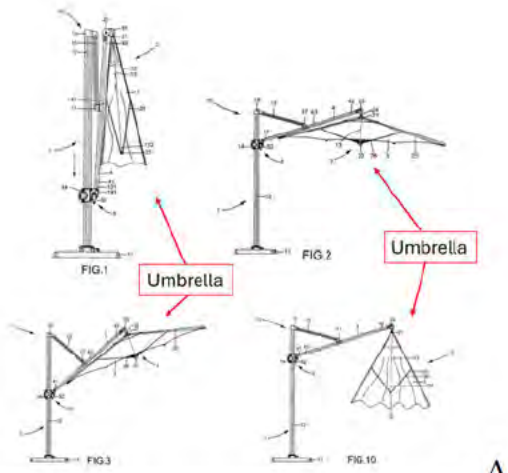


EXHIBIT 11

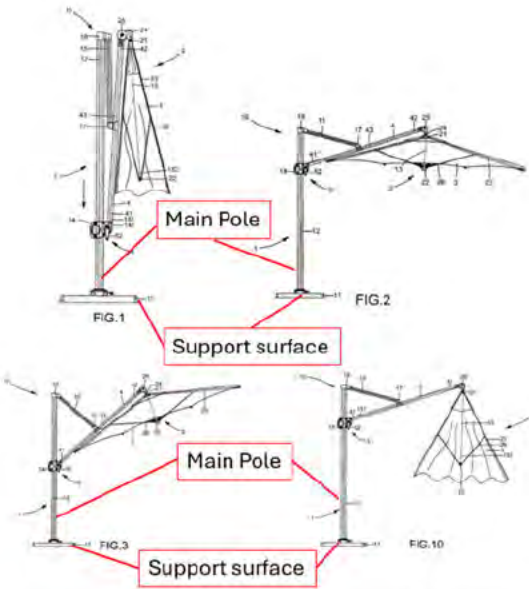
Exhibit 11 - Invalidity Chart for U.S. Patent No. 8,104,492¹ (the '492 Patent) based on U.S. Patent No. 7,886,755 (Tung '755)

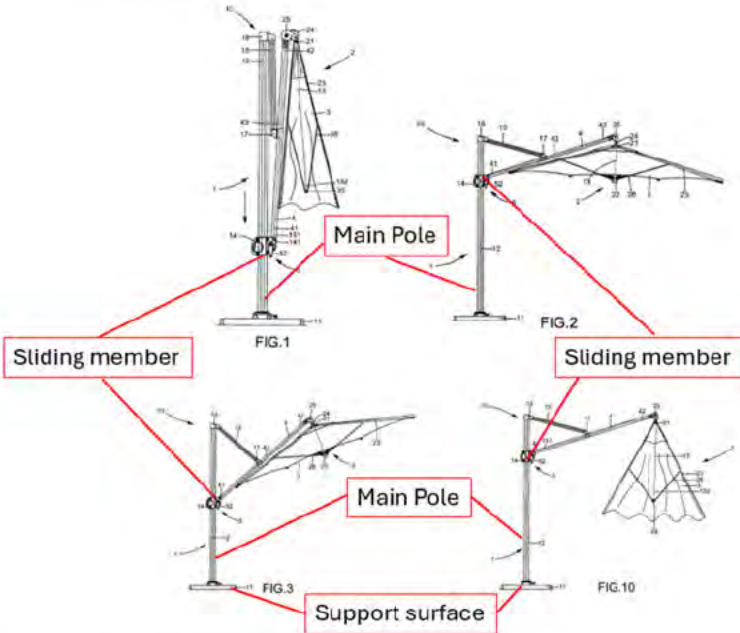
This chart is based on Plaintiff's apparent interpretations of the asserted claim(s) and Defendant's investigation to date. Citations to portions of any reference in this chart are exemplary only, and Defendant may rely on the entirety of the references cited herein to show that the asserted claims are invalid. Further, as Defendant's investigations and discovery are ongoing, Defendant reserves the right to amend or supplement this claim chart to include additional information and/or invalidity contentions identified in connection with Defendant's ongoing investigations. To the extent that every element below is not explicitly or inherently disclosed by the prior art reference, this prior art reference in combination (1) with the knowledge of one of ordinary skill in the art and/or (2) with other prior art identified in the invalidity contentions and/or otherwise herein, renders the asserted claims obvious.

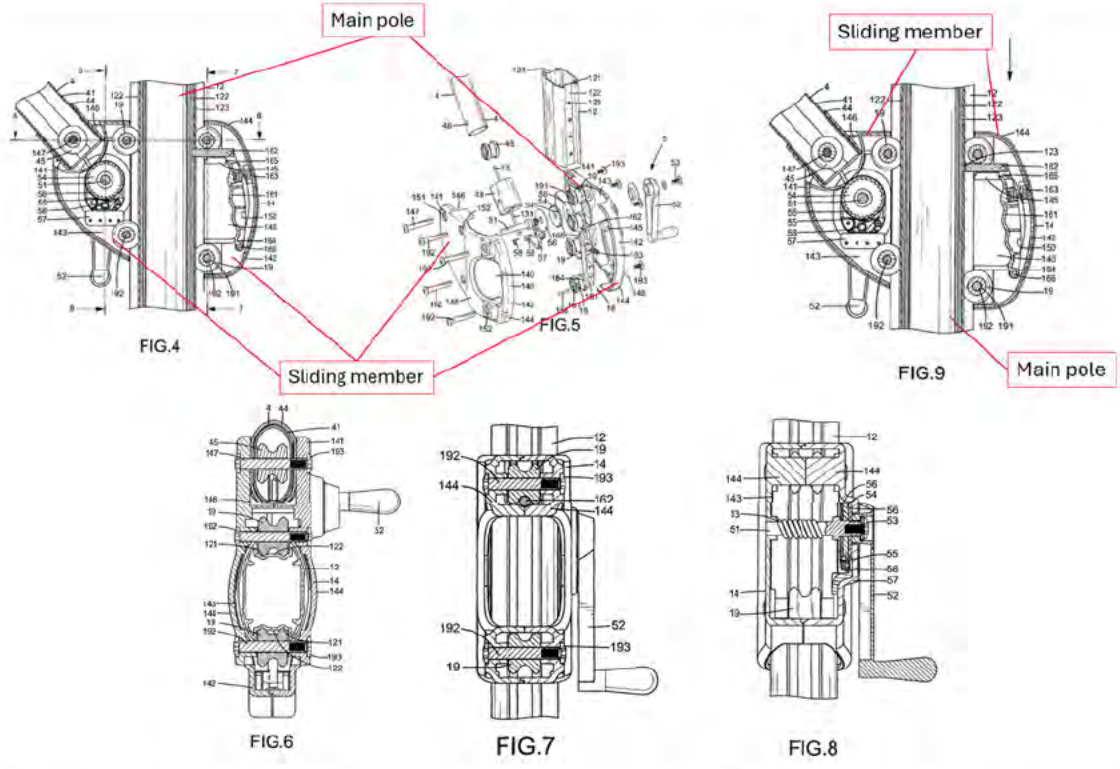
¹ As discussed in the contentions, Claim 1 of the Asserted Patent cannot claim priority to the May 5, 2008 filing date of provisional application no. 61/050,353. Instead, the priority date of Claim 1 of the Asserted Patent is May 5, 2009.

No.	Claim Limitation	Basis for Invalidity
Claim 1		
Anticipated under pre-AIA 35 U.S.C. § 102: U.S. Patent No. 7,886,755 (“Tung ’755”) (filed on February 24, 2009)		
1 [preamble] ²	An umbrella comprising:	Tung ’755 discloses an umbrella (sunshade 10). <i>See e.g.</i>, Tung ’755 at Title; Description of the Drawings at 2:34-61 (referencing a sunshade); Background of the Invention at 1:50-53 (“a need exists for a sunshade or umbrella that allows easy adjustment in a tilting angle of the canopy and that allows easy operation of folding/unfolding of the canopy” Summary at 1:56-58 (“The present invention solves this need and other problems in the field of easy operation of Sunshades by providing, in a preferred form, a side-supporting Sunshade including a mast extending in a vertical direction.”); Description at 3:17 (“A Sunshade according to the preferred teachings of the present invention...”), 3:30 (“According to the preferred form shown, Sunshade 10...”), 4:44 (“According to the preferred form shown, Sunshade further includes...”), 5:4 (“According to the preferred form shown, Sunshade 10...”); Claims 1-11 (referencing a sunshade); Figs. 1-3 and 10 (see annotated below). 

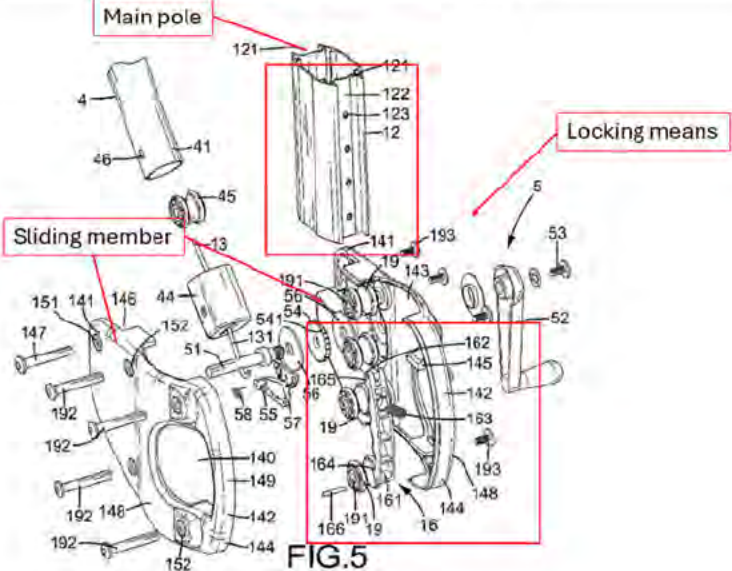
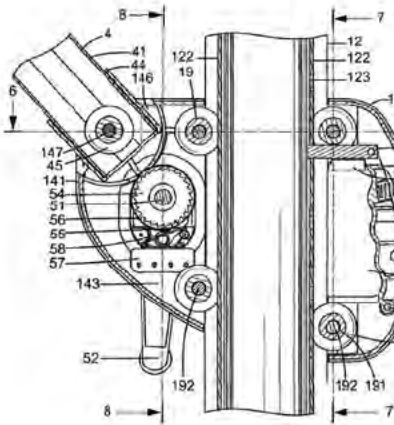
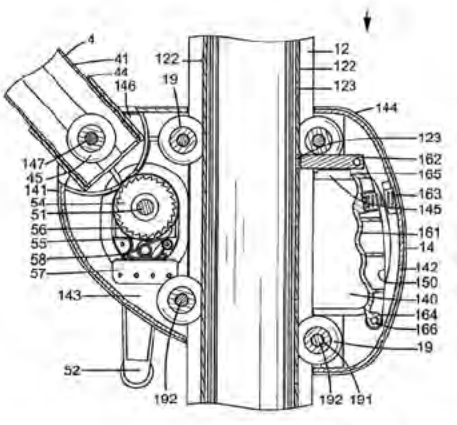
² Defendant makes no concessions or admissions regarding the claim preamble, *e.g.*, that it is or is not limiting, but reserves its right on that and other claim construction issues.

No.	Claim Limitation	Basis for Invalidity
1[a]	a main pole having a lower end for support by a support surface and extending generally upward to an upper end;	Tung '755 discloses a main pole (mast 12) having a lower end for support by a support surface (base 11) and extending generally upward to an upper end. <i>See e.g.</i>, Tung '755 at 3:20-21 (“According to the preferred form shown, sunshade 10 includes a main frame 1 having a base 11 and a mast 12 extending upward from base 1 in a vertical direction.”); Claim 1 (“a mast extending in a vertical direction and including an upper end”); Figs. 1-3 and 10 (see annotated below). 
1[b]	a sliding member associated with the main pole and selectably moveable thereon between lower and upper locations along the main pole;	Tung '755 discloses a sliding member (adjusting sleeve 14) associated with the main pole (mast 12) and selectably moveable thereon between lower and upper locations along the main pole (mast 12). <i>See e.g.</i>, Tung '755 at Description at 3:21-23 (“An adjusting sleeve 14 is slideably mounted on mast 12 in the vertical direction. A joint 18 is mounted on an upper end of mast 12.”), 3:47-54 (“According to the preferred form shown, mast 12 includes first and second sides spaced in a first direction perpendicular to the vertical axis. Each of first and second sides

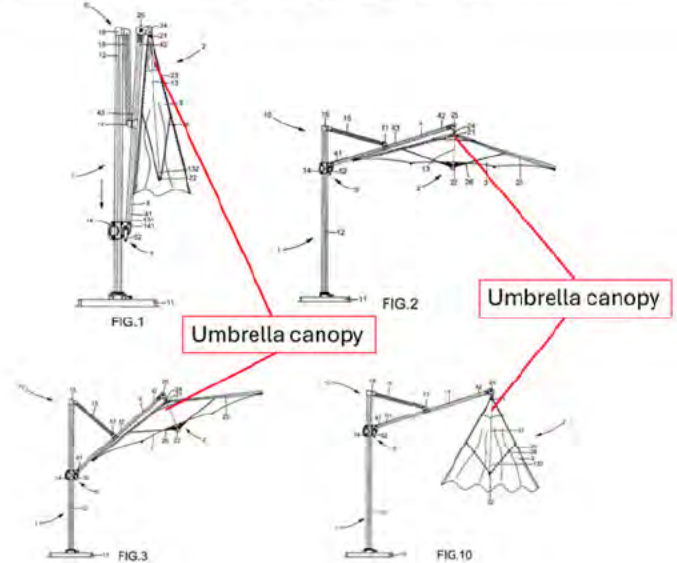
No.	Claim Limitation	Basis for Invalidity
		includes a groove 121 extending in the vertical direction and having a bottom wall 122. Bottom wall 122 of one of grooves 121 includes a plurality of positioning holes 123 spaced in the vertical direction.”), 3:67-4:8 (“In the most preferred form shown, adjusting sleeve 14 includes two sleeve parts 144 assembled together. Note that mast 12 is slideably received in another portion of compartment 143 between opening 140 and first end 141 of adjusting sleeve 14 such that adjusting sleeve 14 can slide on mast 12 in the vertical direction with mast 12 intermediate first and second ends 141 and 142 of adjusting sleeve 14 and intermediate first and second lateral sides 148 of adjusting sleeve 14.”), and 4:36-39 (“Thus, upper and lower rollers 19 slide along bottom walls 122 when adjusting sleeve 14 moves in the vertical direction along mast 12. Movement of adjusting sleeve 14 in the vertical direction is, thus, easier.”); Claim 1 (“an adjusting sleeve slideably mounted on the mast between an upper position and a lower position in the vertical direction”; Figs. 1-5(see annotated below), 6-7, and 9-10 (see annotated below). 

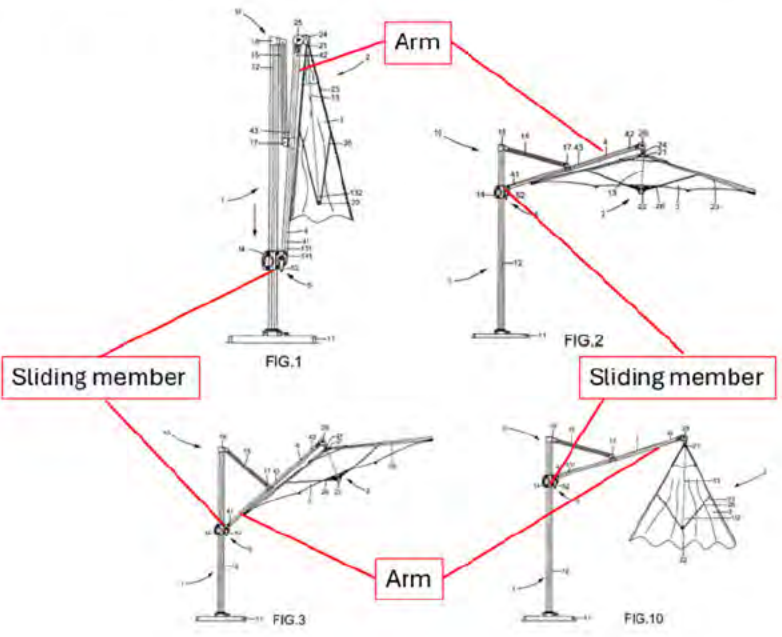
No.	Claim Limitation	Basis for Invalidity
		 FIG. 4 FIG. 5 FIG. 6 FIG. 7 FIG. 8 FIG. 9
1[c]	locking means for releasably securing the sliding member to the main pole at a selected location along the main pole;	Tung '755 discloses a locking means (e.g., lever 161, peg 162, spring 163, holes 123) for releasably securing the sliding member (adjusting sleeve 14) to the main pole at a selected location along the main pole (mast 12) <i>See e.g.,</i> Tung '755 at 3:47-53 (“According to the preferred form shown, mast 12 includes first and second sides spaced in a first direction perpendicular to the vertical axis. Each of first and second sides includes a groove 121 extending in the vertical direction and having a bottom wall 122. Bottom wall 122 of one of grooves 121 includes a plurality of positioning holes 123 spaced in the vertical direction.”), 4:44-5:3 (“According to the preferred form shown, sunshade further includes a positioning device 16 for positioning adjusting sleeve 14 at a

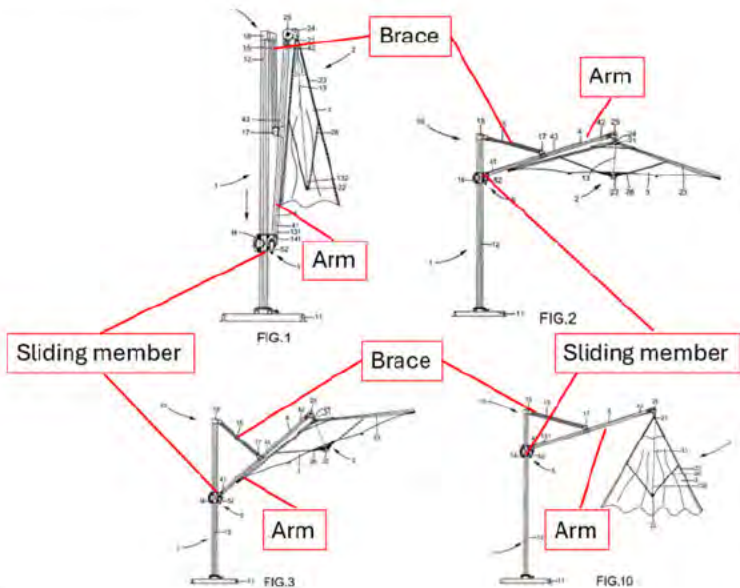
No.	Claim Limitation	Basis for Invalidity
		desired height in the vertical direction. Specifically, positioning device 16 includes a lever 161, a peg 162, and a spring 163. In the most preferred form shown, lever 161 is received in the interior of handgrip 149 and includes a first end 164 pivotably connected by a pin 166 to second end 142 of adjusting sleeve 14. Lever 161 further includes a second end 165 pivotably connected to an end of peg 162. Second end 165 of lever 161 can pivot about a pivot axis defined by pin 166. An intermediate section of lever 161 between first and second ends 164 and 165 extends through slot 150 into opening 140 to allow manual operation. The other end of peg 162 is releasably engaged in one of positioning holes 123 of mast 12. Peg 162 is supported by a guide board 145 fixed in compartment 143 so that pivotal movement of lever 161 causes rectilinear movement of peg 162 in the first direction between an engaging position engaged with one of positioning holes 123 of mast 12 and a disengaged position disengaged from positioning holes 123. Spring 163 is mounted between lever 161 and an inner wall of adjusting sleeve 14 to bias peg 162 to the engaging position. Lever 161 can be pressed to overcome spring 163 and to disengage peg 162 from positioning holes 123 of mast 12, allowing movement of adjusting sleeve 14 in the vertical direction along mast 12. When lever 161 is released, peg 162 is engaged with one of positioning holes 123 to position adjusting sleeve 14 at a desired height.”); Claim 5 (“The side-supporting sunshade as claimed in claim 2, with the bottom wall of the groove of one of the first and second sides of the mast including a plurality of positioning holes spaced in the vertical direction, with the sunshade further comprising, in combination: a lever including a first end pivotably connected to the adjusting sleeve, with the lever further including a second end; and a peg including a first end pivotably connected to the second end of the lever, with the peg further including a second end releasably engaged with one of the plurality of positioning holes of the mast.”); Figs. 4, 5 (see annotated below) and 9.

No.	Claim Limitation	Basis for Invalidity
		 FIG. 5  FIG. 4  FIG. 9

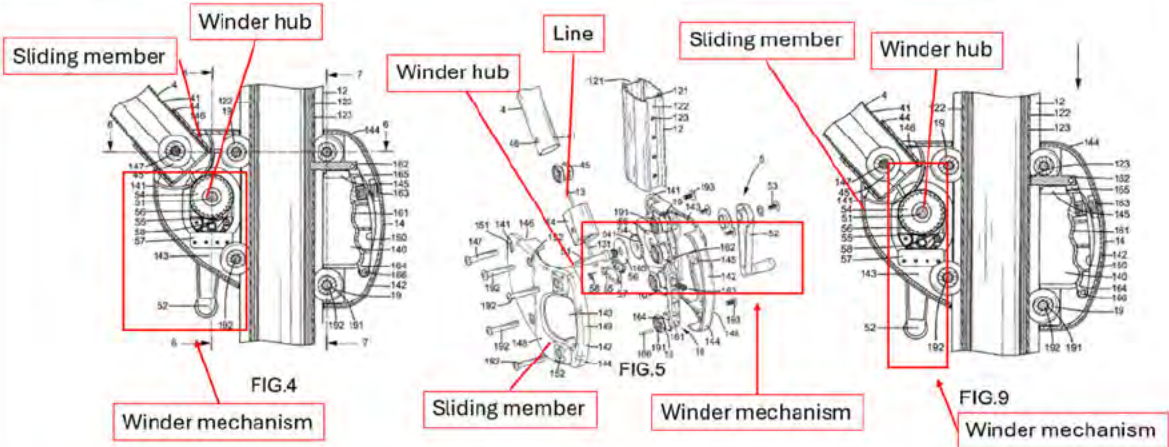
No.	Claim Limitation	Basis for Invalidity
1[d]	an umbrella canopy having a central region;	Tung '755 discloses an umbrella canopy (canopy 3) having a central region. <i>See e.g.</i>, Tung '755 at Abstract, Summary at 2:1-3 (“A canopy support frame is coupled to an upper end of the supporting arm and supports a canopy.”); Description at 3:30-46 (“According to the preferred form shown, sunshade 10 further includes a canopy support frame 2 having upper and lower hubs 21 and 22 spaced in the vertical direction. Canopy support frame 2 further includes a plurality of ribs 23 each having an end pivotably connected to upper hub 21. Canopy support frame 2 further includes a plurality of stretchers 26 each having a first end pivotably connected to lower hub 22 and a second end pivotably connected to an intermediate portion of one of ribs 23. A suspension member 24 is integrally formed with upper hub 21 and is pivotably connected to an elbow 25 fixed to upper end 42 of supporting arm 4. A canopy 3 is mounted to and supported by ribs 23. Canopy 3 is unfolded when lower hub 22 moves toward upper hub 21. On the other hand, canopy 3 is folded when lower hub 22 moves away from upper hub 21. Canopy support frame 2 can be of other forms as conventional including but not limited to a commercially available type.”); Claim 1 (“... canopy supported by the canopy support frame”); Claim 4 (“...wherein when the axle rotates in the direction for unfolding the canopy... folding the canopy...”); Claim 10 (“...unfolding the canopy... or folding the canopy”); Claim 11 (“...with the canopy being at a tilting angle...”); Figs. 1-3 and 10 (see annotated below).

No.	Claim Limitation	Basis for Invalidity
		
1[e]	an arm associated with the central region and extending radially therefrom to an outer end operatively associated with the sliding member;	Tung '755 discloses an arm (supporting arm 4) associated with the central region and extending radially therefrom to an outer end operatively associated with the sliding member (adjusting sleeve 14). <i>See e.g.,</i> Tung '755 at Summary at 1:61-65 (“A supporting arm includes upper and lower ends and an intermediate portion between the upper and lower ends of the supporting arm. The lower end of the supporting arm is pivotably connected to the adjusting sleeve.”), 2:1-3 (“A canopy support frame is coupled to the upper end of the supporting arm and supports a canopy”), and 2:21-24 (“The lower end of the supporting arm extends into the adjusting sleeve and is pivotably connected to the first end of the adjusting sleeve. The cable extends from the axle through an interior of the supporting arm to the canopy support frame.”); Description at 3:24-29 (“A supporting arm 4 includes upper and lower ends 41 and 42 and an intermediate portion 43 between upper and lower ends 41 and 42...Lower end 41 of supporting arm 4 is pivotably connected to adjusting sleeve 14.”), 3:34-40 (“Canopy support frame 2 further includes a plurality of stretchers 26 each having a first end pivotably connected to lower hub 22 and a second end pivotably connected to an intermediate portion

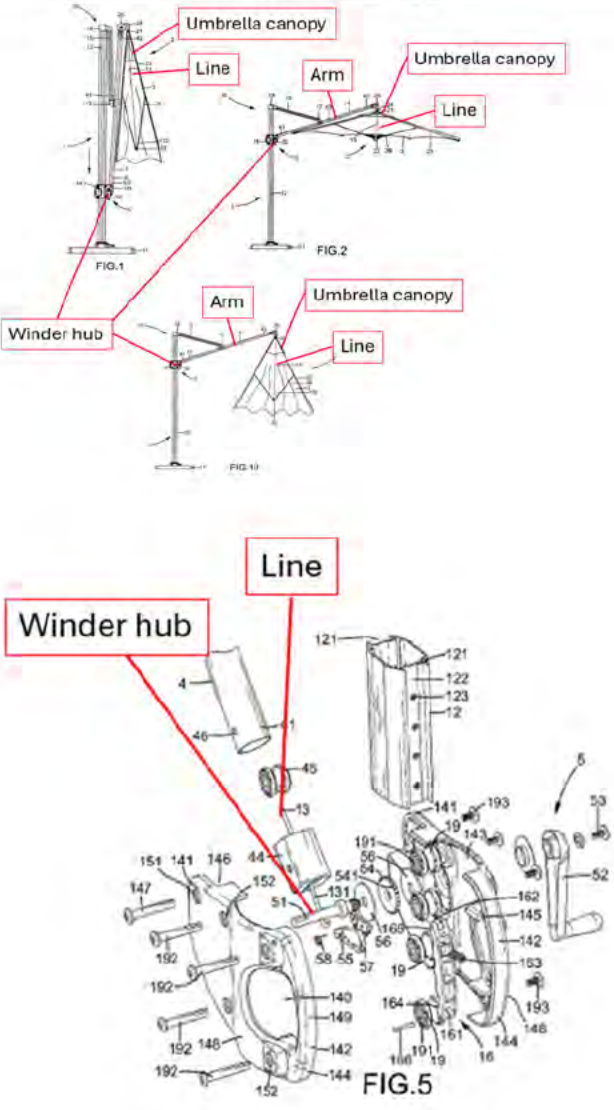
No.	Claim Limitation	Basis for Invalidity
		of one of ribs 23. A suspension member 24 is integrally formed with upper hub 21 and is pivotably connected to an elbow 25 fixed to upper end 42 of supporting arm 4.”); Claim 1 (“a supporting arm including upper and lower ends and an intermediate portion between the upper and lower ends of the supporting arm, with the lower end of the supporting arm pivotably connected to the adjusting sleeve” and “a canopy support frame coupled to the upper end of the supporting arm, with a canopy supported by the canopy support frame”); Claim 2 (“...with the lower end of the supporting arm pivotably connected to the first end of the adjusting sleeve...”); Claim 3 (“...the supporting arm to the canopy support frame, with the lower end of the supporting arm pivotably received in the compartment of the adjusting sleeve...”); Figs. 1-3 and 10 (see annotated below).  The diagrams illustrate various views of a canopy support structure. FIG. 1 shows a side view of the structure with a supporting arm (4) and a canopy (12). FIG. 2 shows a top view of the structure. FIG. 3 shows a side view of the structure with a sliding member (11) and an arm (4). FIG. 10 shows a side view of the structure with a sliding member (11) and an arm (4). Red lines connect the labels 'Arm' and 'Sliding member' to the corresponding parts in the diagrams.

No.	Claim Limitation	Basis for Invalidity
1[f]	a brace having a first end pivotably attached to an upper portion of the pole above the sliding member and a second end pivotably attached to the arm;	Tung '755 discloses a brace (linking rod 15) having a first end pivotably attached to an upper portion of the pole (mast 11) above the sliding member (adjusting sleeve 14) and a second end pivotably attached to the arm (supporting arm 4). <i>See e.g., Tung '755 at Summary at 1:65-2:1 ("linking rod includes a first end pivotably connected to an upper end of the mast. The linking rod further includes a second end pivotably connected to the intermediate portion of the supporting arm"); Description at 3:23-28 ("A joint 18 is mounted on an upper end of mast 12. A supporting arm 4 includes upper and lower ends 41 and 42 and an intermediate portion 43 between upper and lower ends 41 and 42. A joint 17 is mounted to intermediate portion 43. A linking rod 15 has two ends pivotably connected to joints 17 and 18."); Claim 1 ("a linking rod including a first end pivotably connected to the upper end of the mast, with the linking rod further including a second end pivotably connected to the intermediate portion of the supporting arm"); Figs. 1-3 and 10 (see annotated below).</i> 

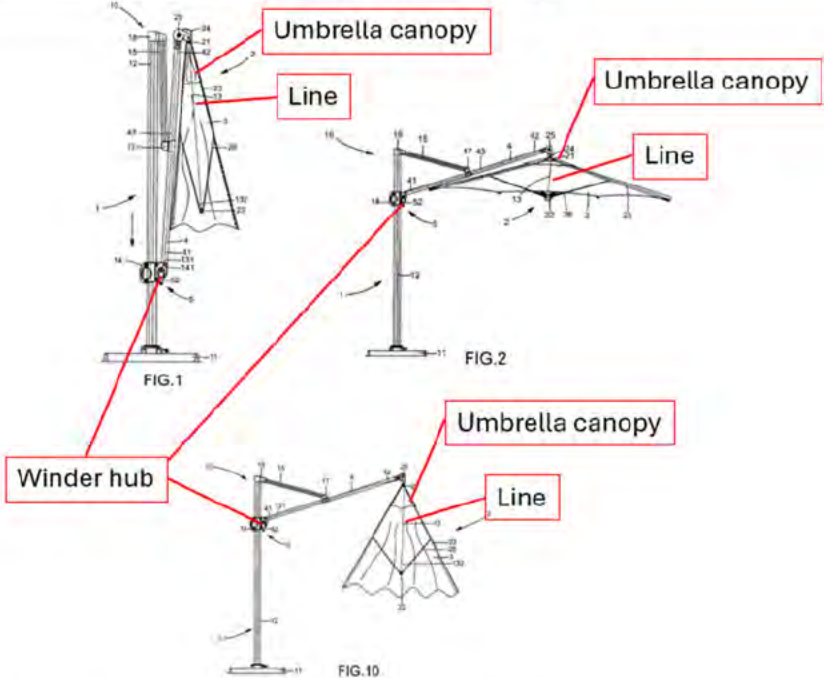
No.	Claim Limitation	Basis for Invalidity
1[g]	a winding mechanism having a winder hub around which a line can be wound, the winder hub being mounted to the sliding member and movable therewith;	Tung '755 discloses a winding mechanism (reel device 5) having a winder hub (axle 51) around which a line (cable 13) can be wound, the winder hub (axle 51) being mounted to the sliding member (adjusting sleeve 14) and movable therewith. <i>See e.g.,</i> Tung '755 at Summary at 2:3-11 (“A reel device is mounted to the adjusting sleeve and includes an axle rotatably mounted in the adjusting sleeve. The reel device further includes a handle coupled to the axle to rotate therewith. A cable includes a first end fixed to the axle and a second end fixed to the canopy support frame. The cable is movable in a winding direction to fold the canopy when the axle rotates in a direction. On the other hand, the cable is movable in a releasing direction to unfold the canopy when the axle rotates in a reverse direction.”) and 2:23-27 (“The cable extends from the axle through an interior of the supporting arm to the canopy support frame. A pulley is rotatably mounted in the lower end of the supporting arm and guides the cable from the axle into the interior of the supporting arm.”); Description at 5:4-15 (“According to the preferred form shown, sunshade 10 further includes a reel device 5 mounted to first end 141 of adjusting sleeve 14. Reel device 5 includes an axle 51 rotatably mounted in compartment 143. An end of axle 51 is located outside of adjusting sleeve 14. A screw 53 is engaged in a screw hole in an end face of the end of axle 51 to prevent disengagement of axle 51. Opening 140 is intermediate axle 51 and handgrip 149 in the first direction. A handle 52 is mounted to the end of axle 51 and can be manually operated to rotate axle 51. A cable 13 includes a first end 131 fixed to axle 51 and a second end 132. Cable 13 is guided by pulley 45 into an interior of supporting arm 4.”), 5:50-52 (“In use, handle 52 can be operated to rotate axle 51 in a direction to release cable 13 so that canopy 3 is folded (FIGS. 1 and 10).”), and 5:61-66 (“Handle 52 can be operated in a reverse direction to rotate axle 51 in a reverse direction to wind cable 13 around axle 51 so that canopy 3 is unfolded (FIG. 2). Note that reel device 5 is mounted on adjusting sleeve 14 that can be moved upward to a height suitable for easy operation of handle 52 by the user.”); Claim 1 (“a reel device mounted to the adjusting sleeve and including an axle rotatably mounted in the adjusting sleeve, with the reel device further including a handle coupled to the axle to rotate

No.	Claim Limitation	Basis for Invalidity
		therewith”); Claim 4 (“with the reel device further comprising: a ratchet wheel mounted around and in friction contact with the axle, with the ratchet wheel including a plurality of teeth on an outer periphery thereof; a catch pivotably connected to the adjusting sleeve; and a spring biasing the catch to engage with one of the plurality of teeth of the ratchet wheel”); Claim 10 (“the side-supporting sunshade as claimed in claim 9, with the reel device further comprising: a ratchet wheel mounted around and in friction contact with the axle, with the ratchet wheel including a plurality of teeth on an outer periphery thereof; a catch pivotably connected to the adjusting sleeve; and a spring biasing the catch to engage with one of the plurality of teeth of the ratchet wheel”); Figs. 4, 5, and 9 (see annotated below). 
1[h]	a line having a first end that winds around the winder hub, an intermediate portion extending from the	Tung '755 discloses a line (cable 13) having a first end that winds around the winder hub (axel 51), an intermediate portion extending from the winder hub (axel 51) along the arm (supporting arm 4) to the umbrella canopy (canopy 3), and a second end that engages the umbrella canopy (canopy 3).

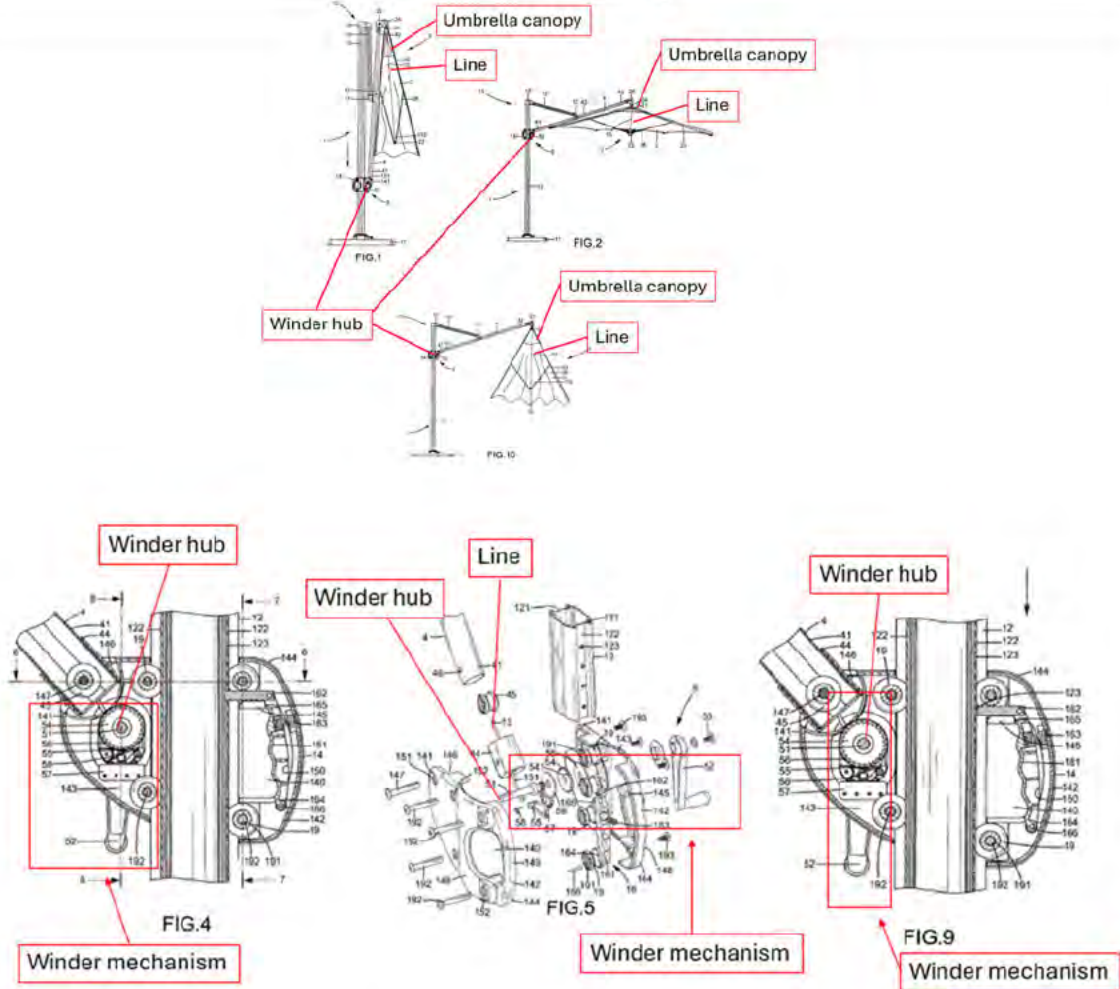
No.	Claim Limitation	Basis for Invalidity
	winder hub along the arm to the umbrella canopy, and a second end that engages the umbrella canopy;	<i>See e.g.</i>, Tung’755 at Summary at 2:3-11 (“A reel device is mounted to the adjusting sleeve and includes an axle rotatably mounted in the adjusting sleeve. The reel device further includes a handle coupled to the axle to rotate therewith. A cable includes a first end fixed to the axle and a second end fixed to the canopy support frame. The cable is movable in a winding direction to fold the canopy when the axle rotates in a direction. On the other hand, the cable is movable in a releasing direction to unfold the canopy when the axle rotates in a reverse direction.”) and 2:23-27 (“The cable extends from the axle through an interior of the supporting arm to the canopy support frame. A pulley is rotatably mounted in the lower end of the supporting arm and guides the cable from the axle into the interior of the supporting arm.”); Description at 5:11-15 (“A handle 52 is mounted to the end of axle 51 and can be manually operated to rotate axle 51. A cable 13 includes a first end 131 fixed to axle 51 and a second end 132. Cable 13 is guided by pulley 45 into an interior of supporting arm 4.”) and 5:50-52 (“In use, handle 52 can be operated to rotate axle 51 in a direction to release cable 13 so that canopy 3 is folded (FIGS. 1 and 10).”); Claim 1 (“...a reel device mounted to the adjusting sleeve and including an axle rotatably mounted in the adjusting sleeve, with the reel device further including a handle coupled to the axle to rotate therewith; and a cable including a first end fixed to the axle and a second end fixed to the canopy support frame, with the cable being movable in a winding direction to fold the canopy when the axle rotates in a direction, and with the cable being movable in a releasing direction to unfold the canopy when the axle rotates in a reverse direction...”); Claim 3 (“The side-supporting sunshade as claimed in claim 2, with the cable extending from the axle through an interior of the supporting arm to the canopy Support frame, with the lower end of the supporting arm pivotably received in the compartment of the adjusting sleeve, and with a pulley rotatably mounted in the lower end of the Supporting arm and guiding the cable from the axle into the interior of the supporting arm; Figs. 1, 2, 5, and 10 (see annotated below).

No.	Claim Limitation	Basis for Invalidity
		

No.	Claim Limitation	Basis for Invalidity
1[i]	wherein rotation of the winder hub tensions or relaxes the line depending upon the direction of rotation of the winder hub, and	Tung'755 discloses wherein rotation of the winder hub (axle 51) tensions or relaxes the line (cable 13) depending upon the direction of rotation of the winder hub (axle 51). <i>See e.g.</i>, Tung '755 at Abstract (“A cable includes a first end fixed to an axle rotatably mounted in the adjusting sleeve and a second end fixed to the canopy support frame. The cable is movable in a winding direction to fold the canopy when the axle rotates in a direction. The cable is movable in a releasing direction to unfold the canopy when the axle rotates in a reverse direction.”); Summary at 2:3-11 (“A reel device is mounted to the adjusting sleeve and includes an axle rotatably mounted in the adjusting sleeve. The reel device further includes a handle coupled to the axle to rotate therewith. A cable includes a first end fixed to the axle and a second end fixed to the canopy support frame. The cable is movable in a winding direction to fold the canopy when the axle rotates in a direction. On the other hand, the cable is movable in a releasing direction to unfold the canopy when the axle rotates in a reverse direction.”) and 2:23-27 (“The cable extends from the axle through an interior of the supporting arm to the canopy support frame. A pulley is rotatably mounted in the lower end of the supporting arm and guides the cable from the axle into the interior of the supporting arm.”); Description at 5:11-15 (“A handle 52 is mounted to the end of axle 51 and can be manually operated to rotate axle 51. A cable 13 includes a first end 131 fixed to axle 51 and a second end 132. Cable 13 is guided by pulley 45 into an interior of supporting arm 4.”) and 5:50-52 (“In use, handle 52 can be operated to rotate axle 51 in a direction to release cable 13 so that canopy 3 is folded (FIGS. 1 and 10).”); Claim 1 (“...a reel device mounted to the adjusting sleeve and including an axle rotatably mounted in the adjusting sleeve, with the reel device further including a handle coupled to the axle to rotate therewith; and a cable including a first end fixed to the axle and a second end fixed to the canopy support frame, with the cable being movable in a winding direction to fold the canopy when the axle rotates in a direction, and with the cable being movable in a releasing direction to unfold the canopy when the axle rotates in a reverse direction...”); Figs. 1, 2, and 10 (see annotated below)

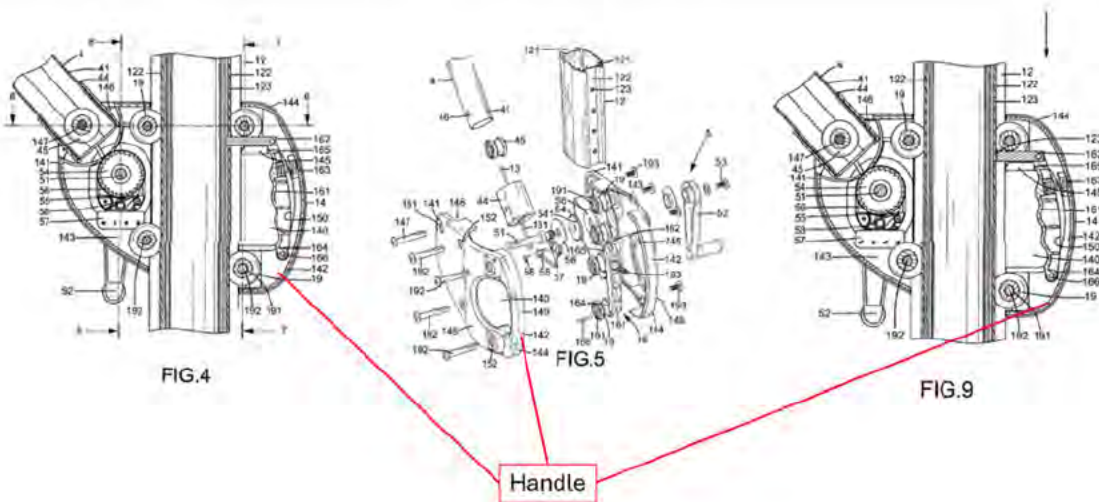
No.	Claim Limitation	Basis for Invalidity
		
1[j]	wherein operation of the winding mechanism to apply tension to the line opens and closes the umbrella canopy in response to movement of the line; and	Tung '755 discloses wherein operation of the winding mechanism (reel device 5) to apply tension to the line (cable 13) opens and closes the umbrella canopy (canopy 3) in response to movement of the line (cable 13). <i>See e.g.,</i> Tung '755 at Abstract (“A cable includes a first end fixed to an axle rotatably mounted in the adjusting sleeve and a second end fixed to the canopy support frame. The cable is movable in a winding direction to fold the canopy when the axle rotates in a direction. The cable is movable in a releasing direction to unfold the canopy when the axle rotates in a reverse direction.”); Summary at 2:3-11 (“A reel device is mounted to the adjusting sleeve and includes an axle rotatably mounted in the adjusting sleeve. The reel device further includes a handle coupled to the axle to rotate therewith. A cable includes a first end fixed to

No.	Claim Limitation	Basis for Invalidity
		the axle and a second end fixed to the canopy support frame. The cable is movable in a winding direction to fold the canopy when the axle rotates in a direction. On the other hand, the cable is movable in a releasing direction to unfold the canopy when the axle rotates in a reverse direction.”) and 2:23-27 (“The cable extends from the axle through an interior of the supporting arm to the canopy support frame. A pulley is rotatably mounted in the lower end of the supporting arm and guides the cable from the axle into the interior of the supporting arm.”); Description at 5:11-15 (“A handle 52 is mounted to the end of axle 51 and can be manually operated to rotate axle 51. A cable 13 includes a first end 131 fixed to axle 51 and a second end 132. Cable 13 is guided by pulley 45 into an interior of supporting arm 4.”) and 5:50-52 (“In use, handle 52 can be operated to rotate axle 51 in a direction to release cable 13 so that canopy 3 is folded (FIGS. 1 and 10).”); Claim 1 (“...a reel device mounted to the adjusting sleeve and including an axle rotatably mounted in the adjusting sleeve, with the reel device further including a handle coupled to the axle to rotate therewith; and a cable including a first end fixed to the axle and a second end fixed to the canopy support frame, with the cable being movable in a winding direction to fold the canopy when the axle rotates in a direction, and with the cable being movable in a releasing direction to unfold the canopy when the axle rotates in a reverse direction...”); Figs. 1, 2, 4, 5, 9, and 10 (see annotated below).

No.	Claim Limitation	Basis for Invalidity
		
1[k]	wherein the angle of the umbrella canopy with respect to the	Tung '755 discloses wherein the angle of the umbrella canopy with respect to the main pole (vertical pole 3) can be controlled by moving the sliding member (adjusting sleeve 14) along the main pole (vertical pole 3).

No.	Claim Limitation	Basis for Invalidity
	main pole can be controlled by moving the sliding member along the main pole.	<i>See e.g., Tung '755 at Description at 5:52-59</i> (“When it is desired to lift canopy 3 to a desired height, the user presses lever 161 to disengage peg 162 from positioning holes 123 and then moves adjusting sleeve 14 to a desired height on mast 12. Adjusting sleeve 14 can be moved along mast 12 between a lower position and an upper position. Note that canopy 3 can be at a tilting angle with mast 12 by adjusting the position of adjusting sleeve 14 to be intermediate the upper and lower positions.”) and 6:2-8 (“Rollers 19 in adjusting sleeve 14 allow smooth sliding of adjusting sleeve 14 on mast 12. Furthermore, handgrip 149 allows easy grip by a hand of the user while moving adjusting sleeve 14 on mast 12. Furthermore, lever 161 can be easily pressed by the hand holding handgrip 149. Further, the tilting angle of canopy 3 can be adjusted easily and smoothly.”); Claim 1 (“...with the mast including first and second sides spaced in the first direction, with each of the first and second sides of the mast including a groove extending in the vertical direction and having a bottom wall, with the adjusting sleeve including first and second rollers rotatably received in the compartment and spaced in the first direction, with the first and second rollers sliding along the bottom walls of the grooves of the mast when the adjusting sleeve moves in the vertical direction.”); Figs 1 and 3 (see annotated below); Claim 11 (“The side-supporting sunshade as claimed in claim 10, with the canopy being at a tilting angle with the mast when the adjusting sleeve is in a position intermediate the upper and lower positions.”)

No.	Claim Limitation	Basis for Invalidity
Claim 5		
Anticipated under pre-AIA 35 U.S.C. § 102: Tung '755 (filed on February 24, 2009)		
5	The umbrella of claim 1, wherein the sliding member has a handle associated therewith.	Tung '755 discloses wherein the sliding member (adjusting sleeve 14) has a handle (handgrip 149) associated therewith. <i>See e.g.</i>, Tung '755 at Description at 3:59-67 (“A compartment 143 is defined by first and second ends 141 and 142 and first and second lateral sides 148. Adjusting sleeve 14 further includes an opening 140 extending in the second direction from first lateral side 148 through second lateral side 148 with a handgrip 149 formed at second end 142 of adjusting sleeve 14. Handgrip 149 includes an inner surface having a slot 150. Opening 140 is in communication with a portion of compartment 143 in an interior of handgrip 149 via slot 150.”), 4:48-51 (“In the most preferred form shown, lever 161 is received in the interior of handgrip 149 and includes a first end 164 pivotably connected by a pin 166 to second end 142 of adjusting sleeve 14.”), 5:10-13 (“Opening 140 is intermediate axle 51 and handgrip 149 in the first direction. A handle 52 is mounted to the end of axle 51 and can be manually operated to rotate axle 51.”), and 6:3-8(“Furthermore, handgrip 149 allows easy grip by a hand of the user while moving adjusting sleeve 14 on mast 12. Furthermore, lever 161 can be easily pressed by the hand holding handgrip 149. Further, the tilting angle of canopy 3 can be adjusted easily and smoothly.”); Claim 7 (“The side-supporting sunshade as claimed in claim 6, with the adjusting sleeve further including an opening extending from the first lateral side through the second lateral side with a handgrip formed at the second end of the adjusting sleeve and adapted to be gripped by a hand of a user holding the adjusting sleeve”); Claim 8 (“The side-supporting sunshade as claimed in claim 7, with the handgrip including an inner surface having a slot in communication with the compartment, with the lever including an intermediate section between the first and second ends of the lever, with the intermediate section of the lever extending into the opening via the slot under action of the spring.”); Claim 9 (“The side-supporting sunshade as claimed in claim 8, with the first and second rollers intermediate the opening and the first end of the adjusting sleeve in the first direction, with the lever pivotably received in the handgrip, and with the opening intermediate the axle and the handgrip in the first direction.”); Figs. 4, 5, and 9 (see annotated below)

No.	Claim Limitation	Basis for Invalidity
		 FIG.4 FIG.5 FIG.9 Handle

No.	Claim Limitation	Basis for Invalidity
Claim 6		
Anticipated under pre-AIA 35 U.S.C. § 102: Tung '755 (filed on February 24, 2009)		
6	The umbrella of claim 1, wherein the line extends along at least substantially the entire length of the arm.	Tung '755 disclose wherein the line (cable 13) extends along at least substantially the entire length of the arm (supporting arm 4). <i>See e.g.</i>, Tung '755 at Description at 5:13-25 (“A cable 13 includes a first end 131 fixed to axle 51 and a second end 132. Cable 13 is guided by pulley 45 into an interior of supporting arm 4. Furthermore, cable 13 extends through the interior of supporting arm 4, elbow 25, suspension member 24, and upper hub 21. The second end 132 of cable 13 is fixed to lower hub 22. When axle 51 rotates in a direction, cable 13 moves in a winding direction to move lower hub 22 toward upper hub 21 so that canopy 3 is unfolded. On the other hand, when axle 51 rotates in a reverse direction, cable 13 moves in a releasing direction to move lower hub 22 away from upper hub 21 so that canopy 3 is folded. Thus, canopy 3 can be folded or unfolded by operating handle 52.”) and 5:50-6:2 (“In use, handle 52 can be operated to rotate axle 51 in a direction to release cable 13 so that canopy 3 is folded (FIGS. 1 and 10). When it is desired to lift canopy 3 to a desired height, the user presses lever 161 to disengage peg 162 from positioning holes 123 and then moves adjusting sleeve 14 to a desired height on mast 12. Adjusting sleeve 14 can be moved along mast 12 between a lower position and an upper position. Note that canopy 3 can be at a tilting angle with mast 12 by adjusting the position of adjusting sleeve 14 to be intermediate the upper and lower positions. When canopy 3 is in the desired position relative to mast 12, lever 161 is released to position adjusting sleeve 14 on mast 12. Handle 52 can be operated in a reverse direction to rotate axle 51 in a reverse direction to wind cable 13 around axle 51 so that canopy 3 is unfolded (FIG. 2). Note that reel device 5 is mounted on adjusting sleeve 14 that can be moved upward to a height suitable for easy operation of handle 52 by the user. Furthermore, cable 13 extending between axle 51 and lower hub 22 has few bends such that releasing and winding of cable 13 are smooth and easy.”); Claim 3 (“The side-supporting sunshade as claimed in claim 2, with the cable extending from the axle through an interior of the supporting arm to the canopy support frame, with the lower end of the supporting arm pivotably received in the compartment of the adjusting sleeve, and with a pulley rotatably mounted in the lower end of the supporting arm and guiding the cable from the axle into the interior of the supporting arm.”)

No.	Claim Limitation	Basis for Invalidity
Claim 7		
Anticipated under pre-AIA 35 U.S.C. § 102: Tung '755 (filed on February 24, 2009)		
7	The umbrella of claim 1, further comprising a crank handle operatively associated with the winder hub, whereby rotating the crank handle causes the winder hub to rotate.	Tung '755 discloses a crank handle (handle 52) operatively associated with the winder hub (axle 51), whereby rotating the crank handle (handle 52) causes the winder hub to rotate (axle 51). <i>See e.g.</i>, Tung '755 at Description at 5:11-13 (“A handle 52 is mounted to the end of axle 51 and can be manually operated to rotate axle 51.”) and 5:47-66 (“Thus, undesired folding of canopy 3 is avoided unless the user applies a sufficient force to handle 52. In use, handle 52 can be operated to rotate axle 51 in a direction to release cable 13 so that canopy 3 is folded (FIGS. 1 and 10). When it is desired to lift canopy 3 to a desired height, the user presses lever 161 to disengage peg 162 from positioning holes 123 and then moves adjusting sleeve 14 to a desired height on mast 12. Adjusting sleeve 14 can be moved along mast 12 between a lower position and an upper position. Note that canopy 3 can be at a tilting angle with mast 12 by adjusting the position of adjusting sleeve 14 to be intermediate the upper and lower positions. When canopy 3 is in the desired position relative to mast 12, lever 161 is released to position adjusting sleeve 14 on mast 12. Handle 52 can be operated in a reverse direction to rotate axle 51 in a reverse direction to wind cable 13 around axle 51 so that canopy 3 is unfolded (FIG. 2).”); Claim 1 (“a reel device mounted to the adjusting sleeve and including an axle rotatably mounted in the adjusting sleeve, with the reel device further including a handle coupled to the axle to rotate therewith”); Figs. 4, 5, and 9 (see annotated below).

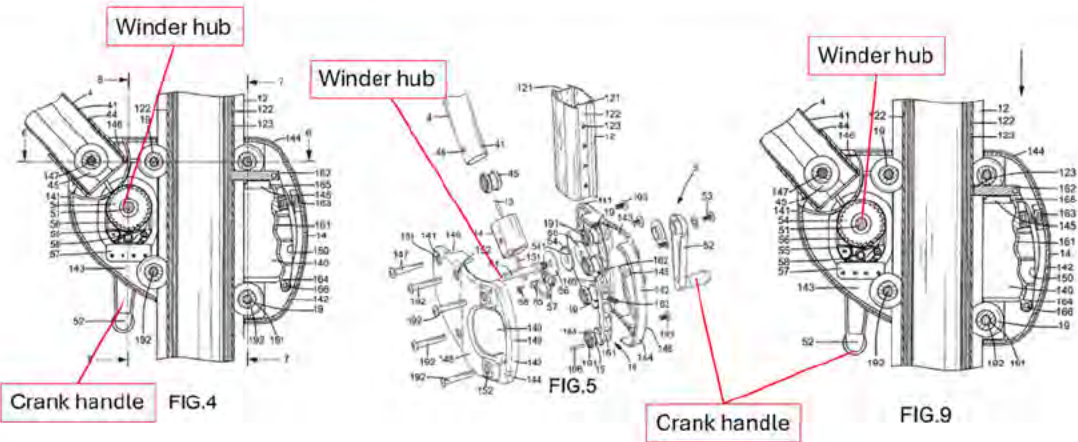
No.	Claim Limitation	Basis for Invalidity
		 Winder hub Winder hub Winder hub Crank handle FIG.4 FIG.5 Crank handle FIG.9

EXHIBIT 12

Exhibit 12 - Invalidity Chart for U.S. Patent No. 8,104,492¹ (the '492 Patent) based on Yotrio Model
YJAF-018

This chart is based on Plaintiff's apparent interpretations of the asserted claim(s) and Defendant's investigation to date. Citations to portions of any reference in this chart are exemplary only, and Defendant may rely on the entirety of the references cited herein to show that the asserted claims are invalid. Further, as Defendant's investigations and discovery are ongoing, Defendant reserves the right to amend or supplement this claim chart to include additional information and/or invalidity contentions identified in connection with Defendant's ongoing investigations. To the extent that every element below is not explicitly or inherently disclosed by the prior art reference, this prior art reference in combination (1) with the knowledge of one of ordinary skill in the art and/or (2) with other prior art identified in the invalidity contentions and/or otherwise herein, renders the asserted claims obvious.

¹ As discussed in the contentions, Claim 1 of the Asserted Patent cannot claim priority to the May 5, 2008 filing date of provisional application no. 61/050,353. Instead, the priority date of Claim 1 of the Asserted Patent is May 5, 2009.

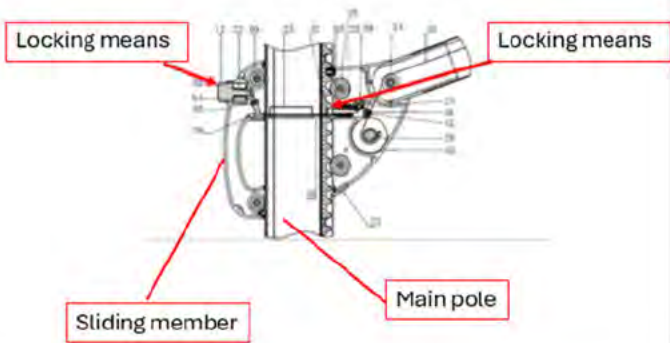
No.	Claim Limitation	Basis for Invalidity
Claim 1 Anticipated under pre-AIA 35 U.S.C. § 102: Yotrio Model YJAF-018		
1 [preamble] ²	An umbrella comprising:	YJAF-018 discloses an umbrella. <i>See annotated below.</i> 
1[a]	a main pole having a lower end for support by a support surface and extending	YJAF-018 discloses a main pole having a lower end for support by a support surface and extending generally upward to an upper end. <i>See annotated below.</i>

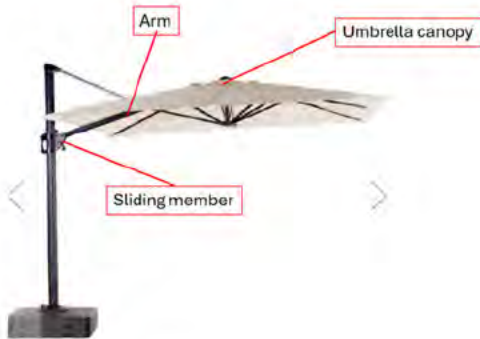
² Defendant makes no concessions or admissions regarding the claim preamble, *e.g.*, that it is or is not limiting, but reserves its right on that and other claim construction issues.

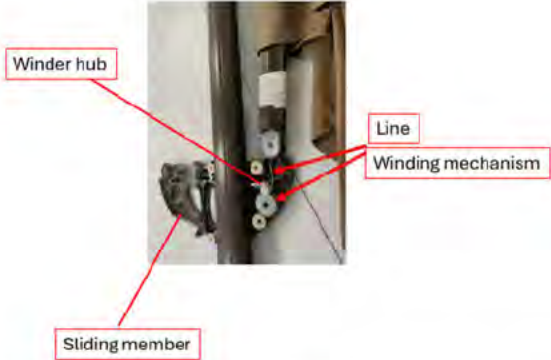
No.	Claim Limitation	Basis for Invalidity
	generally upward to an upper end;	 The diagram shows a patio umbrella with a main pole and a support surface. The main pole is a vertical rod that extends from a base to the top of the umbrella. The support surface is the canopy of the umbrella. A red line points from the label 'Main pole' to the vertical rod. Another red line points from the label 'Support surface' to the canopy. There are also two small arrows pointing outwards from the main pole, one to the left and one to the right.
1[b]	a sliding member associated with the main pole and selectably moveable thereon between lower and upper locations along the main pole;	YJAF-018 discloses a sliding member associated with the main pole and selectably moveable thereon between lower and upper locations along the main pole. <i>See annotated below.</i>

No.	Claim Limitation	Basis for Invalidity
		 Sliding member Main pole  Sliding member  Sliding member

No.	Claim Limitation	Basis for Invalidity
1[c]	locking means for releasably securing the sliding member to the main pole at a selected location along the main pole;	YJAF-018 discloses a locking means for releasably securing the sliding member to the main pole at a selected location along the main pole. <i>See annotated below.</i>  Locking means Sliding member Main pole

No.	Claim Limitation	Basis for Invalidity
		
1[d]	an umbrella canopy having a central region;	YJAF-018 discloses an umbrella canopy having a central region. See annotated below. 

No.	Claim Limitation	Basis for Invalidity
1[e]	an arm associated with the central region and extending radially therefrom to an outer end operatively associated with the sliding member;	YJAF-018 discloses an arm associated with the central region and extending radially therefrom to an outer end operatively associated with the sliding member. See annotated below.  The diagram shows a side view of an umbrella. A vertical pole is attached to a base. A sliding member is positioned on the pole. An arm extends from the central region of the umbrella canopy to its outer edge. Labels with leader lines point to the 'Arm', 'Umbrella canopy', and 'Sliding member'.
1[f]	a brace having a first end pivotably attached to an upper portion of the pole above the sliding member and a second end pivotably attached to the arm;	YJAF-018 discloses a brace having a first end pivotably attached to an upper portion of the pole above the sliding member and a second end pivotably attached to the arm. See annotated below.  The diagram shows a side view of an umbrella. A vertical main pole is attached to a base. A sliding member is positioned on the pole. A brace is attached to the upper portion of the main pole and the arm. Labels with leader lines point to the 'Brace', 'Arm', 'Main pole', and 'Sliding member'.

No.	Claim Limitation	Basis for Invalidity
1[g]	a winding mechanism having a winder hub around which a line can be wound, the winder hub being mounted to the sliding member and movable therewith;	YJAF-018 discloses a winding mechanism having a winder hub around which a line can be wound, the winder hub being mounted to the sliding member and movable therewith. See annotated below. 
1[h]	a line having a first end that winds around the winder hub, an intermediate portion extending from the winder hub along the arm to the umbrella canopy, and a second end that engages the umbrella canopy;	YJAF-018 discloses a line having a first end that winds around the winder hub, an intermediate portion extending from the winder hub along the arm to the umbrella canopy, and a second end that engages the umbrella canopy. See annotated below. 

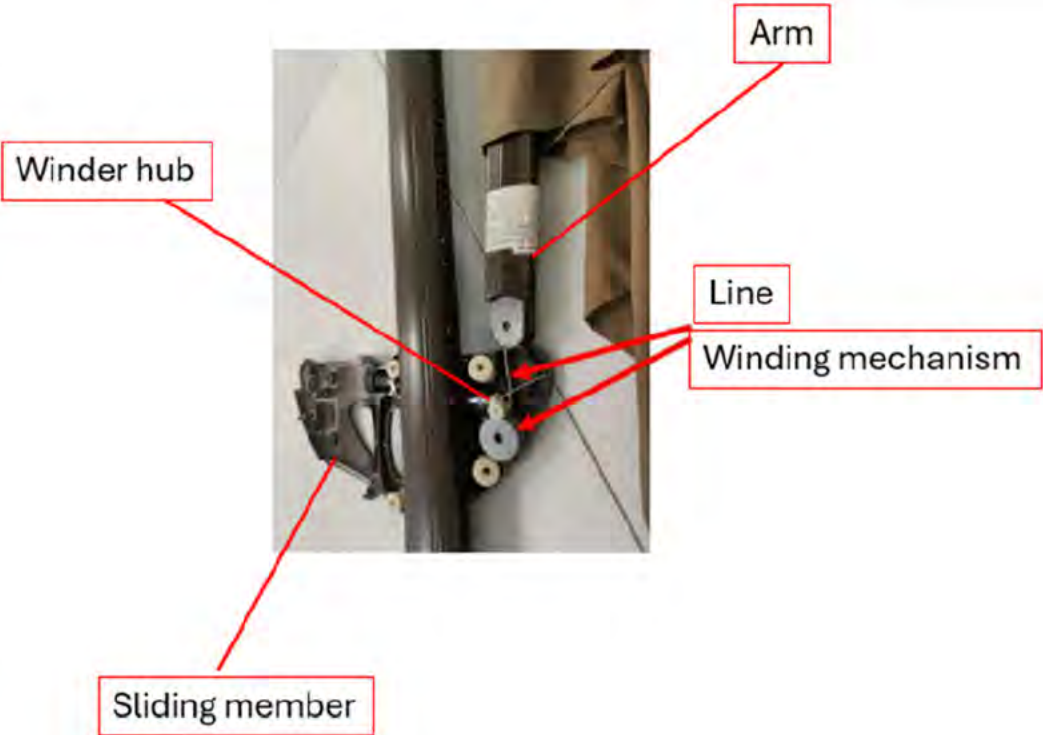
No.	Claim Limitation	Basis for Invalidity
		 A close-up photograph of a mechanical assembly. A red line points from the label 'Winder hub' to a cylindrical component. Another red line points from 'Line' to a thin wire. A third red line points from 'Winding mechanism' to a set of gears. A fourth red line points from 'Sliding member' to a metal bracket.
1[i]	wherein rotation of the winder hub tensions or relaxes the line depending upon the direction of rotation of the winder hub, and	YJAF-018 discloses wherein rotation of the winder hub tensions or relaxes the line depending upon the direction of rotation of the winder hub. See annotated below.  A diagram of an umbrella mechanism. A red line points from the label 'Line' to a wire. Another red line points from 'Arm' to a horizontal bar. A third red line points from 'Umbrella canopy' to the top of the umbrella. A fourth red line points from 'Sliding member' to a bracket on the vertical pole. A fifth red line points from 'Winder hub' to a component on the pole.

No.	Claim Limitation	Basis for Invalidity
		
1[j]	wherein operation of the winding mechanism to apply tension to the line opens and closes the umbrella canopy in response to movement of the line; and	YJAF-018 discloses wherein operation of the winding mechanism to apply tension to the line opens and closes the umbrella canopy in response to movement of the line. <i>See annotated below.</i> 

No.	Claim Limitation	Basis for Invalidity
		 Winder hub Line Winding mechanism Sliding member
1[k]	wherein the angle of the umbrella canopy with respect to the main pole can be controlled by moving the sliding member along the main pole.	YJAF-018 discloses wherein the angle of the umbrella canopy with respect to the main pole can be controlled by moving the sliding member along the main pole. <i>See annotated below.</i>  Less Canopy Angle – Sliding Handle Higher More Canopy Angle – Sliding Handle Lower

No.	Claim Limitation	Basis for Invalidity
Claim 5 Anticipated under pre-AIA 35 U.S.C. § 102: Yotrio Model YJAF-018		
5	The umbrella of claim 1, wherein the sliding member has a handle associated therewith.	YJAF-018 discloses wherein the sliding member has a handle associated therewith. See annotated below. 

No.	Claim Limitation	Basis for Invalidity
Claim 6 Anticipated under pre-AIA 35 U.S.C. § 102: Yotrio Model YJAF-018		
6	The umbrella of claim 1, wherein the line extends along at least substantially the entire length of the arm.	Tung '755 discloses wherein the line (cable 13) extends along at least substantially the entire length of the arms.  The diagram illustrates a mechanical umbrella system. A vertical pole supports a horizontal arm. A cable, labeled 'Line', runs along the length of the arm. The arm is connected to a 'Sliding member' on the pole. A 'Winding mechanism' is located near the base of the arm. The 'Umbrella canopy' is attached to the end of the arm. Red leader lines point from each label to its corresponding component in the diagram.

No.	Claim Limitation	Basis for Invalidity
		 The photograph shows a mechanical assembly. A 'Winder hub' is a cylindrical component on the left. An 'Arm' is a long, thin metal piece extending from the hub. A 'Line' is a thin wire or string running along the arm. A 'Winding mechanism' is a complex assembly of gears and pulleys on the right. A 'Sliding member' is a component that can move along the arm. Red lines connect the labels to the corresponding parts in the image.

No.	Claim Limitation	Basis for Invalidity
Claim 7 Anticipated under pre-AIA 35 U.S.C. § 102: Yotrio Model YJAF-018		
7	The umbrella of claim 1, further comprising a crank handle operatively associated with the winder hub, whereby rotating the crank handle causes the winder hub to rotate.	Tung '755 discloses a crank handle operatively associated with the winder hub, whereby rotating the crank handle causes the winder hub to rotate. See annotated below. 

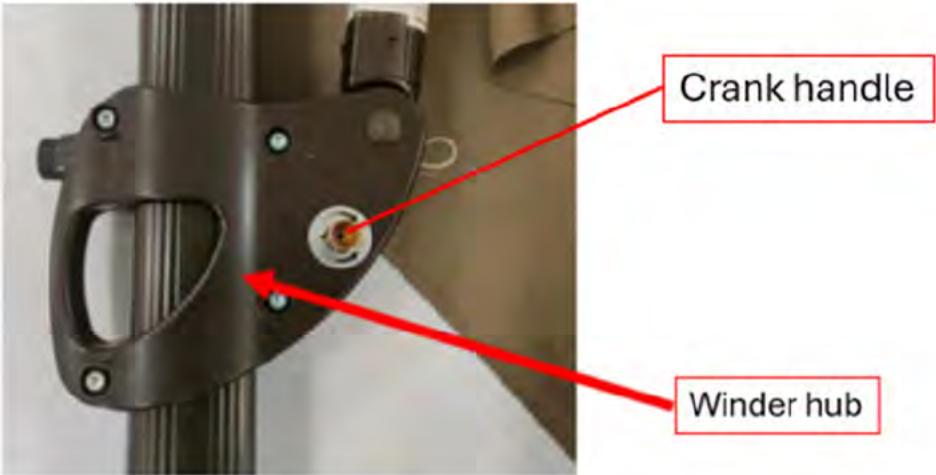
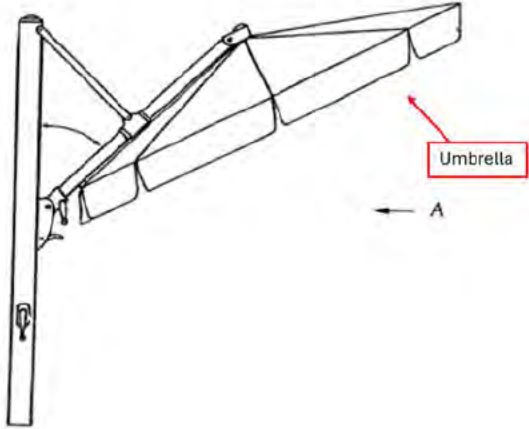
No.	Claim Limitation	Basis for Invalidity
		

EXHIBIT 13

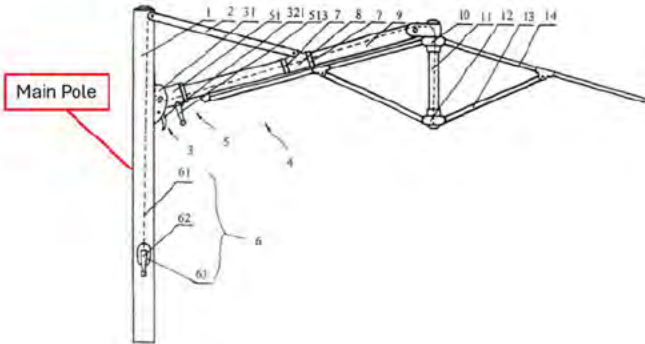
Exhibit 13 - Invalidity Chart for U.S. Patent No. 8,104,492¹ (the '492 Patent) based on Chinese Patent No. CN1208009C (Chen '009)

This chart is based on Plaintiff's apparent interpretations of the asserted claim(s) and Defendant's investigation to date. Citations to portions of any reference in this chart are exemplary only, and Defendant may rely on the entirety of the references cited herein to show that the asserted claims are invalid. Further, as Defendant's investigations and discovery are ongoing, Defendant reserves the right to amend or supplement this claim chart to include additional information and/or invalidity contentions identified in connection with Defendant's ongoing investigations. To the extent that every element below is not explicitly or inherently disclosed by the prior art reference, this prior art reference in combination (1) with the knowledge of one of ordinary skill in the art and/or (2) with other prior art identified in the invalidity contentions and/or otherwise herein, renders the asserted claims obvious.

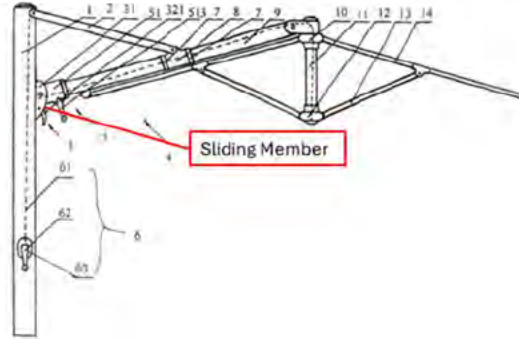
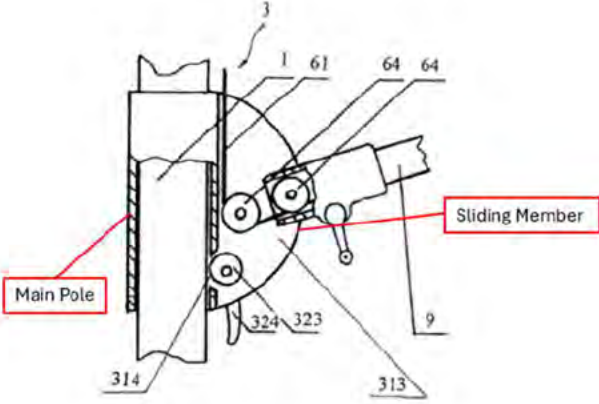
¹ As discussed in the contentions, Claim 1 of the Asserted Patent cannot claim priority to the May 5, 2008 filing date of provisional application no. 61/050,353. Instead, the priority date of Claim 1 of the Asserted Patent is May 5, 2009.

No.	Claim Limitation	Basis for Invalidity
Claim 1 Obvious under pre-AIA 35 U.S.C. § 103: Chinese Patent No. CN1208009C (“Chen ’009”) (issued June 29, 2005) in view of Chinese Publication No. CN201001460Y (“Wang ’460”) (issued January 9, 2008) and/or U.S. Publication No. 2008/0236640 (“Huali ’640”) (published October 2, 2008 and filed on March 28, 2008)		
1 [preamble]²	An umbrella comprising:	Chen ’009 discloses an umbrella (“parasol”). <i>See e.g.</i>, Chen ‘009 at Title (“Outer arm suspension type universal rotating parasol”); Abstract; Technical Field; Summary; Description; Claims 1-10 (all reciting a universal rotating parasol), Figs. 1, 9, 10 (see annotated below)  FIG. 9

² Defendant makes no concessions or admissions regarding the claim preamble, *e.g.*, that it is or is not limiting, but reserves its right on that and other claim construction issues.

No.	Claim Limitation	Basis for Invalidity
1[a]	a main pole having a lower end for support by a support surface and extending generally upward to an upper end;	Chen '009 discloses a main pole ("pole 1") having a lower end for support by a support surface and extending generally upward to an upper end. <i>See e.g.</i>, Chen '009 at Abstract ("The present invention discloses an outer arm suspension type universal rotating parasol, which comprises a pole (1)"); Summary at page 2 ("The technical solution adopted by the present invention to solve the above-mentioned technical problem is as follows: an outer arm suspension type universal rotating parasol comprises a pole..."); Description at page 4 ("As shown in FIG. 1, an outer arm suspension type universal rotating parasol is provided, comprising a pole 1..."); Claim 1 ("1. An outer arm suspension type universal rotating parasol, comprising a pole (1)"); Claim 10 ("The outer arm suspension type universal rotating parasol according to claim 7, characterized in that the pole (1) is provided with an axial guide groove (11), the running frame housing (31) is embedded in the guide groove (101)"); Figs. 1, 9, 10 (see annotated below)  FIG. 1 To the extent Chen '009 does not disclose a support surface, a person of ordinary skill in the art would understand the umbrella disclosed in Chen '009 must be mounted to the surface or have a support surface structure.
1[b]	a sliding member associated with the main pole and	Chen '009 discloses a sliding member (Chen '009 refers to the sliding member as "running frame 3") associated with the main pole ("pole 1") and selectably moveable thereon between lower and upper locations along the main pole ("pole 1").

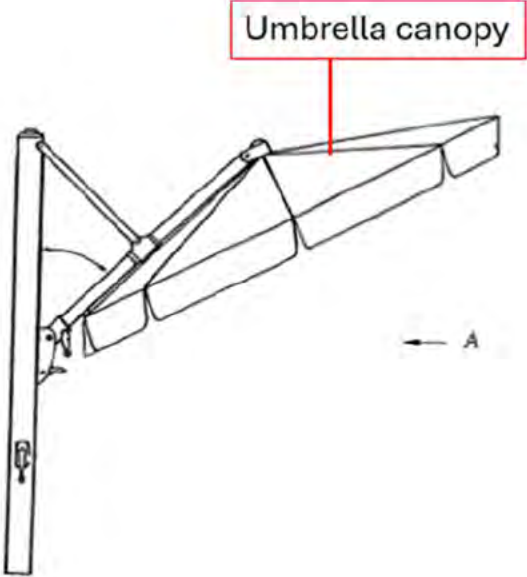
No.	Claim Limitation	Basis for Invalidity
	selectably moveable thereon between lower and upper locations along the main pole;	<i>See e.g.</i>, Chen '009 at Abstract (“The present invention discloses an outer arm suspension type universal rotating parasol, which comprises a pole (1), a suspension arm (2), a running frame (3) movable along an axis of the pole (1)”; Summary at page 3 (“The running frame comprises a running frame housing supporting the lifting arm and a locking device capable of locking the running frame at any point on an axis of the pole.”); Description at page 2 (“The running frame is capable of moving up and down along an axis of the pole.”), page 3 (“The running frame comprises a running frame housing supporting the lifting arm and a locking device capable of locking the running frame at any point on an axis of the pole... the running frame housing is embedded in the guide groove, symmetrical pulleys are provided on both sides of the running frame housing, and the locking device comprises a herringbone lock head connected to an axis of the running frame housing.”), page 4 (“a running frame 3 that is capable of moving axially up and down along the pole 1”), page 6 (“The running frame 3 comprises a running frame housing 31 supporting the lifting arm 9 and a locking device 32 capable of locking the running frame 3 at any point on an axis of the pole 1... The running frame housing 31 comprises a lug 313, the locking device 32 comprises a cam 323 and a wrench 324 connected to each other on both sides of the lug 313, and a notch 314 is provided on the running frame housing 31 for the large diameter part of the cam 323 to pass therethrough. When the wrench 324 is pulled, the protruding surface of the cam 323 presses against the surface of the pole 1, so as to achieve the purpose of locking the running frame 3 at any point on the axis of the pole 1.) and page 8 (“The operation method for adjusting the axial angle of the parasol relative to the pole 1 is as follows: as shown in FIG. 1, FIG. 2 and FIG. 6, when the handle 62 is turned to unfold the parasol, the running frame 3 is moved up and down, then a user can select an angle as needed, which can be achieved by locking the running frame 3; if a user wants to adjust the angle when the parasol is unfolded, the user can turn the handle 62 to slightly fold the parasol, and push or pull the running frame 3 to the desired angle, and then lock the running frame 3; when the parasol is to be completely folded, the locking device 32 must be released.”); Claim 1 (“...a running frame (3) that is capable of moving axially up and down along the pole (1)...”); Claim 7 (“The outer arm suspension type universal rotating parasol according to claim 6, characterized in that the running frame (3) comprises a running frame housing (31) supporting the lifting arm (9) and locking device (32)

No.	Claim Limitation	Basis for Invalidity
		capable of locking the running from (3) at any point on an axis of the pole (1).”); Figs. 1, 3, 9 (see annotated below).  FIG. 1  FIG. 6
1[c]	locking means for releasably securing the sliding member to the main pole at a	Chen '009 discloses a locking means (“locking device 32”) for releasably securing the sliding member (“running frame 3”) to the main pole (“pole 1”) at a selected location along the main pole (“pole 1”).

No.	Claim Limitation	Basis for Invalidity
	selected location along the main pole;	<i>See e.g.</i> Chen '009 at Abstract (“and the running frame (3) is provided with a locking device (32)”); Summary at page 3 (“The running frame comprises a running frame housing supporting the lifting arm and a locking device capable of locking the running frame at any point on an axis of the pole. It can be in the following three forms: a) The running frame housing comprises a protrusion with a radial through hole, the locking device comprises a cam wrench connected to an axis of the protrusion, and a locking block with an end close to the cam wrench and another end opposite to the pole and having a reset spring is provided in the through hole. b) The running frame housing comprises a lug, the locking device comprises a cam and a wrench connected to each other on both sides of the lug, and a notch is provided on the running frame housing for a large diameter part of the cam to pass therethrough. c) The pole is provided with an axial guide groove, the running frame housing is embedded in the guide groove, symmetrical pulleys are provided on both sides of the running frame housing, and the locking device comprises a herringbone lock head connected to an axis of the running frame housing.”); Description at pages 6-7 (“The running frame 3 comprises a running frame housing 31 supporting the lifting arm 9 and a locking device 32 capable of locking the running frame 3 at any point on an axis of the pole 1. The running frame housing 31 comprises a protrusion 312 with a radial through hole 311, the locking device 32 comprises a cam wrench 321 connected to an axis of the protrusion 312, and a locking block 322 with an end close to the cam wrench 321 and another end opposite to the pole 1 and having a reset spring is provided in the through hole 311. When the cam wrench 321 is pulled, the locking block 322 moves forward to press against the surface of the pole 1, so as to achieve the purpose of locking the running frame 3 at any point on the axis of the pole 1. Embodiment ② : its other structures are the same as those of embodiment ①; as shown in FIG. 6, the running frame housing 31 comprises a lug 313, the locking device 32 comprises a cam 323 and a wrench 324 connected to each other on both sides of the lug 313, and a notch 314 is provided on the running frame housing 31 for a large diameter part of the cam 323 to pass therethrough. When the wrench 324 is pulled, the protruding surface of the cam 323 presses against the surface of the pole 1, so as to achieve the purpose of locking the running frame 3 at any point on the axis of the pole 1. Embodiment ③: its other structures are the same as those of embodiment ①; as shown in FIG. 7, the pole 1 is provided with an axial guide groove 11, the running frame housing 31 is embedded in the guide groove 101, symmetrical pulleys 315 are provided on both sides of the running frame housing 31, and the locking device 32 comprises

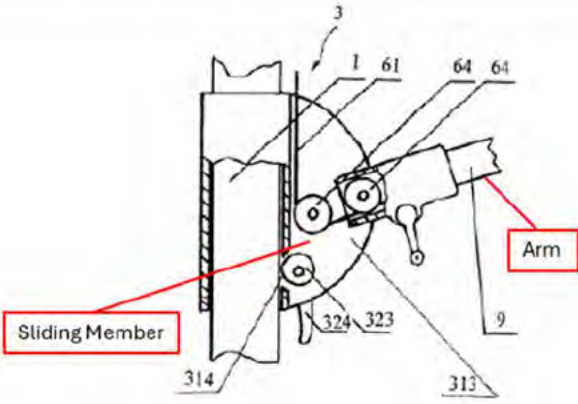
No.	Claim Limitation	Basis for Invalidity
		a herringbone lock head 325 connected to an axis of the running frame housing 31. The herringbone lock has a handle. As can be seen in FIG. 8, its surface opposite to the pole has two symmetrical tilted surfaces. By turning the handle left and right, the lock head rotates from the tilted surface to the parallel surfaces on two sides to contact the surface of the pole so as to press against the surface of the pole 1, thereby locking the running frame 3 at any point on the axis of the pole 1. The cross section of the pole 1 in the above embodiments can be in various shapes such as round, square, hexagonal, etc., and can have a guide rail or not; the running frame can have a pulley or not. The handles and cranks in the above embodiments can be fixed or detachable. The positioning mechanisms and locking devices in the above embodiments can be used interchangeably.”); Description at page 8 (“when the parasol is to be completely folded, the locking device 32 must be released.”); Claim 7 (“the running frame (3) comprises a running frame housing (31) supporting the lifting arm (9) and a locking device (32) capable of locking the running frame (3) at any point on an axis of the pole (1)”); Claim 8 (“the locking device (32) comprises a cam wrench (321) connected to an axis of the protrusion (312), and a locking block (322) with an end close to the cam wrench (321) and another end opposite to the pole (1)”); Claim 9 (“the locking device (32) comprises a cam (323) and a wrench (324) connected to each other on both sides of the lug (313), and a notch (314) is provided on the running frame housing (31) for a large diameter part of the cam (323) to pass therethrough”); Claim 10 (“the running frame housing (31) is embedded in the guide groove (101), symmetrical pulleys (315) are provided on both sides of the running frame housing (31), and the locking device (32) comprises a herringbone lock head (325) connected to an axis of the running frame housing (31)”); Figs. 1, 3, 5, 8 (see annotated below).

No.	Claim Limitation	Basis for Invalidity
		FIG. 5
1[d]	an umbrella canopy having a central region;	Chen '009 discloses an umbrella canopy (“parasol surface/ parasol cloth”) having a central region. <i>See e.g.</i> Chen '009 at Abstract (“an upper end of the lifting arm (9) is hinged to an upper end of the central tube (11), and a middle part of the lifting arm (9) is hinged to another end of the suspension arm (2)”); Description of Drawings at page 4 (“FIG. 9 is a diagram showing a use state of the present invention after the parasol surface is installed”); Description at pages 4-5 (“an upper end of the lifting arm 9 is hinged to an upper end of the central tube 11, an upper parasol plate 10 is fixed to the upper end of the central tube 11, and a parasol surface frame 14 for installing a parasol cloth is hinged around the upper parasol plate 10, an end of a support frame 13 is hinged to a middle part of the parasol surface frame 14, and another end of the support frame 13 is hinged to a lower parasol plate 12, the outer arm suspension type universal rotating parasol is characterized in that the lifting arm 9 is provided with an angle adjustment device 4 that enables a parasol surface to rotate radially around an axis of the lifting arm 9.”);

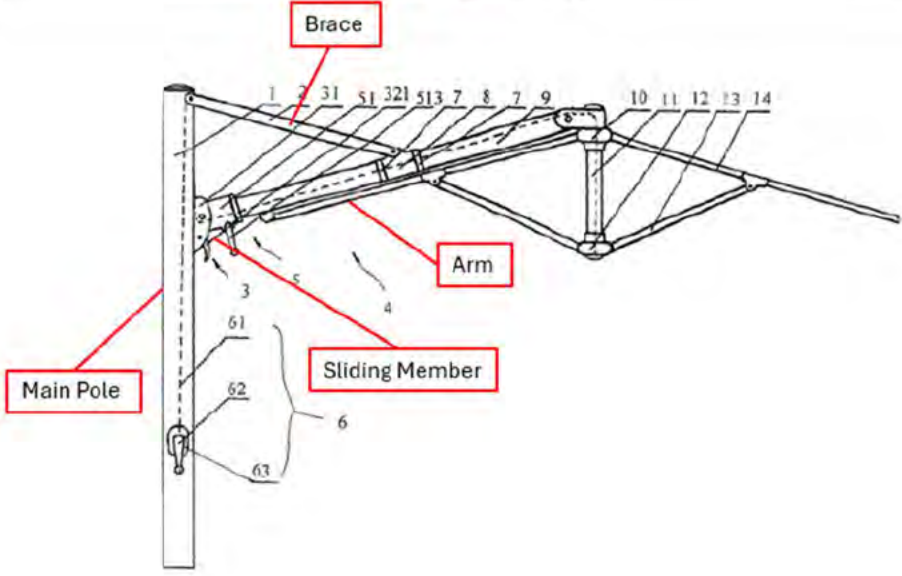
No.	Claim Limitation	Basis for Invalidity
		Claim 1 (“an upper end of the lifting arm (9) is hinged to an upper end of the central tube (11), an upper parasol plate (10) is fixed to the upper end of the central tube (11), and a parasol surface from (14) for installing a parasol cloth is hinged around the upper parasol plate (10), an end of a support frame (13) is hinged to a middle part of the parasol surface from (14), and another end of the support frame (13) is hinged to a lower parasol plate (12)”); Claim 6 (“the parasol surface opening and closing mechanism (6) comprises a winch (63) with a handle (62) and a cable (61) supported by a group of pulleys (64) arranged at corresponding positions of the pole (1) and the lifting arm (9), an end of the cable (61) is connected to the winch (63), and another end of the cable (61) is connected to the lower parasol plate (12).”); Figs. 1, 9, 10 (see annotated below). 
1[e]	an arm associated with the central region and extending radially	Chen '009 discloses an arm (“lifting arm 9”) associated with the central region and extending radially therefrom to an outer end operatively associated with the sliding member (“running frame 3”).

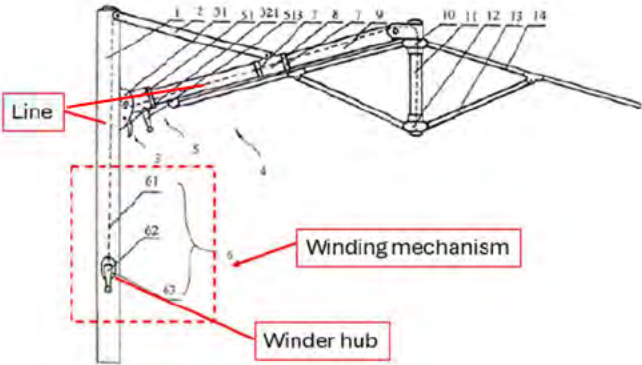
No.	Claim Limitation	Basis for Invalidity
	therefrom to an outer end operatively associated with the sliding member;	<i>See e.g.</i> Chen '009 Abstract (“The present invention discloses an outer arm suspension type universal rotating parasol, which comprises a pole (1), a suspension arm (2), a running frame (3) movable along an axis of the pole (1), a lifting arm (9), a central tube (11), and a parasol surface opening and closing mechanism (6). An upper end of the pole (1) is hinged to an end of the suspension arm (2), a lower end of the lifting arm (9) is supported by the running frame (3), an upper end of the lifting arm (9) is hinged to an upper end of the central tube (11), and a middle part of the lifting arm (9) is hinged to another end of the suspension arm (2). The outer arm suspension type universal rotating parasol is characterized in that the lifting arm (9) is provided with an angle adjustment device (4) for making a parasol surface rotate radially around an axis of the lifting arm (9)”; Summary at page 3 (“The running frame comprises a running frame housing supporting the lifting arm”); Description at page 4 (“an outer arm suspension type universal rotating parasol is provided, comprising a pole 1, a suspension arm 2, a running frame 3 that is capable of moving axially up and down along the pole 1, a lifting arm 9, a central tube 11, and a parasol surface opening and closing mechanism 6, wherein an upper end of the pole 1 is hinged to an end of the suspension arm 2, a middle part of the lifting arm 9 is hinged to another end of the suspension arm 2, a lower end of the lifting arm 9 is supported by the running frame 3, an upper end of the lifting arm 9 is hinged to an upper end of the central tube 11, an upper parasol plate 10 is fixed to the upper end of the central tube 11, and a parasol surface frame 14 for installing a parasol cloth is hinged around the upper parasol plate 10, an end of a support frame 13 is hinged to a middle part of the parasol surface frame 14, and another end of the support frame 13 is hinged to a lower parasol plate 12, the outer arm suspension type universal rotating parasol is characterized in that the lifting arm 9 is provided with an angle adjustment device 4 that enables a parasol surface to rotate radially around an axis of the lifting arm 9.”), page 5 (“In the third form, as shown in FIG. 4, it comprises a cylindrical housing 53 hinged to the running frame 3; the lower end of the lifting arm 9 is movably inserted into the housing 53...”), page 6 (“The running frame 3 comprises a running frame housing 31 supporting the lifting arm 9”), and page 8 (“The operation method for adjusting the radial angle of the parasol surface around the axis of the lifting arm 9 is as follows: as shown in the operation of the structure of FIG. 1 and FIG. 2, when the parasol surface is unfolded, since it is a structure having a worm wheel 512 and a worm 511, a user can select a satisfactory angle by simply turning the crank 513. In the operation of the

No.	Claim Limitation	Basis for Invalidity
		structure of FIG. 1 and FIG. 3, when the lifting arm 9 is not locked, a user can manually move the parasol surface to the desired angle, and then lock the lifting arm 9. To completely fold the parasol surface, it is best to turn the worm crank to adjust the parasol surface to a horizontal level, or relax the angle positioning mechanism and then manually turn the lifting arm 9 to a horizontal level.”); Claim 1 (“an upper end of the pole (1) is hinged to an end of the suspension arm (2), a middle part of the lifting arm (9) is hinged to another end of the suspension arm (2), a lower end of the lifting arm (9) is supported by the running frame (3), an upper end of the lifting arm (9) is hinged to an upper end of the central tube (11)”); Summary at page 2 (“An angle adjustment device is provided on the lifting arm to enable the parasol surface to rotate radially around an axis of the lifting arm.”); Figs. 1-10 (see annotated below). The diagram illustrates a parasol's internal structure. A vertical pole (1) is at the top left. A suspension arm (2) extends from the pole. A lifting arm (9) is hinged to the suspension arm (2) at its middle. The lifting arm (9) has a lower end supported by a running frame (3) and an upper end hinged to a central tube (11). The central tube (11) is part of a central region (indicated by a dashed red box). Other components labeled include a sliding member (6) with parts 61, 62, and 63, and various other parts numbered 1 through 14. A label 'Arm' points to the lifting arm (9). FIG. 1

No.	Claim Limitation	Basis for Invalidity
		 FIG. 6
1[f]	a brace having a first end pivotably attached to an upper portion of the pole above the sliding member and a second end pivotably attached to the arm;	Chen '009 discloses a brace ("suspension arm 2") having a first end pivotably attached to an upper portion of the pole ("pole 1") above the sliding member ("running frame 3") and a second end pivotably attached to the arm ("lifting arm 9"). <i>See e.g.</i> Chen '009 Abstract ("An upper end of the pole (1) is hinged to an end of the suspension arm (2), a lower end of the lifting arm (9) is supported by the running frame (3), an upper end of the lifting arm (9) is hinged to an upper end of the central tube (11), and a middle part of the lifting arm (9) is hinged to another end of the suspension arm (2)."); Summary at page 2 ("an outer arm suspension type universal rotating parasol comprises a pole, a suspension arm, a running frame, a lifting arm, a central tube, and a parasol surface opening and closing mechanism. An upper end of the pole is hinged to an end of the suspension arm. The running frame is capable of moving up and down along an axis of the pole. A lower end of the lifting arm is supported by the running frame. An upper end of the lifting arm is hinged to an upper end of the central tube. A middle part of the lifting arm is hinged to another end of the suspension arm... An angle adjustment device is provided on the lifting arm to enable the parasol surface to rotate radially around an axis of the lifting arm. It comprises a first bearing sleeve hinged to an end of the suspension arm in the middle part of

No.	Claim Limitation	Basis for Invalidity
		the lifting arm.”); Description at page 4 (“an outer arm suspension type universal rotating parasol is provided, comprising a pole 1, a suspension arm 2, a running frame 3 that is capable of moving axially up and down along the pole 1, a lifting arm 9, a central tube 11, and a parasol surface opening and closing mechanism 6, wherein an upper end of the pole 1 is hinged to an end of the suspension arm 2, a middle part of the lifting arm 9 is hinged to another end of the suspension arm 2... The angle adjustment device 4 comprises a first bearing sleeve 8 arranged in the middle part of the lifting arm 9 and hinged to an end of the suspension arm 2”), page 5 (“The angle adjustment device 4 comprises a first bearing sleeve 8 arranged in the middle part of the lifting arm 9 and hinged to an end of the suspension arm 2; the lifting arm 9 passes through the first bearing sleeve 8; bearing stops 7 are arranged at both ends of the first bearing sleeve 8 to limit the lifting arm 9 to radial rotation without axial movement; and an angle positioning mechanism 5 hinged to the running frame 3 is further arranged at the lower end of the lifting arm 9. The angle positioning mechanism 5 can have three different structures”) and page 8 (“a user may also turn the handle in the opposite direction or rotate other power mechanisms so the lifting arm 9, the suspension arm 2 and the parasol surface are all automatically folded into a bundle by the downward force caused by their own weights.”); Claim 1 (“1. An outer arm suspension type universal rotating parasol, comprising a pole (1), a suspension arm (2), a running frame (3) that is capable of moving axially up and down along the pole (1), a lifting arm (9), a central tube (11), and a parasol surface opening and closing mechanism (6), wherein an upper end of the pole (1) is hinged to an end of the suspension arm (2), a middle part of the lifting arm (9) is hinged to another end of the suspension arm (2)”); Claim 2 (“the angle adjustment device (4) comprises a first bearing sleeve (8) arranged in the middle part of the lifting arm (9) and hinged to an end of the suspension arm (2)”); Figs. 1 and 9 (see annotated below).

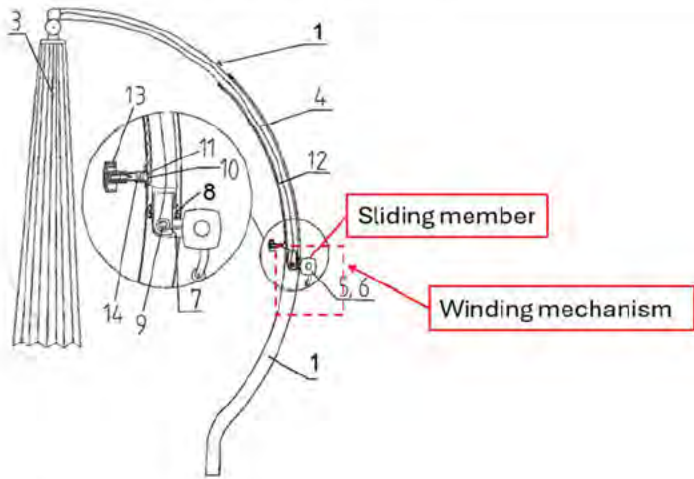
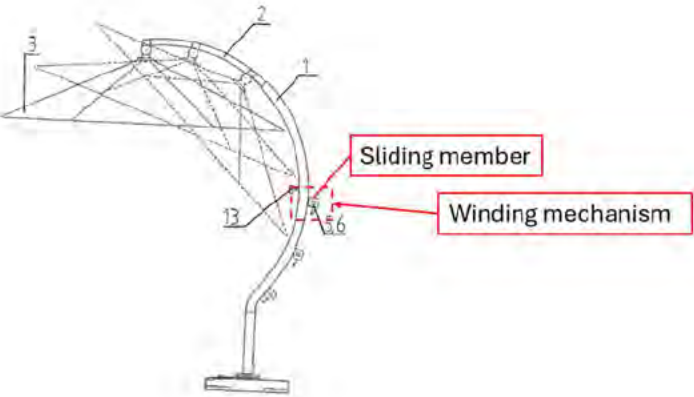
No.	Claim Limitation	Basis for Invalidity
		 FIG. 1
1[g]	a winding mechanism having a winder hub around which a line can be wound, the winder hub being mounted to the sliding member and movable therewith;	Chen '009 discloses a winding mechanism (“parasol surface opening and closing mechanism 6”) having a winder hub (“winch 63”) around which a line (“cable 61”) can be wound. <i>See e.g.</i> Chen '009 at Abstract (“The present invention discloses an outer arm suspension type universal rotating parasol, which comprises a pole (1), a suspension arm (2), a running frame (3) movable along an axis of the pole (1), a lifting arm (9), a central tube (11), and a parasol surface opening and closing mechanism (6).”); Summary at page 2 (“The technical solution adopted by the present invention to solve the above-mentioned technical problem is as follows: an outer arm suspension type universal rotating parasol comprises a pole, a suspension arm, a running frame, a lifting arm, a central tube, and a parasol surface opening and closing mechanism.”); Description at page 3 (“The parasol surface opening and closing mechanism comprises: a winch with a handle and a cable supported by a group of pulleys arranged at corresponding positions of the pole and the lifting arm, an end of the cable is

No.	Claim Limitation	Basis for Invalidity
		connected to the winch, and another end of the cable is connected to the lower parasol plate.”), page 6 (“The parasol surface opening and closing mechanism 6 comprises a winch 63 with a handle 62 and a cable 61 supported by a group of pulleys 64 arranged at corresponding positions of the pole 1 and the lifting arm 9, an end of the cable 61 is connected to the winch 63, and another end of the cable 61 is connected to the lower parasol plate 12. The handle can also be replaced by a hand-controlled or remote-controlled electric device, or various hydraulic transmission devices”); Claim 1 (“An outer arm suspension type universal rotating parasol, comprising a pole (1), a suspension arm (2), a running frame (3) that is capable of moving axially up and down along the pole (1), a lifting arm (9), a central tube (11), and a parasol surface opening and closing mechanism (6)...”), Claim 6 (“The outer arm suspension type universal rotating parasol according to claim 1, 2, 3, 4, or 5, characterized in that the parasol surface opening and closing mechanism (6) comprises a winch (63) with a handle (62) and a cable (61) supported by a group of pulleys (64) arranged at corresponding positions of the pole (1) and the lifting arm (9), an end of the cable (61) is connected to the winch (63), and another end of the cable (61) is connected to the lower parasol plate (12)”) Figs. 1, 9, and 10 (see annotated below).  FIG. 1

No.	Claim Limitation	Basis for Invalidity
		To the extent Chen '009 does not disclose the winding mechanism mounted to the sliding member and movable therewith, Wang '460 discloses a winding mechanism having a winder hub ("rope reel 26") around which a line ("pull rope 13") can be wound, the winder hub (rope reel 26) being mounted to the sliding member ("sliding sleeve 11") and movable therewith. <i>See e.g.</i> Wang '460 Abstract ("the sliding sleeve includes a rope winder and is shaft-connected to a bottom end of the suspension rod, a top end of the suspension rod and an upper parasol disc of the parasol frame have a pitch rotating connection structure, one end of a pull rope is fixed to a reel of the rope winder installed in the sliding sleeve, and the other end thereof passes through the suspension rod and a top tube installed in the upper parasol disc to be fixed to a lower parasol disc. The structure of the present utility model makes the parasol cover easy to open and close, the parasol cover can rotate 360° around the parasol pole, and the pitch angle thereof can also be adjusted. The parasol cover is stable; the operation is simple, labor-saving and convenient."); Claim 1 ("the sliding sleeve comprises a rope winder and is shaft-connected to a bottom end of the suspension rod (03), a top end of the suspension rod (03) and an upper parasol disc (70) of the parasol frame have a pitch rotating connection structure, one end of a pull rope (13) is fixed to a reel (26) of the rope winder installed in the sliding sleeve (11), and the other end thereof passes through the suspension rod (03) and a top tube (57) installed in the upper parasol disc to be fixed to a lower parasol disc."); Description at page 4 ("The parasol pole 01 is equipped with a hoop-type sliding sleeve 11 locked by a bolt. One end of the bolt is equipped with a rotating handle 22, and a spring 23 is sleeved on the bolt portion between the hoop chucks. A roller 21 is respectively installed at the upper end and lower end of the sliding sleeve 11 to slide smoothly with the parasol pole. The sliding sleeve 11 is connected to the spherical left and right casings 141 and 142 of the rope winder. The rope reel 26 of a winder handle 27 is tied with a pull rope 13, and the other end of the pull rope passes through the suspension rod 03 through a pulley 15 and the top tube 57 installed in the upper parasol disc 70, so as to be fixed to the lower parasol disc 73."). Figs. 1-3 (see annotated below).

No.	Claim Limitation	Basis for Invalidity
		A person of ordinary skill in the art would have understood that a simple substitution of the structure in Chen '009 with the structure in Wang '460 (or mounting the winding mechanism to the sliding member) would yield predictable results to improve collapsible umbrella products. Indeed, Chen '009 and Wang '460 both relate to collapsible umbrella products and are thus in the same industry. A motivation to combine is also found in Wang '460. Wang '460 describes how an umbrella design including a sliding sleeve mounted on the supporting pole, including a rope winding device, makes the umbrella easy to open and close, enables the umbrella to be rotated 360 degrees around the supporting pole, and enables the umbrella to tilt. Wang '460 at Abstract. Alternatively, To the extent Chen '009 does not disclose the winding mechanism mounted to the sliding member and movable therewith, Huali '640 discloses a winding mechanism (control device 5) having a winder hub (crank shaft 6) around which a line can be wound (sheathed cable/Bowden control 4), the winder hub (crank shaft 6) being mounted to the sliding member (control device 5 and the connecting piece 7) and movable therewith.

No.	Claim Limitation	Basis for Invalidity
		<i>See e.g.</i> Huali '640 Abstract ('A telescopic umbrella, [s]uch as a [s]unshade, that includes a lower upright stand pipe and a telescopic pipe arranged in a displaceable and arrestable manner therein. The telescopic umbrella also includes a canopy articulated on the telescopic pipe, it being possible for the canopy to be opened and closed by means of a sheathed cable or Bowden control running within the telescopic pipe and controlled by a control device. The control device is attached to the telescopic pipe so that the opening/closing movement of the umbrella canopy is uncoupled from the telescopic mechanism of the umbrella."); Description at paragraphs 38-39 ('[0038 The umbrella canopy 3 can be opened and closed by means of a sheathed cable/Bowden control 4. For this purpose, the sheathed cable/Bowden control 4 is connected to a control device and can be operated with it. In the embodiment shown, the control device 5 is designed as a crank shaft 6. [0039] Based on the invention, the control device 5 is allocated to the telescopic pipe 2. In this embodiment, the control device 5 is attached to the lower end of the telescopic pipe 2, where an L-shaped connecting piece 7 is arranged between the control device5 and the telescopic pipe 2. This connecting piece 7 establishes a connection between the open lower end of the telescopic pipe 2 and the control device 5 located outside the pipe."); Description at paragraph 46 ("[0046] In this illustration, it can be seen particularly well how the control device 5 and the connecting piece 7 are moveable and displaceable in a suitably designed recess 15 provided in the upright stand pipe 1. In the illustrated embodiment, this recess 15 has the shape of a long, axial slit. The slit must be at least as wide as the connecting piece 7 in order to enable the control unit 5 including the connecting piece 7 to move up and down in an axial direction in the slit."); Fig. 1 (see annotated below).

No.	Claim Limitation	Basis for Invalidity
		 Fig. 1  Fig. 3

No.	Claim Limitation	Basis for Invalidity
		A person of ordinary skill in the art would have understood that a simple substitution of the structure in Chen '009 with the structure in Huali '640 (or mounting the winding mechanism to the sliding member) would yield predictable results to improve collapsable umbrella products. Indeed, Chen '009 and Huali '640 both relate to collapsable umbrella products and are thus in the same industry. A motivation to combine is also found in Huali '640. Huali '640 describes the benefits of “uncoupling” the opening/closing movement of the umbrella canopy from the telescopic mechanism of the umbrella by attaching the sheathed cable/Bowden control to the canopy. Huali '640 at [0011].
1[h]	a line having a first end that winds around the winder hub, an intermediate portion extending from the winder hub along the arm to the umbrella canopy, and a second end that engages the umbrella canopy;	Chen '009 discloses a line (“cable 61”) having a first end that winds around the winder hub (“winch 63”), an intermediate portion extending from the winder hub (“winch 63”) along the arm (lifting arm 9) to the umbrella canopy (“parasol surface/ parasol cloth”), and a second end that engages the umbrella canopy (“parasol surface/ parasol cloth”). <i>See e.g.</i>, Chen '009 at Abstract (“The present invention discloses an outer arm suspension type universal rotating parasol, which comprises a pole (1), a suspension arm (2), a running frame (3) movable along an axis of the pole (1), a lifting arm (9), a central tube (11), and a parasol surface opening and closing mechanism (6).”); Summary at page 2 (“The technical solution adopted by the present invention to solve the above-mentioned technical problem is as follows: an outer arm suspension type universal rotating parasol comprises a pole, a suspension arm, a running frame, a lifting arm, a central tube, and a parasol surface opening and closing mechanism.”); Description at page 3 (“The parasol surface opening and closing mechanism comprises: a winch with a handle and a cable supported by a group of pulleys arranged at corresponding positions of the pole and the lifting arm, an end of the cable is connected to the winch, and another end of the cable is connected to the lower parasol plate.”), page 6 (“The parasol surface opening and closing mechanism 6 comprises a winch 63 with a handle 62 and a cable 61 supported by a group of pulleys 64 arranged at corresponding positions of the pole 1 and the lifting arm 9, an end of the cable 61 is connected to the winch 63, and another end of the cable 61 is connected to the lower parasol plate 12. The handle can also be replaced by a hand-controlled or remote-controlled electric device, or various hydraulic transmission devices”); Claim 1 (“An outer arm suspension type universal rotating

No.	Claim Limitation	Basis for Invalidity
		parasol, comprising a pole (1), a suspension arm (2), a running frame (3) that is capable of moving axially up and down along the pole (1), a lifting arm (9), a central tube (11), and a parasol surface opening and closing mechanism (6)...”), Claim 6 (“The outer arm suspension type universal rotating parasol according to claim 1, 2, 3, 4, or 5, characterized in that the parasol surface opening and closing mechanism (6) comprises a winch (63) with a handle (62) and a cable (61) supported by a group of pulleys (64) arranged at corresponding positions of the pole (1) and the lifting arm (9), an end of the cable (61) is connected to the winch (63), and another end of the cable (61) is connected to the lower parasol plate (12)”) Figs. 1, 9, and 10 (see annotated below). FIG. 1 To the extent Chen '009 does not disclose the winding mechanism mounted to the sliding member and movable therewith, Wang '460 discloses a winding mechanism having a winder hub (“rope reel 26”) around which a line (“pull rope 13”) can be wound, the winder hub (“rope reel 26”) being mounted to the sliding member (“sliding sleeve 11”) and movable therewith. <i>See e.g.</i> Wang '460 Abstract (“the sliding sleeve includes a rope winder and is shaft-connected to a bottom end of the suspension rod, a top end of the suspension rod and an upper parasol disc of the parasol frame have a pitch rotating connection structure, one end of a pull rope is fixed to a reel of the rope winder installed in the sliding sleeve, and the other end

No.	Claim Limitation	Basis for Invalidity
		thereof passes through the suspension rod and a top tube installed in the upper parasol disc to be fixed to a lower parasol disc. The structure of the present utility model makes the parasol cover easy to open and close, the parasol cover can rotate 360° around the parasol pole, and the pitch angle thereof can also be adjusted. The parasol cover is stable; the operation is simple, labor-saving and convenient.”); Claim 1 (“the sliding sleeve comprises a rope winder and is shaft-connected to a bottom end of the suspension rod (03), a top end of the suspension rod (03) and an upper parasol disc (70) of the parasol frame have a pitch rotating connection structure, one end of a pull rope (13) is fixed to a reel (26) of the rope winder installed in the sliding sleeve (11), and the other end thereof passes through the suspension rod (03) and a top tube (57) installed in the upper parasol disc to be fixed to a lower parasol disc.”); Description at page 4 (“The parasol pole 01 is equipped with a hoop-type sliding sleeve 11 locked by a bolt. One end of the bolt is equipped with a rotating handle 22, and a spring 23 is sleeved on the bolt portion between the hoop chucks. A roller 21 is respectively installed at the upper end and lower end of the sliding sleeve 11 to slide smoothly with the parasol pole. The sliding sleeve 11 is connected to the spherical left and right casings 141 and 142 of the rope winder. The rope reel 26 of a winder handle 27 is tied with a pull rope 13, and the other end of the pull rope passes through the suspension rod 03 through a pulley 15 and the top tube 57 installed in the upper parasol disc 70, so as to be fixed to the lower parasol disc 73.”). Figs. 1-3 (see annotated below).

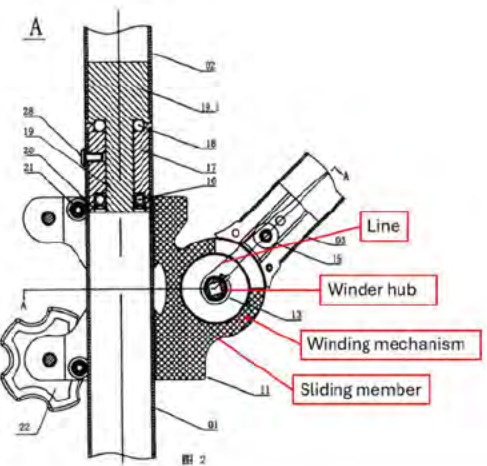
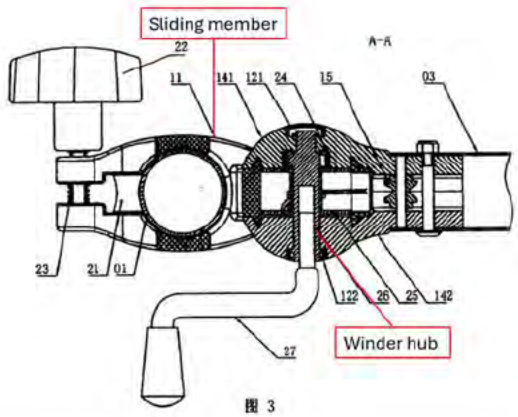
No.	Claim Limitation	Basis for Invalidity
		A person of ordinary skill in the art would have understood that a simple substitution of the structure in Chen '009 with the structure in Wang '460 (or mounting the winding mechanism to the sliding member) would yield predictable results to improve collapsable umbrella products. Indeed, Chen '009 and Wang '460 both relate to collapsable umbrella products and are thus in the same industry. A motivation to combine is also found in Wang '460. Wang '460 describes how an umbrella design including a sliding sleeve mounted on the supporting pole, including a rope winding device, makes the umbrella easy to open and close, enables the umbrella to be rotated 360 degeed around the supporting pole, and enables the umbrella to tilt. Wang '460 at Abstract. Alternatively, To the extent Chen '009 does not disclose the winding mechanism mounted to the sliding member and movable therewith, Huali '640 discloses a winding mechanism (control device 5) having a winder hub (crank shaft 6) around which a line can be wound (sheathed cable/Bowden control 4), the winder hub (crank shaft 6) being mounted to the sliding member (control device 5 and the connecting piece 7) and movable therewith.

No.	Claim Limitation	Basis for Invalidity
		<i>See e.g.</i> Huali '640 Abstract ('A telescopic umbrella, [s]uch as a [s]unshade, that includes a lower upright stand pipe and a telescopic pipe arranged in a displaceable and arrestable manner therein. The telescopic umbrella also includes a canopy articulated on the telescopic pipe, it being possible for the canopy to be opened and closed by means of a sheathed cable or Bowden control running within the telescopic pipe and controlled by a control device. The control device is attached to the telescopic pipe so that the opening/closing movement of the umbrella canopy is uncoupled from the telescopic mechanism of the umbrella."); Description at paragraphs 38-39 ('[0038 The umbrella canopy 3 can be opened and closed by means of a sheathed cable/Bowden control 4. For this purpose, the sheathed cable/Bowden control 4 is connected to a control device and can be operated with it. In the embodiment shown, the control device 5 is designed as a crank shaft 6. [0039] Based on the invention, the control device 5 is allocated to the telescopic pipe 2. In this embodiment, the control device 5 is attached to the lower end of the telescopic pipe 2, where an L-shaped connecting piece 7 is arranged between the control device5 and the telescopic pipe 2. This connecting piece 7 establishes a connection between the open lower end of the telescopic pipe 2 and the control device 5 located outside the pipe."); Description at paragraph 46 ("[0046] In this illustration, it can be seen particularly well how the control device 5 and the connecting piece 7 are moveable and displaceable in a suitably designed recess 15 provided in the upright stand pipe 1. In the illustrated embodiment, this recess 15 has the shape of a long, axial slit. The slit must be at least as wide as the connecting piece 7 in order to enable the control unit 5 including the connecting piece 7 to move up and down in an axial direction in the slit."); Fig. 1 (see annotated below).

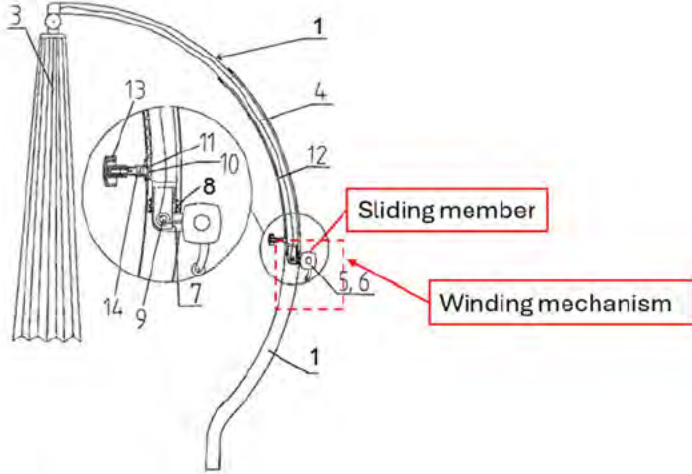
No.	Claim Limitation	Basis for Invalidity
		Fig. 1 Fig. 3

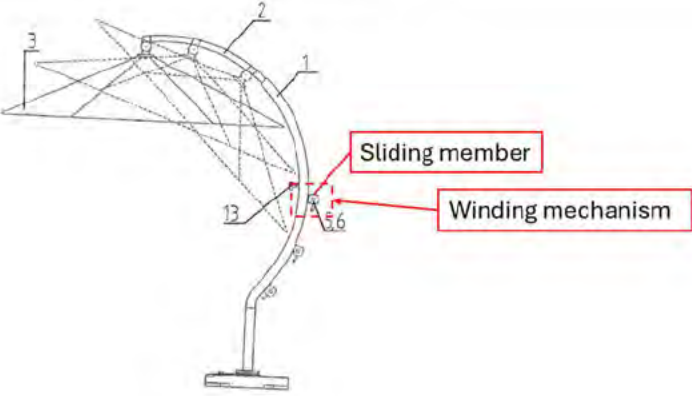
No.	Claim Limitation	Basis for Invalidity
		A person of ordinary skill in the art would have understood that a simple substitution of the structure in Chen '009 with the structure in Huali '640 (or mounting the winding mechanism to the sliding member) would yield predictable results to improve collapsable umbrella products. Indeed, Chen '009 and Huali '640 both relate to collapsable umbrella products and are thus in the same industry. A motivation to combine is also found in Huali '640. Huali '640 describes the benefits of “uncoupling” the opening/closing movement of the umbrella canopy from the telescopic mechanism of the umbrella by attaching the sheathed cable/Bowden control to the canopy. Huali '640 at [0011].
1[i]	wherein rotation of the winder hub tensions or relaxes the line depending upon the direction of rotation of the winder hub, and	Chen '009 discloses wherein operation of the winder hub (“winch 63”) tensions or relaxes the line depending upon the direction of the rotation of the winder hub (“winch 63”). <i>See e.g.</i> Chen '009 at Abstract (“The present invention discloses an outer arm suspension type universal rotating parasol, which comprises a pole (1), a suspension arm (2), a running frame (3) movable along an axis of the pole (1), a lifting arm (9), a central tube (11), and a parasol surface opening and closing mechanism (6).”); Summary at page 2 (“The technical solution adopted by the present invention to solve the above-mentioned technical problem is as follows: an outer arm suspension type universal rotating parasol comprises a pole, a suspension arm, a running frame, a lifting arm, a central tube, and a parasol surface opening and closing mechanism.”); Description at page 3 (“The parasol surface opening and closing mechanism comprises: a winch with a handle and a cable supported by a group of pulleys arranged at corresponding positions of the pole and the lifting arm, an end of the cable is connected to the winch, and another end of the cable is connected to the lower parasol plate.”), page 6 (“The parasol surface opening and closing mechanism 6 comprises a winch 63 with a handle 62 and a cable 61 supported by a group of pulleys 64 arranged at corresponding positions of the pole 1 and the lifting arm 9, an end of the cable 61 is connected to the winch 63, and another end of the cable 61 is connected to the lower parasol plate 12. The handle can also be replaced by a hand-controlled or remote-controlled electric device, or various hydraulic transmission devices”); Claim 1 (“An outer arm suspension type universal rotating parasol, comprising a pole (1), a suspension arm (2), a running frame (3) that is capable of moving axially up and down along the pole (1), a lifting arm (9), a central tube (11), and a parasol surface opening and closing mechanism (6)...”), Claim 6 (“The outer arm suspension

No.	Claim Limitation	Basis for Invalidity
		type universal rotating parasol according to claim 1, 2, 3, 4, or 5, characterized in that the parasol surface opening and closing mechanism (6) comprises a winch (63) with a handle (62) and a cable (61) supported by a group of pulleys (64) arranged at corresponding positions of the pole (1) and the lifting arm (9), an end of the cable (61) is connected to the winch (63), and another end of the cable (61) is connected to the lower parasol plate (12)”) Figs. 1, 9, and 10 (see annotated below). FIG. 1 To the extent Chen '009 does not disclose the winding mechanism mounted to the sliding member and movable therewith, Wang '460 discloses a winding mechanism having a winder hub (rope reel 26) around which a line (pull rope 13) can be wound, the winder hub (rope reel 26) being mounted to the sliding member (sliding sleeve 11) and movable therewith. <i>See e.g.</i> Wang '460 Abstract (“the sliding sleeve includes a rope winder and is shaft-connected to a bottom end of the suspension rod, a top end of the suspension rod and an upper parasol disc of the parasol frame have a pitch rotating connection structure, one end of a pull rope is fixed to a reel of the rope winder installed in the sliding sleeve, and the other end thereof passes through the suspension rod and a top tube installed in the upper parasol disc to be fixed to a lower parasol disc. The structure of the present utility model makes the parasol

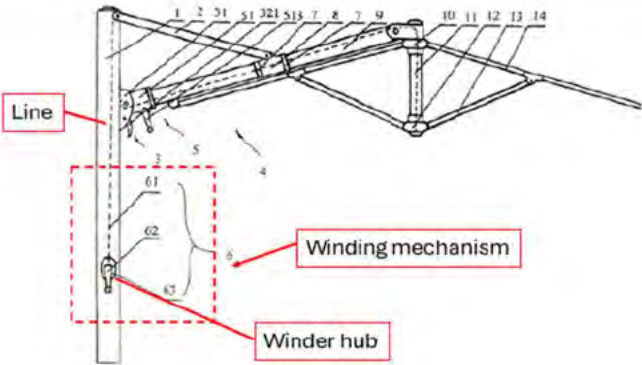
No.	Claim Limitation	Basis for Invalidity
		cover easy to open and close, the parasol cover can rotate 360° around the parasol pole, and the pitch angle thereof can also be adjusted. The parasol cover is stable; the operation is simple, labor-saving and convenient.”); Claim 1 (“the sliding sleeve comprises a rope winder and is shaft-connected to a bottom end of the suspension rod (03), a top end of the suspension rod (03) and an upper parasol disc (70) of the parasol frame have a pitch rotating connection structure, one end of a pull rope (13) is fixed to a reel (26) of the rope winder installed in the sliding sleeve (11), and the other end thereof passes through the suspension rod (03) and a top tube (57) installed in the upper parasol disc to be fixed to a lower parasol disc.”); Description at page 4 (“The parasol pole 01 is equipped with a hoop-type sliding sleeve 11 locked by a bolt. One end of the bolt is equipped with a rotating handle 22, and a spring 23 is sleeved on the bolt portion between the hoop chucks. A roller 21 is respectively installed at the upper end and lower end of the sliding sleeve 11 to slide smoothly with the parasol pole. The sliding sleeve 11 is connected to the spherical left and right casings 141 and 142 of the rope winder. The rope reel 26 of a winder handle 27 is tied with a pull rope 13, and the other end of the pull rope passes through the suspension rod 03 through a pulley 15 and the top tube 57 installed in the upper parasol disc 70, so as to be fixed to the lower parasol disc 73.”). Figs. 1-3 (see annotated below).  

No.	Claim Limitation	Basis for Invalidity
		A person of ordinary skill in the art would have understood that a simple substitution of the structure in Chen '009 with the structure in Wang '460 (or mounting the winding mechanism to the sliding member) would yield predictable results to improve collapsable umbrella products. Indeed, Chen '009 and Wang '460 both relate to collapsable umbrella products and are thus in the same industry. A motivation to combine is also found in Wang '460. Wang '460 describes how an umbrella design including a sliding sleeve mounted on the supporting pole, including a rope winding device, makes the umbrella easy to open and close, enables the umbrella to be rotated 360 degreed around the supporting pole, and enables the umbrella to tilt. Wang '460 at Abstract. Alternatively, To the extent Chen '009 does not disclose the winding mechanism mounted to the sliding member and movable therewith, Huali '640 discloses a winding mechanism (control device 5) having a winder hub (crank shaft 6) around which a line can be wound (sheathed cable/Bowden control 4), the winder hub (crank shaft 6) being mounted to the sliding member (control device 5 and the connecting piece 7) and movable therewith. <i>See e.g.</i> Huali '640 Abstract ('A telescopic umbrella, [s]uch as a [s]unshade, that includes a lower upright stand pipe and a telescopic pipe arranged in a displaceable and arrestable manner therein. The telescopic umbrella also includes a canopy articulated on the telescopic pipe, it being possible for the canopy to be opened and closed by means of a sheathed cable or Bowden control running within the telescopic pipe and controlled by a control device. The control device is attached to the telescopic pipe so that the opening/closing movement of the umbrella canopy is uncoupled from the telescopic mechanism of the umbrella.');" Description at paragraphs 38-39 ('[0038 The umbrella canopy 3 can be opened and closed by means of a sheathed cable/Bowden control 4. For this purpose, the sheathed cable/Bowden control 4 is connected to a control device and can be operated with it. In the embodiment shown, the control device 5 is designed as a crank shaft 6. [0039] Based on the invention, the control device 5 is allocated to the telescopic pipe 2. In this embodiment, the control device 5 is

No.	Claim Limitation	Basis for Invalidity
		attached to the lower end of the telescopic pipe 2, where an L-shaped connecting piece 7 is arranged between the control device 5 and the telescopic pipe 2. This connecting piece 7 establishes a connection between the open lower end of the telescopic pipe 2 and the control device 5 located outside the pipe.”); Description at paragraph 46 (“[0046] In this illustration, it can be seen particularly well how the control device 5 and the connecting piece 7 are moveable and displaceable in a suitably designed recess 15 provided in the upright stand pipe 1. In the illustrated embodiment, this recess 15 has the shape of a long, axial slit. The slit must be at least as wide as the connecting piece 7 in order to enable the control unit 5 including the connecting piece 7 to move up and down in an axial direction in the slit.”); Fig. 1 (see annotated below).  Fig. 1

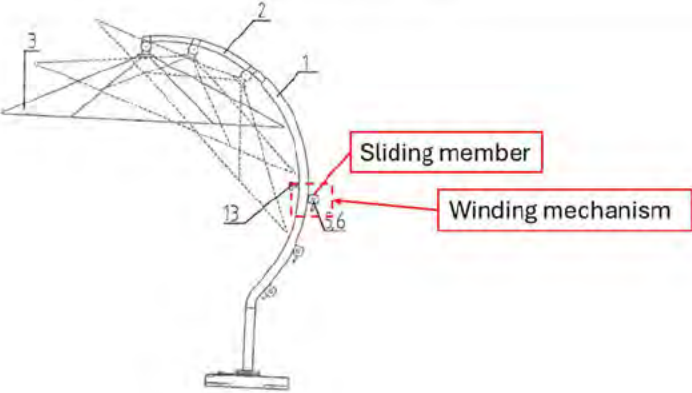
No.	Claim Limitation	Basis for Invalidity
		 Fig. 3 A person of ordinary skill in the art would have understood that a simple substitution of the structure in Chen '009 with the structure in Huali '640 (or mounting the winding mechanism to the sliding member) would yield predictable results to improve collapsable umbrella products. Indeed, Chen '009 and Huali '640 both relate to collapsable umbrella products and are thus in the same industry. A motivation to combine is also found in Huali '640. Huali '640 describes the benefits of “uncoupling” the opening/closing movement of the umbrella canopy from the telescopic mechanism of the umbrella by attaching the sheathed cable/Bowden control to the canopy. Huali '640 at [0011].
1[j]	wherein operation of the winding mechanism to apply tension to the line opens and closes the umbrella canopy in response to	Chen '009 discloses wherein operation of the winding mechanism (“parasol surface opening and closing mechanism 6”) to apply tension to the line (“cable 61”) opens and closes the umbrella canopy (“parasol surface/ parasol cloth”) in response to movement of the line (“cable 61”) <i>See e.g.</i> Chen '009 at Abstract (“The present invention discloses an outer arm suspension type universal rotating parasol, which comprises a pole (1), a suspension arm (2), a running frame (3) movable along an axis of the pole (1), a lifting arm (9), a central tube (11), and a parasol

No.	Claim Limitation	Basis for Invalidity
	movement of the line; and	surface opening and closing mechanism (6).”); Summary at page 2 (“The technical solution adopted by the present invention to solve the above-mentioned technical problem is as follows: an outer arm suspension type universal rotating parasol comprises a pole, a suspension arm, a running frame, a lifting arm, a central tube, and a parasol surface opening and closing mechanism.”); Description at page 3 (“The parasol surface opening and closing mechanism comprises: a winch with a handle and a cable supported by a group of pulleys arranged at corresponding positions of the pole and the lifting arm, an end of the cable is connected to the winch, and another end of the cable is connected to the lower parasol plate.”), page 6 (“The parasol surface opening and closing mechanism 6 comprises a winch 63 with a handle 62 and a cable 61 supported by a group of pulleys 64 arranged at corresponding positions of the pole 1 and the lifting arm 9, an end of the cable 61 is connected to the winch 63, and another end of the cable 61 is connected to the lower parasol plate 12. The handle can also be replaced by a hand-controlled or remote-controlled electric device, or various hydraulic transmission devices”); Claim 1 (“An outer arm suspension type universal rotating parasol, comprising a pole (1), a suspension arm (2), a running frame (3) that is capable of moving axially up and down along the pole (1), a lifting arm (9), a central tube (11), and a parasol surface opening and closing mechanism (6)...”), Claim 6 (“The outer arm suspension type universal rotating parasol according to claim 1, 2, 3, 4, or 5, characterized in that the parasol surface opening and closing mechanism (6) comprises a winch (63) with a handle (62) and a cable (61) supported by a group of pulleys (64) arranged at corresponding positions of the pole (1) and the lifting arm (9), an end of the cable (61) is connected to the winch (63), and another end of the cable (61) is connected to the lower parasol plate (12)”) Figs. 1, 9, and 10 (see annotated below).

No.	Claim Limitation	Basis for Invalidity
		 FIG. 1 To the extent Chen '009 does not disclose the winding mechanism mounted to the sliding member and movable therewith, Wang '460 discloses a winding mechanism having a winder hub (rope reel 26) around which a line (pull rope 13) can be wound, the winder hub (rope reel 26) being mounted to the sliding member (sliding sleeve 11) and movable therewith. <i>See e.g.</i> Wang '460 Abstract (“the sliding sleeve includes a rope winder and is shaft-connected to a bottom end of the suspension rod, a top end of the suspension rod and an upper parasol disc of the parasol frame have a pitch rotating connection structure, one end of a pull rope is fixed to a reel of the rope winder installed in the sliding sleeve, and the other end thereof passes through the suspension rod and a top tube installed in the upper parasol disc to be fixed to a lower parasol disc. The structure of the present utility model makes the parasol cover easy to open and close, the parasol cover can rotate 360° around the parasol pole, and the pitch angle thereof can also be adjusted. The parasol cover is stable; the operation is simple, labor-saving and convenient.”); Claim 1 (“the sliding sleeve comprises a rope winder and is shaft-connected to a bottom end of the suspension rod (03), a top end of the suspension rod (03) and an upper parasol disc (70) of the parasol frame have a pitch rotating connection structure, one end of a pull rope (13) is fixed to a reel (26) of the rope winder installed in the sliding sleeve (11), and the other end thereof passes through the suspension rod (03) and a top tube (57) installed in the upper parasol disc to be fixed to a lower parasol disc.”);

No.	Claim Limitation	Basis for Invalidity
		Description at page 4 (“The parasol pole 01 is equipped with a hoop-type sliding sleeve 11 locked by a bolt. One end of the bolt is equipped with a rotating handle 22, and a spring 23 is sleeved on the bolt portion between the hoop chucks. A roller 21 is respectively installed at the upper end and lower end of the sliding sleeve 11 to slide smoothly with the parasol pole. The sliding sleeve 11 is connected to the spherical left and right casings 141 and 142 of the rope winder. The rope reel 26 of a winder handle 27 is tied with a pull rope 13, and the other end of the pull rope passes through the suspension rod 03 through a pulley 15 and the top tube 57 installed in the upper parasol disc 70, so as to be fixed to the lower parasol disc 73.”). Figs. 1-3 (see annotated below). A person of ordinary skill in the art would have understood that a simple substitution of the structure in Chen '009 with the structure in Wang '460 (or mounting the winding mechanism to the sliding member) would yield predictable results to improve collapsable umbrella products. Indeed, Chen '009 and Wang '460 both relate to collapsable umbrella products and are thus in the same industry. A motivation to combine is also found in Wang '460. Wang '460 describes how an umbrella design including a sliding sleeve mounted on the supporting

No.	Claim Limitation	Basis for Invalidity
		pole, including a rope winding device, makes the umbrella easy to open and close, enables the umbrella to be rotated 360 degreed around the supporting pole, and enables the umbrella to tilt. Wang '460 at Abstract. Alternatively, To the extent Chen '009 does not disclose the winding mechanism mounted to the sliding member and movable therewith, Huali '640 discloses a winding mechanism (control device 5) having a winder hub (crank shaft 6) around which a line can be wound (sheathed cable/Bowden control 4), the winder hub (crank shaft 6) being mounted to the sliding member (control device 5 and the connecting piece 7) and movable therewith. <i>See e.g.</i> Huali '640 Abstract ('A telescopic umbrella, [s]uch as a [s]unshade, that includes a lower upright stand pipe and a telescopic pipe arranged in a displaceable and arrestable manner therein. The telescopic umbrella also includes a canopy articulated on the telescopic pipe, it being possible for the canopy to be opened and closed by means of a sheathed cable or Bowden control running within the telescopic pipe and controlled by a control device. The control device is attached to the telescopic pipe so that the opening/closing movement of the umbrella canopy is uncoupled from the telescopic mechanism of the umbrella."); Description at paragraphs 38-39 ('[0038 The umbrella canopy 3 can be opened and closed by means of a sheathed cable/Bowden control 4. For this purpose, the sheathed cable/Bowden control 4 is connected to a control device and can be operated with it. In the embodiment shown, the control device 5 is designed as a crank shaft 6. [0039] Based on the invention, the control device 5 is allocated to the telescopic pipe 2. In this embodiment, the control device 5 is attached to the lower end of the telescopic pipe 2, where an L-shaped connecting piece 7 is arranged between the control device5 and the telescopic pipe 2. This connecting piece 7 establishes a connection between the open lower end of the telescopic pipe 2 and the control device 5 located outside the pipe."); Description at paragraph 46 ("[0046] In this illustration, it can be seen particularly well how the control device 5 and the connecting piece 7 are moveable and displaceable in a suitably designed recess 15 provided in the upright stand pipe 1. In the illustrated embodiment, this recess 15 has the shape of a long, axial slit. The slit must be at least as wide as the connecting piece 7 in order to enable the control unit 5 including the

No.	Claim Limitation	Basis for Invalidity
		 Fig. 3 A person of ordinary skill in the art would have understood that a simple substitution of the structure in Chen '009 with the structure in in Huali '640 (or mounting the winding mechanism to the sliding member) would yield predictable results to improve collapsable umbrella products. Indeed, Chen '009 and Huali '640 both relate to collapsable umbrella products and are thus in the same industry. A motivation to combine is also found in Huali '640. Huali '640 describes the benefits of “uncoupling” the opening/closing movement of the umbrella canopy from the telescopic mechanism of the umbrella by attaching the sheathed cable/Bowden control to the canopy. Huali '640 at [0011].

1[k]	wherein the angle of the umbrella canopy with respect to the main pole can be controlled by moving the sliding member along the main pole.	Chen '009 discloses wherein the angle of the umbrella canopy ("parasol surface/ parasol cloth") with respect to the main pole ("pole 1") can be controlled by moving the sliding member ("running frame 3") along the main pole ("pole 1"). <i>See e.g.</i> Chen '009 at Abstract ("The outer arm suspension type universal rotating parasol is characterized in that the lifting arm (9) is provided with an angle adjustment device (4) for making a parasol surface rotate radially around an axis of the lifting arm (9), and the running frame (3) is provided with a locking device (32)."); Summary at page 2 ("An angle positioning mechanism hinged to the running frame is further provided at the lower end of the lifting arm"); Description at page 5 ("...an angle positioning mechanism 5 hinged to the running frame 3 is further arranged at the lower end of the lifting arm 9.") and page 8 ("The operation method for adjusting the axial angle of the parasol relative to the pole 1 is as follows: as shown in FIG. 1, FIG. 2 and FIG. 6, when the handle 62 is turned to unfold the parasol, the running frame 3 is moved up and down, then a user can select an angle as needed, which can be achieved by locking the running frame 3; if a user wants to adjust the angle when the parasol is unfolded, the user can turn the handle 62 to slightly fold the parasol, and push or pull the running frame 3 to the desired angle, and then lock the running frame 3; when the parasol is to be completely folded, the locking device 32 must be released... In the operation of the structure of FIG. 1 and FIG. 3, when the lifting arm 9 is not locked, a user can manually move the parasol surface to the desired angle, and then lock the lifting arm 9. To completely fold the parasol surface, it is best to turn the worm crank to adjust the parasol surface to a horizontal level, or relax the angle positioning mechanism and then manually turn the lifting arm 9 to a horizontal level."); Claim 1 ("...the outer arm suspension type universal rotating parasol is characterized in that the lifting arm (9) is provided with an angle adjustment device (4) that enables a parasol surface to rotate radially around an axis of the lifting arm (9)."), Claim 2 ("and an angle positioning mechanism (5) hinged to the running frame (3) is further arranged at the lower end of the lifting arm (9)"), Claim 3 ("The outer arm suspension type universal rotating parasol according to claim 2, characterized in that the angle positioning mechanism (5) comprises a second bearing sleeve (51) hinged to the running frame (3)"), Claim 4 ("The outer arm suspension type universal rotating parasol according to claim 2, characterized in that the angle positioning mechanism (5) comprises a grip (52) hinged to the running frame (3)..."), Claim 5 ("The outer arm suspension type universal rotating parasol according to claim 2, characterized in that the angle positioning mechanism (5) comprises a
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cylindrical housing (53) hinged to the running frame (3)...”); Figs. 1-4, 9, and 10 (see annotated below).

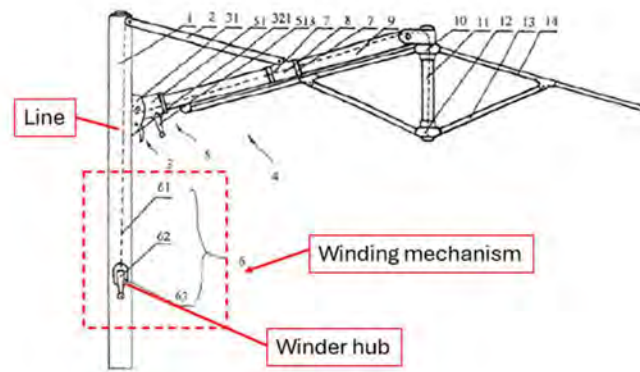
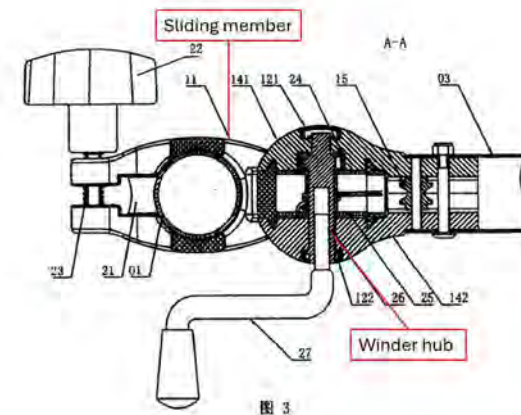
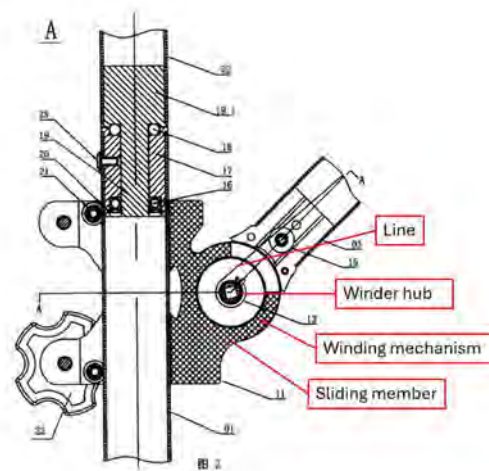


FIG. 1

To the extent Chen '009 does not disclose the winding mechanism mounted to the sliding member and movable therewith, Wang '460 discloses a winding mechanism having a winder hub (rope reel 26) around which a line (pull rope 13) can be wound, the winder hub (rope reel 26) being mounted to the sliding member (sliding sleeve 11) and movable therewith.

See e.g. Wang '460 Abstract (“the sliding sleeve includes a rope winder and is shaft-connected to a bottom end of the suspension rod, a top end of the suspension rod and an upper parasol disc of the parasol frame have a pitch rotating connection structure, one end of a pull rope is fixed to a reel of the rope winder installed in the sliding sleeve, and the other end thereof passes through the suspension rod and a top tube installed in the upper parasol disc to be fixed to a lower parasol disc. The structure of the present utility model makes the parasol cover easy to open and close, the parasol cover can rotate 360° around the parasol pole, and the pitch angle thereof can also be adjusted. The parasol cover is stable; the operation is simple, labor-saving and convenient.”); Claim 1 (“the sliding sleeve comprises a rope winder and is shaft-connected to a bottom end of the suspension rod (03), a top end of the suspension rod (03) and an upper parasol disc (70) of the parasol frame have a pitch rotating connection

structure, one end of a pull rope (13) is fixed to a reel (26) of the rope winder installed in the sliding sleeve (11), and the other end thereof passes through the suspension rod (03) and a top tube (57) installed in the upper parasol disc to be fixed to a lower parasol disc.”); Description at page 4 (“The parasol pole 01 is equipped with a hoop-type sliding sleeve 11 locked by a bolt. One end of the bolt is equipped with a rotating handle 22, and a spring 23 is sleeved on the bolt portion between the hoop chucks. A roller 21 is respectively installed at the upper end and lower end of the sliding sleeve 11 to slide smoothly with the parasol pole. The sliding sleeve 11 is connected to the spherical left and right casings 141 and 142 of the rope winder. The rope reel 26 of a winder handle 27 is tied with a pull rope 13, and the other end of the pull rope passes through the suspension rod 03 through a pulley 15 and the top tube 57 installed in the upper parasol disc 70, so as to be fixed to the lower parasol disc 73.”). Figs. 1-3 (see annotated below).



A person of ordinary skill in the art would have understood that a simple substitution of the structure in Chen '009 with the structure in Wang '460 (or mounting the winding mechanism to the sliding member) would yield predictable results to improve collapsible umbrella products. Indeed, Chen '009 and Wang '460 both relate to collapsible umbrella products and

		are thus in the same industry. A motivation to combine is also found in Wang '460. Wang '460 describes how an umbrella design including a sliding sleeve mounted on the supporting pole, including a rope winding device, makes the umbrella easy to open and close, enables the umbrella to be rotated 360 degreed around the supporting pole, and enables the umbrella to tilt. Wang '460 at Abstract. Alternatively, To the extent Chen '009 does not disclose the winding mechanism mounted to the sliding member and movable therewith, Huali '640 discloses a winding mechanism (control device 5) having a winder hub (crank shaft 6) around which a line can be wound (sheathed cable/Bowden control 4), the winder hub (crank shaft 6) being mounted to the sliding member (control device 5 and the connecting piece 7) and movable therewith. <i>See e.g.</i> Huali '640 Abstract ('A telescopic umbrella, [s]uch as a [s]unshade, that includes a lower upright stand pipe and a telescopic pipe arranged in a displaceable and arrestable manner therein. The telescopic umbrella also includes a canopy articulated on the telescopic pipe, it being possible for the canopy to be opened and closed by means of a sheathed cable or Bowden control running within the telescopic pipe and controlled by a control device. The control device is attached to the telescopic pipe so that the opening/closing movement of the umbrella canopy is uncoupled from the telescopic mechanism of the umbrella."); Description at paragraphs 38-39 ('[0038 The umbrella canopy 3 can be opened and closed by means of a sheathed cable/Bowden control 4. For this purpose, the sheathed cable/Bowden control 4 is connected to a control device and can be operated with it. In the embodiment shown, the control device 5 is designed as a crank shaft 6. [0039] Based on the invention, the control device 5 is allocated to the telescopic pipe 2. In this embodiment, the control device 5 is attached to the lower end of the telescopic pipe 2, where an L-shaped connecting piece 7 is arranged between the control device5 and the telescopic pipe 2. This connecting piece 7 establishes a connection between the open lower end of the telescopic pipe 2 and the control device 5 located outside the pipe."); Description at paragraph 46 ("[0046] In this illustration, it can be seen particularly well how the control device 5 and the connecting piece 7 are moveable and displaceable in a suitably designed recess 15 provided in the upright stand pipe 1. In the illustrated embodiment, this recess 15 has the shape of a long, axial slit. The slit must
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be at least as wide as the connecting piece 7 in order to enable the control unit 5 including the connecting piece 7 to move up and down in an axial direction in the slit.”); Fig. 1 (see annotated below).

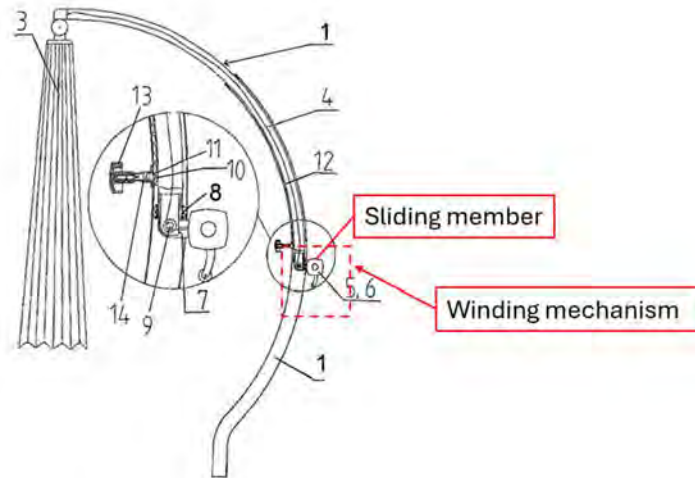


Fig. 1

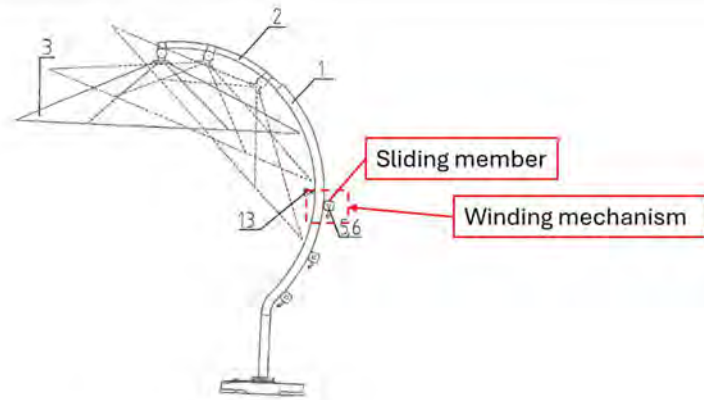
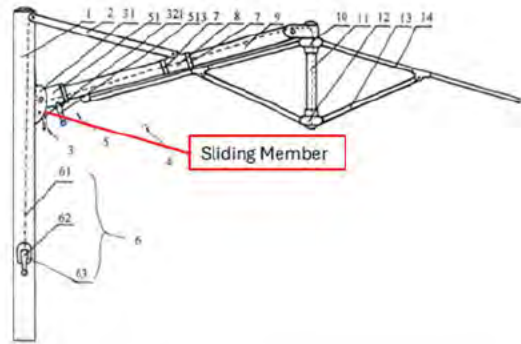
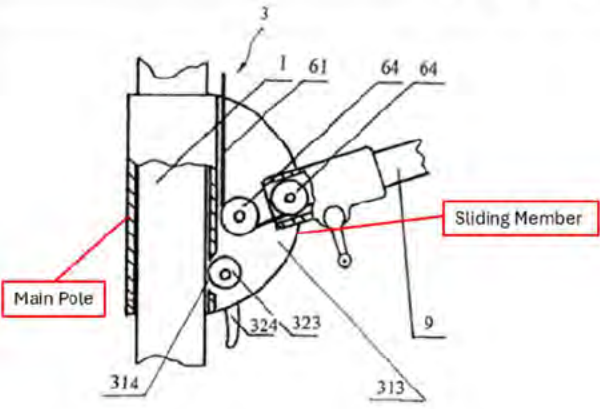


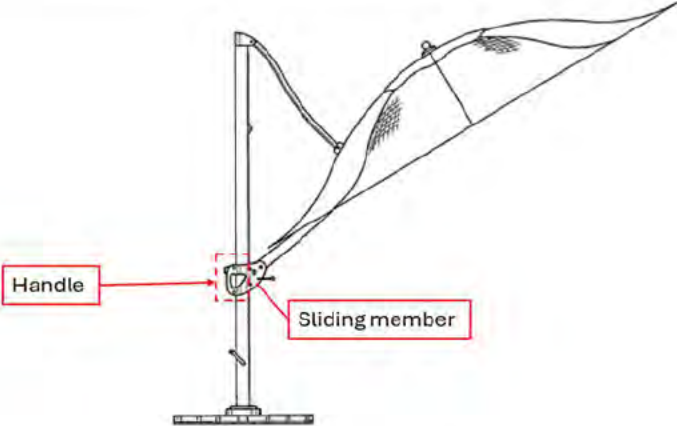
Fig. 3

A person of ordinary skill in the art would have understood that a simple substitution of the structure in Chen '009 with the structure in Huali '640 (or mounting the winding mechanism to the sliding member) would yield predictable results to improve collapsible umbrella products. Indeed, Chen '009 and Huali '640 both relate to collapsible umbrella products and are thus in the same industry. A motivation to combine is also found in Huali '640. Huali '640 describes the benefits of “uncoupling” the opening/closing movement of the umbrella canopy from the telescopic mechanism of the umbrella by attaching the sheathed cable/Bowden control to the canopy. Huali '640 at [0011].

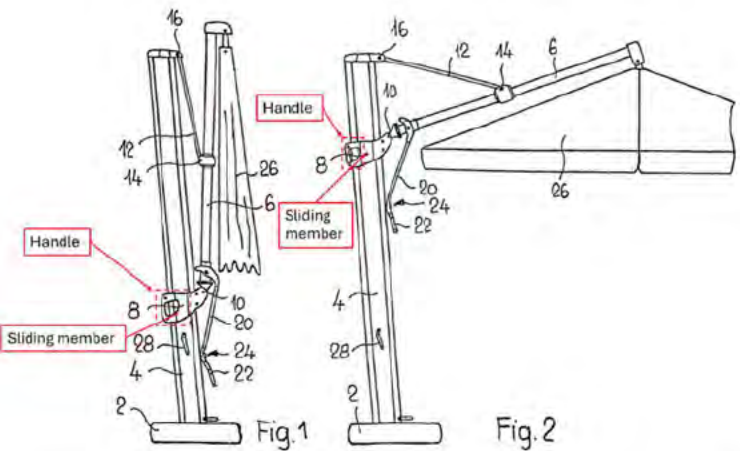
No.	Claim Limitation	Basis for Invalidity
Claim 5 Obvious under pre-AIA 35 U.S.C. § 103: Chinese Patent No. CN1208009C (“Chen ’009”) (issued June 29, 2005) in view of Chinese Publication No. CN201001460Y (“Wang ’460”) (issued January 9, 2008) and/or U.S. Publication No. 2008/0236640 (“Huali ’640”) ((Huali ’640) (published October 2, 2008 and filed on March 28, 2008) and in further view of U.S. Design Patent 609,453 to Liu (“Liu ’453”) and/or German Patent DE20014895 to Bertola (“Bertola ’895”) and/or U.S. Patent No. 7,398,790 to Glatz (“Glatz ’790”)		
5.	The umbrella of claim 1, wherein the sliding member has a handle associated therewith.	Chen ’009 discloses wherein the sliding member (“running frame 3”). <i>See e.g.</i>, Chen ’009 at Abstract (“The present invention discloses an outer arm suspension type universal rotating parasol, which comprises a pole (1), a suspension arm (2), a running frame (3) movable along an axis of the pole (1)”; Summary at page 3 (“The running frame comprises a running frame housing supporting the lifting arm and a locking device capable of locking the running frame at any point on an axis of the pole.”); Description at page 2 (“The running frame is capable of moving up and down along an axis of the pole.”), page 3 (“The running frame comprises a running frame housing supporting the lifting arm and a locking device capable of locking the running frame at any point on an axis of the pole... the running frame housing is embedded in the guide groove, symmetrical pulleys are provided on both sides of the running frame housing, and the locking device comprises a herringbone lock head connected to an axis of the running frame housing.”), page 4 (“a running frame 3 that is capable of moving axially up and down along the pole 1”), page 6 (“The running frame 3 comprises a running frame housing 31 supporting the lifting arm 9 and a locking device 32 capable of locking the running frame 3 at any point on an axis of the pole 1... The running frame housing 31 comprises a lug 313, the locking device 32 comprises a cam 323 and a wrench 324 connected to each other on both sides of the lug 313, and a notch 314 is provided on the running frame housing 31 for the large diameter part of the cam 323 to pass therethrough. When the wrench 324 is pulled, the protruding surface of the cam 323 presses against the surface of the pole 1, so as to achieve the purpose of locking the running frame 3 at any point on the axis of the pole 1.) and page 8 (“The operation method for adjusting the axial angle of the parasol relative to the pole 1 is as follows: as shown in FIG. 1, FIG. 2 and FIG. 6, when the handle 62 is turned to unfold the parasol, the running frame 3 is moved up and down, then a user can select an angle as needed, which can be achieved by locking the running frame 3; if a user wants to adjust the angle when the parasol is unfolded, the user can

No.	Claim Limitation	Basis for Invalidity
		turn the handle 62 to slightly fold the parasol, and push or pull the running frame 3 to the desired angle, and then lock the running frame 3; when the parasol is to be completely folded, the locking device 32 must be released.”); Claim 1 (“...a running frame (3) that is capable of moving axially up and down along the pole (1)...”); Claim 7 (“The outer arm suspension type universal rotating parasol according to claim 6, characterized in that the running frame (3) comprises a running frame housing (31) supporting the lifting arm (9) and locking device (32) capable of locking the running from (3) at any point on an axis of the pole (1).”); Figs. 1, 3, 9 (see annotated below).  FIG. 1

No.	Claim Limitation	Basis for Invalidity
		 FIG. 6 To the extent Chen '009 does not disclose a handle on the sliding member, Liu '453 discloses wherein the sliding member has a handle associated therewith. See e.g., Liu '453 at Figs. 1-3 and 6-8.

No.	Claim Limitation	Basis for Invalidity
		 FIG.6 A person of ordinary skill in the art would have understood that a simple substitution of the structure in Chen '009 with the structure in in Liu '453 would yield predictable results to improve collapsable umbrella products. Indeed, Liu '068 and Liu '453 both relate to collapsable umbrella products and are thus in the same industry. To the extent Chen '009 does not disclose a handle on the sliding member, Bertola '895 discloses wherein the sliding member (slider 28) has a handle (handle 48) associated therewith. <i>See e.g.</i>, Bertola '895 at Description at page 5 (“Provided for fixation is a slider 28, which is axially slidable and fixable on the mast 14”) and page 6 (“The slider further comprises a handle 48, which is preferably integrally connected to the sleeve 38”); Figs. 1-3 (see annotated below).

No.	Claim Limitation	Basis for Invalidity
		Fig. 2 Handle Sliding member Fig. 3 Handle Sliding member US 200 14 095 U1 A person of ordinary skill in the art would have understood that a simple substitution of the structure in Chen '009 with the structure in Bertola '895 would yield predictable results to improve collapsable umbrella products. Indeed, Chen '009 and Bertola '895 both relate to collapsable umbrella products and are thus in the same industry. To the extent Chen '009 does not disclose a handle on the sliding member, Glatz '790 discloses wherein the sliding member (slide 8) has a handle associated therewith. <i>See e.g.</i>, Glatz '790 at Description 3:43-47 (“The free arm parasol illustrated in FIGS. 1 to 5 has a pole 4 which is secured, for example, in a base 2 and serves as a carrier for an extendable extension

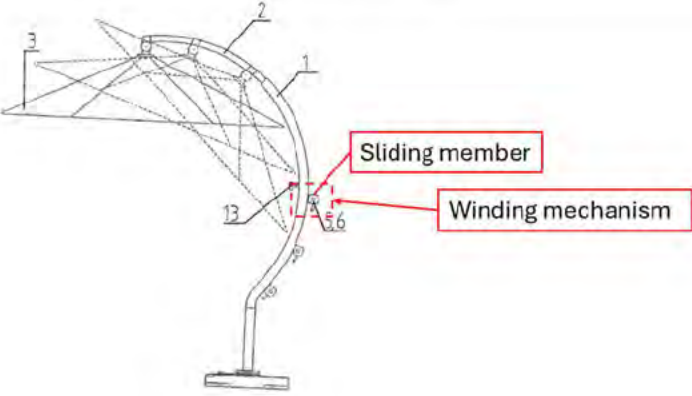
No.	Claim Limitation	Basis for Invalidity
		arm 6. The latter is arranged via a joint 10 on a slide 8 which is movable along the pole.”); Figs. 1-3  A person of ordinary skill in the art would have understood that a simple substitution of the structure in Chen '009 with the known handle in Glatz '790 would yield predictable results to improve collapsable umbrella products. Indeed, Chen '009 and Glatz '790 both relate to collapsable umbrella products and are thus in the same industry. A motivation to combine is found in Glatz '790. The umbrella disclosed by Glatz '790 includes an extension arm that is configured for operation by hand. For example, Glatz '790 states that an objective of the invention is to pivot the extension arm “in a simple manner with one hand.” Glatz '790 at Abstract.

No.	Claim Limitation	Basis for Invalidity
Claim 6 Obvious under pre-AIA 35 U.S.C. § 103: Chinese Patent No. CN1208009C (“Chen ’009”) (issued June 29, 2005) in view of Chinese Publication No. CN201001460Y (“Wang ’460”) (issued January 9, 2008) and/or U.S. Publication No. 2008/0236640 (“Huali ’640”) (published October 2, 2008 and filed on March 28, 2008)		
6.	The umbrella of claim 1, wherein the line extends along at least substantially the entire length of the arm.	Chen ’009 discloses wherein the line (cable 61) extends along at least substantially the entire length of the arm (lifting arm 9). <i>See e.g.</i>, Chen ’009 at Abstract (“The present invention discloses an outer arm suspension type universal rotating parasol, which comprises a pole (1), a suspension arm (2), a running frame (3) movable along an axis of the pole (1), a lifting arm (9), a central tube (11), and a parasol surface opening and closing mechanism (6).”); Summary at page 2 (“The technical solution adopted by the present invention to solve the above-mentioned technical problem is as follows: an outer arm suspension type universal rotating parasol comprises a pole, a suspension arm, a running frame, a lifting arm, a central tube, and a parasol surface opening and closing mechanism.”); Description at page 3 (“The parasol surface opening and closing mechanism comprises: a winch with a handle and a cable supported by a group of pulleys arranged at corresponding positions of the pole and the lifting arm, an end of the cable is connected to the winch, and another end of the cable is connected to the lower parasol plate.”), page 6 (“The parasol surface opening and closing mechanism 6 comprises a winch 63 with a handle 62 and a cable 61 supported by a group of pulleys 64 arranged at corresponding positions of the pole 1 and the lifting arm 9, an end of the cable 61 is connected to the winch 63, and another end of the cable 61 is connected to the lower parasol plate 12. The handle can also be replaced by a hand-controlled or remote-controlled electric device, or various hydraulic transmission devices”); Claim 1 (“An outer arm suspension type universal rotating parasol, comprising a pole (1), a suspension arm (2), a running frame (3) that is capable of moving axially up and down along the pole (1), a lifting arm (9), a central tube (11), and a parasol surface opening and closing mechanism (6)...”), Claim 6 (“The outer arm suspension type universal rotating parasol according to claim 1, 2, 3, 4, or 5, characterized in that the parasol surface opening and closing mechanism (6) comprises a winch (63) with a handle (62) and a cable (61) supported by a group of pulleys (64) arranged at corresponding positions of the pole (1) and the lifting arm (9), an end of the cable (61) is connected to the winch (63),

No.	Claim Limitation	Basis for Invalidity
		and another end of the cable (61) is connected to the lower parasol plate (12)”) Figs. 1, 9, and 10 (see annotated below). FIG. 1 To the extent Chen '009 does not disclose the winding mechanism mounted to the sliding member and movable therewith, Wang '460 discloses a winding mechanism having a winder hub (rope reel 26) around which a line (pull rope 13) can be wound, the winder hub (rope reel 26) being mounted to the sliding member (sliding sleeve 11) and movable therewith. <i>See e.g.</i> Wang '460 Abstract (“the sliding sleeve includes a rope winder and is shaft-connected to a bottom end of the suspension rod, a top end of the suspension rod and an upper parasol disc of the parasol frame have a pitch rotating connection structure, one end of a pull rope is fixed to a reel of the rope winder installed in the sliding sleeve, and the other end thereof passes through the suspension rod and a top tube installed in the upper parasol disc to be fixed to a lower parasol disc. The structure of the present utility model makes the parasol cover easy to open and close, the parasol cover can rotate 360° around the parasol pole, and the pitch angle thereof can also be adjusted. The parasol cover is stable; the operation is simple, labor-saving and convenient.”); Claim 1 (“the sliding sleeve comprises a rope winder and is shaft-connected to a bottom end of the suspension rod (03), a top end of the suspension rod (03) and an upper parasol disc (70) of the parasol frame have a pitch rotating connection

No.	Claim Limitation	Basis for Invalidity
		structure, one end of a pull rope (13) is fixed to a reel (26) of the rope winder installed in the sliding sleeve (11), and the other end thereof passes through the suspension rod (03) and a top tube (57) installed in the upper parasol disc to be fixed to a lower parasol disc.”); Description at page 4 (“The parasol pole 01 is equipped with a hoop-type sliding sleeve 11 locked by a bolt. One end of the bolt is equipped with a rotating handle 22, and a spring 23 is sleeved on the bolt portion between the hoop chucks. A roller 21 is respectively installed at the upper end and lower end of the sliding sleeve 11 to slide smoothly with the parasol pole. The sliding sleeve 11 is connected to the spherical left and right casings 141 and 142 of the rope winder. The rope reel 26 of a winder handle 27 is tied with a pull rope 13, and the other end of the pull rope passes through the suspension rod 03 through a pulley 15 and the top tube 57 installed in the upper parasol disc 70, so as to be fixed to the lower parasol disc 73.”). Figs. 1-3 (see annotated below). Figure 2 is a cross-sectional view of a parasol pole assembly. It shows a sliding member (11) with a winder hub (01) and a winding mechanism (13). A line (15) is shown passing through the assembly. Other components labeled include 02, 12, 13, 14, 16, 17, 18, 19, 20, 21, and 22. Figure 3 is a cross-sectional view of a parasol pole assembly, similar to Figure 2 but with different internal components. It shows a sliding member (11) with a winder hub (01) and a winding mechanism (13). A line (15) is shown passing through the assembly. Other components labeled include 02, 12, 13, 14, 16, 17, 18, 19, 20, 21, and 22. A person of ordinary skill in the art would have understood that a simple substitution of the structure in Chen '009 with the structure in Wang '460 (or mounting the winding mechanism to the sliding member) would yield predictable results to improve collapsible umbrella products. Indeed, Chen '009 and Wang '460 both relate to collapsible umbrella products and

No.	Claim Limitation	Basis for Invalidity
		are thus in the same industry. A motivation to combine is also found in Wang '460. Wang '460 describes how an umbrella design including a sliding sleeve mounted on the supporting pole, including a rope winding device, makes the umbrella easy to open and close, enables the umbrella to be rotated 360 degreed around the supporting pole, and enables the umbrella to tilt. Wang '460 at Abstract. To the extent Chen '009 does not disclose the winding mechanism mounted to the sliding member and movable therewith, Huali '640 discloses a winding mechanism (control device 5) having a winder hub (crank shaft 6) around which a line can be wound (sheathed cable/Bowden control 4), the winder hub (crank shaft 6) being mounted to the sliding member (control device 5 and the connecting piece 7) and movable therewith. <i>See e.g.</i> Huali '640 Abstract ('A telescopic umbrella, such as a Sunshade, that includes a lower upright stand pipe and a telescopic pipe arranged in a displaceable and arrestable manner therein. The telescopic umbrella also includes a canopy articulated on the telescopic pipe, it being possible for the canopy to be opened and closed by means of a sheathed cable or Bowden control running within the telescopic pipe and controlled by a control device. The control device is attached to the telescopic pipe so that the opening/closing movement of the umbrella canopy is uncoupled from the telescopic mechanism of the umbrella."); Description at paragraphs 38-39 ('[0038 The umbrella canopy 3 can be opened and closed by means of a sheathed cable/Bowden control 4. For this purpose, the sheathed cable/Bowden control 4 is connected to a control device and can be operated with it. In the embodiment shown, the control device 5 is designed as a crank shaft 6. [0039] Based on the invention, the control device 5 is allocated to the telescopic pipe 2. In this embodiment, the control device 5 is attached to the lower end of the telescopic pipe 2, where an L-shaped connecting piece 7 is arranged between the control device5 and the telescopic pipe 2. This connecting piece 7 establishes a connection between the open lower end of the telescopic pipe 2 and the control device 5 located outside the pipe."); Description at paragraph 46 ("[0046] In this illustration, it can be seen particularly well how the control device 5 and the connecting piece 7 are moveable and displaceable in a suitably designed recess 15 provided in the upright stand pipe 1. In the illustrated embodiment, this recess 15 has the shape of a long, axial slit. The slit must be at least as wide as the connecting piece 7 in order to enable the control unit 5 including the

No.	Claim Limitation	Basis for Invalidity
		 Fig. 3 A person of ordinary skill in the art would have understood that a simple substitution of the structure in Chen '009 with the structure in in Huali '640 (or mounting the winding mechanism to the sliding member) would yield predictable results to improve collapsable umbrella products. Indeed, Chen '009 and Huali '640 both relate to collapsable umbrella products and are thus in the same industry. A motivation to combine is also found in Huali '640. Huali '640 describes the benefits of “uncoupling” the opening/closing movement of the umbrella canopy from the telescopic mechanism of the umbrella by attaching the sheathed cable/Bowden control to the canopy. Huali '640 at [0011].

No.	Claim Limitation	Basis for Invalidity
Claim 7 Obvious under pre-AIA 35 U.S.C. § 103: Chinese Patent No. CN1208009C (“Chen ’009”) (issued June 29, 2005) in view of Chinese Publication No. CN201001460Y (“Wang ’460”) (issued January 9, 2008) and/or U.S. Publication No. 2008/0236640 (“Huali ’640”) (published October 2, 2008 and filed on March 28, 2008)		
7.	The umbrella of claim 1, further comprising a crank handle operatively associated with the winder hub, whereby rotating the crank handle causes the winder hub to rotate.	Chen ’009 discloses a crank handle (“handle 62”) operatively associated with the winder hub (“winch 63”), whereby rotating the crank handle (“handle 62”) causes the winder hub (“winch 63”) to rotate. <i>See e.g.</i>, Chen ’009 at Description at page 6 (“The parasol surface opening and closing mechanism 6 comprises a winch 63 with a handle 62 and a cable 61 supported by a group of pulleys 64 arranged at corresponding positions of the pole 1 and the lifting arm 9, an end of the cable 61 is connected to the winch 63, and another end of the cable 61 is connected to the lower parasol plate 12. The handle can also be replaced by a hand-controlled or remote-controlled electric device, or various hydraulic transmission devices”); Claim 1 (“An outer arm suspension type universal rotating parasol, comprising a pole (1), a suspension arm (2), a running frame (3) that is capable of moving axially up and down along the pole (1), a lifting arm (9), a central tube (11), and a parasol surface opening and closing mechanism (6)...”), Claim 6 (“The outer arm suspension type universal rotating parasol according to claim 1, 2, 3, 4, or 5, characterized in that the parasol surface opening and closing mechanism (6) comprises a winch (63) with a handle (62) and a cable (61) supported by a group of pulleys (64) arranged at corresponding positions of the pole (1) and the lifting arm (9), an end of the cable (61) is connected to the winch (63), and another end of the cable (61) is connected to the lower parasol plate (12)”) Figs. 1, 9, and 10.

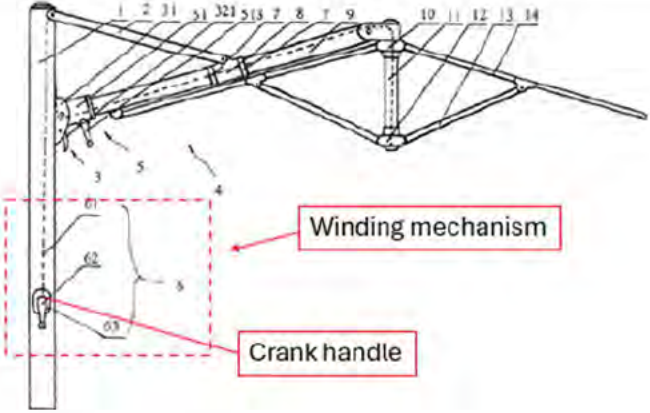
No.	Claim Limitation	Basis for Invalidity
		 FIG. 1

EXHIBIT 14

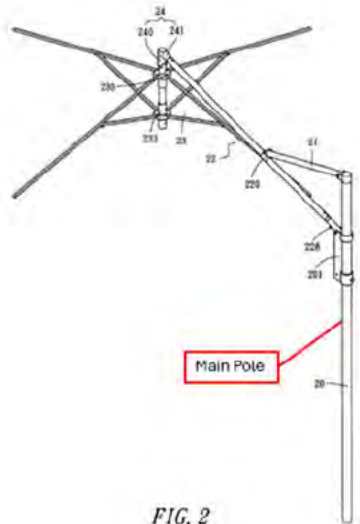
Exhibit 14 - Invalidity Chart for U.S. Patent No. 8,104,492¹ (the '492 Patent) based on United States Patent No. 7,156,114 (Lo '114)

This chart is based on Plaintiff's apparent interpretations of the asserted claim(s) and Defendant's investigation to date. Citations to portions of any reference in this chart are exemplary only, and Defendant may rely on the entirety of the references cited herein to show that the asserted claims are invalid. Further, as Defendant's investigations and discovery are ongoing, Defendant reserves the right to amend or supplement this claim chart to include additional information and/or invalidity contentions identified in connection with Defendant's ongoing investigations. To the extent that every element below is not explicitly or inherently disclosed by the prior art reference, this prior art reference in combination (1) with the knowledge of one of ordinary skill in the art and/or (2) with other prior art identified in the invalidity contentions and/or otherwise herein, renders the asserted claims obvious.

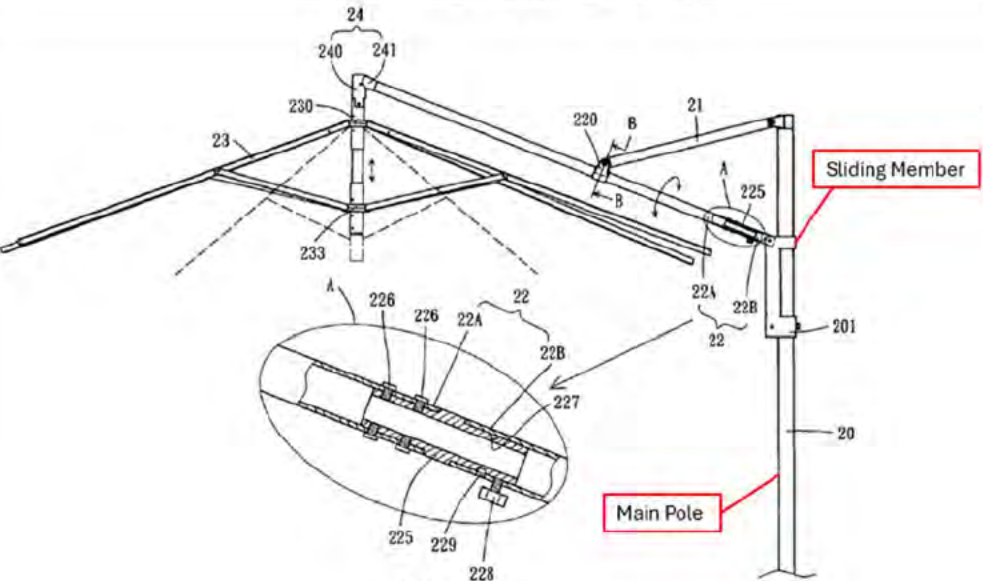
¹ As discussed in the contentions, Claim 1 of the Asserted Patent cannot claim priority to the May 5, 2008 filing date of provisional application no. 61/050,353. Instead, the priority date of Claim 1 of the Asserted Patent is May 5, 2009.

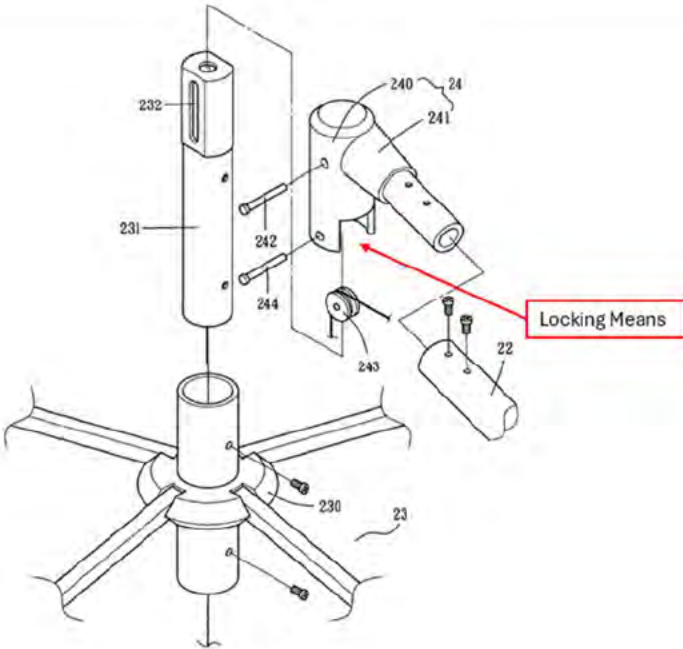
No.	Claim Limitation	Basis for Invalidity
Claim 1 Obvious under pre-AIA 35 U.S.C. § 103: United States Patent No. 7156114 to Lo (“Lo ’114”) (issued on January 2, 2007) in view of U.S. Patent No. 5,284,171 (“Liu ’171”) (issued February 8, 1994) and in further view of Chinese Publication No. CN201001460Y (“Wang ’460”) (issued January 9, 2008) and/or U.S. Publication No. 2008/0236640 (Huali ’640) (published October 2, 2008 and filed on March 28, 2008)		
1 [preamble]²	An umbrella comprising:	Lo ’114 discloses an umbrella. <i>See e.g.</i> Lo ’114 at Title (“Angle Adjusting Device For The Canopy of a Hang Umbrella”); Abstract; Background; Summary; Description; Claims 1-4 (all reciting an angle adjusting device for the canopy of a hang umbrella); Figs 1-3, 8-9 (see annotated below).  FIG. 2

² Defendant makes no concessions or admissions regarding the claim preamble, *e.g.*, that it is or is not limiting, but reserves its right on that and other claim construction issues.

No.	Claim Limitation	Basis for Invalidity
1[a]	a main pole having a lower end for support by a support surface and extending generally upward to an upper end;	Lo '114 discloses a main pole (shank 20) having a lower end for support by a support surface and extending generally upward to an upper end. <i>See e.g.</i> Lo '114 at 2:11-22 (“A preferred embodiment of an angle adjusting device for the canopy of a hang umbrella in the present invention, as shown in FIGS. 1 and 2, includes a shank 20, a pull rod 21, a cantilever 22, a canopy 23, a top cover 24 and a pull rope 25 combined together. The shank 20 has its upper intermediate portion provided with a slide ring 201 able to shift and positioned thereon, with a tightening bolt inserted in the sidewall of the slide ring 201. The pull rod 21 has one end pivotally connected with the upper end of the shank 20 and the other end extending outward.”) and 3:44-46 (“To sum up, this invention is able to adjust the canopy 23 of a hang umbrella to face or have its back facing the shank 20 and also able to turn the canopy 23 toward the left and the right side of the shank 20, having great practicability.”); Claim 1 (“A shank provided thereon with a slide ring, said slide ring able to be shifted up and down and positioned on said shank...”); Figs. 2-4, 6-9 (see annotated below).  FIG. 2

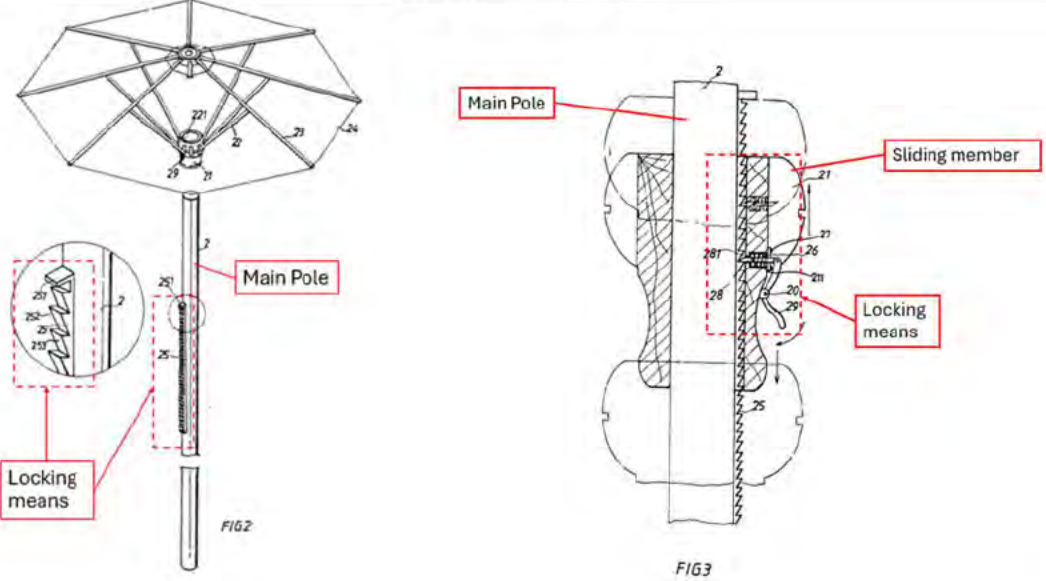
No.	Claim Limitation	Basis for Invalidity
		To the extent Lo '114 does not disclose a support surface, a person of ordinary skill in the art would understand the umbrella disclosed in Lo '114 must be mounted to the surface or have a support surface structure.
1[b]	a sliding member associated with the main pole and selectably moveable thereon between lower and upper locations along the main pole;	Lo '114 discloses a sliding member (slide ring 201) associated with the main pole (shank 20) and selectably moveable thereon between the lower and upper locations along the main pole (shank 20). <i>See e.g.</i> Lo '114 at 2:16-19 (“The shank 20 has its upper intermediate portion provided with a slide ring 20[1] able to shift and positioned thereon, with a tightening bolt inserted in the sidewall of the slide ring 201.”), 2:23-27 (“The cantilever 22, as shown in FIGS. 3 and 4, has one end pivotally connected with the upper end of the slide ring 201 and its intermediate portion fixed thereon with a hollow sleeve 220 having its inner wall bored with an annular recess 221, as shown in FIGS. 6 and 7.”), 3:7-23 (“The pull rope 25 is fastened with the slide base 201 and passes through the interiors of the cantilever 22 and the connecting tube 241 and the rope pulley 243 as well as the main cover 240 and the combining tube 231 and the upper umbrella rib holder 230 of the canopy 23 and finally connected with a lower rib holder 233. Thus, when the slide ring 201 is moved downward and have the pull rope 25 pulled tight, the upper and the lower rib holder 230, 233 will closed together, and the upper end of the combining tube 231 and the main cover 240 will be closely engaged with each other, letting the canopy 23 stretched open. On the contrary, when the slide base 201 is moved upward to loosen the pull rope 25, the upper end of the combining tube 231 and the main cover 240 will be disengaged, and the upper and the lower rib holder 230, 233 will be separated from each other. At this time, the ribs of the canopy 23 will move downward to collapse the canopy 23.”), and 3:27-32 (“1. When the canopy 23 is to be adjusted to face or have its back facing the shank 20, as shown in FIG. 8, simply loosen the slide base 201 on the upright support post 20 and then moved it upward or downward, as shown in FIG. 8B and 8C. After the canopy 23 is adjusted to an appropriate angle, the slide ring 201 is firmly positioned on the shank 20.”); Claim 1 (“A shank provided thereon with a slide ring, said slide ring able to be shifted up and down and positioned on said shank”); Figs. 1-4, 8, 9 (see annotated below).

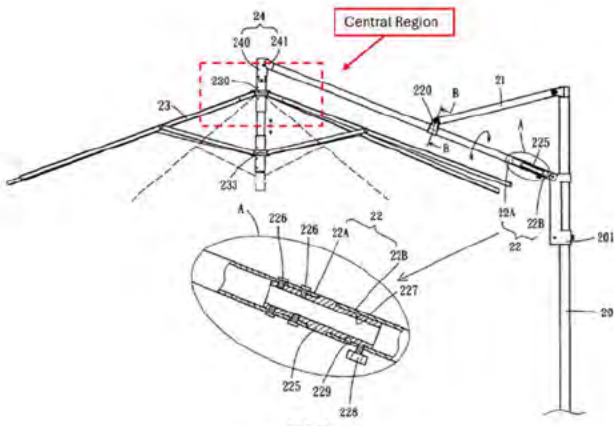
No.	Claim Limitation	Basis for Invalidity
		 FIG. 3
1[c]	locking means for releasably securing the sliding member to the main pole at a selected location along the main pole;	Lo '114 discloses a locking means (locking member 244) releasably securing the sliding member (slide ring 201) to the main pole (shank 20) at a selected location along the main pole (shank 20). <i>See e.g.</i> Lo '114 at 3:3-6 (“Further, the main cover 240 has its outer wall bored with an insert hole matching with the slide slot 232 of the combining tube 231 for a locking member 244 to be inserted there through and get in the slide slot 232.”); Fig. 5 (see annotated below).

No.	Claim Limitation	Basis for Invalidity
		 FIG. 5 To the extent Lo '114 does not disclose this limitation, Liu '171 discloses a locking means (elongated rack-like member 25, groove 221, spring 26, supporting pin 28, arm 29) for releasably securing the sliding member (runner 21) to the main pole (main shaft 2) at a selected location along the main pole. <i>See e.g.</i> Liu '171 at Abstract (“An improved sunshade opening and supporting device is provided with a rack-like member disposed on the main shaft of a sunshade at a section thereof over which the runner of the sunshade travels during the opening and closing of the sunshade”); Background of the Invention at 1:6-31 (“The present invention relates to an improved opening and supporting device for a sunshade which is equipped with a rack-like member having a plurality of Z-shaped teeth disposed on the main shaft at a specific section

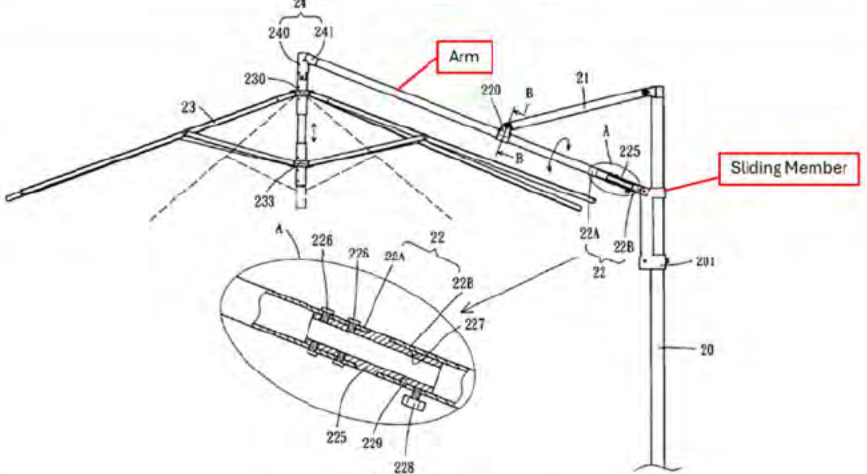
No.	Claim Limitation	Basis for Invalidity
		over which the runner of the sunshade travels during the opening and closing of the same. A supporting pin housed in a cavity which is provided with a through hole at the front end thereof on the wall of the groove with a spring received therein is connected to an arc arm pivotally secured to a lug disposed on the outer wall of the runner. The bias spring is disposed between a restraint flange disposed on the front portion of the supporting pin and a lid secured to the open end of the cavity. So the actuation of the arc arm connected to the end of the supporting pin which is led through a through hole on the lid can force the supporting pin to move backward against the bias spring and the release of the arm permits the biased spring to push the supporting pin to travel in a reverse direction so as to let the front tip of the supporting pin to selectively engage with one tooth of the racklike member whereby the runner of the sunshade can be automatically retained in place when it is pushed upwardly open, and can be slidably operated downwardly when the pivot arm is actuated to make the supporting pin withdrawn in the cavity, permitting the runner to move downward.”) and 1:52-2:16 (“Generally speaking, the conventional sunshade opening device using a supporting pin is able to be operated with ease, but there are still some disadvantages associated therewith in practical operation, which are given as follows: 1. The size of the sunshade is usually very large so that it can keep a wide area covered; the larger the sunshade is the heavier it becomes; an operator has to push the runner upwardly with great effort first with hands and then hold the runner in place with one hand and locate the supporting pin with the other; and the supporting pin is selectively inserted into one of the locking holes as long as the runner is disposed at a desired position and the supporting pin is in alignment with the target locking hole. If not, the operator has to make some adjustments of the location of the runner and the supporting pin. To an operator who is too weak to open the heavy sunshade with one hand, the opening of the same without help from others becomes impossible, causing great inconvenience in practical operation. 2. The main shaft and the runner of the sunshade are slidably engaged with each other and the two are usually assembled together in a loose manner so that the runner can be smoothly moved; but the loose engagement of the runner with the main shaft produces crevice therebetween which can get the fingers of an operator hurt easily when the skin of the fingers is accidentally clamped in the crevice in the collapse of the sunshade. To overcome the above cited problems, the present inventor has worked out an improved opening and supporting device for a sunshade which is presented in details in the following description along with a number of drawings.”); Description at 3:31-49 (“The

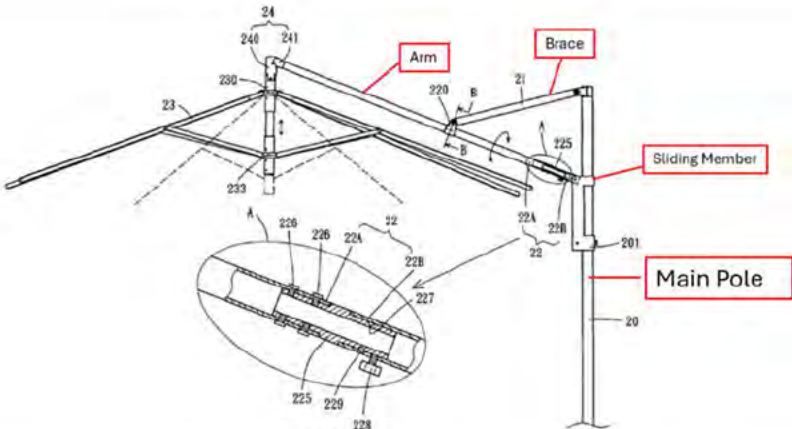
No.	Claim Limitation	Basis for Invalidity
		operation of the present invention is described hereinafter. To get the sunshade opened, the runner 21 is pushed upwardly along the main shaft 2, the oblique face of the front tip of the supporting pin 28 is in abutment against the oblique face 253 of the Z-shaped teeth 252 in the upward journey, resulting in the backward withdrawal of the supporting pin 28. During the process, the spring 26 is continuously compressed with the backward movement of the runner 21, the compressed spring will pop out when the runner 21 is located at a new position and retain the runner 21 in place so as to keep the sunshade opened. To close the sunshade, the arc arm 29 is pivotally triggered and held in place, resulting in the backward pulling of the supporting pin 28 so as to make the same separate from the locking tooth of the rack-like member 25, permitting the runner 21 to travel downwardly freely to collapse the sunshade.”) and 3:50-4:08 (“It can be clearly seen the present invention enables a person to open the sunshade simply by pushing the runner upwardly which is equipped with a spring biased supported pin along a rack-like member; the supporting pin will move against a Z-shaped tooth each time and will pop out and be retained in place when it passes over each tooth due to the help of a bias spring until the runner is located at a desired position so as to facilitate a person to open a heavy sunshade with no effort at all. To close or collapse the sunshade, a person only has to trigger and hold a pivotal arc arm which is pivotally connected to the end of the supporting pin, causing the spring biased supporting pin to withdraw from the engagement with the tooth of the rack-like member so as to permit the runner to slide down all the way, resulting in the collapse of the sunshade.”); Figs. 2 and 3. <i>See also e.g.</i> Liu ’171 at Claim 1.

No.	Claim Limitation	Basis for Invalidity
		 A person of ordinary skill in the art would have understood that a simple substitution of the structure in Lo '114 with the structure in Liu '171 would yield predictable results to improve collapsable umbrella products. Indeed, Lo '114 and Liu '453 both relate to collapsable umbrella products and are thus in the same industry. A motivation to combine is also found in Liu '171. Liu '171 explains how the teeth disposed on the main shaft of the sunshade (i.e. umbrella) provide several advantages, including: (1) allowing operation by operators who are too weak to open a heavy sunshade with one hand; (2) reducing the danger that a user will injure their fingers in the crevice formed by the main shaft and runner; (3) making operation of the umbrella more convenient; and (4) reducing the effort required to operate the sunshade. Liu '171 at 1:57-2:11, 2:38-42, 3:50-4:8.
1[d]	an umbrella canopy having a central region;	Lo '114 discloses an umbrella canopy (canopy) having a central region. <i>See e.g.</i> Lo '114 Title ("Angle Adjusting Device for the Canopy of a Hang Umbrella"); Abstract ("An angle adjusting device for the canopy of a hang umbrella.... By so designing, the outer portion of the cantilever, which is connected with the canopy, can be rotated and

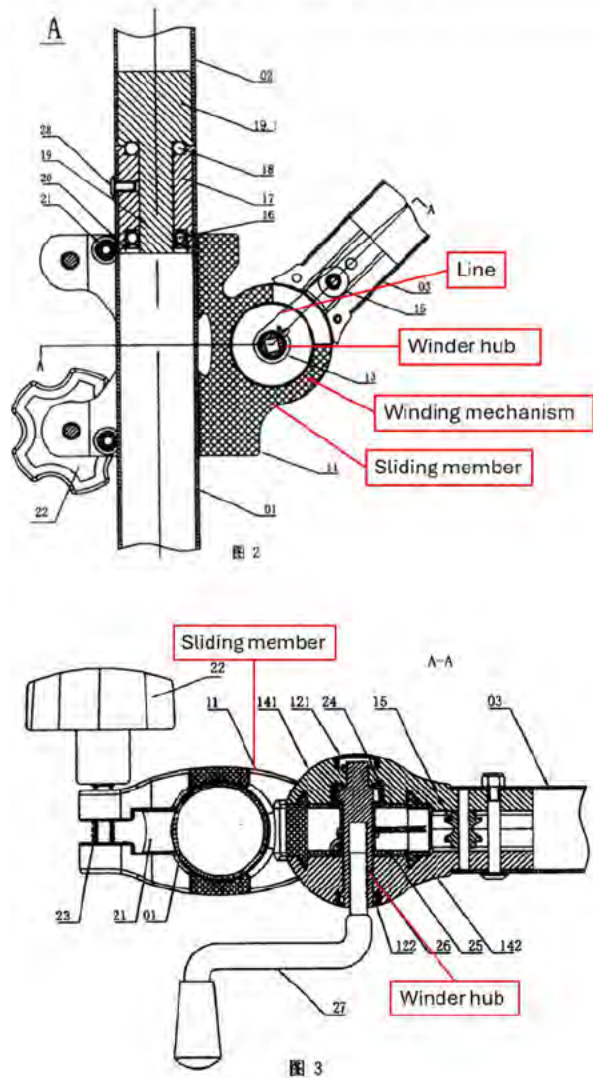
No.	Claim Limitation	Basis for Invalidity
		adjusted in different angles. Thus, the canopy of the hang umbrella can be adjusted and turned forward and backward as well as leftward and rightward.”); 1:8-10 (“This invention relates to an angle adjusting device for the canopy of a hang umbrella, particularly to one enabling the canopy of a hang umbrella to be turned forward and back ward as well as leftward and rightward.”); 1:32:35 (“The objective of the invention is to offer an angle adjusting device for the canopy of a hang umbrella, able to adjust the canopy of a hang umbrella to turn forward and backward as well as leftward and rightward”); 1:51-2:6 (all referencing the umbrella canopy); 2:11-12 (“A preferred embodiment of an angle adjusting device for the canopy of a hang umbrella in the present invention.”); 2:58-62 (“The canopy 23, as shown in FIG. 5, fixed at the outer end of the cantilever 22 is provided in the center with an upper rib holder 230 having its upper end connected with a vertical combining tube 231 having the opposite side walls of its upper portion respectively cut with a vertical slide slot 232.”); Claim 1 (“An angle adjusting device for the canopy of a hang umbrella comprising...canopy fixed at said extending end of said cantilever, said canopy facing downward...”); Claims 2-4 (all reciting an angle adjusting device for the canopy of a hang umbrella); Figs. 2, 3, 5, 8, 9 (see annotated below).  FIG. 3

No.	Claim Limitation	Basis for Invalidity
1[e]	an arm associated with the central region and extending radially therefrom to an outer end operatively associated with the sliding member;	Lo '114 discloses an arm (cantilever 22) associated with the central region and extending radially therefrom to an outer end operatively associated with the sliding member (slide ring 201). <i>See e.g.</i> Lo '114 at 2:11-14 (“A preferred embodiment of an angle adjusting device for the canopy of a hang umbrella in the present invention, as shown in FIGS. 1 and 2, includes a shank 20, a pull rod 21, a cantilever 22”), 2:23-27 (“The cantilever 22, as shown in FIGS. 3 and 4, has one end pivotally connected with the upper end of the slide ring 201 and its intermediate portion fixed thereon with a hollow sleeve 220 having its inner wall bored with an annular recess 221, as shown in FIGS. 6 and 7.”), 3:7-13 (“The pull rope 25 is fastened with the slide base 201 and passes through the interiors of the cantilever 22 and the connecting tube 241 and the rope pulley 243 as well as the main cover 240 and the combining tube 231 and the upper umbrella rib holder 230 of the canopy 23 and finally connected with a lower rib holder 233.”); Claim 1 (“A cantilever having one end pivotally connected with the side wall of said slide ring, said cantilever having the other end extending outward, said cantilever having its intermediate portion pivotally connected with the extending end of said pull rod, said pull rod able to pull upward the extending end of said cantilever to prevent it from falling down; A canopy fixed at said extending end of said cantilever, said canopy facing downward...”); Figs. 1, 2, 3, 5, 8, 9 (see annotated below).

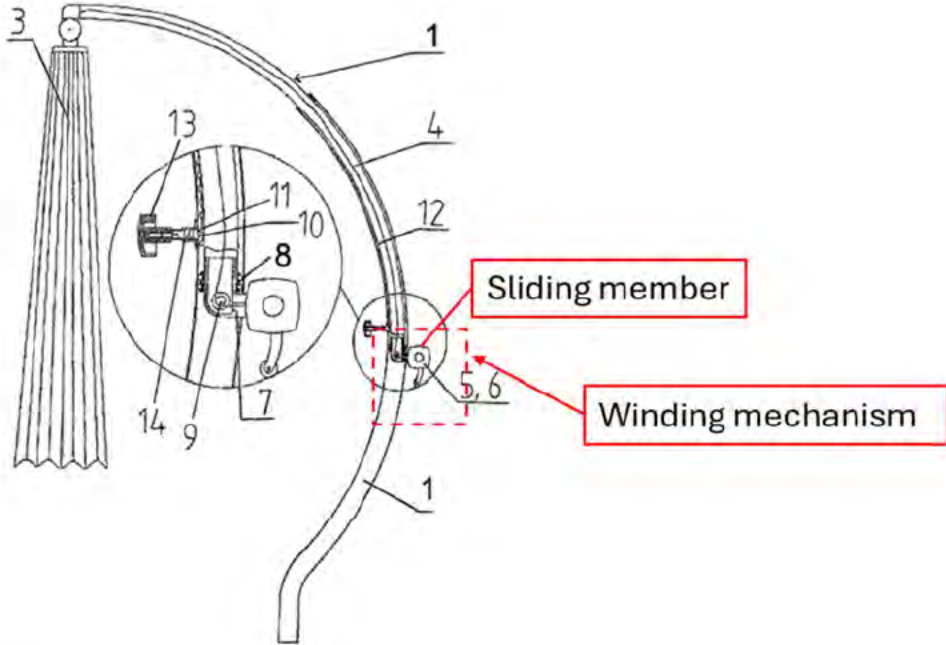
No.	Claim Limitation	Basis for Invalidity
		 FIG. 3
1[f]	a brace having a first end pivotably attached to an upper portion of the pole above the sliding member and a second end pivotably attached to the arm;	Lo '114 discloses a brace (pull rod 21) having a first end pivotably attached to an upper portion of the pole (shank 20) above the sliding member (slide ring 201) and a second end pivotably attached to the arm (cantilever 22). <i>See e.g.</i> Lo '114 Description at 2:11-14 (“A preferred embodiment of an angle adjusting device for the canopy of a hang umbrella in the present invention, as shown in FIGS. 1 and 2, includes a shank 20, a pull rod 21”), 2:20-22 (“The pull rod 21 has one end pivotally connected with the upper end of the shank 20 and the other end extending outward.”), 2:27-30 (“The hollow sleeve 220 has its upper surface extending upward to form two connecting wings 222 for the extending end of the pull rod 21 to be pivotally connected therebetween.”); Claim 1 (“A pull rod having one end pivotally connected with the upper end of said shank; A cantilever having one end pivotally connected with the side wall of said slide ring, said cantilever having the other end extending outward, said cantilever having its intermediate portion pivotally connected with the extending end of said pull rod, said pull rod able to pull upward the extending end of said cantilever to prevent it from falling down ...”); Figs. 1, 2, 3, 8, 9 (see annotated below).

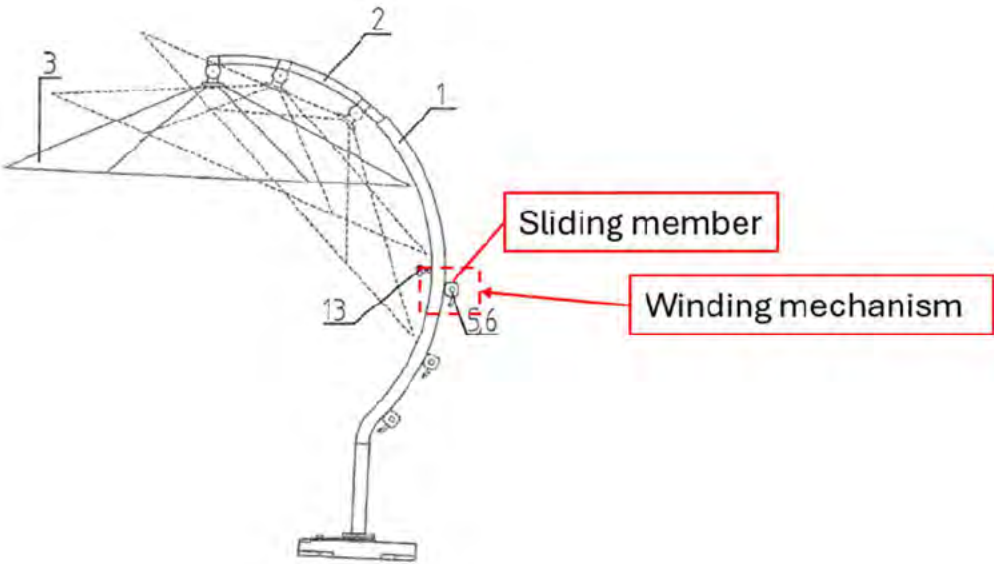
No.	Claim Limitation	Basis for Invalidity
		 FIG. 3
1[g]	a winding mechanism having a winder hub around which a line can be wound, the winder hub being mounted to the sliding member and movable therewith;	To the extent Lo '114 does not disclose this limitation, Wang '460 discloses a winding mechanism having a winder hub (rope reel 26) around which a line (pull rope 13) can be wound, the winder hub (rope reel 26) being mounted to the sliding member (sliding sleeve 11) and movable therewith. <i>See e.g.,</i> Wang '460 at Abstract (“the sliding sleeve includes a rope winder and is shaft-connected to a bottom end of the suspension rod, a top end of the suspension rod and an upper parasol disc of the parasol frame have a pitch rotating connection structure, one end of a pull rope is fixed to a reel of the rope winder installed in the sliding sleeve, and the other end thereof passes through the suspension rod and a top tube installed in the upper parasol disc to be fixed to a lower parasol disc. The structure of the present utility model makes the parasol cover easy to open and close, the parasol cover can rotate 360° around the parasol pole, and the pitch angle thereof can also be adjusted. The parasol cover is table; the operation is simple, labor-saving and convenient.”); Description at page 2 (“the sliding sleeve comprises a rope winder and is shaft connected to a bottom end of the suspension rod, a top end of the suspension rod and an upper parasol disc of the parasol frame have a pitch rotating connection structure, one end of a pull rope is fixed to a reel of the rope winder installed in the sliding

No.	Claim Limitation	Basis for Invalidity
		sleeve, and the other end thereof passes through the suspension rod and a top tube installed in the upper parasol disc to be fixed to a lower parasol disc” and “When opening the parasol, the sliding sleeve of the parasol pole is pushed up, the rope winder is then operated to wind the parasol rope so as to lift the lower parasol disc”) and page 4 (“The parasol pole 01 is equipped with a hoop-type sliding sleeve 11 locked by a bolt. One end of the bolt is equipped with a rotating handle 22, and a spring 23 is sleeved on the bolt portion between the hoop chucks. A roller 21 is respectively installed at the upper end and lower end of the sliding sleeve 11 to slide smoothly with the parasol pole. The sliding sleeve 11 is connected to the spherical left and right casings 141 and 142 of the rope winder. The rope reel 26 of a winder handle 27 is tied with a pull rope 13, and the other end of the pull rope passes through the suspension rod 03 through a pulley 15 and the top tube 57 installed in the upper parasol disc 70, so as to be fixed to the lower parasol disc 73. The element 20 in the figures is a positioning spring clip of the lower bearing 16, the element 25 is fixed at the top end of the rope reel 26 located in the left casing 141.”); Claim 1 (“the sliding sleeve comprises a rope winder and is shaft-connected to a bottom end of the suspension rod (03), a top end of the suspension rod (03) and an upper parasol disc (70) of the parasol frame have a pitch rotating connection structure, one end of a pull rope (13) is fixed to a reel (26) of the rope winder installed in the sliding sleeve (11), and the other end thereof passes through the suspension rod (03) and a top tube (57) installed in the upper parasol disc to be fixed to a lower parasol disc.”); Figs. 1-3 (see annotated below).

No.	Claim Limitation	Basis for Invalidity
		 Figure 2 (top) is a cross-sectional view of a sliding member (11) with a winder hub (13) and a winding mechanism (12). A line (02) is shown passing through the hub. Figure 3 (bottom) is a cross-sectional view of a sliding member (11) with a winder hub (122) and a winding mechanism (121). A line (03) is shown passing through the hub. Both figures show various internal components and their interactions. A person of ordinary skill in the art would have understood that a simple substitution of the structure in Lo '114 with the structure in Wang '460 would yield predictable results to

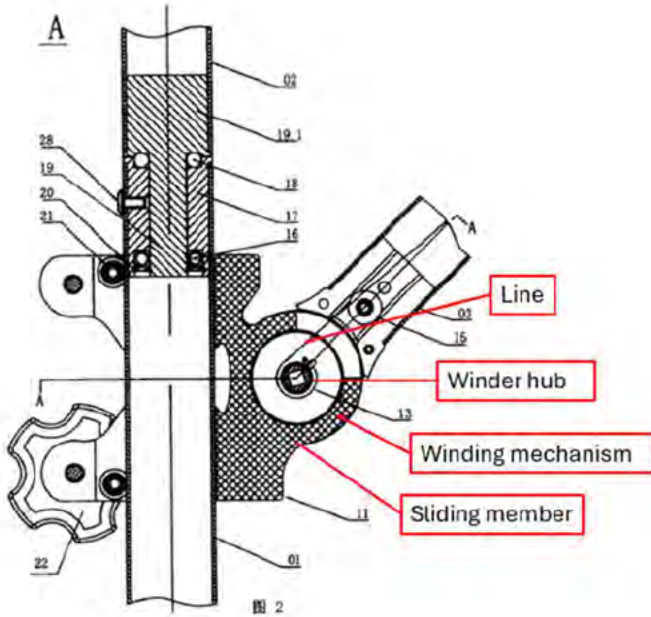
No.	Claim Limitation	Basis for Invalidity
		improve collapsable umbrella products. Indeed, Lo '114 and Wang '460 both relate to collapsable umbrella products and are thus in the same industry. A motivation to combine is also found in Wang '460. Wang '460 describes how an umbrella design including a sliding sleeve mounted on the supporting pole, including a rope winding device, makes the umbrella easy to open and close, enables the umbrella to be rotated 360 degrees around the supporting pole, and enables the umbrella to tilt. Wang '460 at Abstract. To the extent Lo '114 does not disclose this limitation, Huali '640 discloses a winding mechanism (control device 5) having a winder hub (crank shaft 6) around which a line (sheathed cable/Bowden control 4) can be wound, the winder hub (crank shaft 6) being mounted to the sliding member (control device 5 and the connecting piece 7) and movable therewith. <i>See e.g.</i>, Huali '640 at Abstract (“The telescopic umbrella also includes a canopy articulated on the telescopic pipe, it being possible for the canopy to be opened and closed by means of a sheathed cable or Bowden control running within the telescopic pipe and controlled by a control device. The control device is attached to the telescopic pipe so that the opening/closing movement of the umbrella canopy is uncoupled from the telescopic mechanism of the umbrella.”); Field of the Invention at [0002] (“The invention relates to a telescopic umbrella, in particular a sunshade with a lower upright stand pipe and a moveable and lockable telescopic pipe arranged in it with an umbrella canopy attached to the telescopic pipe, where the umbrella canopy can be opened and closed by means of a sheathed cable or Bowden control arranged within the pipe and with a control device for the sheathed cable or Bowden control.”); Description at [0038]-[0039] (“The umbrella canopy 3 can be opened and closed by means of a sheathed cable/Bowden control 4. For this purpose, the sheathed cable/Bowden control 4 is connected to a control device and can be operated with it. In the embodiment shown, control device 5 is designed as a crank shaft 6. Based on the invention, the control device 5 is allocated to the telescopic pipe 2. In this embodiment, the control device 5 is attached to the lower end of the telescopic pipe 2, where an L-shaped connecting piece 7 is arranged between the control device 5 and the telescopic pipe 2. This connecting piece 7 establishes a connection between the open lower end of the telescopic pipe 2 and the control device 5 located outside the pipe.”) and [0046] (“In this illustration, it can be seen

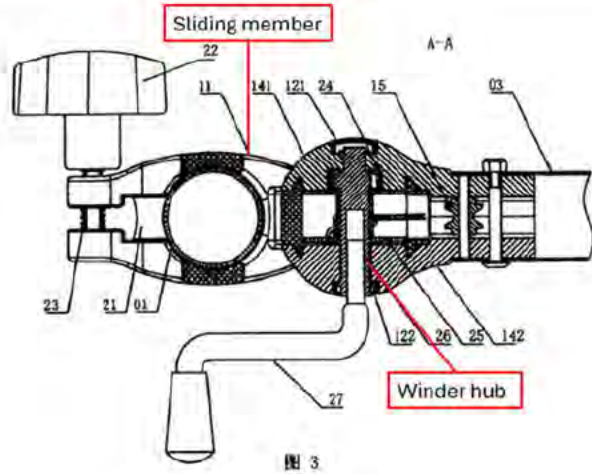
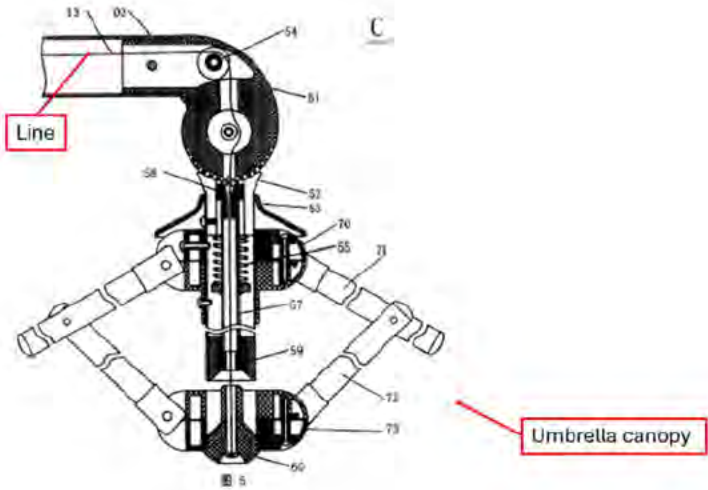
No.	Claim Limitation	Basis for Invalidity
		particularly well how the control device 5 and the connecting piece 7 are moveable and displaceable in a suitably designed recess 15 provided in the upright stand pipe 1. In the illustrated embodiment, this recess 15 has the shape of a long, axial slit. The slit must be at least as wide as the connecting piece 7 in order to enable the control unit 5 including the connecting piece 7 to move up and down in an axial direction in the slit.”); Claim 1 (“a control device for the sheathed cable or Bowden control”); Claim 8 (“wherein the control unit comprises one of a crank shaft or an electrically driven reeling/unreeling device or similar mechanism”); Figs. 1 and 3 (see annotated below).  Fig. 1

No.	Claim Limitation	Basis for Invalidity
		 Fig. 3 A person of ordinary skill in the art would have understood that a simple substitution of the structure in Lo '114 with the structure in Huali '640 would yield predictable results to improve collapsable umbrella products. Indeed, Lo '114 and Huali '640 both relate to collapsable umbrella products and are thus in the same industry. A motivation to combine is also found in Huali '640. Huali '640 describes the benefits of “uncoupling” the opening/closing movement of the umbrella canopy from the telescopic mechanism of the umbrella by attaching the sheathed cable/Bowden control to the canopy. Huali '640 at [0011].
1[h]	a line having a first end that winds around the winder hub, an	Lo '114 discloses a line (pull rope 25) that travels along the arm (cantilever 22) to the umbrella canopy that engages the umbrella canopy.

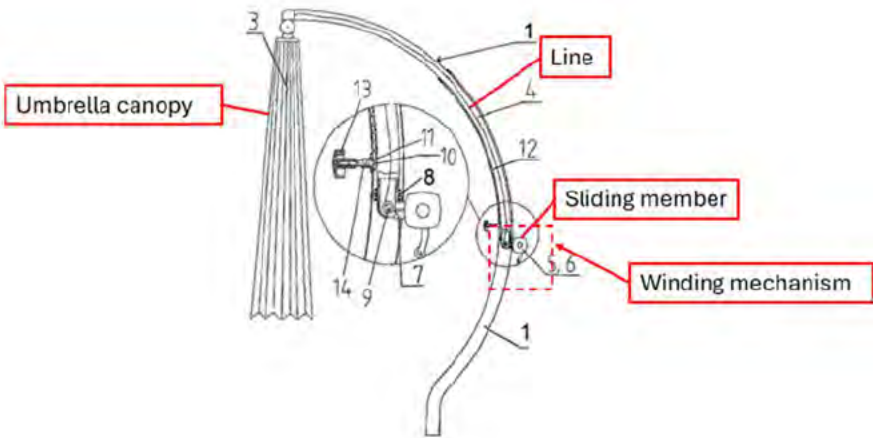
No.	Claim Limitation	Basis for Invalidity
	intermediate portion extending from the winder hub along the arm to the umbrella canopy, and a second end that engages the umbrella canopy;	<i>See e.g. Lo '114 Fig. 5 (see annotated below).</i> FIG. 5 To the extent Lo '114 does not disclose this limitation, a person of ordinary skill in the art would readily recognize the crank connected to the winding mechanism as being a necessary component for opening and closing the umbrella canopy. The disclosed winding mechanism necessarily also includes a line/cable that extends from the winding mechanism and engages the umbrella canopy. Such a mechanism is indeed required for the shown design, which includes an umbrella canopy that opens and closes. Such mechanisms are well known in the art. To the extent Lo '114 does not disclose this limitation, Wang '460 discloses a line (pull rope 13) having a first end that winds around the winder hub (rope reel 26), an intermediate portion extending from the winder hub (rope reel 26) along the arm (tubular suspension rod 3) to the

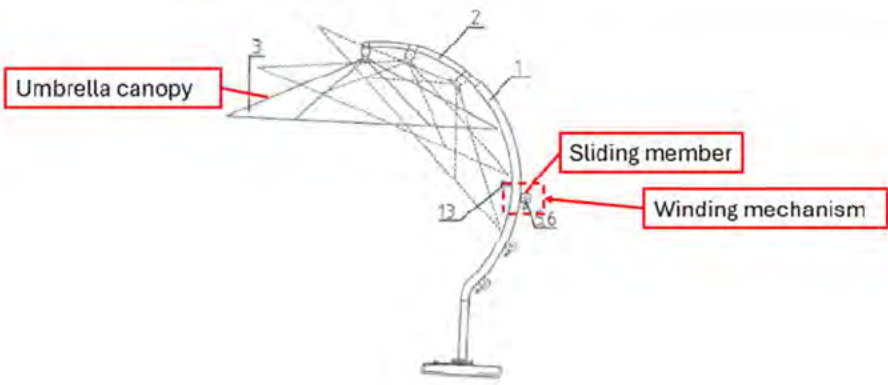
No.	Claim Limitation	Basis for Invalidity
		umbrella canopy (parasol cover 112), and a second end that engages the umbrella canopy (parasol cover 112). <i>See e.g.</i>, Wang '460 at Abstract (“a parasol pole set has a sliding sleeve of a locking device that matches the parasol pole, the sliding sleeve includes a rope winder and is shaft-connected to a bottom end of the suspension rod, a top end of the suspension rod and an upper parasol disc of the parasol frame have a pitch rotating connection structure, one end of a pull rope is fixed to a reel of the rope winder installed in the sliding sleeve, and the other end thereof passes through the suspension rod and a top tube installed in the upper parasol disc to be fixed to a lower parasol disc. The structure of the present utility model makes the parasol cover easy to open and close, the parasol cover can rotate 360° around the parasol pole, and the pitch angle thereof can also be adjusted. The parasol cover is stable; the operation is simple, labor-saving and convenient.”); Description at page 2 (“the sliding sleeve comprises a rope winder and is shaft connected to a bottom end of the suspension rod, a top end of the suspension rod and an upper parasol disc of the parasol frame have a pitch rotating connection structure, one end of a pull rope is fixed to a reel of the rope winder installed in the sliding sleeve, and the other end thereof passes through the suspension rod and a top tube installed in the upper parasol disc to be fixed to a lower parasol disc” and “When opening the parasol, the sliding sleeve of the parasol pole is pushed up, the rope winder is then operated to wind the parasol rope so as to lift the lower parasol disc” and page 4 (“The parasol pole 01 is equipped with a hoop-type sliding sleeve 11 locked by a bolt. One end of the bolt is equipped with a rotating handle 22, and a spring 23 is sleeved on the bolt portion between the hoop chucks. A roller 21 is respectively installed at the upper end and lower end of the sliding sleeve 11 to slide smoothly with the parasol pole. The sliding sleeve 11 is connected to the spherical left and right casings 141 and 142 of the rope winder. The rope reel 26 of a winder handle 27 is tied with a pull rope 13, and the other end of the pull rope passes through the suspension rod 03 through a pulley 15 and the top tube 57 installed in the upper parasol disc 70, so as to be fixed to the lower parasol disc 73. The element 20 in the figures is a positioning spring clip of the lower bearing 16, the element 25 is fixed at the top end of the rope reel 26 located in the left casing 141.”); Claim 1 (“the sliding sleeve comprises a rope winder and is shaft-connected to a bottom end of the suspension rod (03), a top end of the suspension rod (03) and an upper parasol disc (70) of the parasol frame have a pitch rotating connection

No.	Claim Limitation	Basis for Invalidity
		structure, one end of a pull rope (13) is fixed to a reel (26) of the rope winder installed in the sliding sleeve (11), and the other end thereof passes through the suspension rod (03) and a top tube (57) installed in the upper parasol disc to be fixed to a lower parasol disc.”); Figs. 1-5 (see annotated below).  图 2

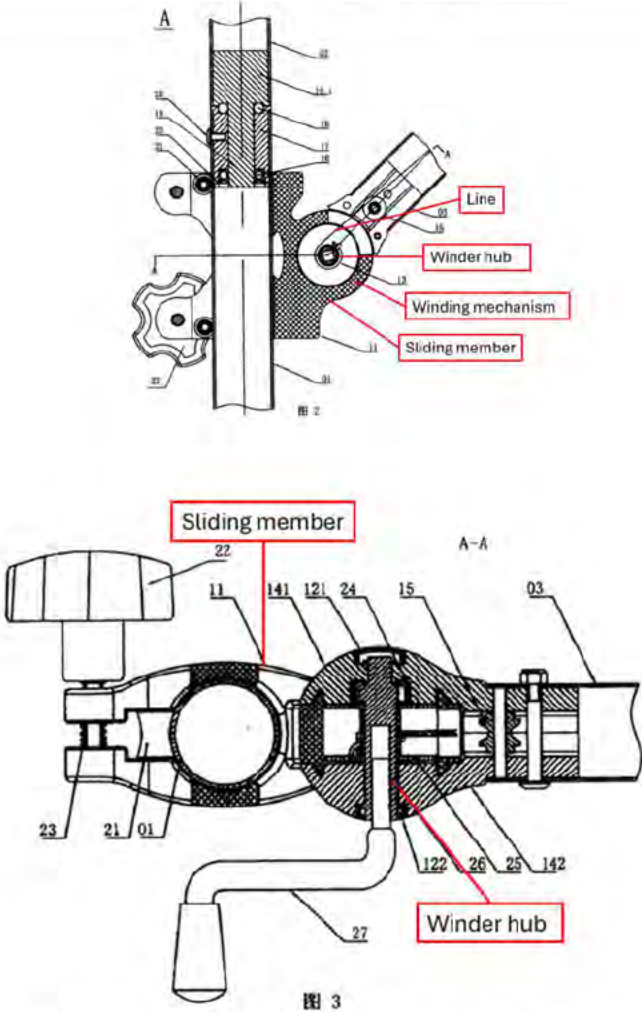
No.	Claim Limitation	Basis for Invalidity
		 Figure 3 is a technical drawing of a mechanical assembly, likely a part of a retractable awning. It shows a cross-section of a housing with a sliding member (22) and a winder hub (26). The drawing includes various numbered parts (11, 141, 121, 24, 15, 03, 23, 21, 01, 27, 122, 25, 142) and a cross-section line A-A.  Figure 5 is a technical drawing of a mechanical assembly, likely a retractable awning. It shows a perspective view of the assembly, including a line (13) and an umbrella canopy (73). The drawing includes various numbered parts (00, 54, 61, 58, 57, 63, 70, 55, 71, 67, 59, 72, 73, 60).

No.	Claim Limitation	Basis for Invalidity
		A person of ordinary skill in the art would have understood that a simple substitution of the structure in Lo '114 with the structure in Wang '460 would yield predictable results to improve collapsable umbrella products. Indeed, Lo '114 and Wang '460 both relate to collapsable umbrella products and are thus in the same industry. A motivation to combine is also found in Wang '460. Wang '460 describes how an umbrella design including a sliding sleeve mounted on the supporting pole, including a rope winding device, makes the umbrella easy to open and close, enables the umbrella to be rotated 360 degrees around the supporting pole, and enables the umbrella to tilt. Wang '460 at Abstract. To the extent Lo '114 does not disclose this limitation, Huali '640 discloses a line (a sheathed cable/Bowden control 4) having a first end that winds around the winder hub (crank shaft 6), an intermediate portion extending from the winder hub (crank shaft 6) along the arm to the umbrella canopy (umbrella canopy 3), and a second end that engages the umbrella canopy (umbrella canopy 3). <i>See e.g.</i>, Huali '640 at Abstract (“The telescopic umbrella also includes a canopy articulated on the telescopic pipe, it being possible for the canopy to be opened and closed by means of a sheathed cable or Bowden control running within the telescopic pipe and controlled by a control device.”); Field of the Invention (“where the umbrella canopy can be opened and closed by means of a sheathed cable or Bowden control arranged within the pipe and with a control device for the sheathed cable or Bowden control.”); Description at [0038]-[0039] (“The umbrella canopy 3 can be opened and closed by means of a sheathed cable/Bowden control 4. For this purpose, the sheathed cable/Bowden control 4 is connected to a control device and can be operated with it. In the embodiment shown, the control device 5 is designed as a crank shaft 6. Based on the invention, the control device 5 is allocated to the telescopic pipe 2. In this embodiment, the control device 5 is attached to the lower end of the telescopic pipe 2, where an L-shaped connecting piece 7 is arranged between the control device 5 and the telescopic pipe 2. This connecting piece 7 establishes a connection between the open lower end of the telescopic pipe 2 and the control device 5 located outside the pipe.” And [0046] (“In this illustration, it can be seen particularly well how the control device 5 and the connecting piece 7 are moveable and displaceable in a suitably designed recess 15 provided in the upright stand pipe 1. In the illustrated embodiment, this recess 15 has the shape of a

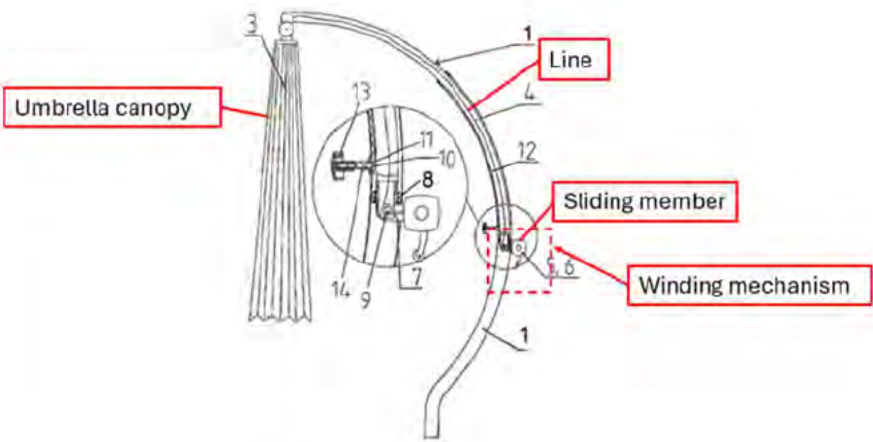
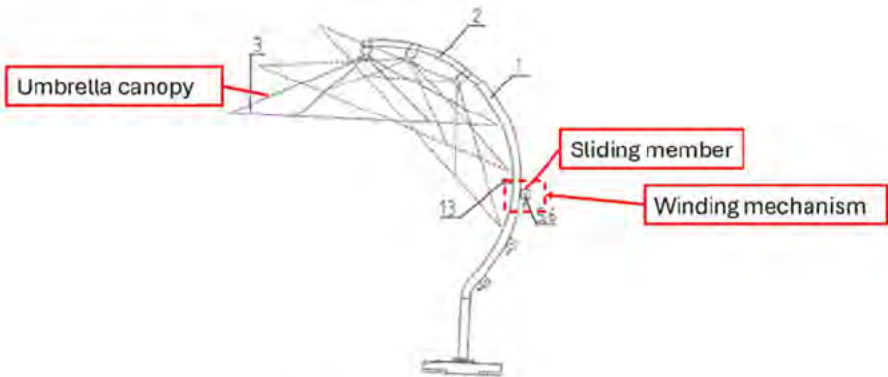
No.	Claim Limitation	Basis for Invalidity
		long, axial slit. The slit must be at least as wide as the connecting piece 7 in order to enable the control unit 5 including the connecting piece 7 to move up and down in an axial direction in the slit.”); Claim 1 (“an umbrella canopy joined to the telescopic pipe, the umbrella canopy being configured to be opened or closed by means of a sheathed cable or Bowden control located inside the pipes”); Figs. 1 and 3 (see annotated below).  Fig. 1

No.	Claim Limitation	Basis for Invalidity
		 Fig. 3 A person of ordinary skill in the art would have understood that a simple substitution of the known structure in Lo '114 with the structure in Huali '640 would yield predictable results to improve collapsable umbrella products. Indeed, Lo '114 and Huali '640 both relate to collapsable umbrella products and are thus in the same industry. A motivation to combine is also found in Huali '640. Huali '640 describes the benefits of “uncoupling” the opening/closing movement of the umbrella canopy from the telescopic mechanism of the umbrella by attaching the sheathed cable/Bowden control to the canopy. Huali '640 at [0011].
1[i]	wherein rotation of the winder hub tensions or relaxes the line depending upon the direction of rotation of the winder hub, and	To the extent Lo '114 does not disclose this limitation, Wang '460 discloses wherein rotation of the winder hub (rope reel 26) tensions or relaxes the line (pull rope 13) depending upon the direction of rotation of the winder hub (rope reel 26). <i>See e.g.</i>, Wang '460 at Abstract (“a parasol pole set has a sliding sleeve of a locking device that matches the parasol pole, the sliding sleeve includes a rope winder and is shaft-connected to a bottom end of the suspension rod, a top end of the suspension rod and an upper parasol disc of the parasol frame have a pitch rotating connection structure, one end of a pull rope is fixed to a reel of the rope winder installed in the sliding sleeve, and the other end thereof passes through the suspension rod and a top tube installed in the upper parasol disc to be fixed

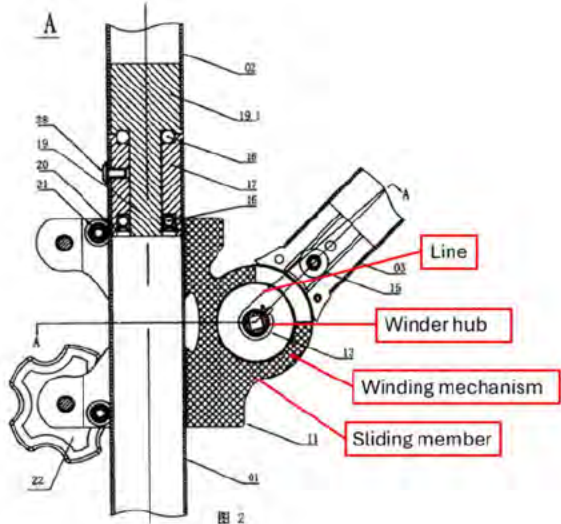
No.	Claim Limitation	Basis for Invalidity
		to a lower parasol disc. The structure of the present utility model makes the parasol cover easy to open and close, the parasol cover can rotate 360° around the parasol pole, and the pitch angle thereof can also be adjusted. The parasol cover is stable; the operation is simple, labor-saving and convenient.”); Description at page 2 (“the sliding sleeve comprises a rope winder and is shaft connected to a bottom end of the suspension rod, a top end of the suspension rod and an upper parasol disc of the parasol frame have a pitch rotating connection structure, one end of a pull rope is fixed to a reel of the rope winder installed in the sliding sleeve, and the other end thereof passes through the suspension rod and a top tube installed in the upper parasol disc to be fixed to a lower parasol disc” and “When opening the parasol, the sliding sleeve of the parasol pole is pushed up, the rope winder is then operated to wind the parasol rope so as to lift the lower parasol disc” and page 4 (“The parasol pole 01 is equipped with a hoop-type sliding sleeve 11 locked by a bolt. One end of the bolt is equipped with a rotating handle 22, and a spring 23 is sleeved on the bolt portion between the hoop chucks. A roller 21 is respectively installed at the upper end and lower end of the sliding sleeve 11 to slide smoothly with the parasol pole. The sliding sleeve 11 is connected to the spherical left and right casings 141 and 142 of the rope winder. The rope reel 26 of a winder handle 27 is tied with a pull rope 13, and the other end of the pull rope passes through the suspension rod 03 through a pulley 15 and the top tube 57 installed in the upper parasol disc 70, so as to be fixed to the lower parasol disc 73. The element 20 in the figures is a positioning spring clip of the lower bearing 16, the element 25 is fixed at the top end of the rope reel 26 located in the left casing 141.”); Claim 1 (“the sliding sleeve comprises a rope winder and is shaft-connected to a bottom end of the suspension rod (03), a top end of the suspension rod (03) and an upper parasol disc (70) of the parasol frame have a pitch rotating connection structure, one end of a pull rope (13) is fixed to a reel (26) of the rope winder installed in the sliding sleeve (11), and the other end thereof passes through the suspension rod (03) and a top tube (57) installed in the upper parasol disc to be fixed to a lower parasol disc.”); Figs. 1-5 (see annotated below).

No.	Claim Limitation	Basis for Invalidity
		 Figure 2 is a cross-sectional view of a mechanical assembly. It shows a sliding member (11) with a winder hub (12) and a winding mechanism (13). A line (14) is also indicated. Figure 3 is a cross-sectional view of a mechanical assembly. It shows a sliding member (11) with a winder hub (12) and a winding mechanism (13). A line (14) is also indicated. A person of ordinary skill in the art would have understood that a simple substitution of the structure in Lo '114 with the structure in Wang '460 would yield predictable results to improve collapsable umbrella products. Indeed, Lo '114 and Wang '460 both relate to collapsable umbrella products and are in the same industry. A motivation to combine is also

No.	Claim Limitation	Basis for Invalidity
		found in Wang '460. Wang '460 describes how an umbrella design including a sliding sleeve mounted on the supporting pole, including a rope winding device, makes the umbrella easy to open and close, enables the umbrella to be rotated 360 degrees around the supporting pole, and enables the umbrella to tilt. Wang '460 Abstract. To the extent Lo '114 does not disclose this limitation, Huali '640 discloses wherein rotation of the winder hub (crank shaft 6) tensions or relaxes the line (a sheathed cable/Bowden control 4) depending upon the direction of rotation of the winder hub (crank shaft 6). <i>See e.g.</i>, Huali '640 at Abstract (“The telescopic umbrella also includes a canopy articulated on the telescopic pipe, it being possible for the canopy to be opened and closed by means of a sheathed cable or Bowden control running within the telescopic pipe and controlled by a control device.”); Field of the Invention (“where the umbrella canopy can be opened and closed by means of a sheathed cable or Bowden control arranged within the pipe and with a control device for the sheathed cable or Bowden control.”); Description at [0038]-[0039] (“The umbrella canopy 3 can be opened and closed by means of a sheathed cable/Bowden control 4. For this purpose, the sheathed cable/Bowden control 4 is connected to a control device and can be operated with it. In the embodiment shown, the control device 5 is designed as a crank shaft 6. Based on the invention, the control device 5 is allocated to the telescopic pipe 2. In this embodiment, the control device 5 is attached to the lower end of the telescopic pipe 2, where an L-shaped connecting piece 7 is arranged between the control device 5 and the telescopic pipe 2. This connecting piece 7 establishes a connection between the open lower end of the telescopic pipe 2 and the control device 5 located outside the pipe.” And [0046] (“In this illustration, it can be seen particularly well how the control device 5 and the connecting piece 7 are moveable and displaceable in a suitably designed recess 15 provided in the upright stand pipe 1. In the illustrated embodiment, this recess 15 has the shape of a long, axial slit. The slit must be at least as wide as the connecting piece 7 in order to enable the control unit 5 including the connecting piece 7 to move up and down in an axial direction in the slit.”); Claim 1 (“an umbrella canopy joined to the telescopic pipe, the umbrella canopy being configured to be opened or closed by means of a sheathed cable or Bowden control located inside the pipes”); Figs. 1 and 3 (see annotated below).

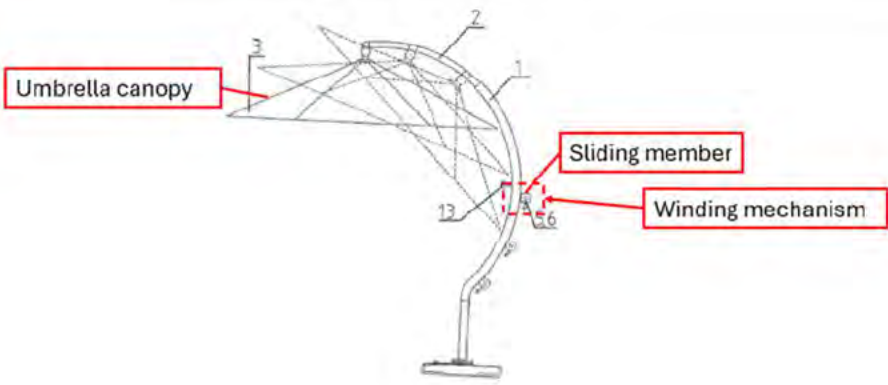
No.	Claim Limitation	Basis for Invalidity
		 Fig. 1  Fig. 3

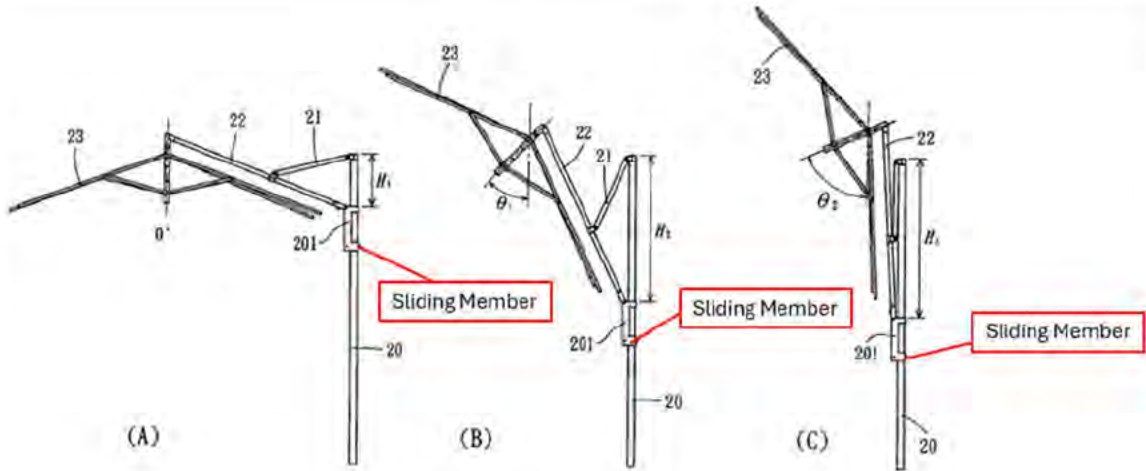
No.	Claim Limitation	Basis for Invalidity
		A person of ordinary skill in the art would have understood that a simple substitution of the structure in Lo '114 with the structure in in Huali '640 would yield predictable results to improve collapsable umbrella products. Indeed, Lo '114 and Huali '640 both relate to collapsable umbrella products and are thus in the same industry. Huali '640 describes the benefits of “uncoupling” the opening/closing movement of the umbrella canopy from the telescopic mechanism of the umbrella by attaching the sheathed cable/Bowden control to the canopy. Huali '640 at [0011].
1[j]	wherein operation of the winding mechanism to apply tension to the line opens and closes the umbrella canopy in response to movement of the line; and	To the extent Lo '114 does not disclose this limitation, Wang '460 discloses operation of the winding mechanism (e.g., rope reel 26/ winder handle 27) to apply tension to the line (pull rope 13) opens and closes the umbrella canopy (parasol cover 112) in response to movement of the line (pull rope 13). <i>See e.g.</i>, Wang '460 at Abstract (“a parasol pole set has a sliding sleeve of a locking device that matches the parasol pole, the sliding sleeve includes a rope winder and is shaft-connected to a bottom end of the suspension rod, a top end of the suspension rod and an upper parasol disc of the parasol frame have a pitch rotating connection structure, one end of a pull rope is fixed to a reel of the rope winder installed in the sliding sleeve, and the other end thereof passes through the suspension rod and a top tube installed in the upper parasol disc to be fixed to a lower parasol disc. The structure of the present utility model makes the parasol cover easy to open and close, the parasol cover can rotate 360° around the parasol pole, and the pitch angle thereof can also be adjusted. The parasol cover is stable; the operation is simple, labor-saving and convenient.”); Description at page 4 (“The parasol pole 01 is equipped with a hoop-type sliding sleeve 11 locked by a bolt. One end of the bolt is equipped with a rotating handle 22, and a spring 23 is sleeved on the bolt portion between the hoop chucks. A roller 21 is respectively installed at the upper end and lower end of the sliding sleeve 11 to slide smoothly with the parasol pole. The sliding sleeve 11 is connected to the spherical left and right casings 141 and 142 of the rope winder. The rope reel 26 of a winder handle 27 is tied with a pull rope 13, and the other end of the pull rope passes through the suspension rod 03 through a pulley 15 and the top tube 57 installed in the upper parasol disc 70, so as to be fixed to the lower parasol disc 73. The element 20 in the figures is a positioning spring clip of the lower bearing 16, the element 25 is fixed at the top end of the rope reel 26 located in the left

No.	Claim Limitation	Basis for Invalidity
		casing 141.”); Claim 1 (“the sliding sleeve comprises a rope winder and is shaft-connected to a bottom end of the suspension rod (03), a top end of the suspension rod (03) and an upper parasol disc (70) of the parasol frame have a pitch rotating connection structure, one end of a pull rope (13) is fixed to a reel (26) of the rope winder installed in the sliding sleeve (11), and the other end thereof passes through the suspension rod (03) and a top tube (57) installed in the upper parasol disc to be fixed to a lower parasol disc.”); Figs. 1-5 (see annotated below).  图 2

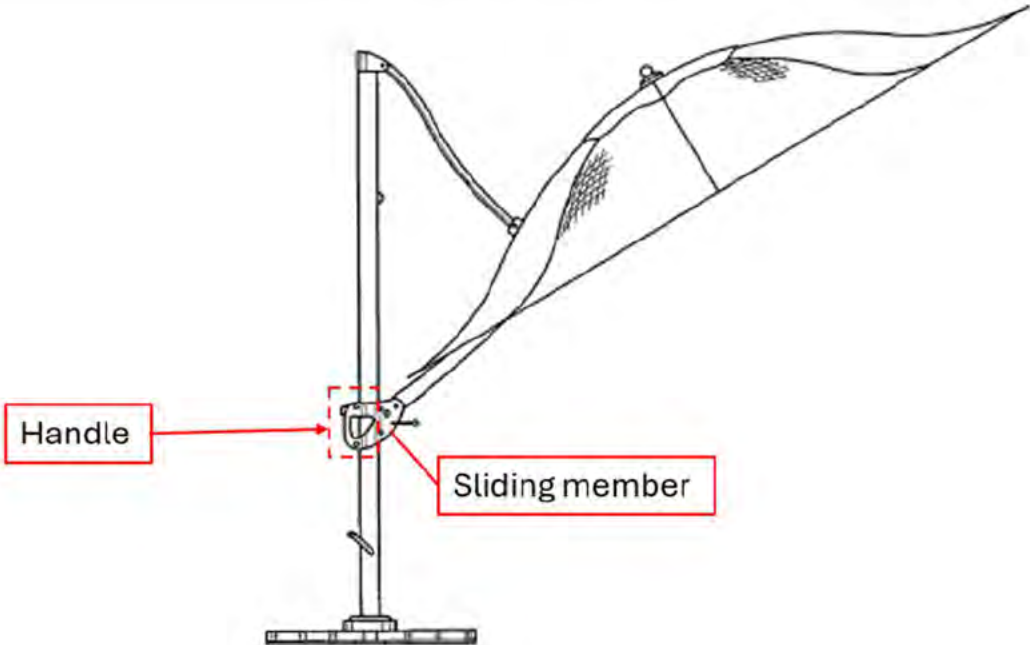
No.	Claim Limitation	Basis for Invalidity
		A person of ordinary skill in the art would have understood that a simple substitution of the structure in Lo '114 with the structure in in Wang '460 would yield predictable results to improve collapsable umbrella products. Indeed, Lo '114 and Wang '460 both relate to collapsable umbrella products and are thus in the same industry. Wang '460 describes how an umbrella design including a sliding sleeve mounted on the supporting pole, including a rope winding device, makes the umbrella easy to open and close, enables the umbrella to be rotated 360 degrees around the supporting pole, and enables the umbrella to tilt. Wang '460 at Abstract. To the extent Lo '114 does not disclose this limitation, Huali '640 discloses wherein operation of the winding mechanism (control device 5) to apply tension to the line (a sheathed cable/Bowden control 4) opens and closes the umbrella canopy (umbrella canopy 3) in response to movement of the line (a sheathed cable/Bowden control 4). <i>See e.g.</i>, Huali '640 at Abstract (“The telescopic umbrella also includes a canopy articulated on the telescopic pipe, it being possible for the canopy to be opened and closed by means of a sheathed cable or Bowden control running within the telescopic pipe and controlled by a control device.”); Field of the Invention (“where the umbrella canopy can be opened and closed by means of a sheathed cable or Bowden control arranged within the pipe and with a

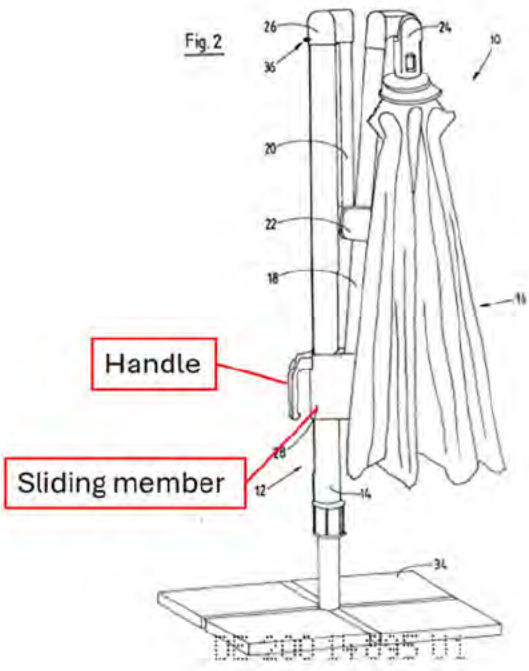
No.	Claim Limitation	Basis for Invalidity
		control device for the sheathed cable or Bowden control.”); Description at [0038]-[0039] (“The umbrella canopy 3 can be opened and closed by means of a sheathed cable/Bowden control 4. For this purpose, the sheathed cable/Bowden control 4 is connected to a control device and can be operated with it. In the embodiment shown, the control device 5 is designed as a crank shaft 6. Based on the invention, the control device 5 is allocated to the telescopic pipe 2. In this embodiment, the control device 5 is attached to the lower end of the telescopic pipe 2, where an L-shaped connecting piece 7 is arranged between the control device 5 and the telescopic pipe 2. This connecting piece 7 establishes a connection between the open lower end of the telescopic pipe 2 and the control device 5 located outside the pipe.” And [0046] (“In this illustration, it can be seen particularly well how the control device 5 and the connecting piece 7 are moveable and displaceable in a suitably designed recess 15 provided in the upright stand pipe 1. In the illustrated embodiment, this recess 15 has the shape of a long, axial slit. The slit must be at least as wide as the connecting piece 7 in order to enable the control unit 5 including the connecting piece 7 to move up and down in an axial direction in the slit.”); Claim 1 (“an umbrella canopy joined to the telescopic pipe, the umbrella canopy being configured to be opened or closed by means of a sheathed cable or Bowden control located inside the pipes”); Figs. 1 and 3 (see annotated below). Fig. 1

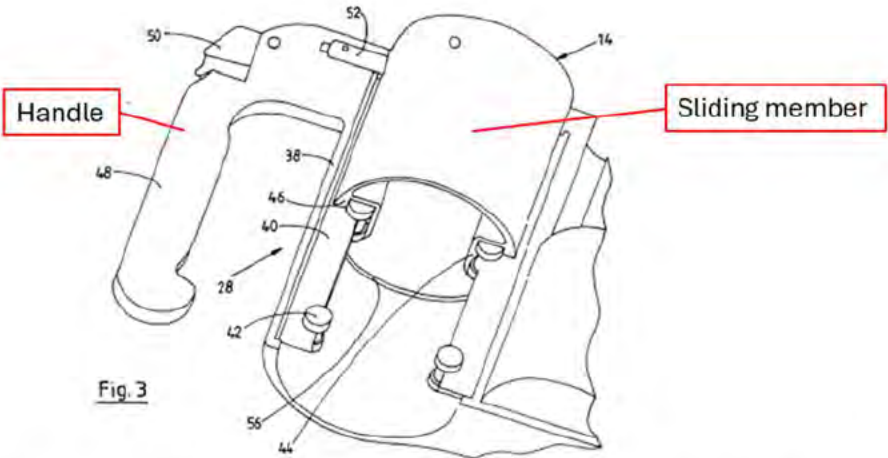
No.	Claim Limitation	Basis for Invalidity
		 Fig. 3 A person of ordinary skill in the art would have understood that a simple substitution of the structure in Lo '114 with the structure in in Huali '640 would yield predictable results to improve collapsable umbrella products. Indeed, Lo '114 and Huali '640 both relate to collapsable umbrella products and are thus in the same industry. A motivation to combine is also found in Huali '640. Huali '640 describes the benefits of “uncoupling” the opening/closing movement of the umbrella canopy from the telescopic mechanism of the umbrella by attaching the sheathed cable/Bowden control to the canopy. Huali '640 at [0011].
1[k]	wherein the angle of the umbrella canopy with respect to the main pole can be controlled by moving the sliding member along the main pole.	Lo '114 discloses wherein the angle of the umbrella canopy with respect to the main pole (shank 20) can be controlled by moving the sliding member (slide ring 201) along the main pole (shank 20). <i>See e.g.</i> Lo '114 at 3:27-32 (“1. When the canopy 23 is to be adjusted to face or have its back facing the shank 20, as shown in FIG. 8, simply loosen the slide base 201 on the upright support post 20 and then moved it upward or downward, as shown in FIG. 8B and 8C. After the canopy 23 is adjusted to an appropriate angle, the slide ring 201 is firmly positioned on the shank 20.”) and 3:43-46 (“To sum up, this invention is able to adjust the canopy 23 of a hang umbrella to face or have its back facing the shank 20”); Figs. 1, 3, 8 (annotated below).

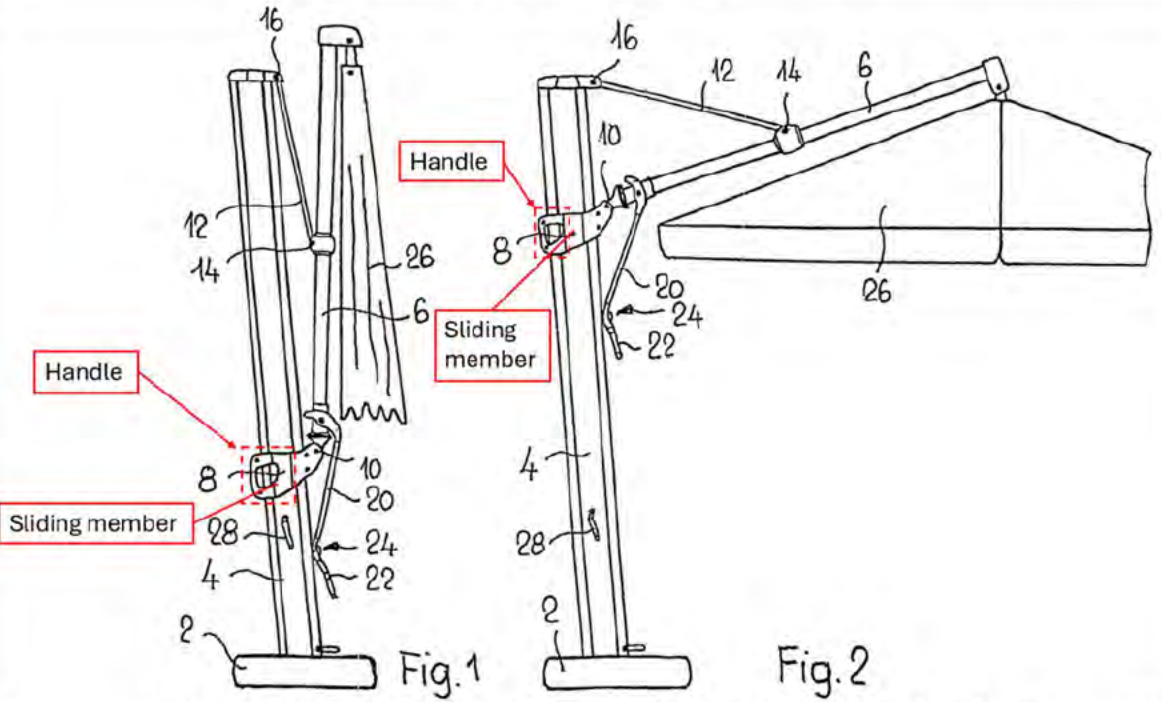
No.	Claim Limitation	Basis for Invalidity
		 FIG. 8

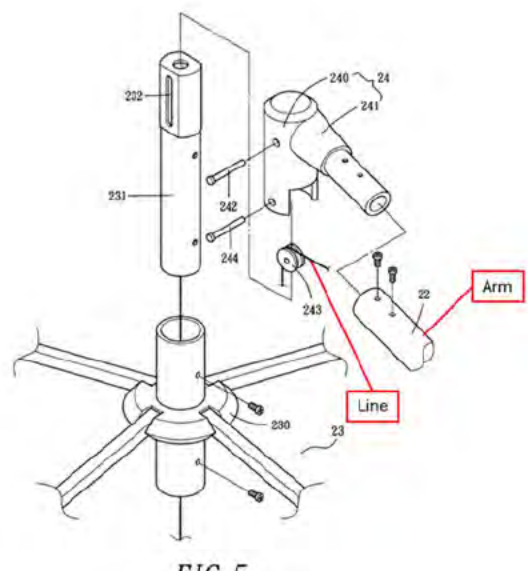
No.	Claim Limitation	Basis for Invalidity
		Claim 5 Obvious under pre-AIA 35 U.S.C. § 103: United States Patent No. 7156114 to Lo (“Lo ’114”) (issued on January 2, 2007) in view of U.S. Patent No. 5,284,171 (“Liu ’171”) (issued February 8, 1994) and in further view of Chinese Publication No. CN201001460Y (“Wang ’460”) (issued January 9, 2008) and/or U.S. Publication No. 2008/0236640 (Huali ’640) (published October 2, 2008 and filed on March 28, 2008) and in further view of U.S. Design Patent 609,453 Liu (“Liu ’453”) (issued February 8, 1994) or German Patent DE20014895 to Bertola (“Bertola ’895”) (published on November 16, 2001) or U.S. Patent No. 7,398,790 to Glatz (“Glatz ’790”) (issued on July 15, 2008 and was filed as a PCT application on July 9, 2004)
5	The umbrella of claim 1, wherein the sliding member has a handle associated therewith.	Lo ’114 discloses the sliding member (slide ring) has a handle associated therewith. <i>See e.g.</i>, Lo ’114 2:16-19 (“The shank 20 has its upper intermediate portion provided with a slide ring 20 able to shift and positioned thereon, with a tightening bolt inserted in the sidewall of the slide ring 201.”). A person of ordinary skill in the art would understand that in order to manipulate the sliding member in Lo ’114, there would need to be a handle on the sliding member for a user to use. To the extent Lo ’114 does not disclose this limitation, Liu ’453 discloses wherein the sliding member has a handle associated therewith. <i>See e.g.</i>, Liu ’453 at Figs. 1-3 and 6-8.

No.	Claim Limitation	Basis for Invalidity
		 FIG.6 A person of ordinary skill in the art would have understood that a simple substitution of the known handle in Liu '068 with the known handle in in Liu '453 would yield predictable results to improve collapsable umbrella products. Indeed, Liu '068 and Liu '453 both relate to collapsable umbrella products and are thus in the same industry. To the extent Liu '068 does not disclose this limitation, Bertola '895 discloses wherein the sliding member (slider 28) has a handle (handle 48) associated therewith. <i>See e.g.</i>, Bertola '895 at Description at page 5 ("Provided for fixation is a slider 28, which is axially slidable

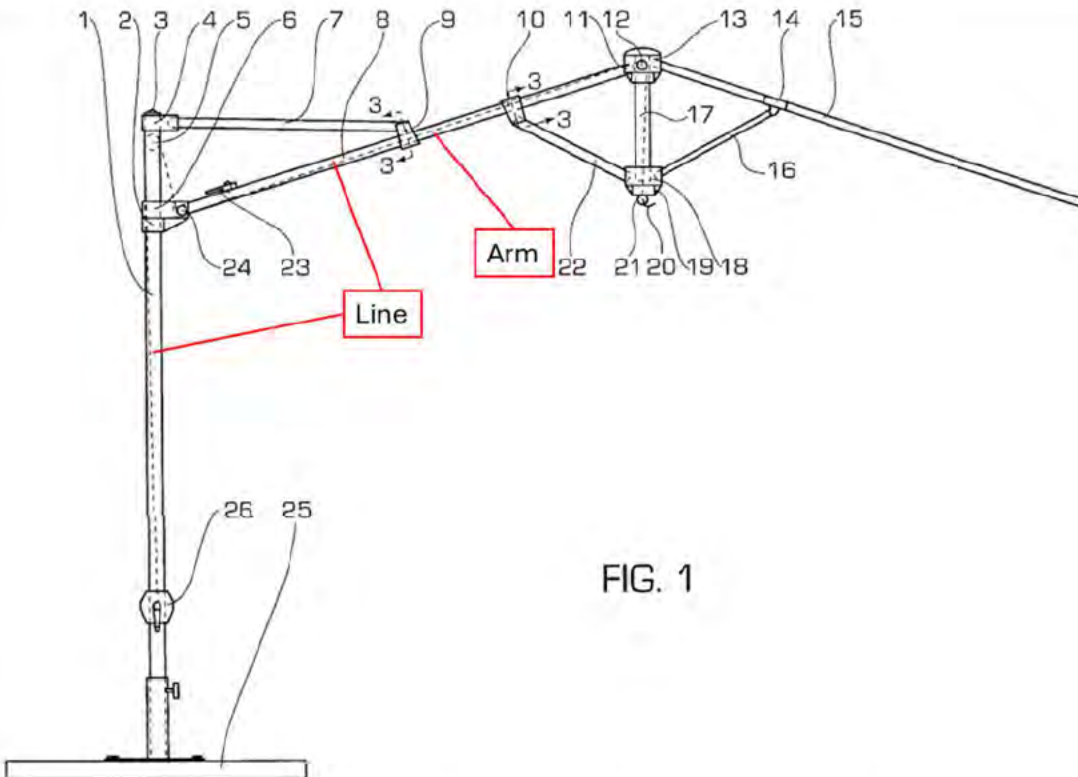
No.	Claim Limitation	Basis for Invalidity
		and fixable on the mast 14”) and page 6 (“The slider further comprises a handle 48, which is preferably integrally connected to the sleeve 38”); Figs. 1-3 (see annotated below). 

No.	Claim Limitation	Basis for Invalidity
		 Fig. 3 A person of ordinary skill in the art would have understood that a simple substitution of the known handle in Liu '068 with the known handle in in Bertola '895 would yield predictable results to improve collapsable umbrella products. Indeed, Liu '068 and Bertola '895 both relate to collapsable umbrella products and are thus in the same industry. To the extent Liu '068 does not disclose this limitation, Glatz '790 discloses wherein the sliding member (slide 8) has a handle associated therewith. <i>See e.g.</i>, Glatz '790 at Description 3:43-47 (“The free arm parasol illustrated in FIGS. 1 to 5 has a pole 4 which is secured, for example, in a base 2 and serves as a carrier for an extendable extension arm 6. The latter is arranged via a joint 10 on a slide 8 which is movable along the pole.”); Figs. 1-3

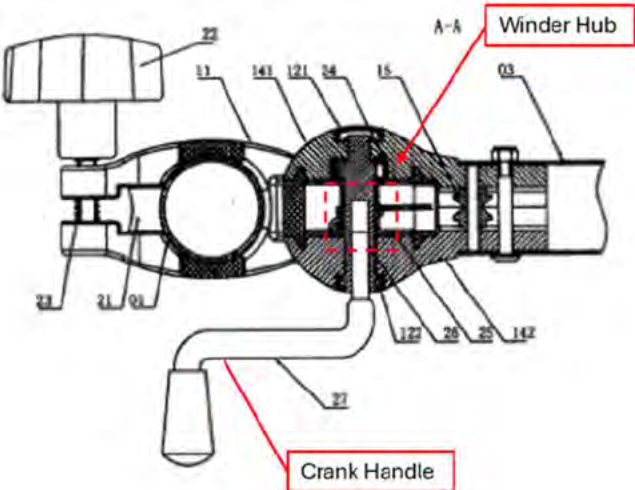
No.	Claim Limitation	Basis for Invalidity
		 Fig. 1 Fig. 2 A person of ordinary skill in the art would have understood that a simple substitution of the known handle in Liu '068 with the known handle in Glatz '790 would yield predictable results to improve collapsable umbrella products. Indeed, Liu '068 and Glatz '790 both relate to collapsable umbrella products and are thus in the same industry. A motivation to combine is found in Glatz '790. The umbrella disclosed by Glatz '790 includes an extension arm that is configured for operation by hand. For example, Glatz '790 states that an objective of the invention is to pivot the extension arm "in a simple manner with one hand." Glatz '790 at Abstract.

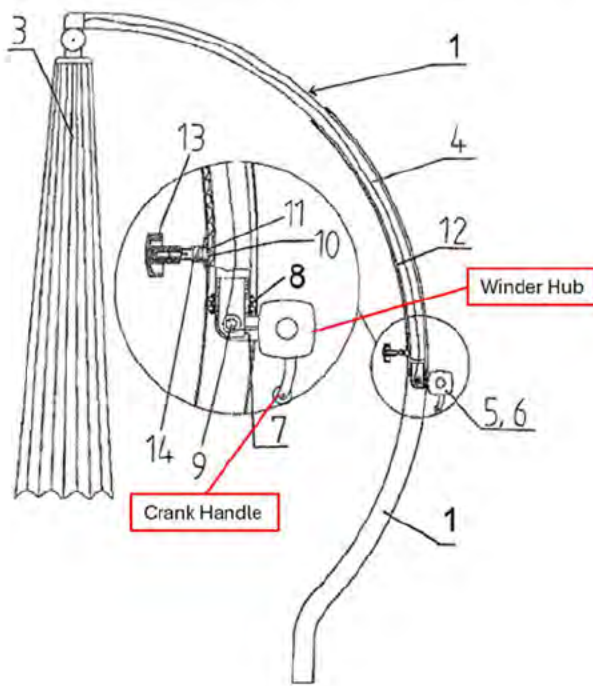
No.	Claim Limitation	Basis for Invalidity
Claim 6 Obvious under pre-AIA 35 U.S.C. § 103: United States Patent No. 7156114 to Lo ("Lo '114") (issued on January 2, 2007) in view of U.S. Patent No. 5,284,171 ("Liu '171") (issued February 8, 1994) and in further view of Chinese Publication No. CN201001460Y ("Wang '460") (issued January 9, 2008) and/or U.S. Publication No. 2008/0236640 (Huali '640) (published October 2, 2008 and filed on March 28, 2008) and in further view of in view of U.S. Patent No. 6,196,242 to Xu ("Xu '242") (issued on March 6, 2001)		
6.	The umbrella of claim 1, wherein the line extends along at least substantially the entire length of the arm.	Lo '114 discloses wherein the line (pull rope 25) extends along at least substantially the entire length of the arm (cantilever 22). <i>See e.g.</i> Lo '114 Description at ("The pull rope 25 is fastened with the slide base 201 and passes through the interiors of the cantilever 22 and the connecting tube 241 and the rope pulley 243 as well as the main cover 240 and the combining tube 231 and the upper umbrella rib holder 230 of the canopy 23 and finally connected with a lower rib holder 233."); Fig. 5 (see annotated below). 

No.	Claim Limitation	Basis for Invalidity
		To the extent Lo '114 does not disclose this limitation, Xu '242 discloses wherein the line (pull rope) extends along at least substantially the entire length of the arm (hinged hanging arm 8). <i>See e.g.</i>, Xu '242 at 2:55-3:14 (“The upper umbrella tray holder (13) (see FIGS. 1 and 2) comprises an upper umbrella tray (28) and a center post (17) in rigid connection with it, wherein the center post (17) can let a pull rope pass through. On the periphery of the upper umbrella tray (28), slots (27) are evenly distributed, and in one slot (27), the hinged hanging arm (8) and a pulley (11) are provided. The pulley (11) is disposed at an open side of the hanging arm (8) and is fixed on the upper umbrella tray (28) by a cross pin. Another pulley (12) is provided at the center position of the upper umbrella tray (28). In the rest of the slots (27), hinged umbrella rods (15) are provided, and the top face of the upper tray holder (13) is sealed by another tube plug. The lower umbrella tray holder (18) (see FIG. 1) comprises a lower umbrella tray similar in structure to the upper umbrella tray (28). On the periphery of the lower umbrella tray, limit slots are evenly distributed, like the slots (27) provided in the upper umbrella tray (28). In one slot, the hanging arm bracing (22) is hinged, and in the rest of the slots, a hinged bracing (16) is provided. The lower portion of the lower umbrella tray is provided with a knot bead (21), which cooperates with a knotted pull rope (20) and a knot pin (19) to prevent the bead from separating. The opposite end of the hanging arm bracing (22) is hinged on the square tube clamp (10), which is fixed to the hanging arm (8). The opposite end of each bracing (16) is hinged to the corresponding tube clamp (14) fixed on the umbrella rod (15).”) and 3:56-65 (“During opening and closing of the sun umbrella, the pull rope (20) bundled and knotted on the cranking shaft (33) first threads the column (1), then rounds the pulley (5) fitted at the column (1) top end, passes around the pulley (24) on the hanging arm movable holder (2), through the hanging arm (8) inner chamber to the pulley (11) at the hanging arm (8) top end opening, around the pulley (12) in the upper umbrella tray holder (13), through the center post (17) inner hole, and to the knot bead (21) at the lower portion of the lower umbrella tray holder (18) and knotted.”); Fig. 1

No.	Claim Limitation	Basis for Invalidity
		 FIG. 1 A person of ordinary skill in the art would have understood that a simple substitution of the structure in Lo '114 with the structure in in Xu '242 would yield predictable results to improve collapsable umbrella products. Indeed, Lo '114 and Xu '242 both relate to collapsable umbrella products and are thus in the same industry. A motivation to combine is also found in Xu '242. Xu '242 describes how a cantilever umbrella with a pull rope control enlarges the moving range under the umbrella by avoiding the hinderance of a column. Xu '242 1:53-60.

No.	Claim Limitation	Basis for Invalidity
Claim 7 Obvious under pre-AIA 35 U.S.C. § 103: United States Patent No. 7156114 to Lo (“Lo ’114”) (issued on January 2, 2007) in view of U.S. Patent No. 5,284,171 (“Liu ’171”) (issued February 8, 1994) and in further view of Chinese Publication No. CN201001460Y (“Wang ’460”) (issued January 9, 2008) and/or U.S. Publication No. 2008/0236640 (Huali ’640) (published October 2, 2008 and filed on March 28, 2008)		
7.	The umbrella of claim 1, further comprising a crank handle operatively associated with the winder hub, whereby rotating the crank handle causes the winder hub to rotate.	To the extent Lo ’114 does not disclose this limitation, Wang ’460 discloses a crank handle (winder handle 27) operatively associated with the winder hub (rope reel 26), whereby rotating the crank handle (winder handle 27) causes the winder hub (rope reel 26) to rotate. <i>See e.g.</i> Wang ’460 at Abstract “the sliding sleeve includes a rope winder and is shaft-connected to a bottom end of the suspension rod, a top end of the suspension rod and an upper parasol disc of the parasol frame have a pitch rotating connection structure, one end of a pull rope is fixed to a reel of the rope winder installed in the sliding sleeve, and the other end thereof passes through the suspension rod and a top tube installed in the upper parasol disc to be fixed to a lower parasol disc. The structure of the present utility model makes the parasol cover easy to open and close, the parasol cover can rotate 360° around the parasol pole, and the pitch angle thereof can also be adjusted.”); Fig. 3 (see annotated below); Description at page 4 (The sliding sleeve 11 is connected to the spherical left and right casings 141 and 142 of the rope winder. The rope reel 26 of a winder handle 27 is tied with a pull rope 13, and the other end of the pull rope passes through the suspension rod 03 through a pulley 15”); Fig. 3 (see annotated below).

No.	Claim Limitation	Basis for Invalidity
		 Fig. 3 A person of ordinary skill in the art would have understood that a simple substitution of the structure in Lo '114 with the structure in Wang '460 would yield predictable results to improve collapsable umbrella products. Indeed, Lo '114 and Wang '460 both relate to collapsable umbrella products and are thus in the same industry. A motivation to combine is also found in Wang '460. Wang '460 describes how an umbrella design including a sliding sleeve mounted on the supporting pole, including a rope winding device, makes the umbrella easy to open and close, enables the umbrella to be rotated 360 degrees around the supporting pole, and enables the umbrella to tilt. Wang '460 at Abstract. To the extent Lo '114 does not disclose this limitation, Huali '640 discloses a crank handle (control device 5) operatively associated with the winder hub (crank shaft 6), whereby rotating the crank handle (control device 5) causes the winder hub (crank shaft 6) to rotate.

No.	Claim Limitation	Basis for Invalidity
		See Huali '640 at Description at paragraphs 38-39 (“[0038] The umbrella canopy 3 can be opened and closed by means of a sheathed cable/Bowden control 4. For this purpose, the sheathed cable/Bowden control 4 is connected to a control device and can be operated with it. In the embodiment shown, the control device 5 is designed as a crank shaft 6. [0039] Based on the invention, the control device 5 is allocated to the telescopic pipe 2. In this embodiment, the control device 5 is attached to the lower end of the telescopic pipe 2, where an L-shaped connecting piece 7 is arranged between the control device 5 and the telescopic pipe 2. This connecting piece 7 establishes a connection between the open lower end of the telescopic pipe 2 and the control device 5 located outside the pipe.”); Figs 1, 3 (see annotated below)  Fig. 1

No.	Claim Limitation	Basis for Invalidity
		A person of ordinary skill in the art would have understood that a simple substitution of the structure in Lo '114 with the structure in Huali '640 would yield predictable results to improve collapsable umbrella products. Indeed, Lo '114 and Huali '640 both relate to collapsable umbrella products and are thus in the same industry. A motivation to combine is also found in Huali '640. Huali '640 describes the benefits of “uncoupling” the opening/closing movement of the umbrella canopy from the telescopic mechanism of the umbrella by attaching the sheathed cable/Bowden control to the canopy. Huali '640 at [0011].