encoche (20), et une extrémité de baleine distale s'étendant de ladite extrémité proximale de la baleine dans une direction radiale vers l'axe (L) et agencée au niveau d'un côté inférieur de ladite toile (42) pour supporter ladite toile (42) dans une position déployée et dans une position repliée ;
un curseur tubulaire (30) monté de manière coulissante sur ladite partie de glissement du curseur (16) dudit mât (10 ; 10') et pouvant se déplacer entre des positions supérieure et inférieure correspondant respectivement aux positions déployée et repliée de ladite toile (42) ; et
un assemblage d'étirement (90) destiné à interconnecter ledit assemblage de baleines (41) et ledit curseur (30), de sorte à étirer ou à rétracter ledit assemblage de baleines (41), plaçant ainsi ladite toile (42) dans la position déployée ou la position repliée lorsque ledit curseur (30) est déplacé respectivement vers la position supérieure ou vers la position inférieure ;
un premier élément d'accouplement (22 ; 22" ; 230 ; 620 ; 722 ; 822) comportant une extrémité supérieure fixe, fixée sur ladite partie d'extrémité inférieure dudit élément d'encoche (20), et une extrémité d'accouplement inférieure (221), agencée en un point opposé à ladite extrémité supérieure fixe le long de l'axe (L) ;
un deuxième élément d'accouplement (13 ; 13' ; 13" ; 160 ; 130 ; 610 ; 810), comportant une extrémité inférieure fixe (133 ; 134), fixée sur ladite partie d'extrémité supérieure du mât (11 ; 11'), et une extrémité d'accouplement supérieure (131 ; 131") opposée à ladite extrémité inférieure fixe (133 ; 134) le long de l'axe (L), et agencée de sorte à pouvoir être tournée de manière pivotante et par frottement par rapport à ladite extrémité d'accouplement inférieure (221) sur l'axe (L), pour permettre la rotation dudit curseur (30) avec ladite extrémité d'accouplement inférieure (221) lorsque ledit curseur (30) se trouve dans la position supérieure ; et
un moyen de retenue (14, 23 ; 14',23"; 141, 232 ; 611, 622 ; 611', 622', 611, 723 ; 711', 723' ; 814, 823) agencé de sorte à empêcher un déplacement de ladite extrémité d'accouplement inférieure (221) par rapport à ladite extrémité d'accouplement supérieure (131 ; 131 ") le long de l'axe (L) au cours de la rotation par frottement de ladite extrémité d'accouplement supérieure (131 ; 131") par rapport à ladite extrémité d'accouplement inférieure (221) ;
caractérisé en ce qu'au moins une desdites extrémités supérieure et inférieure fixes est formée d'une seule pièce avec de ladite partie d'extrémité inférieure dudit élément d'encoche (20) ou respectivement ladite partie d'extrémité supérieure du mât (11 ; 11'), ledit moyen de retenue étant agencé entre lesdites extrémités supérieure et inférieure fixes.

2. Parasol selon la revendication 1, **caractérisé en ce que** l'une desdites extrémités d'accouplement supérieure et inférieure est emmanchée sur l'autre desdites extrémités d'accouplement supérieure et inférieure, le long de l'axe (L), de sorte à pouvoir pivoter par rapport à celle-ci sur l'axe (L), ledit moyen de

retenue englobant des première et deuxième parties de retenue agencées respectivement sur lesdites extrémités d'accouplement inférieure et supérieure, et s'étendant dans une direction radiale par rapport à l'axe (L), de sorte que lesdites première et deuxième parties de retenue sont superposées, pour permettre l'établissement d'un contact coulissant entre elles lorsque lesdites extrémités d'accouplement supérieure et inférieure sont entraînées à tourner par frottement l'une par rapport à l'autre.

3. Parasol selon la revendication 2, **caractérisé en ce que** lesdites première et deuxième parties de retenue sont respectivement formées d'une seule pièce avec lesdites extrémités d'accouplement inférieure et supérieure, et sont configurées de sorte à correspondre l'une à l'autre afin de s'engager l'une dans l'autre par frottement et rotation, dans une direction longitudinale parallèle à l'axe (L).

4. Parasol selon la revendication 3, **caractérisé en ce que** ladite partie d'extrémité supérieure du mât (11 ; 11') comporte une paroi environnante entourant l'axe (L) pour définir un trou (11), ledit deuxième moyen d'accouplement (13 ; 13') ayant la configuration d'un tube reçu dans ledit trou (111) et fixé sur ladite paroi environnante, ledit premier moyen d'accouplement (22 ; 22") ayant la configuration d'une saillie, insérée dans ledit tube , vers le bas et dans la direction longitudinale, pour permettre la superposition desdites première et deuxième parties de retenue (23, 14, 14').

5. Parasol selon la revendication 4, **caractérisé en ce que** ledit deuxième élément d'accouplement (13') est formé d'une seule pièce avec ladite partie d'extrémité supérieure du mât (11') et s'étend vers le haut à partir de ladite partie d'extrémité supérieure du mât (11').

6. Parasol selon la revendication 4, **caractérisé en ce que** ladite saillie comporte une fente (223) formée dans ladite extrémité d'accouplement inférieure (221), de sorte à faciliter l'insertion de ladite saillie dans ledit tube.

7. Parasol selon la revendication 3, **caractérisé en ce que** ladite extrémité d'accouplement inférieure dudit premier élément d'accouplement (22") a la configuration d'un tube entourant l'axe (L), ladite extrémité d'accouplement supérieure (131") ayant la configuration d'une saillie insérée dans ledit tube, vers le haut et dans la direction longitudinale, pour permettre la superposition desdites première et deuxième parties de retenue (23", 14'').

8. Parasol selon la revendication 7, **caractérisé en ce que** ladite saillie comporte une fente (132) pour faciliter l'insertion de ladite saillie dans ledit tube.

9. Parasol selon la revendication 7, **caractérisé en ce que** ladite extrémité inférieure fixe (133) dudit deuxième élément d'accouplement (13") est emmanchée sur ladite partie d'extrémité supérieure du mât (11), ledit parasol comprenant en outre une goupille de fixation (12") s'étendant à travers ledit deuxième élément d'accouplement (13") et ladite partie d'extrémité supérieure du mât (11), dans une direction radiale par rapport à l'axe (L), de sorte à fixer ledit deuxième élément d'accouplement (13") sur ladite partie d'extrémité supérieure du mât (11).

10. Parasol selon la revendication 7, **caractérisé en ce que** ladite extrémité inférieure fixe (134) s'étend dans ladite partie d'extrémité supérieure du mât (11), le long de l'axe (L), ledit parasol comprenant en outre une goupille de fixation (135) s'étendant à travers ladite extrémité inférieure fixe (134) et ladite partie d'extrémité supérieure du mât (11), dans une direction radiale par rapport à l'axe (L), de sorte à fixer ladite extrémité inférieure fixe (134) sur ladite partie d'extrémité supérieure du mât (11).

11. Parasol selon la revendication 3, **caractérisé en ce que** ledit deuxième élément d'accouplement (160) et ladite deuxième partie de retenue (141) ont la configuration d'un boulon à vis (140), englobant une tige filetée (160) s'engageant par filetage dans ladite extrémité supérieure du mât (11), le long de l'axe (L), et constituant ledit deuxième élément d'accouplement (160), et une tête (150) s'étendant à partir de ladite tige filetée (160) vers le haut et dans une direction distale par rapport à ladite partie d'extrémité supérieure du mât (11), et coopérant avec ladite tige filetée (160) pour définir un épaulement (141) constituant ladite deuxième partie de retenue (141), ledit premier élément d'accouplement et ladite première partie de retenue ayant la configuration d'un manchon (230) comportant une paroi interne (231), emmanché sur ladite tige filetée (160), et un bord annulaire supérieur (232), s'étendant radialement par rapport à ladite paroi interne (231) et vers l'extérieur de celle-ci, et s'engageant par frottement dans ledit épaulement (141), de sorte à constituer ladite première partie de retenue (232).

12. Parasol selon la revendication 3, **caractérisé en ce que** ladite partie d'extrémité supérieure du mât (11) comporte une paroi environnante, entourant l'axe (L) pour définir un trou (11), ledit deuxième élément d'accouplement (610) étant formé d'une seule pièce avec ladite paroi environnante et s'étendant vers le haut à partir de ladite paroi environnante, le long de l'axe (L).

13. Parasol selon la revendication 12, **caractérisé en**

ce que ledit deuxième élément d'accouplement (610) est poinçonné radialement par rapport à l'axe (L) et vers l'intérieur de celui-ci, pour former une saillie (611) constituant ladite deuxième partie de retenue (611), ledit premier élément d'accouplement (620) étant inséré dans ledit deuxième élément d'accouplement (610) dans la direction longitudinale et comportant une partie concave annulaire (622) constituant ladite première partie de retenue (622) et s'engageant par frottement et de manière rotative dans ladite saillie (611).

14. Parasol selon la revendication 2, **caractérisé en ce que** ledit deuxième élément d'accouplement (810) a la configuration d'un tube, s'étendant vers le haut à partir de ladite partie d'extrémité supérieure du mât (11), le long de l'axe (L), et comportant deux trous de passage diamétralement opposés (811), ledit premier élément d'accouplement (822) ayant la configuration d'un manchon, emmanché de manière rotative sur ledit tube et comportant une partie convexe environnante (823), entourant l'axe (L) et recouvrant lesdits trous de passage (811) pour constituer ladite première partie de retenue (823), ladite deuxième partie de retenue (813, 814) englobant deux galets (814) reçus respectivement dans lesdits trous de passage (811) et s'engageant par roulement et frottement dans ladite partie convexe environnante (823), et un ressort (813) destiné à solliciter lesdits galets (814) vers ladite partie convexe environnante (823).

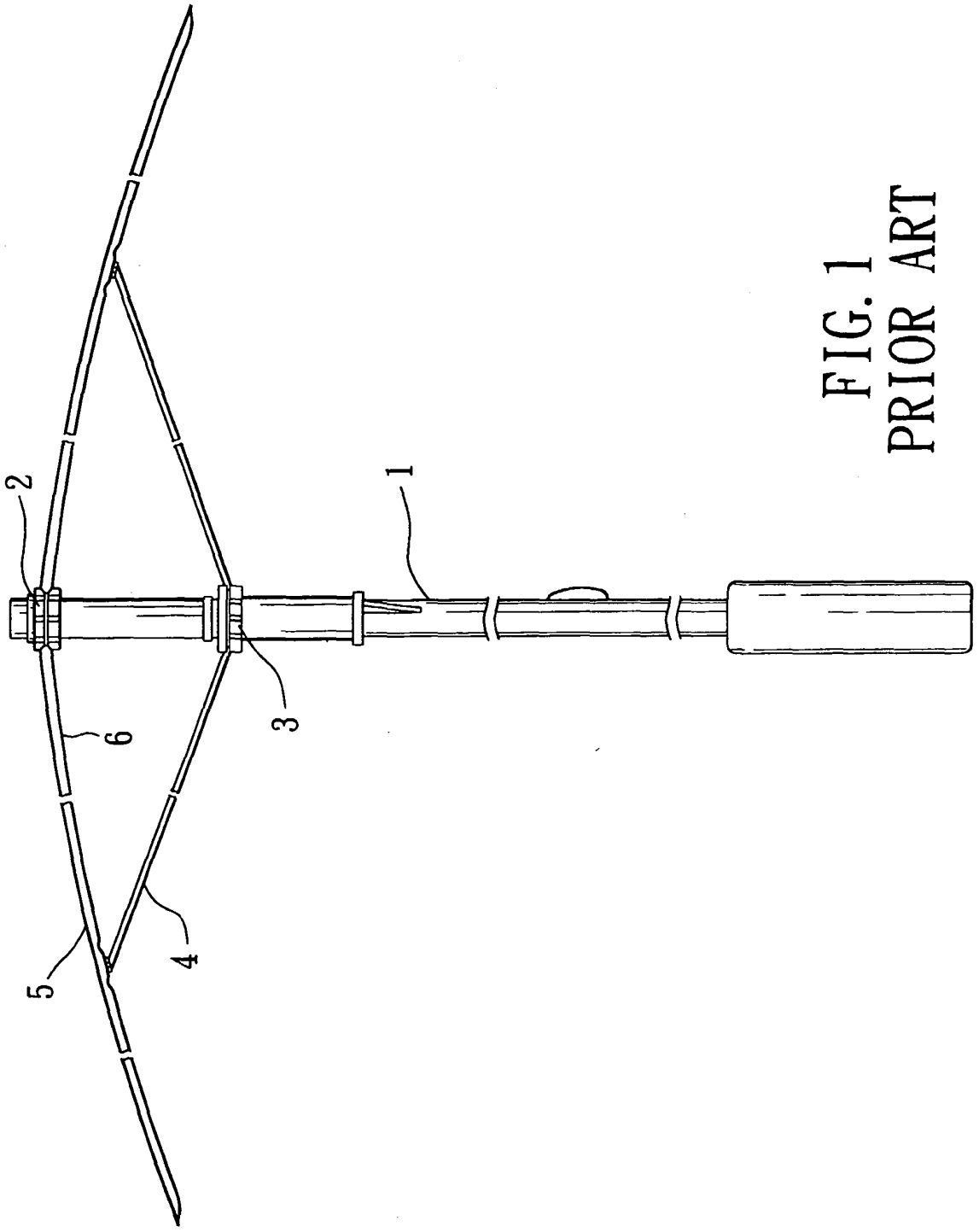

FIG. 1
PRIOR ART

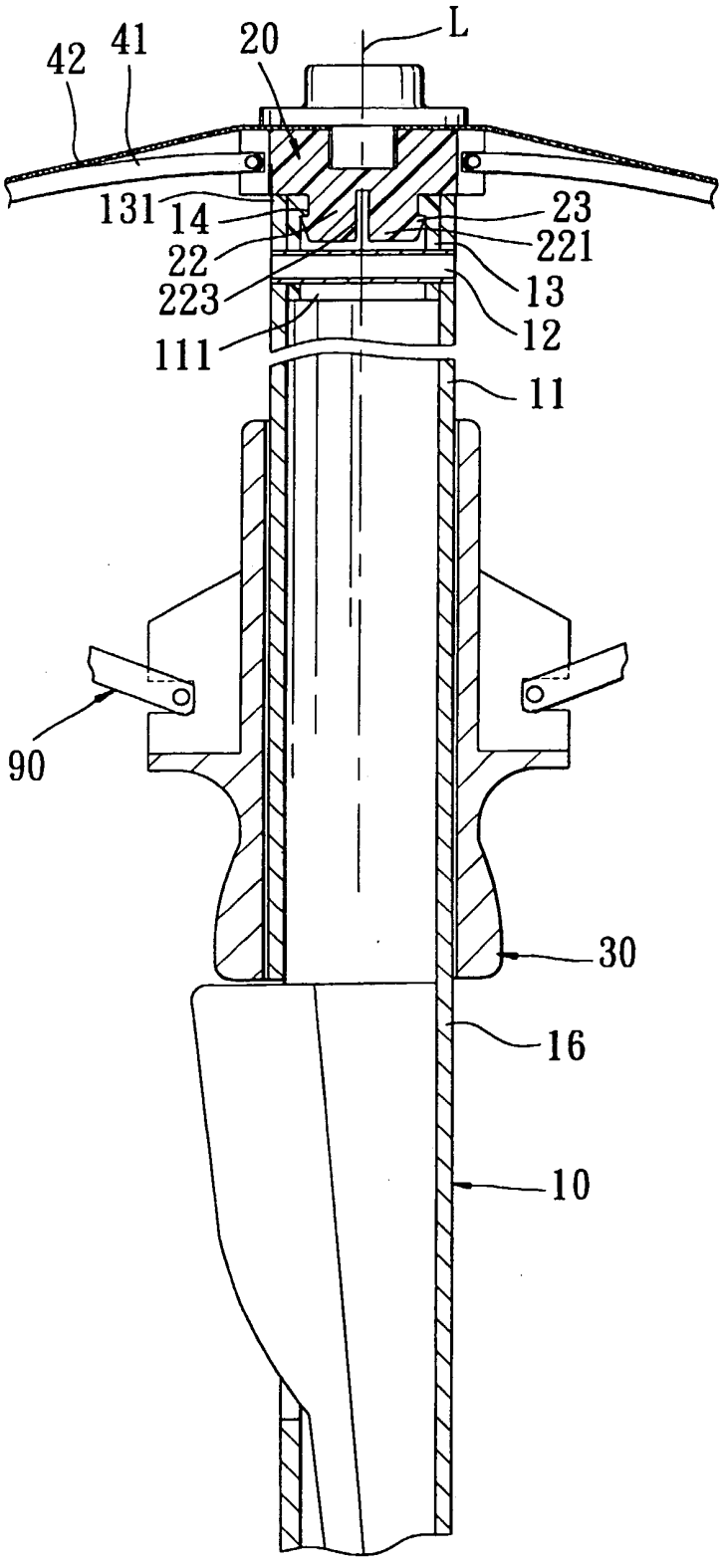

FIG. 2

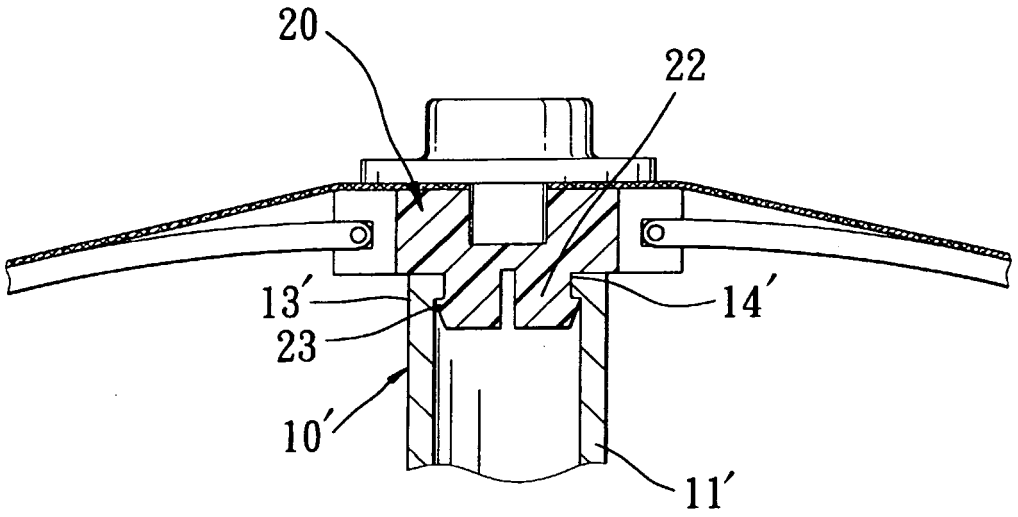

FIG. 3

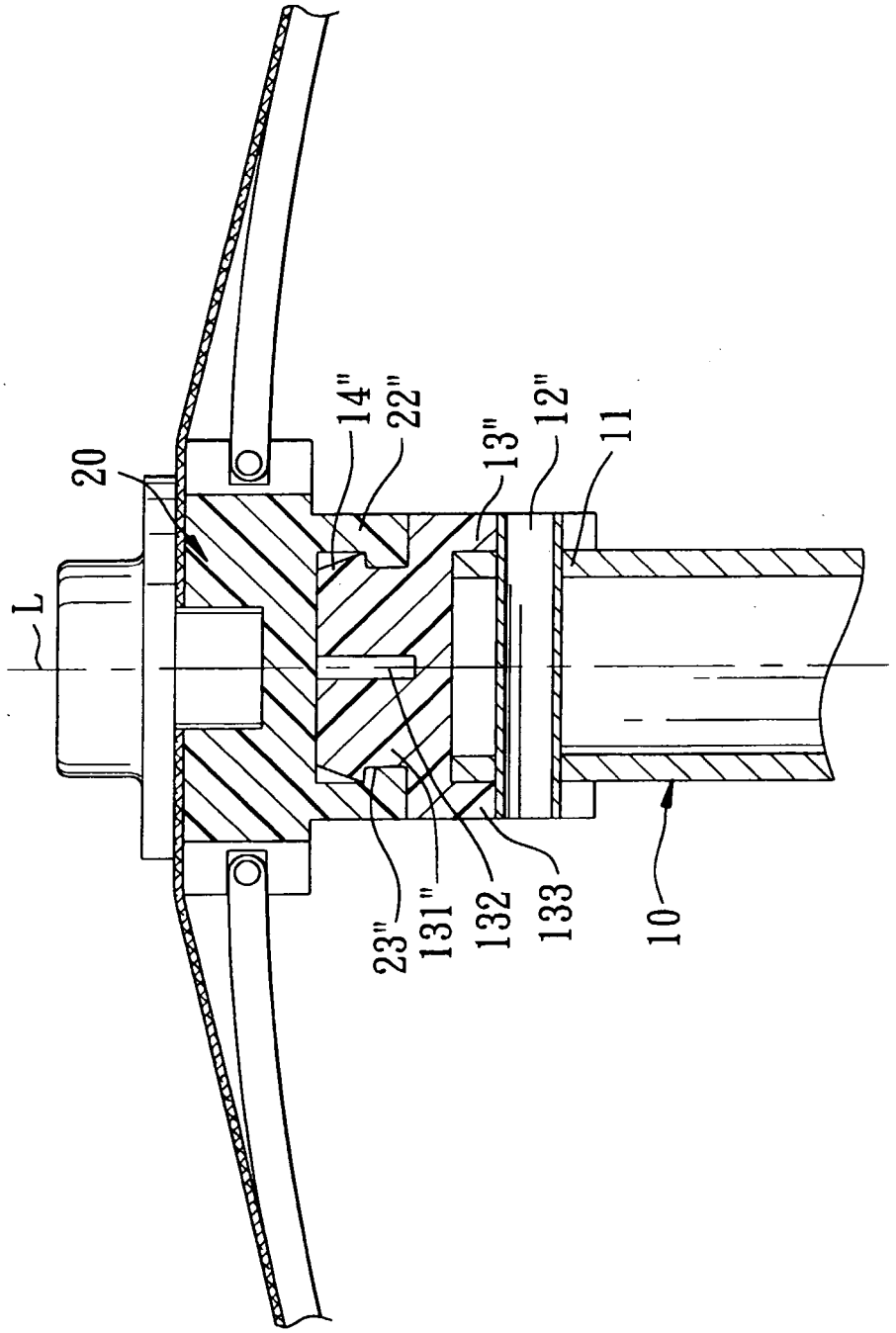

FIG. 4

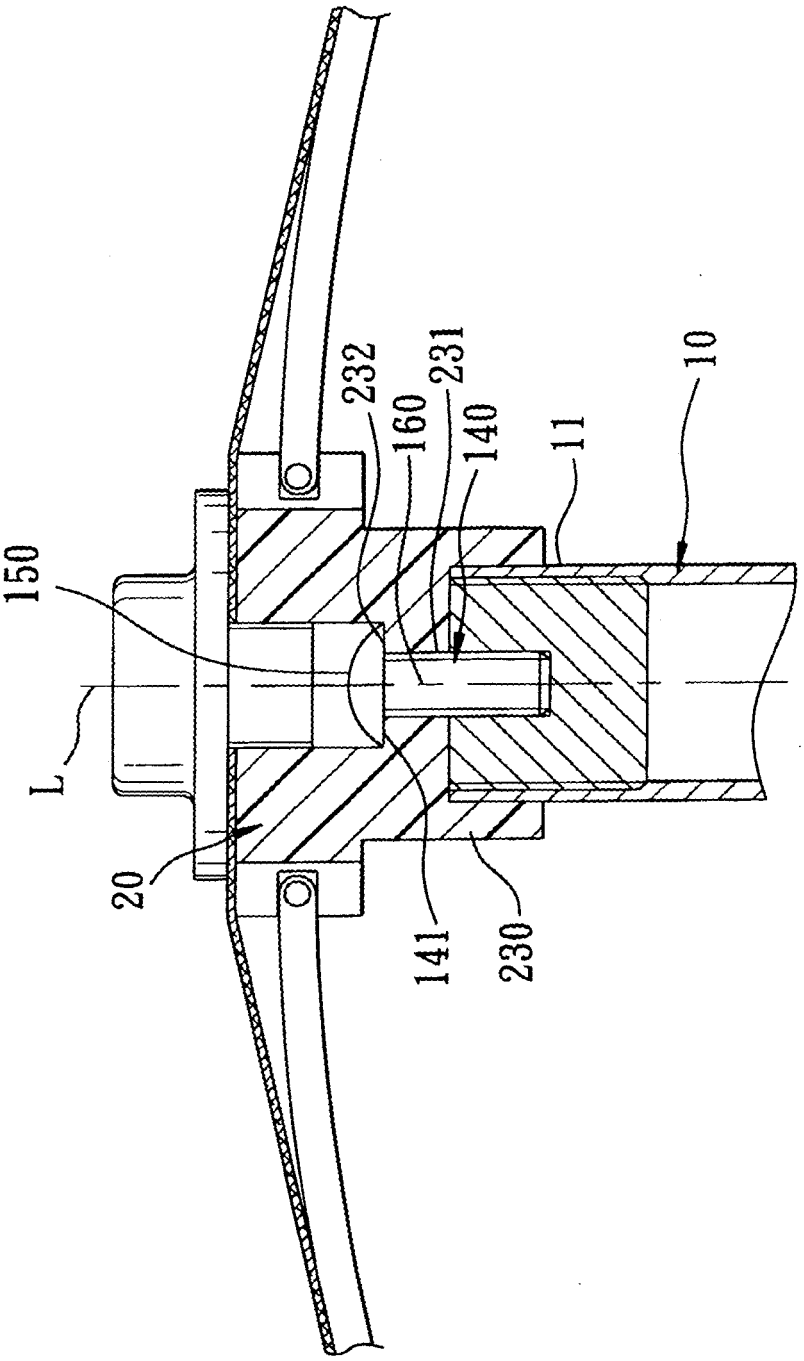

FIG. 5

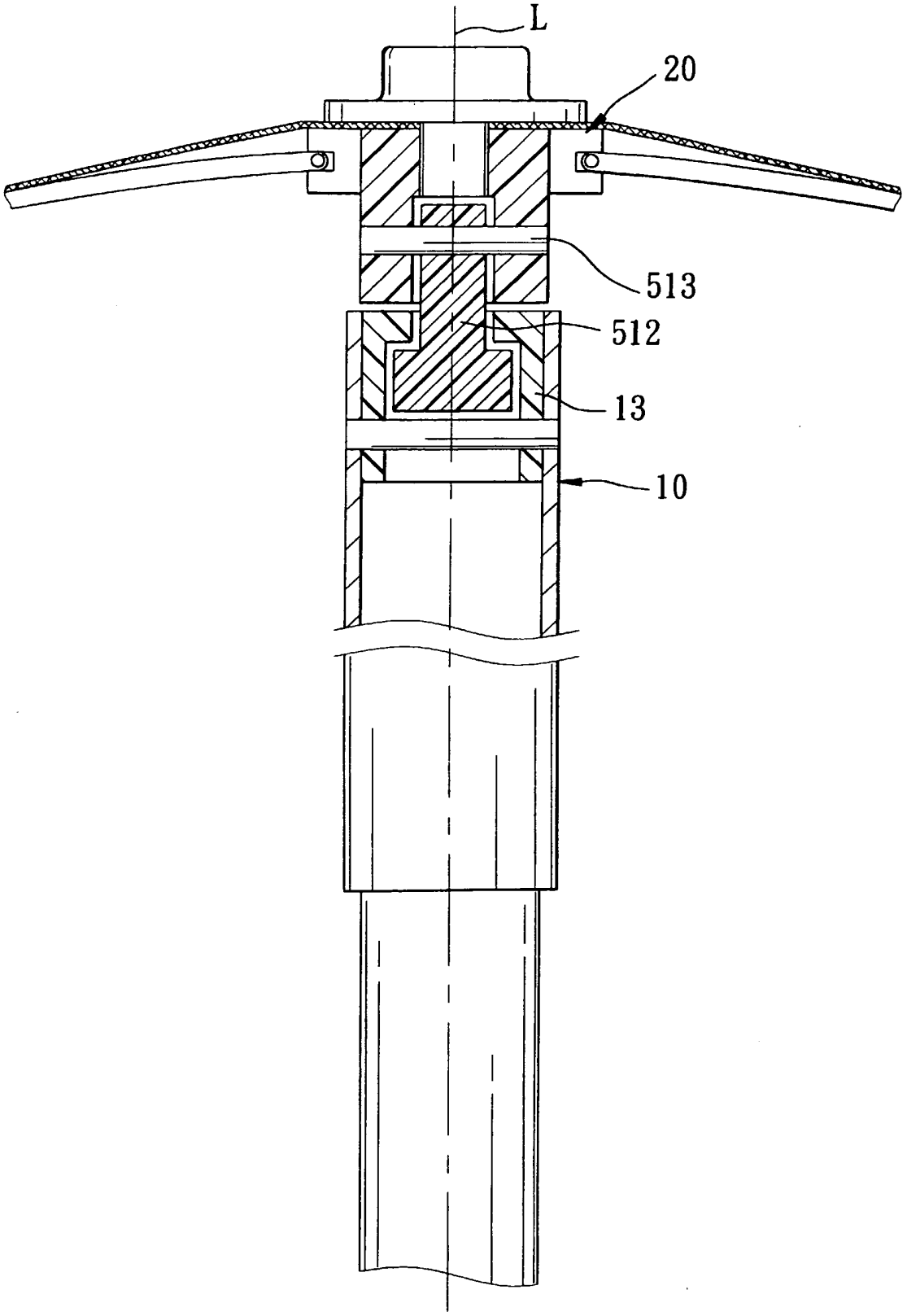

FIG. 6

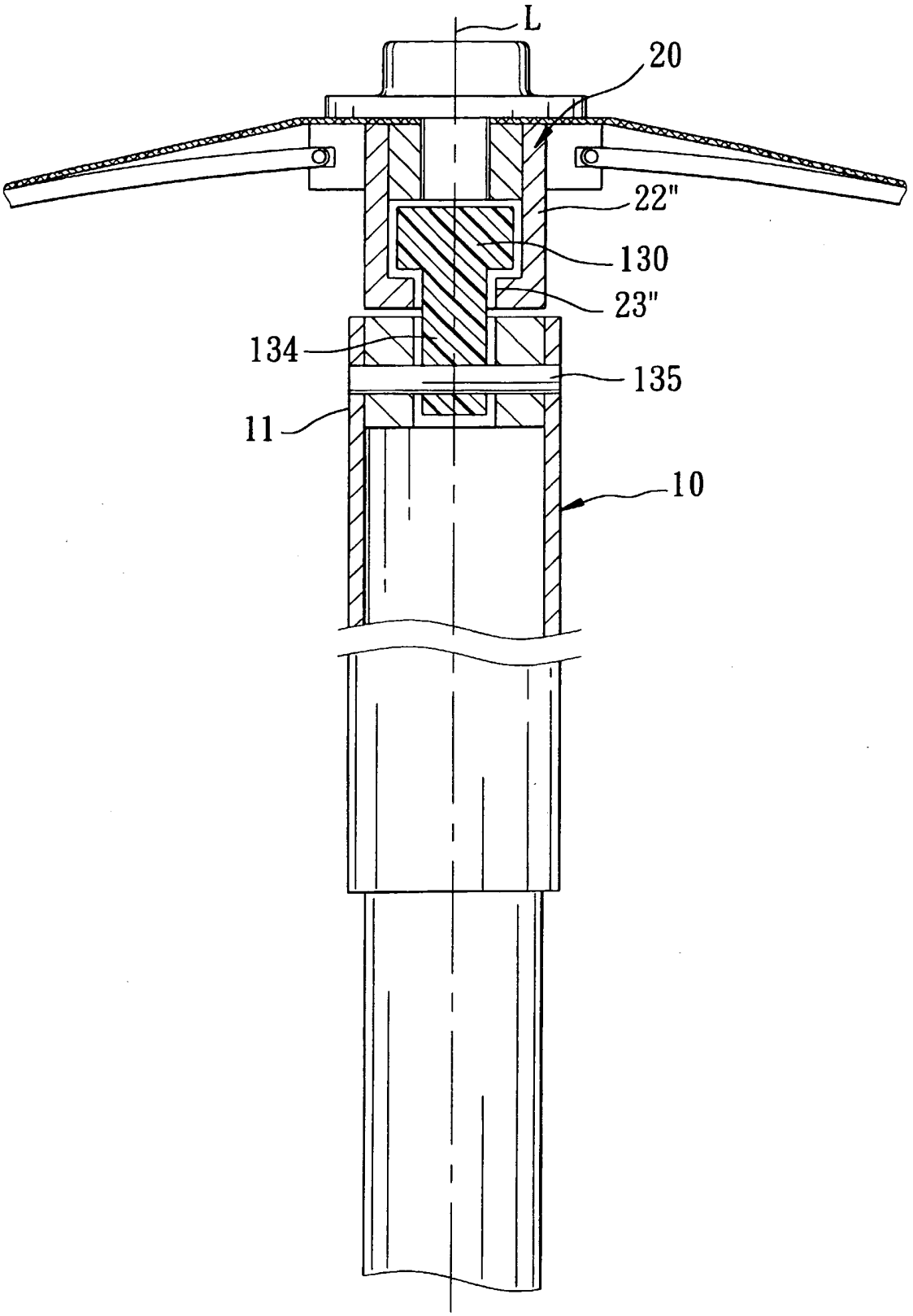

FIG. 7

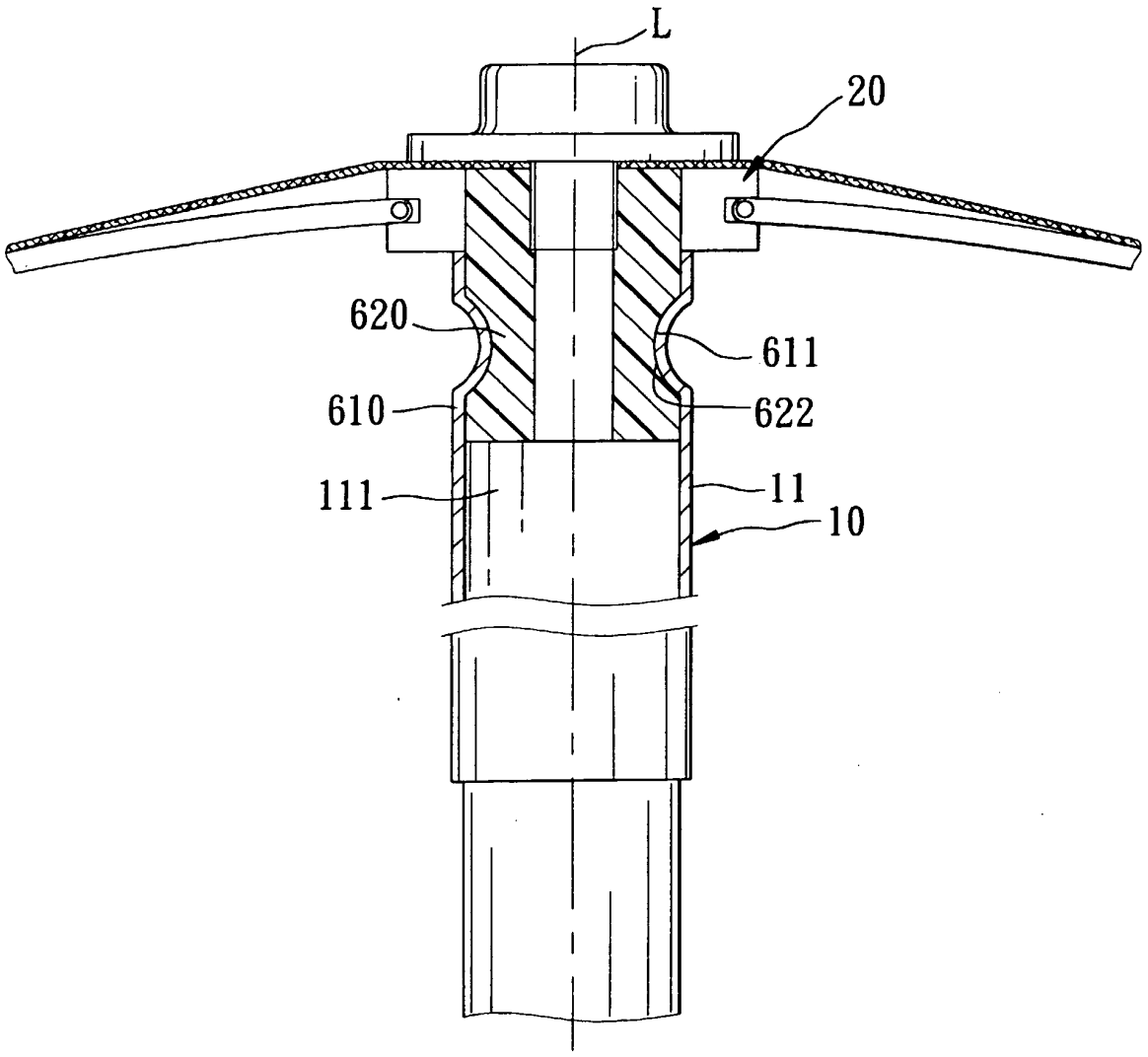

FIG. 8

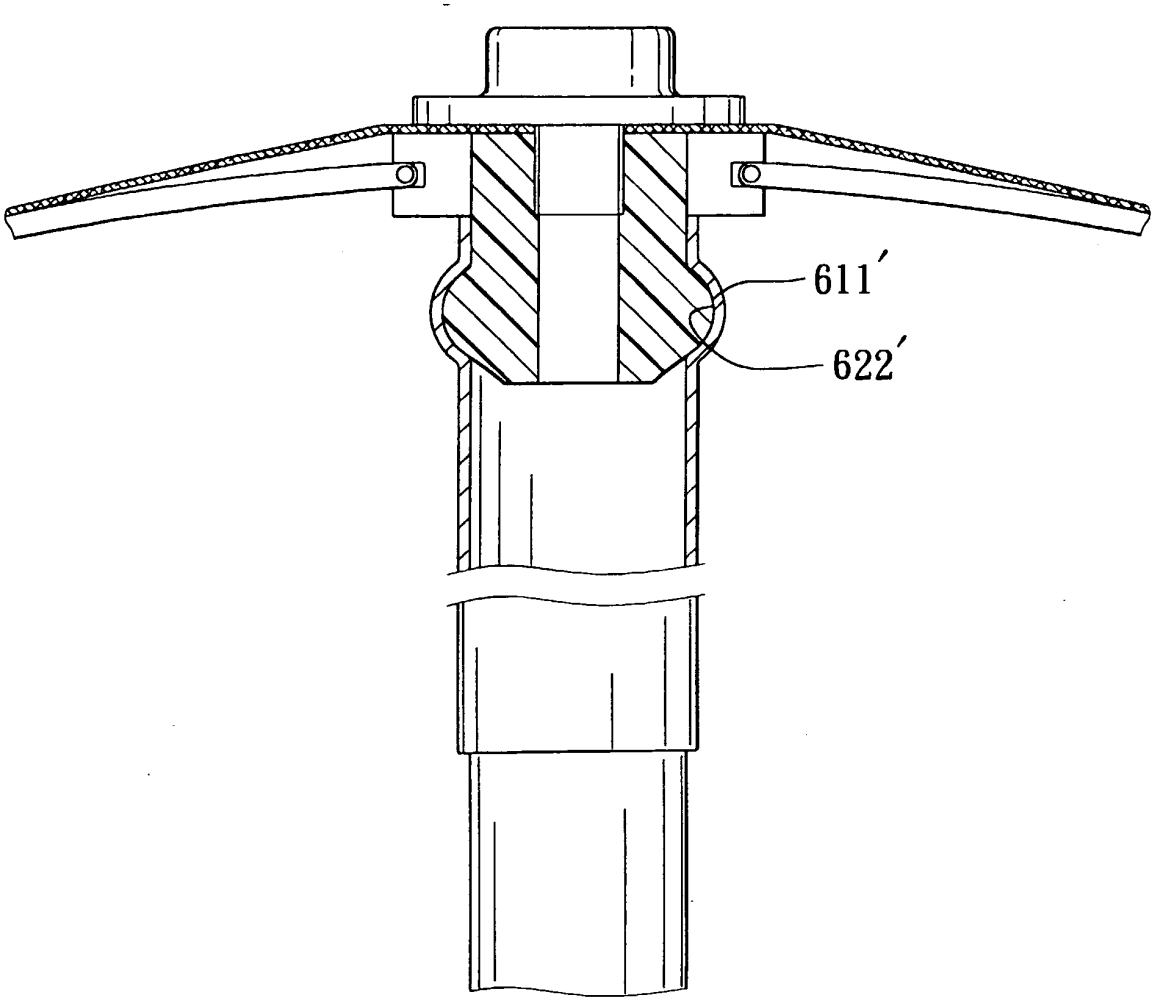

FIG. 9

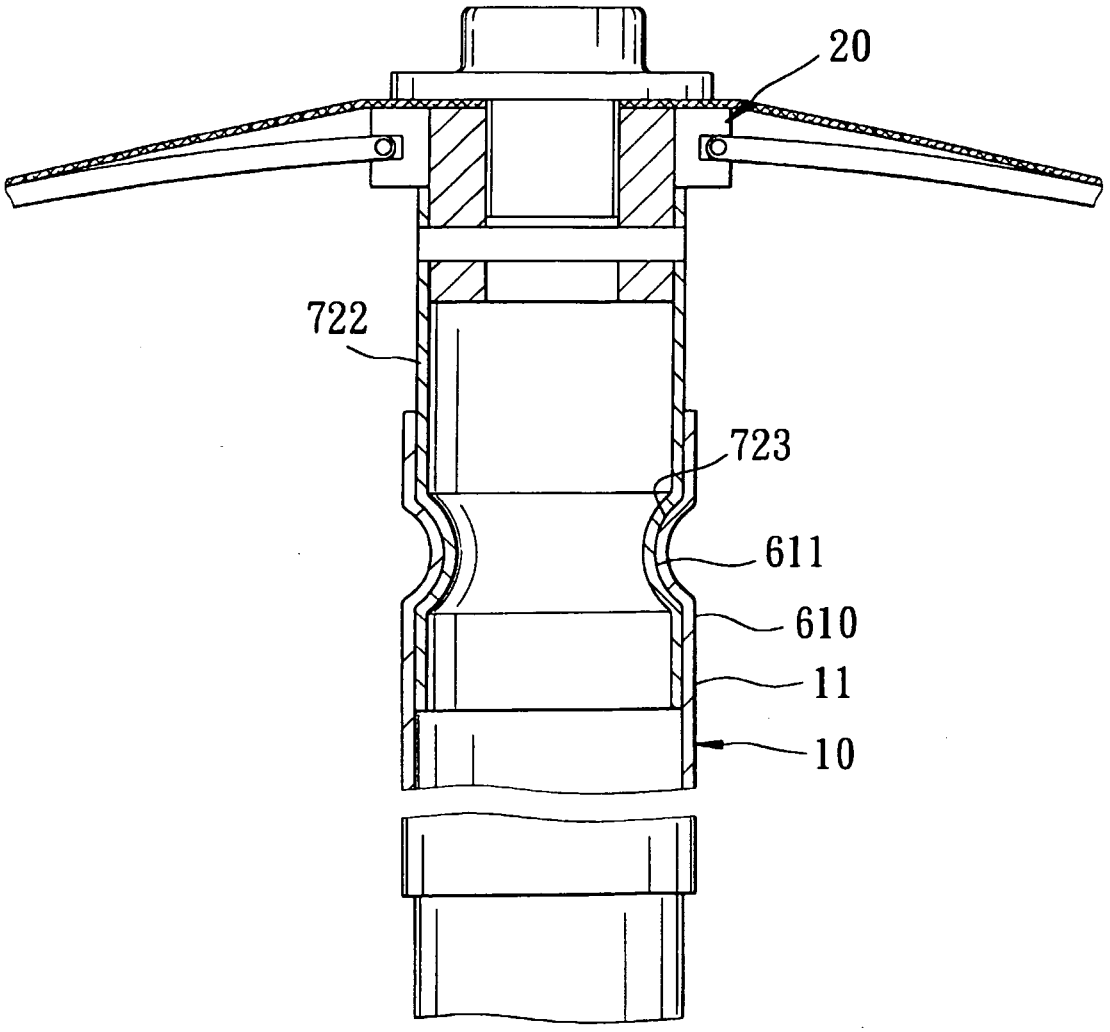

FIG. 10

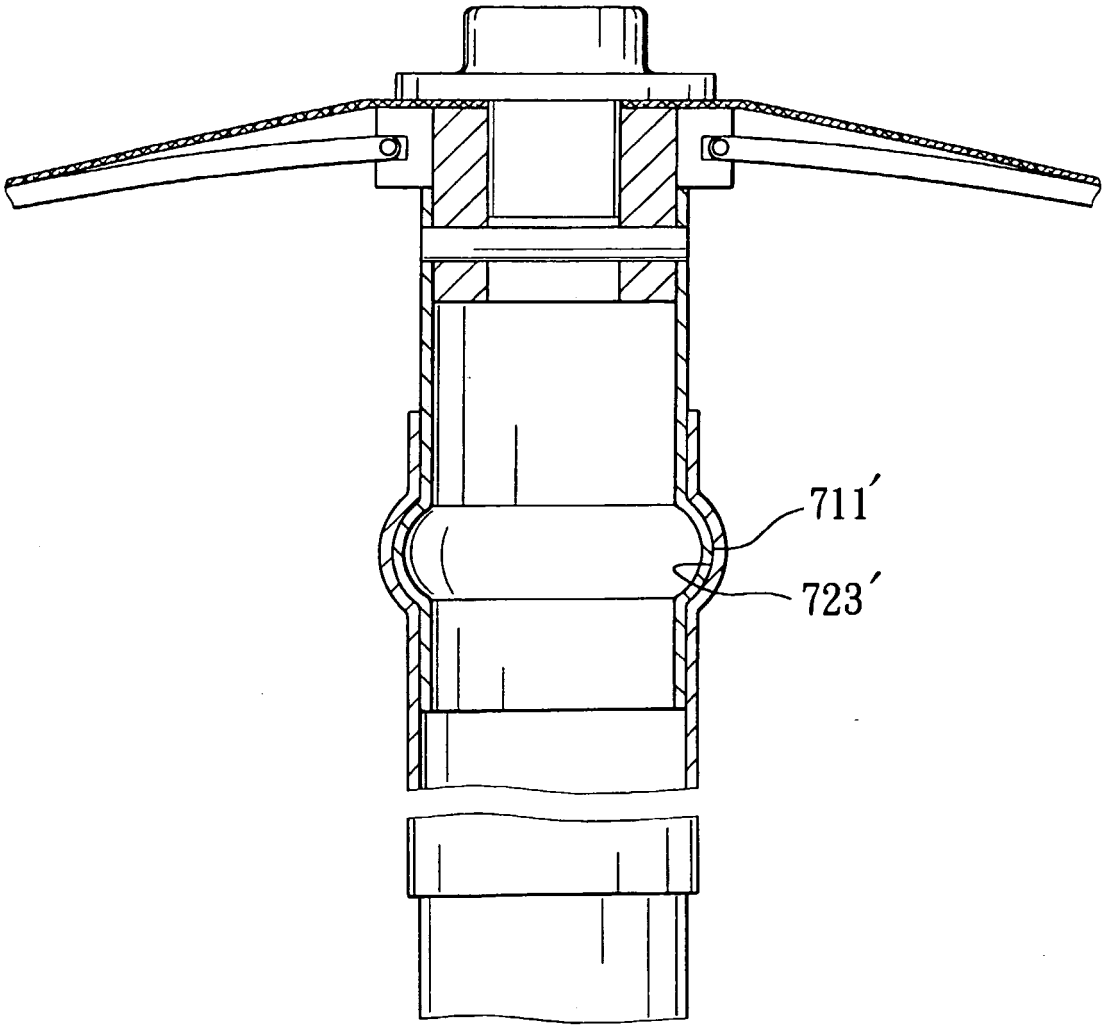

FIG. 11

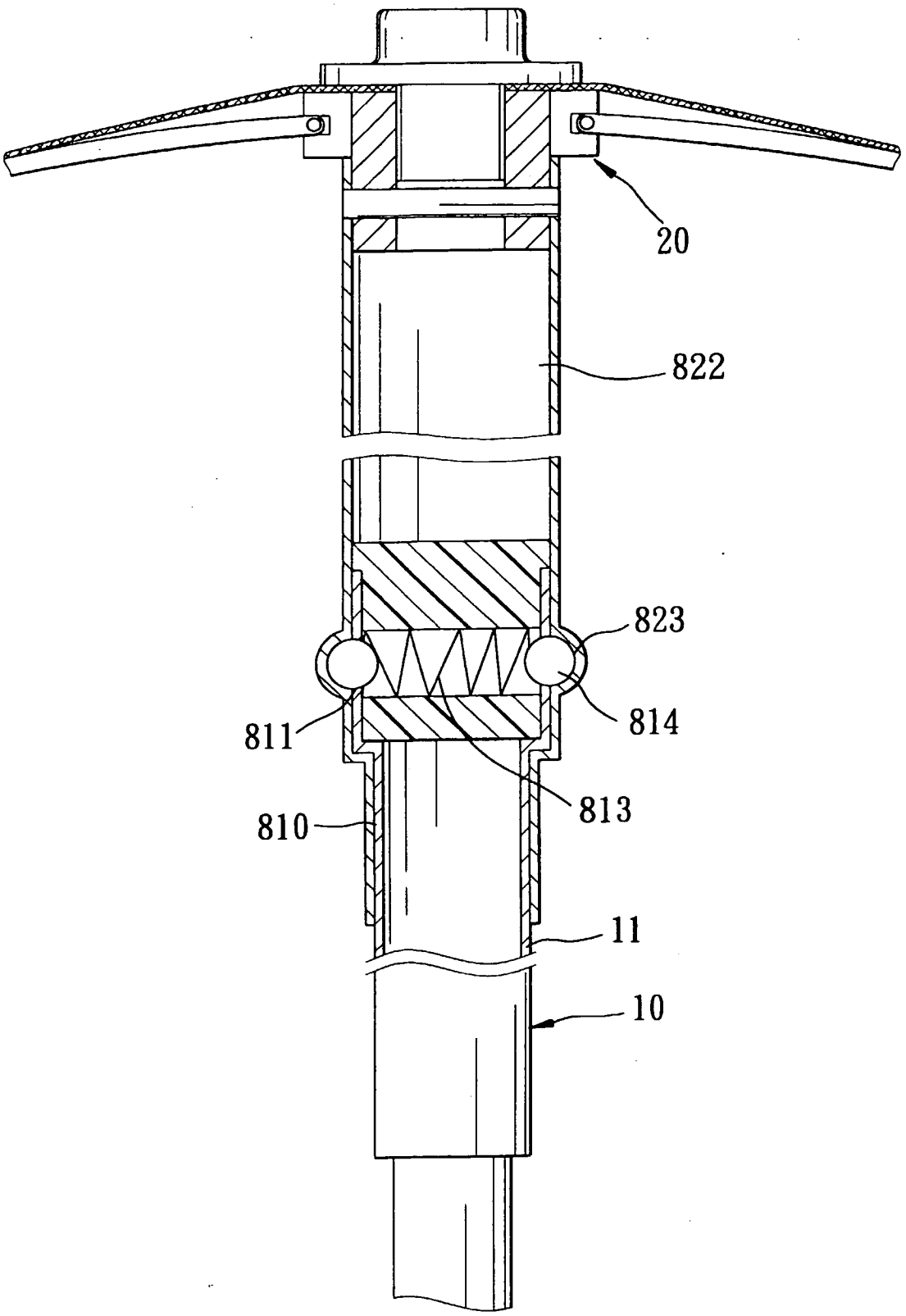

FIG. 12

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- US 4998551 A **[0004]**
- US 5020557 A **[0005]**