

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SHORESHADE LLC

Petitioner

v.

SOLBELLO, INC.

Patent Owner

U.S. Patent No. RE50606
Issued September 30, 2025

DECLARATION OF STEPHEN MELAMED

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I. INTRODUCTION

1. I, Stephen Melamed, have been retained as an independent expert by ShoreShade LLC (“Petitioner” or “ShoreShade”) in connection with a post-grant review (PGR) of U.S. Patent No. RE50606 (“the Reissue Patent”) (Ex. 1001). I have prepared this declaration in connection with Petitioner’s Petition for post-grant review.

2. Specifically, this document contains my opinions about the subject matter in claims 44, 45, and 47 of the Reissue Patent and the grounds against these claims that have been asserted by Petitioner. I was not asked to provide any opinions about the Reissue Patent that are not expressed herein.

II. SUMMARY OF OPINIONS

3. This declaration considers claims 44, 45, and 47 of the Reissue Patent. In this Declaration, I set forth the opinions I have formed, the conclusions I have reached, and the bases for these opinions and conclusions. I believe the statements contained in this declaration to be true and correct to the best of my knowledge.

4. Based on my experience and knowledge of the art at the time of the applicable priority date (I was told to assume a priority date of August 28, 2019), it is my opinion that claims 44, 45, and 47 of the Reissue Patent are unpatentable based upon the asserted grounds as discussed below.

5. I am being compensated for my time at my normal hourly rate. My compensation is in no way contingent upon the nature of my findings, the presentation of my findings in testimony, or the outcome of this proceeding.

III. QUALIFICATIONS AND BACKGROUND

6. I believe that I am well qualified to serve as a technical expert (or a person having ordinary skill in the art (POSITA)) in this matter based upon my qualifications, discussed in detail below. A copy of my curriculum vitae is provided herewith as Ex. 1003. This includes a list of all publications I have authored including in the last ten years. I have provided numerous expert reports and declarations, but I have not testified as an expert at trial or by deposition during the last four years.

7. Based on my education, research, and work experience, I am knowledgeable about the subject matter of the Reissue Patent and the related prior art.

8. I began my studies in theoretical physics at Boston University. I then served as an apprentice to Bauhaus designer/artist/author Werner Graeff. I later obtained a Bachelor of Fine Arts and a Master's Degree with Distinction in Industrial Design from the University of Illinois at Chicago (UIC). While at UIC, I was awarded a Design Fellowship by the National Endowment for the Arts & Humanities (now known as the National Foundation on the Arts & the Humanities). I also

participated one summer (1981) in “World Game” under the direct supervision of R. Buckminster Fuller. World Game was an educational simulation developed by Bucky Fuller to help create innovative solutions to overpopulation and the uneven distribution of global resources. In 1981, I was also a speaker at the First International Interdisciplinary Design Conference at the United Nations and was later named as one of the Nation’s top 25 most admired design educators by DesignIntelligence in 2010.

9. I was inducted into the Academy of Fellows of the Industrial Designers Society of America (IDSA) in 2016. In 2017, I was named the first President of the International Society for Design Thinking (ISDT), a public/private partnership of the Chinese Ministry of Education and IEG (Innovation Excellence Group) based in Beijing, China. I held that position for four years. I was also the Keynote Speaker at the XI International Congress for Design Management & Technology, Mexico City in 2017.

10. I have over 50 years of experience in the research, design, and development of consumer and industrial products and systems. For example, I have worked in manufacturing, corporate, not-for-profit, and consulting across a wide spectrum of industries, including medical, health & fitness, consumer electronics, housewares, office equipment, lighting and sporting goods.

11. I was the Founding Chair of the UIC Industrial Design Department in the School of Design. I am currently Professor Emeritus of Industrial Design and Interdisciplinary Product Development (IPD) at UIC and formerly the Associate Director of the IPD Program at the UIC Innovation Center. In 2011, I was honored as the IDSA Midwest Educator of the Year.

12. I was a founding member of the not-for-profit AIGA national design advocacy group, Design for Democracy (D4D) and have served on its first Board of Directors. I have also written numerous articles on the topics of innovation, industrial design, interdisciplinary product development, design thinking and design research and have been a featured lecturer at universities and conferences both domestically and abroad. I am also an LSP (Lego® Serious Play) Certified Facilitator.

13. I am also the sole and/or contributing author of over thirteen publications relating to this field. I am also named as an inventor on at least 60 U.S. Patents.

14. Over the course of my career, I have had the honor of being selected to serve on panels of international judges for numerous product design and innovation competitions held across the world. These competitions have ranged from general product design to housewares, plastics, and sustainability-focused designs.

15. I have participated in multiple design exhibitions, including those hosted by the Chicago Athenaeum Museum of Architecture and Design, the Smithsonian, the Centre Pompidou, and the Design Museum of Chicago.

16. I have also served as an expert for other cases in this same industry. For example, I have served as an expert in *Shibumi Shade, Inc. v. Beach Shade LLC et al.*, 5:23-cv-00297-FL (E.D.N.C.), filed June 5, 2023, and in *Shibumi Shade, Inc. v. Beach Shade LLC*, 5:21-cv-00256-FL (E.D.N.C.), filed June 11, 2021. In both of these cases, I served as an expert on behalf of Shibumi Shade, Inc., who is another company that makes shade devices.

17. A copy of my current curriculum vitae further elaborating on my professional background and qualifications is attached hereto as Exhibit B-1.

18. Except as noted in the next sentence, I am being compensated at my customary rate of \$500 per hour for my work on this case including the preparation of this declaration and any related testimony. In addition, I would be compensated at the rate of \$750 per hour for travel, being deposed, and/or for providing testimony. No part of my compensation is dependent on the outcome of this case.

IV. MATERIALS CONSIDERED

19. In forming my opinions, I have analyzed the materials listed in the table below. My opinions are based on my experience, knowledge of the relevant art, the

documents identified in the table below, as well as the documents expressly mentioned in this declaration.

Exhibit No.	Description
1001	U.S. Patent No. RE50606 (“the Reissue Patent”)
1004	Prosecution History for Reissue Patent
1005	U.S. Pat. App. No. 62/892,700 (“Provisional Application”)
1006	Prosecution History for Provisional Application
1009	U.S. Pat. No. 11,596,211 (“Original Patent”)
1011	Prosecution History for Related European Pat. App. No. 4,585,774 (the “European Application”).
1012	U.S. Pat. Publ. No. 2013/0019794 to Neal (“Neal”)
1013	DE202014103145U1 (“German Reference”)
1014	Certified Translation of German Reference
1015	U.S. Pat. Publ. No. 2008/0196754 to Saiz (“Saiz”)
1016	U.S. Pat. No. 10,190,330 to Barnes et al. (“Barnes”)
1032	Merriam-Webster Definition for Cap

20. The exhibits I intend to use in any testimony I may provide include the documents referenced in this declaration. I may also rely on and use demonstrative

exhibits and summaries that have yet to be prepared. I may also use a variety of other materials to summarize and support my opinions and testimony. These may include things such as models, studies, photographs, animations, charts, drawings, or other demonstrative materials.

21. I reserve the right to supplement, expand, update, and/or refine my opinions and conclusions in light of any additional information or material that is brought to my attention during the course of this case, including, but not limited to, any additional declarations or expert reports that the parties might offer, testimony, or other evidence introduced at a hearing or trial. I reserve the right to supplement this declaration to consider any such additional information. I reserve the right to give opinions on facts and other matters arising subsequent to this declaration, either prior to or during any hearing or trial in this action.

V. LEGAL STANDARDS

22. I am not a lawyer. My understanding of the legal standards to apply in reaching the conclusions in this declaration is based on discussions with counsel for Petitioner, my experience applying similar standards in other patent-related matters (including other patent-related matters in this industry and specific product category), and my reading of the documents submitted in this proceeding. In preparing this declaration, I have tried to faithfully apply these legal standards to the challenged claims to the best of my knowledge.

23. I have been informed that there are two ways in which prior art may render a patent claim unpatentable. First, I have been informed that the prior art can “anticipate” a claim. Second, I have been informed that the prior art can render a claim “obvious” to a POSITA. I understand that a claim is patentable if it was not anticipated and would not have been obvious by the prior art at the effective filing date of the patent.

24. I have been informed that a dependent claim is a patent claim that refers back to another patent claim. I have been informed that a dependent claim includes all of the limitations of the claim to which it refers.

25. I have been asked to provide my opinions as to whether the cited prior art anticipates and/or renders obvious claims 44, 45, and 47 of the Reissue Patent from the perspective of a POSITA at the Reissue Patent’s earliest claimed priority date (August 28, 2019), as described in more detail below.

26. I have been informed that in post-grant review proceedings, such as this one, the party challenging the patent bears the burden of proving unpatentability by a preponderance of the evidence. I understand that a preponderance of the evidence means “more likely than not.”

27. For purposes of this declaration, I have been asked to provide my opinions on issues regarding unpatentability. I have been informed of the following legal standards, which I have applied in forming my opinions.

A. Person Having Ordinary Skill in the Art

28. I have been informed that the level of a POSITA is determined by considering several factors, including the (i) type of problems encountered in the art; (ii) prior art solutions to those problems; (iii) rapidity with which innovations are made; (iv) sophistication of the technology; and (v) educational level of active workers in the field.

29. I have been instructed to assume that a POSITA is not a specific real individual, but rather a hypothetical individual having the qualities reflected by the factors discussed above.

B. Prior Art

30. I have been advised and understand that the information used to evaluate whether an invention was new and not obvious when made is generally referred to as “prior art.” I understand that prior art includes patents, printed publications, and other products in public use or available to the public that existed before the earliest claimed priority date or the earliest filing date of the patent (which I have been informed is also called the “effective filing date”). I have been informed and understand that a patent or published patent application is prior art if it was filed before the effective filing date of the claimed invention and that a printed publication is prior art if it was publicly available before the effective filing date.

C. Anticipation (35 U.S.C. § 102)

31. I have been informed that under 35 U.S.C. § 102, a patent claim is unpatentable if it is not novel, including if the claimed subject matter was patented or described in a printed publication before the effective filing of the claimed invention. I have been informed that this is referred to as unpatentability by anticipation. I have been informed that a patent claim is anticipated under § 102 if a single prior art reference discloses all limitations of the patent claim.

D. Obviousness (35 U.S.C. § 103)

32. I have been informed that under 35 U.S.C. § 103, a patent claim is unpatentable if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious to a POSITA to which the subject matter pertains at the time the invention was made. I have been informed that this is referred to as unpatentability by obviousness.

33. I have been informed that a proper obviousness analysis includes the following: (a) determining the scope and content of the prior art; (b) ascertaining the differences between the prior art and the claims at issue; (c) resolving the level of ordinary skill in the pertinent art; and (d) considering objective evidence of nonobviousness (if available), also called “secondary considerations.” I am not aware of any evidence of secondary considerations that would support a determination of nonobviousness of the claimed subject matter in the Reissue Patent.

34. I have been informed that the relevant time for considering whether a claim would have been obvious to a POSITA is the time of invention. For my obviousness analysis, counsel for Petitioner instructed me to assume that the date of invention for the challenged claims is August 28, 2019. My opinions would not change if I assumed a later date of invention.

35. I have been informed that a reference may be modified or combined with other references or with a POSITA's own knowledge if the person would have found the modification or combination obvious. I have also been informed that a POSITA is presumed to know all the relevant prior art, and the obviousness analysis may take into account the inferences and creative steps that a POSITA would employ.

36. I have been informed that whether a prior art reference renders a patent claim obvious is determined from the perspective of a POSITA. I have also been informed that, while there is no requirement that the prior art contain an express suggestion to combine known elements to achieve the claimed invention, and while a suggestion to combine known elements to achieve the claimed invention may come from the prior art as a whole or individually and may consider the inferences and creative steps a POSITA would employ, as filtered through the knowledge of one skilled in the art, obviousness grounds cannot be sustained by mere conclusory

statements and must include some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.

37. In determining whether a prior art reference could have been combined with another prior art reference or other information known to a POSITA, I have been informed that the following principles may be considered: (a) a combination of familiar elements according to known methods is likely to be obvious if it yields predictable results; (b) the substitution of one known element for another is likely to be obvious if it yields predictable results; (c) the use of a known technique to improve similar items or methods in the same way is likely to be obvious if it yields predictable results; (d) the application of a known technique to a prior art reference that is ready for improvement to yield predictable results; (e) any need or problem known in the field and addressed by the reference can provide a reason for combining the elements in the manner claimed; (f) a POSITA often will be able to fit the teachings of multiple references together like a puzzle; and (g) the proper analysis of obviousness requires a determination of whether a POSITA would have a “reasonable expectation of success”—but not “absolute predictability” of success—in achieving the claimed invention by combining prior art references.

38. I have been informed that, when a work is available in one field, design alternatives and other market forces can prompt variations of it, either in the same field or in another. I have been informed that if a POSITA could have implemented

a predictable variation and would have seen the benefit of doing so, that variation is likely to have been obvious. I have been informed that, in many fields, there may be little discussion of obvious combinations, and in these fields, market demand—not scientific literature—may drive design trends. I have been informed that, when there was a design need or market pressure and there are a finite number of predictable solutions, a POSITA would have had a good reason to pursue those known options.

39. I have been informed that the law permits the application of “common sense” in examining whether a claimed invention would have been obvious to a person skilled in the art. For example, I have been informed that combining familiar elements according to known methods and in a predictable way may suggest obviousness when such a combination would yield nothing more than predictable results. I understand, however, that a claim is not obvious merely because every claim element is disclosed in the prior art, and that a party asserting obviousness should still provide a rationale to combine or modify the references as recited in the claims and explain why one skilled in the art would have reasonably expected to succeed in doing so.

40. I have been informed that there is no rigid rule that a reference or combination of references must contain a “teaching, suggestion, or motivation” to combine references. But I also understand that the “teaching, suggestion, or motivation” test can be a useful guide in establishing a rationale for combining

elements of the prior art. I have been informed that this test poses the question as to whether there is an express or implied teaching, suggestion, or motivation to combine prior art elements in a way that results in the claimed invention, and that it seeks to counter impermissible hindsight analysis.

41. I have been informed that, in an obviousness analysis, prior art must be analogous prior art to the patent being considered. I have been informed that a prior art reference is considered to be analogous, or in the same field of art, if the reference is either (1) in the same field of endeavor as the challenged patent, regardless of the problems the challenged patent and the prior art address; or (2) reasonably pertinent to the particular problem being solved by the challenged patent. Each of the prior art references discussed below is clearly “analogous art.”

E. Written Description (35 U.S.C. § 112)

42. I have been informed that, under 35 U.S.C. § 112(a), the specification is required to contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.

43. I have been informed that, 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.

44. I have been informed that assessing such possession as shown in the disclosure requires an objective inquiry into the four corners of the specification (i.e., focusing solely on the material in the application, including the specification, the drawings, and the claims) from the perspective of a POSITA.

45. I have been informed that the specification must describe an invention understandable to a POSITA and show that the inventor actually invented the subject matter that is set forth in the claim.

46. I have been informed that, for a broad, functional claim to meet the written description requirement, the specification must demonstrate that the patentee has invented examples ("species") sufficient to support a claim that is broadly generic to the function ("functionally-defined genus").

F. Enablement (35 U.S.C. § 112)

47. I have been informed that a patent must enable a skilled artisan to practice the claimed invention without undue experimentation under 35 U.S.C. § 112(a). I also understand that the enablement requirement is met only when a POSITA, after reading the specification, could make and practice the claimed invention without undue experimentation. I have been advised that the full scope of

the asserted invention must be enabled, meaning that the specification and drawings must teach a POSITA how to make and use the invention as broadly as it is claimed. I also understand that the specification and drawings must demonstrate that the various embodiments covered by the full scope of the claim would work for the intended purpose described in the patent.

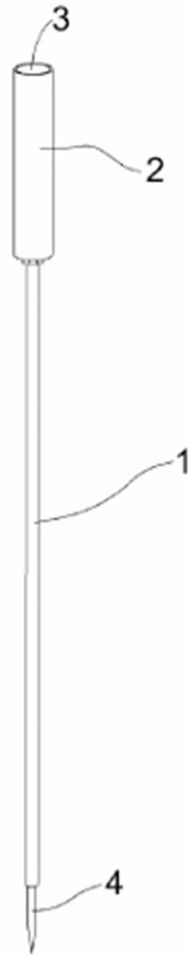
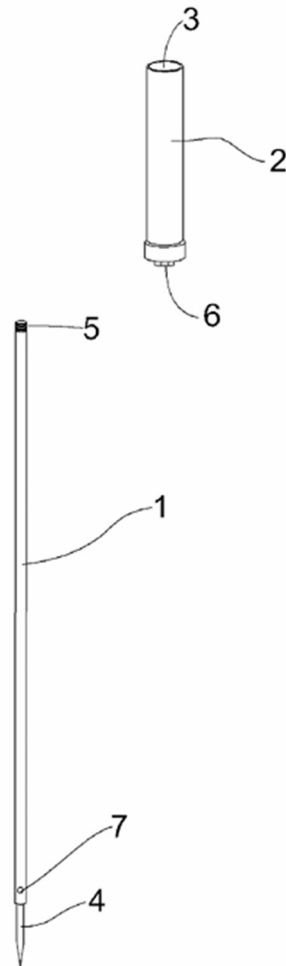
48. I also understand that a patent is considered non-enabling if a POSITA would be required to conduct “undue experimentation” in order to practice the invention. I have been informed that undue experimentation is determined based on a nonexclusive list of factors including: (1) the quantity of experimentation 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. I also have been informed that the analysis is case- and fact-specific, and all eight factors need not be analyzed in every case.

VI. TECHNOLOGY BACKGROUND

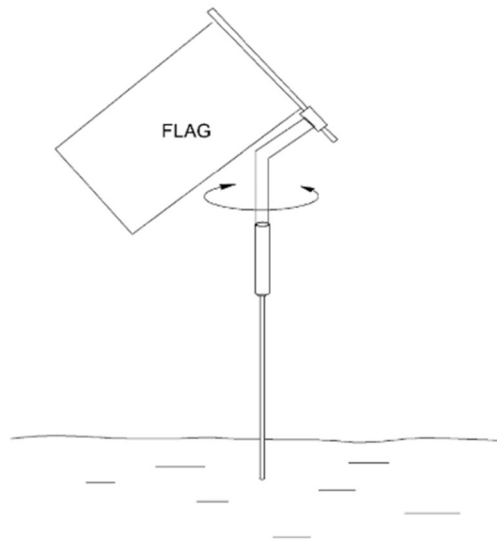
49. The various references that the Petition seeks to combine are summarized as follows:

A. Neal (Ex. 1012)

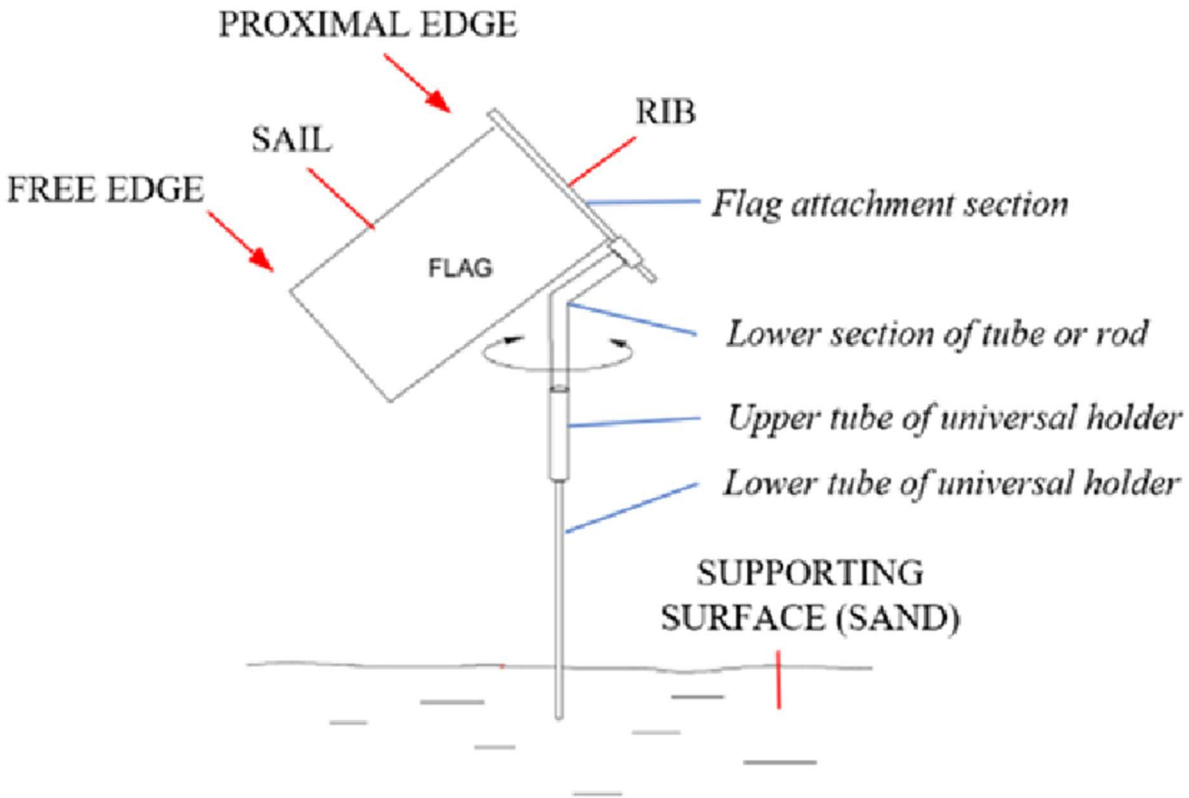
50. Neal relates to a universal holder as noted at Paragraph 23 of the reference. The universal holder is shown in isolation in Figures 1–2, which respectively show the universal holder in fully assembled and disassembled states. The universal holder has an upper pipe or tube 2 with an open end 3 as noted in Paragraph 23. As noted in Paragraphs 9 and 24, “[t]he bottom end of the stainless steel pipe can receive a point or a pointed spike 4,” and the point or spike 4 may be used for insertion into soil or sand. Figures 1 and 2 are shown below:

**FIG. 1****FIG. 2**

51. Neal notes that the universal holder can be used to hold a variety of devices. The embodiment described with reference to Figure 5 of Neal is particularly relevant here. Figure 5 is reproduced below:

**FIG. 5**

52. An annotated version of this figure is shown below. Text in all caps shows where elements of the claim are located in this device, and the text in italics shows certain names used for components in the Neal reference.

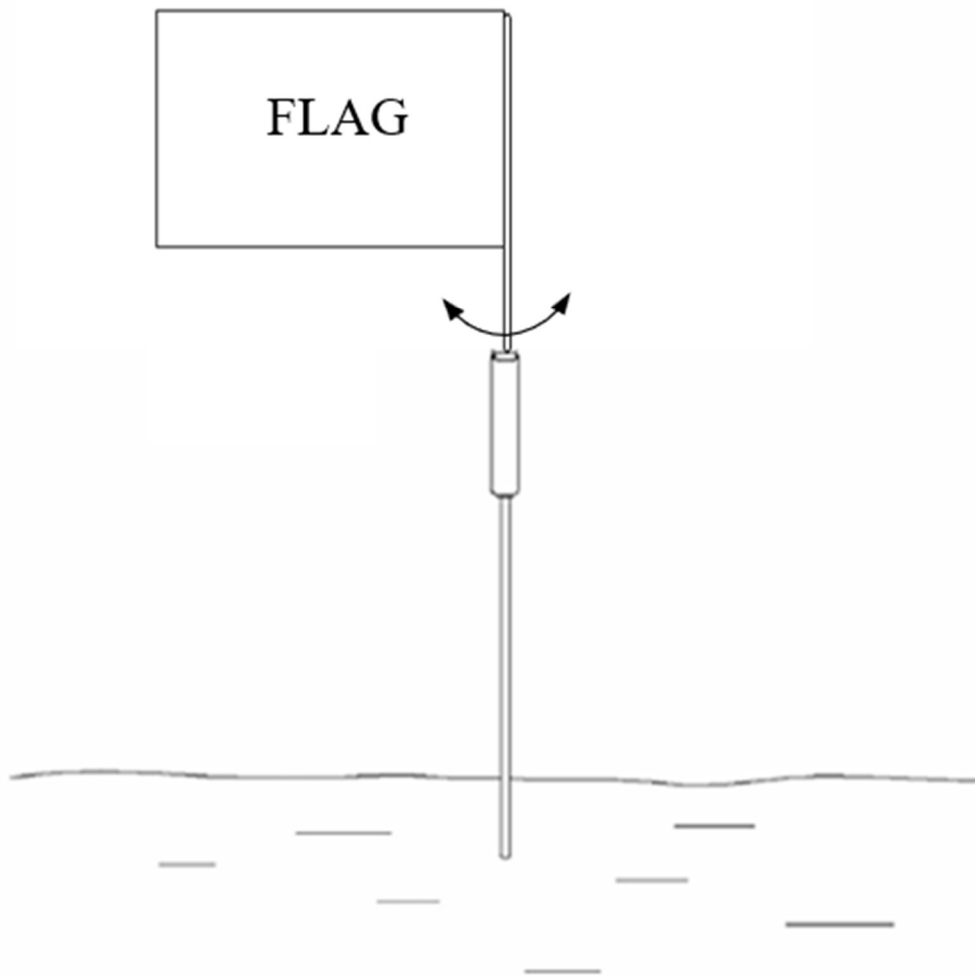
**FIG. 5**

53. Neal states as follows at Paragraph 28:

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. This allows the flag to turn in the wind. A lower section of tube or rod has an angle of around 45 degrees and thus points upward at an angle when its lower end is inserted into the universal holder. A flag attachment section is attached to the upper end of the tube or rod as a second tube or rod at around 90 degrees as shown in FIG.

5. This upper tube or rod can hold a flag by tying the flag to it, having rings or otherwise allowing a flag to be attached to it. 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. Alternatively, a straight vertical flagpole can also be held by the present invention.

54. The same paragraph describes an alternative embodiment where “a straight vertical flagpole can also be held by the present invention.” This alternative embodiment would look something like the image below.

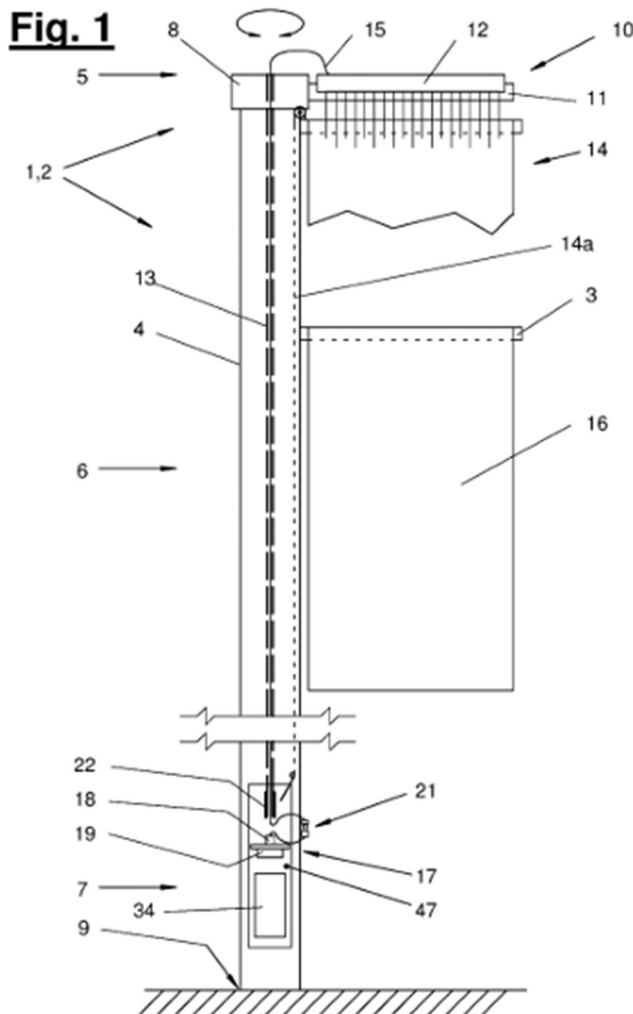


55. Neal is a printed publication that was published on January 24, 2013. This is before the August 28, 2019 that I was asked to assume is the “date of invention” for purposes of my analysis. Consequently, Neal constitutes prior art relative to the Reissue Patent.

B. German Reference (Ex. 1013)

56. This original version of the German Reference (Ex. 1013) is provided entirely in German, but I have also reviewed a certified translation of this reference

that is being provided (Ex. 1014). Citations to paragraph numbers in this section are citations to paragraphs within the certified translation (Ex. 1014).

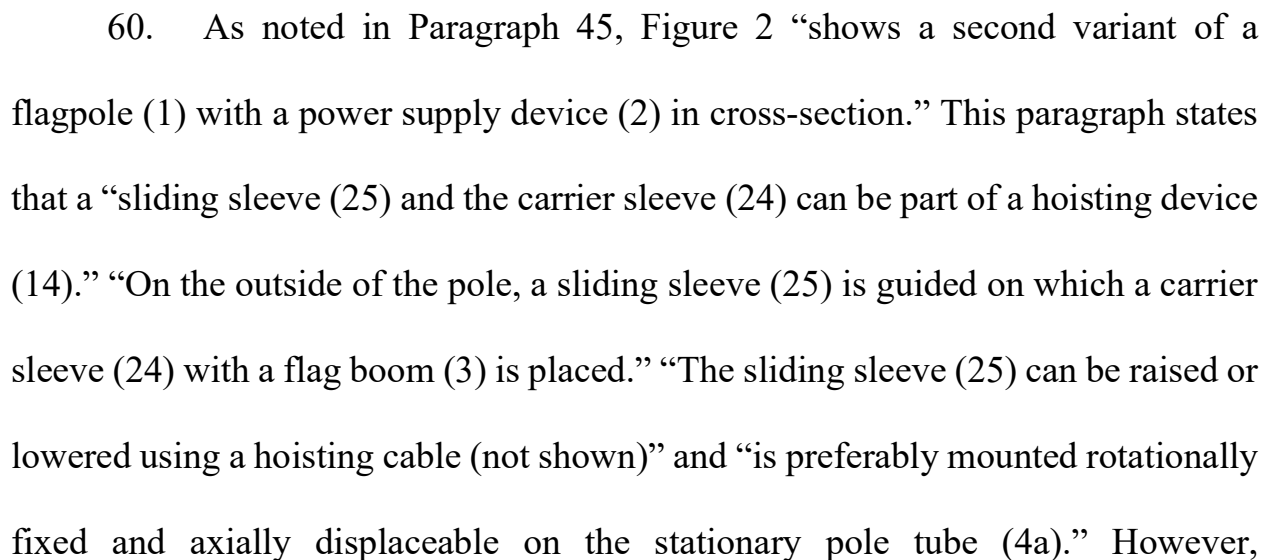


57. Figure 1 of the German Reference shows some relevant features of the device. As noted at Paragraph 31 of the reference, a pole 1 has a base region 7 at its lower end. The same paragraph states that the base region is “fixed immovably and, if necessary, detachably to a foundation (9) or a ground mount.” Paragraph 33 states “[a] support body (8) arranged in the head region (5) of the pole (1) from Fig. 1.”

The same paragraph notes that the support body (8) can be fastened to the pole head via any pivot bearing and that “a lighting means holder (11) is fastened to the support body (8) and in turn holds one or more lighting means (12).”

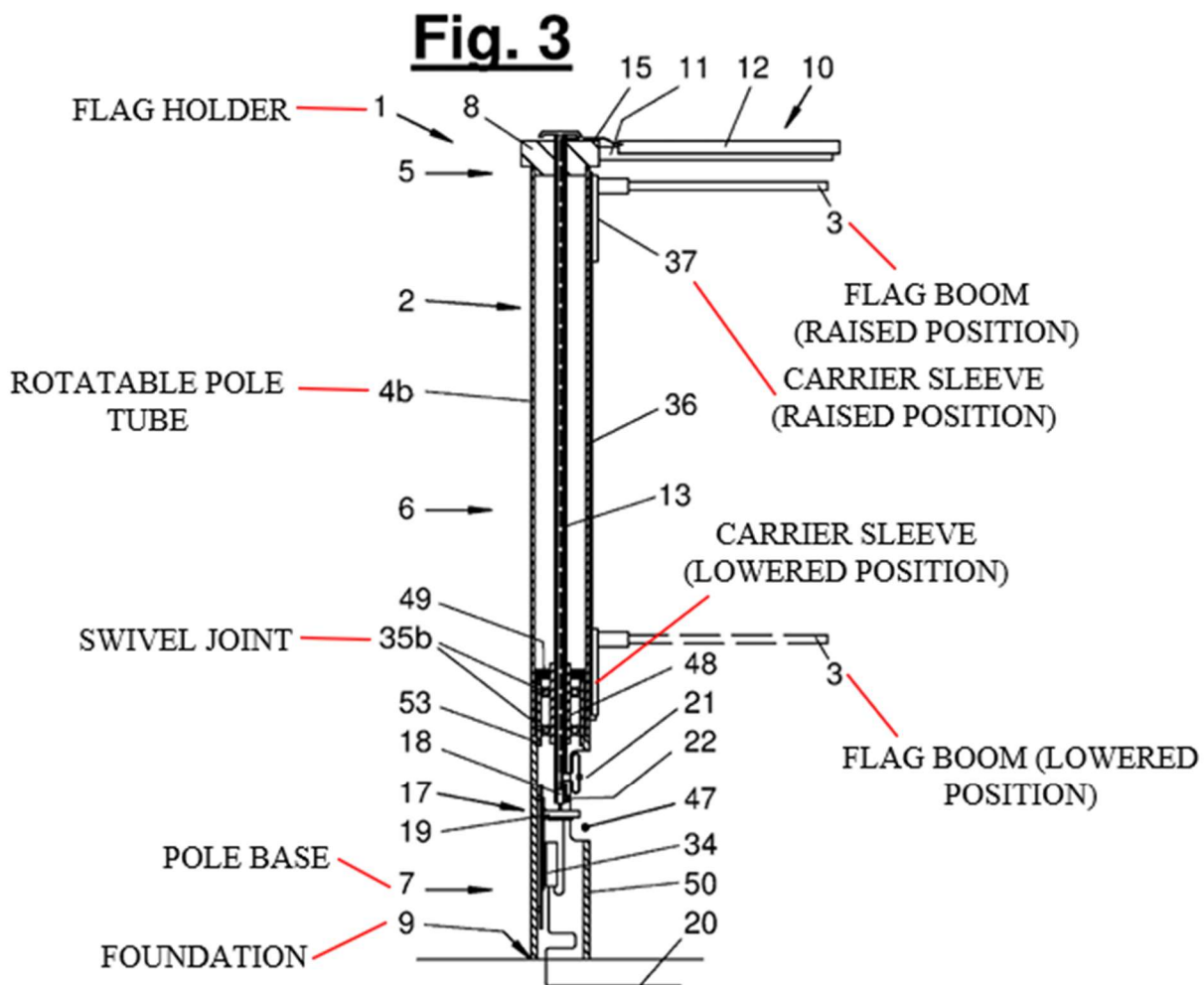
58. Paragraph 35 states “[a]rranged on the pole (1) is a flag (16) which via a hoisting device (14) can be raised and lowered,” and that “[t]he flag holder (3) is preferably axially displaceable and rotatable mounted on the pole (1).”

59. One relevant embodiment of the German Reference is shown in Figure 2, an annotated version of which is shown below:

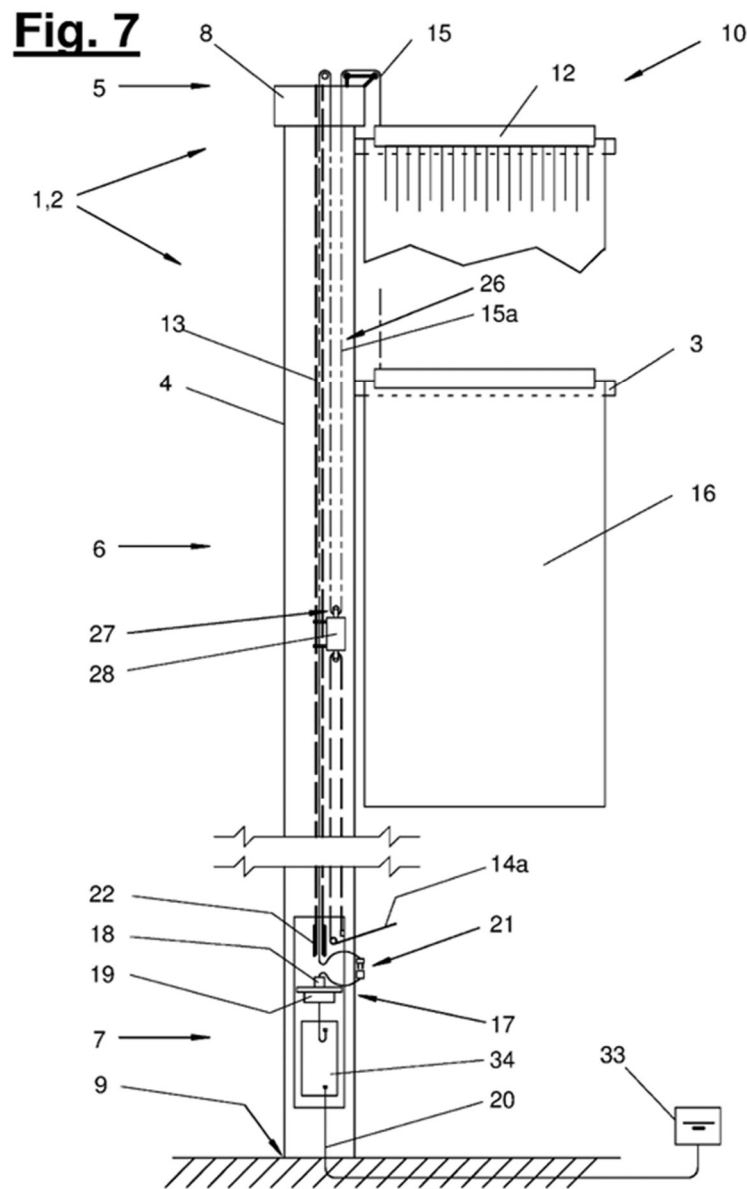


importantly, “[t]he carrier sleeve (24) is entrained by the sliding sleeve (25) and is rotatably mounted thereon so that the flag boom (3) with a flag can rotate freely in the wind around the stationary pole tube (4a).”

61. As noted in Paragraph 48, Figure 3 shows another alternative embodiment including a stationary pole base (7) and a rotatable pole tube (4b) which is mounted via swivel joint (35b) to the pole base (7).



62. Figure 7 shows a flag positioned on the flag boom 3.



63. The German Reference is a printed publication that was published on October 12, 2015. This is before the effective filing date of August 28, 2019 that I was asked to assume for the Reissue Patent. Consequently, the German Reference constitutes prior art relative to the Reissue Patent.

C. Saiz (Ex. 1015)

64. Saiz is entitled “Aerodynamic Sunshade” and the abstract states “[t]he present invention is an aerodynamic sunshade” Figure 1 shows a top view of one sunshade discussed in Saiz. Paragraph 32 describes a central arm 2 of a support stem 1 which serves as a mast.

65. Figure 1 illustrates lateral arms 3 and 4, and these lateral arms are located proximate to the top end of the support stem 1. While the cloth 12 appears to be behind the other elements in Figure 1, I understand this as being done for the purposes of illustration so that other components underneath the cloth can be seen for the purposes of illustration. 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 Figure 1. Paragraph 32 notes that the lateral arms 3 and 4 are attached to the spindle 8, and the spindle 8 allows rotation of the cloth 12 relative to the lower portion of the support stem 1. The same paragraph states 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.”

66. As noted in paragraph 4, Saiz discloses a “stem or mast, which is embedded either in the sand, in a concrete base or a handle” Paragraph 8 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”

The same paragraph notes that 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.” The telescoping sections are shown in Figure 13 at locations where reference numbers 1 and 1a are shown.

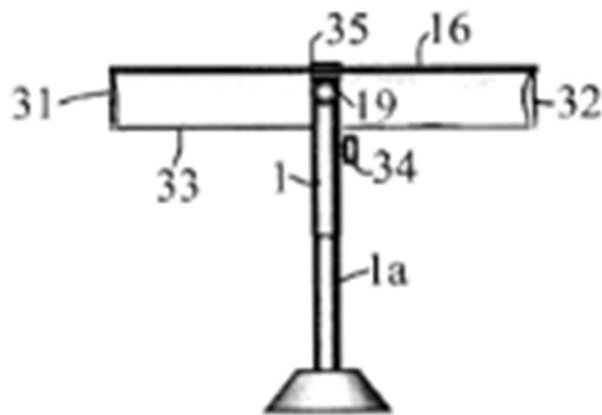


FIG. 13

67. Discussing the telescoping sections, paragraph 8 of 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.” This is illustrated in Figure 13, with this figure showing “a knob of fixation with screw (34).”

68. Paragraph 3 of Saiz also states 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.” Paragraph 14 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.”

69. Additionally, Figure 3 of Saiz shows a side view where the rod 1a extends into the support surface to secure the assembly.

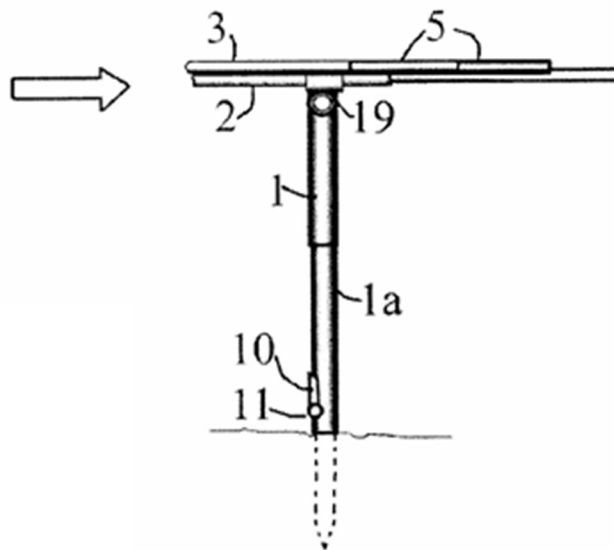


FIG. 3

70. Additionally, paragraph 4 notes that the stem or mast is embedded either in the sand or “in a concrete base.”

71. Saiz was the primary reference relied upon by the U.S. patent examiner during prosecution of the Reissue Patent. In the examiner’s statement of reasons for allowance, the examiner discussed application claim 47, which became claim 44 in the Reissue Patent after the claims were renumbered for issuance. In his notice of allowance,

the examiner stated the closest prior art was Saiz, and the examiner distinguished the claim from Saiz 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.

D. Barnes (Ex. 1016)

72. As noted in the abstract of Barnes, Barnes discloses “[a] system for providing shade onto a surface” This system 10 is shown in Figure 1 of Barnes below, with the system 10 “providing shade 1 onto a surface 2.” Barnes at 3:64–65.

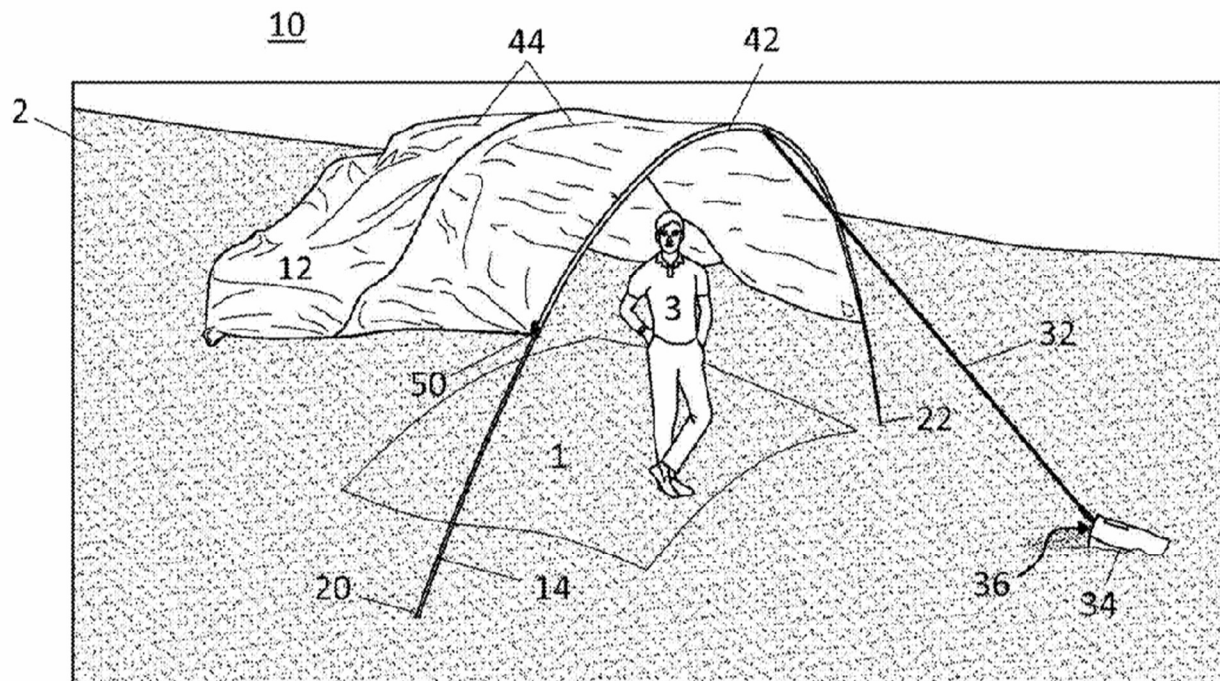


FIG. 1

73. The embodiment shown in Figure 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. As shown in

Figure 1 of Barnes, nothing is present from the proximal edge to the unrestrained free edge to restrain the canopy of Barnes, and Barnes frequently notes that the canopy 12 is aerially suspended. Barnes at Abstract, 1:53–55, 1:62–63; 7:45–48; claim 1; claim 11.

74. 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 Figure 1 through the loop 40. Barnes at 4:15–18. The loop 40 is depicted in Figure 4 of Barnes, and the frame 14 is depicted in Figure 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.

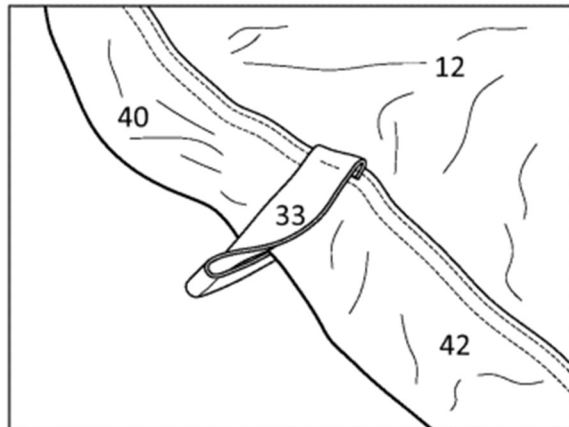


FIG. 4

75. Barnes also describes other issues with existing prior art, stating, in its background section, that “[s]ome systems include rigid canopy susceptible to being

shifted or unanchored by wind.” Barnes at 1:25–27. Barnes notes 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.

76. 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 touts the lightweight materials that are used in the canopy 12. Barnes at 3:67–4:6 (“The canopy 12 may include one or more lightweight materials”). It also notes that “[t]he canopy 12 may be unitarily constructed or may include a plurality of coupled sections 44 and/or selectively engageable sections 44.” Barnes at 4:4–6.

77. 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.

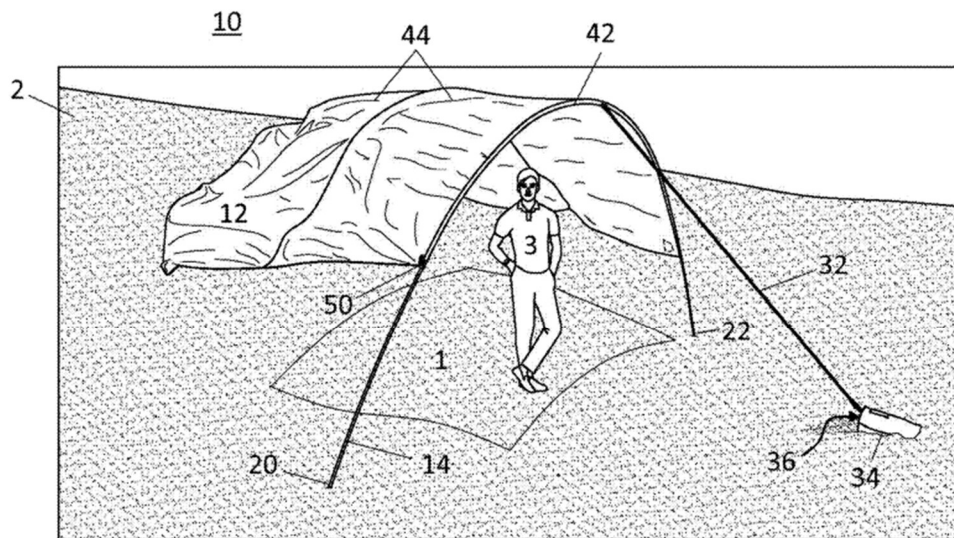


FIG. 1

78. Barnes was never cited or applied by the patent examiner during prosecution of the Original Patent or the Reissue Patent. Accordingly, it does not appear that the patent examiner had this reference available to him as he evaluated the application resulting in the Reissue Patent.

79. Barnes was filed several years before the earliest effective filing date of August 28, 2019 that I was asked to assume for the Reissue Patent. Consequently, Barnes constitutes prior art to the Reissue Patent.

VII. THE REISSUE PATENT

A. Overview of Reissue Patent

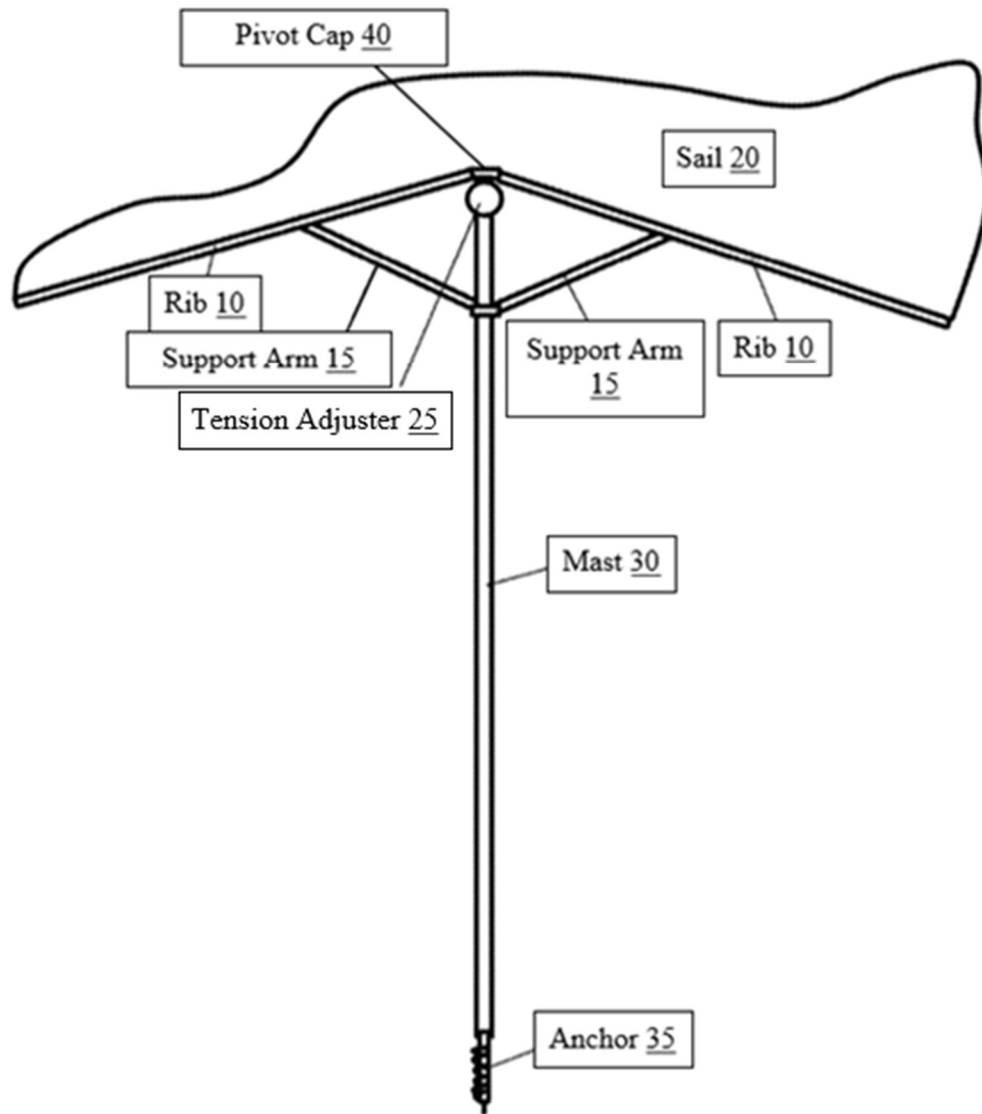
80. The Reissue Patent “is directed to a self-adjusting sun shade assembly.” Reissue Patent at 1:24–25. The term “sun shade assembly” is described as “e.g., an assembly that provides shade from the sun.” Reissue Patent at 1:61–62.

81. In the background, the Reissue Patent discusses “conventional beach umbrellas,” stating that (emphasis added with underlining):

Conventional beach umbrellas include a single central support pole with a pointed lower end that is inserted directly into the sand. Conventional umbrellas further include an overhead fabric covering attached to the support pole. However, the main problem with the canopy design of traditional umbrellas is that the position of the umbrella constantly shifts in response to wind gusts. As a result, the user must frequently readjust the umbrella to compensate for the shifts in movement. In addition, 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. Conventional umbrellas are also prone to wind breakage. It would therefore be beneficial to provide an umbrella with improved stability in response to the wind blowing.

Reissue Patent at 1:40–54.

82. An annotated version of Figure 1 of the Reissue Patent is provided below with names of the different components being identified.



83. The Reissue Patent discusses an anchor 35 located at the bottom end of the mast 30 so that the assembly can “be secured into a support surface (e.g., sand).” Reissue Patent at 6:3–5.

84. The Reissue Patent states “[t]he term ‘anchor’ broadly refers to any element that provides weight and/or a mechanism by which to secure assembly 5 into a support surface (e.g., sand).” Reissue Patent at 8:49–51.

85. The Reissue Patent never shows any instance where an anchor 35 is not used. The Reissue Patent describes the anchor 35 as comprising auger 36 in reference to Figure 6. Reissue Patent at 8:59–63.

86. The ribs 10 and support arms 15 rotate about the mast 30, thereby self-adjusting the direction of sail 20 in response to the wind blowing. Reissue Patent at 6:5–8.

87. The Reissue Patent touts the relative rotation between sail and mast as an important feature. Discussing “the assembly” as a whole rather than any particular embodiment, 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.

88. All discussion in the Reissue Patent indicates that rotation of the ribs 10 occurs as a result of rotation of the rib relative to a non-rotatable mast. The Reissue Patent attempts to differentiate its alleged invention from the prior art, stating:

Because the support can rotate and adjust in response to the wind, the assembly has a reduced likelihood of falling over as a result [of] heavy winds and/or when the wind shifts directions. Specifically, when the wind shifts direction, the sail will self-adjust (e.g. the pivot cap, ribs, sail, support arm, and slider rotate about the non-movable

mast in response to the wind blowing and changing direction).

Reissue Patent at 12:36–42 (emphasis added).

89. The Reissue Patent states that a tension adjuster 25 is included to enable adjustment “to achieve a desired amount of rotation of the pivot cap, ribs, support arms, slider, and sail relative to the non-movable mast” and that “[t]he sun shade assembly self-adjusts in response to the blowing of the wind.” Reissue Patent at 3:7–10.

90. The Reissue Patent notes that the slider and support arms (which the ribs are attached to) “can rotate freely about the mast” and that “the mast remains in a stationary position, while the slider (and attached support arms and ribs) rotate in response to the wind blowing.” Reissue Patent at 7:33–38. The Reissue Patent also states:

FIG. 6 illustrates one embodiment of anchor 35 comprising auger 36 that can be configured as any type of spike, helical corkscrew, or shaft optionally having a threaded portion capable of being turned and embedding itself into a support surface (e.g., sand at a beach). Lower end 38 of the auger can be configured as a spike or pointed end to initiate insertion of the anchor into the support surface. Because auger 36 is inserted into a support surface, it does not rotate and remains in the inserted

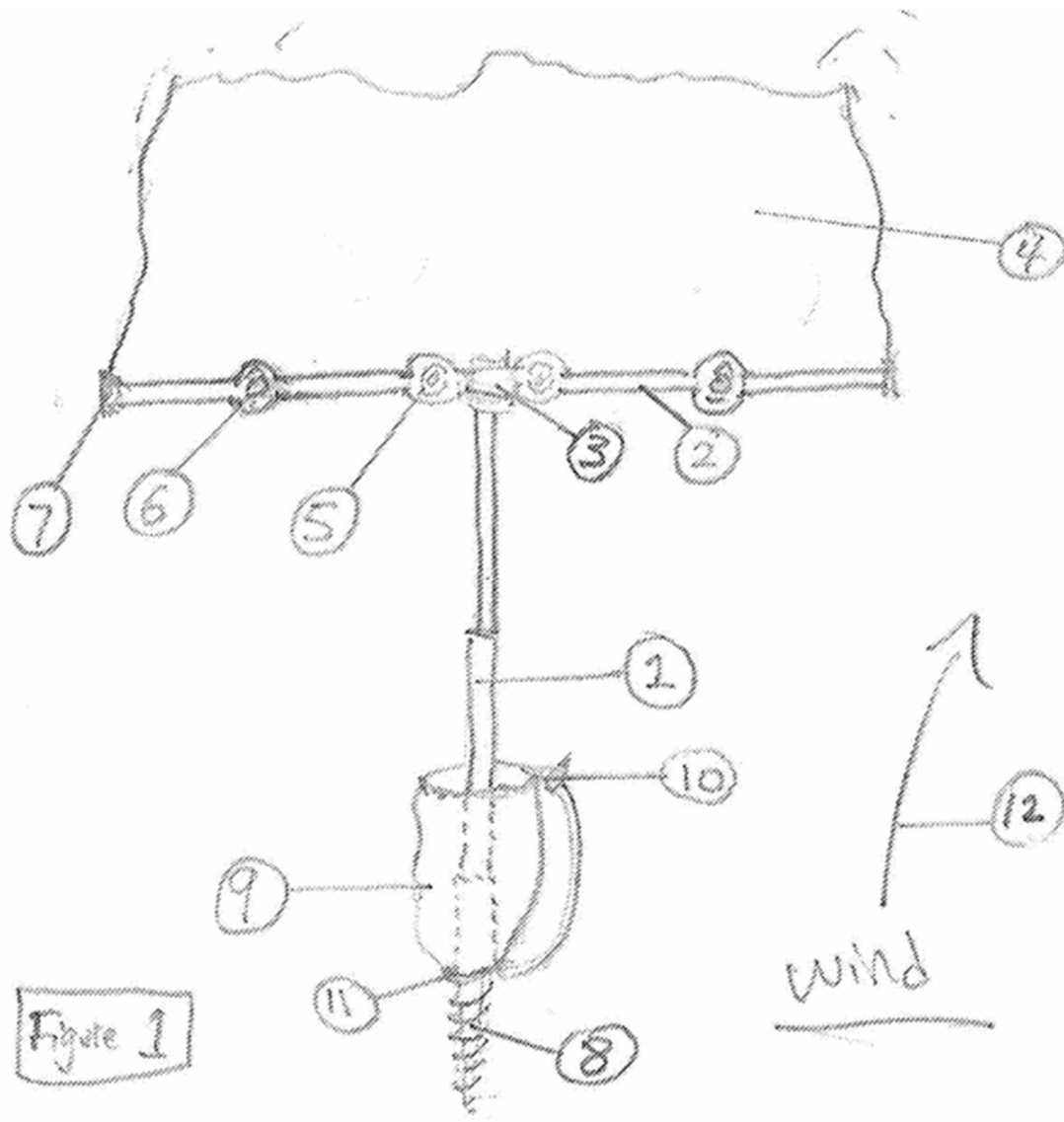
position until the user desires to remove it. Likewise, the mast does not rotate in response to wind conditions due to its attachment to the anchor.

Reissue Patent at 8:59–9:2 (emphasis added).

B. Certain Portions of Prosecution History

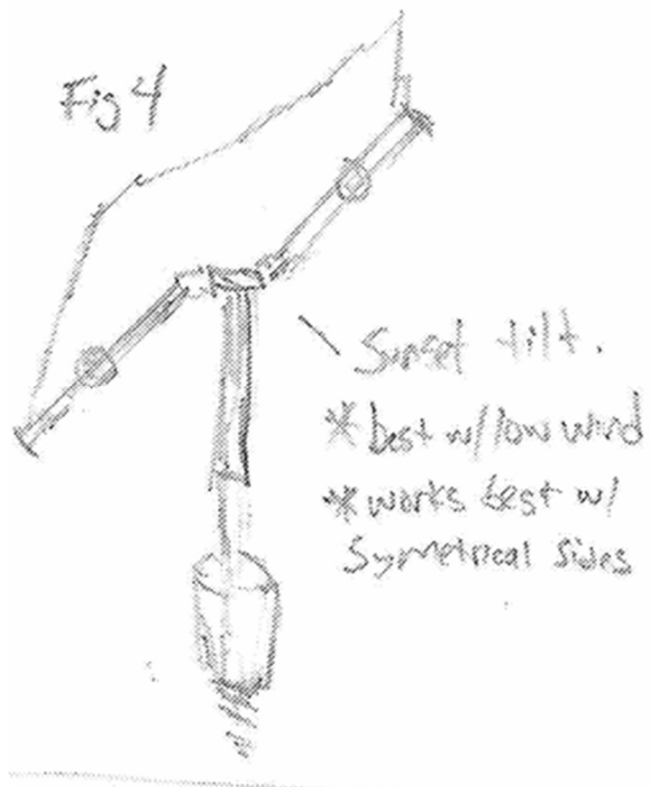
i. Provisional Patent Application (Ex. 1005)

91. Patent Owner initially filed a provisional patent application U.S. Pat. App. No. 62/892,700 (“Provisional Application”) on August 28, 2019. Ex. 1005. In the Provisional Application, the Patent Owner described the “invention,” the “claimed invention,” and “our device,” showing and describing only an embodiment in which the mast is non-rotatably secured to the sand using an auger 8. Ex. 1005 at 1–3. The Provisional Application provided the following drawing in Figure 1:



92. The Provisional Application stated that the assembly included a telescoping mast 1, ribs 2, a tension adjustable and pivoting point at T-connection 3, ribs including main rib hinges 5 and secondary rib hinges 6, and an auger bottom 8. Provisional Application at 2. The auger bottom was described as being used for sand application, and the telescoping mast 1 anchors/stakes in the ground to hold up the frame. Provisional Application at 2.

93. Figure 4 shows that the inventor contemplated a sunset tilt for the assembly. In this sunset tilt, the sail itself extends in a plane offset from a horizontal plane.



94. The Provisional Application also describes deficiencies in existing shade 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.

ii. Other Prosecution Leading to Reissue Patent Application

95. I’ve been informed that, on June 22, 2020, Patent Owner filed an application under the Patent Cooperation Treaty, PCT/US2020/038920 (“PCT

Application”), with this PCT Application claiming priority back to the Provisional Application.

96. I’ve been informed that, on June 23, 2021, Patent Owner entered the national phase in the USPTO under 35 U.S.C. § 371 based on the PCT Application and that the national phase application was given non-provisional patent application No. 17/417,739. I’ve also been informed that this patent application ultimately issued as U.S. Pat. No. 11,596,211 (“Original Patent”). Ex. 1009.

iii. Reissue Patent Application U.S. Pat. App. No. 18/367,224

97. On September 12, 2023, Patent Owner filed a reissue patent application U.S. Pat. App. No. 18/367,224 seeking to correct issues in the Original Patent. Ex. 1004 at 119, 122, 339 (stating that Original Patent was wholly or partly inoperative or invalid because the Patent Owner claimed more or less than it had a right to claim in the Original Patent). The prosecution history for the reissue patent application is provided as Exhibit 1004.

98. The examiner entered a non-final rejection on April 15, 2025. Ex. 1004 at 145–67. This non-final rejection rejected all of pending claims 21–57 on the basis that the reissue declaration was defective. Ex. 1004 at 158–59. Claims 35–40 were rejected under 35 U.S.C. § 112(b) as being indefinite. Ex. 1004 at 160. In addition, claims 41–43, 45, 46, 54, 55, and 57 were rejected under 35 U.S.C. § 102(a)(1) as being anticipated by U.S. Pat. Publ. No. 2008/0196754 to Saiz. Ex. 1004 at 162–65.

99. Patent Owner filed an Amendment in response to the non-final office action on May 14, 2025. In the Amendment, Patent Owner amended the claims to incorporate the subject matter of claims that were presumed to be allowable if rewritten into independent form. Ex. 1004 at 115. Patent Owner also filed a fresh Reissue Application Declaration. Ex. 1004 at 75. In this, Patent Owner stated as follows:

As required under 37 CFR 1.175, Applicant respectfully submits the following statement of at least one error which is relied upon to support the present reissue application. Claim 1 of Applicant's original patent (U.S. Pat. No. 11,596,211) contains certain unnecessary limitations which render the patent wholly or partially inoperative. Specifically, Claim 1 of the original patent recites the unnecessary limitation "at least one support arm". Original Claim 1 is broadened in the Preliminary Amendment filed on February 5, 2024 by removing this limitation from newly added independent Claims 41, 47, 53, 54.

Ex. 1004 at 75.

100. Claim 47 turned into what is now claim 44 in the Reissue Patent. *Cf.* Ex. 1004 at 106–07 (Original claim 47) to Ex. 1001 at claim 44. Nothing was stated in the Reissue Application Declaration about Patent Owner attempting to broaden

this claim to cover a device where the entire device (including the mast) could rotate relative to the supporting surface. Ex. 1004 at 75.

101. The Examiner ultimately entered a Notice of Allowance on August 21, 2025. Ex. 1004 at 11–20. The Notice of Allowance provided a statement of reasons for allowance for each of the independent claims, including claims 21, 35, 41, 47, 53, and 54. Ex. 1004 at 16–18. The Notice of Allowance then stated as follows:

9. The closest prior art, to Saiz, does not teach nor render obvious, with any other combination of prior art, the above claimed combinations. Saiz does teach rotation, but this rotation is effected by the mast, and not relative to the mast. See para. [0008]. There would be no reason to modify Saiz to have the sail and pivot ribs (from claim 54) of figure 1 of Saiz to rotate *relative to the mast*, especially since there is no teaching in the prior art of such an arrangement while meeting all the other limitations as well.

Ex. 1004 at 18 (emphasis in original). After payment of the issue fee on August 21, 2025, the Reissue Patent granted on September 30, 2025. Ex. 1001.

VIII. LEVEL OF ORDINARY SKILL IN THE ART

102. A person having ordinary skill in the art at the time of the claimed invention in the Reissue Patent would be someone familiar with product design and development principles relating to beach and leisure equipment. This could be

obtained in the form of a bachelor's or advanced degree in industrial design, two or more years of experience designing consumer products in this or related fields, or a particular interest or experience in the problems encountered in this field and efforts to remedy them. An industrial designer is typically trained as a generalist (industry agnostic), but as a specialist in the *process of product design and development*.

IX. GROUNDS OF UNPATENTABILITY

103. Based on my review of the materials set forth above, including my application of the knowledge of a POSITA, it is my opinion that claims 44, 45, and 47 of the Reissue Patent are not novel based on the prior art shown below, are obvious based on the prior art, lack written description support, and are not enabled.

Ground	Challenged Claims	Basis
I	44, 45, and 47	§ 102, Neal
II	44, 45, and 47	§ 102, German Reference
III	44, 45, and 47	§ 103, Saiz and Barnes
IV	44, 45, and 47	§ 112, Written Description
V	44, 45, and 47	§ 112, Enablement

X. THE CHALLENGED CLAIMS ARE UNPATENTABLE

104. The specific Grounds will now be addressed in further detail.

A. Ground I

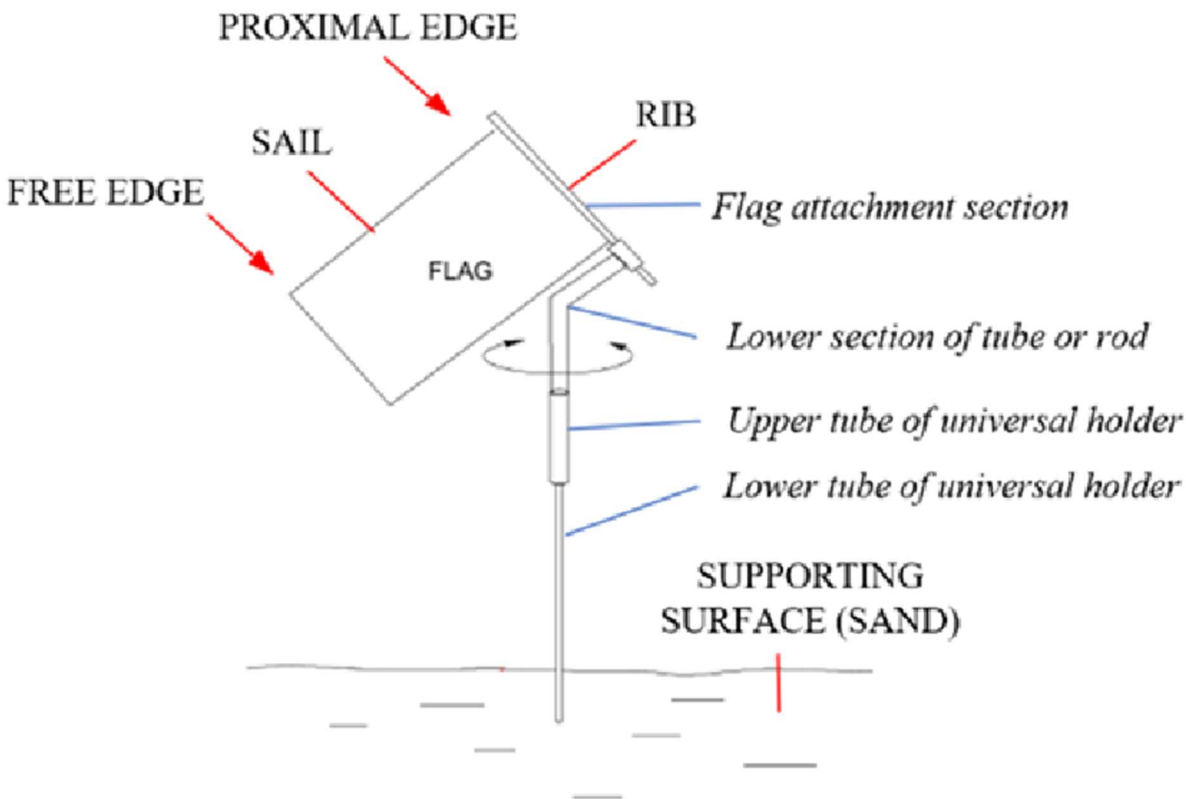
105. Claims 44, 45, and 47 of the Reissue Patent are anticipated (i.e., lacks novelty) under 35 U.S.C. § 102 based on Neal.

i. Claim 44(a): A sun shade assembly comprising:

106. The flag of Figure 5 in Neal provides shade from the sun, making it a sun shade assembly.

ii. Claim 44(b): A mast configured to extend upwardly from a supporting surface, and having a top end and a bottom end;

107. Figure 5 of Neal shows a mast configured to extend upwardly from a supporting surface, and having a top end and a bottom end as shown in the annotated image below. Neal therefore discloses “[a] mast configured to extend upwardly from a supporting surface, and having a top end and a bottom end.” 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.

**FIG. 5**

- iii. **Claim 44(c): At least one rib located proximate the top end of said mast, and configured to rotate relative to the supporting surface;**

108. Figure 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 above (see the arrows just below the flag, which were in the original figure).

109. The rotatability is disclosed in Paragraph 28 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. 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.

110. Paragraph 28 of Neal 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.

111. This would similarly cover this claim, regardless of whether “at least one rib . . . configured to rotate relative to the supporting surface” is considered to mean (i) ribs capable of rotating relative to the supporting surface; or (ii) ribs “specifically designed to rotate relative to the mast.”

112. Neal therefore discloses “[a]t least one rib located proximate the top end of said mast, and configured to rotate relative to the supporting surface.”

- iv. **Claim 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**

113. Figure 5 of Neal shows these features as shown in the annotated version of that figure below.

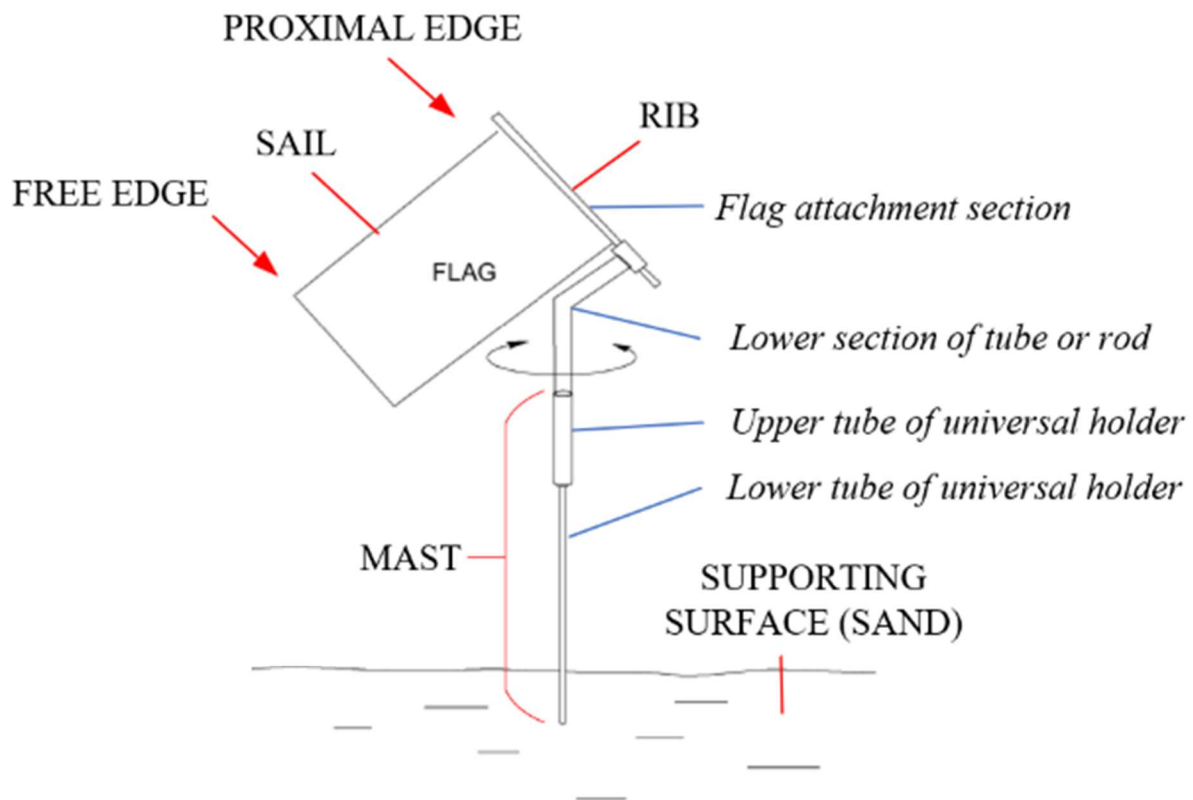


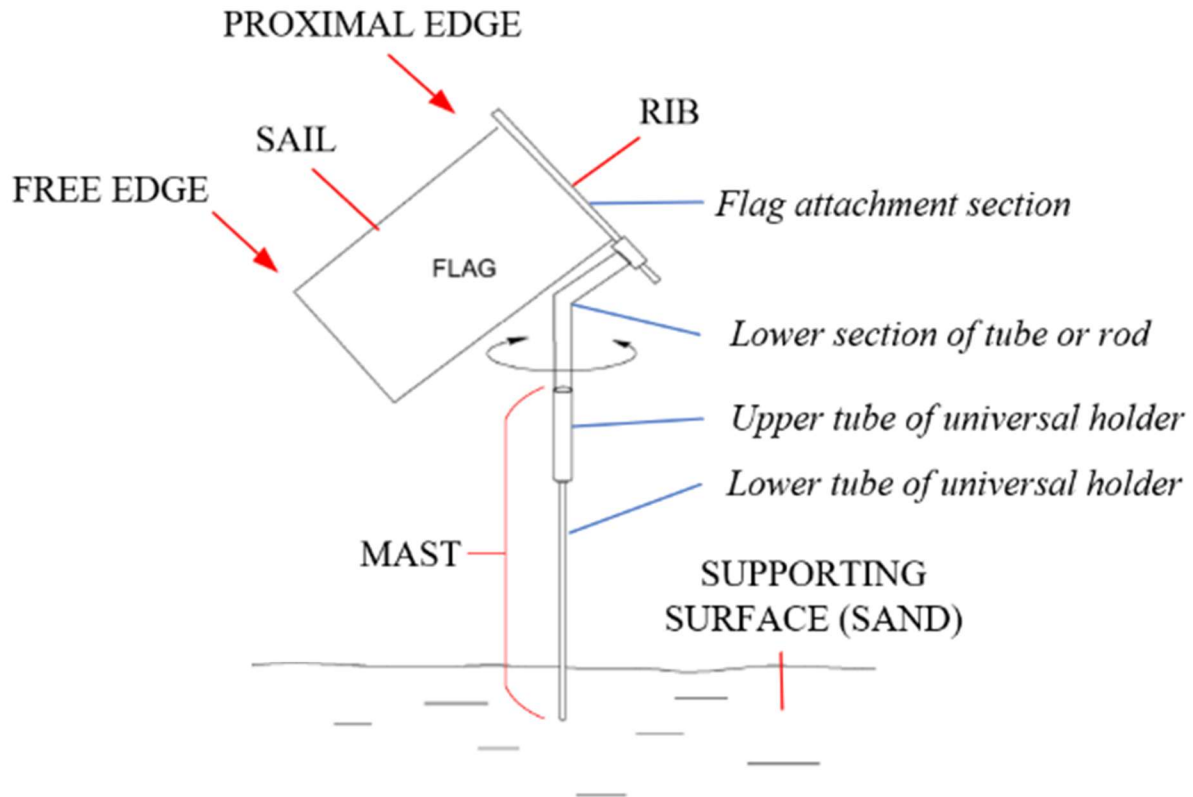
FIG. 5

114. Notably, in the absence of any further limitations in claim 44 regarding what constitutes a “sail,” the flag of Neal is a “sail.”

115. Neal 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.”

v. Claim 44(e): When unfurled, said sail and rib are adapted to rotate together to a direction of the blowing wind.

116. 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 Figure 5 of Neal (which appears in the original).

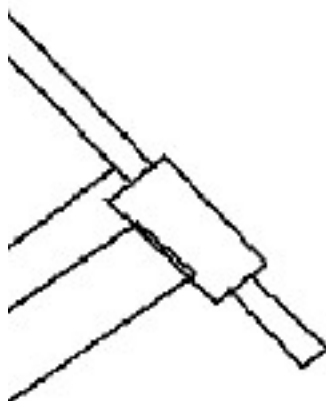
**FIG. 5**

117. Paragraph [0028] states that the flag of Figure 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.”

118. This limitation is therefore present in Neal. Because every element of claim 44 is present in the Neal reference, claim 44 lacks novelty.

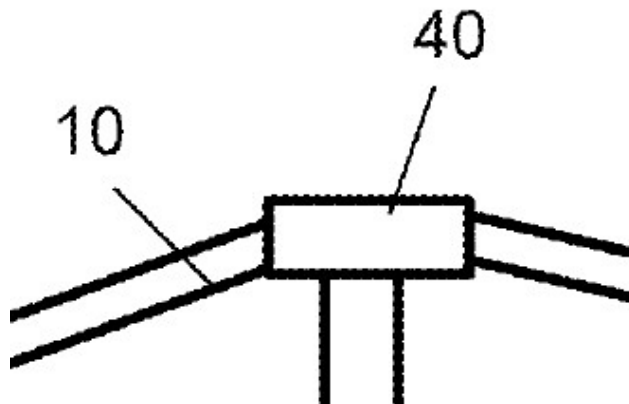
- vi. Claim 45: The assembly of claim 44, wherein said at least one rib is attached to a cap located at the top end of said mast.**

119. 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:



120. 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.

121. Notably, such a “cap” is visually similar to the depiction of the pivot cap 40 in Figure 3a of the Reissue Patent:



122. 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.

123. 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. Claim 45 thus also lacks novelty.

vii. Claim 47: The assembly of claim 44, and comprising an anchor located at the bottom end of said mast.

124. Neal discloses this limitation when anchor is considered to include “any element that provides weight and/or a mechanism by which to secure assembly into a support surface.”

125. 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].

126. 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.

127. Therefore, claim 47 also lacks novelty.

B. Ground II

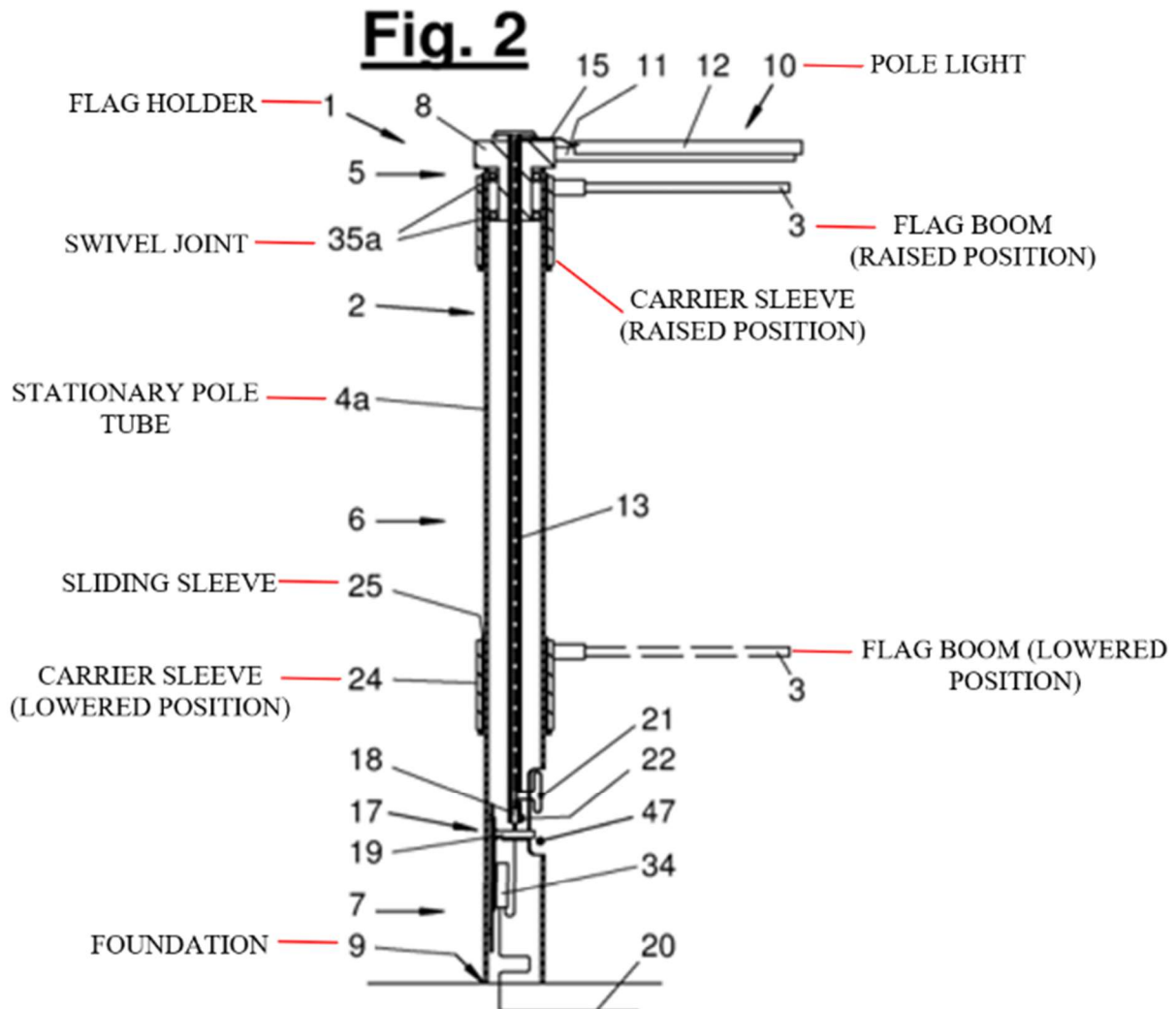
128. Claims 44, 45, and 47 of the Reissue Patent are anticipated (i.e., lacks novelty) under 35 U.S.C. § 102 based on the German Reference.

i. Claim 44(a): A sun shade assembly comprising:

129. A preamble is not considered limiting as a general rule. Even if consideration of the preamble is appropriate, the flag of FIGS. 2, 3, and 7 in the German reference provides shade from the sun, making it a sun shade assembly.

ii. Claim 44(b): A mast configured to extend upwardly from a supporting surface, and having a top end and a bottom end;

130. As noted in Paragraph 31, the stationary pole tube (4a) and the base region (7) of the pole (1) serve as the mast. The mast formed by these components rests on the foundation (9), which constitutes a supporting surface. The mast formed by these components has a top end and a bottom end.



131. The German reference includes a “mast configured to extend upwardly from a supporting surface, and having a top end and a bottom end.”

iii. Claim 44(c): At least one rib located proximate the top end of said mast, and configured to rotate relative to the supporting surface;

132. The German Reference includes a “flag boom (3),” which is also referred to as a “flag holder (3)” at times in the Certified Translation of Ex. 1014. 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 Figure 2 shown below when in the raised position.

133. Regardless of whether “configured to” is deemed to mean “capable of” or “specifically designed to,” the German Reference covers the “configured to rotate relative to the supporting surface” limitation. The German Reference states:

- a. At paragraph 35, that “[t]he flag holder (3) is preferably axially displaceable and rotatable mounted on the pole (1).”
- b. At paragraph 45, that “[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).”

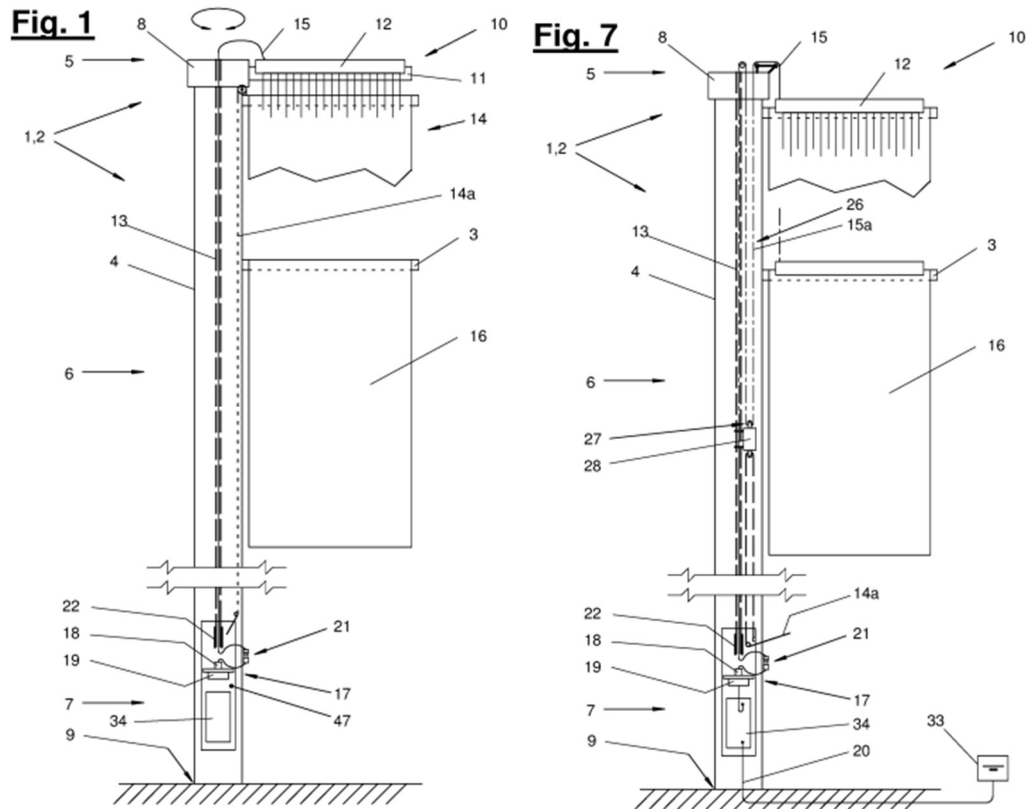
134. As such, the flag holder (3) is capable of rotating relative to the supporting surface (foundation 9) and the mast (stationary pole tube 4a), and it is specifically designed to rotate relative to the mast (stationary pole tube 4a).

135. The assembly of the German Reference therefore includes “[a]t least one rib located proximate the top end of said mast, and configured to rotate relative to the supporting surface.”

iv. Claim 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

136. 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 Figure 2 (likely to allow other components to be seen), but it is shown in FIGS. 1 and 7.

137. These figures show the flag in two different locations for the purposes of illustrating 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.



138. The figures shown above illustrate the flag (16) hanging down without any fasteners connecting the flag 16 to the pole tube (4).

139. Thus, the German Reference 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.”

- v. **Claim 44(e): When unfurled, said sail and rib are adapted to rotate together to a direction of the blowing wind.**

140. Paragraph 45 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).” The flag and the flag holder are both capable of and specifically designed to rotate together to a direction of the blowing wind.

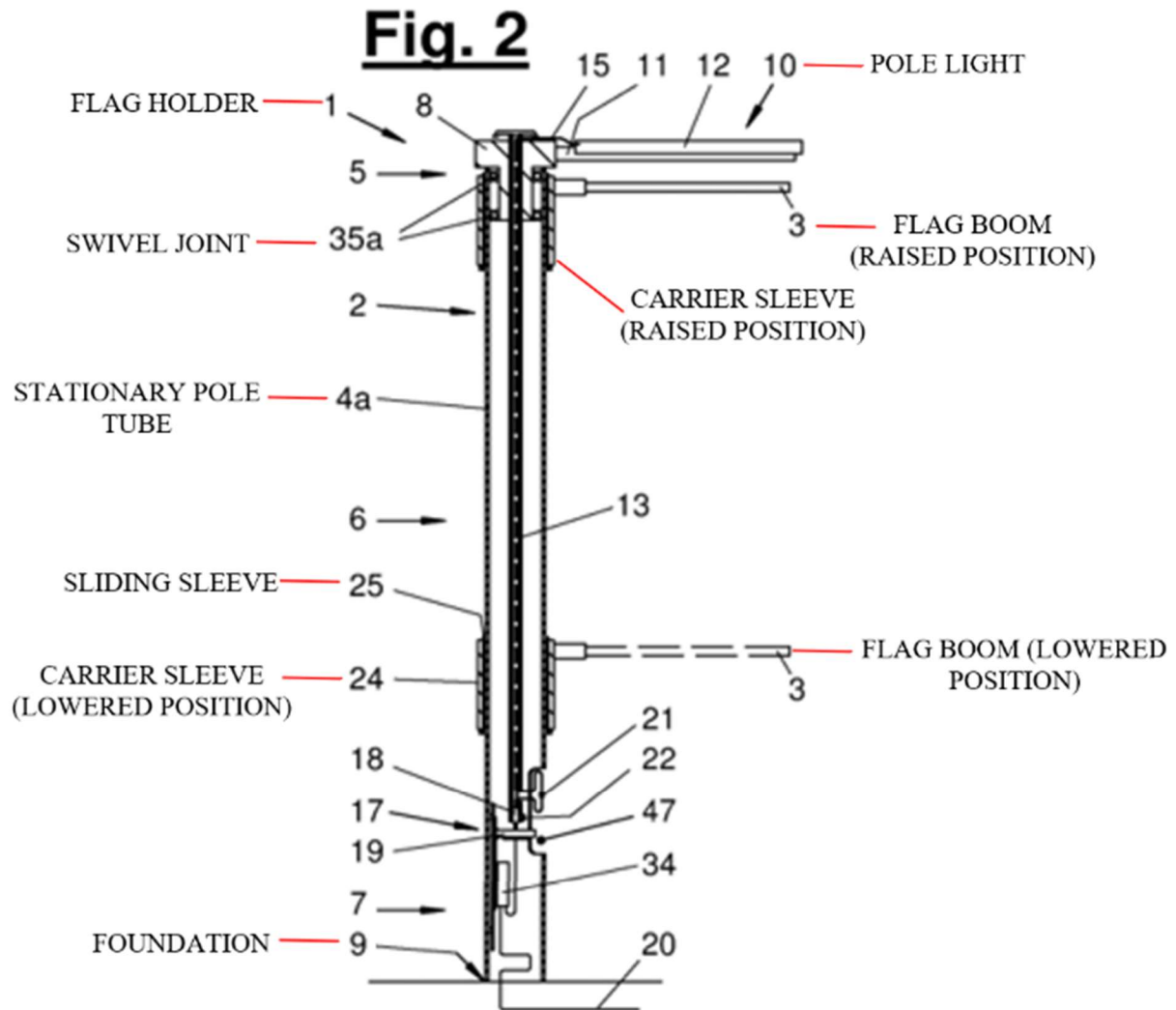
141. Because all limitations of claim 44 are disclosed in the German Reference, claim 44 lacks novelty.

- vi. **Claim 45: The assembly of claim 44, wherein said at least one rib is attached to a cap located at the top end of said mast.**

142. The carrier sleeve 24 of the German Reference, when in the raised position, constitutes a cap at the top end of said mast, and the carrier sleeve 24 has a rib attached to it in the form of the flag boom 3.

143. The carrier sleeve 24 serves as an overlaying or covering structure and would also serve as a pivot cap.

144. The German Reference thus includes a rib attached to a cap located at the top end of the mast. Accordingly, claim 45 also lacks novelty based on the German reference.



vii. Claim 47: The assembly of claim 44, and comprising an anchor located at the bottom end of said mast.

145. The German Reference discloses this limitation when anchor is deemed to include “any element that provides weight and/or a mechanism by which to secure assembly into a support surface.”

146. Paragraph 31 discusses a base region 7 that is “fixed immovably and, if necessary, detachably to a foundation (9) or a ground mount.”

147. 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)).

148. Claim 47 thus also lacks novelty in view of the German reference.

C. Ground III

149. Saiz is entitled “Aerodynamic Sunshade” and the abstract states “[t]he present invention is an aerodynamic sunshade” Figure 1 of Saiz also illustrates one sunshade.

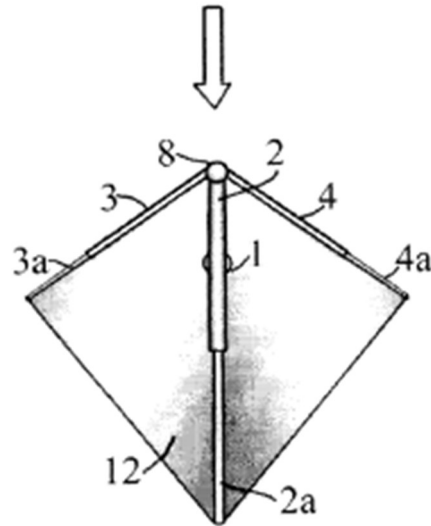
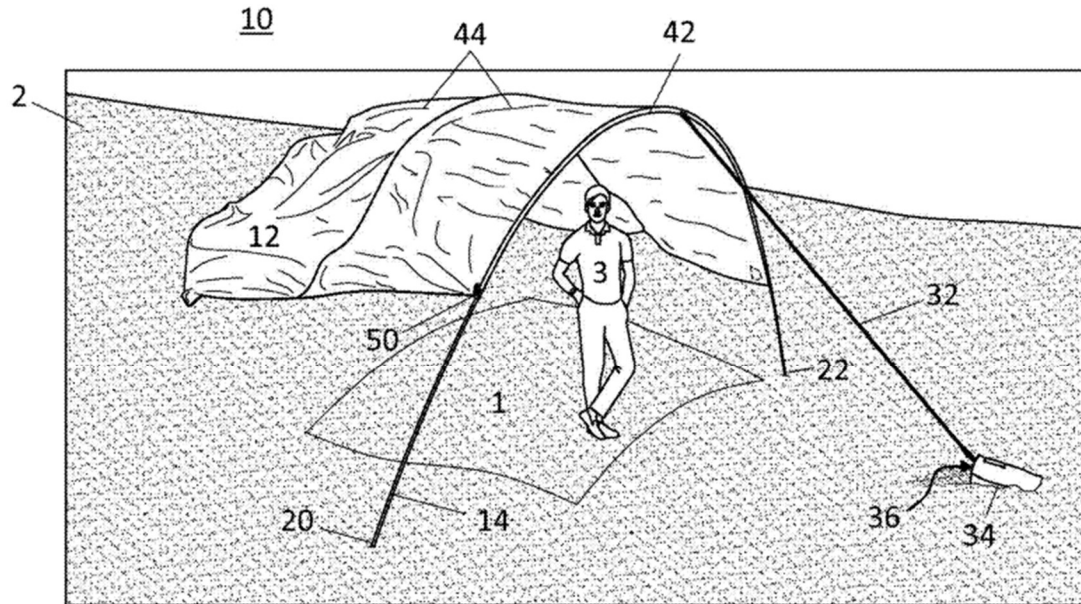


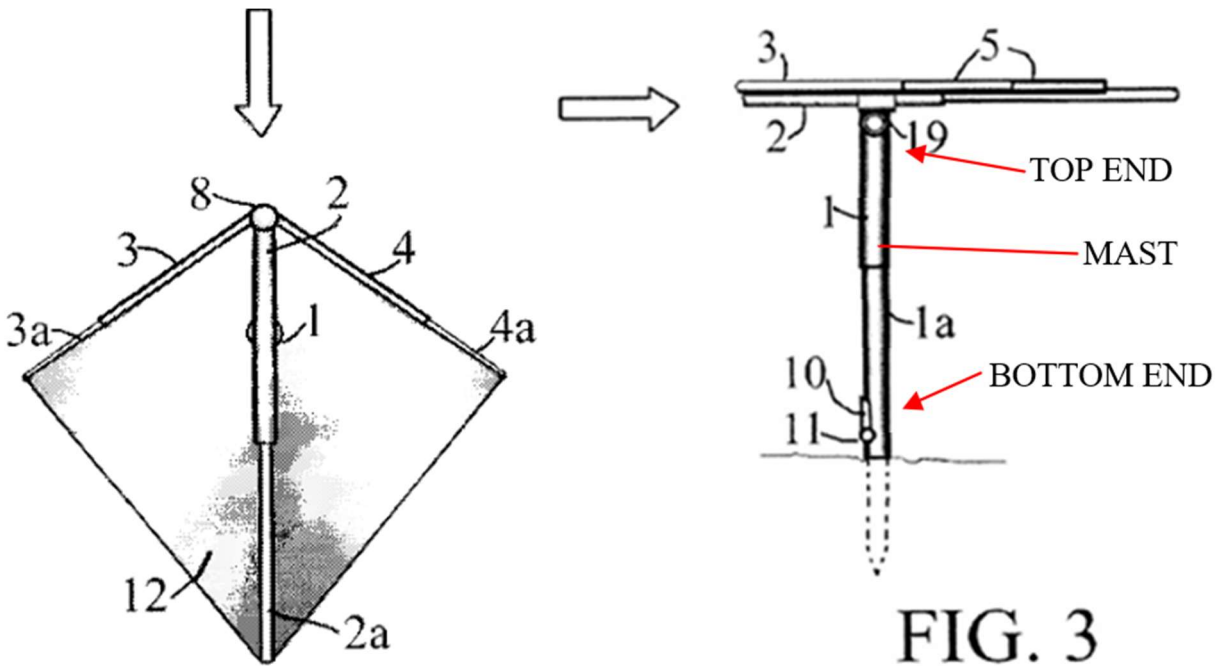
FIG. 1

150. 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 Figure 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**

151. Thus, Saiz and Barnes both disclose a sun shade assembly, and a combination of these two references would disclose a sun shade assembly.

152. Paragraph 32 of Saiz discloses a support stem 1 in Figure 1 that serves as a mast. The support stem 1 is shown in a top view of Figure 1, but a similar support stem 1 is illustrated in the side view of Figure 3. That figure shows that the support stem 1 has a top end and a bottom end.



153. At Paragraph 4, Saiz discloses a “stem or mast, which is embedded either in the sand, in a concrete base or a handle” Thus, the stem extends upwardly from a supporting surface.

154. 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.

155. The embodiment of Figure 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 Figure 1. In Saiz, the lateral arms

3 and 4 are attached to the spindle 8, and the spindle allows rotation of the cloth 12 as noted in paragraph 32.

156. Saiz possesses ribs that are capable of rotation relative to the supporting surface. Paragraph 8 of 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” The same paragraph states that 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.” The telescoping sections are shown in Figure 13 at locations where reference numbers 1 and 1a are shown.

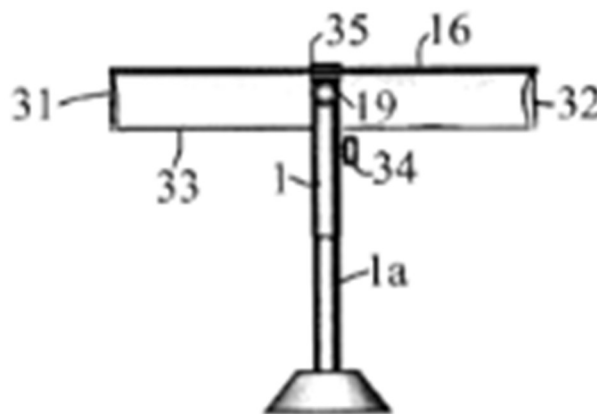


FIG. 13

157. Discussing the telescoping sections, Saiz also notes at Paragraph 8 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.” This is illustrated in Figure 13, with this figure showing “a knob of fixation with screw (34)” as noted in Paragraph 44.

158. Rotation of the stem 1 as described in Paragraph 8 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.

159. Saiz also possesses “at least one rib . . . specifically designed to rotate relative to the mast.” As noted in Paragraph 8, the stem comprises two telescoping sections, and one of these telescoping sections may rotate relative to the other. Thus, the rib would rotate relative to the portion of the stem or mast that is attached to the supporting surface (rod 1a in Figure 13).

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

161. 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.

162. The embodiment shown in Figure 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.

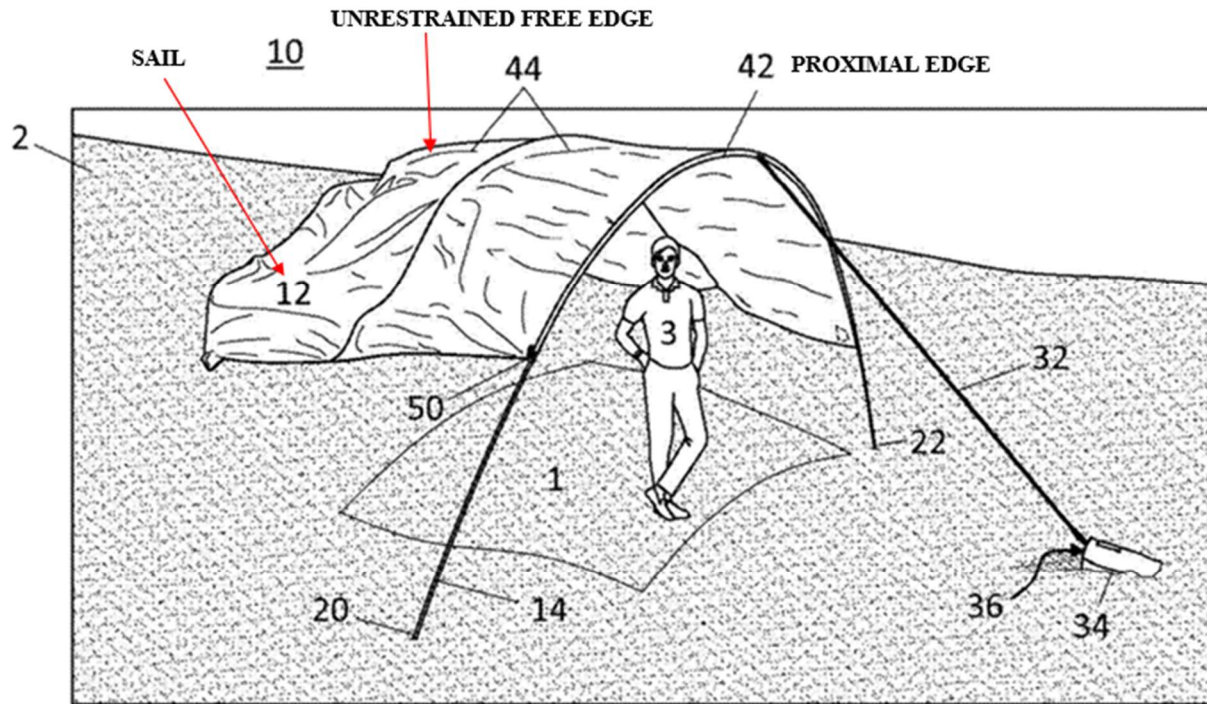


FIG. 1

163. The canopy 12 serves as a sail, and the suspension end 42 serves as a proximal edge. Figure 1 also shows that the system 10 of Barnes includes an unrestrained free edge that unfurls in response to the blowing of the wind. Barnes notes that the canopy is aurally 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.

164. 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 Figure 1 of Barnes, nothing is present from the proximal edge to the unrestrained free edge to restrain the canopy of Barnes.

165. 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.”

166. The device in Figure 1 of Saiz is also adapted to rotate to a direction of the blowing wind. At Paragraph 14, 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.” At Paragraph 32, Saiz states that Figure 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 Paragraph 8.

167. 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.”

168. In my opinion, a POSITA would have modified Saiz to attach the suspension end 42 of the Barnes canopy 12 to the arms 3, 3a, 4, 4a of Saiz.

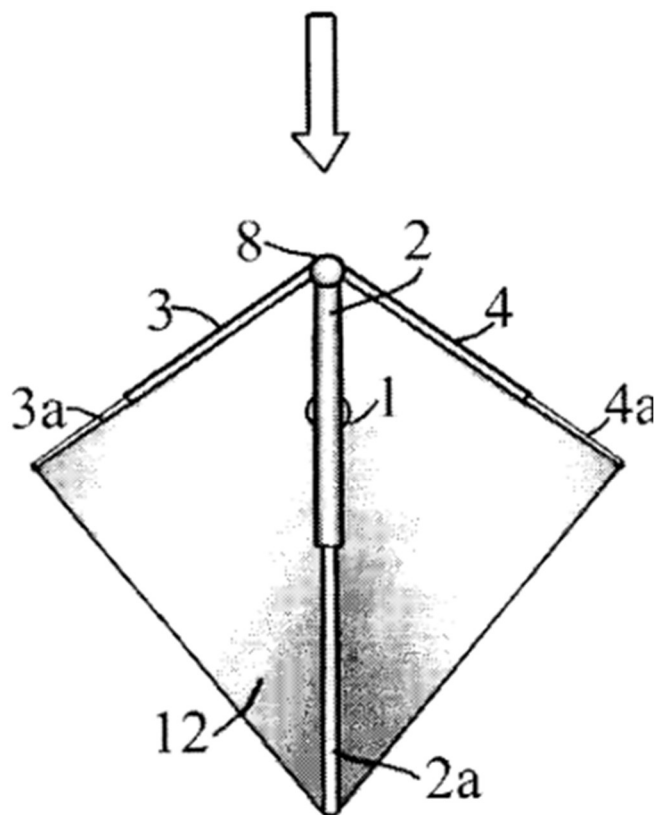


FIG. 1

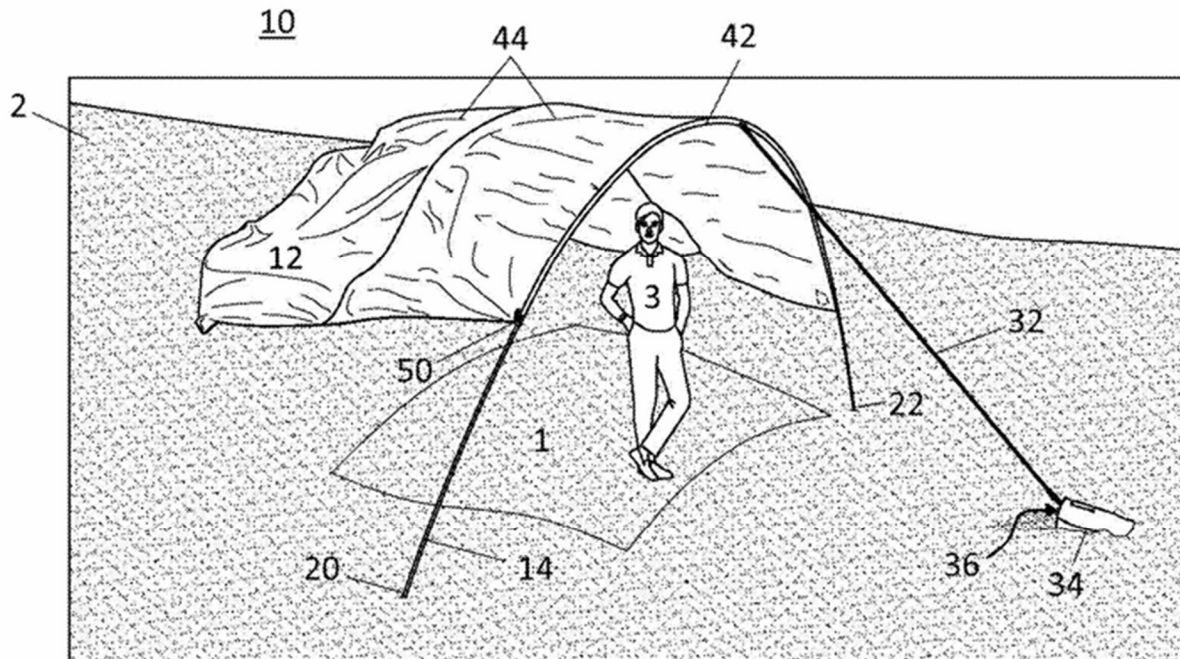


FIG. 1

169. Barnes discloses that the canopy 12 defines a loop 40 configured to accept a portion of the frame 14. Barnes at 4:15–18. As shown below, the loop 40 is depicted in Figure 4 of Barnes, and the frame 14 is depicted in Figure 1 of Barnes. 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.

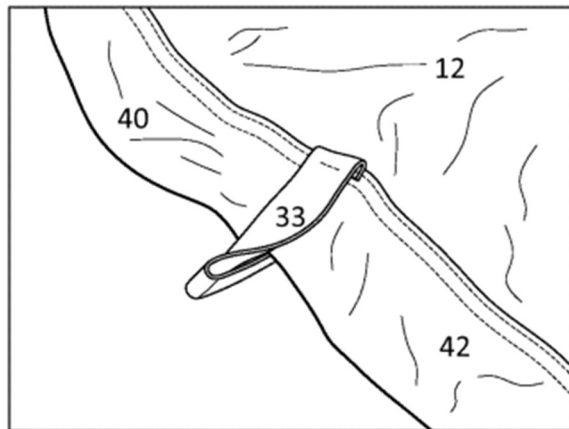


FIG. 4

170. 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.

171. 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.

172. 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 at Paragraph 3 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.” Given that both references acknowledge this significantly common issue, a POSITA would have considered both references.

173. 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 of transport and assembly.” Barnes at 1:31–34. 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 . . .”).

174. Barnes also expresses a desire to at least partially support flexible canopy structure using the wind. Barnes at 1:31–34. Barnes accomplishes 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.

175. Accordingly, in my opinion, a POSITA as of August 28, 2019, would have been 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.

176. 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. 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.

177. 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 conducting a typical product development process 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 one of ordinary skill in the art.

178. The obvious combination of Saiz and Barnes thus includes all the limitations of claim 44. I therefore conclude that claim 44 is obvious to a POSITA over Saiz and Barnes.

179. Figure 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 as noted in Paragraph 32. The spindle 8 is positioned at the top end of the mast formed by the stem 1, and this spindle 8 provides an overlaying or covering structure.

180. 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.” Saiz and Barnes thus include the additional subject matter of claim 45. This claim is also obvious to a POSITA.

181. Saiz discloses an anchor in the form of the rod 1a. As shown in Figure 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.

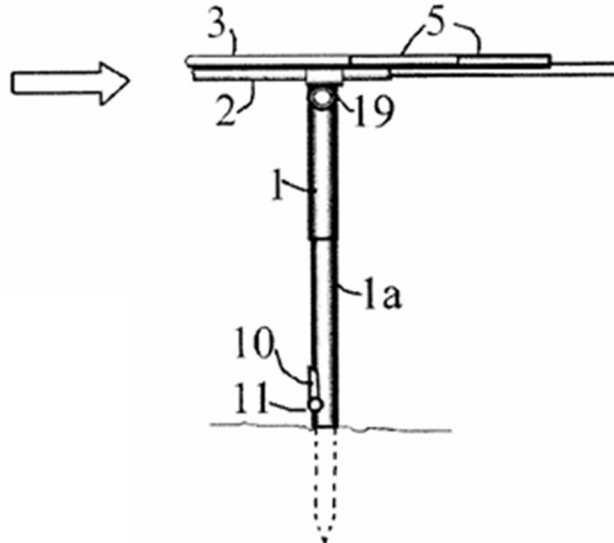


FIG. 3

182. Additionally, Saiz notes that the stem or mast is embedded either in the sand or “in a concrete base.” Saiz at Paragraph 4. Such a concrete base would constitute an “element that provides weight” and would serve as an anchor.

183. Thus, the proposed combination of Saiz and Barnes discloses “anchor located at the bottom end of said mast,” with anchor being construed as noted above. Saiz and Barnes thus include the additional subject matter of claim 47. This claim is also obvious to a POSITA.

D. Ground IV

184. Especially if claim 44 of the Reissue Patent is read as broadly as Solbello wants, it is invalid at least because of a lack of adequate “written description.”

185. Claim 44 requires that “at least one rib . . . [is] configured to rotate relative to the supporting surface.”

186. All of 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 col. 3, lines 7–10, col. 7, lines 34–38, col. 9, lines 1–2, col. 12, line 39.

187. 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.

188. 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, the Patent Owner 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.

189. 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.

190. Thus, I do not believe that, as of August 28, 2019, the Patent Owner was in possession of an invention as described in any of claims 44, 45, or 47 where the entire mast was capable of rotating relative to the ground with ribs fixed against rotation relative to the mast. Claims 45 and 47 do not contain additional limitations that cure this defect in claim 44.

E. Ground V

191. Here, as noted previously, the claims are broad, covering a broad genus of “at least one rib . . . [is] configured to rotate relative to the supporting surface” and that “sail and rib are adapted to rotate together to a direction of the blowing wind.”

192. The Reissue Patent only provides guidance and examples regarding a mast not capable of rotating where the ribs rotate relative to the mast so that the ribs rotate relative to the supporting surface—all discussion in the Reissue Patent indicates that rotation of the ribs 10 occurs as a result of rotation of the rib relative

to a non-rotatable mast. *See also* 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 relative to the supporting surface.

193. In fact, the direction or guidance provided in the Reissue Patent would lead a POSITA *away from using an embodiment where the mast rotates*. 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).

194. All discussion in the Reissue Patent indicates that rotation of the ribs 10 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.

195. 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.

196. 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 1:52–54.¹

197. For these reasons, in my opinion, the Reissue Patent does not enable the full scope of the invention as defined by the claims in claims 44, 45, and 47 to the extent the claims include an embodiment in which the ribs are secured against rotation to the mast, but the entire mast itself is allowed to rotate.

198. Claims 45 and 47 do not contain additional limitations that cure this defect in claim 44.

XI. CONCLUSION

199. For the reasons set forth above, it is my opinion that a POSITA would have found that (a) claims 44, 45, and 47 of the Reissue Patent are anticipated by both Neal and the German Reference; (b) claims 44, 45, and 47 of the Reissue Patent are obvious based on a combination of Saiz and Barnes; (c) claims 44, 45, and 47 of

¹ 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.

the Reissue Patent lacked sufficient written description support in the specification;
(d) claims 44, 45, and 47 of the Reissue Patent are not enabled by the specification.

XII. DECLARATION

200. In signing this declaration, I understand that the declaration will be filed as evidence in a contested case before the Patent Trial and Appeal Board of the United States Patent and Trademark Office. I acknowledge that I may be subject to cross-examination in this case and that cross-examination will take place within the United States. If cross-examination is required of me, I will appear for cross-examination within the United States during the time allotted for cross-examination with sufficient advance notice.

201. I declare that all statements made herein of my knowledge are true and correct and that all statements made on information and belief are believed to be true, and further, that these statements were made with knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001.

Executed on June 30, 2026

A handwritten signature in blue ink, appearing to read "Stephen Melamed", is written over a horizontal line.

Stephen Melamed