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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TREASURE GARDEN, INC.,

Petitioner,

v.

ATLEISURE, LLC,

Patent Owner.

Case IPR2025-01006

Patent No. 8,104,492

**PETITION FOR *INTER PARTES* REVIEW OF
U.S. PATENT NO. 8,104,492**

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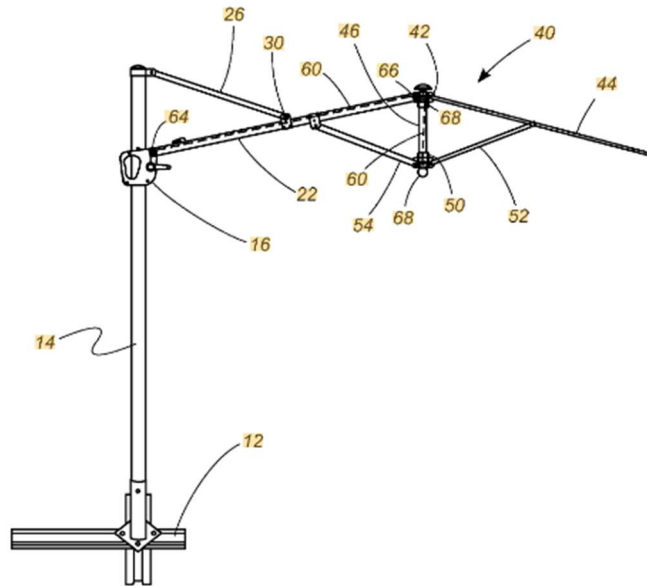
LIST OF EXHIBITS

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1001	U.S. Patent 8,104,492 (the “’492 Patent”)
1002	Prosecution History for the ’492 Patent
1003	Provisional Application No. 61/050,353
1004	Declaration of Dr. Richard W. Klopp, dated May 9, 2025
1007	Chinese Utility Model Patent No. CN 201001460Y (“Wang ’460”) (Appl. No. ZL 200720106096.5) with Certified English Translation
1009	U.S. Patent No. 6,321,763 (“Ma ’763”)
1010	U.S. Patent No. 6,478,037 (“Tung ’037”)
1011	U.S. Patent No. 5,284,171 (“Liu ’171”)
1012	U.S. Patent No. 5,937,882 (“Harbaugh ’882”)
1013	German Patent Application Publication No. DE20014895U1 (“Bertola ’895”) with Certified English Translation
1015	European Patent Application No. EP1602297 (Ma ’297)
1016	ATLeisure’s N.D.GA Local Rules 6.1 and 6.2 Disclosures in <i>ATLeisure v. Treasure Garden, Inc.</i> , Case No. 1:24-cv-02270-TWT
1017	Oxford Learner’s Dictionary
1018	Bloomsbury English Dictionary
1019	The New Oxford American Dictionary
1020	The American Heritage Dictionary
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1024	<i>ATLeisure, LLC v. Ace Evert, Inc.</i> , Case No. 1:12-cv-01260, Dkt. 85 (N.D. Ga. May 20, 2013)
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I. INTRODUCTION

Petitioner Treasure Garden, Inc. requests *inter partes* review of Claims 1-7 of U.S. Patent 8,104,492 (“’492 Patent”) assigned to Patent Owner ATLeisure, LLC. The ’492 Patent relates to a cantilevered umbrella as shown below.



’492 Patent Figure 3

Specifically, the ’492 Patent describes its invention as “an improved mechanism for raising and lowering the umbrella canopy and for adjusting the angle of the canopy with respect to a vertical support member.” Ex. 1001 at 1:11-16. But the mechanism described in the ’492 Patent is not new. During prosecution, the examiner repeatedly rejected the claims over a prior art cantilever umbrella that disclosed a similar mechanism having a sliding member that moves along the main pole to adjust the umbrella and locks in place once properly adjusted.

The patentee overcame the prior art by amending the one independent claim to add a limitation requiring the sliding member to have “a winder hub around which a line can be wound, the winder hub being mounted to the sliding member and movable therewith.” However, prior art that was not before the examiner discloses cantilevered umbrellas having the entire mechanism claimed in the ’492 Patent, including a winder hub mounted to the sliding member. Specifically, Wang ’460 discloses nearly every element in Claims 1-7, including the winder hub. Only the “locking means for releasably securing the sliding member to the main pole” in the Wang ’460 umbrella differs from the three structures described in the ’492 Patent. However, other prior art references disclose cantilever umbrellas with these specific locking structures, and combinations of these references with Wang ’460 render obvious Claims 1-7. Alternatively, Ma ’763 combined with other references also renders these claims obvious.

Because the Petition demonstrates by more than a preponderance of the evidence that the Claims 1-7 are unpatentable, the Board should institute *inter partes* review and cancel these claims.

II. GROUNDS FOR STANDING AND FEES

Pursuant to 37 C.F.R. § 42.104(a), Petitioner certifies that the ’492 Patent is available for *inter partes* review and that Petitioner is not barred or estopped from requesting this *inter partes* review on the grounds identified herein.

The fee set forth in 37 C.F.R. §§ 42.15(e) and 42.103 accompanies this Petition. Petitioner authorizes a debit from Deposit Account 11-1410 for whatever additional payment is necessary in granting this Petition.

III. IDENTIFICATION OF CHALLENGE

Pursuant to 37 C.F.R. §§ 42.22(a) and 42.104(b), Petitioner requests *inter partes* review and cancellation of the Challenged Claims of the '492 Patent based on the following prior art:

- Wang '460 which issued on January 9, 2008;
- Ma '763 which issued on November 27, 2001;
- Tung '037 which issued on November 12, 2002;
- Liu '171 which issued on February 8, 1994;
- Bertola '895 which issued on November 16, 2000; and
- Ma '297 which was published on July 12, 2005.

The statutory grounds for the challenge of each claim are set forth below.

Ground	Pre-AIA 35 U.S.C. §	Claims	References
1	103	1-7	Wang '460 in view of Tung '037, Liu '171 or Bertola '895
2	103	1, 4, and 5-7	Ma '763 in view of Ma '297 and further in view of Bertola '895
		2	Ma '763 in view of Ma '297 and further in view of Tung '037
		3	Ma '763 in view of Ma '297 and further in view of Liu '171

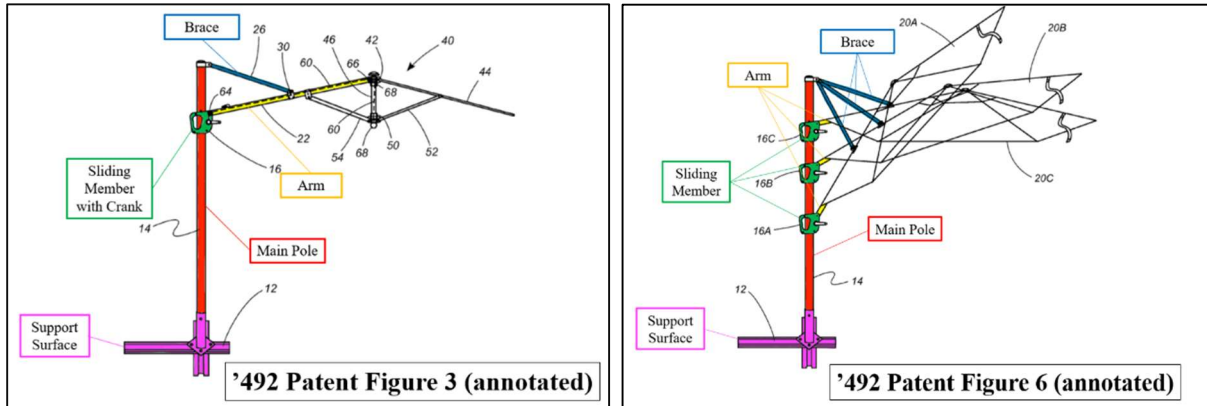
In support of these grounds for unpatentability, Petitioner submits the declaration of Dr. Richard W. Klopp (Ex. 1004) who has had over thirty years of experience in mechanical engineering and design, and relies on the exhibits filed herewith.

IV. THE '492 PATENT

A. The Specification of the '492 Patent

The '492 Patent admits that adjustable cantilevered umbrellas were in the prior art. Ex. 1001 at 1:19-32. These umbrellas used “a cantilever arrangement to suspend the canopy to the side of the main pole,” and the angle of the canopy could be “adjusted with respect to the main pole.” Ex. 1001 at 1:28-32. The '492 Patent's purported improvement is a mechanism for adjusting a cantilevered umbrella having a sliding member that moves along the main pole to adjust the angle of the canopy

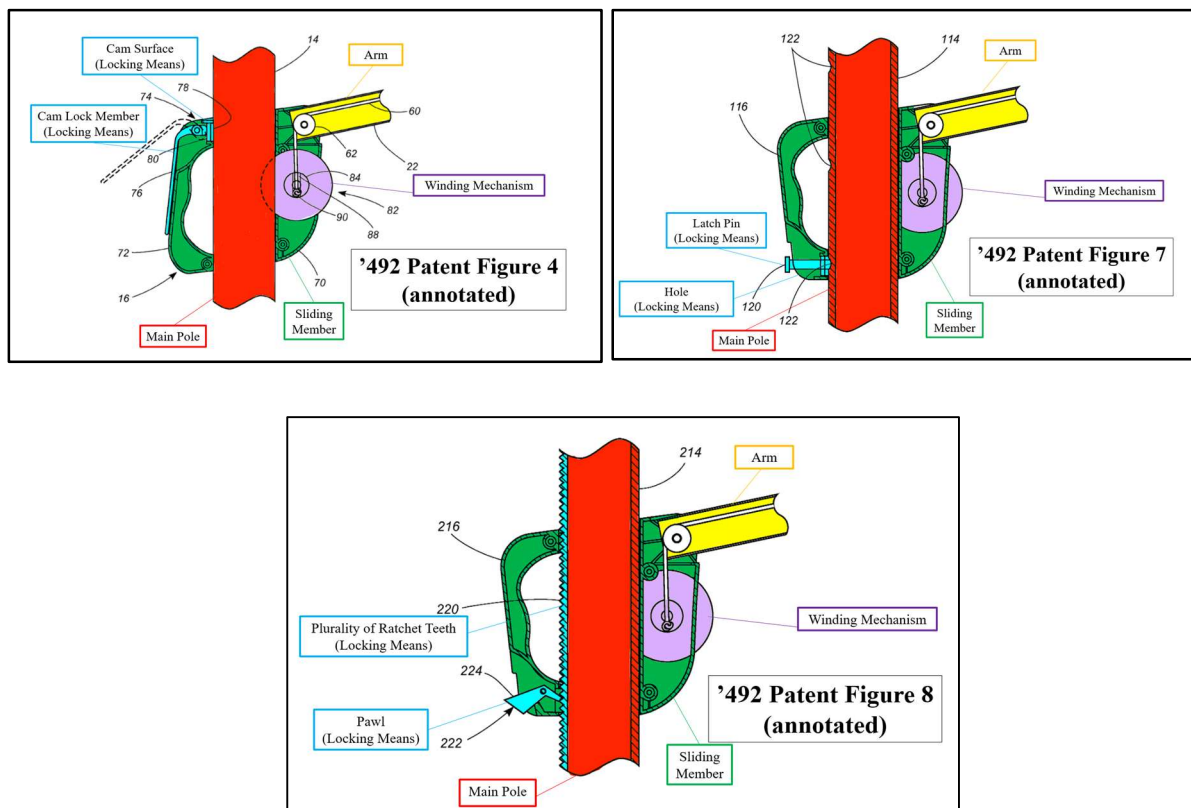
with a winding mechanism mounted to the sliding member for opening and closing the canopy.



Id. at Figure 3 and 6. To open the canopy, “the user first grasps the crank 92 of the winding mechanism 82 and winds in the line 60. Tension on the line 60 draws ... the opposite end of the line upward, elevating the spreader hub 50. As the spreader hub 50 is raised, the canopy assembly 20 extends.” *Id.* at 3:60-65. Once the canopy assembly “has been fully erected, the user can adjust the angle of the canopy assembly with respect to the main pole 14 by moving the sliding member 16 up or down the pole until the desired result is achieved.” *Id.* at 3:66-4:2.

When the canopy is at the desired angle, the sliding member is secured to the main pole at a specific location. The '492 Patent discloses three structures that are “locking means” for securing the sliding member to the main pole at a specific location. These structures, shown below, include: 1) a cam lock member mechanism with a lever portion that is pivotally mounted in an upper position of a housing of a sliding member and rotates to its extended position to disengage the cam surface; 2)

a latch pin and hole mechanism that uses a stop bolt and a plurality of holes to adjust the height of the umbrella; and 3) a ratchet teeth and pawl mechanism where the row of teeth are on the main pole and interact with a pawl located on the sliding member.



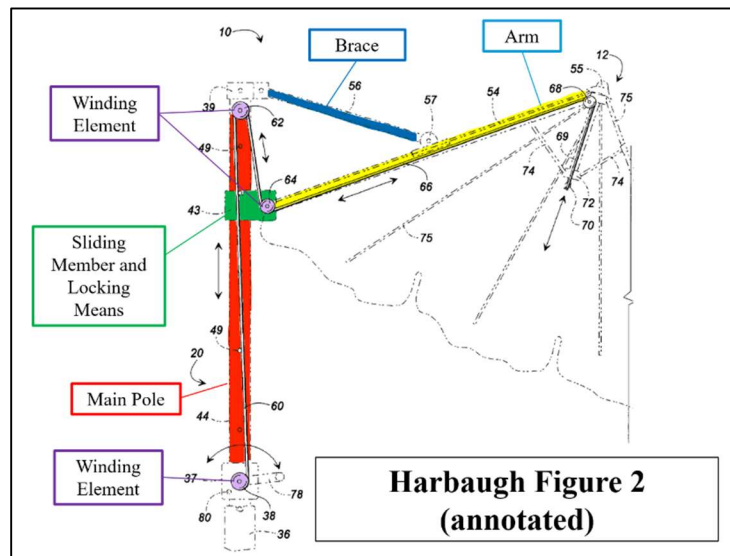
Id. at Figures 4, 7, and 8.

B. The Prosecution History

The '492 Patent was filed on May 5, 2009. *See* Ex. 1001. The first office action rejected all claims. Ex. 1002 at 138-143. The examiner rejected original claims 1, 4, and 6 as anticipated by U.S. Patent No. 5,937,882 issued to Harbaugh (*Id.* at 139-140) and rejected claims 2, 3, and 5 under § 103(a) over Harbaugh in

view of U.S Patent No. 6,478,037 (“Tung”) and U.S. Patent No. 5,284,171 (“Liu”).
Id. at 140-142.

Original claim 1, rejected over Harbaugh, included nearly all the limitations in issued claim 1. Specifically, the examiner found that Harbaugh teaches a main pole (20); a sliding member (43) associated with the main pole; locking means (48/49) for releasably securing the sliding member; an umbrella canopy (15) having a central region (55); an arm (54); a brace (56) associated with the arm; a winding element (including 38, 64 and 62) mounted to the sliding member and movable therewith; and a line (60); wherein operation of the winding element opens and closes the umbrella canopy; and wherein the angle of the umbrella canopy can be controlled by moving the sliding member. *Id.* at 139-140; *see* Ex. 1012 at Figure 2.



In response, the patentee argued that Harbaugh does not disclose a “sliding member [having] a winding element mounted to the sliding member and movable therewith.”

Ex. 1002 at 129. Specifically, the applicant disagreed with the examiner's including element 64, which moves with the sliding member, as part of the winding element because element 64 is a pulley. *Id.* at 129-130.

Unpersuaded, the examiner issued a final rejection, again rejecting claims 1, 4, and 6 under § 102(b) over Harbaugh. *Id.* at 102-111. The examiner explained that “Harbaugh clearly teaches a winding element insofar as this element is recited in the claims.” *Id.* at 107 Harbaugh discloses the winding element mounted on the sliding member because “[t]he elements identified as the winding element, which includes 64, clearly mounted on the sliding member and movable therewith, allow for and provide means for winding and applying tension to the line. . .” *Id.* at 107.

The examiner also renewed the rejection of dependent claims 2, 3, and 5 under § 103(a). *Id.* at 105-107. The examiner found that the three “locking means” in the '492 Patent were known in the prior art. The examiner found that Harbaugh teaches the pin and hole “locking means” in claim 4. Specifically, the locking means in Harbaugh “comprises a plurality of holes (49) formed in the main pole and a pin (48) associated with the sliding member and operative to engage a selected one of the holes.” *Id.* at 140. The examiner rejected claim 2 because “to modify the locking means and sliding member of Harbaugh by using a cam locking means with a handle as taught by Tung” would have been obvious. *Id.* at 140-141. The examiner also

rejected claim 3 because “to modify the locking means of Harbaugh by using a teeth-and-pawl means as taught by Liu” would have been obvious. *Id.* at 141-142.

The patentee then amended claim 1 to add a limitation that the winding mechanism has “a winder hub around which a line can be wound, the winder hub being mounted to the sliding member and movable therewith” and that rotation of the winder hub “tensions or relaxes the line. . .” Ex. 1002 at 85-100. The patentee never disputed the examiner’s findings that the prior art discloses each of the locking means described in the application. *See* Ex. 1002. On August 23, 2011, the examiner entered an examiner’s amendment and allowed the application. *Id.* at 71-75.

C. The Challenged Claims

The ’492 Patent issued with seven claims. Only claim 1 is independent.

Claim 1	
Preamble	An umbrella comprising:
1[A]	a main pole having a lower end for support by a support surface and extending generally upward to an upper end;
1[B]	a sliding member associated with the main pole and selectably moveable thereon between lower and upper locations along the main pole;
1[C]	locking means for releasably securing the sliding member to the main pole at a selected location along the main pole;
1[D]	an umbrella canopy having a central region;

1[E]	an arm associated with the central region and extending radially therefrom to an outer end operatively associated with the 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;
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 ;
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;
1[I]	wherein rotation of the winder hub tensions or relaxes the line depending upon the direction of rotation of the winder hub, and
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
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.

D. Claim Construction

During *inter partes* review, claims are construed using the same claim construction standard that would be used in a civil action. 37 C.F.R. § 42.100(b). This standard is articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-17 (Fed. Cir. 2015) (*en banc*), and requires “construing the claim in accordance with the ordinary and customary meaning of such claims as understood by one of ordinary

skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. § 42.100(b).

1. The Phrase “locking means for releasably securing” Should be Construed Pursuant to pre-AIA § 112 ¶ 6

The phrase “locking means for releasably securing” in claim 1 is a “means-plus-function” limitation governed by pre-AIA § 112 ¶ 6. *See ATLeisure, LLC v. Ace Evert, Inc.*, Case No. 1:12-cv-01260, Dkt. 85 (N.D. Ga. May 20, 2013) (Ex. 1024); *ATLeisure, LLC v. Sunvilla Corp.*, Case No. 1:20-cv-04662, Dkt. 46 (N.D. Ga. July 26, 2021) (Ex. 1025); *ATLeisure, LLC v. Lowe’s Home Centers, LLC*, Case No. 6:22-cv-682-WWB-GJK, Dkt. 39 (M.D. Fla. Dec. 16, 2022) (Ex. 1026).

Under 112 ¶ 6, a claim term that is expressed as a means for performing a specified function, shall be construed to cover the corresponding structure, material, or acts described in the [patent’s] specification and equivalents thereof. Pre-AIA 35 U.S.C. § 112 ¶ 6. In construing a “means-plus-function” limitation, “a court must identify both the claimed function and the corresponding structure in the written description for performing that function.” *Northrop Grumman Corp. v. Intel Corp.*, 325 F.3d 1346, 1350 (Fed. Cir. 2003). In addition to the structures in the specification, the claims are also entitled to equivalents. *JVW Enters. v. Interact Accessories, Inc.*, 424 F.3d 1324, 1333 (Fed. Cir. 2005).

Here, the “locking means” performs the function of “releasably securing the sliding member to the main pole at a selected location.” Ex. 1001 claim 1. As

discussed above, the '492 Patent specification describes three structures corresponding to the claim term “locking means:”

- (1) The cam lock structure, shown in Figure 4 as described in Ex. 1001 at 3:25-40. This structure has a cam lock member with a lever portion that is pivotally mounted in an upper position of a housing of a sliding member and rotates to its extended position to disengage the cam and a lever portion that is pivotally mounted near the upper portion of the sliding member and rotates to its extended position to disengage the cam surface to unclamp the sliding member from the main pole. Ex. 1001 at 3:25-40 and Figure 4; Ex. 1004 at ¶ 48. When the cam lock member rotates back, the lever portion overlaps the exterior of the grasping portion of sliding member and the cam lock member clamps the sliding member to the main pole. Ex. 1004 at ¶ 48.
- (2) The latch pin and hole structure, shown in Figure 7 as described in Ex. 1001 at 4:12-20. This structure has a spring-loaded latch pin 120 mounted to the sliding member. The latch pin engages one of a corresponding series of holes in the main pole. Ex. 1001 at 4:12-20 and Figure 7; Ex. 1004 at ¶ 49.
- (3) The ratchet teeth and pawl structure, shown in Figure 8 as described in Ex. 1001 at 4:21-31. This structure has a plurality of ratchet teeth along the rear surface of the main pole. A pawl 222 pivotally mounted to the

sliding mechanism engages a cooperating one of the ratchet teeth 220 to lock the sliding member in position. Ex. 1001 at 4:21-31; Ex. 1004 at ¶ 50.

Indeed, in the underlying litigation between the parties, ATLeisure has agreed that the structures shown in Figures 4, 7, 8 correspond to the claim term “locking means.” See Ex. 1016.

2. Other Proposed Constructions in the Underlying Litigation

Petitioner’s other proposed claim constructions in the underlying litigation between the parties are consistent with the terms’ ordinary meanings but are not necessary for institution of this proceeding. Claim 1 recites “the winder hub being **mounted to** the sliding member and movable therewith.” Ex. 1001 at 4:64-65 (emphasis added). The term “mounted to” should be construed as “secured to and supported by” consistent with its ordinary meaning. See Ex. 1004 at ¶ 51; Ex. 1017 at 1; Ex. 1018 at 1230; and Ex. 1019 at 1107; Ex. 1020 at 1148-49. Claim 1 also recites “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.” Ex. 1001 at 4:60-62 (emphasis added). The term “pivotably attached” should be construed in accordance with its ordinary meaning as “attached so as to rotate around a central point.” See Ex. 1004 at ¶ 52; 1017 at 3; Ex. 1018 at 1431; Ex. 1019 at 1295; Ex. 1020 at 1339.

V. LEVEL OF ORDINARY SKILL IN THE ART

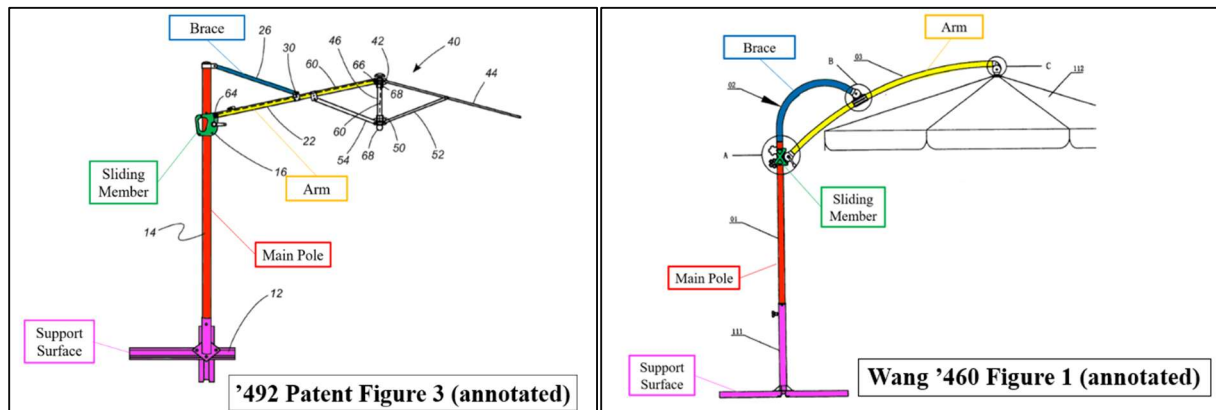
A person of ordinary skill in the art as of the effective filing date of the '492 Patent would have had a bachelor's degree in mechanical engineering or physics or a related discipline and at least four years of experience in the design, development, or analysis of mechanical devices, fabricated frames, cantilevered frames, and/or winder or pulley assemblies, though additional work experience could substitute for a formal degree, and vice versa.

VI. CLAIMS 1-7 OF THE '492 PATENT ARE INVALID

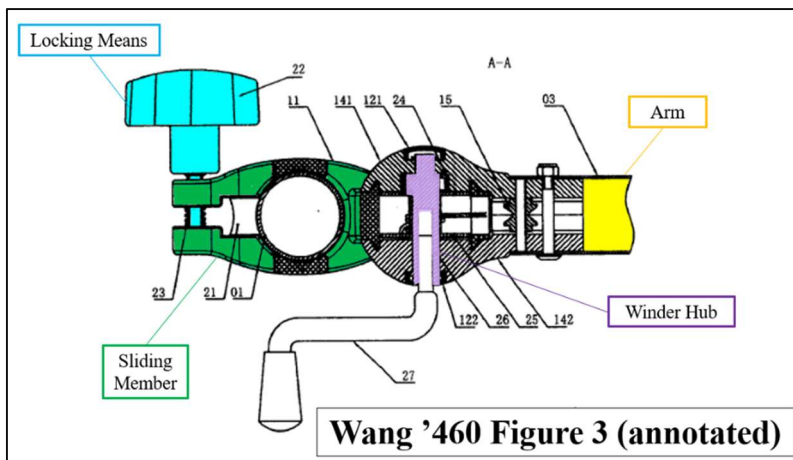
A. Overview of the Prior Art

The prior art discloses cantilevered umbrellas having all of the features claimed in the '492 Patent. Specifically, Chinese Utility Model Patent No. CN 201001460Y ("Wang '460") (Ex. 1007) and U.S. Patent No. 6,321,763 ("Ma '763") (Ex. 1009), each discloses nearly every claimed element. For any element missing from one of these references, a POSITA would have found motivation in the prior art to make a simple substitution of a known element disclosed in another prior art umbrella.

Wang '460, issued on January 9, 2008, is prior art under pre-AIA 35 U.S.C. § 102(a). *See* Ex. 1007. Wang '460 discloses an offset "hanging parasol" where the angle of the canopy is adjustable similar to the '492 Patent's umbrella. Ex. 1004 at ¶ 54-55.



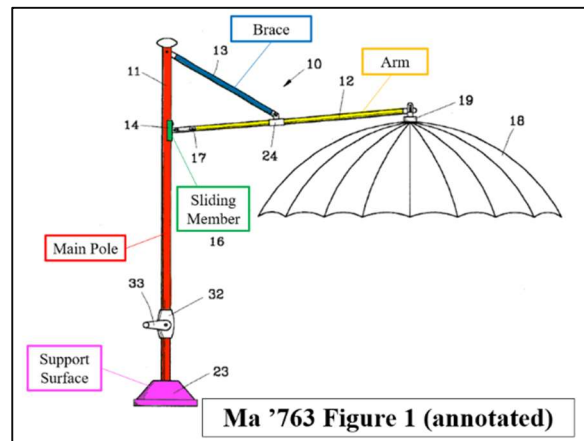
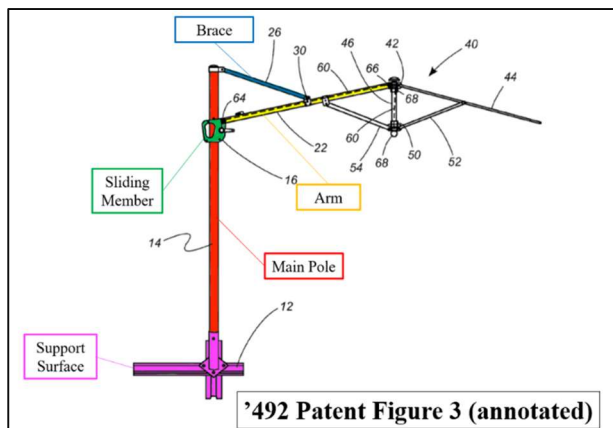
Ex. 1001 at Figure 3; Ex. 1007 at Figure 1. Wang '460 describes a sliding member (“sliding sleeve 11”) that “slide[s] smoothly with the parasol pole.” Ex. 1007 at 17; Ex. 1004 at ¶ 55. The Wang '460 umbrella also has a winder hub (rope reel 26) and crank mounted to the sliding sleeve 11. Ex. 1007 at 12 (Claim 1) and 17; Ex. 1004 at ¶ 55.



A pull rope (13) is fixed to a reel (26) of the rope winder and allows a user to open and close the canopy by winding the line around the winder hub. Ex. 1007 at 12 (Claim 1); Ex. 1004 at ¶ 56. Wang '460 discloses a locking means on “parasol pole 01...with a hoop-type sliding sleeve 11 locked by a bolt.” Ex. 1007 at 17; Ex. 1004

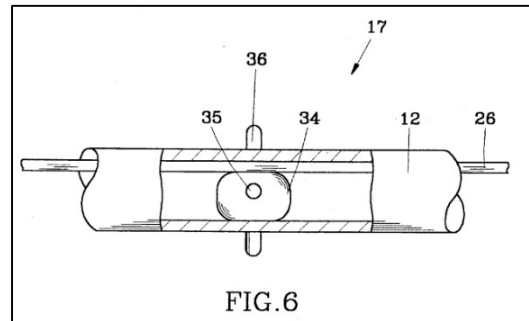
at ¶ 56. While Wang '460 does not disclose the identical structure corresponding to the “locking means” in the '492 Patent, that structure was well-known in the prior art as discussed below.

Ma '763, issued on November 27, 2001, is also prior art under pre-AIA 35 U.S.C. § 102(b). *See* Ex. 1009. Ma '763 discloses a cantilevered umbrella with an arm and a brace as well as a sliding member that adjusts the angle of the arm and the canopy. Ex. 1004 at ¶ 61.



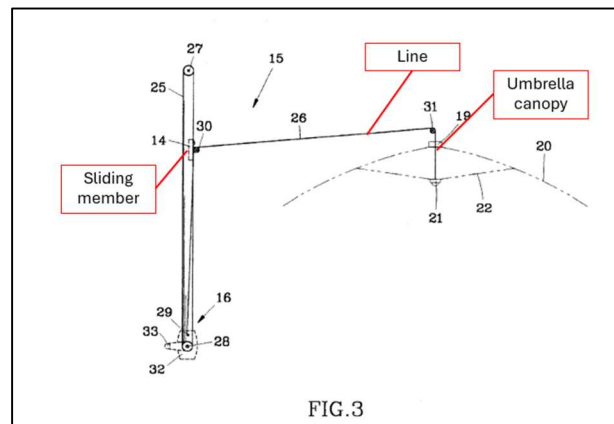
Ex. 1001 at Figure 3; Ex. 1009 at Figure 1. Like the umbrella claimed in the '492 Patent, the Ma '763 umbrella has a line running from a securing device mounted to the sliding member and along the arm to the canopy where tensioning and releasing the line opens and closes the canopy. Ex. 1009 at 3:50-57 and Figures 2 and 3; Ex. at 1004 at ¶ 63.

Instead of using a winding hub for securing the line as in the '492 Patent, the Ma '763 umbrella uses locking device 17 shown below.



Ma '763 Figure 6

Ma '763 expressly states that the locking device 17 “may be attached to the” the sliding member 14. Ex. 1009 at 4:36-40 and Figure 6; Ex. 1004 at ¶ 62. In the Ma '763 umbrella, one end of the line (secondary rope 26) is attached to the main pole toward the base and runs over a pulley mounted on the end of the arm that connects to the slider and continues along the arm and through the top of the canopy where it is secured. Ex. 1009 at 3:17-19 and Figure 3; Ex. 1004 at ¶ 64.



Ma '763 Figure 3

Ma '763 explains that “[t]he locking device 17 may be manually actuated to engage and thus fix the secondary rope 26. The locking device 17 comprises a

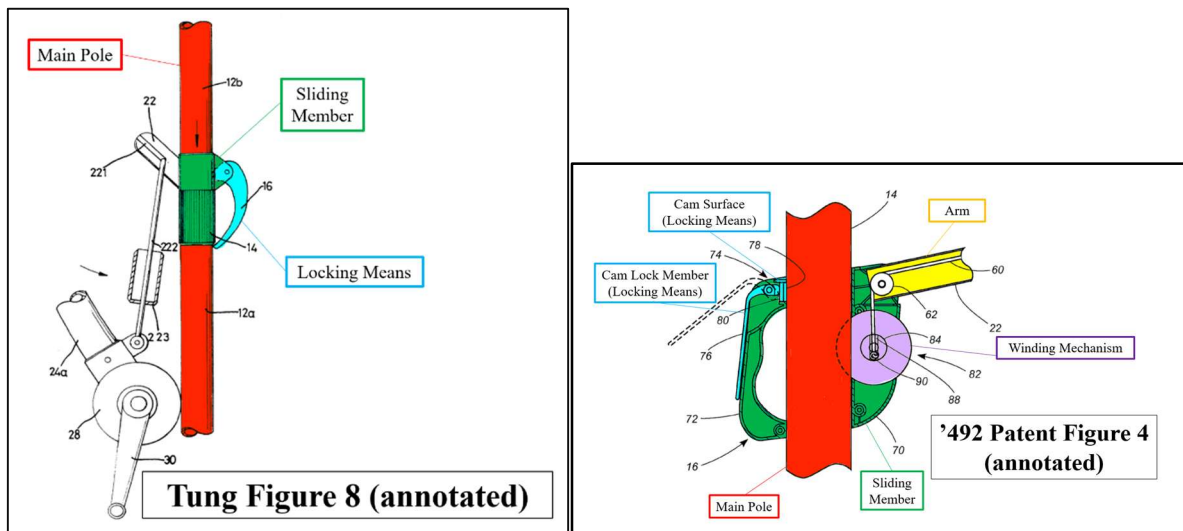
locking member 34 pivotally mounted in the arm 12 by an eccentric pin 35. The secondary rope 26 extends through a gap between the locking member 34 and an inner surface of the arm 12. The pin 35 is coupled to a manual knob 36. When the knob 36 is rotated by a user, the locking member 34 is moved in such a way so as to reduce the gap, and thereby pinch the secondary rope 26 between the locking member 34 and the inner surface of the arm 12, and thus effectively lock the secondary rope 26 in the particular position.” Ex. 1009 at 4:24-35 and Figure 3; Ex. 1004 at ¶ 65.

Although the Ma ’763 umbrella has locking device 17 instead of the winder hub claimed in the ’492 Patent, the use of a winder hub to open and close a canopy was well known known in the prior art (e.g., Wang ’460). Replacing locking device 17 in Ma ’763 with a winder hub to maintain the tension in the line is a simple substitution of one known element for another and would have been obvious to a POSITA. Ex. 1004 at ¶ 67.

1. Secondary References Disclose the Locking Means Structures

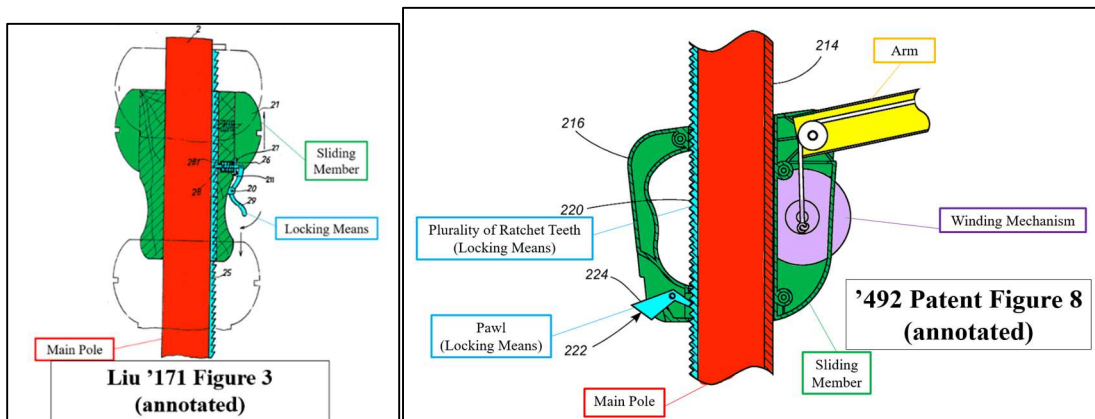
The structures corresponding to the §112 ¶ 6 claim limitation “locking means” were well known in prior art cantilevered umbrellas. For example, U.S. Patent No. 6,478,037 (“Tung”) (Ex. 1010) issued on November 12, 2002 is prior art under pre-AIA 35 U.S.C. § 102(b). *See* Ex. 1010. Tung ’037 teaches a “foldable sunshade

with a tiltable canopy” that uses a cam latch locking means similar to Figure 4 in the ’492 Patent. Ex. 1010 at Title, 3:36-46, 4:56-63; Ex. 1004 at ¶ 68.



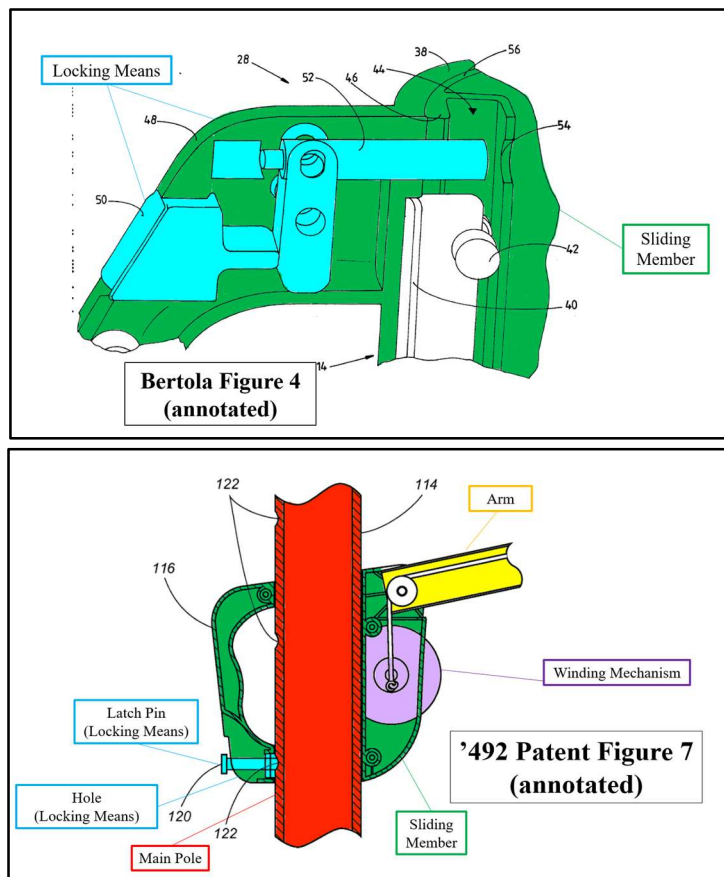
Ex. 1010 at Figure 8. During the prosecution of the ’492 Patent, the examiner identified Tung as prior art that taught the cam latch structure. See Ex.1002 at 140-141.

Similarly, U.S. Patent No. 5,284,171 (“Liu”) (Ex. 1011) issued on February 8, 1994, and is prior art under pre-AIA 35 U.S.C. § 102(b). See Ex. 1011. Liu ’171 teaches a “sunshade opening and supporting device” that uses a teeth and pawl locking means similar to Figure 8 in the ’492 Patent. Ex. 1011 at Title, 2:61-4:8; Ex. 1004 at ¶ 70.



Cf. Ex. 1011 at Figure 3 *with* Ex. 1001 at Figure 8. During the prosecution of the '492 Patent, the examiner identified Liu as prior art that taught the teeth and pawl locking means. *See* Ex. 1002 at 141-142.

Finally, German Patent Application Publication No. DE20014895U1 ("Bertola") (Ex. 1013) issued on November 16, 2000 and prior art under pre-AIA 35 U.S.C. § 102(b). Bertola teaches an adjustable offset umbrella that uses a spring-loaded pin and hole locking means as in Figure 7 of the '492 Patent. Ex. 1013 at 30; Ex. 1004 at ¶ 72. In the Bertola umbrella, "a button 50 is arranged in the handle 48 and is used to operate a latch 52 of the outer tube 56, which latch engages in a hole 54 of the outer tube 56 for fixation of the slider 28 on the mast 14." Ex. 1013 at 30; Ex. 1004 at ¶ 73.



Bertola further explains that it is “advantageous to pretension the latch 52 using a pretensioning means such that the latch autonomously transitions into the locked or supported position. By means of the button 50, the latch 52 can then transition into the unlocked position against the spring pretension, whereupon the slider 28 can then be adjusted upward, thus ensuring seamless and straightforward sliding of the slider 28 on the mast 14.” Ex. 1013 at 30.

Because Wang '460 and Ma '763 all have locking devices to affix a sliding member at a specific position along the main pole, it would have been obvious to a POSITA to make a simple substitution replacing the structure used to affix the

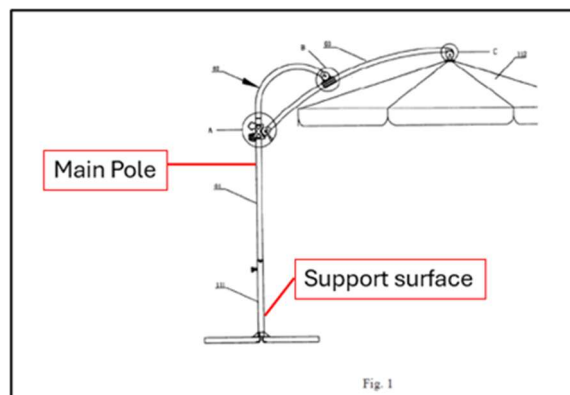
sliding member along the main pole with one of the structures corresponding to “locking means” in the ’492 Patent.

E. **Ground 1: Wang ’460 in view of Tung invalidates the claims of the ’492 Patent under pre-AIA 35 U.S.C. § 103**

1. **Claim 1**

a. **Preamble and Limitation 1[A]: “An umbrella comprising a main pole having a lower end for support by a support surface and extending generally upward to an upper end”**

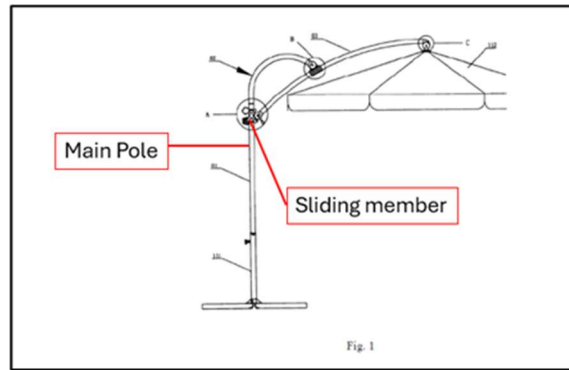
The Wang ’460 umbrella has a main pole (parasol pole 1) having a lower end for support by a support surface (parasol base 111) and extending generally upward to an upper end. Ex. 1007 at Figure 1; Ex. 1004 at ¶¶ 79-80; *see* Ex. 1007 at 12 and 14-16.



Wang ’460 Figure 1

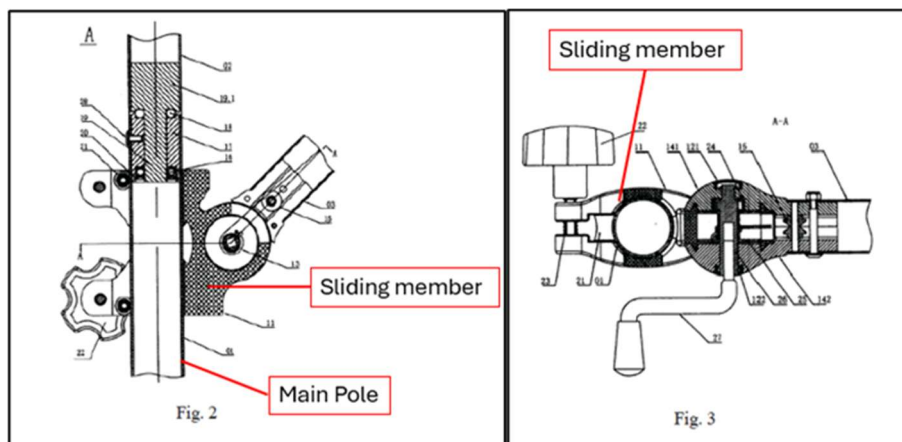
b. **Limitation 1[B]: “a sliding member associated with the main pole and selectably moveable thereon between lower and upper locations along the main pole”**

As shown below, Wang ’460 discloses this. Ex. 1004 at ¶ 81.



Wang '460 Figure 1

Wang '460 explains that a “parasol pole (01) set has a sliding sleeve (11) of a locking device that matches the parasol pole” and that “the sliding sleeve (11) has a bolt-locking hoop structure.” *Id.* at 12 (claims 1 and 3); Ex. 1004 at ¶ 81. Wang '460 further discloses that “[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” and “[w]hen opening the parasol, the sliding sleeve of the parasol pole is pushed up.” Ex. 1007 at 15, 17; Ex. 1004 at ¶ 81.



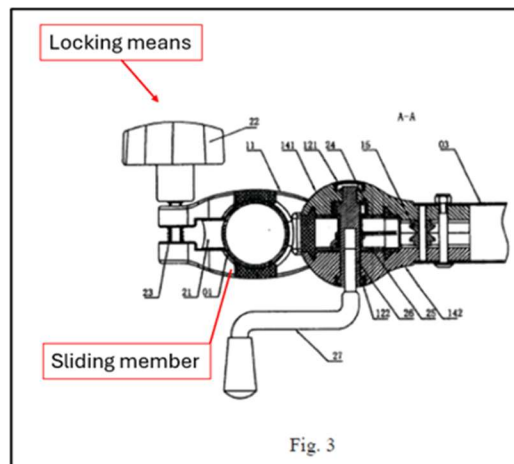
Wang '460 Figures 2 and 3

Ex. 1007 at Figures 2-3.

c. **Limitation 1[C]: “locking means for releasably securing the sliding member to the main pole at a selected location along the main pole”**

Wang '460 discloses a locking device (bolt-locking hoop structure) for releasably securing the sliding member (sliding sleeve 11) to the main pole (parasol pole 1) at a selected location along the main pole (parasol pole 1) as shown below.

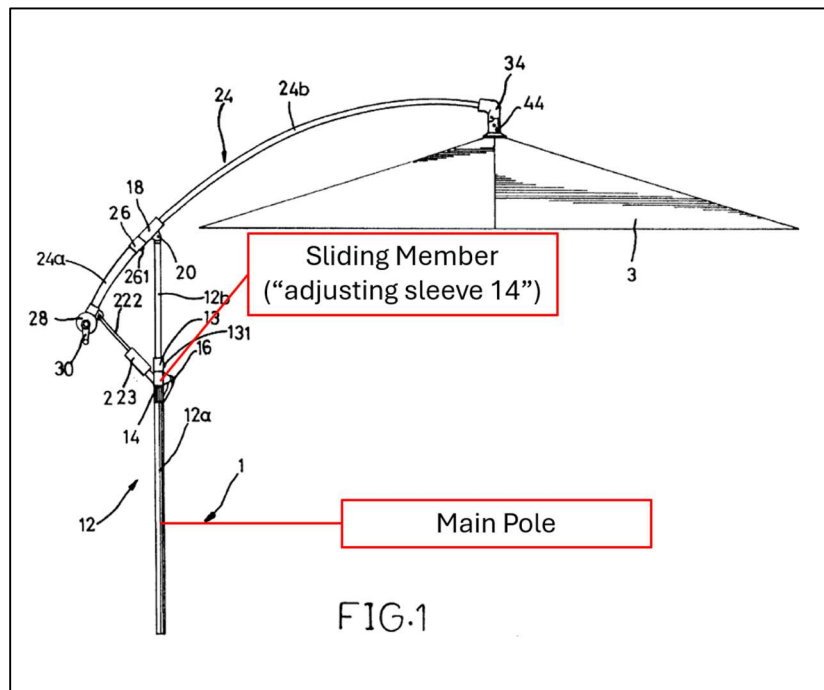
Ex. 1004 at ¶ 82.

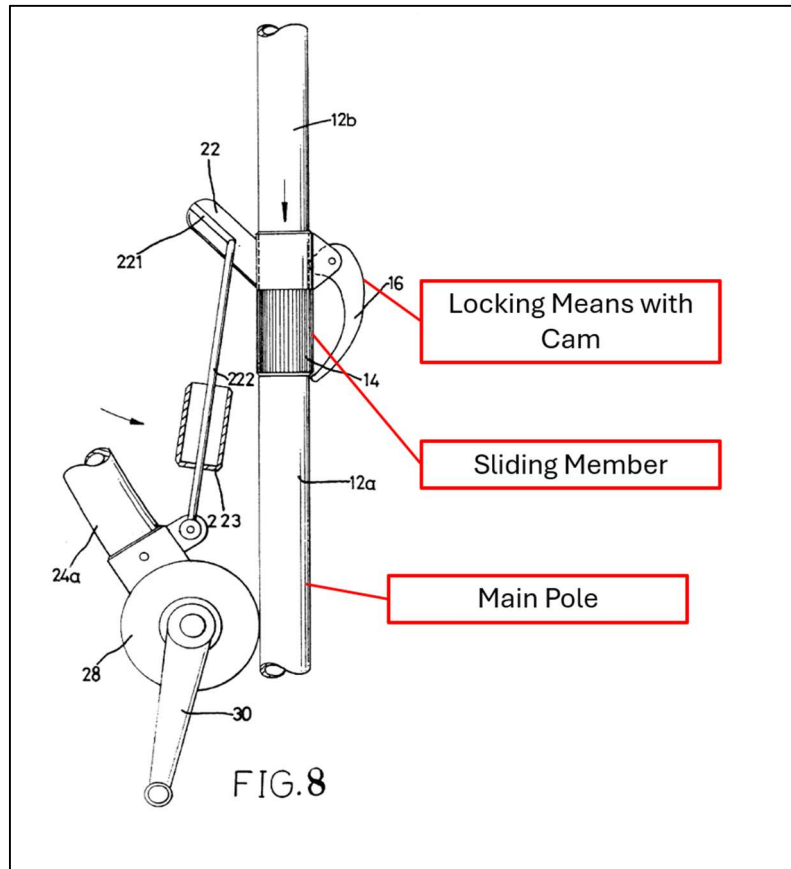


Wang '460 Figure 3

Wang '460 explains that “parasol pole 01 is equipped with a hoop-type sliding sleeve 11 locked by a bolt” and “[o]ne end of the bolt is equipped with a rotating handle 22, and a spring 23 is sleeved on the bolt portion between the hoop chunks.” Ex. 1007 at 17 and 20 (Figure 3); Ex. at 1004 at ¶ 82.

It would have been an obvious simple substitution to replace the Wang '460 locking means with the locking means disclosed in Tung, a cam latch structure as in Figure 4 of the '492 patent. Ex. 1004 at ¶ 85.





Tung Figures 1 and 8

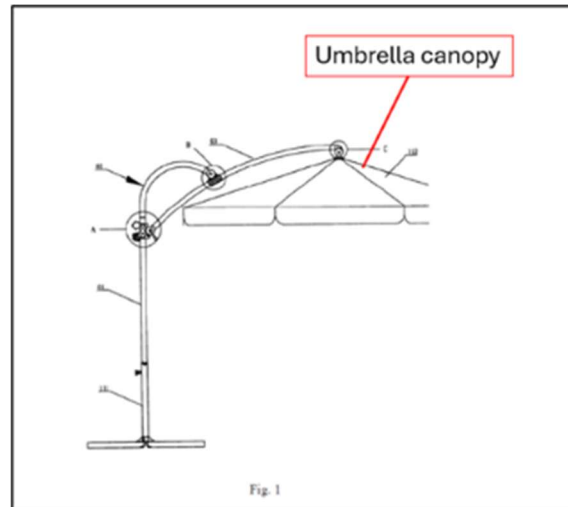
Ex. 1010 at Figures 1 and 8. Tung describes “an adjusting sleeve 14 slidably mounted around the supporting rod 12, and a lever 16 mounted to the adjusting sleeve 14. When the lever 16 is in a locked position, the adjusting sleeve 14 is frictionally retained in place, and when the lever 16 is in a released position, sliding movement of the adjusting sleeve 14 relative to the supporting rod 12 is allowed.” Ex. 1010 at 3:40-46; Ex. 1004 at ¶ 83.

A POSITA would have understood that a simple substitution of the locking device in Wang '460 with the cam latch locking device of Tung would yield predictable results improving the device. Ex. 1004 at ¶ 85. Wang '460 and Tung

both disclose adjustable, tiltable umbrellas. Wang '460 explains the benefit that “the parasol cover can rotate 360° around the parasol pole, and the pitch angle thereof can also be adjusted.” Tung similarly states that a primary object of the invention is “to provide an improved sunshade in which the canopy is tiltable, and adjustment of the tilting angle of the canopy can be easily achieved.” Ex. 1010 at 1:34-37; Ex. 1004 at ¶ 86. Further, Tung identifies the benefits of its sliding member and locking mechanism stating that an object of the invention is providing an “improved Sunshade in which the canopy can be reliably retained in a desired tilting angle.” *Id.* 1:37-41; Ex. 1004 at ¶ 86. Thus, using the teaching of Tung to substitute the cam lever of Tung for the screw locking mechanism of Wang '460 would have been obvious to a POSITA. Ex. 1004 at ¶ 86.

d. **Limitation 1[D]: “an umbrella canopy having a central region”**

Wang '460 discloses an umbrella canopy (a parasol cover 112) having a central region as shown below. Ex. 1004 at ¶ 88.

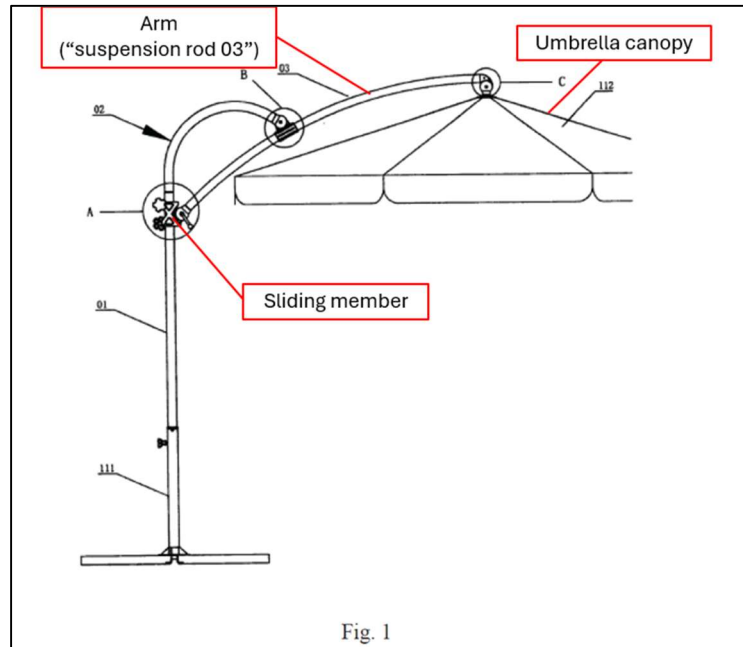


Wang '460 Figure 1

Ex. 1007 at 19.

- e. **Limitation 1[E]: “an arm associated with the central region and extending radially therefrom to an outer end operatively associated with the sliding member”**

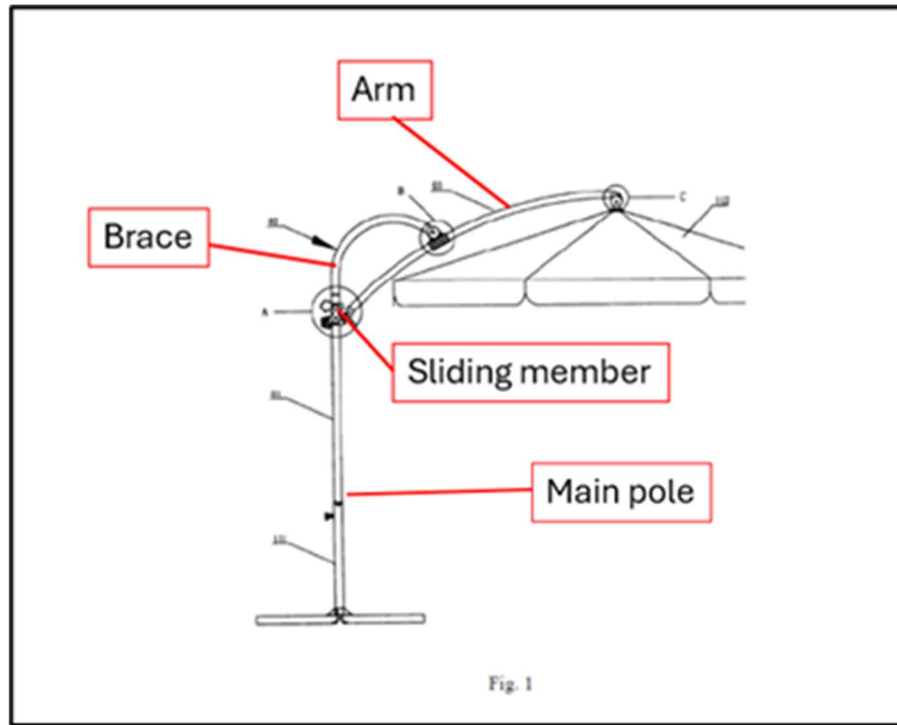
Wang '460 discloses an arm (suspension rod 3) associated with the central region (where the umbrella canopy connects to the arm) and extending radially therefrom to an outer end operatively associated with the sliding member (sliding sleeve 11) as shown below. Ex. 1004 at ¶ 89.



Wang '460 Figure 1

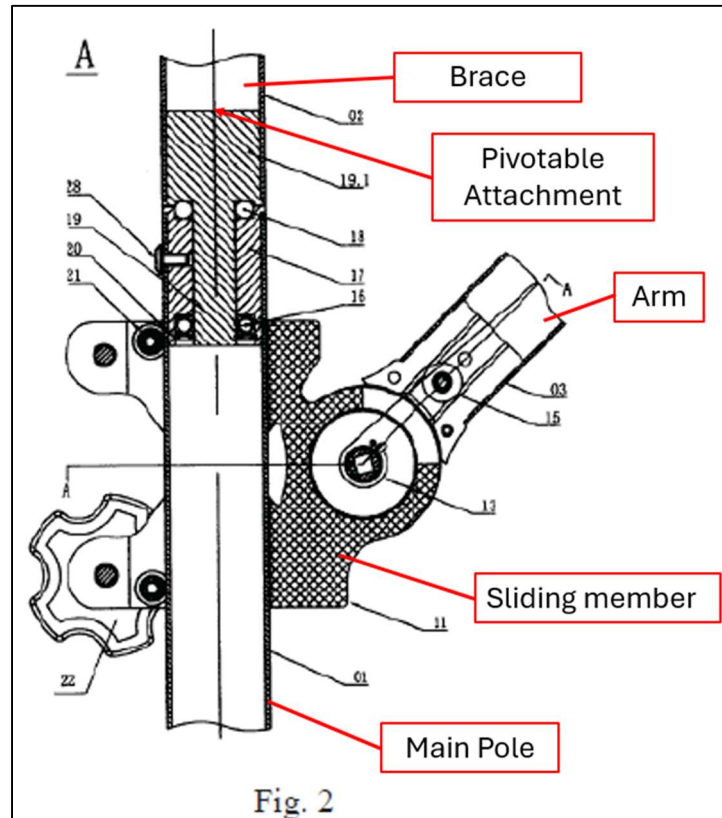
- f. **Limitation 1[F]: “a brace having a first end pivotably attached to an upper portion of the pole above the sliding member and a second end pivotably attached to the arm”**

Wang '460 discloses a brace (pull rod 02) having a first end attached to an upper portion of the pole (01) above the sliding member (sliding sleeve 11) and a second end attached to the arm (suspension rod 03). Ex. 1004 at ¶ 90.

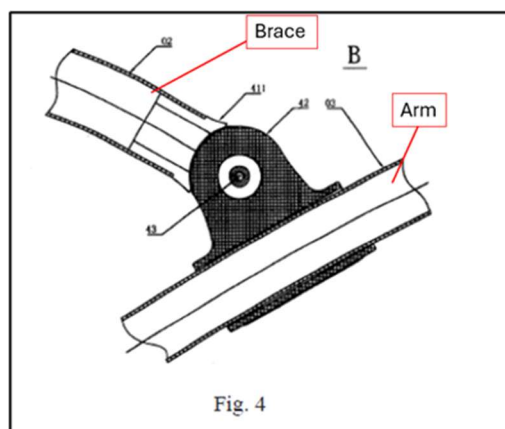


Wang '460 Figure 1

Wang '460 explains that the brace is pivotably attached to the upper end of the pole as follows: “[a] bottom end of the pull rod is connected to a top end of the parasol pole; a top end of the pull rod is connected to the suspension rod in a sleeving manner, the top end of the parasol pole and the bottom end of the pull rod have a **horizontal rotating connection** structure.” Ex. 1007 at 10 (emphasis added); Ex. 1004 at ¶ 90. The pivotal connection between the brace/pull rod and the top end of the parasol pole is further shown in Figure 2 below.



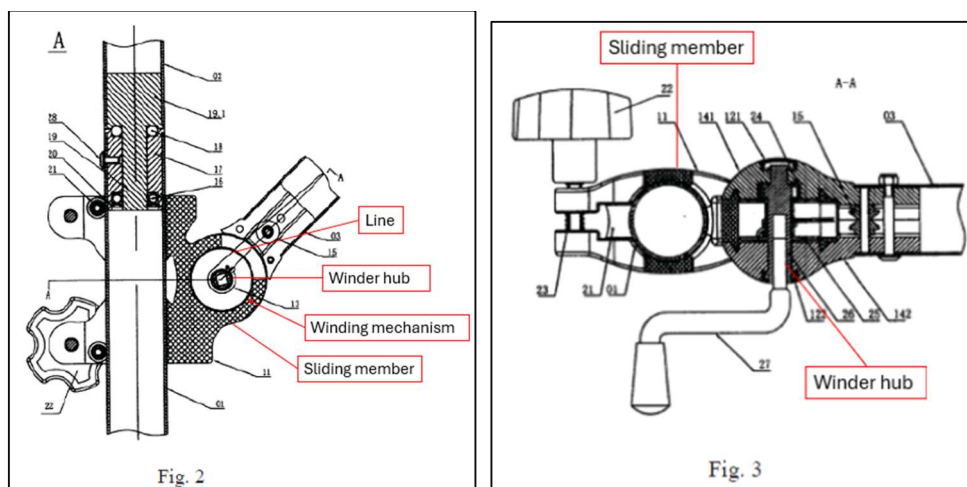
Ex. 1007 Figure 2. As shown in Figure 4, the second end of the brace is pivotally attached to the arm.



Id. at Figure 4. Wang '460 explains that “[w]ith reference to Fig. 4, the top end of the pull rod 02 is equipped with a concave arc joint 411 to slide relatively with a semi-cylindrical lug of a tube sleeve 42 of the suspension rod 03. The joint 411 and the tube sleeve 42 are hingedly connected by a pivot pin 43, so that when the suspension rod 03 slides in the tube sleeve 42, the semi-cylindrical lug can rotate relative to the concave arc joint 411.” Ex. 1007 at 17; Ex. 1004 at ¶ 92.

g. **Limitation 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”**

Wang '460 discloses a winding mechanism (rope winder) 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. Ex. 1004 at ¶ 93.

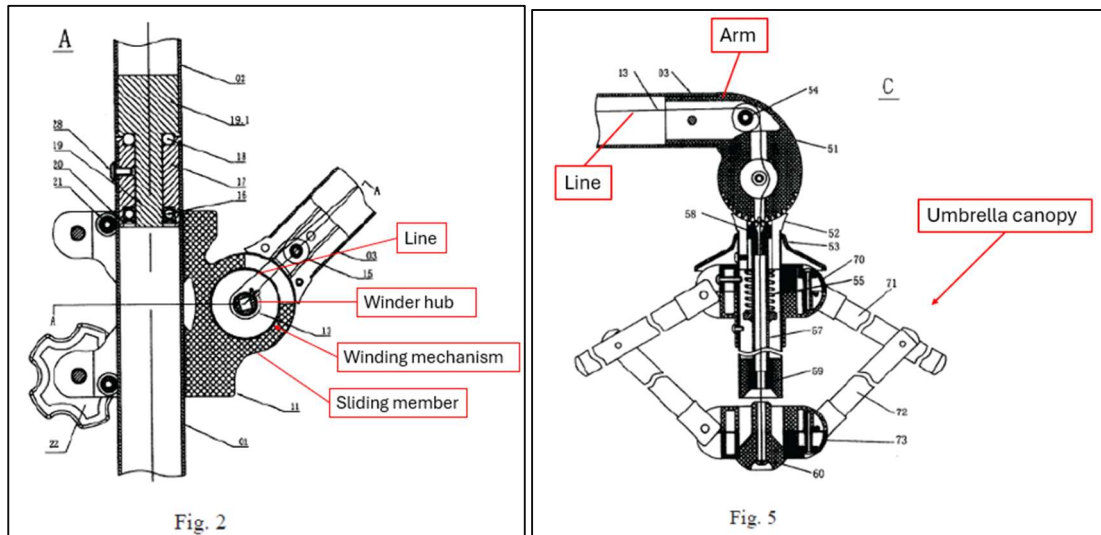


Wang '460 Figures 2 and 3

Wang '460 explains that “[t]he 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.” Ex. 1007 at 17; Ex. 1004 at ¶ 93. Further, Wang '460 claim 1 recites “the sliding sleeve comprises a **rope winder** and is shaft-connected to a bottom end of the suspension rod (03) . . .” Ex. 1007 at 12 (emphasis added); Ex. 1004 at ¶ 93.

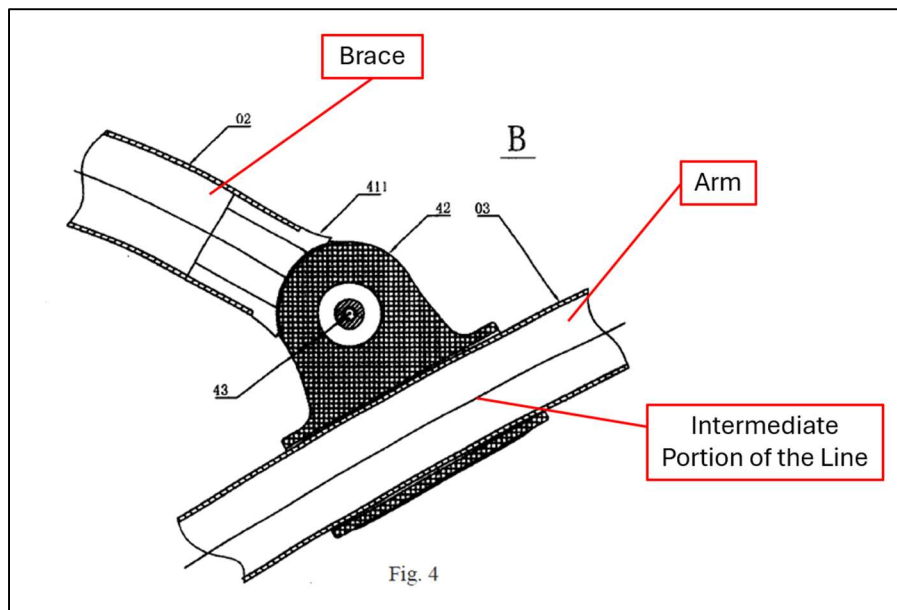
h. Limitation 1[H]: “a line having a first end that winds around the winder hub, an intermediate portion extending from the winder hub along the arm to the umbrella canopy, and a second end that engages the umbrella canopy”

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 (suspension rod 03) to the umbrella canopy (a parasol cover 112), and a second end that engages the umbrella canopy (a parasol cover 112) as shown below. Ex. 1004 at ¶ 94.



Wang '460 Figures 2 and 5

An intermediate portion of the line is seen in FIG. 4.



Wang '460 Figure 4

Wang '460 explains that “the sliding sleeve comprises a rope winder . . . 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.” Ex. 1007 at 12 (claim 1); Ex. 1004 at ¶ 94; *see also* Ex. 1007 at 10-11 and 17.

i. **Limitation 1[I]: “wherein rotation of the winder hub tensions or relaxes the line depending upon the direction of rotation of the winder hub”**

In Wang '460, operation of the winder hub (rope winder including the reel 26) tensions or relaxes the line (pull rope 13) depending upon the direction of the rotation of the winder hub (rope reel 26). Ex. 1004 at ¶ 96. Wang '460 explains: “When opening the parasol, . . . the rope winder is then operated to wind the parasol rope so as to lift the lower parasol disc, . . . the parasol support of the lower parasol disc pushes the parasol ribs to open the parasol cover. . .” Ex. 1007 at 2-3; Ex. 1004 at ¶ 97. Wang '460 also describes relaxing the line stating “the parasol rope can be slightly loosened to disengage the top tube from the joint.” *Id.*

j. **Limitation 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”**

Wang '460 discloses this. Ex. 1004 at ¶ 99. Wang '460 states “the parasol cover can be easily opened and closed... the rope winder is [] operated to wind the parasol rope so as to lift the lower parasol disc” to open the umbrella (Ex. 1007 at

15). “[T]he 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.” Ex. 1007 at 12 (claim 1); Ex. 1004 at ¶ 99.

k. **Limitation 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”**

Wang ’460 describes “a hanging parasol with adjustable inclination angle of the parasol cover.” Ex. 1007 at Abstract. However, adjusting the angle of the Wang ’460 umbrella requires loosening the parasol rope “to disengage the top tube from the joint” so that “the parasol cover can be adjusted to reach an appropriate pitch angle.” *Id.* at 3. Tung explains that this type design is “troublesome” because “the user has to lower the canopy to a reachable level ..., rotate the canopy, and raise the canopy again.” As a result, “the user must operate the mechanism for adjusting the height of the canopy twice” or “otherwise a chair or the like is required to reach [and adjust] the canopy.” Ex. 1010 at 1:14-21; Ex. 1004 at ¶ 102. Tung discloses a more

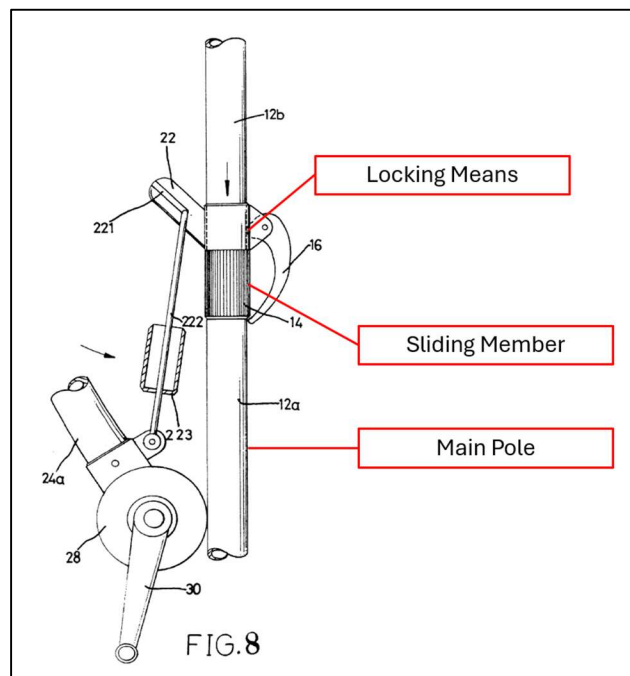
elegant design where simply sliding the sleeve along the main pole adjusts the pitch angle. Tung explains that “[t]he arcuate tube 24 (including the Outer tube section 24a and the inner tube section 24b) is slid along the holding sleeve 18 until a desired tilting angle of the canopy 3 is reached for optimum shade. The lever 16 is then switched to its locked position.” Ex. 1010 at 4:55-65. Tung’s sleeve design allows a user to adjust the umbrella at the sleeve without separately interacting with the raised canopy or adjusting the height of the canopy multiple times. Ex. 1004 at ¶ 102. Thus, a POSITA would have been motivated to modify the Wang ’460 umbrella to have the sliding sleeve and locking means disclosed in Tung for adjusting the angle of the canopy to improve the umbrella. Ex. 1004 at ¶¶ 102-103.

Accordingly, Claim 1 is invalid. Ex. 1004 at ¶ 104.

2. Claim 2

Claim 2 of the ’492 Patent recites “[t]he umbrella of claim 1, wherein the locking means for releasably securing the sliding member to the main pole comprises a cam latch member having a cam surface, the cam latch member being rotatable with respect to the sliding member between a first position in which the cam surface causes the sliding member to be clamped against the main pole, and a second position in which the cam surface permits movement of the sliding member with respect to the main pole.” Ex. 1001 at 5:12-18.

Wang'460 combined with Tung discloses this. Tung discloses a locking means comprising a cam latch member having a cam surface (lever 16). As shown below, the Tung cam latch member (lever 16) is rotatable with respect to the sliding member (adjusting sleeve 14, control sleeve 13) between a first position in which the cam surface causes the sliding member (adjusting sleeve 14, control sleeve 13) to be clamped against the main pole (supporting rod 12), and a second position in which the cam surface (lever 16) permits movement of the sliding member with respect to the main pole (supporting rod 12). Ex. 1004 at ¶ 105; Ex. 1010 at 4:55-65.

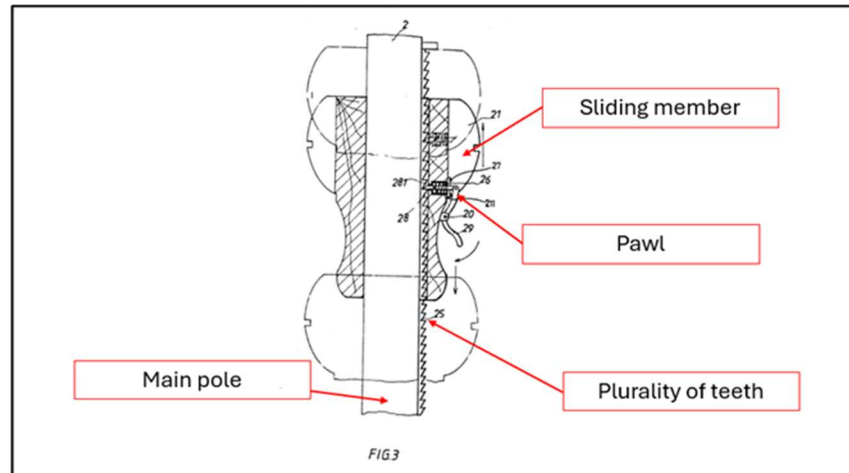


Id. at Figure 8. As discussed above, a POSITA would have understood that a simple substitution of the locking mechanism in Wang '460 with the cam latch locking mechanism of Tung would yield predictable results to improve adjustable umbrella of Wang '460. Ex. 1004 at ¶ 106.

Thus, claim 2 is invalid under § 103. Ex. 1004 at ¶ 107.

3. Claim 3

Claim 3 of the '492 Patent recites “[t]he umbrella of claim 1, wherein the locking means for releasably securing the sliding member to the main pole comprises a plurality of teeth formed on the main pole and a cooperating pawl associated with the sliding member and selectively operative to engage a selected one of the teeth to prevent movement of the sliding member with respect to the main pole.” Ex. 1001 at 5:21-6:5. Wang '460 combined with Liu discloses this. Ex. 1004 at ¶ 108. The Abstract of Liu discloses a “rack-like member is equipped with a plurality of consecutive Z-shaped teeth” located on the main shaft of the sunshade where the sliding member can slidably move along the rack. Ex.1011 at Abstract; 2:21-38; 3:1-6; Ex. 1004 at ¶ 109. The front tip of the supporting pin located on the runner engages “with the teeth of the rack-like member and can disengaged there with by actuation of the arc arm so as to make the supporting pin retrievably actuated.” Ex.1011 at Abstract; Ex. 1004 at ¶ 109; *see* Ex.1011 at 1:19-31, 2:21-38, 3:10-30.



and runner; (3) making operation of the umbrella more convenient; and (4) reducing the effort required to operate the sunshade. Ex. 1011 at 1:57-2:11, 2:38-42, 3:50-4:8; Ex. 1004 at ¶ 111. A POSITA would recognize that Wang '460's "hoop-type sliding sleeve 11 locked by a bolt," requires holding the sliding sleeve in place while using the other hand to lock it. Ex. 1004 at ¶ 112. Thus, using the locking mechanism in Liu would improve the ease of use of the umbrella while achieving the goals recited in Wang '460. Ex. 1004 at ¶ 113.

Thus, claim 3 is invalid under § 103. Ex. 1004 at ¶ 114.

4. Claim 4

Claim 4 of the '492 Patent recites "[t]he umbrella of claim 1, wherein the locking means for releasably securing the sliding member to the main pole comprises a plurality of holes formed in the main pole and a pin associated with the sliding member and operative to engage a selected one of the holes." Ex. 1001 at 6:6-10. As discussed above, Wang '460 discloses a locking device (bolt-locking hoop structure) for releasably securing the sliding member at a selected location. The use of a pin and hole locking structure was well-known in the prior art, and a POSITA would have been motivated to substitute a known pin and hole structure for the bolt-locking structure in Wang '460. For example, Bertola discloses a button 50 that is used to operate a spring-loaded pin (latch 52) under "spring pretension" that engages

with a hole (hole 54) “for fixation of the slider [] on the mast.” Ex. 1013 at 28, 30; Ex. 1004 at ¶ 115.

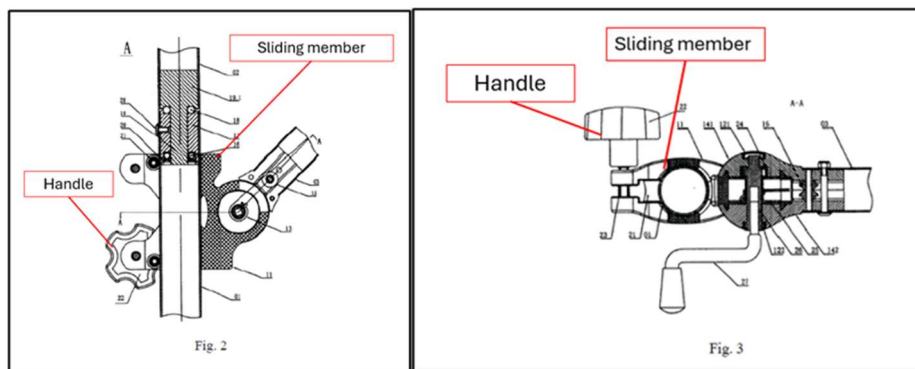
A POSITA would have understood that a simple substitution of the locking mechanism of Wang ’460 with the pin and hole structure of Bertola would yield predictable results to improve the umbrella. Ex. 1004 at ¶ 116. Both references also disclose similar motivations to combine. Ex. 1004 at ¶ 117. For example, Wang ’460 states that prior umbrella designs are “complicated, and the opening and closing of the parasol cover is quite inconvenient” and “unstable when the parasol cover is opened.” Ex. 1007 at 14; Ex. 1004 at ¶ 117. Similarly, Bertola explains that one disadvantage of a prior umbrella is “the height-adjustable boom being quite difficult to adjust via both a fork and a locking bolt, which engages into a hole in the mast.” Ex. 1013 at 38. Bertola further states that one advantage of her invention is that “the boom is height-adjustable and fixable on the mast in a quite straightforward manner, as a result of which the tilt angle of the boom is variable in a quick and straightforward manner.” *Id.* Bertola goes to explain that one aspect of this is that “the sleeve comprises a handling means, e.g. a handle, and a latch or the like is operable by means of a button that is preferably arranged on the handle, whereby the latch engages in a hole of the mast or the outer tube for the purpose of axial fixation of the slider on the mast.” *Id.* at 28 and 41. Thus, a POSITA would have been

motivated to use the locking mechanism of Bertola achieve the goals stated in Wang '460. Ex. 1004 at ¶ 117.

Thus, claim 4 is invalid under § 103. Ex. 1004 at ¶ 118.

5. Claim 5

Claim 5 of the '492 Patent recites “[t]he umbrella of claim 1, wherein the sliding member has a handle associated therewith.” Ex. 1001 at 6:11-12. Wang '460 discloses the sliding member (running frame 3) having a handle (rotating handle 22). Ex. 1004 at ¶ 119. As shown below, “[t]he parasol pole 01 is equipped with a hoop-type sliding sleeve 11 locked by a bolt” and “[o]ne 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.” Ex. 1007 at 17; Ex. 1004 at ¶ 120.

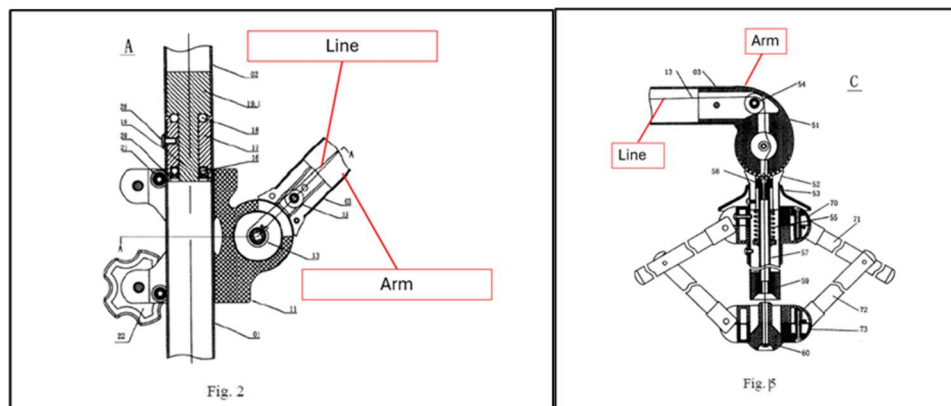


Wang '460 Figures 2 and 3 (Ex. 1007 at 20)

Thus, claim 5 is invalid under § 103. Ex. 1004 at ¶ 121.

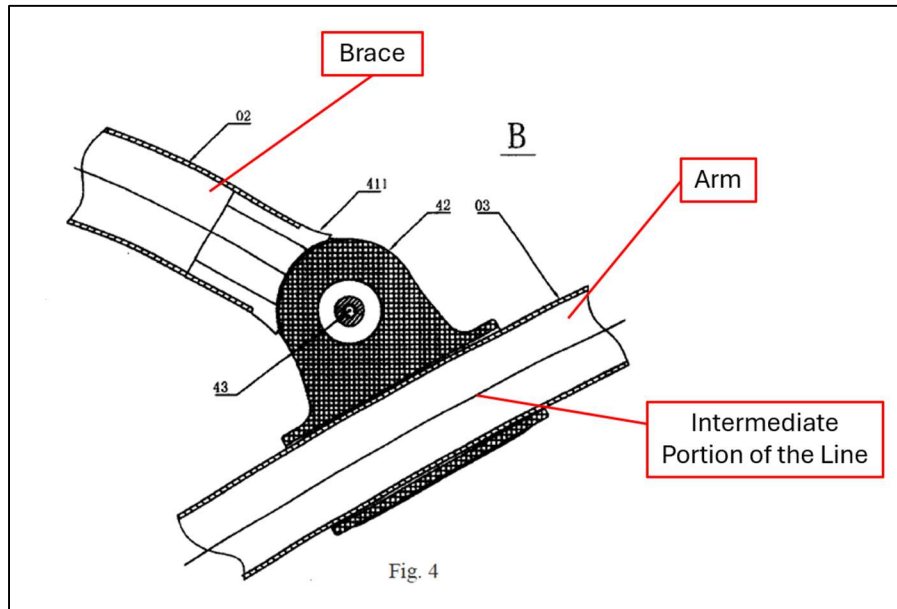
6. Claim 6

Claim 6 of the '492 Patent recites “[t]he umbrella of claim 1, wherein the line extends along at least substantially the entire length of the arm.” Ex. 1001 at 6:13-14. Wang '460 discloses the line (pull rope 13) extending along at least substantially the entire length of the arm (suspension rod 03). Ex. 1004 at ¶ 125. As shown below, “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.” Ex. 1007 at 10-11, 12 (claim 1), 15, and 20-21 (Figures 2 and 5); Ex. 1004 at ¶ 125.



Wang '460 Figures 2 and 5 (Ex. 1007 at 20-21)

Between these end portions, the intermediate section of the line extends along the arm (suspension rod 03) as seen in FIG. 4.



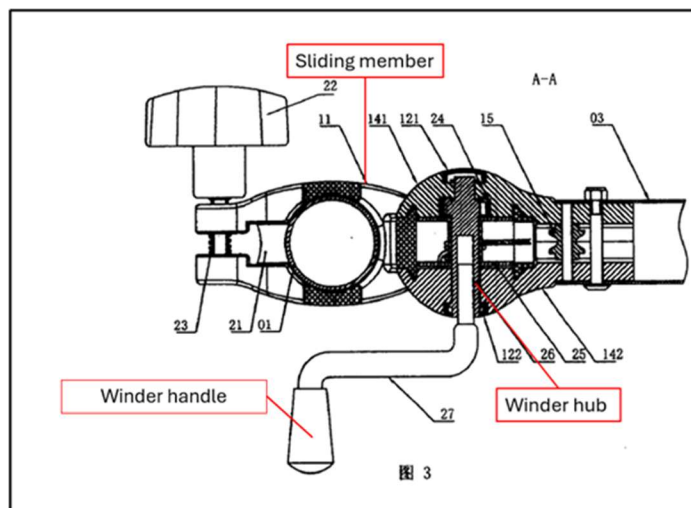
Wang '460 Figure 4

Thus, claim 6 is invalid under § 103. Ex. 1004 at ¶ 127.

7. Claim 7

Claim 7 of the '492 Patent recites “[t]he 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.” Ex. 1001 at 6:15-17. 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. Ex. 1004 at ¶ 128. As shown below, “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.” Ex. 1007 at 17 and 20 (Figure 3); Ex. 1004 at ¶ 128.



Wang '460 Figure 3 (Ex. 1007 at 20)

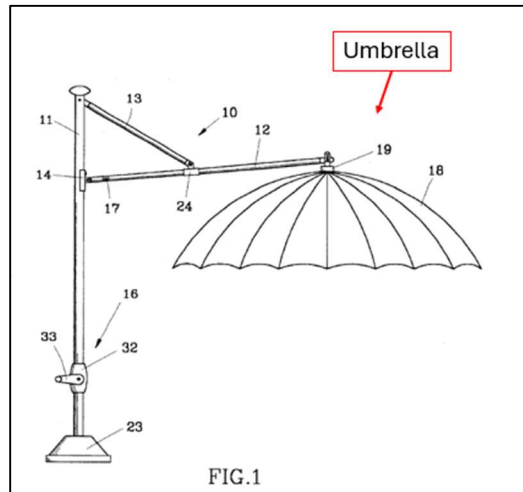
Thus, claim 7 is invalid under § 103. See Ex. 1004 at ¶¶ 128-129.

F. Ground 2: Ma '763 in view of Bertola invalidates the claims of the '492 Patent under pre-AIA 35 U.S.C. § 103.

1. Claim 1

- a. Preamble and Limitation 1[A]: “An umbrella comprising a main pole having a lower end for support by a support surface and extending generally upward to an upper end”**

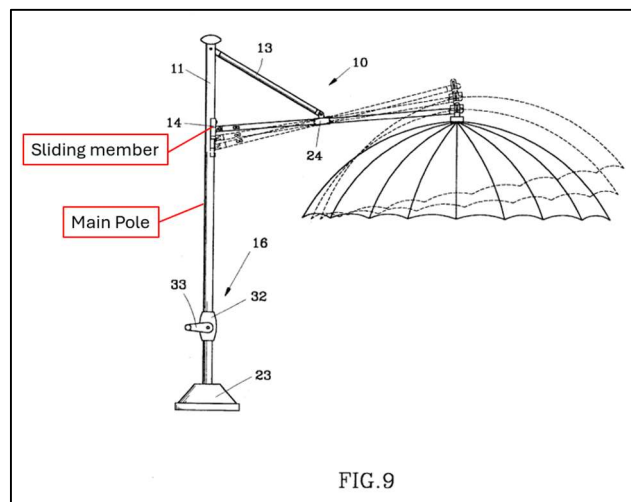
Ma '763 discloses an umbrella that has a main pole (support pole 11) having a lower end for support by a support surface (base 23) and extending generally upward to an upper end as shown below. Ex. 1009 at Title, Abstract, 2:50-52; Ex. 1004 at ¶¶ 131-132.



Ma '763 Figure 1 (Ex. 1009)

b. **Limitation 1[B]: “a sliding member associated with the main pole and selectably moveable thereon between lower and upper locations along the main pole”**

The Ma '763 umbrella has a sliding member (slide 14) associated with the main pole (support pole 11) and selectably moveable thereon between lower and upper locations along the main pole (support pole 11) as shown below. Ex. 1004 at ¶ 134.

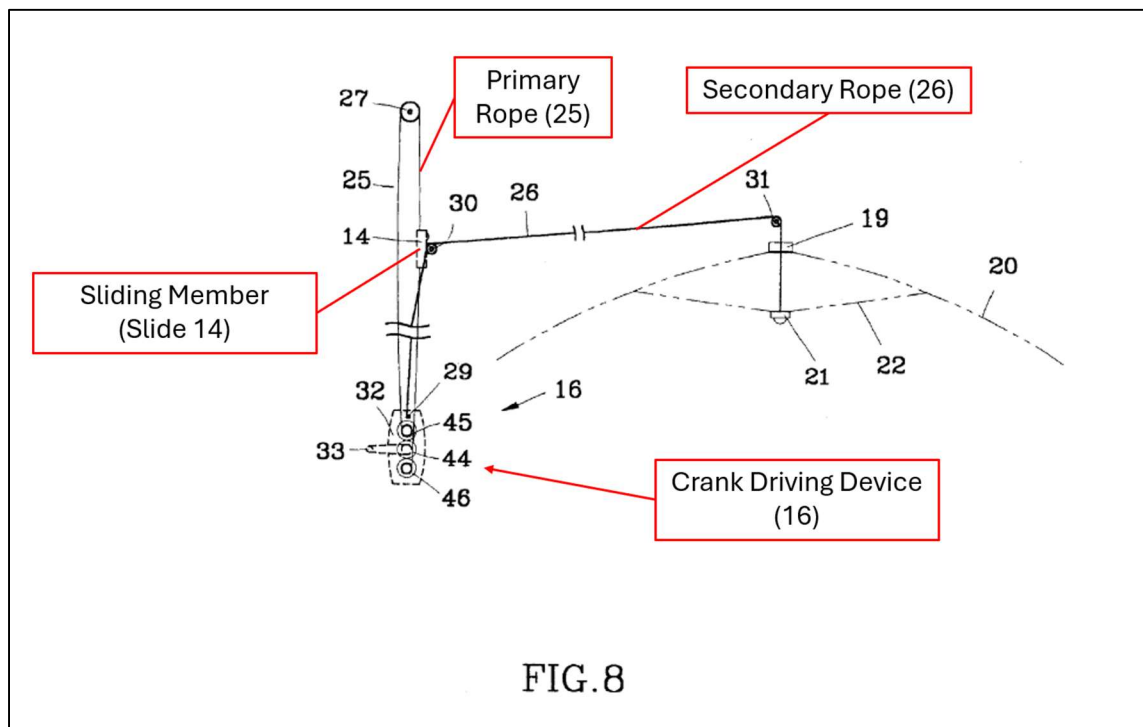


Ma '763 Figure 9 (Ex. 1009)

Ma '763 explains that the “arm 12 [is] movabl[y] mounted to the support pole 11 by a slide 14” *Id.* at 2:49-59; Ex. 1004 at ¶ 134.

c. **Limitation 1[C]: “locking means for releasably securing the sliding member to the main pole at a selected location along the main pole”**

The Ma '763 umbrella has a locking device for releasably securing the sliding member (slide 14) to the main pole at a selected location. Ex. 1004 at ¶ 135. Specifically, as shown below, “[t]he slide 14 is attached to the primary rope 25 and slidable along the pole 11 so that when the primary rope 25 is driven by the crank driving device 16, the slide 14 is moved along the pole 11 and thus causing the arm 12 to move with respect to the pole 11.” Ex. 1009 at 3:13-16; Ex. 1004 at ¶ 135.



Ma '763 Figure 8 (Ex. 1009)

Ma '763 explains that “[t]he primary rope 25 forms a loop coupled between the axle 28 and the pulley 27. When the crank member 33 is actuated, the primary rope 25 is driven to move between the axle 28 and the pulley 27, which in turn drives the slide 14 to move along the pole 11.” Ex. 1009 at 3:63-67; Ex. 1004 at ¶ 136. Thus, the primary rope 25, in combination with the crank member 33, axle 28, and pulley 27, acts as a locking device that secures the sliding member 14 at a selected location along the main pole. Ex. 1004 at ¶ 136. The elevation of the slide due to the operation of the primary rope 25 also simultaneously tensions the secondary rope 26 to open the canopy. Ex. 1004 at ¶ 137; Ex. 1009 at 4:41-47 (“when the slide 14 is driven by the movement of the primary rope 25 . . . the distance

between the slide 14 and the . . . proximate end of the secondary rope 26 . . . is increased, which causes the runner 21 to . . . open the panel.”)

While the locking device disclosed in Ma ’763 is not one of the three structures corresponding to the § 112 ¶ 6 limitation “locking means” in the ’492 Patent, it would have been obvious to a POSITA to substitute one of those structures for the locking device in the Ma ’763 umbrella. For example, as discussed above, Bertola discloses a pin and hole locking structure that corresponds with the latch-pin and hole locking means structure described in the ’492 Patent. Ex. 1013 at 28, 30; Ex. 1004 at ¶ 138.

A POSITA would have understood that a simple substitution of the primary rope used to lock the sliding member in Ma ’763 with the known pin and hole mechanism of Bertola would yield predictable results and would improve the Ma ’763 umbrella. Ex. 1004 at ¶ 139.

First, replacing the ropes and pulleys in the Ma ’763 locking means would improve durability. Specifically, slide 14 is locked into place by the tension of the primary rope 25 holding the slide. Ex. 1009 at 3:12-16 and 3:57-67; Ex. 1004 at ¶ 139. The slide staying in place (and holding the umbrella in place) depends on the integrity of rope which can be weakened due to the degradation and wear of the primary rope 25 in operation over the pulley 27. A failure in the integrity of the rope would result in the collapse of the umbrella and could lead to user injury. Ex. 1004

at ¶ 139. Moreover, prior art teaches that removing pulleys provides a better design because it reduces opportunities for “defects ... caused by breakage of the cord or jamming of the cord at one of the several pivot areas around which the cord is guided” and provides a design that “can be operated independently of the position” of other mechanisms. Ex. 1015 at [0004], [0005], [0025]; Ex. 1004 at ¶ 139.

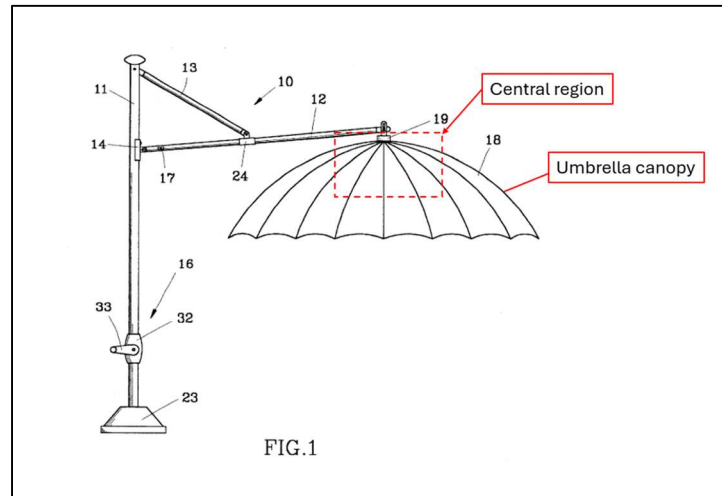
Second, in the Ma ’763 umbrella, the slide 14 must be fully elevated to sufficiently tension the secondary rope 26 to cause the canopy to be in a fully open position and the secondary rope 26 must then be locked before the user can adjust the angle of the canopy through moving the slide 14 because primary rope 25 has dual functions for (a) opening and closing the canopy and (b) positioning the angle of the canopy. *Id.* at ¶ 140. Ma ’763 explains that once the Ma ’763 umbrella is fully opened, locking device 17 can hold the umbrella in the open position by locking secondary rope 26 in place. Ex. 1009 at 4:52-61 and Figure 6; Ex. 1004 at ¶ 140. Then, “[f]urther driving of the primary rope 25 to move the slide 14 causes the panel 18 [the canopy] to rotate to a different direction, as indicated by the dashed lines shown in FIG. 9.” Ex. 1009 at 4:58-61. Using the pin and hole mechanism described in Bertola to lock the slide in place instead of the primary rope 25, would allow the secondary rope 26 to operate independently of the position of the slide 15 (which independent operation is discussed in Section VI.C.4 below) such that a user could adjust the angle of the canopy independently from opening or closing the

canopy. Ex. 1004 at ¶ 140. For example, if rope 26 functioned to open and close the canopy without any dependence on the position of the slide 14, and a pin and hole device locked the position of the slide, a user could partially open the canopy and then adjust the angle of the canopy without having it fully open or a user could position the slide as desired and then open the canopy. *Id.* That is not possible using the primary rope as the locking device where the primary rope also fully elevates the slide to open the canopy in coordinate manner as described in Ma '763. Prior art further teaches that independent adjustment of the parasol canopy and the height of the parasol is advantageous. Ex. 1015 at [0020].

Thus, a POSITA would have been motivated to use the locking mechanism taught in Bertola to remedy the drawbacks of the locking means in Ma '763. *Id.*

d. **Limitation 1[D]: “an umbrella canopy having a central region”**

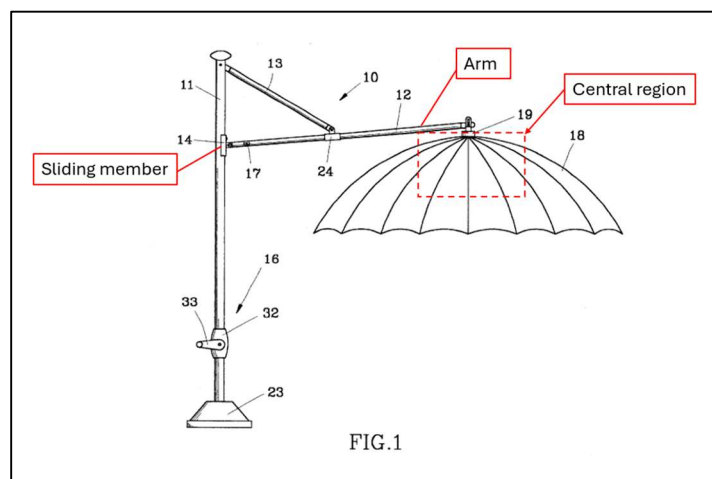
Ma '763 discloses an umbrella canopy (panel 18) having a central region as shown below. Ex. 1009 at 2:60-3:2; Ex. 1004 at ¶ 141.



Ma '763 Figure 1 (Ex. 1009)

- e. **Limitation 1[E]: “an arm associated with the central region and extending radially therefrom to an outer end operatively associated with the sliding member”**

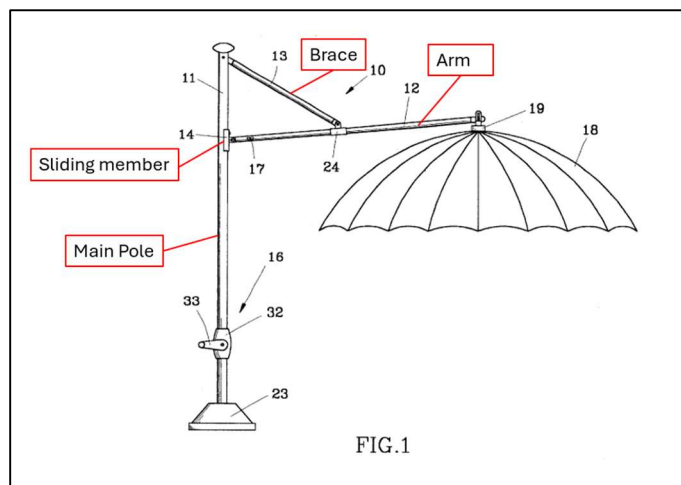
Ma '763 discloses this limitation. Ex. at 1004 at ¶ 142. As shown below, Ma '763 has “an arm 12 movably mounted to the support pole 11 by a slide 14 and also coupled to the support pole 11 by a link 13” the canopy. Ex. 1009 at 2:52-55; Ex. 1004 at ¶ 142.



Ma '763 Figure 1 (Ex. 1009)

- f. **Limitation 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”**

Ma '763 discloses a brace (link 13) having a first end pivotably attached to an upper portion of the pole (support pole 11) above the sliding member (slide 14) and a second end pivotably attached to the arm (arm 12) as shown below. Ex. 1004 at ¶ 143.



Ma '763 Figure 1 (Ex. 1009)

Ma '763 explains that “[a]n arm has an end pivoted to the slide and is further supported by a link pivoted to both the pole and the arm” and “[a] pivot joint 24 is formed on the arm 12. The link 13 has two ends respectively pivotally connected to an upper end of the pole 11 and the pivot joint 24.” *Id.* at 3:19-22 and Figure 1; Ex. 1004 at ¶ 143.

g. **Limitation 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”**

Ma '763 has a line securing device (locking device 17) mounted to the sliding member and movable therewith that functions the same way as the winder hub in the umbrella of the '492 Patent. Ex. 1004 at ¶ 144. The winder hub in the '492 Patent anchors the line and increases or decreases tension in the line to open and close the canopy. Ex. 1001 at 3:41-49; Ex. 1004 at ¶ 144. Similarly, in Ma '763, locking device 17, shown below, anchors the line (secondary rope 26) to maintain the canopy in an open position. Ex. 1009 at 4:24-26; Ex. 1004 at ¶ 144.

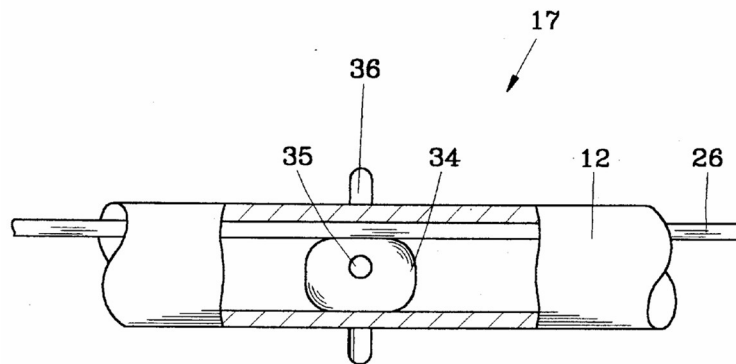
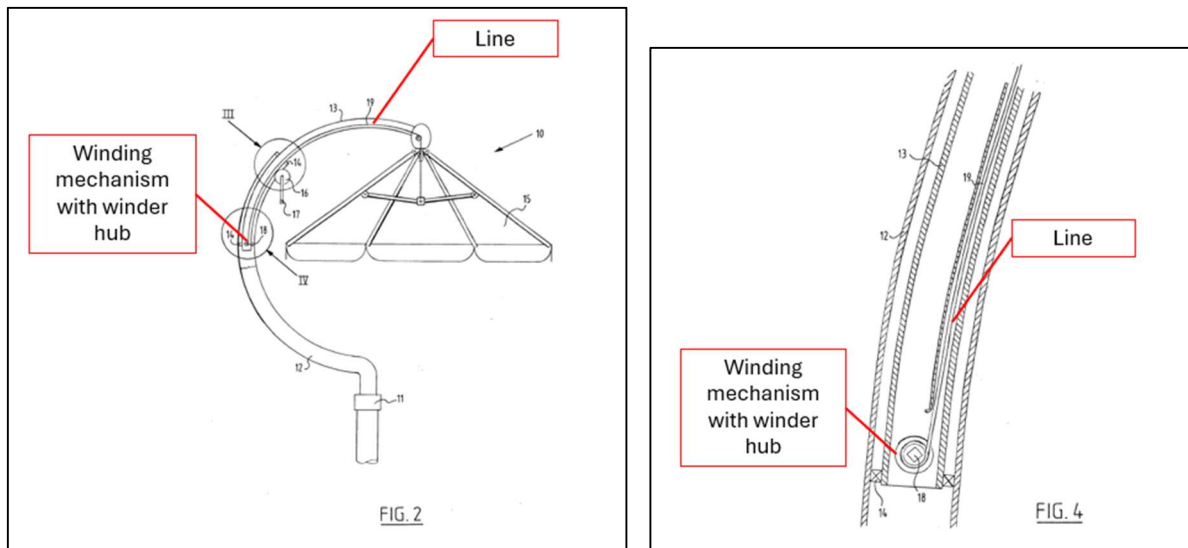


FIG. 6

Ma '763 explains that “[t]he locking device 17 may be manually actuated to engage and thus fix the secondary rope 26... When the knob 36 is rotated by a user, the locking member 34 is moved in such a way so as to reduce the gap, and thereby pinch the secondary rope 26 . . .” Ex. 1009 at 4:25-35 and 4:38-40; Ex. 1004 at

¶ 145. Moreover, Ma '763 states that the locking device can be placed on the arm 12 or on slide 14. Ex. 1009 at 4:36-40; Ex. 1004 at ¶ 145.

Although, Ma '763 does not disclose the use of a winder hub, it would have been obvious to a POSITA to replace locking device 17 in Ma '763 with a winder hub to make it easier to open or close the umbrella. It was well known in the prior art to use a winder hub with a line to open and close a canopy. For example, European Patent Application No. EP1602297 (Ma '297) (Ex. 1015) discloses an umbrella device with a winding mechanism having a winder hub (reel 18) around which a line (cord 19) can be wound to open and close the umbrellas. Ex. 1004 at ¶ 146. Ma '297 was published on July 12, 2005 and is prior art under pre-AIA 35 U.S.C. § 102(b). *See* Ex. 1015. As shown below, the Ma '297 umbrella device has a fixed main pole (first tubular element 12), an arm (second tubular element 13) coupled with the fixed pole, and “[i]nside the second tubular element 13[,] a reel 18 is present along which a cord 19 is wound, which is guided through the second tubular element 13 and is used to open and close the parasol 15.” Ex. 1015 at [0018], [0022], and Figures 2 and 4 (see annotated below); Ex. 1004 at ¶ 148.



Ma '297 Figures 2 and 4 (Ex. 1015)

A POSITA would have understood the benefits of combining Ma '297's winder hub (reel 18) with Ma '763's locking device 17. Ex. 1004 at ¶ 149. Ma '763's locking device 17 has a locking member that pivots to pinch the line. Ex. 1009 at 4:22-25. Ma '297 identifies problems of breakage and jamming with lines guided through such pivots. Specifically, in connection with identifying problems in the prior art, Ma '297 states that a "mechanism using a cord for moving [a] second tubular element relative to [a] first tubular element is rather susceptible for defects for example caused by breakage of the cord or jamming of the cord at one of the several pivot areas around which the cord is guided." Ex. 1015 at [0004]; Ex. 1004 at ¶ 149. Thus, replacing locking device 17 of Ma '763 with the reel 18 of Ma '297 would yield predictable results maintaining tension in the rope that holds the canopy

in place, and would reduce the risk of defects, improving the device. Ex. 1004 at ¶ 149.

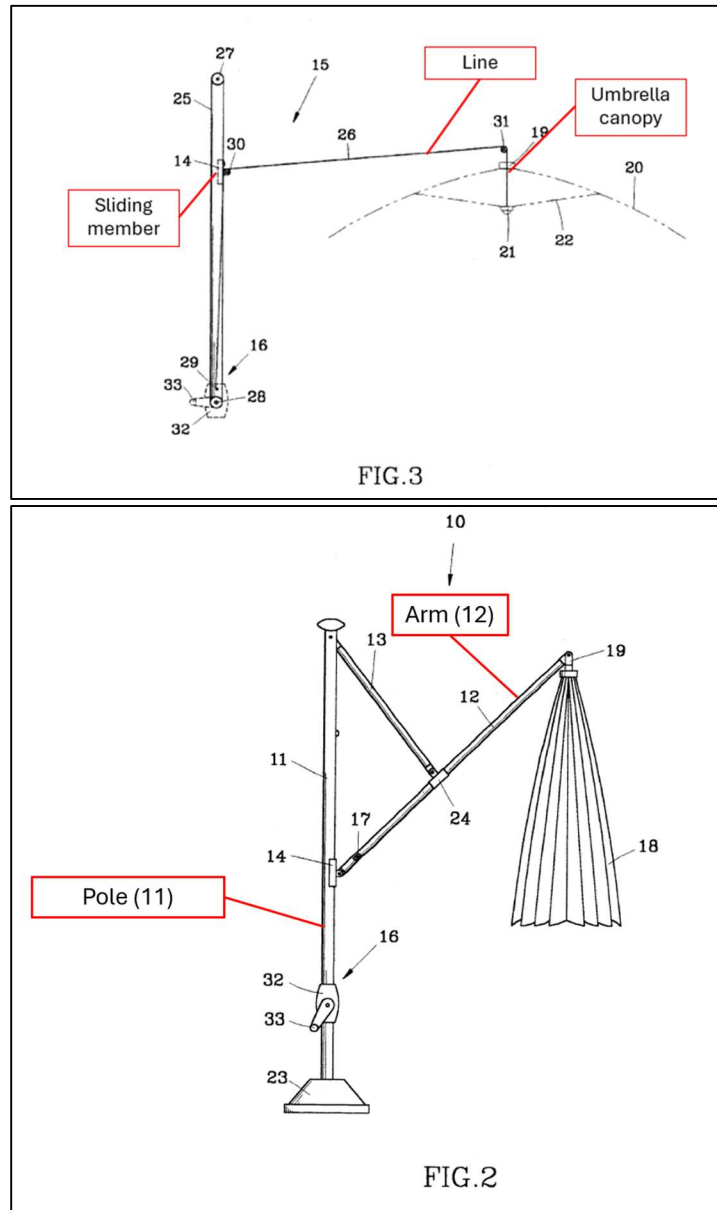
Moreover, replacing locking device 17 (attached to slide 14) of Ma '763 with reel 18 of Ma '297, would further improve the Ma '763 umbrella by allowing for independent operation of the opening/closing and shade angle adjustment features. Ex. 1004 at ¶ 150. In Ma '763, to change the shade angle, the slide 14 must be fully elevated, which causes the frame and panels 18 to open by tensioning the secondary rope 26. Ex. 1004 at ¶ 150; *see* Ex. 1009 at FIG. 9 (solid line position of arm 12). Next, locking device 17 must be activated to pinch the secondary rope 26. Ex. 1004 at ¶ 150. Only then can the open canopy be tilted relative to the fully open position. Ex. 1004 at ¶ 150; *see* Ex. 1009 at FIG. 9 (any of the dashed lines positions, all of which are below the solid line position of the arm 12). And tilting can be only in one direction – by lowering the slide 14 from the fully raised position. Ex. 1004 at ¶ 150. In Ma '763, this additional step to tilt would be by cranking the crank member 33. Ex. 1004 at ¶ 150.

Ma '297 identifies this as a problem in prior art umbrellas, namely that in some designs “[i]t is ... not possible to independently open or close the parasol. Opening of the parasol is only possible having the second tubular element in its fully extended position.” Ex. 1015 at [0003]. Ma '297 goes on to explain that “[i]t is therefore an object of the invention to provide a telescopic parasol stand ... in which

the parasol can be operated independently of the position of the second tubular element relative to the first tubular element.” Ex. 1015 at [0005]; Ex. 1004 at ¶ 151. Indeed, one advantage of the Ma ’297 umbrella is that “the second tubular element 4 can be retracted or extended independently of the position of the parasol 2” so that “the opening or closing of the parasol 15 is fully independent of the position of the second tubular element 13 relative to the first tubular element 12,” in order “to place the parasol 15 under an angle.” Ex. 1015 at [0020], [0025]; Ex. 1004 at ¶ 151. Replacing the locking device 17 of Ma ’763 with the reel 18 of Ma ’297 makes opening and closing of the umbrella canopy of Ma ’763 independent of the position of the slide 14 of Ma ’763 achieving this benefit of the Ma ’297 design. Ex. 1004 at ¶ 151.

h. Limitation 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”

Ma ’763 discloses a line (secondary rope 26) that engages the umbrella canopy. Ex. 1004 at ¶ 152; Ex. 1009 at 3:17-10 and Figure 3. Ma ’763 explains that the “remote end of the secondary rope 26 extends through a central bore (not labeled) defined in the crown 19” of the umbrella canopy. Ex. 1009 at 3:2-4 and Figure 3; Ex. 1004 at ¶ 152. As shown below, the “arm 12 is an elongate tubular member through which the [intermediate portion of the] secondary rope 26 extends.” Ex. 1009 at 3:49-51; Ex. 1004 at ¶ 152.



Ma '763 Figures 2 and 3

When a user moves the slide 14 using the crank driving device 16, tension is applied to the secondary rope 26 due to the secondary rope 26's fixed length. Ex. 1004 at ¶ 154. For example, Ma '763 discloses that when the slide is driven up towards the upper end of the pole, "the distance between the slide 14 and the pin 29 ... is increased which causes the runner 21 to move toward the crown 19 and thus

open the panel 18.” Ex. 1009 at 3:58-67 and 4:41-47; Ex. 1004 at ¶ 154. As discussed above with limitation 1[G], the fixed length rope from the pin 29 to the runner can be replaced by simple substitution with a winder hub as taught in Ma ’297. See Ex. 1004 at ¶¶ 156-157. As modified, the umbrella of Ma ’763 has a line with a first end that winds around the winder hub.

i. **Limitation 1[I]: “wherein rotation of the winder hub tensions or relaxes the line depending upon the direction of rotation of the winder hub”**

The use of a winder hub to tension or relax the line was well known in the prior art. For example, Ma ’297 discloses a winder hub (reel 18) that tensions or relaxes the line (cord 19) depending upon the direction of rotation of the winder hub (reel 18). Ex. 1004 at ¶ 158. Ma ’297 explains that “[a] reel 18 is arranged in the second tubular element 13 and this reel 18 is used to operate the cord 19, which is used to open and close the parasol 15. Preferably the cord 19 is wound at least for one full loop around the reel 18. The reel 18 can be operated by for example a crank 17, which can be put into the reel 18 through an opening in the first tubular element 12”. Ex. 1015 at [0024]; Ex. 1004 at ¶ 158. For the reasons stated above, a POSITA would be motivated to combine the winder hub of Ma ’297 with the umbrella of Ma ’763. Ex. 1004 at ¶ 159.

j. **Limitation 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”**

In Ma ’763, tension in the line (secondary rope 26) opens and closes the umbrella canopy in response to movement of the line. Specifically, Ma ’763 explains that “when the secondary rope 26 is pulled in a direction away from the panel 18, the runner 21 is moved from a lower closed position (FIGS. 2 and 4) to an upper open position (FIGS. 1 and 3) for driving the ribs 20 and the stretchers 22 to open the panel 18” as shown in Figures 1 and 8. Ex. 1009 at 3:4-8; Ex. 1004 at ¶ 160.

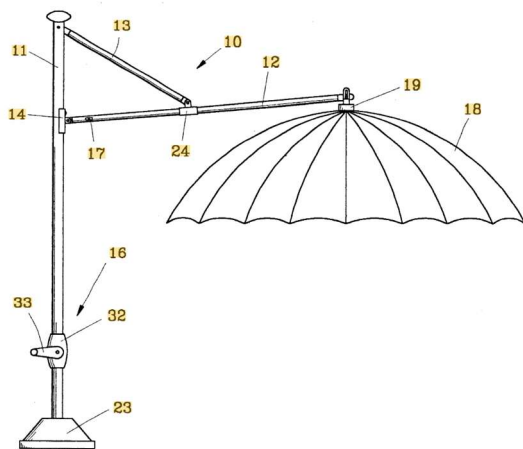


FIG.1

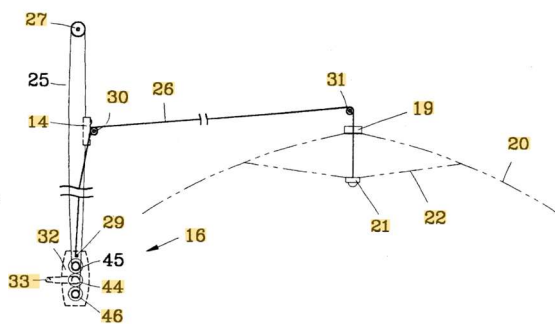
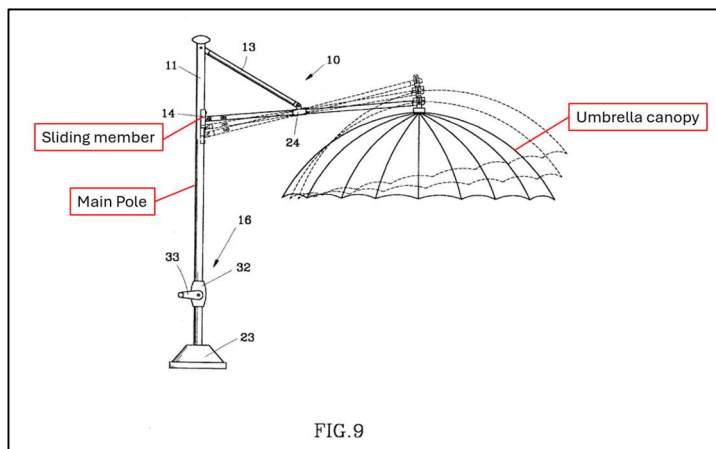


FIG.8

Ex. 1009 at Figs 1 and 8. As discussed above, Ma ’297 teaches that the use of a winder hub to tension a line to open and close a canopy was well known in the prior art. Ex. 1004 at ¶ 161.

k. **Limitation 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”**

Ma ’763 discloses that the angle of the umbrella canopy (panel 18) with respect to the main pole (support pole 11) can be controlled by moving the sliding member (slide 14) along the main pole (support pole 11). Ex. 1004 at ¶ 163. Ma ’763 explains that the canopy (panel 18) is securely attached to the arm “thereby allowing the panel” or canopy “to be moved with the arm for adjusting the orientation thereof” as shown below. Ex. 1009 at Abstract, 4:18-21; Ex. 1004 at ¶ 163.



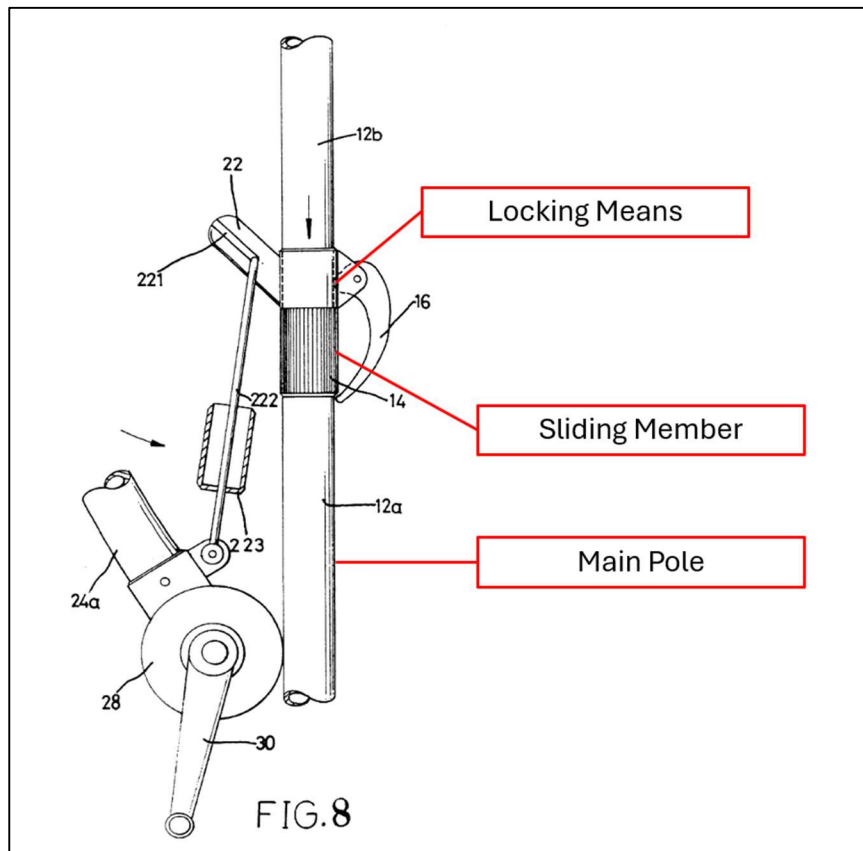
Ex. 1009 at Figures 9.

Accordingly, Ma ’763 in view of Bertola and in further view of Ma ’297 invalidate claim 1 under pre-AIA 35 U.S.C. § 103. Ex. at 1004 at ¶ 164.

2. Claim 2

Claim 2 of the '492 Patent recites “[t]he umbrella of claim 1, wherein the locking means for releasably securing the sliding member to the main pole comprises a cam latch member having a cam surface, the cam latch member being rotatable with respect to the sliding member between a first position in which the cam surface causes the sliding member to be clamped against the main pole, and a second position in which the cam surface permits movement of the sliding member with respect to the main pole.” Ex. 1001 at 5:12-18 (claim 2).

As discussed above, Tung discloses a locking means comprising a cam latch member having a cam surface (lever 16). Further, the Tung cam latch member, shown below, is rotatable with respect to the sliding member adjusting sleeve 14) between a first position in which the cam surface causes the sliding member (adjusting sleeve 14) to be clamped against the main pole (supporting rod 12), and a second position in which the cam surface permits movement of the sliding member (adjusting sleeve 14) with respect to the main pole (supporting rod 12). Ex. 1004 at ¶ 165.



Tung Figure 8 (Ex. 1010 at 9)

Tung explains “[t]he main frame 1 includes a supporting rod 12, an adjusting sleeve 14 slidably mounted around the supporting rod 12, and a lever 16 mounted to the adjusting sleeve 14. When the lever 16 is in a locked position, the adjusting sleeve 14 is frictionally retained in place, and when the lever 16 is in a released position, sliding movement of the adjusting sleeve 14 relative to the supporting rod 12 is allowed.” Ex. 1010 at 3:36-46; Ex. 1004 at ¶ 165.

A POSITA would have understood that a simple substitution of the primary rope 25 and crank 33 in Ma ’763 with the cam latch locking mechanism of Tung

would yield predictable results of affixing the slide 14 in a selected position. Ex. 1004 at ¶ 166. As discussed above, this modification would eliminate a pulley and rope device, which would eliminate a source of wear. *See supra* Section F.1.c. Additionally, in the Ma '763 umbrella, the canopy must be locked in a fully open position before the user can adjust the angle of the canopy through moving the slide 14 because primary rope 25 has dual functions for (a) opening and closing the canopy and (b) positioning the angle of the canopy. *Id.* at ¶ 168. Using the cam latch mechanism described in Tung to lock the slide in place instead of the primary rope 25, would allow a user to adjust the angle of the canopy independently from opening or closing the canopy. Ex. 1004 at 168.

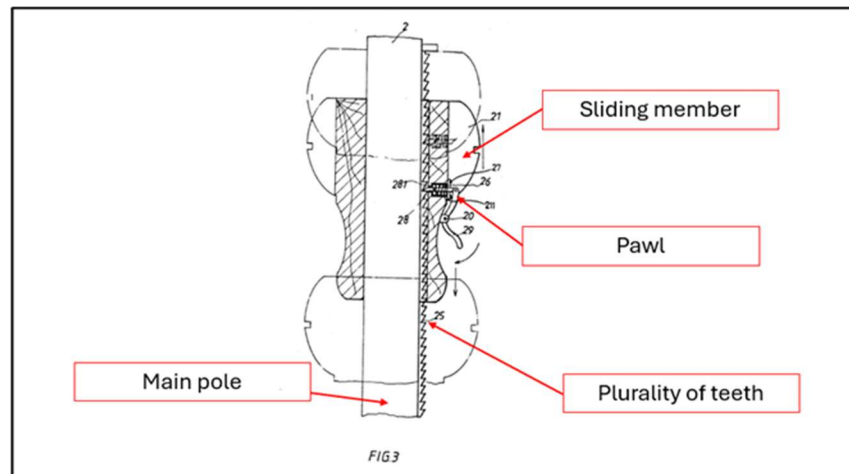
Thus, a POSITA would have been motivated to combine the cam latch mechanism taught in Tung with the locking means in Ma '763 to make a device that is simpler and less prone to breakage. Ex. 1004 at ¶ 169. A POSITA would understand that using the cam latch mechanism in Tung provides for a more stable locking means than the locking means taught in Ma '763. *Id.* A POSITA would also understand to use the locking mechanism of Tung to remedy the drawbacks in Ma '763. Thus, claim 2 is invalid under § 103. *Id.*

3. Claim 3

Claim 3 of the '492 Patent recites “[t]he umbrella of claim 1, wherein the locking means for releasably securing the sliding member to the main pole comprises

a plurality of teeth formed on the main pole and a cooperating pawl associated with the sliding member and selectively operative to engage a selected one of the teeth to prevent movement of the sliding member with respect to the main pole.” Ex. 1001 at 5:21-6:5.

As discussed above, Liu discloses a sliding member and a locking means that has a plurality of teeth on the main pole and a cooperating pawl shown below. Ex. 1004 at ¶ 170.



Liu Figure 3 (Ex. 1011 at 4)

A POSITA would have understood that a simple substitution of the known locking means in Ma '763 with the known locking means in Liu would yield predictable results to improve adjustable collapsible umbrella products and to secure the umbrella into place. Ex. 1004 at ¶ 171.

Thus, claim 3 is invalid under § 103. Ex. 1004 at ¶ 175.

4. Claim 4

Claim 4 of the '492 Patent recites “[t]he umbrella of claim 1, wherein the locking means for releasably securing the sliding member to the main pole comprises a plurality of holes formed in the main pole and a pin associated with the sliding member and operative to engage a selected one of the holes.” Ex. 1001 at 6:6-10. As discussed above, Bertola discloses an umbrella with a slider to adjust the position of the umbrella and a locking-pin and hole structure to lock the slider in place along the main pole. A POSITA would have understood that a simple substitution of the locking mechanism that secures the sliding member in the Ma '763 umbrella with the Bertola locking-pin and hole structure would yield predictable results to improve the umbrella and to secure the umbrella into place. Ex. 1004 at ¶ 176.

Specifically, the locking mechanism in the Ma '763 umbrella has disadvantages that could be improved by replacing the locking means with the structure disclosed in Bertola. First, the Ma '763 locking mechanism relies on the tension of the primary rope 25 to hold the slide in place. Ex. 1009 at 3:12-16 and 3:57-67; Ex. 1004 at ¶ 177. Thus, the locking mechanism of Ma '763 is dependent on the integrity of rope which can be weakened due to degradation or inadvertent over-tensioning of the primary rope 25 resulting in the collapse of the umbrella which can lead to user injury. Ex. 1004 at ¶ 177.

Additionally, separating the function of manipulating the umbrella canopy of Ma '763 from the function of securing the slide 14 provides additional advantages. Ex. 1004 at ¶ 178. Without separating these functions, a user would only be able to lower slide 14 once the umbrella canopy is fully opened. *See* Ex. 1009 at 3:57-4:21, 4:41-52, 4:61-67, Figure 1, Figure 2, and Figure 9; Ex. 1004 at ¶ 178. Indeed, Ma '763 states that for the umbrella canopy to fully open, “the slide 14 [needs to be] [] driven by the movement of the primary rope 25 to slide toward the upper end of the pole 11, the distance between the slide 14 and the pin 29 that fixes proximate end of the secondary rope 26 to the pole 11 is increased, which causes the runner 21 to move toward the crown 19 and thus open the panel 18, as shown in FIG. 1.” Ex. 1009 at 4:41-47; Ex. 1004 at ¶ 178. In other words, to fully deploy the umbrella, the user must operate the crank member 33 to raise the slide 16 to its highest position. Ex. 1009 at ¶ 179. A user then uses locking device 17 to maintain the tension of the secondary rope 26 to keep the umbrella deployed before lowering the slide 16 to reach a preferred height. Ex. 1009 at 4:22-35 and Figure 6; Ex. 1004 at ¶ 179. It was recognized in the prior art that a system such as this that requires a “user [] [to] operate the mechanism for adjusting the height of the canopy twice”, is “troublesome.” Ex. 1010 at 1:16-21; Ex. 1004 at ¶ 178.

Also, removing the pulley 27 and the pulley 30 in Ma '763 used in the locking mechanism for slide 14 would provide benefits. *See* Ex. 1009 at 3:12-16, 3:57-67,

Figure 3; Ex. 1004 at ¶ 179. Prior art teaches that removing pulleys provides a better design because it reduces opportunities for “defects ... caused by breakage of the cord or jamming of the cord at one of the several pivot areas around which the cord is guided” and provides a design that “can be operated independently of the position” of other mechanisms. Ex. 1015 at [0004], [0005], [0025]; Ex. 1004 at ¶ 179. Instead, one could use Bertola’s locking mechanism to adjust the height of the slide separately from manipulating the umbrella without introducing a mechanism that is dependent on the integrity of a cord and pulley mechanism. Separating the locking mechanism function from the canopy opening function also allows the pulley 30 to be eliminated as it is not needed when a winder hub is used to tension the rope 26 to open the canopy in the modification of the Ma ’763. See Ex. 1011 at 1:57-2:11, 2:38-42, 3:50-4:8; Ex. 1004 at ¶ 179. Thus, a POSITA would have been motivated to use the locking mechanism of Bertola to improve these weaknesses in the locking means used in Ma ’763. Ex. 1004 at ¶ 179. Accordingly, claim 4 is invalid under § 103. Ex. 1004 at ¶ 180.

5. Claim 5

Claim 5 of the ’492 Patent recites “[t]he umbrella of claim 1, wherein the sliding member has a handle associated therewith.” Ex. 1001 at 6:11-12. To the extent that Ma ’763 does not disclose this claimed limitation, Bertola discloses the sliding member (rack-like member 25) having a handle (arc arm 29) associated

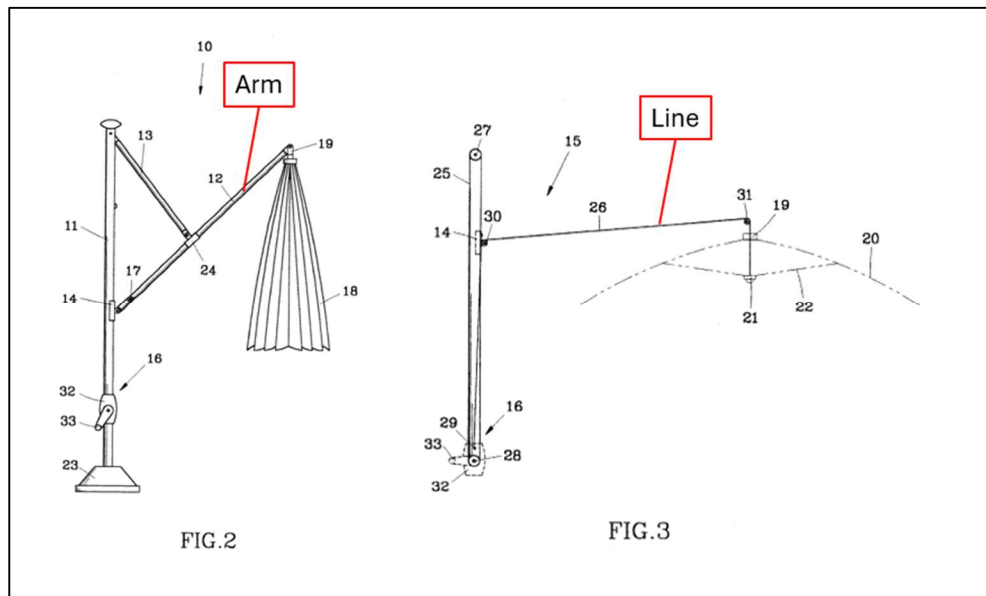
therewith. Ex. 1004 at ¶ 181. Bertola expressly discloses “a handle, and a latch or the like is operable by means of a button that is preferably arranged on the handle” on the sliding member. Ex. 1013 at 41. Further, as discussed above, a POSITA would have understood the advantages of a simple substitution of the sliding member with the latch-pin and hole mechanism and handle described in Bertola for the sliding member disclosed in Ma ’763.

Thus, claim 5 is invalid. Ex. 1004 at ¶ 183.

6. Claim 6

Claim 6 of the ’492 Patent recites “[t]he umbrella of claim 1, wherein the line extends along at least substantially the entire length of the arm.” Ex. 1001 at 6:13-14.

Ma ’763 discloses wherein the line (secondary rope 26) extends along at least substantially the entire length of the arm (arm 12). Ex. 1004 at ¶ 184. For example, as shown in below, Ma ’763 discloses that “[t]he arm 12 is an elongate tubular member through which the secondary rope 26 extends. The secondary rope 26 further extends through the central bore of the pole 11. In this respect, a pulley 30 is mounted at the proximate end of the arm 12 for aiding the passage of the secondary rope 26 into the pole 11. A further pulley 31 is mounted at the distal end of the arm 12 for aiding the passage of the secondary rope 26 through the crown 19 to the runner 21.” Ex. 1009 at 3:50-57; Ex. at 1004 at ¶ 184.



Ex. 1009 at Figures 2-3. Thus, claim 6 is invalid. Ex.1004 at ¶ 185.

7. Claim 7

Claim 7 of the '492 Patent recites “[t]he 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.” Ex. 1001 at 6:15-17.

Ma '297 discloses a crank handle (crank 17) operatively associated with the winder hub (reel 18), whereby rotating the crank handle (crank 17) causes the winder hub (reel 18) to rotate. Ex. 1004 at Heading 7 (page 112-113). Ma '297 discloses “[a] reel 18 is arranged in the second tubular element 13 and this reel 18 is used to operate the cord 19, which is used to open and close the parasol 15. Preferably the cord 19 is wound at least for one full loop around the reel 18. The reel 18 can be operated by for example a crank 17.” Ex. 1015 at [0024].

As set forth above, a POSITA would have understood to combine Ma '297's reel 18 and crank 17 on Ma '763's locking device 17 if placed on slide 14. Ex. 1004 at ¶ 186.

Thus, claim 7 is invalid. Ex. 1004 at ¶ 187.

**VII. THE BOARD SHOULD NOT EXERCISE ITS DISCRETION
TO DENY INSTITUTION**

A. Under 35 U.S.C. §314(a)

The *Fintiv* factors weigh strongly in favor of institution. Factor 1 is neutral or favors institution because, although Petitioner will move to stay the litigation, the district court has not considered or ruled on any stay motion. *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 at 14 (P.T.A.B. Dec. 1, 2020). Additionally, the district court is likely to stay the case to benefit from the Board's expertise as the district court intends to appoint a special master to preside through summary judgment. Ex. 1027.

Factor 2 weighs in favor of institution. The district court has not yet set a trial date, and the parties' most recent stipulated litigation schedule sets the close of fact discovery for five months out and the close of expert discovery for at least nine months from now. Exs. 1028, 1029. Factor 3 favors institution because the district court and the parties have expended few resources in litigation. The parties have engaged in written discovery but no depositions. The Markman hearing has

not been set, and the special master has not yet been appointed by the Court. Exs. 1027, 1028

Factor 4 favors institution. This Petition challenges all the claims in the '492 Patent which is more than the claims at issue in the litigation. Exs. 1030, 1031. Under Factor 5, Petitioner is the defendant in the litigation. Factor 6 favors institution because of the strong merits of this Petition.

B. Under 35 U.S.C. §325(d)

The factors in *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 at 17-18 (P.T.A.B. Dec. 15, 2017) favor institution. Wang '109, Wang '439, Ma '763, and Ma '297 were not previously presented to or considered by the Office during prosecution of the '492 Patent. Thus, the combinations of prior art relied on in this Petition have not previously been presented to or considered by the Office. Moreover, during examination the Office did not have the benefit of the arguments and evidence presented in this Petition, including the testimony of Petitioner's expert, Dr. Klopp (*see* Ex. 10004).

For the reasons above, this Petition presents new, noncumulative prior art and arguments and the Board should not exercise its discretion under § 325(d).

VIII. MANDATORY NOTICES

Petitioner provides the following mandatory notices pursuant to 37 C.F.R. § 42.8(a)(1).

A. Real Party-in-Interest (37 C.F.R. § 42.8(b)(1))

The real parties-in-interest are ATLeisure and Treasure Garden. No other entity is controlling, directing, or funding the submission of this petition.

B. Related Matters (37 C.F.R. § 42.8(b)(2))

The '492 Patent is asserted against Petitioner in *ATLeisure, LLC v. Treasure Garden, Inc.*, Case No. 1:24-cv-02270-TWT (N.D. Ga. May 23, 2024) (i.e., the Underlying Litigation).

ATLeisure has previously asserted the '492 Patent in the following actions: *ATLeisure, LLC v. Ace Evert, Inc.*, Case No. 1:12-cv-01260 (N.D. Ga. Apr. 12, 2012) (settlement, dismissed with prejudice), *ATLeisure, LLC v. Red Star Traders, LLC*, Case No. 1:12-cv-02253 (N.D. Ga. June 28, 2012) (settlement, dismissed with prejudice), *ATLeisure, LLC v. Sunvilla Corp.*, Case No. 1:20-cv-04662 (N.D. Ga. Nov. 16, 2020) (dismissed with prejudice), *ATLeisure, LLC v. Lowe's Home Centers, LLC*, Case No. 6:22-cv-682-WWB-GJK (M.D. Fla. Apr. 8, 2022) (settlement, dismissed with prejudice).

The '492 Patent has also been previously challenged before the Board in *Zhejiang Zhengte Co., Ltd. v. ATLeisure, LLC*, IPR2021-00430 (PTAB Jan. 22, 2021) and the Board denied institution.

C. Lead and Back-up Counsel (37 C.F.R. § 42.8(b)(3))

Petitioner appoints the following attorneys as lead and back-up counsel from Knobbe Martens Olson & Bear LLP. Filed herewith are a powers of attorney in accordance with 37 C.F.R. § 42.10(b).

Lead Counsel	Back-up Counsel
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D. Service Information (37 C.F.R. §42.8(b)(4))

Petitioner consents to electronic service by email to its lead and back-up counsel at the following email addresses:

- Lauren.Katzenellenbogen@knobbe.com;
- Andrew.Douglas@knobbe.com;
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- BoxTGINCL.330LP2@knobbe.com

IX. CONCLUSION

Petitioner respectfully requests that the Board institute *inter partes* review and find all claims of the '492 Patent unpatentable.

Dated: May 22, 2025

By: /Lauren Keller Katzenellenbogen/
Lauren Keller Katzenellenbogen (Reg. No. 56553)
Andrew M. Douglas (Reg. No. 51,212)
KNOBBE MARTENS OLSON & BEAR, LLP

Attorney for Petitioner Treasure Garden, Inc.

CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(d), the undersigned certifies that this PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 8,104,492 contains 13,635 words according to the word-processing program used to prepare this paper. The foregoing word count complies with the 14,000-word type-volume limit specified by 37 C.F.R. § 42.24(a)(1).

Dated: May 22, 2025

By: /Lauren Keller Katzenellenbogen/
Lauren Keller Katzenellenbogen (Reg. No. 56553)
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CERTIFICATE OF SERVICE

The undersigned hereby certifies that on the date below a copy of this PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 8,104,492, PETITIONER’S POWER OF ATTORNEY, AND EXHIBITS 1001-1031, were served by FedEx on the Patent Owner at the correspondence address of record for the subject patent as follows:

104839 – Jack G. Abid
1135 East State Road 434, Suite 3001
Winter Springs, FL
UNITED STATES

A courtesy copy has been sent by email on this day to Patent Owner’s counsel of record in the matter identified in Section VIII.B of the Petition as follows:

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Dated: May 22, 2025

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