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(54) **AERODYNAMIC SUNSHADE**

Publication Classification

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(57) **ABSTRACT**

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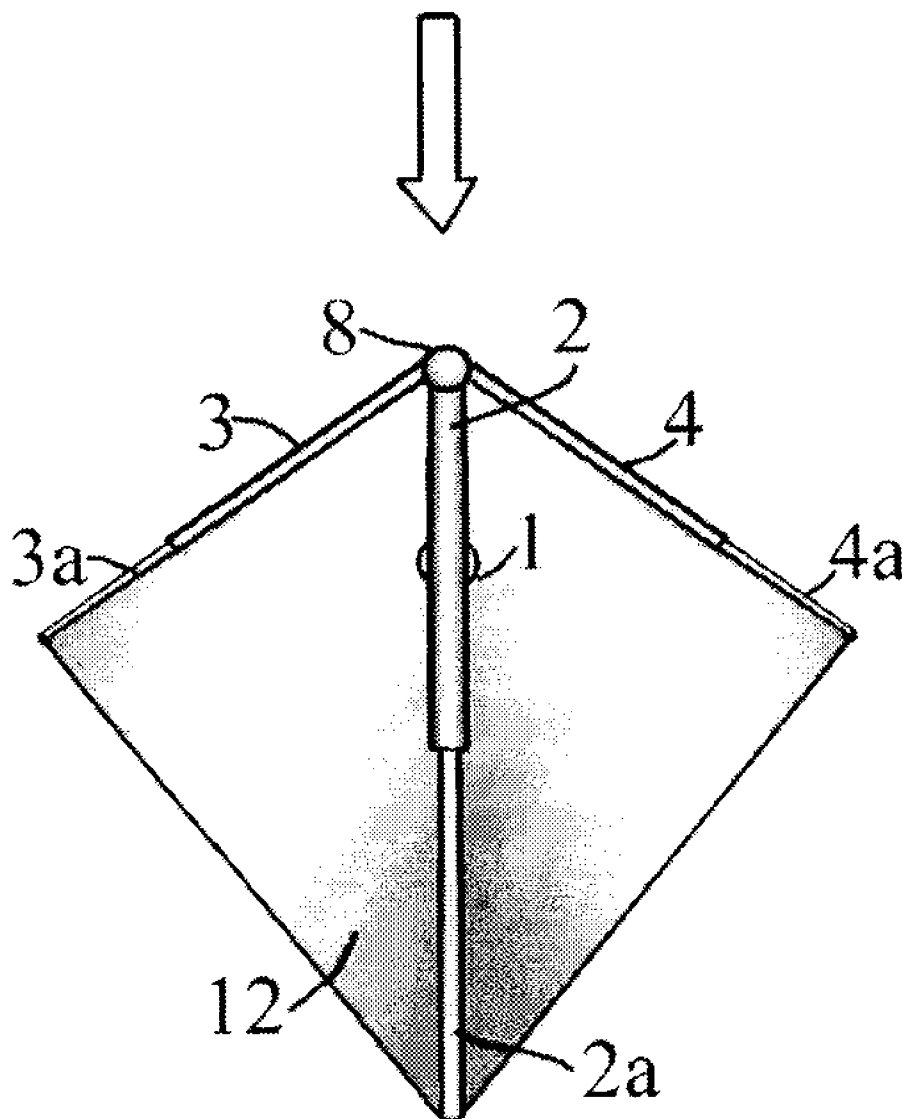
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Feb. 16, 2007 (ES) P200700553
Jan. 10, 2008 (ES) P200800093

The present invention is an aerodynamic sunshade that has a flat frame or rack made up of a series of radial or angular rods or arms, having the outermost ends of said arms joined to the perimeter of a hexagonal kite- or arrowhead-shaped cloth, said frame or rack being supported in an eccentric and articulated manner perpendicularly from a point between the leading edge of the kite or arrowhead and a third of its main centreline by a cylindrical element, stem or mast, which is embedded either in the sand, in a concrete base or a handle, with the addition of peripheral flounces or fringes at the sides or outside edge of the cloth.



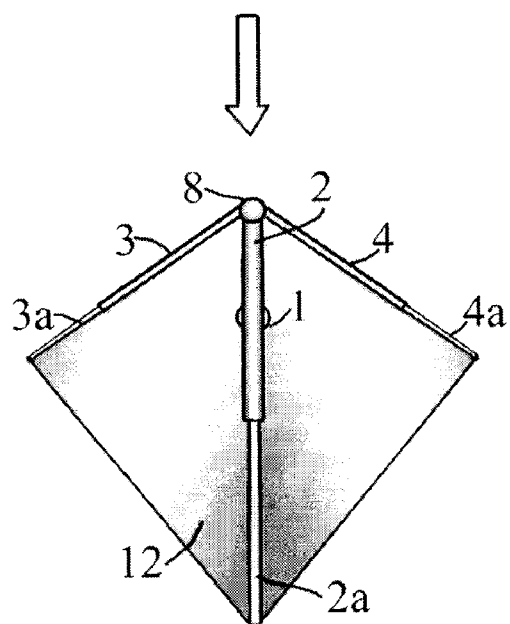


FIG. 1

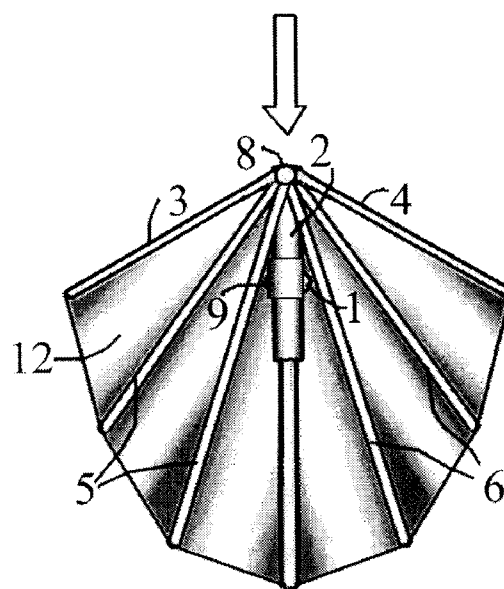


FIG. 2

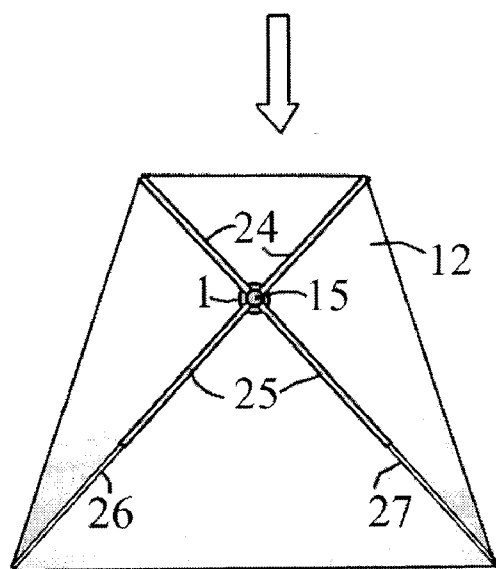


FIG. 4

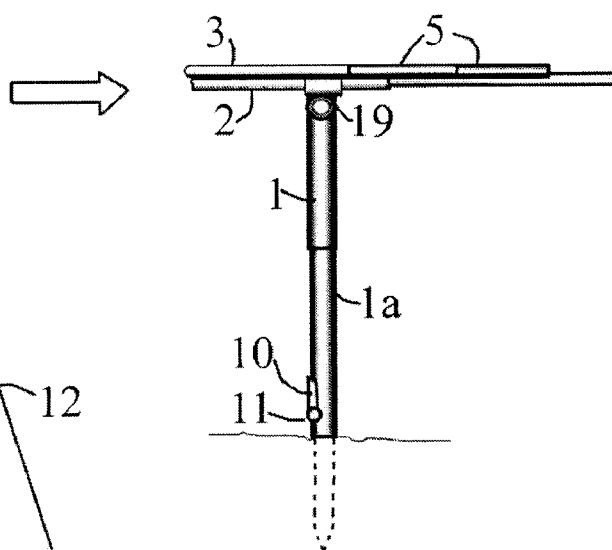


FIG. 3

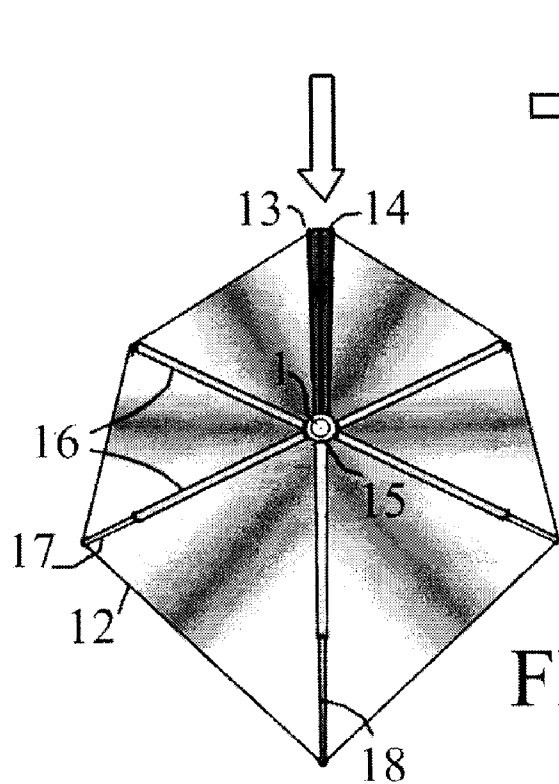


FIG. 5

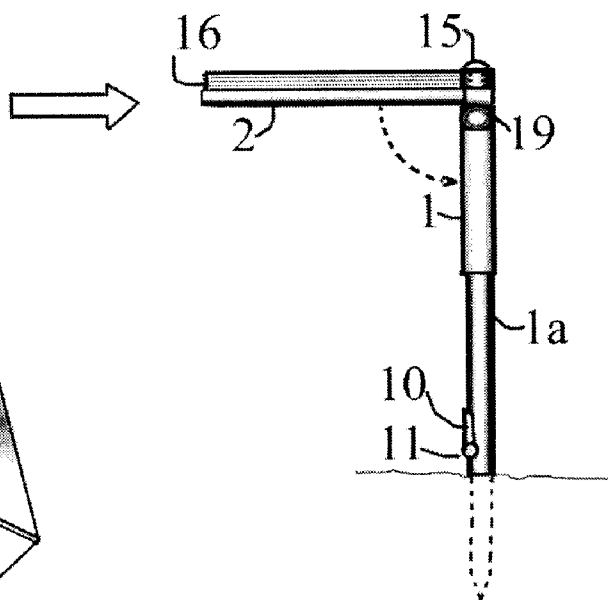


FIG. 6

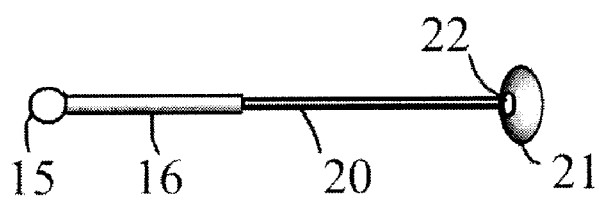


FIG. 7

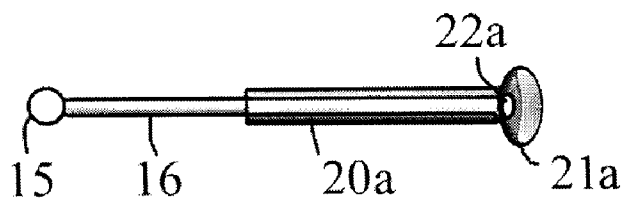


FIG. 8

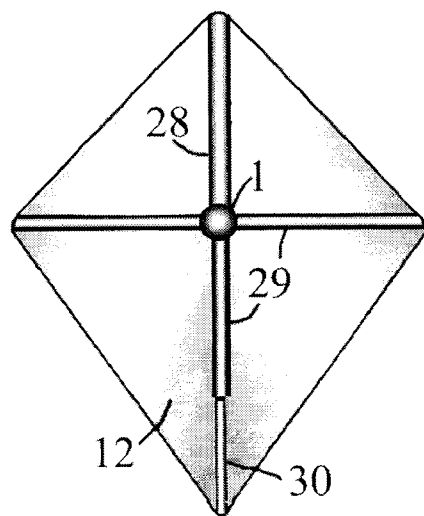


FIG. 9

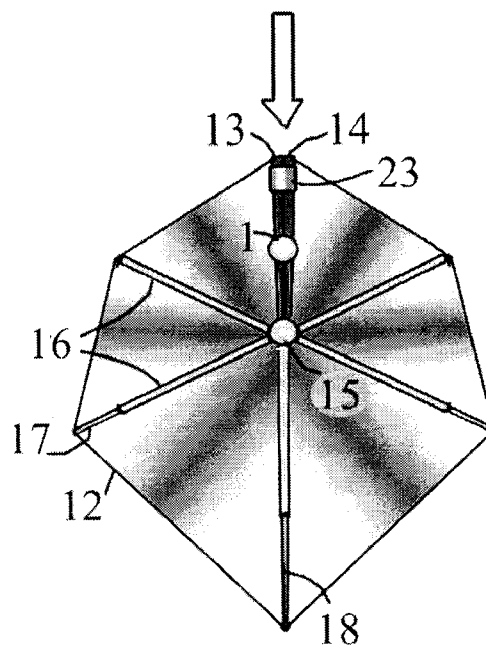


FIG. 10

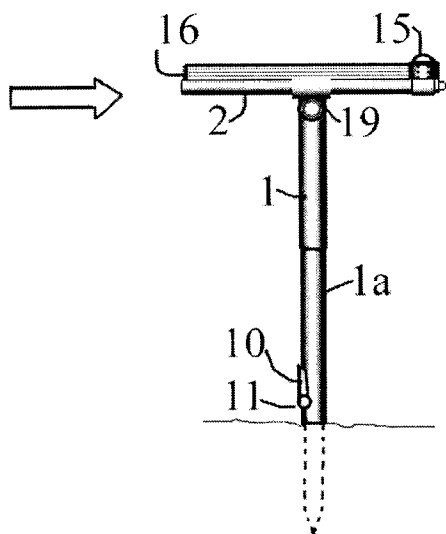


FIG. 11

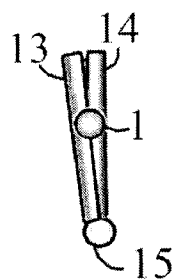


FIG. 12

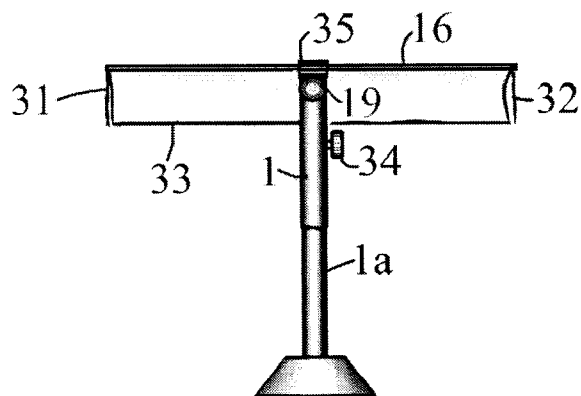


FIG. 13

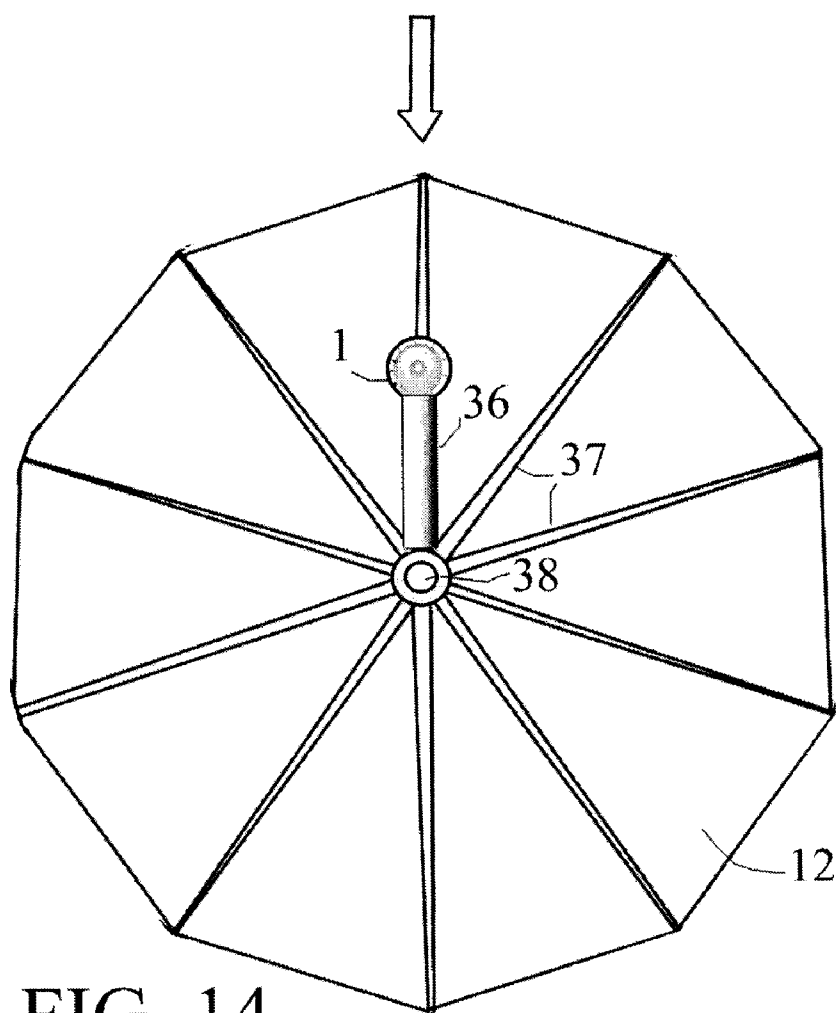


FIG. 14

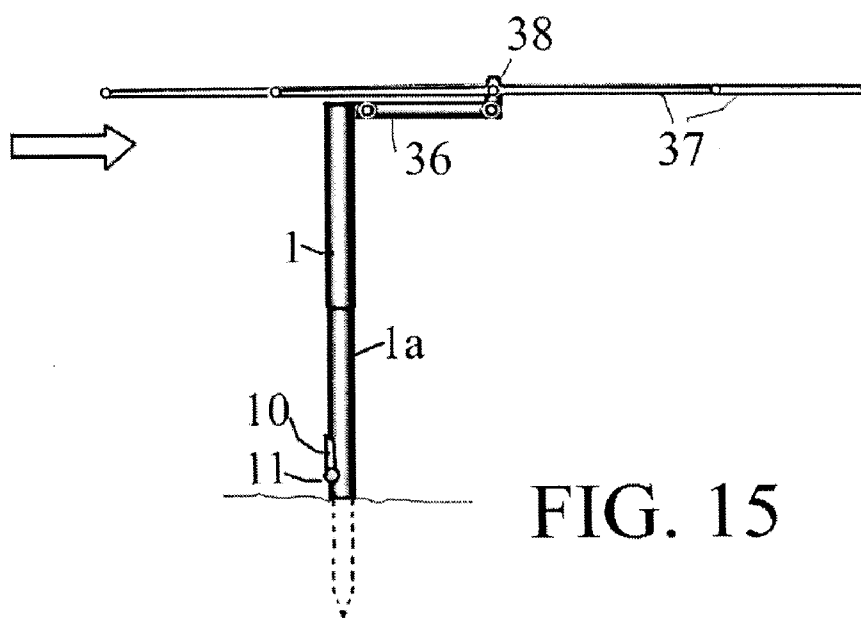
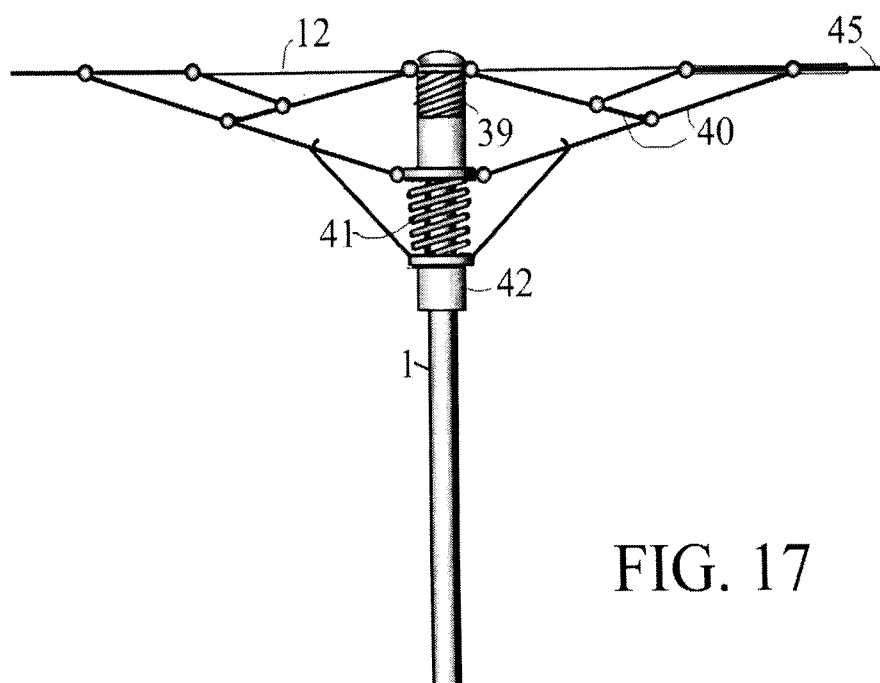
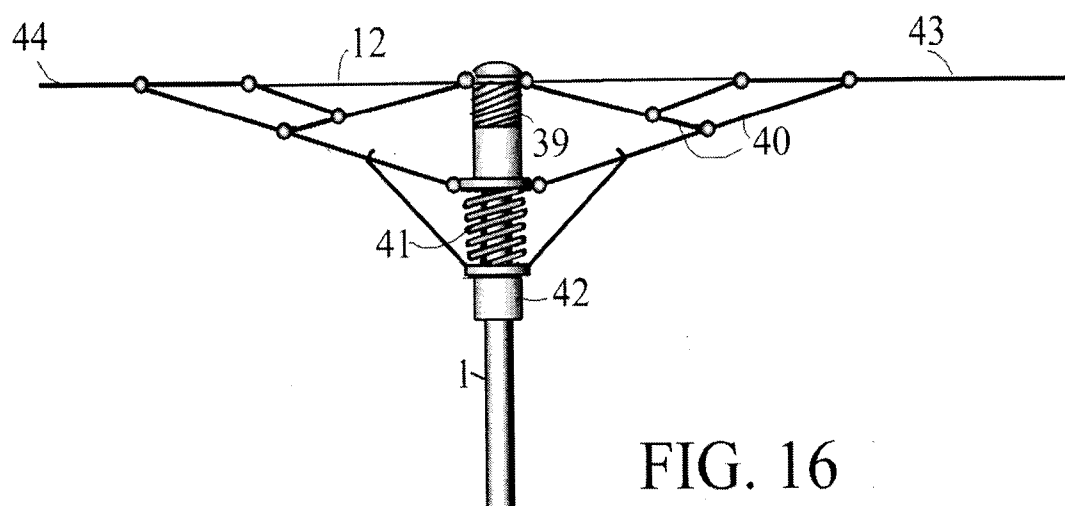


FIG. 15



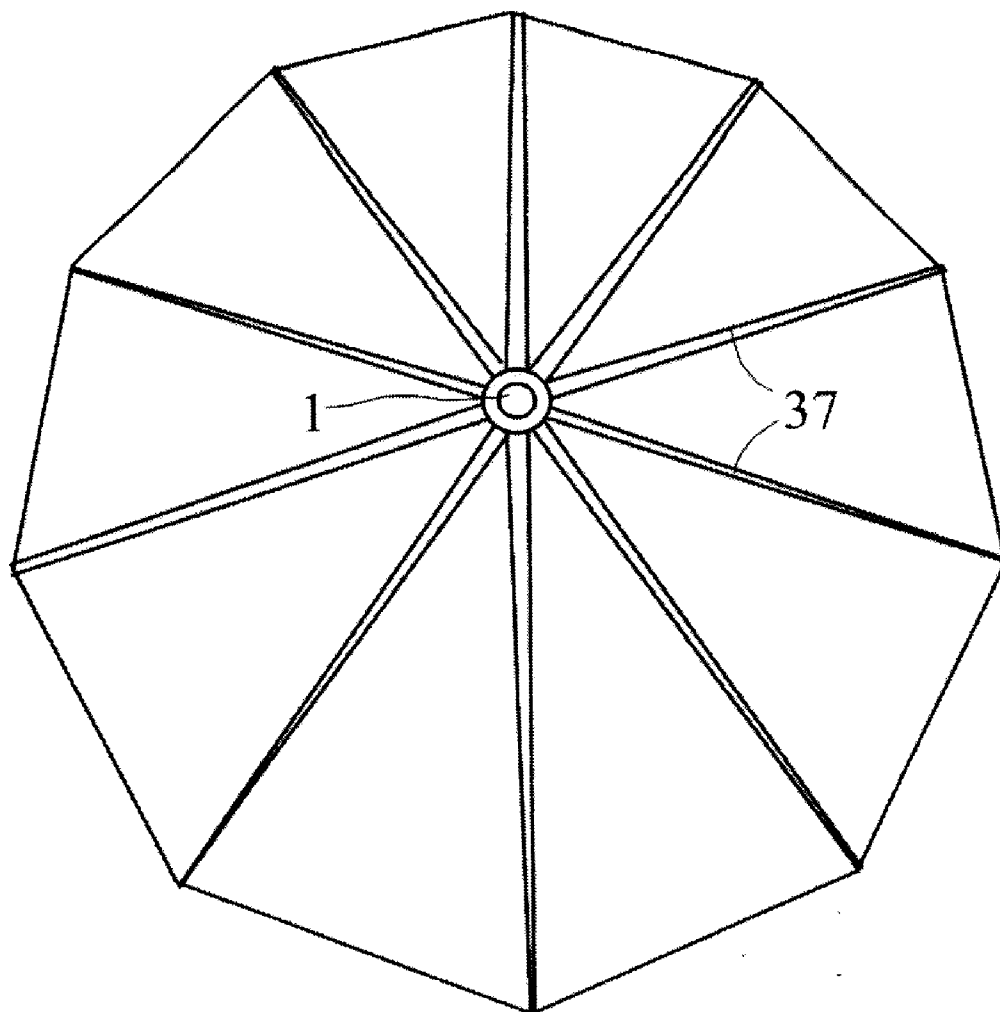


FIG. 18

AERODYNAMIC SUNSHADE

INDEX TO RELATED APPLICATIONS

[0001] This application claims benefit of the filing dates of Spain National Patent Application P200700553, filed Feb. 16, 2007 and Spain National Patent Application P200800093 filed Jan. 10, 2008 the disclosures of which are incorporated herein by reference in their entirety.

FIELD OF THE INVENTION

[0002] The present invention relates to sun protection devices.

PRIOR ART

[0003] Current 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.

SUMMARY OF THE INVENTION

[0004] The directional type kite- or arrowhead-shaped aerodynamic sunshade of the invention consists of a flat frame or rack made up of a series of radial or angular rods or arms, having the outermost ends of said arms joined to the perimeter of a hexagonal kite- or arrowhead-shaped cloth, said frame or rack being supported in an eccentric and articulated manner perpendicularly from a point between the leading edge of the kite or arrowhead and a third of its main centreline by a cylindrical element, stem or mast, which is embedded either in the sand, in a concrete base or a handle, with the addition of peripheral flounces or fringes at the sides or outside edge of the cloth.

[0005] The radial or angular rods or arms may be extending or telescopic; they may be extended to form an obtuse angle or a complete circle in the form of a fan, the outermost radial arms of which are connected to one another laterally, either entirely or partly, in a dovetail joint, both when they are extended and when they are retracted. They may also be rotated and retracted along the support stem.

[0006] The sunshades, when extended, take on a different form, similar to kites.

[0007] They may add peripheral flounces or fringes at the sides or around the perimeter of the cloth.

[0008] The 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 latter circumstance, linked to the fact that the stem is connected to an eccentric point, 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. If 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.

[0009] The hinged joint between the stem and the radial or angular arms may be executed at the centre or connection point of same, or else approximately at the mid-point of one of the arms. It may be tilted sideways. In the model that presents the arms forming an obtuse angle, the central arm is reinforced so as to support the stem.

[0010] The radial or angular rods may be telescopic with the outermost or ancillary section running along the inside of the main tubular section or with the outer or ancillary section

running along the outside of the main section. In both cases the outermost end of the radial arms has a rounded, oval or arch shaped ring to prevent possible harm to the users.

[0011] The rods or arms may be rotated and retracted parallel to the stem or mast, while they may be extended by means of a spring but with the special feature of the rods being extended perpendicular to the stem and the cloth flat and perpendicular to the stem. The rods or arms are of varying length, securing the outside edge of the cloth in an oval form and with the rods and stem starting from their focal points approximately; some of them may also be extending. The automatic extension system may also be used by means of a spring and the corresponding joint.

[0012] One version uses the normal sunshade with the stem attached to the middle of the sunshade and off-centred and articulated laterally in the form of a crank handle.

[0013] They are extended for its use and they are retracted for storage and transport. The mast has a handle, rotary and retractable by means of a spring, which assists the embedding of said mast in the sand when pressing it with one's foot.

[0014] Advantages: It is simple, straightforward and economic to use, stable in the face of wind, in respect of which it is self-directional and offers little resistance.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] FIG. 1 shows a plant schematic view of the sunshade.

[0016] FIG. 2 shows a plant schematic view of a variant of sunshade.

[0017] FIG. 3 shows a side schematic view of the sunshade shown in FIG. 2.

[0018] FIG. 4 shows a plant schematic view of a variant of sunshade.

[0019] FIG. 5 shows a plant schematic view of another variant of sunshade.

[0020] FIG. 6 shows a side schematic view of the sunshade shown in FIG. 5.

[0021] FIG. 7 shows a schematic view of a radial extending rod.

[0022] FIG. 8 shows a schematic view of a radial extending rod.

[0023] FIG. 9 shows a plant schematic view of a variant of sunshade.

[0024] FIG. 10 shows a plant view of another variant of sunshade.

[0025] FIG. 11 shows a side schematic view of the retracted sunshade shown in FIG. 10.

[0026] FIG. 12 shows a way of connection of the two outermost ends rods of a sunshade shown in FIG. 10.

[0027] FIG. 13 shows a side schematic view of a sunshade variant.

[0028] FIG. 14 shows a plant view of a sunshade variant.

[0029] FIG. 15 shows a side schematic view of the sunshade shown in FIG. 14.

[0030] FIG. 16 and 17 show side schematic view of a sunshade variant.

[0031] FIG. 18 shows a plant view of another sunshade variant.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0032] FIG. 1 consists of a central arm (2) and its extending arm (2a) for bracing and connection to the support stem (1),

lateral arms (3 and 4) and their telescopic extending arms (3a and 4a), spindle for the attachment and rotation (8) of the inner end of the radial arms and cloth (12), secured by the ends of the rods. It is extended like a fan, taking on the form of a kite. It indicates its direction in respect of the wind arrow.

[0033] FIG. 2 consists of a main radial arm (2) of reinforcement and union to the support rod (1), lateral arms (3 and 4), angular arms (5 and 6), spindle for the attachment and rotation (8) of the inner end of the radial arms, clip (9) support of the main radial centre arm with the support rod and the fabric (12) held by the ends of the radial rods. It is of the angular type with the spin axis of the support rod in the apex.

[0034] FIG. 3 consists of a main arm (2) of reinforcement and union to the rod of support (1 and 1a), lateral arm (3), intermediate arm (5), handle (10) that rotates 90° around the axis (11) and is retracted by means of a spring, being (19) the rotary joint of the rod. The handle facilitates the embedded in the sand.

[0035] FIG. 4 consists of a support rod (1), main radial arms (24 and 25), spin axis of such (15), telescopic radial arms (26 and 27) and the fabric held by the ends of the radial rods (12). It is of the angular type radial arms in the form of San Andres cross.

[0036] FIG. 5 consists of a support rod (1), fabric (12), lateral radial arms (13 and 14) dovetail laterally, spin axis of the arms (15), inner radial arms (16) and tensile telescopic arms (17 and 18). It acts as a fan opening itself in an angle of 360°.

[0037] FIG. 6 consists of a main radial arm (2) of reinforcement and union to the support rod of (1 and 1a), inner radial arms (16), rotary around the axis (15), handle (10) that rotates 90° around the axis (11) and is retracted by means of a wharf. The rod has the rotary joint (19). The handle facilitates the embedded in the sand.

[0038] FIG. 7 consists of a rotary axis (15), more internal radial arm (16) and the most external (20), orifice or eyelet (22) and oval outermost end of protection (21).

[0039] FIG. 8 consists of the rotary shaft (15) the internal radial arm (16) and the most external radial arm (20a).

[0040] FIG. 9 consists of the support rod (1), fabric (12), crossed radial arms (28 and 29), (28) are greater and add the telescopic arm (30).

[0041] FIG. 10 consists of the support rod (1), fabric (12), lateral arms (13 and 14), rotary shaft of the arms (15), more internal radial arms (16), tensile telescopic arms (17 and 18) and clip of blocking (23). It acts as a fan opening itself in an angle of 360°.

[0042] FIG. 11 consists of main radial arm (2) of reinforcement and union to the support rod (1 and 1a), internal radial arms (16) around the axis (15), retracted handle (10) by means of a spring that turns 90° around the axis (11) and revolving joint of the rod (19). The handle facilitates the embedded in the sand.

[0043] FIG. 12 consists of the support rod (1), lateral arms (13 and 14) and spin axis (15). It shows both radial arms during his connection or disconnection by dovetailed.

[0044] FIG. 13 consists of the support rod (1 and 1a), arms or rods (16), lateral flounces or fringes (31 and 32), after flounce or fringe (33) and knob of fixation with screw (34). It has a pedestal to its positioning.

[0045] FIG. 14 consists of rod (1), radial connecting rod (36), radial rods (37) and spin axis (38). It uses a standard sunshade with the modified rod.

[0046] FIG. 15 consists of the rod (1 and 1a), radial connecting rod (36), radial rods (37) and spin axis. It uses a standard sunshade with the modified rod of FIG. 14.

[0047] FIG. 16 consists of the rod (1), fabric (12), secondary spring (39), joint (40), main spring (41), sliding ring (42), large rod (43) and short rod (44).

[0048] FIG. 17 consists of the rod (1), fabric (12), secondary spring (39), joint (40), main spring (41), sliding ring (42) and tensile rod (45).

[0049] FIG. 18 consists of the rod (1) and tensile radial rods of different length (37).

[0050] The arrows indicate the direction of the wind.

[0051] While the invention has been described in its preferred form or embodiment with some degree of particularity, it is understood that this description has been given only by way of example and that numerous changes in the details of construction, fabrication, and use, including the combination and arrangement of parts, may be made without departing from the spirit and scope of the invention.

I claim:

1. A aerodynamic sunshade that consists of a flat frame or rack made up of a series of radial or angular rods or arms, having the outermost ends of said arms joined to the perimeter of a hexagonal kite- or arrowhead-shaped cloth, said frame or rack being supported in an eccentric and articulated manner perpendicularly from a point between the leading edge of the kite or arrowhead and a third of its main centreline by a cylindrical element, stem or mast, which is embedded either in the sand, in a concrete base or a handle, with the addition of peripheral flounces or fringes at the sides or outside edge of the cloth.

2. An aerodynamic sunshade according to claim 1, wherein the rods or arms are extending or telescopic.

3. An aerodynamic sunshade according to claim 1, wherein the rods or arms are extended to form an obtuse angle.

4. An aerodynamic sunshade according to claim 1, wherein the rods or arms may be extended to form a complete circle in the form of a fan, the outermost radial arms of which are connected to one another laterally, either entirely or partly, in a dovetail joint, both when they are extended and when they are retracted.

5. An aerodynamic sunshade according to claim 1, wherein the rods or arms are rotated and retracted attached along the support stem.

6. An aerodynamic sunshade according to claim 1, wherein the 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.

7. An aerodynamic sunshade according to claim 1, wherein a screw and a brake hold and brake the rotation between mast and its support.

8. An aerodynamic sunshade according to claim 1, wherein the hinged joint between the stem and the radial or angular arms may be executed at the centre or connection point of same.

9. An aerodynamic sunshade according to claim 1, wherein the hinged joint between the stem and the radial or angular arms may be executed at the mid-point of one of the arms.

10. An aerodynamic sunshade according to claim 1, wherein the hinged joint of the mast allows to be tilted sideways.

11. An aerodynamic sunshade according to claim 1, wherein the rods may be telescopic with the outermost or ancillary section running along the inside of the main tubular section.

12. An aerodynamic sunshade according to claim 1, wherein the rods may be telescopic with the outermost or ancillary section running along the outside of the main section.

13. An aerodynamic sunshade according to claim 1, wherein the outermost end of the radial or angular arms have a rounded, oval or arch shaped ring.

14. An aerodynamic sunshade according to claim 1, wherein the mast has a handle, rotary and retractable by means of a spring.

15. An aerodynamic sunshade according to claim 1, wherein the rods or arms are rotated and retracted parallel to the stem or mast, while they are extended by means of a spring

but with the special feature of the rods being extended perpendicular to the stem and the cloth flat and perpendicular to the stem.

16. An aerodynamic sunshade according to claim 1, wherein the rods or arms are of varying length, securing the outside edge of the cloth in an oval form and with the rods and stem starting from their focal points approximately.

17. An aerodynamic sunshade according to claim 1, wherein some of the rods or arms are extending.

18. An aerodynamic sunshade according to claim 1, wherein an automatic extension system is used by means of a spring and the corresponding joint.

19. An aerodynamic sunshade according to claim 1, wherein it is used the stem attached to the middle of the sunshade and off-centred and articulated laterally in the form of a crank handle.

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