

**IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF GEORGIA
AUGUSTA DIVISION**

SOLBELLO, INC.,	)	
	)	
Plaintiff,	)	
	)	
v.	)	Case No. 1:25-cv-00267-JRH-BKE
	)	
SHORESHADE, LLC,	)	
	)	
Defendant.	)	
	)	

**SHORESHADE LLC’S DISCLOSURE OF
INITIAL INVALIDITY CONTENTIONS**

Pursuant to the Court’s Scheduling Order dated May 26, 2026 (Dkt. No. 63), Defendant ShoreShade LLC (“ShoreShade”) respectfully submits the following initial Invalidity Contentions.

I. IDENTIFICATION OF PRIOR ART (N.D. Cal. LPR 3-3(a))

ShoreShade identifies below prior art that anticipates, renders obvious, or otherwise evidences the invalidity of each Asserted Claim. ShoreShade may also rely on this identified prior art to illustrate the level of ordinary skill in the art and the background knowledge and common knowledge of those of ordinary skill in the art at or about the time of the alleged invention of U.S. Pat. No. RE50606 (the “Reissue Patent”). In addition, ShoreShade may rely on the file histories and family members of all prior art patents and published patent applications, and all prior art cited or disclosed in the file history of the Reissue Patent and other filings in the same patent family.

The parties have not conducted any substantial discovery in this matter, and ShoreShade’s investigation is ongoing. The contentions in this document are based on ShoreShade’s investigation to date, its understanding of Plaintiff’s positions, and its good faith positions at the present time. Moreover, the interpretation of disputed claim terms may affect one or more of the

contentions in this document. Thus, ShoreShade reserves the right to further supplement, amend, or narrow these contentions as discovery progresses, additional information is otherwise obtained, and/or claims are construed.

A. Prior Art Patent Applications and Patents

ShoreShade hereby identifies the following prior art patent applications and patents that anticipate each asserted claim or render it obvious.

Patent / Application No.	Named Inventor(s) / Business	Country	Filing Date	First Publication / Issue Date
U.S. Pat. Publ. No. 2013/0019794	Neal	United States	July 19, 2011	Jan. 24, 2013
German Pat. Publ. No. DE202014103145U1	Alfa GmbH Fahnen- und Lichtpoleen	Germany	July 9, 2014	October 12, 2015
U.S. Pat. Publ. No. 2008/0196754	Saiz	United States	February 12, 2008	August 21, 2008
U.S. Patent No. 10,190,330	Barnes	United States	August 12, 2017	January 29, 2019
WIPO Pat. Publ. No. WO 2000/022951	Yi	WIPO	October 11, 1999	April 27, 2000
U.S. Pat. No. 9,920,471	Cai	United States	July 15, 2016	March 20, 2018
U.S. Pat. No. 6,199,569	Gibson	United States	April 10, 1996	March 13, 2001

II. IDENTIFICATION OF EXEMPLARY ANTICIPATION AND OBVIOUSNESS ARGUMENTS (N.D. Cal. LPR 3-3(b))

A. Anticipation – 35 U.S.C. § 102

Claims 44, 45, and 47 are invalid as being anticipated by Neal.

Claims 44, 45, and 47 are invalid as being anticipated by the German Reference.

B. Obviousness – 35 U.S.C. § 103

Claim 47 is invalid as being unpatentable over Neal in view of Gibson.

Claim 47 is invalid as being unpatentable over the German Reference in view of Gibson.

Claims 21, 22, 24, 26, 27, 29, and 34 are invalid as being unpatentable over Saiz in view of Barnes and Yi (alone or in further view of Gibson and, in the case of claim 29, Cai).

Claims 21, 22, 24, 26, 27, 29, 34, 44, 45, and 47 are invalid as being unpatentable over Yi in view of Barnes (alone or in further view of Gibson and, in the case of claim 29, Cai).

Claims 44, 45, and 47 are invalid as being unpatentable over Saiz in view of Barnes.

III. INVALIDITY CHARTS (N.D. Cal. LPR 3-3(c))

Below, ShoreShade provides a chart identifying specifically where and how each limitation of each asserted claim is found in the prior art listed above.

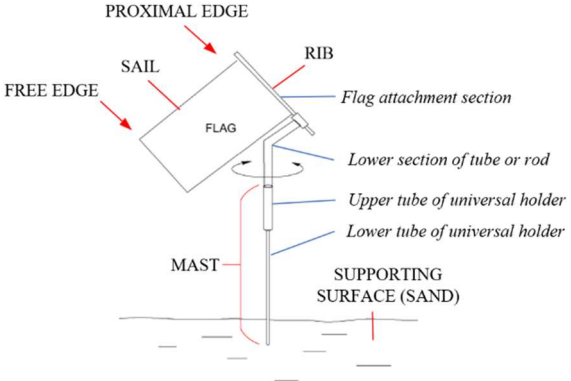
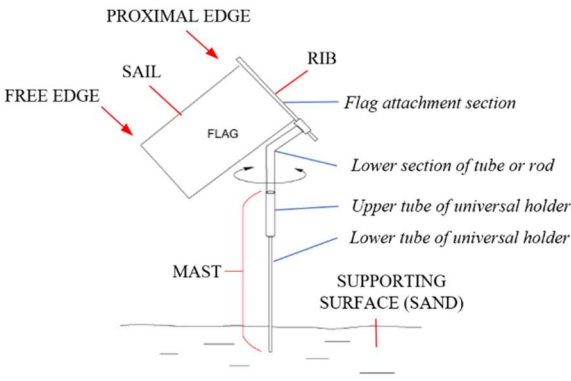
A. Claims 44, 45, and 47 are anticipated by Neal

Claims 44, 45, and 47 of the Reissue Patent are anticipated (i.e., lack novelty) under 35 U.S.C. § 102 based on U.S. Pat. Publ. No. 2013/0019794 to Neal.

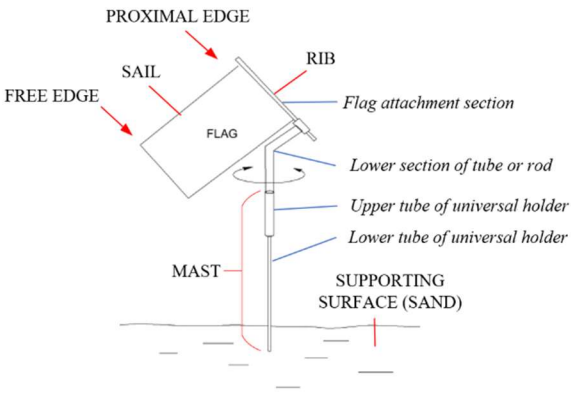
i. Claim 44

As shown in the table below, each element of claim 44 is present in Neal.

#	<u>Claim Language</u>	<u>Prior Art Material</u>
44(a)	A sun shade assembly comprising:	The preamble is not limiting. Even if consideration of the preamble is appropriate, the flag of FIG. 5 in Neal provides shade from the sun, making it a sun shade assembly.
44(b)	A mast configured to extend upwardly from a supporting surface, and having a top end and a bottom end	FIG. 5 of Neal shows a mast extending upwardly from a supporting surface, and having a top end and a bottom end as shown in the annotated image below.

		 FIG. 5 The “mast” of Neal may alternatively be considered just the lower and upper tubes of the universal holder, or these two components plus the lower section of tube or rod. Neal thus discloses “[a] mast configured to extend upwardly from a supporting surface, and having a top end and a bottom end.”
44(c)	At least one rib located proximate the top end of said mast, and configured to rotate relative to the supporting surface;	FIG. 5 shows a rib located proximate the top end of the mast that is configured to rotate relative to the supporting surface as shown in the annotated image below (see the arrows just below the flag):  FIG. 5 The rotatability is disclosed in Paragraph [0028] of Neal, which states: The special flag pole accessory shown in FIG. 5 can be conveniently made from sections of PVC pipe or other material. It

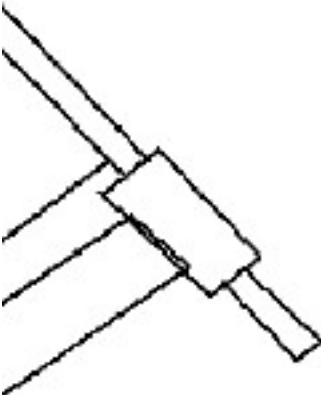
		can be designed as shown in FIG. 5 to hold the flag at an angle. <u>This allows the flag to turn in the wind. . . . The flag flies at an angle and the entire assembly can turn freely in the wind since the lower section of tube or rod loosely fits into the upper tube of the universal holder.</u> (emphasis added). Paragraph [0028] also describes an alternative embodiment stating that “a straight vertical flagpole can also be held by the present invention.” In this embodiment, the rib identified above would be inserted directly into the upper tube of the universal holder, allowing the rib to rotate relative to the mast and relative to the supporting surface. Both embodiments described in Neal for the “flag pole accessory” meet this limitation of claim 44 regardless of whether a narrower or broader construction (discussed above) is applied. Neal thus discloses “[a]t least one rib located proximate the top end of said mast, and configured to rotate relative to the supporting surface.”
44(d)	A sail having a proximal edge secured to said rib and an unrestrained free edge adapted to unfurl in response to the blowing of the wind, and wherein an entire surface area of said sail is unrestrained from the proximal edge to the free edge; and	FIG. 5 of Neal shows these features as shown in the annotated version of that figure below. FIG. 5

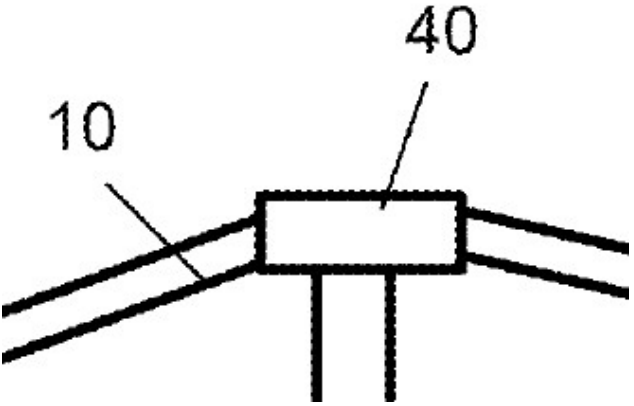
		Notably, in the absence of any further limitations in claim 44 regarding what constitutes a “sail,” the flag of Neal is a “sail.” Neal thus discloses “[a] sail having a proximal edge secured to said rib and an unrestrained free edge adapted to unfurl in response to the blowing of the wind, and wherein an entire surface area of said sail is unrestrained from the proximal edge to the free edge.”
44(e)	When unfurled, said sail and rib are adapted to rotate together to a direction of the blowing wind.	Neal discloses that “[w]hen unfurled, said sail and rib are adapted to rotate together to a direction of the blowing wind.” This is readily apparent from the circular black arrow in FIG. 5 of Neal (which appears in the original figure).  FIG. 5 Paragraph [0028] of Neal states that the flag of FIG. 5 is allowed to turn in the wind and also states that “[t]he flag flies at an angle and the entire assembly can turn freely in the wind since the lower section of tube or rod loosely fits into the upper tube of the universal holder.” Limitation 44(e) is thus also present in Neal.

Because each limitation of claim 44 is present in the single Neal reference, the claim is anticipated under 35 U.S.C. § 102.

ii. Claim 45

As shown in the table below, each element of claim 45 is present in Neal.

#	<u>Claim Language</u>	<u>Prior Art Material</u>
45(a)	The assembly of claim 44,	As discussed above, Neal discloses all elements of claim 44.
45(b)	wherein said at least one rib is attached to a cap located at the top end of said mast.	In Neal, the flag attachment section (rib) is attached to the “lower section of tube or rod” via a rectangular piece at the top of the “lower section of tube or rod.” As shown, a short length of the flag attachment section extends through this rectangular piece to the other side. This is illustrated in the enlarged view below:  If the mast in Neal is construed as the lower and upper tubes of the universal holder plus the lower section of tube or rod, then this rectangular piece constitutes a “cap located at the top end of said mast” as specified in claim 45. Notably, such a “cap” is visually similar to the depiction of the pivot cap 40 in FIG. 3a of the Reissue Patent:

		 If, in the alternative, the “mast” of Neal is considered to be just the lower and upper tubes of the universal holder, the limitations of claim 45 are still met by Neal. In this case, the “cap located at the top end of said mast” would be the combination of the rectangular piece discussed above and the lower section of tube or rod. Neal thus also discloses the additional limitation of claim 45, namely a rib connected to a cap located at the top end of the mast.
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As such, claim 45 is anticipated under 35 U.S.C. § 102.

iii. Claim 47

As shown in the table below, each element of claim 47 is present in Neal.

<u>#</u>	<u>Claim Language</u>	<u>Prior Art Material</u>
47(a)	The assembly of claim 44,	As discussed above, Neal discloses all elements of claim 44.
47(b)	and comprising an anchor located at the bottom end of said mast.	An anchor is properly construed as “comprising any element that provides weight and/or a mechanism by which to secure assembly into a support surface.” In this regard, Neal discloses that “[t]he bottom end of the stainless steel pipe can receive a point or a pointed spike 4.” Neal at ¶ [0024].

		The point or spike 4 may be used for insertion into soil or sand. Neal at ¶ [0009]. The spike 4 of Neal provides weight and also provides a mechanism by which to secure the assembly into a supporting surface such as sand. Because free rotation of the flag occurs above the pointed spike 4, very limited forces act at the pointed spike 4, and the lower portion of the mast would not rotate during normal operating conditions. Accordingly, the point or spike 4 of Neal constitutes an anchor according to this limitation. Neal thus also discloses the additional limitation of claim 47, namely an anchor located at the bottom end of said mast. As such, claim 47 is anticipated under 35 U.S.C. § 102.¹
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B. Claims 44, 45, and 47 are anticipated by the German Reference

Claims 44, 45, and 47 of the Reissue Patent are also anticipated (i.e., lack novelty) under 35 U.S.C. § 102 based on the German Reference.

i. Claim 44

As shown in the table below, each element of claim 44 is present in the German Reference.

<u>#</u>	<u>Claim Language</u>	<u>Prior Art Material</u>
44(a)	A sun shade assembly comprising:	The preamble is not limiting. Even if consideration of the preamble is appropriate, the flag of FIGS. 2, 3, and 7 of the German Reference provides shade from the sun, making it a sun shade assembly.

¹ Additionally or alternatively, it would have been obvious to add the anchor 10 of Gibson. A POSITA would have been motivated to make this combination to make the device of Neal easier to install and/or remove in certain situations or more stable when the wind blows. *See* Gibson at col. 2, ll. 32–39; col. 4, l. 56–col. 5, l. 20.

44(b)	A mast configured to extend upwardly from a supporting surface, and having a top end and a bottom end	In the German Reference, the stationary pole tube (4a) and the base region (7) of the pole (1) serve as the mast. See also Ex. 1014 at ¶ [0031]. The mast formed by these components rests on the foundation (9), which constitutes a supporting surface. Ex. 1014 at ¶ [0031]. The mast formed by these components has a top end and a bottom end. The German Reference thus includes a “mast configured to extend upwardly from a supporting surface, and having a top end and a bottom end.” Ex. 1014 at FIGS. 2, 3, and 7 of the German Reference.
44(c)	At least one rib located proximate the top end of said mast, and configured to rotate relative to the supporting surface;	The German Reference includes a “flag boom (3),” which is also referred to as a “flag holder (3)” at times in the Certified Translation. The flag boom (3) constitutes a rib, and the flag boom (3) is located proximate the top end of the pole (1) in the annotated version of FIG. 2 shown below when in the raised position. Regardless of whether “configured to” is construed as “capable of” or “specifically designed to,” the German Reference covers the “configured to rotate relative to the supporting surface” limitation. The German Reference states: • “[t]he flag holder (3) is preferably axially displaceable and rotatably mounted on the pole (1).” Ex. 1014 at ¶ [0035]. • “<u>The carrier sleeve (24) is entrained by the sliding sleeve (25) and is rotatably mounted thereon so that the flag boom (3) with a flag can rotate freely in the wind around the stationary pole tube (4a).</u>” Ex. 1014 at ¶ [0045]. As such, the flag holder (3) is capable of rotating relative to the supporting surface (foundation 9) and the mast (stationary pole tube 4a), and it is specifically designed to rotate relative to the mast (stationary pole tube 4a).

		The assembly of the German Reference thus includes “[a]t least one rib located proximate the top end of said mast, and configured to rotate relative to the supporting surface.”
44(d)	A sail having a proximal edge secured to said rib and an unrestrained free edge adapted to unfurl in response to the blowing of the wind, and wherein an entire surface area of said sail is unrestrained from the proximal edge to the free edge; and	In the absence of any further limitations in claim 44 regarding what constitutes a “sail,” the flag of the German Reference is a “sail.” In the German Reference, the flag is allowed to simply hang down from the flag holder without a second flag holder at the bottom of the flag. The flag is not shown in FIG. 2 (likely to allow other components to be seen), but it is shown in FIGS. 1 and 7. These figures show the flag in two different locations to illustrate that the flag boom (3) is capable of moving vertically. In FIGS. 1 and 7, the flag is shown with only a single flag holder. The flag has a proximal edge and an unrestrained free edge.

Fig. 1

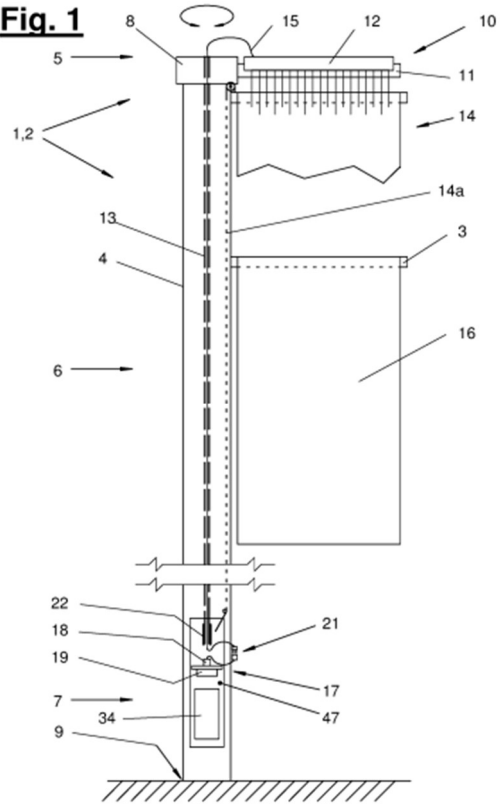
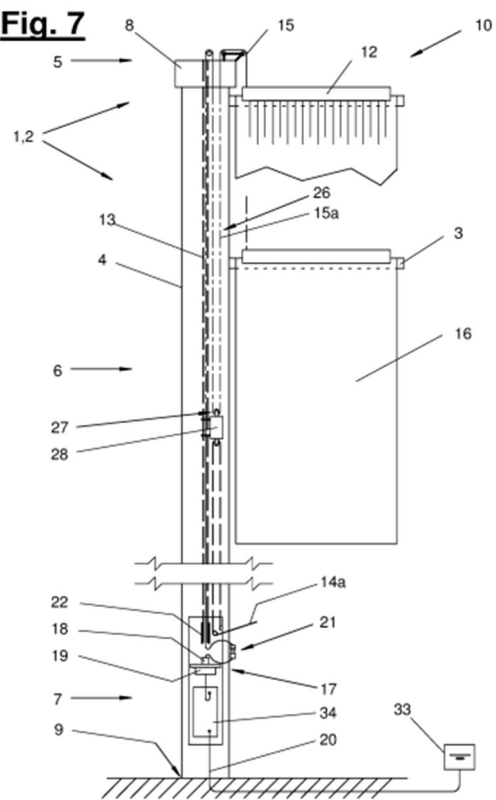


Fig. 7



		The figures shown above illustrate the flag (16) hanging down without any fasteners connecting the flag 16 to the pole tube (4). The German Reference thus includes “[a] sail having a proximal edge secured to said rib and an unrestrained free edge adapted to unfurl in response to the blowing of the wind, and wherein an entire surface area of said sail is unrestrained from the proximal edge to the free edge.”
44(e)	When unfurled, said sail and rib are adapted to rotate together to a direction of the blowing wind.	The German Reference states “[t]he carrier sleeve (24) is entrained by the sliding sleeve (25) and is rotatably mounted thereon so that the flag boom (3) with a flag can rotate freely in the wind around the stationary pole tube (4a).” Ex. 1014 at ¶ [0045]. The flag (sail) and the flag holder (rib) are both capable of and specifically designed to rotate together to a direction of the blowing wind.

Because each limitation of claim 44 is present in the single German Reference, the claim is anticipated under 35 U.S.C. § 102.

ii. Claim 45

As shown in the table below, each element of claim 45 is present in the German Reference.

<u>#</u>	<u>Claim Language</u>	<u>Prior Art Material</u>
45(a)	The assembly of claim 44,	As discussed above, the German Reference discloses all elements of claim 44.
45(b)	wherein said at least one rib is attached to a cap located at the top end of said mast.	The carrier sleeve 24 of the German Reference, when in the raised position, constitutes a cap at the top end of said mast. The carrier sleeve 24 serves as an overlaying or covering structure and would also serve as a pivot cap. The German Reference thus also discloses the additional limitation of claim 45, namely a rib attached to a cap located at the top end of the mast.

		As such, claim 45 is anticipated under 35 U.S.C. § 102 by the German Reference. Fig. 2
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iii. Claim 47

As shown in the table below, each element of claim 47 is present in the German Reference.

#	Claim Language	Prior Art Material
47(a)	The assembly of claim 44,	As discussed above, the German Reference discloses all elements of claim 44.
47(b)	and comprising an anchor located at the bottom end of said mast.	“Anchor” is properly construed as “comprising any element that provides weight and/or a mechanism by which to secure assembly into a support surface.” In this regard, the German Reference discusses a base region 7 that is “fixed immovably and, if necessary, detachably to a foundation (9) or a ground mount.” Ex. 1014 at ¶ [0031]. This ground mount for the devices described in the German Reference constitutes an anchor as it provides weight and also because it provides a mechanism to secure the rest of the device to the supporting surface (the foundation (9)). The German Reference thus also discloses the additional limitation of claim 47, namely an

		anchor located at the bottom end of said mast. Consequently, claim 47 is anticipated under 35 U.S.C. § 102 by the German Reference. ²
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C. Claims 21, 22, 24, 26, 27, 29, and 34 are unpatentable over Saiz in view of Barnes and Yi

Claims 21, 22, 24, 26, 27, 29, and 34 of the Reissue Patent are unpatentable as obvious over Saiz in view of Barnes and Yi (alone or possibly also in view of Gibson and Cai as described below).

i. Claim 21

As shown in the discussion below, the combination of Saiz, Barnes, and Yi discloses every element of claim 21. A person having ordinary skill in the art (POSITA) would be motivated to combine these references and would have a reasonable expectation of success in doing so.

<u>#</u>	<u>Claim Language</u>	<u>Prior Art Material</u>
21(a)	A sun shade assembly comprising:	The preamble is not limiting. Even if consideration of the preamble is appropriate, Saiz is entitled “Aerodynamic Sunshade” and the abstract states “[t]he present invention is an aerodynamic sunshade” FIG. 1 of Saiz also illustrates one sunshade.

² Additionally or alternatively, it would have been obvious to add the anchor 10 of Gibson. A POSITA would have been motivated to make this combination to make the device of the German reference easier to install and/or remove in certain situations. *See* Gibson at col. 2, ll. 32–39; col. 4, l. 56–col. 5, l. 20.

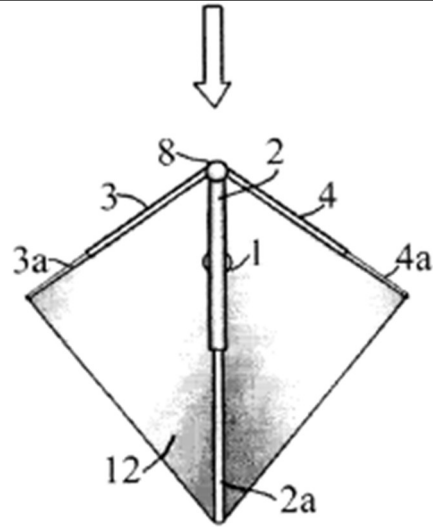


FIG. 1

Barnes also discloses a sun shade assembly, stating in the abstract that “[a] system for providing shade onto a surface is described herein.” This system 10 is shown in FIG. 1 of Barnes below, and Barnes states “FIG. 1 depicts one embodiment of a system 10 for providing shade 1 onto a surface 2.” Barnes at 3:64–65.

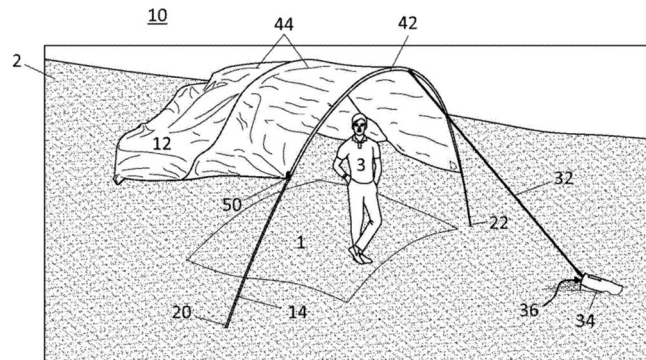
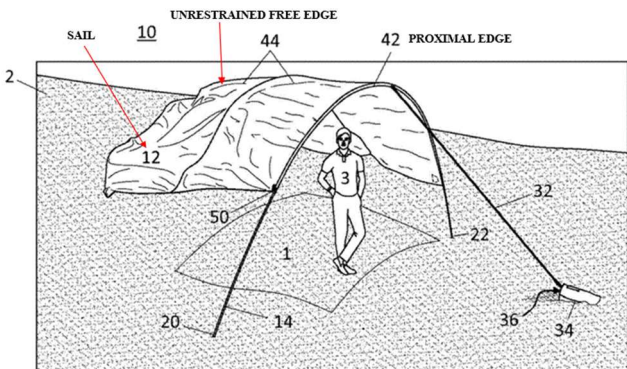
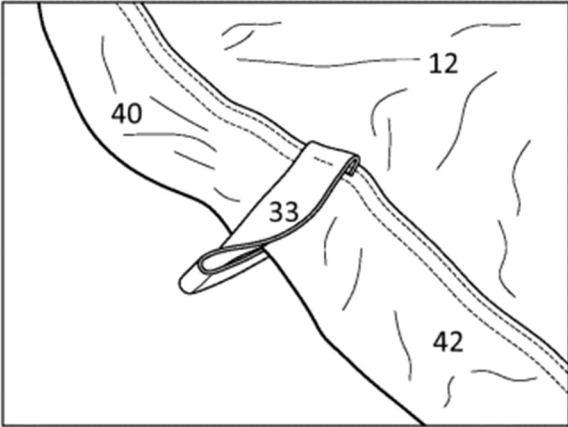


FIG. 1

The umbrella of Yi also acts as a sun shade assembly. Yi states “[i]t is another object of the present invention to provide an umbrella which can be used as a sun or rain shield parasol while having a configuration capable of allowing its canopy or its canopy-securing part including the canopy to rotate and move naturally in an application direction of an external force applied to the canopy-securing part. . . .” Yi at p. 4, ll. 7–13.

		Thus, even if the preamble is determined to be limiting, the proposed combination of Saiz, Barnes, and Yi discloses “[a] sun shade assembly.”
21(b)	a pair of ribs defined by a first end and a second end, wherein the first end of each rib is attached to a pivot cap;	The embodiment of FIG. 1 in Saiz illustrates lateral arms 3 and 4, and these lateral arms are located proximate the top end of the support stem 1. Telescoping extending arms 3a, 4a are also attached to the lateral arms 3 and 4, and the cloth 12 is attached to these arms 3, 3a, 4, 4a as shown in FIG. 1. In Saiz, the lateral arms 3 and 4 are attached to the spindle 8, and the spindle allows rotation of the cloth 12. Saiz at ¶ [0032]. Thus, the proposed combination of Saiz, Barnes, and Yi discloses “a pair of ribs defined by a first end and a second end, wherein the first end of each rib is attached to a pivot cap.”
21(c)	a sail with a front edge comprising a channel sized and shaped to house each rib such that the ribs extend across the edge;	The embodiment shown in FIG. 1 of Barnes discloses that the “canopy 12 may define a suspension end 42 positioned proximal to the frame 14 when the canopy 12 is engaged with the frame 14.” Barnes at 4:7–9.  FIG. 1 The canopy 12 serves as the required sail, and the suspension end 42 is the required front edge. Barnes discloses that the canopy 12 defines a loop 40. Barnes at 4:15–18. This loop 40 is configured to accept a portion of the frame 14 depicted in FIG. 1 through the loop 40. Barnes at 4:15–18. The loop 40 is depicted in FIG. 4 of Barnes, and the frame 14 is depicted in FIG. 1 of Barnes (see below). The frame 14 is a slender tube, similar in shape to the arms 3, 3a, 4, and 4a of Saiz, and would be inserted through the loop 40 in a similar manner.

		 FIG. 4 Thus, the proposed combination of Saiz, Barnes, and Yi discloses “a sail with a front edge comprising a channel sized and shaped to house each rib such that the ribs extend across the edge.”
21(d)	a mast comprising a first end and a second end, wherein the first end is operably connected to the pivot cap, wherein the pivot cap can freely rotate about the mast;	As shown in FIG. 1, Saiz discloses a support stem 1 which serves as a mast. Saiz at ¶ [0032]. The support stem 1 is shown in the top view of FIG. 1. However, a similar support stem 1 is illustrated in the side view of FIG. 3, and that figure shows that a support stem 1 has a top end and a bottom end.

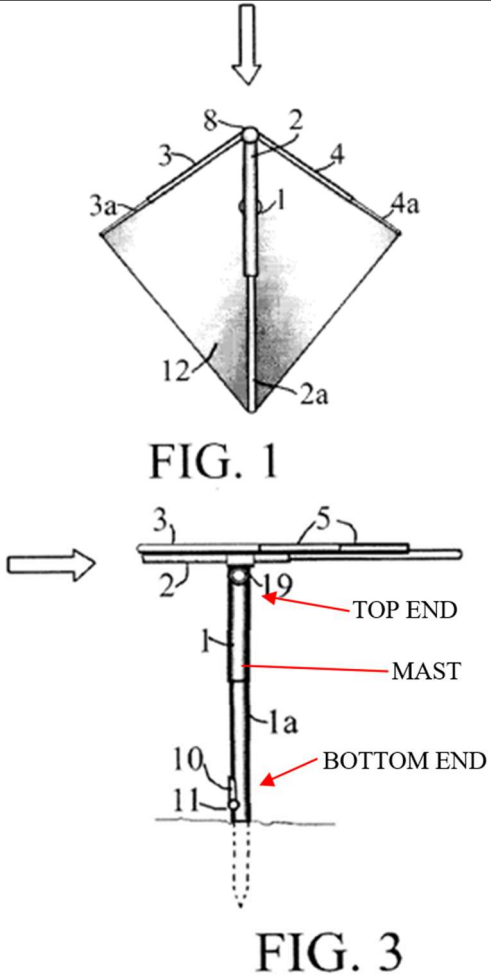
		 FIG. 1 shows a perspective view of a mast assembly. A central vertical member (1) is shown with a top cap (2) and a base (12). Two support arms (3, 4) are attached to the top cap. The arms have outer sections (3a, 4a) and inner sections (3, 4). A downward arrow indicates a force or movement at the top. FIG. 3 shows a side cross-sectional view of the mast assembly. A horizontal member (3) is shown with a central vertical member (1) passing through it. The vertical member has a top end (19) and a bottom end (11). The top end is labeled 'TOP END' and the bottom end is labeled 'BOTTOM END'. The central vertical member is labeled 'MAST'. The bottom end (11) is shown embedded in a supporting surface (10). A dashed line indicates the mast extending further down.
21(e)	at least one support arm with a first end and a second end, wherein the first end of the support arm is attached to a rib and the second end of the support arm is attached to a slider configured to move up and down the mast; and	Yi discloses an umbrella with a slider 20 and support members 22. These and other components are illustrated in FIGS. 1 and 2 of Yi.

FIG. 1

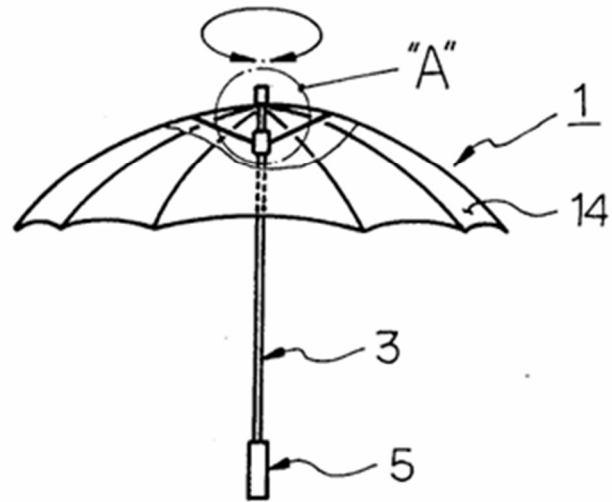
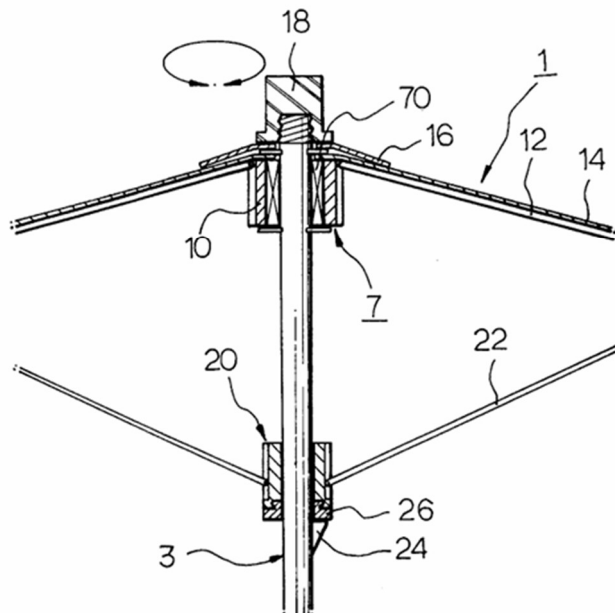
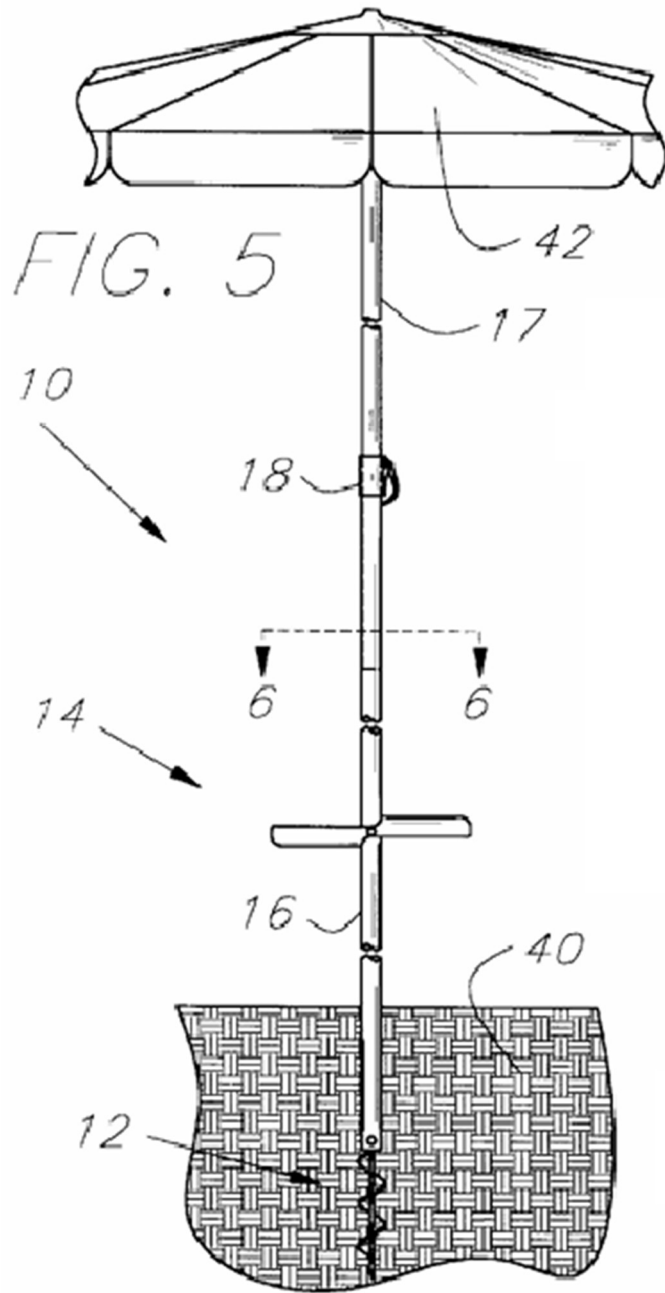


FIG. 2



Yi therefore discloses the limitation “at least one support arm with a first end and a second end, wherein the first end of the support arm is attached to a rib and the second end of the support arm is attached to a slider.” The support members 22 each have a first end attached to a rib 12 in

		the frame 1, and the support members 22 each have a second end attached to the slider 20. Yi states “[e]ach rib support member 22 is hingably connected at one end thereof to an associated one of the ribs 12 and at the other end thereof to the slider 20.” Yi at p. 8, ll. 28–30. Yi also discloses a “slider configured to move up and down the mast.” Yi states “[a] slider 20 is fitted around the umbrella shaft 3 so that it moves slidably along the umbrella shaft 3.” Yi at p. 8, ll. 21–22. Yi also states “[t]he canopy-securing frame 1 is operatively connected to the slider 20 by means of a plurality of rib support members 22 in such a fashion that it moves between its folded position and its unfolded position as the slider 20 slides vertically between its upper position and its lower position.” Yi at p. 8, ll. 23–28. Thus, the combination of Saiz, Barnes, and Yi discloses “at least one support arm with a first end and a second end, wherein the first end of the support arm is attached to a rib and the second end of the support arm is attached to a slider configured to move up and down the mast.”
21(f)	an anchor operably connected to the second end of the mast;	An anchor is properly construed as “comprising any element that provides weight and/or a mechanism by which to secure assembly into a support surface.” Saiz discloses an anchor in the form of the rod 1a. As shown in FIG. 3, the rod 1a extends into the support surface to secure the assembly. Because the upper rod 1 is allowed to freely rotate relative to the lower rod 1a, very limited forces act at the bottom point of the lower rod 1a where the lower rod 1a is inserted into the supporting surface, and the lower rod 1a would not rotate during normal operating conditions. Additionally or alternatively, it would have been obvious to add the anchor 10 of Gibson in place of the rod 1a.



A POSITA would have been motivated to make this combination to make the sunshade of Saiz easier to install and/or remove in certain situations or more stable when the wind blows. *See Saiz* at ¶ [0003]; *Gibson* at col. 2, ll. 32–39; col. 4, l. 56–col. 5, l. 20. A POSITA would have a reasonable expectation of success in adding the anchor 10 of *Gibson* to the combination of *Saiz*, *Barnes*, and *Yi* described herein as it amounts to the basic attachment of mechanical components. The other obviousness

		rationales described herein (e.g., this combination would merely combine prior art elements according to known methods to yield predictable results, use a known technique to improve a similar device in the same way, obvious to try, etc.) apply equally to a combination involving Gibson. Thus, the combination of Saiz, Barnes, and Yi (and potentially Gibson) discloses an “anchor operably connected to the second end of the mast.”
21(g)	wherein the pivot cap, ribs, slider, and support arms are configured to rotate about the mast in response to blowing of the wind.	Saiz describes advantages of its invention and states that it is “stable in the face of wind” as it “is self-directional and offers little resistance.” Saiz at ¶ [0014]. At Paragraph [0032], Saiz states that “FIG. 1 consists of . . . cloth (12), secured by the ends of the rods,” that the cloth (12) “is extended like a fan, taking on the form of a kite” and that it indicates its direction in respect of the wind arrow.” As described above, the lateral arms 3 and 4 rotate with the central arm 2, Saiz at ¶ [0008], allowing the cloth (12) and the lateral arms 3 and 4 to rotate together to a direction of the blowing wind. As a result, “the extended cloth of the shade acts as a weather vane under the action of the wind. . . .” Saiz at ¶ [0008]. The slider of Yi is also allowed to rotate. Yi notes that its invention allows the canopy to rotate. Yi at p. 3, l. 28–p. 4, l. 18. Yi also notes, “the canopy- securing frame 1 can rotate along with the slider 20.” Yi at p. 9, ll. 6–7. Thus, the proposed combination of Saiz, Barnes, and Yi discloses that “the pivot cap, ribs, slider, and support arms are configured to rotate about the mast in response to blowing of the wind.”

A POSITA would be motivated to modify Saiz to attach the suspension end 42 of the Barnes canopy 12 to the arms 3, 3a, 4, 4a of Saiz, thereby providing a sail and a rib that are adapted to rotate together to a direction of the blowing wind.

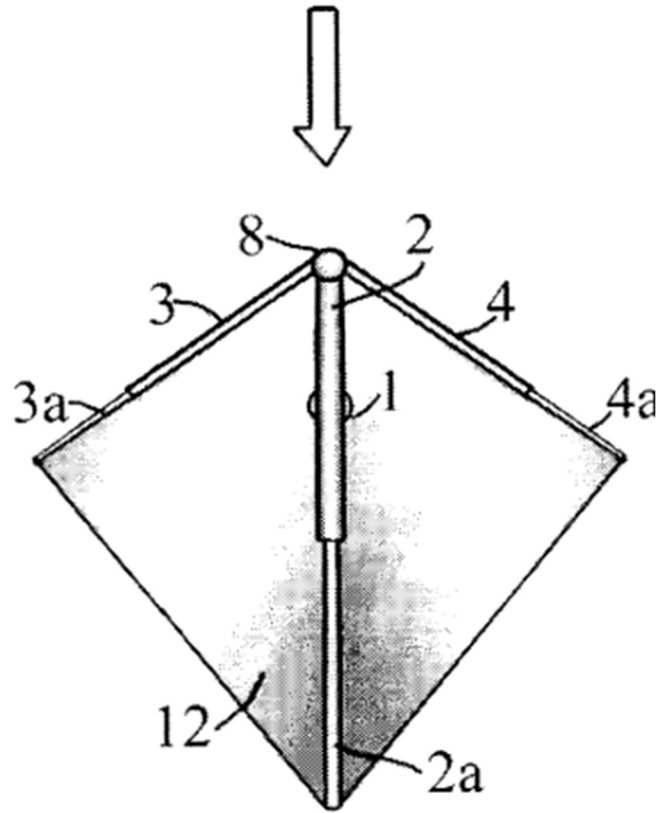


FIG. 1

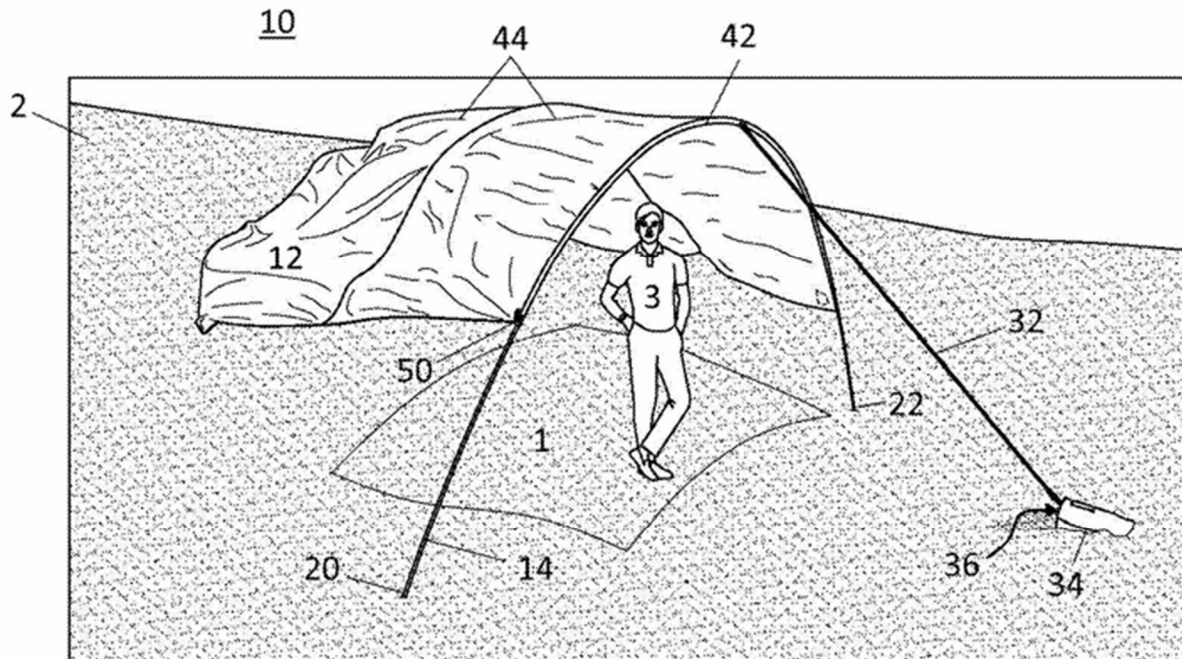


FIG. 1

It would have been obvious to combine Saiz and Barnes and to modify the device of Saiz to include the canopy of Barnes. Both references are in the same field and relate to devices that are configured to provide shade to users. Also, in the process of new product development, it is considered standard to research the category, examine all existing art, and then to design, develop, and test. This process would be conducted iteratively until the most successful conclusion possible is accomplished. This further suggests that a POSITA would have arrived at the subject matter of claims 21, 22, 24, 26, 27, 29, and 34.

A POSITA would be motivated to modify the device of Saiz to include the canopy of Barnes to make the device of Saiz more lightweight and easier to assemble. Both references show a motivation to enable the sail or covering device to have flexibility and ability to move when faced with heavy wind. For example, Barnes states, in its background section, that “[s]ome systems include rigid canopy susceptible to being shifted or unanchored by wind.” Barnes at 1:25–27. Saiz

also states in its section regarding the prior art that “[c]urrent sunshades are not efficient and stable when the wind blows through not being aerodynamic or self-directional and not having the anchor point advanced in relation to the centre of application of resistance and through this being high.” Saiz at ¶ [0003]. Given that both references acknowledge this common issue, a POSITA would have considered both references. Saiz, Barnes, and the other prior art references discussed herein clearly constitute “analogous art.”

Barnes also states that “[o]ther systems are cumbersome to transport or assemble, due to the number of parts involved, steps required during setup and/or low shade to weight ratios.” Barnes at 1:25–30. Barnes states, in its background section, that “there remains a need for systems and methods including flexible canopy structures capable of being at least partially supported by wind and configured for easy [] transport and assembly.” Barnes at 1:31–34 (emphasis added). Thus, Barnes expresses a clear need in the art for lightweight and easy to assemble shade devices. To accomplish this goal, Barnes used the canopy 12 which was aurally suspended, and Barnes touts the lightweight materials that are used in the canopy. Barnes at 3:67–4:6 (“The canopy 12 may include one or more lightweight materials . . .”).

Barnes also expressed a desire to partially support flexible canopy structure using the wind. Barnes at 1:31–34 (emphasis added). Barnes accomplished this by providing a canopy 12 without any supporting rods or arms from the suspension end 42 (i.e., the proximal edge) to the unrestrained free edge.

A POSITA would have had a reasonable expectation of success in combining the references as noted. A POSITA considering the teachings of Saiz and Barnes would have succeeded in implementing them together, as doing so amounts to a simple combination of basic mechanical components. Saiz at ¶ [0032]; Barnes at 4:15–18. The proposed combination simply

requires removal of the existing cloth 12 of Saiz, with this cloth 12 being replaced by the canopy 12 of Barnes, with the arms 3, 3a, 4, 4a of Saiz being inserted into the internal volume of the loop 40 in the canopy 12 of Barnes. Saiz at ¶ [0032]; Barnes at 4:15–18.

Numerous rationales support such an obviousness combination: (i) this combination would merely combine prior art elements according to known methods to yield predictable results; (ii) attachment of the canopy 12 of Barnes to the arms 3, 3a, 4, 4a of Saiz would use a known technique to improve a similar device in the same way; (iii) attachment of the canopy 12 of Barnes to the arms 3, 3a, 4, 4a of Saiz applies a known technique to a known device ready for improvement to yield predictable results; (iv) attachment of the canopy 12 of Barnes to the arms 3, 3a, 4, 4a of Saiz would be obvious to try, and a POSITA would choose from a finite number of identified, predictable solutions, with a reasonable expectation of success; and (v) attachment of the canopy 12 of Barnes to the arms 3, 3a, 4, 4a of Saiz would apply a known work in one field of endeavor (e.g., mechanical arts) to prompt variations of it for use in either the same field based on design incentives or other market forces, with the variations being predictable to a POSITA. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 416–21 (2007).

It would have been obvious to combine Yi with the previously described combination of Saiz and Barnes to utilize a slider and support arms similar to the slider 20 and rib support members 22 of Yi. Yi is in the same field as Saiz and Barnes, with each of these references relating to devices that are configured to provide shade to users. Yi at p. 4, ll. 7–18; Saiz, Abstract; Barnes, Abstract. Also, in the process of new product development, it is considered standard to research the category, examine all existing art, and then to design, develop, and test. This process would be conducted iteratively until the most successful conclusion possible is accomplished. This further suggests that

a POSITA would have arrived at the material described in claim 21 and its dependent claims described herein.

A POSITA would be motivated to modify the combination of Saiz and Barnes to utilize a slider and support arms similar to the slider 20 and rib support members 22 of Yi to provide a compact, known, umbrella-style deployment mechanism for a wind-responsive shade, improving ease of setup, retraction, storage, and transport while maintaining wind-stability objectives emphasized by Saiz, Yi, and Barnes. Yi at p. 8, ll. 21–30; Saiz at ¶ [0003]; Barnes at 1:25–34.

A POSITA would recognize that Yi would provide a known opening/closing mechanism for a collapsible shade frame. Yi teaches that “[a] slider 20 is fitted around the umbrella shaft 3 so that it moves slidably along the umbrella shaft 3,” and the canopy-securing frame moves between folded and unfolded positions as the slider moves vertically. Yi at p. 8, ll. 21–28. That mechanism could be viewed as a straightforward way to make Saiz’s arms easier to deploy and retract, since Saiz already contemplates arms that “are extended for its use and they are retracted for storage and transport.” Saiz at ¶ [0013].

A POSITA would recognize that Yi would improve portability and setup. Barnes identifies a need for shade systems that are easier to transport and assemble, noting that prior systems can be “cumbersome to transport or assemble, due to the number of parts involved, steps required during setup and/or low shade to weight ratios.” Barnes at 1:25–30. Yi’s slider-and-support-arm arrangement provides a compact, familiar umbrella-style mechanism for moving a frame between stored and deployed states, which aligns with Barnes’s goal of easy transport and assembly. Yi at p. 8, ll. 21–30; Barnes at 1:25–34.

A POSITA would recognize that Yi would support a wind-responsive shade while preserving collapsibility. Saiz focuses on wind stability, stating that its shade is “stable in the face

of wind” and “self-directional.” Saiz at ¶ [0014]. Yi similarly addresses wind forces by allowing the canopy or canopy-securing part to rotate so that “the force of the wind and rain directly transferred to the user can be effectively reduced.” Yi at p. 4, ll. 1–9. Adding Yi’s slider 20 and support members 22 to Saiz/Barnes would retain wind-responsive shade behavior while adding a proven collapsible support linkage. Yi at p. 8, ll. 21–30; Barnes at 1:31–34.

A POSITA would recognize that Yi could reduce wind damage or user force while maintaining shade function. Yi teaches that allowing the canopy-securing part to rotate under external force can reduce transferred force and avoid damage, including when installed “on the beach or rest area where there is heavy wind.” Yi at p. 4, ll. 1–18. Combining Barnes’s wind-supported beach shade with Yi’s deployable/rotatable umbrella support hardware would improve resistance to wind forces. Barnes at 1:25–34; Yi at p. 4, ll. 1–18; Yi at p. 8, ll. 21–30.

Combining Yi with Saiz and Barnes would effectively use a known umbrella support linkage in an analogous shade-device field. All three references concern portable shade or umbrella/parasol structures: Yi is directed to an “umbrella” with a canopy-securing frame and ribs, Saiz is directed to an “aerodynamic sunshade,” and Barnes is directed to a system and method for providing shade from the sun. Yi at p. 4, ll. 7–18; Saiz, Abstract; Barnes, Abstract. That overlap supports an argument that a POSITA would look to Yi’s slider/support-arm mechanism when modifying Saiz or Barnes. Yi at p. 8, ll. 21–30; Barnes at 1:25–34.

Each of Saiz, Barnes, and Yi show a motivation to enable the sail or covering device to have flexibility and ability to move when faced with heavy wind. For example, Barnes states, in its background section, that “[s]ome systems include rigid canopy susceptible to being shifted or unanchored by wind.” Barnes at 1:25–27. Saiz also states in its section regarding the prior art that “[c]urrent sunshades are not efficient and stable when the wind blows through not being

aerodynamic or self-directional and not having the anchor point advanced in relation to the centre of application of resistance and through this being high.” Saiz at ¶ [0003]. Yi teaches that allowing the canopy or canopy-securing part to rotate and move naturally in response to external force can reduce force transferred by wind and prevent damage, including when the device is installed “on the beach or rest area where there is heavy wind.” Yi at p. 3, l. 28–p. 4, l. 18. Given that each of these references acknowledge this common issue, a POSITA would have considered all these references. Saiz, Barnes, and Yi and the other prior art references discussed herein clearly constitute “analogous art.”

A POSITA would have had a reasonable expectation of success in combining the references as noted. A POSITA considering the teachings of Saiz, Barnes, and Yi would have succeeded in implementing them together, as doing so amounts to a simple combination of basic mechanical components. The proposed combination simply requires the addition of the slider 20 and rib support members 22 of Yi.

Numerous rationales support such an obviousness combination: (i) this combination would merely combine prior art elements according to known methods to yield predictable results; (ii) inclusion of the components similar to the slider 20 and rib support members 22 of Yi to the combination of Saiz and Barnes described above would use a known technique to improve a similar device in the same way; (iii) inclusion of the components similar to the slider 20 and rib support members 22 of Yi to the combination of Saiz and Barnes described above applies a known technique to a known device ready for improvement to yield predictable results; (iv) inclusion of the components similar to the slider 20 and rib support members 22 of Yi to the combination of Saiz and Barnes described above would be obvious to try, and a POSITA would choose from a finite number of identified, predictable solutions, with a reasonable expectation of success; and (v)

inclusion of the components similar to the slider 20 and rib support members 22 of Yi to the combination of Saiz and Barnes described above would apply a known work in one field of endeavor (e.g., mechanical arts) to prompt variations of it for use in the same field based on design incentives or other market forces, with the variations being predictable to a POSITA. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 416–21 (2007).

The obvious combination of Saiz, Barnes, and Yi thus includes all the limitations of claim 21. Claim 21 is therefore unpatentable as being obvious to a POSITA over Saiz, Barnes, and Yi.

ii. Claim 22

As shown in the discussion below, the combination of Saiz, Barnes, and Yi discloses every element of claim 22. A POSITA would be motivated to combine these references and would have a reasonable expectation of success in doing so for the reasons stated above in the discussion of claim 21. Claim 22 is therefore unpatentable as being obvious to a POSITA over Saiz, Barnes, and Yi.

#	<u>Claim Language</u>	<u>Prior Art Material</u>
22(a)	The assembly of claim 21,	All of the limitations of claim 21 are disclosed by the combination of Saiz, Barnes, and Yi as discussed above.
22(b)	wherein the ribs are configured at an angle of greater than 180 degrees relative to each other.	Solbello's infringement contentions state:

Ribs are at more than 180-degree angle relative to each other, from top of one rib to top of other rib.



Saiz discloses, in FIG. 1 and in other figures, arms 3, 4 that are at more than a 180-degree angle relative to each other.

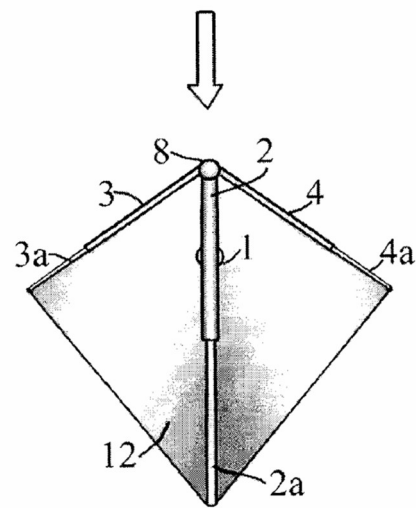


FIG. 1

Thus, the combination of Saiz, Barnes, and Yi discloses “wherein the ribs are configured at an angle of greater than 180 degrees relative to each other.”

iii. Claim 24

As shown in the discussion below, the combination of Saiz, Barnes, and Yi discloses every element of claim 24. A POSITA would be motivated to combine these references and would have

a reasonable expectation of success in doing so for the reasons stated above in the discussion of claim 21. Claim 24 is therefore unpatentable as being obvious to a POSITA over Saiz, Barnes, and Yi.

<u>#</u>	<u>Claim Language</u>	<u>Prior Art Material</u>
24(a)	The assembly of claim 21,	All of the limitations of claim 21 are disclosed by the combination of Saiz, Barnes, and Yi as discussed above.
24(b)	wherein the slider is configured as a collar that fits around the exterior circumference of the mast.	Yi discloses slider 20 fitted around umbrella shaft 3 so that it moves slidably along the shaft. Yi at p. 8, ll. 21–22. Because slider 20 fits around the exterior of the shaft and moves along it, slider 20 is configured as a collar that fits around the exterior circumference of the mast. Thus, the combination of Saiz, Barnes, and Yi discloses “wherein the slider is configured as a collar that fits around the exterior circumference of the mast.”

iv. Claim 26

As shown in the discussion below, the combination of Saiz, Barnes, and Yi discloses every element of claim 26. A POSITA would be motivated to combine these references and would have a reasonable expectation of success in doing so for the reasons stated above in the discussion of claim 21. Claim 26 is therefore unpatentable as being obvious to a POSITA over Saiz, Barnes, and Yi.

<u>#</u>	<u>Claim Language</u>	<u>Prior Art Material</u>
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26(a)	The assembly of claim 21,	All of the limitations of claim 21 are disclosed by the combination of Saiz, Barnes, and Yi as discussed above.
26(b)	wherein the sail channel comprises one or more apertures to facilitate insertion of the ribs into the channel.	Barnes discloses that loop 40 on suspension end 42 is configured to accept a portion of frame 14 therethrough, and Barnes also discloses fasteners that may include a hook and slit or aperture. Barnes at 4:7–23; Barnes at 4:42–53. In the proposed combination, loop 40 forms the sail channel and includes one or more openings or apertures to facilitate insertion of the Yi ribs into the channel. Thus, the combination of Yi and Barnes discloses “wherein the sail channel comprises one or more apertures to facilitate insertion of the ribs into the channel.”

v. Claim 27

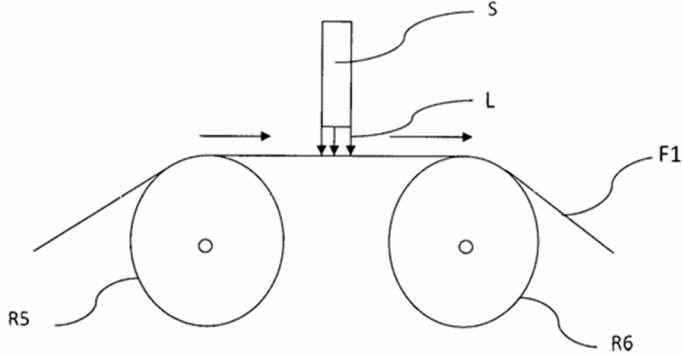
As shown in the discussion below, the combination of Saiz, Barnes, and Yi discloses every element of claim 27. A POSITA would be motivated to combine these references and would have a reasonable expectation of success in doing so for the reasons stated above in the discussion of claim 21. Claim 27 is therefore unpatentable as being obvious to a POSITA over Saiz, Barnes, and Yi.

#	<u>Claim Language</u>	<u>Prior Art Material</u>
27(a)	The assembly of claim 21,	All of the limitations of claim 21 are disclosed by the

		combination of Saiz, Barnes, and Yi as discussed above.
27(b)	wherein the sail channel comprises one or more apertures to allow direct contact between each rib and a corresponding support arm.	Yi discloses rib support members 22 hingably connected directly to associated ribs 12. Yi at p. 8, ll. 23–30. Barnes discloses a loop 40 on suspension end 42 configured to accept a portion of frame 14 therethrough and discloses fasteners that may include apertures. Barnes at 4:7–23; Barnes at 4:42–53. In the proposed combination, the canopy of Barnes would necessarily have apertures or openings to fit around the framework of Yi, allowing direct contact between each Yi rib and the corresponding Yi support arm. Thus, the combination of Saiz, Barnes, and Yi discloses “wherein the sail channel comprises one or more apertures to allow direct contact between each rib and a corresponding support arm.”

vi. Claim 29

As shown in the discussion below, the combination of Saiz, Barnes, and Yi (and, if necessary, Cai) discloses every element of claim 29. A POSITA would be motivated to combine these references and would have a reasonable expectation of success in doing so for the reasons stated above in the discussion of claim 21 and for the additional reasons set forth below. Claim 29 is therefore unpatentable as being obvious to a POSITA over Saiz, Barnes, and Yi (and possibly further in view of Cai).

#	<u>Claim Language</u>	<u>Prior Art Material</u>
29(a)	The assembly of claim 21,	All of the limitations of claim 21 are disclosed by the combination of Saiz, Barnes, and Yi as discussed above.
29(b)	wherein the sail has a top face and a bottom face and wherein at least one of the top or bottom faces comprises a coating.	Barnes discloses that canopy 12 may include one or more lightweight materials having properties including ripstop, polyester, blackout, light diffusion, light modification, and waterproof. Barnes at 3:67–4:6. By disclosing these properties for the canopy, Barnes inherently discloses a coating. Regardless, it would have been obvious to implement Barnes’s blackout, light-modifying, or waterproof properties as a coating on at least one face of the canopy based on common knowledge as one skilled in the art would know that the fabric could be coated if desired as fabric coatings are ubiquitous. Additionally or alternatively, Cai discloses a spray coating material for making fabrics waterproof. Cai discusses treatment of fabrics with spray methods. Abstract; FIG. 2; ’471 Patent at col. 1, ll. 9–15; col. 1, ll. 52–60; col. 2, l. 64–col. 3, l. 2. Cai also states that FIG. 9 shows a spray head method, with “[t]he spray method facility [being] composed of two rollers R5 and R6 and a spray head S, and the fabric F1 passing through rollers R5 and R6. The spray head S sprays the water repellent agent L onto the fabric F1.” Cai at col. 3, ll. 28–38.  Figure 9 Thus, the combination of Yi and Barnes (and, if necessary, Cai) discloses “wherein the sail has a top face and a bottom face and wherein at least one of the top or bottom faces comprises a coating.” Given the discussion in Barnes about having waterproof fabrics, a POSITA would be motivated to utilize a spray coating material to provide these waterproof properties in an easy-to-apply manner. Additionally, a POSITA would have been motivated to provide the

		other properties mentioned in Barnes (e.g., blackout, light diffusion, light modification, etc.) in its canopy using a spray coating approach described in Cai. A POSITA would have a reasonable expectation of success in applying the spray coating to provide waterproof properties. Numerous additional obviousness rationales support a combination with Cai: (i) this combination merely combines prior-art elements according to known methods to yield predictable results; (ii) applying the spray coating of Cai would use a known technique to improve the canopy of the aforementioned combination in the same way; (iii) applying a waterproof spray coating of Cai applies a known technique to a known device ready for improvement; (iv) the modification would have been obvious to try from a finite number of predictable ways to provide waterproof properties; and (v) the modification applies known work in the same or a similar field to predictable variations based on design incentives and market forces. Thus, the combination of Saiz, Barnes, and Yi (and, if necessary, Cai) discloses “wherein the sail has a top face and a bottom face and wherein at least one of the top or bottom faces comprises a coating.”
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vii. Claim 34

As shown in the discussion below, the combination of Saiz, Barnes, and Yi (and possibly Gibson) discloses every element of claim 34. A POSITA would be motivated to combine these references and would have a reasonable expectation of success in doing so for the reasons stated above in the discussion of claim 21. Claim 34 is therefore unpatentable as being obvious to a POSITA over Saiz, Barnes, and Yi (possibly in further view of Gibson).

#	<u>Claim Language</u>	<u>Prior Art Material</u>
34(a)	A method of using a sunshade, the method comprising:	The preamble is not limiting. Even if consideration of the preamble is appropriate, Saiz is entitled “Aerodynamic Sunshade” and the abstract states “[t]he present invention is an aerodynamic sunshade” FIG. 1 of Saiz also illustrates one sunshade.

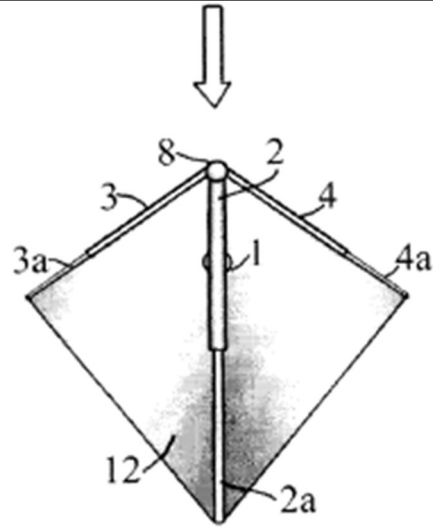


FIG. 1

Barnes also discloses a sun shade assembly, stating in the abstract that “[a] system for providing shade onto a surface is described herein.” This system 10 is shown in FIG. 1 of Barnes below, and Barnes states “FIG. 1 depicts one embodiment of a system 10 for providing shade 1 onto a surface 2.” Barnes at 3:64–65.

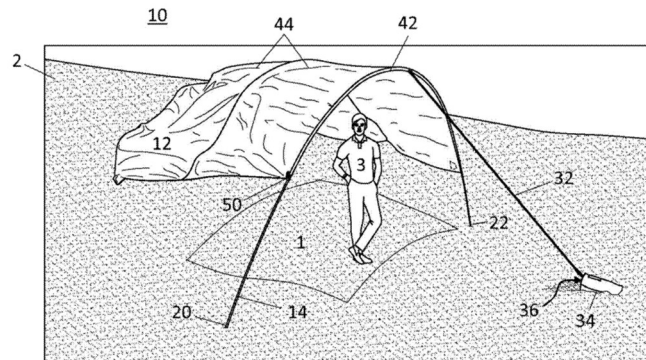
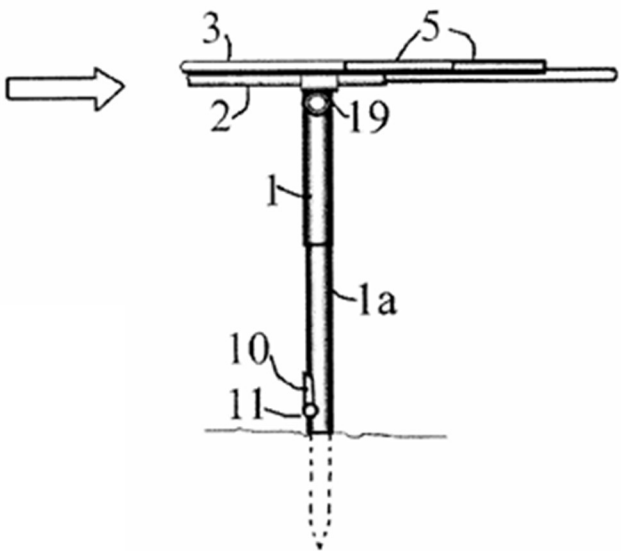
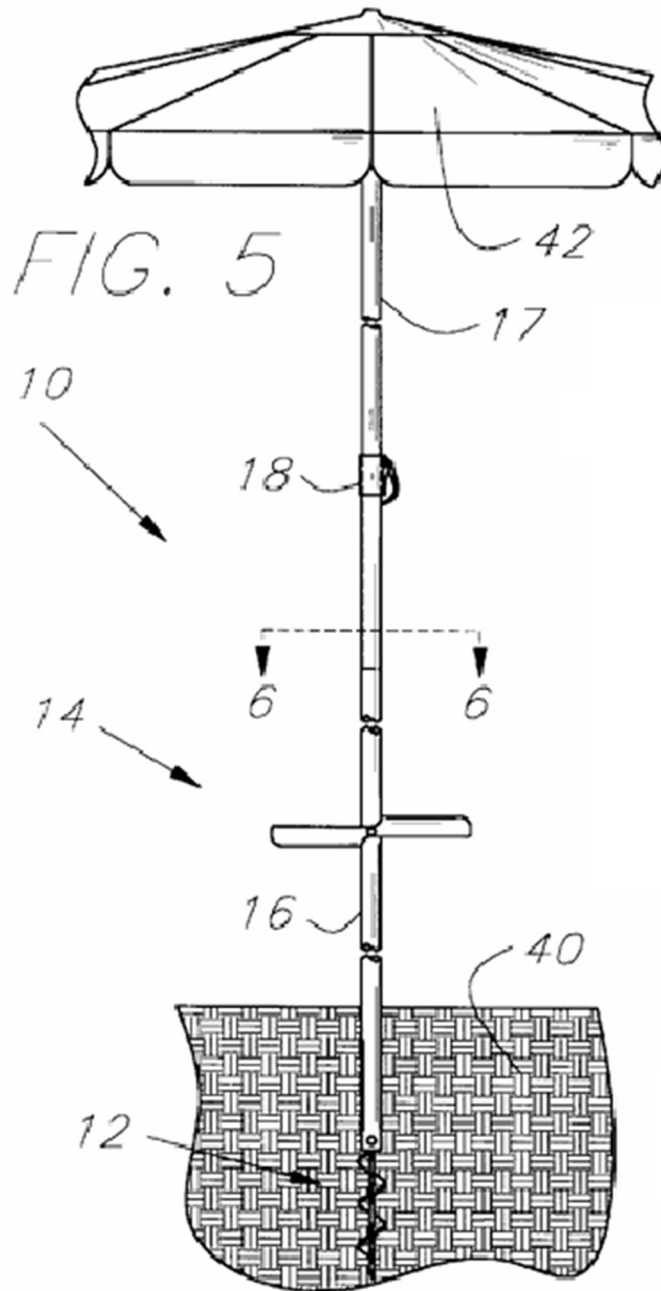
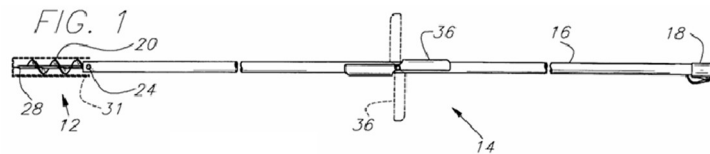


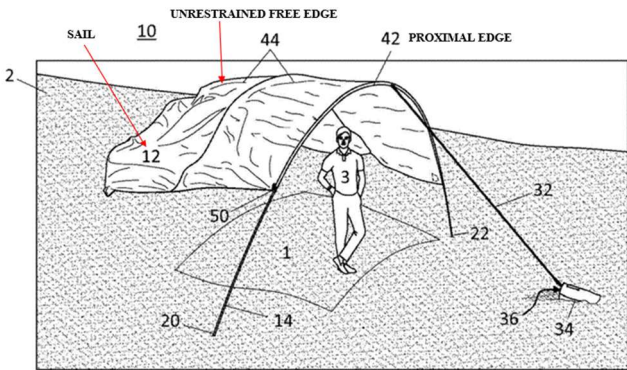
FIG. 1

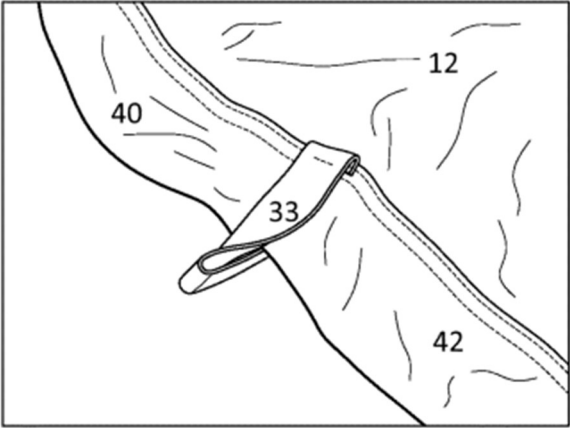
The umbrella of Yi also acts as a sun shade assembly. Yi states “[i]t is another object of the present invention to provide an umbrella which can be used as a sun or rain shield parasol while having a configuration capable of allowing its canopy or its canopy-securing part including the canopy to rotate and move naturally in an application direction of an external force applied to the canopy-securing part. . . .” Yi at p. 4, ll. 7–13.

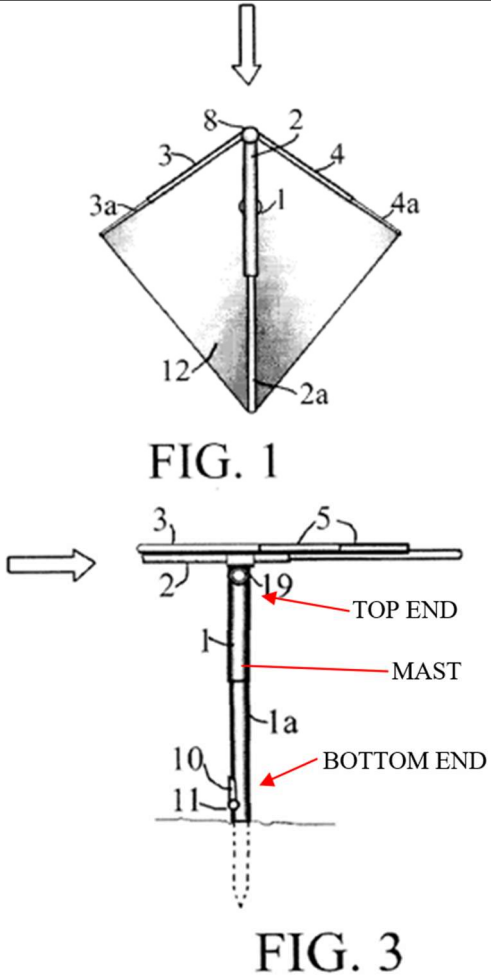
		Thus, even if the preamble is determined to be limiting, the proposed combination of Saiz, Barnes, and Yi discloses a sunshade and “a method of using a sunshade.”
34(b)	positioning an anchor of a sun shade assembly in a support surface,	An anchor is properly construed as “comprising any element that provides weight and/or a mechanism by which to secure assembly into a support surface.” Saiz discloses an anchor in the form of the rod 1a. As shown in FIG. 3, the rod 1a extends into the support surface to secure the assembly. Saiz also describes a handle 10 as useful to facilitate embedding rod 1a in the ground. Saiz, ¶ [0034]. Because the upper rod 1 is allowed to freely rotate relative to the lower rod 1a, very limited forces act at the bottom point of the lower rod 1a where the lower rod 1a is inserted into the supporting surface, and the lower rod 1a would not rotate during normal operating conditions.  FIG. 3 Additionally, Saiz notes that the stem or mast is embedded either in the sand or “in a concrete base.” Saiz at ¶ [0004]. Such a concrete base would constitute an “element that provides weight” and would serve as an anchor. Additionally or alternatively, it would have been obvious to add the anchor 10 of Gibson.



A POSITA would have been motivated to make this combination to make the sunshade of Saiz easier to install and/or remove in certain circumstances, or more stable when the wind blows. See Saiz at ¶ [0003]; Gibson at col. 2, ll. 32–39; col. 4, l. 56–col. 5, l. 20. A POSITA would

		have a reasonable expectation of success in adding the anchor 10 of Gibson to the combination of Saiz, Barnes, and Yi described herein as it amounts to the basic attachment of mechanical components. The other obviousness rationales described herein (e.g., this combination would merely combine prior art elements according to known methods to yield predictable results, use a known technique to improve a similar device in the same way, obvious to try, etc.) apply equally to a combination involving Gibson. Thus, the combination of Saiz, Barnes, and Yi (and potentially Gibson) discloses “positioning an anchor of a sun shade assembly in a support surface.”
34(c)	wherein the sun shade assembly comprises: a pair of ribs defined by a first end and a second end, wherein the first end of each rib is attached to a pivot cap;	The embodiment of FIG. 1 in Saiz illustrates lateral arms 3 and 4, and these lateral arms are located proximate the top end of the support stem 1. Telescoping extending arms 3a, 4a are also attached to the lateral arms 3 and 4, and the cloth 12 is attached to these arms 3, 3a, 4, 4a as shown in FIG. 1. In Saiz, the lateral arms 3 and 4 are attached to the spindle 8, and the spindle allows rotation of the cloth 12. Saiz at ¶ [0032]. Thus, the proposed combination of Saiz, Barnes, and Yi discloses “a pair of ribs defined by a first end and a second end, wherein the first end of each rib is attached to a pivot cap.”
34(d)	[wherein the sun shade assembly comprises:] a sail with a front edge comprising a channel sized and shaped to house each rib such that the ribs extend across the edge;	The embodiment shown in FIG. 1 of Barnes discloses that the “canopy 12 may define a suspension end 42 positioned proximal to the frame 14 when the canopy 12 is engaged with the frame 14.” Barnes at 4:7–9.  FIG. 1

		The canopy 12 serves as the required sail, and the suspension end 42 is the required front edge. Barnes discloses that the canopy 12 defines a loop 40. Barnes at 4:15–18. This loop 40 is configured to accept a portion of the frame 14 depicted in FIG. 1 through the loop 40. Barnes at 4:15–18. The loop 40 is depicted in FIG. 4 of Barnes, and the frame 14 is depicted in FIG. 1 of Barnes (see below). The frame 14 is a slender tube, similar in shape to the arms 3, 3a, 4, and 4a of Saiz, and would be inserted through the loop 40 in a similar manner.  FIG. 4 Thus, the proposed combination of Saiz, Barnes, and Yi discloses “a sail with a front edge comprising a channel sized and shaped to house each rib such that the ribs extend across the edge.”
34(e)	[wherein the sun shade assembly comprises:] a mast comprising a first end and a second end, wherein the first end is operably connected to the pivot cap, wherein the pivot cap can freely rotate about the mast;	As shown in FIG. 1, Saiz discloses a support stem 1 which serves as a mast. Saiz at ¶ [0032]. The support stem 1 is shown in the top view of FIG. 1. However, a similar support stem 1 is illustrated in the side view of FIG. 3, and that figure shows that a support stem 1 has a top end and a bottom end.

		 FIG. 1 is a perspective view of a diamond-shaped frame with a central vertical member. A downward arrow is above the top vertex. Labels include 8, 2, 3, 4, 3a, 4a, 12, 2a, and 1. FIG. 3 is a side cross-sectional view of a mast assembly. A horizontal arrow points to the left. Labels include 3, 5, 2, 19, 1, 1a, 10, 11, TOP END, MAST, and BOTTOM END. The mast is shown extending from a supporting surface (11) upwards. FIG. 3 Saiz discloses a “stem or mast, which is embedded either in the sand, in a concrete base or a handle” Saiz at ¶ [0004]. Thus, the stem extends upwardly from a supporting surface. The proposed combination of Saiz, Barnes, and Yi therefore discloses “a mast comprising a first end and a second end, wherein the first end is operably connected to the pivot cap, wherein the pivot cap can freely rotate about the mast.”
34(f)	[wherein the sun shade assembly comprises:] at least one support arm with a first end and a second end, wherein the first end of the support arm is attached to a rib and the second end of the support arm is attached to a slider configured to	Yi discloses an umbrella with a slider 20 and support members 22. These and other components are illustrated in FIGS. 1 and 2 of Yi.

move up and down the mast; and

FIG. 1

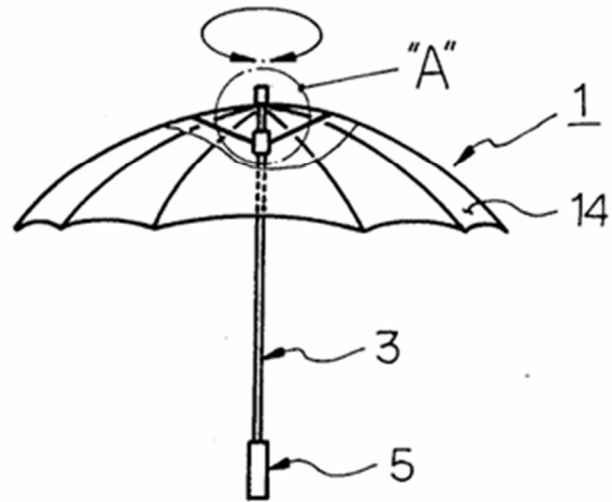
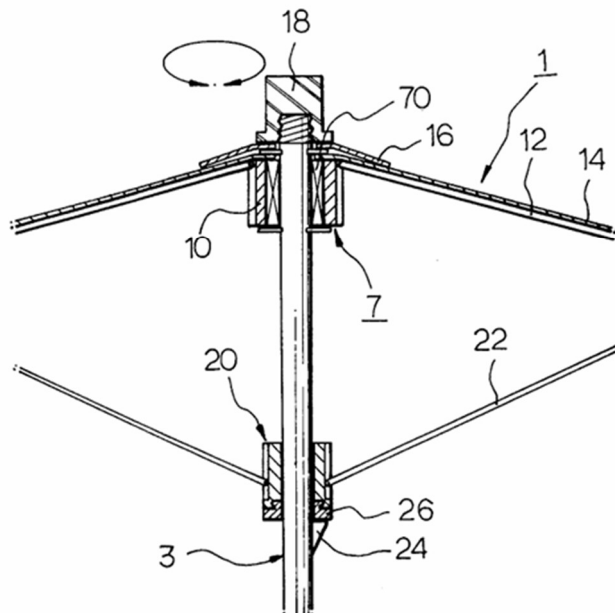


FIG. 2



Yi covers the limitation "at least one support arm with a first end and a second end, wherein the first end of the support arm is attached to a rib and the second end of the support arm is attached to a slider." The support members 22 each have a first end attached to a rib 12 in the frame

		1, and the support members 22 each have a second end attached to the slider 20. Yi states “[e]ach rib support member 22 is hingably connected at one end thereof to an associated one of the ribs 12 and at the other end thereof to the slider 20.” Yi at p. 8, ll. 28–30. Yi also discloses a “slider configured to move up and down the mast.” Yi states “[a] slider 20 is fitted around the umbrella shaft 3 so that it moves slidably along the umbrella shaft 3.” Yi at p. 8, ll. 21–22. Yi also states “[t]he canopy-securing frame 1 is operatively connected to the slider 20 by means of a plurality of rib support members 22 in such a fashion that it moves between its folded position and its unfolded position as the slider 20 slides vertically between its upper position and its lower position.” Yi at p. 8, ll. 23–28. Thus, the combination of Saiz, Barnes, and Yi discloses “at least one support arm with a first end and a second end, wherein the first end of the support arm is attached to a rib and the second end of the support arm is attached to a slider configured to move up and down the mast; and.”
34(g)	[wherein the sun shade assembly comprises:] the anchor operably connected to the second end of the mast;	An anchor is properly construed as “comprising any element that provides weight and/or a mechanism by which to secure assembly into a support surface.” Saiz discloses an anchor in the form of the rod 1a. As shown in FIG. 3, the rod 1a extends into the support surface to secure the assembly. Because the upper rod 1 is allowed to freely rotate relative to the lower rod 1a, very limited forces act at the bottom point of the lower rod 1a where the lower rod 1a is inserted into the supporting surface, and the lower rod 1a would not rotate during normal operating conditions.

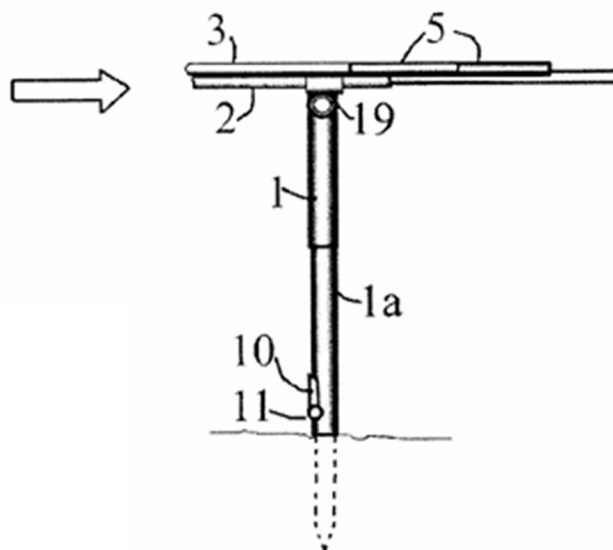
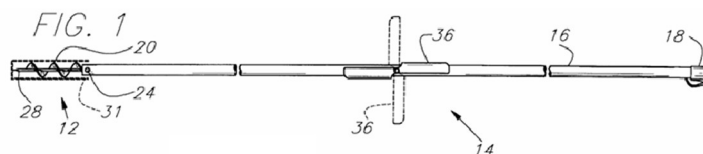
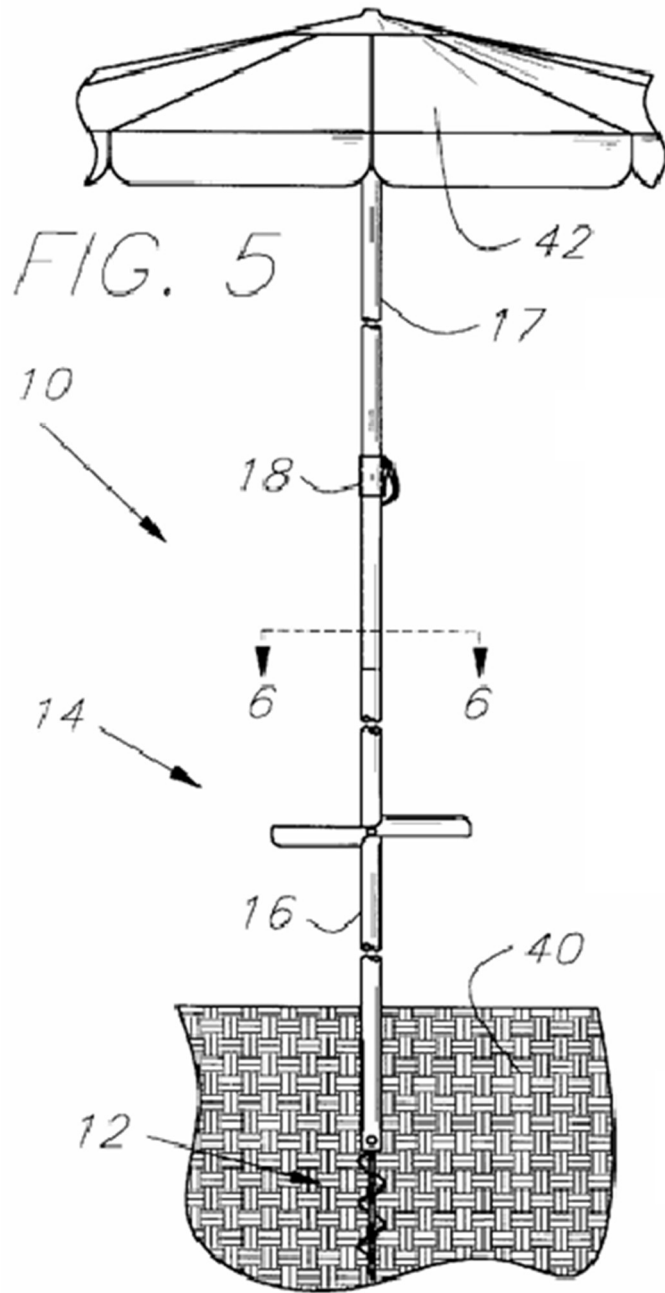


FIG. 3

Additionally, Saiz notes that the stem or mast is embedded either in the sand or “in a concrete base.” Saiz at ¶ [0004]. Such a concrete base would constitute an “element that provides weight” and would serve as an anchor.

Additionally or alternatively, it would have been obvious to add the anchor 10 of Gibson in place of the rod 1a.





A POSITA would have been motivated to make this combination to make the sunshade of Saiz easier to install and/or remove in certain circumstances, or more stable when the wind blows. *See Saiz* at ¶ [0003]; *Gibson* at col. 2, ll. 32–39; col. 4, l. 56–col. 5, l. 20. A POSITA would have a reasonable expectation of success in adding the anchor 10 of *Gibson* to the combination of *Saiz*, *Barnes*, and *Yi* described herein as it amounts to the basic attachment of mechanical components. The other

		obviousness rationales described herein (e.g., this combination would merely combine prior art elements according to known methods to yield predictable results, use a known technique to improve a similar device in the same way, obvious to try, etc.) apply equally to a combination involving Gibson. Thus, the proposed combination of Saiz, Barnes, and Yi (and potentially Gibson) discloses an “anchor operably connected to the second end of the mast.”
34(h)	wherein the sun shade assembly self-adjusts in response to the blowing of the wind.	This “wherein” clause is non-limiting as merely describing a characteristic of the above combination in use. Even if limiting, however, Saiz describes advantages of its invention and states that it is “stable in the face of wind” as it “is self-directional and offers little resistance.” Saiz at ¶ [0014]. At Paragraph [0032], Saiz states that “FIG. 1 consists of . . . cloth (12), secured by the ends of the rods,” that the cloth (12) “is extended like a fan, taking on the form of a kite” and that it indicates its direction in respect of the wind arrow.” As described above, the lateral arms 3 and 4 rotate with the central arm 2, Saiz at ¶ [0008], allowing the cloth (12) and the lateral arms 3 and 4 to rotate together to a direction of the blowing wind. As a result, “the extended cloth of the shade acts as a weather vane under the action of the wind. . . .” Saiz at ¶ [0008]. Thus, the proposed combination of Saiz, Barnes, and Yi (and if necessary Gibson) discloses that, “the sun shade assembly self-adjusts in response to the blowing of the wind.”

A POSITA would be motivated to modify Saiz to attach the suspension end 42 of the Barnes canopy 12 to the arms 3, 3a, 4, 4a of Saiz, thereby providing a sail and a rib that are adapted to rotate together to a direction of the blowing wind. It would have been obvious to combine Saiz and Barnes and to modify the device of Saiz to include the canopy of Barnes. A POSITA would have had a reasonable expectation of success in combining the references as noted. The reasoning is the same as discussed above in reference to Claim 21. Additionally, the rationales discussed above in the discussion of claim 21 support a similar obviousness combination for claim 34.

It would have been obvious to combine Yi with the previously described combination of Saiz and Barnes to utilize a slider and support arms similar to the slider 20 and rib support members 22 of Yi. A POSITA would be motivated to modify the combination of Saiz and Barnes to utilize a slider and support arms similar to the slider 20 and rib support members 22 of Yi for the same reasons discussed above in the discussion of claim 21. A POSITA would have had a reasonable expectation of success in combining the references as noted in the discussion of claim 21. Numerous rationales support such an obviousness combination just as they do for claim 21.

The obvious combination of Saiz, Barnes, and Yi thus includes all the limitations of claim 34, and claim 34 is obvious to a POSITA over Saiz, Barnes, and Yi.

D. Claims 21, 22, 24, 26, 27, 29, 34, 44, 45, and 47 are unpatentable over Yi in view of Barnes

Claims 21, 22, 24, 26, 27, 29, 34, 44, 45, and 47 of the Reissue Patent are unpatentable as obvious over Yi in view of Barnes (alone or possibly also in view of Gibson and Cai as described below).

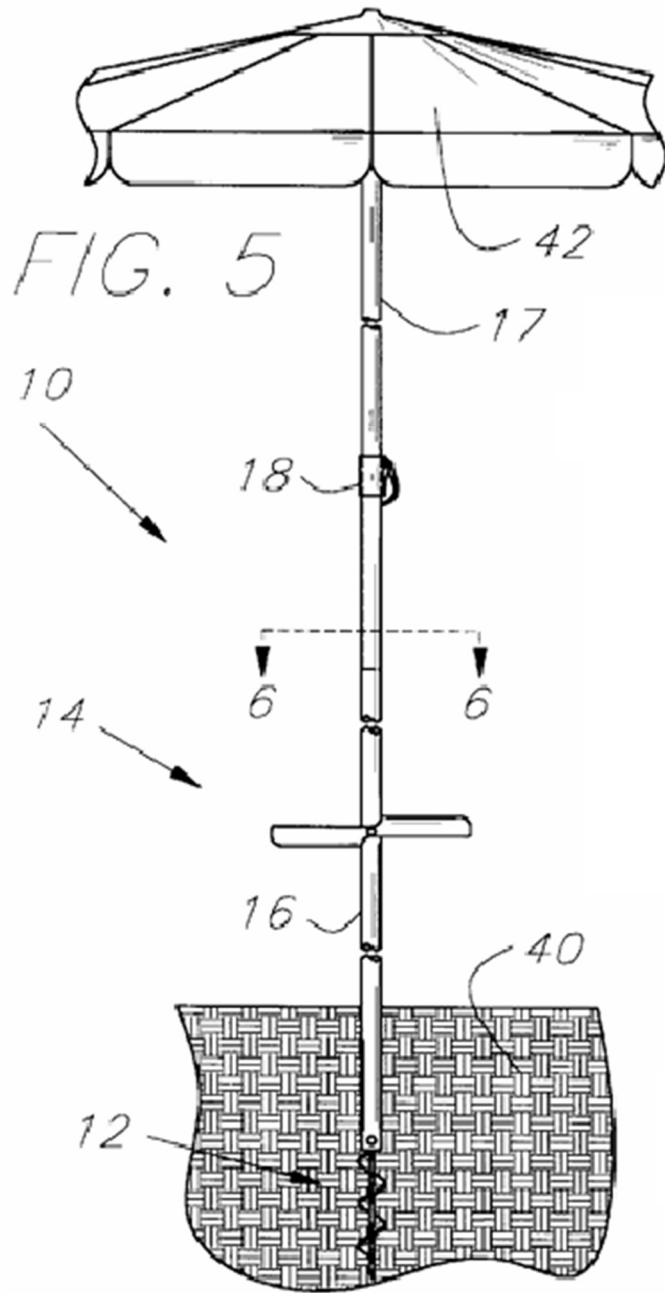
i. Claim 21

As shown in the discussion below, the combination of Yi and Barnes discloses every element of claim 21. A POSITA would be motivated to combine these references and would have a reasonable expectation of success in doing so.

#	<u>Claim Language</u>	<u>Prior Art Material</u>
21(a)	A sun shade assembly comprising:	The preamble is not limiting. Even if consideration of the preamble is appropriate, Yi discloses an umbrella that can be used as a sun or rain shield parasol and that allows its canopy or canopy-securing part to rotate and move naturally in response to external force, including when installed on a beach or rest area with heavy wind. Yi at p. 4, ll. 7–18. Barnes also discloses a system for providing shade onto a surface. Barnes, Abstract.

		Thus, the combination of Yi and Barnes discloses “[a] sun shade assembly.”
21(b)	a pair of ribs defined by a first end and a second end, wherein the first end of each rib is attached to a pivot cap;	Yi discloses a canopy-securing frame 1 made up of a plurality of ribs 12 fixed to and around member 10 at the upper end of umbrella shaft 3. The member 10 is rotatably mounted to the upper end of the shaft and supports the ribs, so the member 10 serves as the pivot cap in the proposed combination. Yi at p. 8, ll. 1–11; Yi, FIG. 2. The ribs 12 form the claimed pair of ribs, each having a first end attached to the pivot cap and a second end extending outwardly from the pivot cap. Thus, the combination of Yi and Barnes discloses “a pair of ribs defined by a first end and a second end, wherein the first end of each rib is attached to a pivot cap.”
21(c)	a sail with a front edge comprising a channel sized and shaped to house each rib such that the ribs extend across the edge;	Barnes discloses canopy 12, which serves as the claimed sail. Barnes further discloses suspension end 42 positioned proximal to frame 14, and loop 40 on suspension end 42 configured to accept a portion of frame 14 therethrough. Barnes at 3:67–4:18; Barnes, FIG. 1. In the proposed combination, the suspension end 42 is the sail’s front edge, and loop 40 is a channel sized and shaped to house the ribs of Yi, such that the ribs extend across the edge in the loop. Thus, the combination of Yi and Barnes discloses “a sail with a front edge comprising a channel sized and shaped to house each rib such that the ribs extend across the edge.”
21(d)	a mast comprising a first end and a second end, wherein the first end is operably connected to the pivot cap, wherein the pivot cap can freely rotate about the mast;	Yi discloses a central umbrella shaft 3, which serves as the claimed mast and has a first end and a second end. Yi further discloses a member 10 rotatably mounted to the upper end of umbrella shaft 3 around the shaft, with a member 10 supporting the ribs of the canopy-securing frame. Yi at p. 8, ll. 1–11; Yi, Figs. 1–2. The member 10 therefore operates as the pivot cap, and the pivot cap can freely rotate about the mast. Thus, the combination of Yi and Barnes discloses “a mast comprising a first end and a second end, wherein the first end is operably connected to the pivot cap, wherein the pivot cap can freely rotate about the mast.”
21(e)	at least one support arm with a first end and a second end,	Yi discloses a slider 20 fitted around umbrella shaft 3 so that it moves slidably along the shaft. Yi at p. 8, ll. 21–

	wherein the first end of the support arm is attached to a rib and the second end of the support arm is attached to a slider configured to move up and down the mast; and	22. Yi also discloses rib support members 22, each hingably connected at one end to an associated rib 12 and at the other end to slider 20, so the rib support members serve as the claimed support arms and slider 20 serves as the claimed slider configured to move up and down the mast. Yi at p. 8, ll. 23–30. Thus, the combination of Yi and Barnes discloses “at least one support arm with a first end and a second end, wherein the first end of the support arm is attached to a rib and the second end of the support arm is attached to a slider configured to move up and down the mast.”
21(f)	an anchor operably connected to the second end of the mast;	An anchor is properly construed as “comprising any element that provides weight and/or a mechanism by which to secure assembly into a support surface.” Yi discloses an umbrella shaft 3 with a lower end and teaches use of the umbrella as a parasol installed on a beach or rest area. Yi at p. 4, ll. 7–18; Yi, FIG. 1. Because free rotation of the parasol occurs at an elevated location on the umbrella shaft, very limited forces act at the bottom of the umbrella shaft where the umbrella shaft forms a spike that is inserted into the beach. Consequently, the lower portion of the mast would not rotate during normal operating conditions. Accordingly, the bottom spike of Yi constitutes an anchor according to this limitation. Additionally or alternatively, it would have been obvious to add the anchor 10 of Gibson at the end of the umbrella shaft of Yi.



A POSITA would have been motivated to make this combination to make the sunshade of Yi easier to install and/or remove, or more stable when the wind blows. *See* Yi at p. 2, ll. 13–15; p. 4, ll. 7–18; Gibson at col. 2, ll. 32–39; col. 4, l. 56–col. 5, l. 20. A POSITA would have a reasonable expectation of success in adding the anchor 10 of Gibson to the combination of Yi and Barnes described herein as it amounts to the basic attachment of mechanical components. The other obviousness rationales described

		herein (e.g., this combination would merely combine prior art elements according to known methods to yield predictable results, use a known technique to improve a similar device in the same way, obvious to try, etc.) apply equally to a combination involving Gibson. Thus, the combination of Yi and Barnes (and potentially Gibson) discloses “an anchor operably connected to the second end of the mast.”
21(g)	wherein the pivot cap, ribs, slider, and support arms are configured to rotate about the mast in response to blowing of the wind.	Yi discloses that the member 10 and ribs 12 rotate about umbrella shaft 3, that slider 20 is part of the same canopy-securing frame mechanism, and that the canopy-securing frame can rotate along with slider 20. Yi at p. 8, l. 1–p. 9, l. 6; Yi at p. 9, ll. 5–30. Yi further teaches that the canopy or canopy-securing part rotates naturally in the direction of external force, including wind. Yi at p. 4, ll. 1–18; Yi at p. 16, ll. 1–18. Thus, the combination of Yi and Barnes discloses “wherein the pivot cap, ribs, slider, and support arms are configured to rotate about the mast in response to blowing of the wind.”

The obvious combination of Yi and Barnes thus includes all the limitations of claim 21, and claim 21 is obvious to a POSITA over Yi and Barnes.

A POSITA would have been motivated to combine Yi and Barnes and to modify Yi to use the canopy 12 of Barnes. Both Yi and Barnes relate to shade structures, and both address wind-responsive functionality. Yi teaches a canopy or canopy-securing part that rotates and moves naturally in response to external force, including heavy wind at a beach or rest area, while Barnes identifies a need for flexible canopy structures capable of being at least partially supported by wind and configured for easy transport and assembly. Yi at p. 4, ll. 1–18; Barnes at 1:25–34.

Both references are in the same field and relate to devices that are configured to provide shade to users. Barnes states, in its background section, that “[s]ome systems include rigid canopy susceptible to being shifted or unanchored by wind.” Barnes at 1:25–27. Yi teaches that allowing

the canopy or canopy-securing part to rotate and move naturally in response to external force can reduce force transferred by wind and prevent damage, including when the device is installed “on the beach or rest area where there is heavy wind.” Yi at p. 3, l. 28–p. 4, l. 18. Given that each of these references acknowledge this common issue, a POSITA would have considered both of these references. Barnes and Yi and the other prior art references discussed herein constitute “analogous art.”

Also, in the process of new product development, it is considered standard to research the category, examine all existing art, and then to design, develop, and test. This process would be conducted iteratively until the most successful conclusion possible is accomplished. This further suggests that a POSITA would have arrived at the subject matter of claim 21 and its dependent claims.

A POSITA would be motivated to modify the device of Yi to include the canopy of Barnes to make the device of Yi more lightweight and easier to assemble. Barnes states that “[o]ther systems are cumbersome to transport or assemble, due to the number of parts involved, steps required during setup and/or low shade to weight ratios.” Barnes at 1:25–30. Barnes states, in its background section, that “there remains a need for systems and methods including flexible canopy structures capable of being at least partially supported by wind and configured for easy [] transport and assembly.” Barnes at 1:31–34 (emphasis added). Thus, Barnes expresses a clear need in the art for lightweight and easy to assemble shade devices. To accomplish this goal, Barnes used the canopy 12 which was aurally suspended, and Barnes touts the lightweight materials that are used in the canopy. Barnes at 3:67–4:6 (“The canopy 12 may include one or more lightweight materials . . .”).

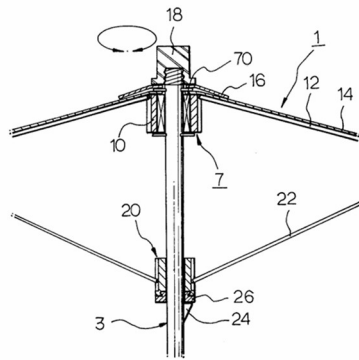
A POSITA would have had a reasonable expectation of success in combining the references as noted. A POSITA considering the teachings of Yi and Barnes would have succeeded in implementing them together, as doing so amounts to a simple combination of basic mechanical components. The proposed combination simply requires removal of the existing canopy of Yi, with this canopy being replaced by the canopy 12 of Barnes, with ribs 12 of Yi being inserted into the internal volume of the loop 40 in the canopy 12 of Barnes.

Numerous rationales support such an obviousness combination: (i) this combination would merely combine prior art elements according to known methods to yield predictable results; (ii) attachment of the canopy 12 of Barnes to the ribs 12 of Yi would use a known technique to improve a similar device in the same way; (iii) attachment of the canopy 12 of Barnes to the ribs 12 of Yi applies a known technique to a known device ready for improvement to yield predictable results; (iv) attachment of the canopy 12 of Barnes to the ribs 12 of Yi would be obvious to try, and a POSITA would choose from a finite number of identified, predictable solutions, with a reasonable expectation of success; and (v) attachment of the canopy 12 of Barnes to the ribs 12 of Yi would apply a known work in one field of endeavor (e.g., mechanical arts) to prompt variations of it for use in either the same field based on design incentives or other market forces, with the variations being predictable to a POSITA.

The obvious combination of Yi and Barnes thus includes all the limitations of claim 21, and claim 21 is obvious to a POSITA over Yi and Barnes (possibly in further view of Gibson).

ii. Claim 22

As shown in the discussion below, the combination of Yi and Barnes discloses every element of claim 22. A POSITA would be motivated to combine these references and would have a reasonable expectation of success in doing so for the reasons stated above in the discussion of claim 21. Claim 22 is therefore unpatentable as being obvious to a POSITA over Yi and Barnes.

#	<u>Claim Language</u>	<u>Prior Art Material</u>
22(a)	The assembly of claim 21,	All of the limitations of claim 21 are disclosed by the combination of Yi and Barnes as discussed above. Thus, the combination of Yi and Barnes discloses “[t]he assembly of claim 21.”
22(b)	wherein the ribs are configured at an angle of greater than 180 degrees relative to each other.	Solbello’s infringement contentions state: <i>Ribs are at more than 180-degree angle relative to each other, from top of one rib to top of other rib.</i>  Yi discloses, in FIG. 2 and in other figures, ribs 12 that are at more than a 180-degree angle relative to each other, particularly when measured from the top of one rib to the top of the other rib. FIG. 2 

		Thus, the combination of Yi and Barnes discloses “wherein the ribs are configured at an angle of greater than 180 degrees relative to each other.”
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iii. Claim 24

As shown in the discussion below, the combination of Yi and Barnes discloses every element of claim 24. A POSITA would be motivated to combine these references and would have a reasonable expectation of success in doing so for the reasons stated above in the discussion of claim 21. Claim 24 is therefore unpatentable as being obvious to a POSITA over Yi and Barnes.

<u>#</u>	<u>Claim Language</u>	<u>Prior Art Material</u>
24(a)	The assembly of claim 21,	All of the limitations of claim 21 are disclosed by the combination of Yi and Barnes as discussed above. Thus, the combination of Yi and Barnes discloses “[t]he assembly of claim 21.”
24(b)	wherein the slider is configured as a collar that fits around the exterior circumference of the mast.	Yi discloses slider 20 fitted around umbrella shaft 3 so that it moves slidably along the shaft. Yi at p. 8, ll. 21–22. Because slider 20 fits around the exterior of the shaft and moves along it, slider 20 is configured as a collar that fits around the exterior circumference of the mast. Thus, the combination of Yi and Barnes discloses “wherein the slider is configured as a collar that fits around the exterior circumference of the mast.”

iv. Claim 26

As shown in the discussion below, the combination of Yi and Barnes discloses every element of claim 26. A POSITA would be motivated to combine these references and would have a reasonable expectation of success in doing so for the reasons stated above in the discussion of claim 21. Claim 26 is therefore unpatentable as being obvious to a POSITA over Yi and Barnes.

<u>#</u>	<u>Claim Language</u>	<u>Prior Art Material</u>
26(a)	The assembly of claim 21,	All of the limitations of claim 21 are disclosed by the combination of Yi and Barnes as discussed above. Thus, the combination of Yi and Barnes discloses “[t]he assembly of claim 21.”
26(b)	wherein the sail channel comprises one or more apertures to facilitate insertion of the ribs into the channel.	Barnes discloses that loop 40 on suspension end 42 is configured to accept a portion of frame 14 therethrough, and Barnes also discloses fasteners that may include a hook and slit or aperture. Barnes at 4:7–23; Barnes at 4:42–53. In the proposed combination, loop 40 forms the sail channel and includes one or more openings or apertures to facilitate insertion of the Yi ribs into the channel. Thus, the combination of Yi and Barnes discloses “wherein the sail channel comprises one or more apertures to facilitate insertion of the ribs into the channel.”

v. **Claim 27**

As shown in the discussion below, the combination of Yi and Barnes discloses every element of claim 27. A POSITA would be motivated to combine these references and would have a reasonable expectation of success in doing so for the reasons stated above in the discussion of claim 21. Claim 27 is therefore unpatentable as being obvious to a POSITA over Yi and Barnes.

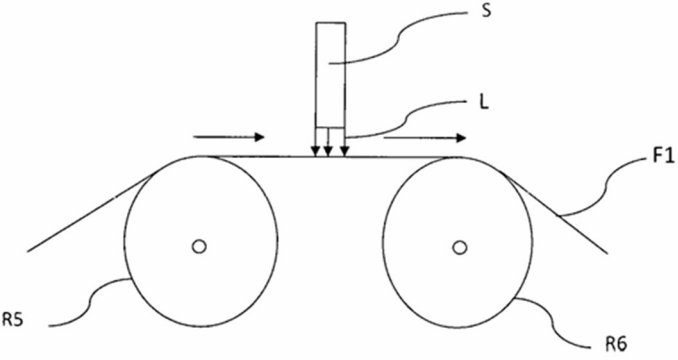
<u>#</u>	<u>Claim Language</u>	<u>Prior Art Material</u>
27(a)	The assembly of claim 21,	All of the limitations of claim 21 are disclosed by the combination of Yi and Barnes as discussed above. Thus, the combination of Yi and Barnes discloses “[t]he assembly of claim 21.”
27(b)	wherein the sail channel comprises one or more apertures to allow direct contact between each rib and a corresponding support arm.	Yi discloses rib support members 22 hingably connected directly to associated ribs 12. Yi at p. 8, ll. 23–30. Barnes discloses a loop 40 on suspension end 42 configured to accept a portion of frame 14 therethrough and discloses fasteners that may include apertures. Barnes at 4:7–23; Barnes at 4:42–53. In the proposed combination, the canopy of Barnes would necessarily have apertures or openings to fit around the framework of Yi, allowing direct contact between each Yi rib and the corresponding Yi support arm. Thus, the combination of Yi and Barnes discloses “wherein the sail channel comprises one or more apertures to allow direct contact between each rib

		and a corresponding support arm.”
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vi. Claim 29

As shown in the discussion below, the combination of Yi and Barnes (and, if necessary, Cai) discloses every element of claim 29. A POSITA would be motivated to combine these references and would have a reasonable expectation of success in doing so for the reasons stated above in the discussion of claim 21 and for the additional reasons set forth below. Claim 29 is therefore unpatentable as being obvious to a POSITA over Yi and Barnes.

#	<u>Claim Language</u>	<u>Prior Art Material</u>
29(a)	The assembly of claim 21,	All of the limitations of claim 21 are disclosed by the combination of Yi and Barnes as discussed above. Thus, the combination of Yi and Barnes discloses “[t]he assembly of claim 21.”
29(b)	wherein the sail has a top face and a bottom face and wherein at least one of the top or bottom faces comprises a coating.	Barnes discloses that canopy 12 may include one or more lightweight materials having properties including ripstop, polyester, blackout, light diffusion, light modification, and waterproof. Barnes at 3:67–4:6. By disclosing these properties for the canopy, Barnes inherently discloses a coating. Regardless, it would have been obvious to implement Barnes’s blackout, light-modifying, or waterproof properties as a coating on at least one face of the canopy based on common knowledge as one skilled in the art would know that the fabric could be coated if desired as fabric coatings are ubiquitous. Additionally or alternatively, Cai discloses a spray coating material for making fabrics waterproof. Cai discusses treatment of fabrics with spray methods. Cai at Abstract; FIG. 2; col. 1, ll. 9–15; col. 1, ll. 52–60; col. 2, l. 64–col. 3, l. 2. Cai also states that FIG. 9 shows a spray head method, with “[t]he spray method facility [being] composed of two rollers R5 and R6 and a spray head S, and the fabric F1 passing through rollers R5 and R6. The spray head S sprays

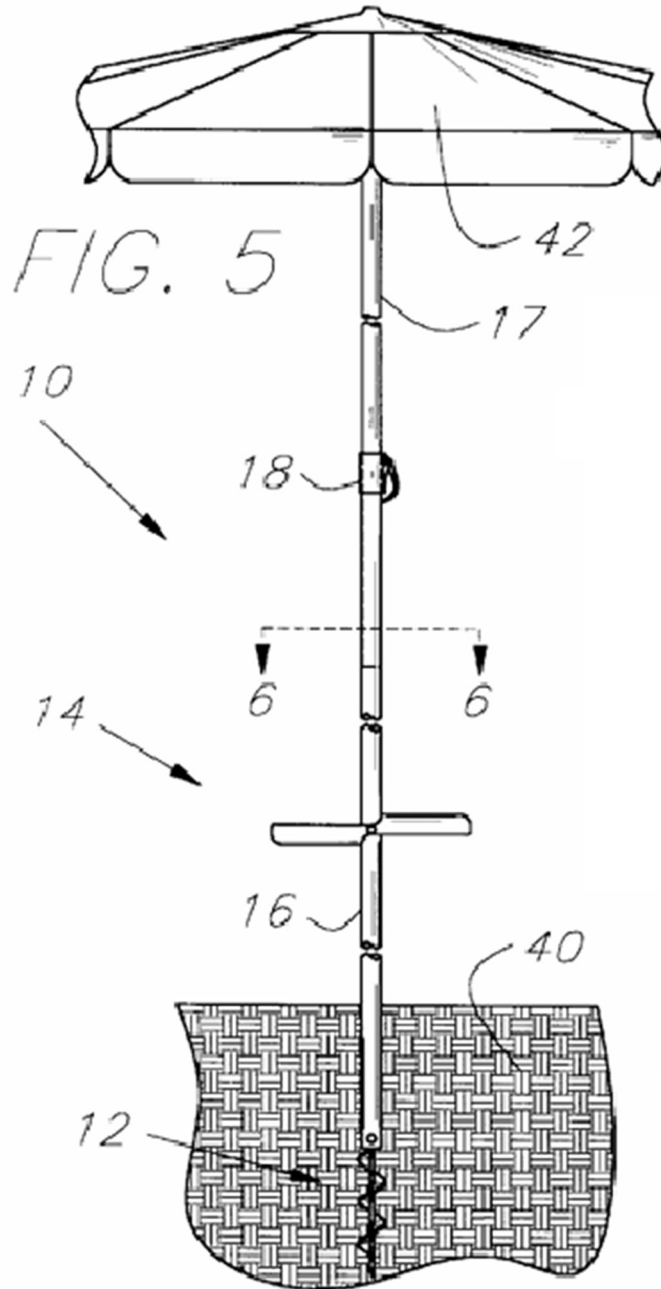
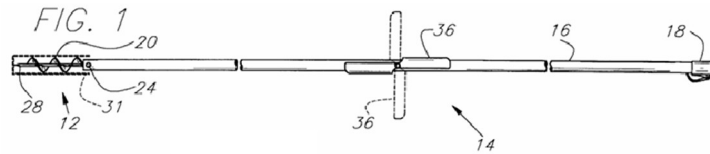
	the water repellent agent L onto the fabric F1.” Cai at col. 3, ll. 28–38.  Figure 9 Thus, the combination of Yi and Barnes (and, if necessary, Cai) discloses “wherein the sail has a top face and a bottom face and wherein at least one of the top or bottom faces comprises a coating.” Given the discussion in Barnes about having waterproof fabrics, a POSITA would be motivated to utilize a spray coating material to provide these waterproof properties in an easy-to-apply manner. Additionally, a POSITA would have been motivated to provide the other properties mentioned in Barnes (e.g., blackout, light diffusion, light modification, etc.) in its canopy using a spray coating approach described in Cai. A POSITA would have a reasonable expectation of success in applying the spray coating to provide waterproof properties. Numerous additional obviousness rationales support a combination with Cai: (i) this combination merely combines prior-art elements according to known methods to yield predictable results; (ii) applying the spray coating of Cai would use a known technique to improve the canopy of the aforementioned combination in the same way; (iii) applying a waterproof spray coating of Cai applies a known technique to a known device ready for improvement; (iv) the modification would have been obvious to try from a finite number of predictable ways to provide waterproof properties; and (v) the modification applies known work in the same or a similar field to predictable variations based on design incentives and market forces.
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		Thus, the combination of Yi and Barnes (and, if necessary, Cai) discloses “wherein the sail has a top face and a bottom face and wherein at least one of the top or bottom faces comprises a coating.”
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vii. Claim 34

As shown in the discussion below, the combination of Yi and Barnes discloses every element of claim 34. A POSITA would be motivated to combine these references and would have a reasonable expectation of success in doing so.

<u>#</u>	<u>Claim Language</u>	<u>Prior Art Material</u>
34(a)	A method of using a sunshade, the method comprising:	The preamble is not limiting. Even if consideration of the preamble is appropriate, Yi discloses an umbrella that can be used as a sun or rain shield parasol, and Barnes discloses a system and method for providing shade onto a surface. Yi at p. 4, ll. 7–18; Barnes, Abstract. Thus, the combination of Yi and Barnes discloses “[a] method of using a sunshade.”
34(b)	positioning an anchor of a sun shade assembly in a support surface, wherein the sun shade assembly comprises:	An anchor is properly construed as “comprising any element that provides weight and/or a mechanism by which to secure assembly into a support surface.” Yi discloses an umbrella shaft 3 with a lower end and teaches use of the umbrella as a parasol installed on a beach or rest area. Yi at p. 4, ll. 7–18; Yi, FIG. 1. Because free rotation of the parasol occurs at an elevated location on the umbrella shaft, very limited forces act at the bottom of the umbrella shaft where the umbrella shaft forms a spike that is inserted into the beach. Consequently, the lower portion of the mast would not rotate during normal operating conditions. Accordingly, the bottom spike of Yi constitutes an anchor according to this limitation. Additionally or alternatively, it would have been obvious to add the anchor 10 of Gibson at the end of the umbrella shaft of Yi.



A POSITA would have been motivated to make this combination easier to install and/or remove in certain circumstances, or to make the sunshade of Yi more stable when the wind blows. See Yi at p. 2, ll. 13–15; p. 4, ll. 7–18; Gibson at col. 2, ll. 32–39; col. 4, l. 56–col. 5, l. 20.

		A POSITA would have a reasonable expectation of success in adding the anchor 10 of Gibson to the combination of Yi and Barnes described herein as it amounts to the basic attachment of mechanical components. The other obviousness rationales described herein (e.g., this combination would merely combine prior art elements according to known methods to yield predictable results, use a known technique to improve a similar device in the same way, obvious to try, etc.) apply equally to a combination involving Gibson. Thus, the combination of Yi and Barnes (and potentially Gibson) discloses “an anchor operably connected to the second end of the mast.”
34(c)	a pair of ribs defined by a first end and a second end, wherein the first end of each rib is attached to a pivot cap;	As discussed for claim 21, Yi discloses ribs 12 fixed to and around a member 10 at the upper end of umbrella shaft 3. The member 10 is rotatably mounted to the shaft and supports the ribs, and therefore serves as the pivot cap to which the first end of each rib is attached in the proposed Yi/Barnes combination. Yi at p. 8, ll. 1–11; Yi, Figs. 1–2. Thus, the combination of Yi and Barnes discloses “a pair of ribs defined by a first end and a second end, wherein the first end of each rib is attached to a pivot cap.”
34(d)	a sail with a front edge comprising a channel sized and shaped to house each rib such that the ribs extend across the edge;	As discussed for claim 21, Barnes discloses canopy 12, suspension end 42, and loop 40 on the suspension end configured to accept a portion of frame 14 therethrough. Barnes at 3:67–4:18; Barnes, FIG. 1. In the proposed combination, the Barnes canopy is the sail, the suspension end is the front edge, and the loop is the channel sized and shaped to house Yi’s ribs so the ribs extend across the edge. Thus, the combination of Yi and Barnes discloses “a sail with a front edge comprising a channel sized and shaped to house each rib such that the ribs extend across the edge.”
34(e)	a mast comprising a first end and a second end, wherein the first end is operably connected to the pivot cap, wherein the pivot cap can freely rotate about the mast;	As discussed for claim 21, Yi discloses central umbrella shaft 3 and a member 10 rotatably mounted to the upper end of the shaft. Yi at p. 8, ll. 1–11; Yi, Figs. 1–2. The shaft serves as the mast, the member 10 serves as the pivot cap, and the pivot cap can freely rotate about the mast. Thus, the combination of Yi and Barnes discloses “a mast comprising a first end and a second end, wherein the first

		end is operably connected to the pivot cap, wherein the pivot cap can freely rotate about the mast.”
34(f)	at least one support arm with a first end and a second end, wherein the first end of the support arm is attached to a rib and the second end of the support arm is attached to a slider configured to move up and down the mast; and	As discussed for claim 21, Yi discloses slider 20 fitted around umbrella shaft 3 so that it moves slidably along the shaft. Yi at p. 8, ll. 21–22. Yi also discloses rib support members 22, each hingably connected at one end to an associated rib 12 and at the other end to slider 20, thereby disclosing the claimed support arm and slider arrangement. Yi at p. 8, ll. 23–30. Thus, the combination of Yi and Barnes discloses “at least one support arm with a first end and a second end, wherein the first end of the support arm is attached to a rib and the second end of the support arm is attached to a slider configured to move up and down the mast.”
34(g)	the anchor operably connected to the second end of the mast;	An anchor is properly construed as “comprising any element that provides weight and/or a mechanism by which to secure assembly into a support surface.” Yi discloses an umbrella shaft 3 with a lower end and teaches use of the umbrella as a parasol installed on a beach or rest area. Yi at p. 4, ll. 7–18; Yi, FIG. 1. Because free rotation of the parasol occurs at an elevated location on the umbrella shaft, very limited forces act at the bottom of the umbrella shaft where the umbrella shaft forms a spike that is inserted into the beach. Consequently, the lower portion of the mast would not rotate during normal operating conditions. Accordingly, the bottom spike of Yi constitutes an anchor according to this limitation. Additionally or alternatively, it would have been obvious to add the anchor 10 of Gibson at the end of the umbrella shaft of Yi as described above. Thus, the combination of Yi and Barnes (and potentially Gibson) discloses “an anchor operably connected to the second end of the mast.”
34(h)	wherein the sun shade assembly self-adjusts in response to the blowing of the wind.	This “wherein” clause is non-limiting as merely describing a characteristic of the above combination in use. Even if limiting, however, Yi discloses that the canopy or canopy-securing part rotates and moves naturally in the application direction of external force, including wind, and that this rotation reduces force

		transferred by wind and avoids damage. Yi at p. 4, ll. 1–18; Yi at p. 16, ll. 1–18. Thus, the combination of Yi and Barnes discloses “wherein the sun shade assembly self-adjusts in response to the blowing of the wind.”
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A POSITA would be motivated to modify Yi to attach the suspension end 42 of the Barnes canopy 12 to the ribs of Yi, thereby providing a sail and a rib that are adapted to rotate together to a direction of the blowing wind. It would have been obvious to combine Yi and Barnes and to modify the device of Yi to include the canopy of Barnes. A POSITA would have had a reasonable expectation of success in combining the references as noted. The reasoning is the same as discussed above in reference to Claim 21.

Additionally, the same rationales discussed above in the discussion of claim 21 support a similar obviousness combination for claim 34.

The obvious combination of Yi and Barnes thus includes all the limitations of claim 34, and claim 34 is obvious to a POSITA over Yi and Barnes.

viii. Claim 44

As shown in the discussion below, the combination of Yi and Barnes discloses every element of claim 44. A POSITA would be motivated to combine these references and would have a reasonable expectation of success in doing so. Thus, claim 44 is obvious in view of Yi and Barnes.

<u>#</u>	<u>Claim Language</u>	<u>Prior Art Material</u>
44(a)	A sun shade assembly comprising:	The preamble is not limiting. Regardless, the umbrella 1 of Yi constitutes a sun shade assembly because Yi discloses an umbrella that can be used as a sun or rain shield parasol, including when installed on a beach or rest area where there is heavy wind. Yi at p. 4, ll. 7–18. Barnes also discloses a sun shade assembly,

		stating in the abstract that a system for providing shade onto a surface is described. Barnes, Abstract. Thus, the combination of Yi and Barnes discloses “[a] sun shade assembly.”
44(b)	A mast configured to extend upwardly from a supporting surface, and having a top end and a bottom end	Yi discloses umbrella shaft 3, which serves as a mast having a top end and a bottom end. Yi at p. 8, ll. 1–11; Yi, Figs. 1–2. Yi also discloses that the umbrella may be installed on a beach or rest area where there is heavy wind, so the shaft is configured to extend upwardly from a supporting surface. Yi at p. 4, ll. 7–18. Thus, the combination of Yi and Barnes discloses “[a] mast configured to extend upwardly from a supporting surface, and having a top end and a bottom end.”
44(c)	At least one rib located proximate the top end of said mast, and configured to rotate relative to the supporting surface;	Yi discloses ribs 12 located proximate the top end of umbrella shaft 3. The ribs 12 are fixed to and positioned around the member 10, and the member 10 is rotatably mounted to the upper end of shaft 3, so the ribs rotate relative to the shaft and the supporting surface. Yi at p. 8, ll. 1–11; Yi, Figs. 1–2. Yi further teaches that its canopy or canopy-securing part can rotate naturally in the direction of external force, including when installed in heavy wind. Yi at p. 4, ll. 1–18. Thus, the combination of Yi and Barnes discloses “[a]t least one rib located proximate the top end of said mast, and configured to rotate relative to the supporting surface.”
44(d)	A sail having a proximal edge secured to said rib and an unrestrained free edge adapted to unfurl in response to the blowing of the wind, and wherein an entire surface area of said sail is unrestrained from the proximal edge to the free edge; and	Barnes discloses that canopy 12 may define suspension end 42 positioned proximal to frame 14 when canopy 12 is engaged with frame 14. Barnes at 3:67–4:18; Barnes, FIG. 1. In the proposed combination, canopy 12 is the sail, suspension end 42 is the proximal edge, and the Barnes canopy provides an unrestrained free edge and an entire surface area unrestrained from the proximal edge to the free edge when attached to at least one Yi rib. Thus, the combination of Yi and Barnes discloses “[a] sail having a proximal edge secured to said rib and an unrestrained free edge adapted to unfurl in response to the blowing of the wind, and wherein an entire surface area of said sail is unrestrained from the proximal edge to the free edge.”
44(e)	When unfurled, said sail and rib are adapted to rotate together to a	The proposed combination of Yi and Barnes discloses that, when unfurled, the sail and rib are adapted to rotate together to a direction of the blowing wind. Yi discloses that ribs 12 rotate relative to shaft 3, and Barnes discloses loop 40 on suspension

	direction of the blowing wind.	end 42 configured to accept a portion of frame 14 therethrough. Yi at p. 8, ll. 1–11; Barnes at 4:7–18. Thus, the combination of Yi and Barnes discloses “[w]hen unfurled, said sail and rib are adapted to rotate together to a direction of the blowing wind.”
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A POSITA would be motivated to modify Yi to attach the suspension end 42 of the Barnes canopy 12 to the ribs of Yi, thereby providing a sail and a rib that are adapted to rotate together to a direction of the blowing wind. It would have been obvious to combine Yi and Barnes and to modify the device of Yi to include the canopy of Barnes. A POSITA would have had a reasonable expectation of success in combining the references as noted. The reasoning is the same as discussed above in reference to Claim 21.

Additionally, the same rationales discussed above in the discussion of claim 21 support a similar obviousness combination for claim 44.

The obvious combination of Yi and Barnes thus includes all the limitations of claim 44, and claim 44 is obvious to a POSITA over Yi and Barnes.

ix. Claim 45

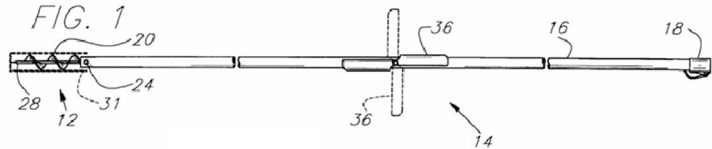
As shown in the table below, the combination of Yi and Barnes discloses every element of claim 45. A POSITA would be motivated to combine these references and would have a reasonable expectation of success in doing so for the reasons stated above in the discussion of claim 44. Claim 45 is therefore unpatentable as being obvious to a POSITA over Yi and Barnes.

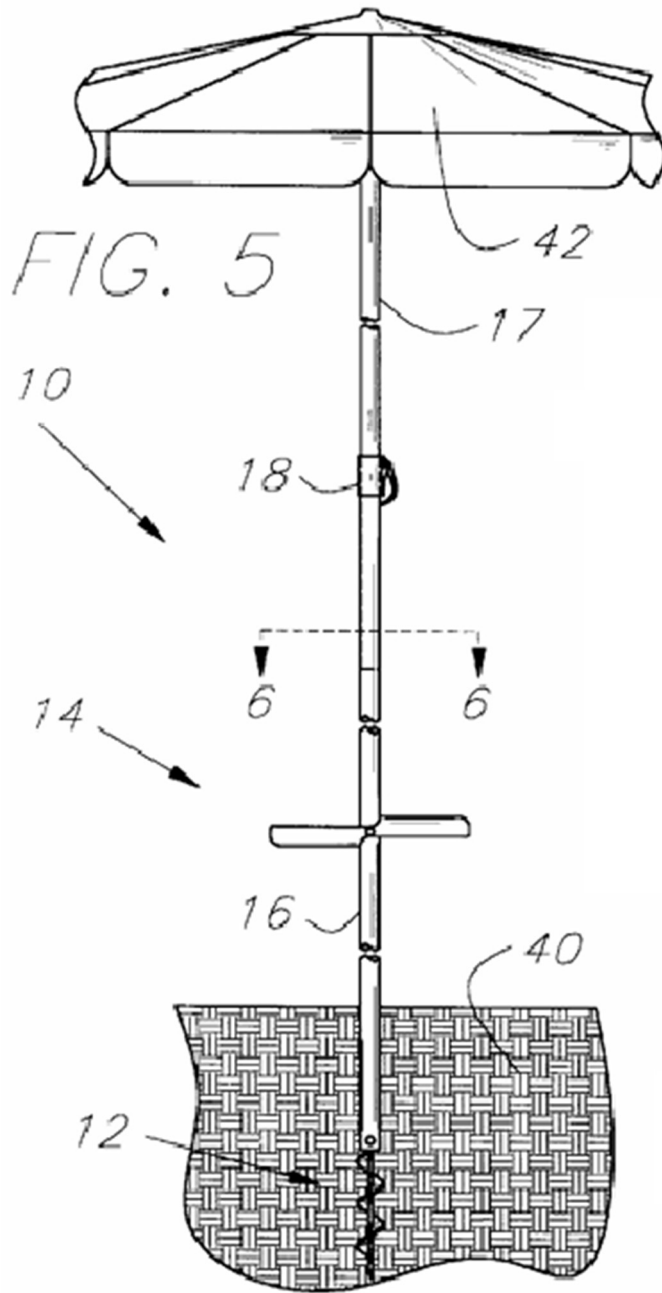
#	<u>Claim Language</u>	<u>Prior Art Material</u>
45(a)	The assembly of claim 44,	All of the limitations of claim 44 are disclosed by the combination of Yi and Barnes as discussed above. Thus, the combination of Yi and Barnes discloses “[t]he assembly of claim 44.”
45(b)	wherein said at least one rib is attached to a cap located at	Yi also discloses a member 10 rotatably mounted to the upper end of umbrella shaft 3 and supporting the ribs 12 of the canopy-securing frame. Yi at p. 8, ll. 1–11.

	the top end of said mast.	Thus, the combination of Yi and Barnes discloses “wherein said at least one rib is attached to a cap located at the top end of said mast.”
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x. **Claim 47**

As shown in the table below, the combination of Yi and Barnes discloses every element of claim 47. A POSITA would be motivated to combine these references and would have a reasonable expectation of success in doing so for the reasons stated above in the discussion of claim 44. Claim 47 is therefore unpatentable as being obvious to a POSITA over Yi and Barnes.

#	<u>Claim Language</u>	<u>Prior Art Material</u>
47(a)	The assembly of claim 44,	All of the limitations of claim 44 are disclosed by the combination of Yi and Barnes as discussed above. Thus, the combination of Yi and Barnes discloses “[t]he assembly of claim 44.”
47(b)	and comprising an anchor located at the bottom end of said mast.	An anchor is properly construed as “comprising any element that provides weight and/or a mechanism by which to secure assembly into a support surface.” Yi discloses an umbrella shaft 3 with a lower end and teaches use of the umbrella as a parasol installed on a beach or rest area. Yi at p. 4, ll. 7–18; Yi, FIG. 1. Because free rotation of the parasol occurs at an elevated location on the umbrella shaft, very limited forces act at the bottom of the umbrella shaft where the umbrella shaft forms a spike that is inserted into the beach. Consequently, the lower portion of the mast would not rotate during normal operating conditions. Accordingly, the bottom spike of Yi constitutes an anchor according to this limitation. Additionally or alternatively, it would have been obvious to add the anchor 10 of Gibson at the end of the umbrella shaft of Yi. 



A POSITA would have been motivated to make this combination to make the sunshade of Yi easier to install and/or remove in certain circumstances, or more stable when the wind blows. *See* Yi at p. 2, ll. 13–15; p. 4, ll. 7–18; Gibson at col. 2, ll. 32–39; col. 4, l. 56–col. 5, l. 20. A POSITA would have a reasonable expectation of success in adding the anchor 10 of Gibson to the combination of Yi and Barnes described herein as it amounts to the basic attachment of mechanical components. The other obviousness rationales described herein (e.g., this combination

		would merely combine prior art elements according to known methods to yield predictable results, use a known technique to improve a similar device in the same way, obvious to try, etc.) apply equally to a combination involving Gibson. Thus, the combination of Yi and Barnes (and potentially Gibson) discloses “an anchor located at the bottom end of said mast.”
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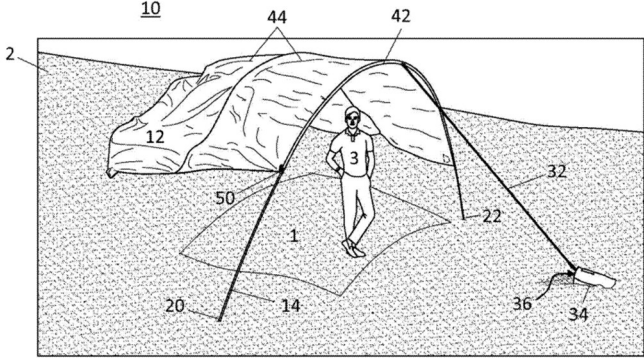
E. Claims 44, 45, and 47 are unpatentable over Saiz in view of Barnes

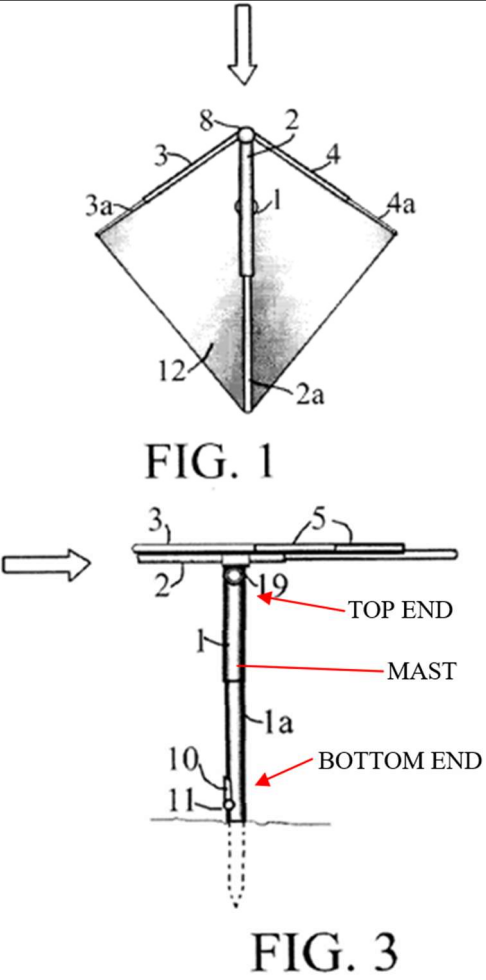
Claims 44, 45, and 47 of the Reissue Patent are unpatentable as obvious over Saiz in view of Barnes.

i. Claim 44

As shown in the discussion below, the combination of Saiz and Barnes discloses every element of claim 44. A POSITA would be motivated to combine these references and would have a reasonable expectation of success in doing so. Thus, claim 44 is obvious in view of Saiz and Barnes.

<u>#</u>	<u>Claim Language</u>	<u>Prior Art Material</u>
44(a)	A sun shade assembly comprising:	The preamble is not limiting. Even if consideration of the preamble is appropriate, Saiz is entitled “Aerodynamic Sunshade” and the abstract states “[t]he present invention is an aerodynamic sunshade” FIG. 1 of Saiz also illustrates one sunshade. Barnes also discloses a sun shade assembly, stating in the abstract that “[a] system for providing shade onto a surface is described herein.” This system 10 is shown in FIG. 1 of Barnes below, and Barnes states “FIG. 1 depicts one embodiment of a system 10 for providing shade 1 onto a surface 2.” Barnes at 3:64–65.

		 FIG. 1 Thus, even if the preamble is determined to be limiting, the proposed combination of Saiz and Barnes discloses “[a] sun shade assembly.”
44(b)	A mast configured to extend upwardly from a supporting surface, and having a top end and a bottom end	As shown in FIG. 1, Saiz discloses a support stem 1 which serves as a mast. Saiz at ¶ [0032]. The support stem 1 is shown in the top view of FIG. 1. However, a similar support stem 1 is illustrated in the side view of FIG. 3, and that figure shows that a support stem 1 has a top end and a bottom end.

		 FIG. 1 FIG. 3 Saiz discloses a “stem or mast, which is embedded either in the sand, in a concrete base or a handle” Saiz at ¶ [0004]. Thus, the stem extends upwardly from a supporting surface. The proposed combination of Saiz and Barnes therefore discloses “[a] mast configured to extend upwardly from a supporting surface, and having a top end and a bottom end.”
44(c)	At least one rib located proximate the top end of said mast, and configured to rotate relative to the supporting surface;	The embodiment of FIG. 1 illustrates lateral arms 3 and 4, and these lateral arms are located proximate the top end of the support stem 1. Telescoping extending arms 3a, 4a are also attached to the lateral arms 3 and 4, and the cloth 12 is attached to these arms 3, 3a, 4, 4a as shown in FIG. 1. In Saiz, the lateral arms 3 and 4 are attached to the spindle 8, and the spindle allows rotation of the cloth 12. Saiz at ¶ [0032]. Saiz possesses ribs (lateral arms 3 and 4) that are capable of rotation relative to the supporting surface. Saiz notes that “[t]he stem is made up of two telescopic sections connected by dovetailing and sliding in relation to each other, both on a

longitudinal and a rotational basis” Saiz at ¶ [0008]. The telescoping sections are able to rotate relative to each other due “to the fact that the stem is connected to an eccentric point, [which] means that the extended cloth of the shade acts as a weather vane under the action of the wind, which makes it very stable and prevents it from being blown away in the event of strong winds.” Saiz at ¶ [0008]. The telescoping sections are shown in FIG. 13 at locations where reference numbers 1 and 1a are shown.

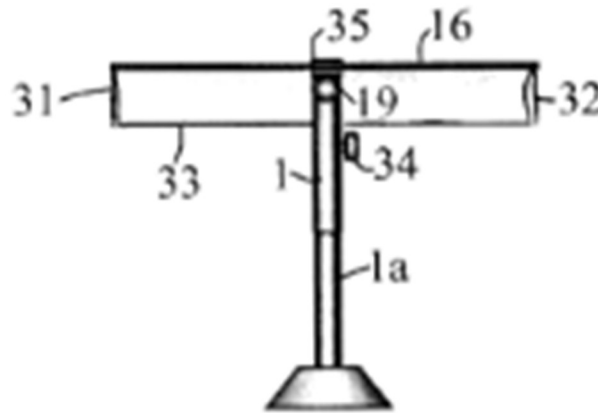


FIG. 13

Discussing the telescoping sections, Saiz also notes that, “[i]f so wished, rotation can be eliminated by means of exerting pressure on the inner section with a screw anchored to the outer section or else with a brake.” Saiz at ¶ [0008]. This is illustrated in FIG. 13, with this figure showing a “knob of fixation with screw (34).” Saiz at ¶ [0044].

Rotation of the stem 1 as described in ¶ [0008] of Saiz would also cause rotation of the lateral arms 3 and 4, showing that the lateral arms 3 and 4 are capable of rotation relative to the supporting surface.

Even with a narrower construction, Saiz possesses “at least one rib . . . specifically designed to rotate relative to the mast.” The stem comprises two telescoping sections. Saiz at ¶ [0008]. One of these telescoping sections may rotate relative to the other. Saiz at ¶ [0008]. Thus, the rib would rotate relative to the portion of the stem or mast that is attached to the supporting surface (rod 1a in FIG. 13).

Thus, the proposed combination of Saiz and Barnes discloses “[a]t least one rib located proximate the top end of said mast.”

44(d)

A sail having a proximal edge secured to said rib and an unrestrained free edge adapted to unfurl in response to the blowing of the wind, and wherein an entire surface area of said sail is unrestrained from the proximal edge to the free edge; and

Saiz discloses a sail, but the sail arguably does not have “wherein an entire surface area of said sail is unrestrained from the proximal edge to the free edge” as the main radial arm 2 of Saiz extends from front to back of the cloth 12. However, this “unrestrained” limitation is disclosed in Barnes.

The embodiment shown in FIG. 1 of Barnes discloses that the “canopy 12 may define a suspension end 42 positioned proximal to the frame 14 when the canopy 12 is engaged with the frame 14.” Barnes at 4:7–9.

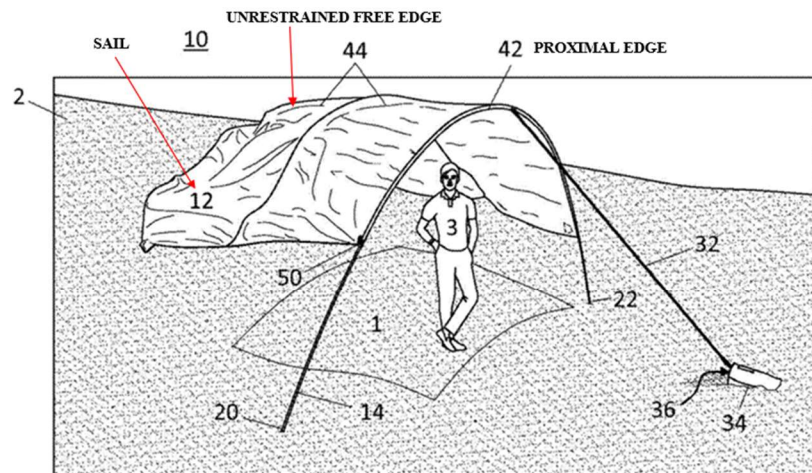


FIG. 1

The canopy 12 serves as the required sail, and the suspension end 42 is the required proximal edge. FIG. 1 also shows that the system 10 of Barnes includes an unrestrained free edge adapted to unfurl in response to the blowing of the wind as required by Claim 44. Barnes also notes that the canopy is aerially suspended on numerous occasions. Barnes at Abstract, 1:53–55, 1:62–63; 7:45–48; claim 1; claim 11. This further evidences that Barnes discloses an unrestrained free edge.

If Saiz and Barnes are combined by attaching at least one of lateral arms 3 and 4 from the Saiz device, each of which is equivalent to the claimed “at least one rib,” to the suspension end 42 of the Barnes device, the limitation “an entire surface area of said sail is unrestrained from the proximal edge to the free edge” would still be met. As shown in FIG. 1 of Barnes, nothing is present from the proximal edge to the unrestrained free edge to restrain the canopy of Barnes.

Thus, the proposed combination of Saiz and Barnes discloses “[a] sail having a proximal edge secured to said rib and an unrestrained free edge adapted to unfurl in response to the blowing of the wind,

		and wherein an entire surface area of said sail is unrestrained from the proximal edge to the free edge.”
44(e)	When unfurled, said sail and rib are adapted to rotate together to a direction of the blowing wind.	Saiz describes advantages of its invention and states that it is “stable in the face of wind” as it “is self-directional and offers little resistance.” Saiz at ¶ [0014]. At Paragraph [0032], Saiz states that “FIG. 1 consists of . . . cloth (12), secured by the ends of the rods,” that the cloth (12) “is extended like a fan, taking on the form of a kite” and that it indicates its direction in respect of the wind arrow.” As described above, the lateral arms 3 and 4 rotate with the central arm 2, Saiz at ¶ [0008], allowing the cloth (12) and the lateral arms 3 and 4 to rotate together to a direction of the blowing wind. As a result, “the extended cloth of the shade acts as a weather vane under the action of the wind. . . .” Saiz at ¶ [0008]. Thus, the proposed combination of Saiz and Barnes discloses that, “[w]hen unfurled, said sail and rib are adapted to rotate together to a direction of the blowing wind.”

A POSITA would be motivated to modify Saiz to attach the suspension end 42 of the Barnes canopy 12 to the arms 3, 3a, 4, 4a of Saiz, thereby providing a sail and a rib that are adapted to rotate together to a direction of the blowing wind.

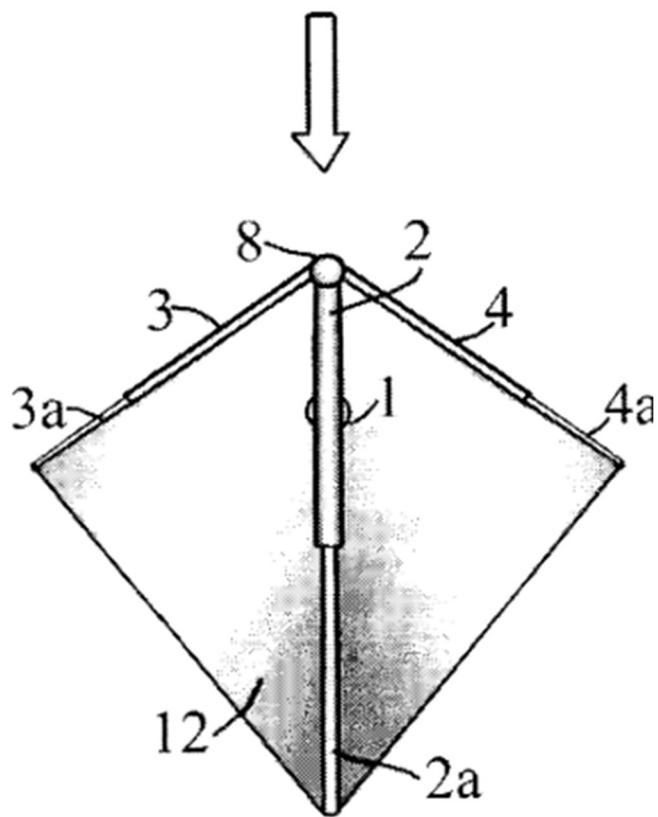


FIG. 1

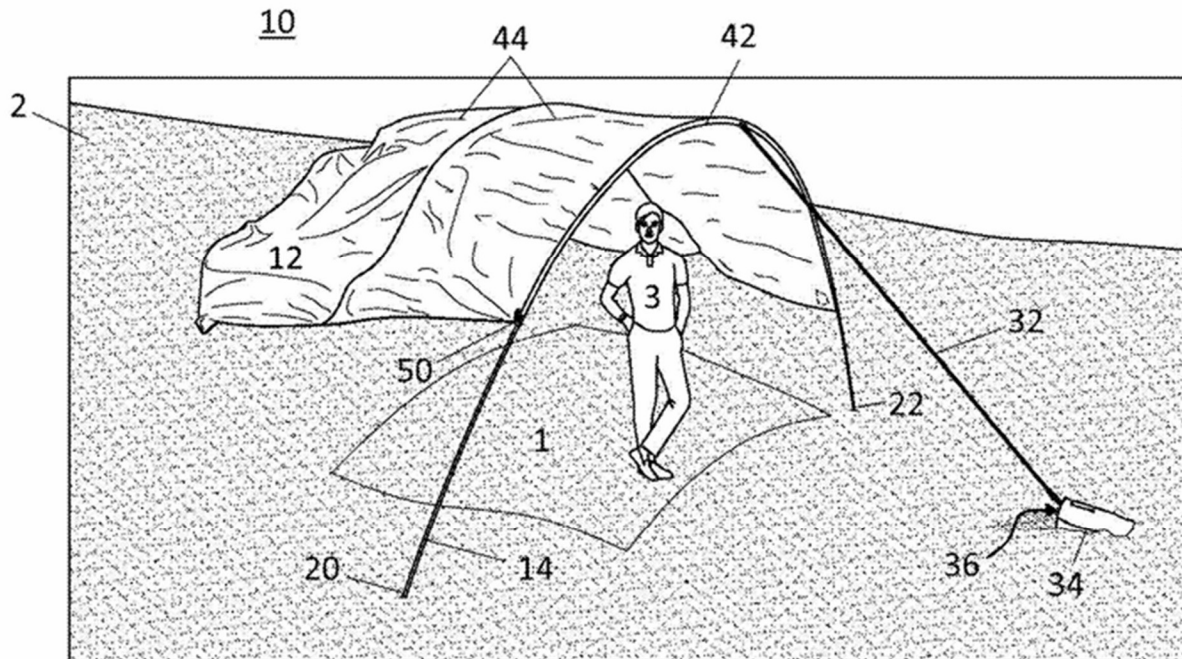


FIG. 1

Barnes discloses that the canopy 12 defines a loop 40. Barnes at 4:15–18. This loop 40 is configured to accept a portion of the frame 14 depicted in FIG. 1 through the loop 40. Barnes at 4:15–18. The loop 40 is depicted in FIG. 4 of Barnes, and the frame 14 is depicted in FIG. 1 of Barnes (see below). The frame 14 is a slender tube, similar in shape to the arms 3, 3a, 4, and 4a of Saiz, and would be inserted through the loop 40 in a similar manner.

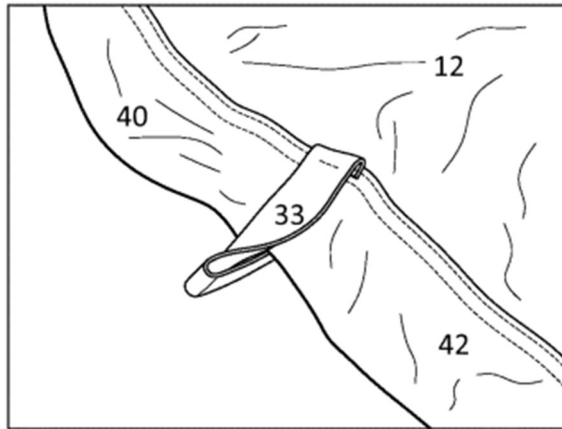


FIG. 4

It would have been obvious to combine Saiz and Barnes and to modify the device of Saiz to include the canopy of Barnes. Both references are in the same field and relate to devices that are configured to provide shade to users. Also, in the process of new product development, it is considered standard to research the category, examine all existing art, and then to design, develop, and test. This process would be conducted iteratively until the most successful conclusion possible is accomplished. This further suggests that a POSITA would have arrived at the material described in Claims 44, 45, and 47.

A POSITA would be motivated to modify the device of Saiz to include the canopy of Barnes to make the device of Saiz more lightweight and easier to assemble. Both references show a motivation to enable the sail or covering device to have flexibility and ability to move when faced with heavy wind. For example, Barnes states, in its background section, that “[s]ome systems include rigid canopy susceptible to being shifted or unanchored by wind.” Barnes at 1:25–27. Saiz also states in its section regarding the prior art that “[c]urrent sunshades are not efficient and stable when the wind blows through not being aerodynamic or self-directional and not having the anchor

point advanced in relation to the centre of application of resistance and through this being high.” Saiz at ¶ [0003]. Given that both references acknowledge this common issue, a POSITA would have considered both references. Saiz, Barnes, and the other prior art references discussed herein clearly constitute “analogous art.”

Barnes also states that “[o]ther systems are cumbersome to transport or assemble, due to the number of parts involved, steps required during setup and/or low shade to weight ratios.” Barnes at 1:25–30. Barnes states, in its background section, that “there remains a need for systems and methods including flexible canopy structures capable of being at least partially supported by wind and configured for easy [] transport and assembly.” Barnes at 1:31–34 (emphasis added). Thus, Barnes expresses a clear need in the art for lightweight and easy to assemble shade devices. To accomplish this goal, Barnes used the canopy 12 which was aurally suspended, and Barnes touts the lightweight materials that are used in the canopy. Barnes at 3:67–4:6 (“The canopy 12 may include one or more lightweight materials . . .”).

Barnes also expressed a desire to partially support flexible canopy structure using the wind. Barnes at 1:31–34 (emphasis added). Barnes accomplished this by providing a canopy 12 without any supporting rods or arms from the suspension end 42 (i.e., the proximal edge) to the unrestrained free edge.

A POSITA would have had a reasonable expectation of success in combining the references as noted. A POSITA considering the teachings of Saiz and Barnes would have succeeded in implementing them together, as doing so amounts to a simple combination of basic mechanical components. Saiz at ¶ [0032]; Barnes at 4:15–18. The proposed combination simply requires removal of the existing cloth 12 of Saiz, with this cloth 12 being replaced by the canopy

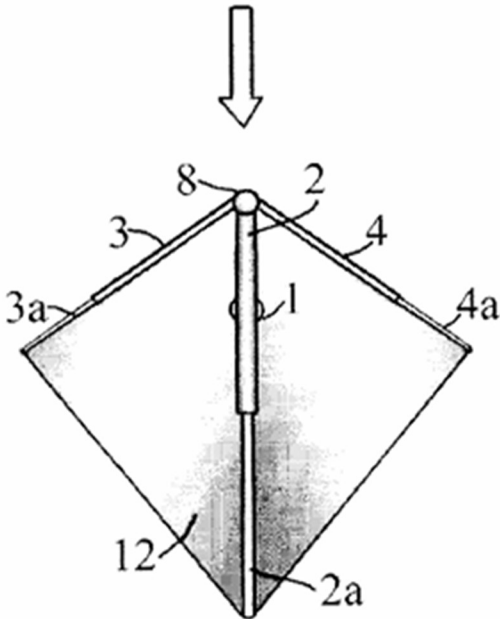
12 of Barnes, with the arms 3, 3a, 4, 4a of Saiz being inserted into the internal volume of the loop 40 in the canopy 12 of Barnes. Saiz at ¶ [0032]; Barnes at 4:15–18.

Numerous rationales support such an obviousness combination: (i) this combination would merely combine prior art elements according to known methods to yield predictable results; (ii) attachment of the canopy 12 of Barnes to the arms 3, 3a, 4, 4a of Saiz would use a known technique to improve a similar device in the same way; (iii) attachment of the canopy 12 of Barnes to the arms 3, 3a, 4, 4a of Saiz applies a known technique to a known device ready for improvement to yield predictable results; (iv) attachment of the canopy 12 of Barnes to the arms 3, 3a, 4, 4a of Saiz would be obvious to try, and a POSITA would choose from a finite number of identified, predictable solutions, with a reasonable expectation of success; and (v) attachment of the canopy 12 of Barnes to the arms 3, 3a, 4, 4a of Saiz would apply a known work in one field of endeavor (e.g., mechanical arts) to prompt variations of it for use in either the same field based on design incentives or other market forces, with the variations being predictable to a POSITA. Saiz at ¶ [0032]; Barnes at 4:15–18; Barnes at 1:25–34; *see also KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 416–21 (2007).

The obvious combination of Saiz and Barnes thus includes all the limitations of claim 44, and claim 44 is obvious to a POSITA over Saiz and Barnes.

ii. Claim 45

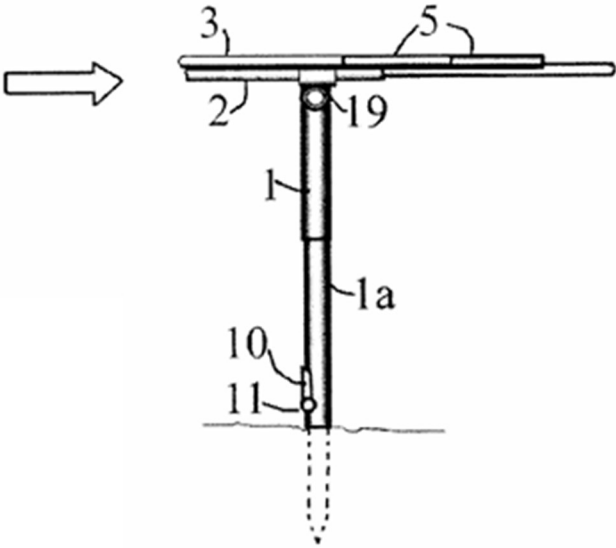
As shown in the table below, the combination of Saiz and Barnes discloses every element of claim 45. A POSITA would be motivated to combine these references and would have a reasonable expectation of success in doing so for the reasons stated above in the discussion of claim 44. Claim 45 is therefore unpatentable as being obvious to a POSITA over Saiz and Barnes.

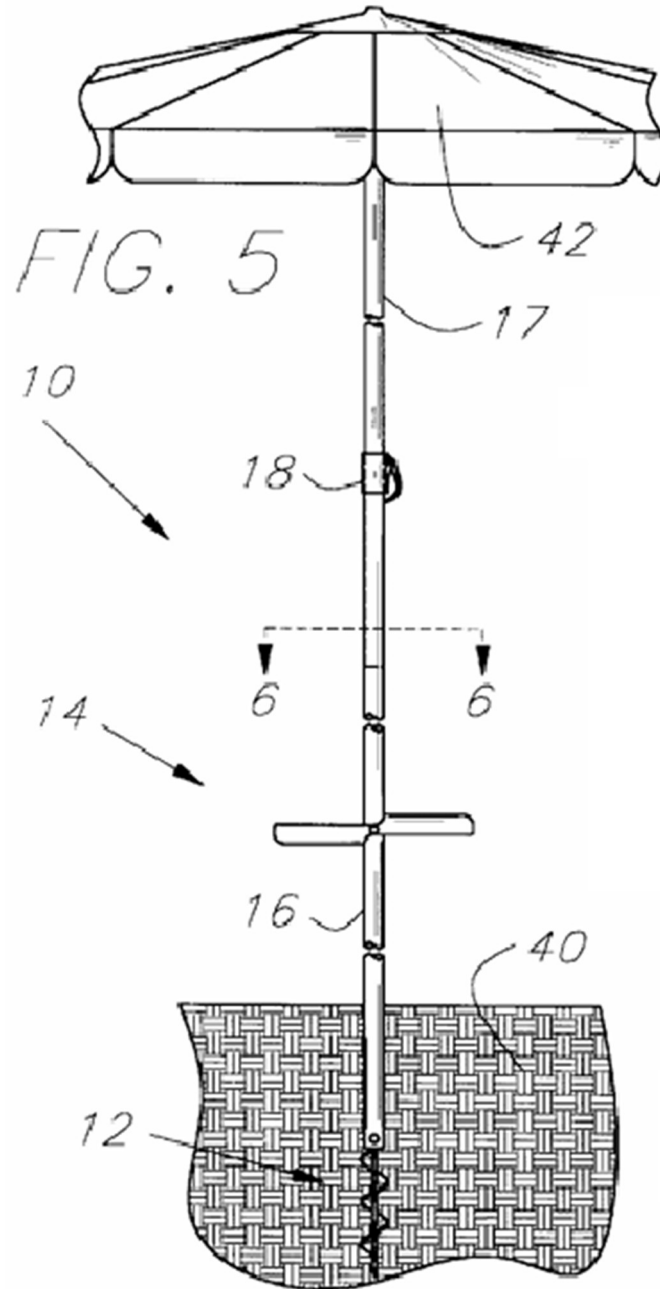
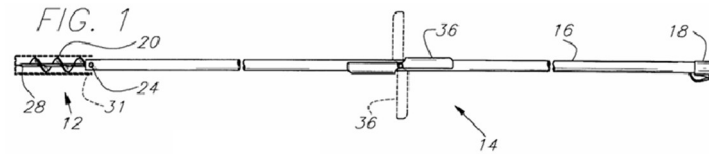
#	Claim Language	Prior Art Material
45(a)	The assembly of claim 44,	All of the limitations of claim 44 are disclosed by the combination of Saiz and Barnes as discussed above.
45(b)	wherein said at least one rib is attached to a cap located at the top end of said mast.	FIG. 1 of Saiz shows lateral arms 3 and 4 and telescopic extending arms 3a and 4a, and a spindle 8 for the attachment and rotation of the cloth 12. Saiz at ¶ [0032]. The spindle 8 is positioned at the top end of the mast formed by the stem 1. The spindle 8 provides an overlaying or covering structure.  FIG. 1 Thus, the proposed combination of Saiz and Barnes discloses that the “at least one rib is attached to a cap located at the top end of said mast.” The obvious combination of Saiz and Barnes thus includes all the limitations of claim 45, and claim 45 is obvious to a POSITA over Saiz and Barnes.

iii. Claim 47

As shown in the table below, the combination of Saiz and Barnes discloses every element of claim 47. A POSITA would be motivated to combine these references and would have a

reasonable expectation of success in doing so for the reasons stated above in the discussion of claim 44. Claim 47 is therefore unpatentable as being obvious to a POSITA over Saiz and Barnes.

#	Claim Language	Prior Art Material
47(a)	The assembly of claim 44,	All of the limitations of claim 44 are disclosed by the combination of Saiz and Barnes as discussed above.
47(b)	and comprising an anchor located at the bottom end of said mast.	An anchor is properly construed as “comprising any element that provides weight and/or a mechanism by which to secure assembly into a support surface.” Saiz discloses an anchor in the form of the rod 1a. As shown in FIG. 3, the rod 1a extends into the support surface to secure the assembly. Because the upper rod 1 is allowed to freely rotate relative to the lower rod 1a, very limited forces act at the bottom point of the lower rod 1a where the lower rod 1a is inserted into the supporting surface, and the lower rod 1a would not rotate during normal operating conditions.  FIG. 3 Additionally, Saiz notes that the stem or mast is embedded either in the sand or “in a concrete base.” Saiz at ¶ [0004]. Such a concrete base would constitute an “element that provides weight” and would serve as an anchor. Additionally or alternatively, it would have been obvious to add the anchor 10 of Gibson.



A POSITA would have been motivated to make this combination to make the sunshade of Saiz easier to install and/or remove in certain circumstances, or more stable when the wind blows. *See Saiz* at ¶ [0003]; *Gibson* at col. 2, ll. 32–39; col. 4, l. 56–col. 5, l. 20. A POSITA would have a reasonable expectation of success in

		adding the anchor 10 of Gibson to the combination of Saiz and Barnes described herein as it amounts to the basic attachment of mechanical components. The other obviousness rationales described herein (e.g., this combination would merely combine prior art elements according to known methods to yield predictable results, use a known technique to improve a similar device in the same way, obvious to try, etc.) apply equally to a combination involving Gibson. Thus, the proposed combination of Saiz and Barnes discloses an “anchor located at the bottom end of said mast,” with anchor being construed as noted above. The obvious combination of Saiz and Barnes thus includes all the limitations of claim 47, and claim 47 is obvious to a POSITA over Saiz and Barnes.
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IV. INVALIDITY BASED ON § 112

ShoreShade also contends that the asserted claims are invalid for failure to comply with the enablement and written description requirements of 35 U.S.C. § 112.

A. Claims 21, 22, 24, 26, 27, 29, 34, 44, 45, and 47 are invalid pursuant to 35 U.S.C. § 112 as lacking written description support.

To satisfy the written description requirement of Section 112(a), the patent’s disclosure must “reasonably convey[] to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.” *Brita LP v. Int’l Trade Comm’n*, 156 F.4th 1326, 1331 (Fed. Cir. 2025) (quoting *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (*en banc*)). Assessing such “possession as shown in the disclosure” requires “an objective inquiry into the four corners of the specification from the perspective of a [POSITA].” *Id.* (quoting *Ariad*, 598 F.3d at 1351). “[T]he specification must describe an invention understandable to [a POSITA] and show that the inventor actually invented the invention claimed.” *Id.* at 1331–32 (quoting *Ariad*, 598 F.3d at 1351).

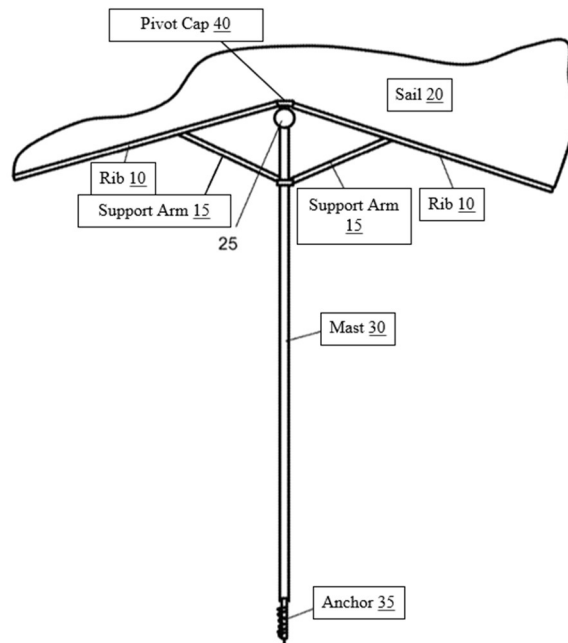
For a broad, functional claim to meet the written description requirement, the patentee must demonstrate he “has invented species sufficient to support a claim to the functionally-defined genus.” *Id.* at 1335 (quoting *Ariad*, 598 F.3d at 1349). This is where Claim 44 fails.

Genus – “at least one rib . . . [is] configured to rotate relative to the supporting surface”; “sail and rib are adapted to rotate together to a direction of the blowing wind”

Disclosed?

✓ **Species 1** – Mast Not Capable of Rotating, Ribs Rotate Relative to Mast

✗ **Species 2** – Mast Capable of Rotating



Claim 44 is a claim added in the reissue application by which Solbello attempted to obtain broader coverage than it got in the Original Patent. An annotated version of FIG. 1 of the Reissue Patent is shown above with various claim terms shown to aid the discussion. Claim 44 requires that “at least one rib . . . [is] configured to rotate relative to the supporting surface.” All the description in the Reissue Patent indicates that this limitation is met by rotating the rib relative to a non-rotatable mast. See Reissue Patent at 3:7–10, 7:34–38, 9:1–2, 12:39. In other words, the specification only describes a species where the mast does not rotate. The pivot cap, the ribs, and support arms are always described as being able to rotate relative to the mast to allow the ribs to rotate to the direction of the blowing wind.

The Reissue Patent also states “because the sail rotates relative to the mast it prevents loosening the auger position and thereby causing failure of the assembly.” Reissue Patent at 12:42–44. Thus, Solbello was indicating that failure would likely occur if the auger was loosened or if the mast rotated, indicating that the claimed “invention” does not encompass a device in which the mast rotated.

The patent examiner’s statements indicate that he interpreted the claim as limited to the disclosed species (i.e., a nonrotating mast with rotating ribs). In the examiner’s statement of reasons for allowance,

he discussed application claim 47, which became claim 44 in the Reissue Patent after the claims were renumbered for issuance. There, the examiner stated the closest prior art was Saiz, which he distinguished by stating that “Saiz does teach rotation, but this rotation is effected by the mast, and not relative to the mast.” Ex. 1004 at 18. Thus, in the examiner’s view, the ribs of the Reissue Patent must rotate “relative to the mast,” and this was the critical point of distinction between Saiz and the present claim. Now that Solbello has obtained a patent, it is improperly trying to use a broader interpretation compared to the interpretation on which the claim was granted. *Data Engine Techs. LLC v. Google LLC*, 10 F.4th 1375, 1381 (Fed. Cir. 2021) (citations and internal quotation marks omitted).

Because the specification does not support an interpretation of claim 44 that would literally cover a rotating mast as Solbello now contends, claim 44 is invalid. A POSITA would understand that Solbello was not in possession of an invention as described in claim 44 as of August 28, 2019. As claims 45 and 47 do not contain additional limitations that cure this defect in claim 44, they are invalid for the same reason.

Claims 21, 22, 24, 26, 27, 29, and 34 are also invalid for lack of written description support. Of these claims, claims 21 and 34 are independent claims. These claims require a pivot cap that can freely rotate about the mast. In attempt to address this requirement in the infringement contentions, Solbello states as follows:

*Top of mast is operably
connected to the pivot cap*



*Entire product rotates in sand to match
direction of the wind*

*See videos submitted in support of Solbello's
Second Motion for Preliminary Injunction:*

<https://dub.sh/mWRi4Te>

<https://dub.sh/CfGy1rG>

Thus, Solbello reads the limitation as being broad enough to cover a pivot cap that doesn't pivot and that instead simply rests on a mast that rotates relative to the ground. As discussed above, there is no disclosure of any embodiment where a cap is used that does not rotate relative to the mast; thus, claims 21 and 34 are invalid for a lack of written description support for the same reasons as claim 44. As the dependent claims do not contain additional limitations that cure this defect in claims 21 and 34, they are invalid for the same reasons.

B. Claims 21, 22, 24, 26, 27, 29, 34, 44, 45, and 47 are invalid pursuant to 35 U.S.C. § 112 for failure to satisfy the enablement requirement.

The “specification must enable the full scope of the invention as defined by its claims, allowing for a reasonable amount of experimentation.” *Seagen Inc. v. Daiichi Sankyo Co., Ltd.*, 160 F.4th 1322, 1332 (Fed. Cir. 2025) (quoting *Amgen v. Sanofi*, 598 U.S. 594, 610, 612 (2023))

(quotations marks removed). “To be enabling, the specification of a patent must teach those skilled in the art how to make and use the full scope of the claimed invention without undue experimentation.” *Id.* at 1332 (quoting *MagSil Corp. v. Hitachi Glob. Storage Techs., Inc.*, 687 F.3d 1377, 1380 (Fed. Cir. 2012) (cleaned up)).

“If a patent claims an entire class of processes, machines, manufactures, or compositions of matter, the patent’s specification must enable a person skilled in the art to make and use the entire class.” *Brita*, 156 F.4th at 1336 (quoting *Amgen*, 598 U.S. at 610). “In other words, the specification must enable the full scope of the invention as defined by the claims.” *Id.* (quoting *Amgen*, 598 U.S. at 610).

The standard for enablement is whether a person skilled in the art can “make and use” the full scope of the invention “without undue experimentation.” *Id.* at 1336–37 (quoting *In re Wands*, 858 F.2d 731, 735–37 (Fed. Cir. 1988)); *Seagen*, 160 F.4th at 1332 (quoting *MagSil*, 687 F.3d at 1380) (cleaned up). In determining whether disclosure would require undue experimentation, courts “consider (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims.” *In re Wands*, 858 F.2d at 737.

Genus – “at least one rib . . . [is] configured to rotate relative to the supporting surface”; “sail and rib are adapted to rotate together to a direction of the blowing wind”

Disclosed?



Species 1 – Mast Not Capable of Rotating, Ribs Rotate Relative to Mast



Species 2 – Mast Capable of Rotating

Here, the Reissue Patent only provides guidance and examples regarding a mast not capable of rotating where the ribs and a pivot cap rotate relative to the mast so that the ribs and pivot cap rotate relative to the supporting surface—all discussion in the Reissue Patent indicates that rotation of the ribs and pivot cap occurs as a result of rotation of the rib relative to a non-rotatable mast. Reissue Patent at 3:7–10; 6:5–8; 7:33–38; 8:59–9:2; 12:36–42. However, no guidance or examples are provided regarding a mast that is capable of rotating relative to the supporting surface to enable rotation of the ribs and a cap relative to the supporting surface.

In fact, the direction or guidance provided in the Reissue Patent would lead a POSITA away from using an embodiment where the mast rotates. For example, the Reissue Patent states “because the sail rotates relative to the mast it prevents loosening the auger position and thereby causing failure of the assembly.” Reissue Patent at 12:42–44 (emphasis added).

The Reissue Patent also discusses deficiencies in conventional beach umbrellas. In the background, the Reissue Patent discusses “conventional beach umbrellas,” stating that “[c]onventional beach umbrellas include a single central support pole with a pointed lower end that is inserted directly into the sand,” that “conventional umbrellas can easily tip over or be blown down the beach where they

can cause hassle to the owner as well as injury to other beachgoers,” and that “[c]onventional umbrellas are also prone to wind breakage.” Reissue Patent at 1:40–43, 1:49–52. In light of these supposed deficiencies, the Reissue Patent states that “[i]t would therefore be beneficial to provide an umbrella with improved stability in response to the wind blowing.” Reissue Patent at 1:52–54.³

Thus, the specification does not enable an embodiment in which the ribs or pivot cap are secured against rotation to the mast, but the entire mast itself is allowed to rotate. Accordingly, claims 21, 34, and 44 are invalid under 35 U.S.C. § 112(a) as failing to satisfy the enablement requirement. As the dependent claims do not contain additional limitations that cure this defect in claims 21, 34, and 44, they are invalid for the same reason.

V. N.D. Cal. LPR 3-4 DISCLOSURES

With respect to N.D. Cal. LPR 3-4(a), ShoreShade notes that Plaintiff already has in its possession at least one physical sample of the accused instrumentality. Nevertheless, ShoreShade produces herewith public, non-confidential specifications, schematics, and other relevant documentation that are believed to be sufficient to show operation of aspects or elements of the accused instrumentality. To the extent that any confidential specifications, schematics, and other relevant documentation exist that are necessary to show the operation of any aspects or elements of the accused instrumentality, ShoreShade will produce them upon entry of a protective order. Production numbers SHORE000161– SHORE000172 correspond to this category.

Pursuant to N.D. Cal. LPR 3-4(b), ShoreShade is producing herewith a copy or sample of the prior art identified pursuant to N.D. Cal. LPR 3-3(a) that does not appear in the file history of the patent(s) at issue. To the extent any such item is not in English, an English translation of the

³ The Provisional Application also repeatedly mentioned these deficiencies in conventional beach umbrellas, stating “[s]hade umbrellas are dangerous in the wind,” that they “easily break in the wind,” that they “don’t do well in the wind and they are dangerous.” Provisional Application at 1.

portion(s) relied upon is being produced. Production numbers SHORE000001– SHORE000152 correspond to this category.

Regarding N.D. Cal. LPR 3-4(c), ShoreShade is currently not aware of any such agreements. To the extent any such documents exist, ShoreShade will produce them upon entry of a protective order.

For N.D. Cal. LPR 3-4(d), ShoreShade does not provide any documents sufficient to show the sales, revenue, cost, and profits for the first and second generation ShoreShade products at this time based on the language in the Scheduling Order dated May 26, 2026. This Scheduling Order stated that “[f]act discovery on damages shall begin the first business day after the claim construction hearing” and that, “[w]ith the exception of fact discovery on damages, fact discovery shall commence on the same date that claim construction discovery commences and shall run in tandem with the claim construction process.” ShoreShade will produce these documents at the appropriate time following entry of a protective order.

(signature page to follow on subsequent page)

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CERTIFICATE OF SERVICE

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This the 23rd day of July 2026.

/s/ Jonathan D. Todd

Jonathan D. Todd