



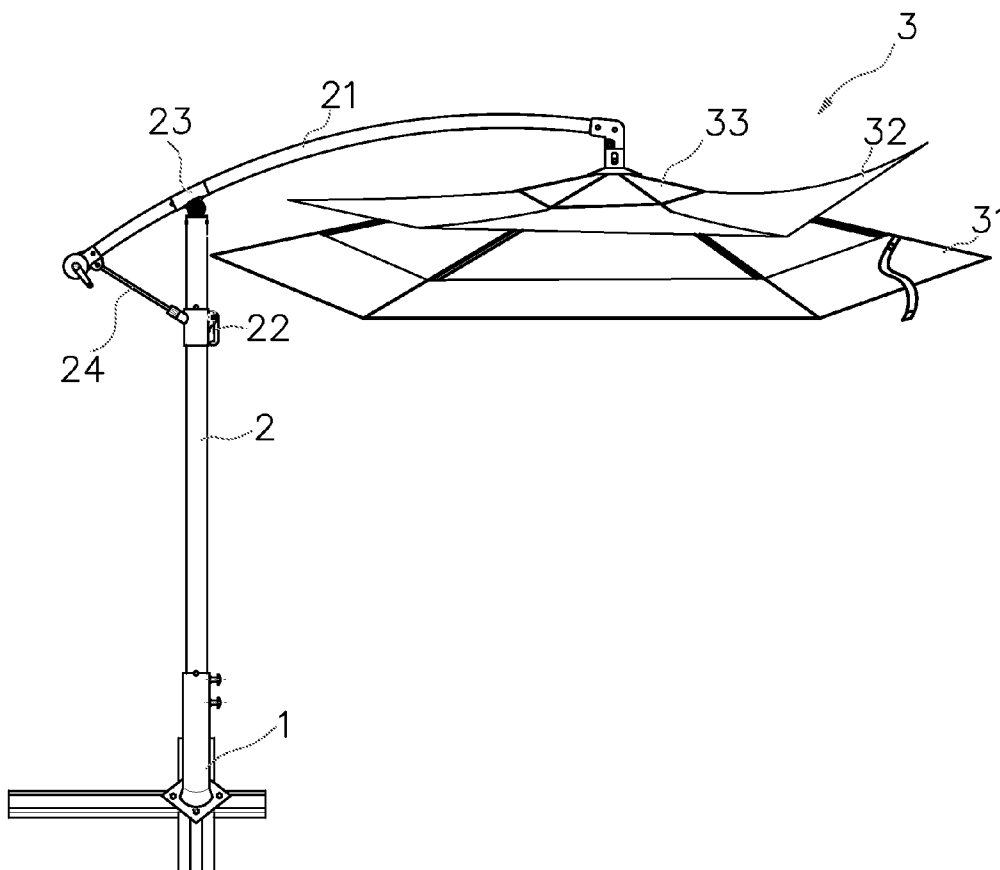
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(19) **United States**(12) **Patent Application Publication**
WU(10) **Pub. No.: US 2011/0030751 A1**(43) **Pub. Date: Feb. 10, 2011**(54) **WINDPROOF SUNSHADE**(75) Inventor: **WEIDAN WU**, Zhejiang (CN)Correspondence Address:
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Zhejiang (CN)(21) Appl. No.: **12/718,993**(22) Filed: **Mar. 7, 2010**(30) **Foreign Application Priority Data**

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E04H 15/28 (2006.01)(52) **U.S. Cl. 135/98**(57) **ABSTRACT**

A kind of windproof sunshade comprising an umbrella fabric, an umbrella frame and a stem for supporting said umbrella frame, said umbrella fabric covering said umbrella frame, said umbrella frame comprising multiple long umbrella ribs, multiple short umbrella ribs and a central stick, said long umbrella ribs and said short umbrella ribs being capable of being folded and unfolded, said long umbrella ribs being provided with soft ribs which can be bended and detached from the front ends of said long umbrella ribs in case of wind and restore the original state when the wind stops, said umbrella fabric at least comprising a bottom edge engaged with the long umbrella ribs and a windproof top engaged with said soft ribs. Compared with existing technologies, this utility model is advantageous in that: the soft ribs will bend upwards and be blown open along with the windproof top to deflect the wind in strong wind and the windproof top will rebound automatically under the stress of the soft ribs to restore the original state when the wind stops. Thus, the damage to the umbrella frame and other parts including the long umbrella ribs can be reduced and the wind resistance of the sunshade can be improved.



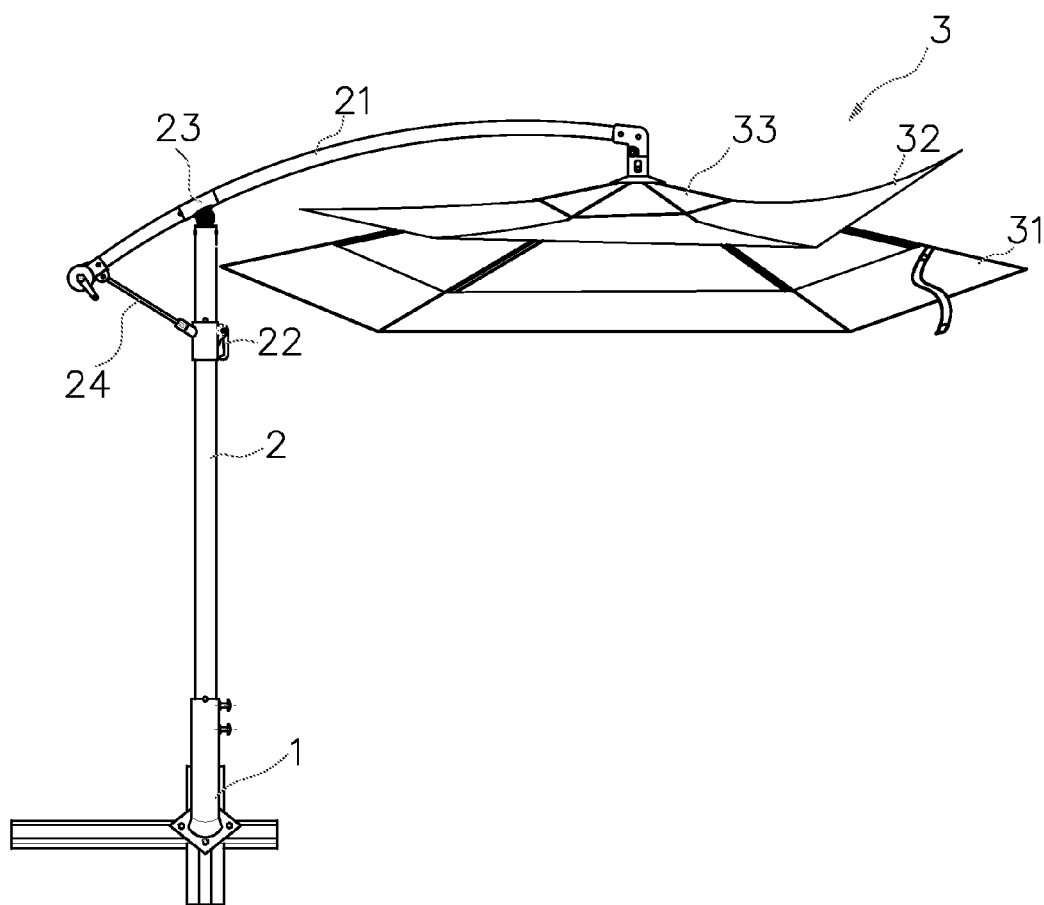


Fig. 1

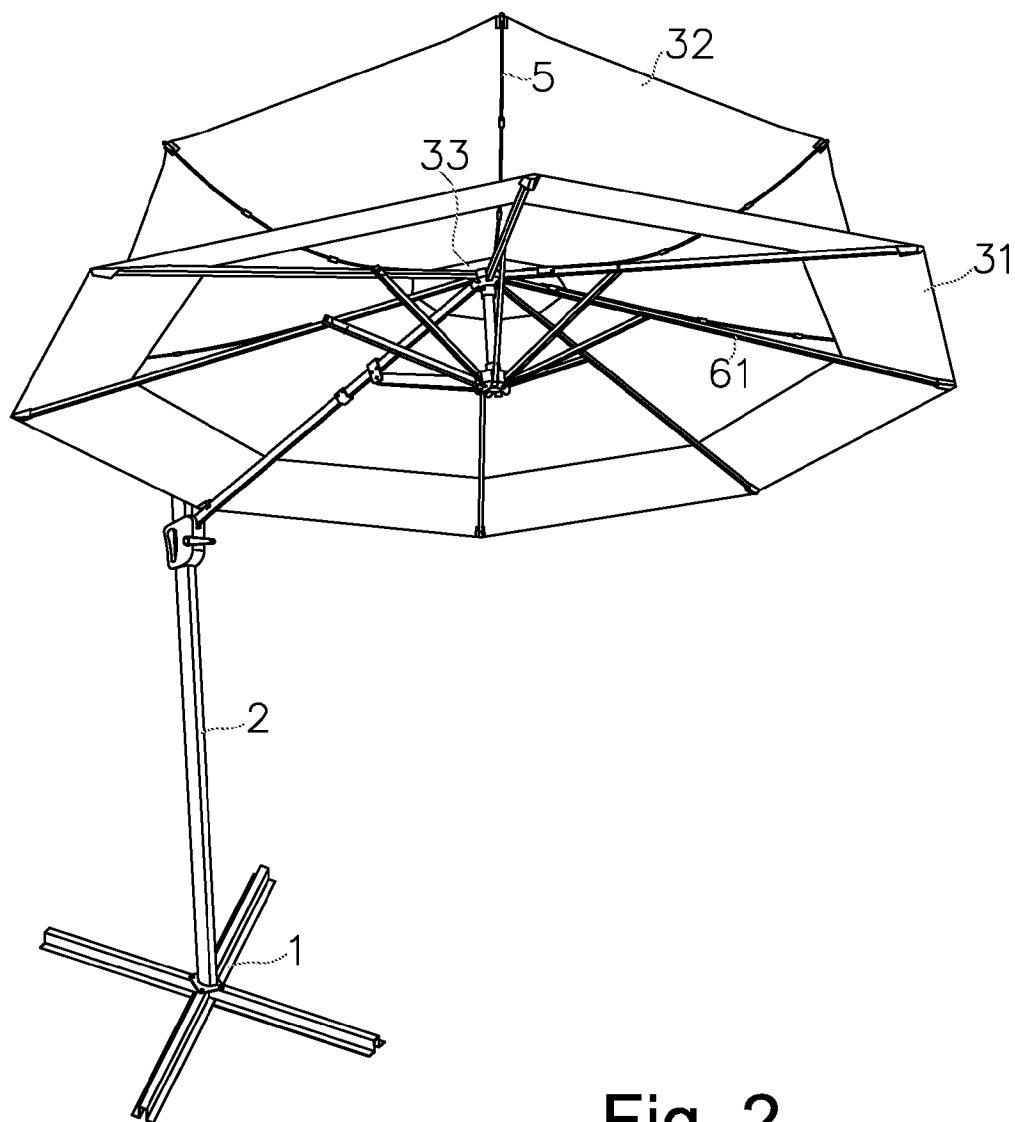


Fig. 2

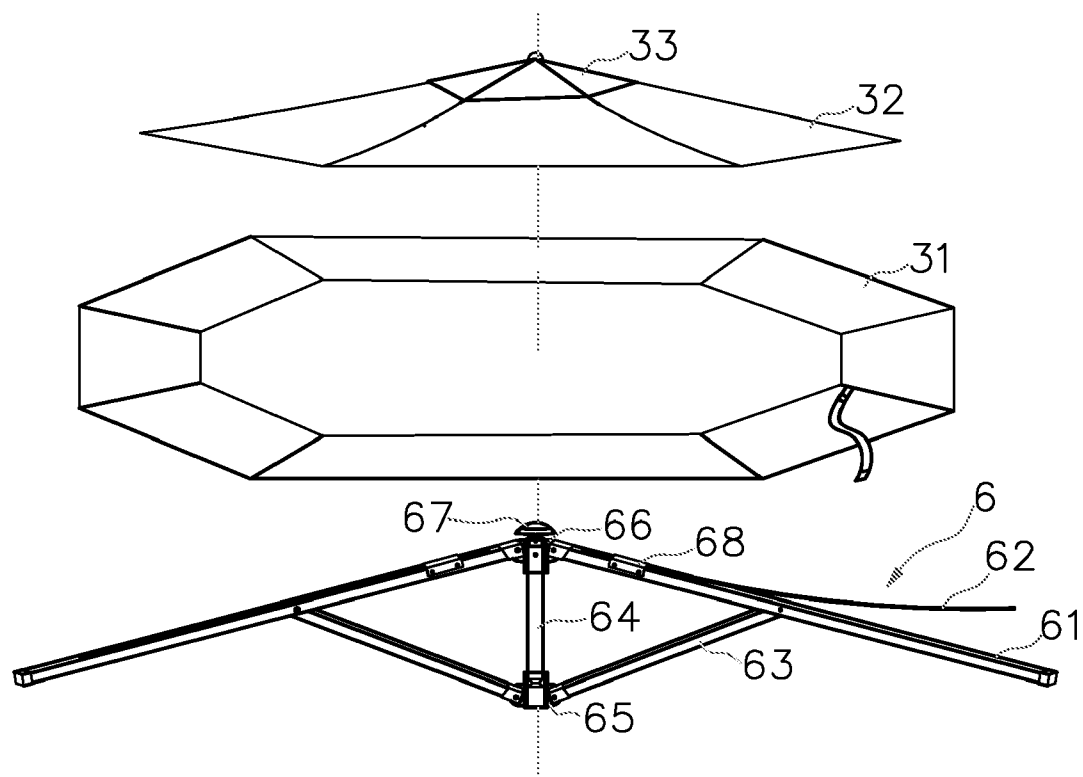


Fig. 3

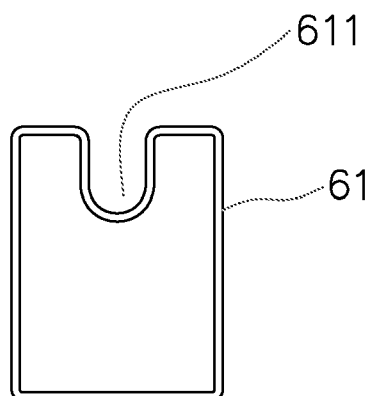


Fig. 4

WINDPROOF SUNSHADE

FIELD OF INVENTION

[0001] This utility model relates to a kind of windproof sunshade.

BACKGROUND OF INVENTION

[0002] As a tool for outdoor recreation, sunshade is widely used in various recreational occasions such as squares, beaches, parks and gardens, etc, providing the people with comfortable space for enjoying the cool.

[0003] Existing sunshades are usually subject to the following problems: first of all, the umbrella fabric is mounted directly on the umbrella frame, only leaving an air outlet on the umbrella fabric, thus in case of strong wind, the insufficient opening of the air outlet will make the umbrella fabric against the wind, resulting in circumstances like swinging or bending of the umbrella fabric, more seriously, in case of stronger wind, the sunshade may be broken or fall and cause personal injury; secondly, to make thicker umbrella ribs, the cost will be increased, which will add to the consumption load of the user. Therefore, those sunshades can only be folded in strong wind, however, this will greatly influence the mood of recreation.

[0004] In order to improve the wind resistance of sunshade, technicians have made various efforts, there have been many wind-resistant sunshades adopting existing techniques, such as Chinese Utility Model Wind-resistant Sunshade under Patent No.: ZL01223970.4 (Publication number: CN2483977Y), whose stem integrates the umbrella frame and 2-layer fabric, the lower fabric being provided with multiple air outlets; this patent is featured by that said air outlets are provided at positions right below each umbrella rib, said upper fabric covers said outlets, the outer flanges of both fabrics are respectively integrated with the umbrella ribs, forming the elastic adhesion. Timely ventilation through the air outlets may reduce the damage of the sunshade due to the wind; another example is Chinese Utility Model Wind-resistant Umbrella Frame under Patent No: ZL01203127.5 (Publication number: CN2461343Y), which adopts the frame with a center disc, which is provided with a runner, a rivet fixed at the end of the stem is movably mounted in the runner. In case of strong wind, since the stem is movably counted on the center disc with the engagement of the rivet and the runner, the stem may slide along the center disc against the wind so as to prevent the frame from being broken due to intensive stress and ensure the service life of the umbrella frame. There are also other examples such as ZL03272847.6, ZL200320100556.5 for your reference.

SUMMARY OF INVENTION

[0005] This utility model is intended to provide a kind of wind-resistant sunshade so as to solve the technical problems above; this sunshade may reduce the damage due to the wind by deflecting the wind with the soft frame and windproof top and can restore the original state when the wind stops.

[0006] The technical solution of this utility model to solve the technical problems above is:

[0007] a windproof sunshade comprising:

[0008] an umbrella fabric, an umbrella frame and a stem for supporting said umbrella frame;

[0009] said umbrella fabric covering said umbrella frame;

[0010] said umbrella frame comprising a multiple of long umbrella ribs, a multiple of short umbrella ribs and a central stick, said long umbrella ribs and said short umbrella ribs can be propped to open or gathered together respect to the central stick;

[0011] each said long umbrella rib being provided with a soft rib attached thereon, the soft rib being bended to detach from a front end of said long umbrella rib in case of wind and restoring an original attaching state when the wind stops;

[0012] said umbrella fabric at least comprising a bottom edge joined with the long umbrella ribs and a windproof top joined with said soft ribs.

[0013] The best embodiment for the integration of the soft ribs and the long umbrella ribs is as follows: said long umbrella rib is provided with a groove on upper side thereof, while said soft rib is laid along said groove and a rear end of the soft rib is pressed on the groove by a block.

[0014] A small cap is mounted on the top of said windproof top, ventilation outlets are existed between the small cap and the windproof top.

[0015] Said soft ribs are made of steel wire or elastic fiberglass.

[0016] Compared with existing technologies, this utility model is advantageous in that: the soft ribs will bend upwards and be blown open along with the windproof top to deflect the wind in strong wind and the windproof top will rebound automatically under the stress of the soft ribs to restore the original state when the wind stops. Thus, the damage to the umbrella frame and other parts including the long umbrella ribs can be reduced and the wind resistance of the sunshade can be improved. The whole structure is simple and practical, ensuring easy assembly and low cost.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] FIG. 1 is a structural diagram and the embodiment.

[0018] FIG. 2 shows the state of the embodiment upon strong wind.

[0019] FIG. 3 is an exploded view of the umbrella frame and the umbrella fabric.

[0020] FIG. 4 is a zoom-in sectional view of the long umbrella rib.

DETAIL DESCRIPTION OF THE INVENTION

[0021] Detailed description of this utility model will be given below in combination with the drawings.

[0022] As shown in FIGS. 1, 2 and 3, the windproof sunshade according to this embodiment comprises an umbrella fabric 3, an umbrella frame 6 and a stem 2 supporting said umbrella frame 6, said umbrella frame 6 is covered by said umbrella fabric 3, said stem 2 is provided with a locking device 22, said umbrella frame 6 is connected with the top of said stem 2 through an adjustable boom 21 and then a slide sleeve 23, said locking device 22 is hinged to a link rod 24, one end of which is movably connected with the end of said boom 21, said stem 2 being provided with the base 1 on the bottom.

[0023] Said umbrella frame 6 comprises multiple long umbrella ribs 61 and multiple short umbrella ribs 63, a central stick 64, a short umbrella rib disc 65 and a long umbrella rib disc 66, said long umbrella ribs 61 and said short umbrella ribs 63 being can be folded or unfolded in relation to said central stick 64, an umbrella cap 67 is provided above said long umbrella rib disc 66. One end of each short umbrella rib

63 is flexibly connected to said short umbrella rib disc **65**, the other end of each short umbrella rib **63** is movably hinged at the middle of one long umbrella rib **61**, the upper end of said long umbrella rib **61** is movably hinged to said long umbrella rib disc **66**, which is fixed at the top of said central stick **64**, said short umbrella ribs disc **65** can be movably mounted on said central stick **64**.

[0024] Each long umbrella rib **61** is provided with a soft rib **62**, which is made of steel wire or elastic fiberglass.

[0025] Said umbrella fabric **3** comprises the bottom edge **31**, the windproof top **32** and the small top **33**, said bottom edge **31** is engaged with said long umbrella rib **61**, said windproof top **32** is engaged with said soft rib **62**. Said small top **33** is mounted on said windproof top **32** with air outlets between both tops.

[0026] Said soft rib **62** can be partly bended and detached from the front of said long umbrella ribs **61** in case of wind and automatically restore the original state when the wind stops. As shown in FIG. 4, a groove **611** is provided on the upper side of said long umbrella rib **61**, said soft rib **62** is provided inside said groove **611** and is pressed by a block **68** on the rear end.

[0027] In case of strong wind, the soft rib **62** bends upwards and extends along with the windproof top to deflect the wind and rebound automatically under the stress of the soft ribs to restore the original state when the wind stops. Thus, the damage to the umbrella frame and other parts including the long umbrella ribs can be reduced and the wind resistance of the sunshade can be improved.

[0028] The windproof frame in this embodiment may be made into vertical sunshades with single-layer top, double-layer top or multi-layer top or inclined foldable suspended

sunshades and elbow umbrellas with single-layer top, double-layer top or multi-layer top or sunshades of other types.

What is claimed is:

1. a windproof sunshade comprising:

an umbrella fabric, an umbrella frame and a stem for supporting said umbrella frame;

said umbrella fabric covering said umbrella frame;

said umbrella frame comprising a multiple of long umbrella ribs, a multiple of short umbrella ribs and a central stick, said long umbrella ribs and said short umbrella ribs can be propped to open or gathered together respect to the central stick;

each said long umbrella rib being provided with a soft rib attached thereon, the soft rib being bended to detach from a front end of said long umbrella rib in case of wind and restoring an original attaching state when the wind stops;

said umbrella fabric at least comprising a bottom edge joined with the long umbrella ribs and a windproof top joined with said soft ribs.

2. The windproof sunshade according to claim **1**, wherein said long umbrella rib is provided with a groove on upper side thereof, while said soft rib is laid along said groove and a rear end of the soft rib is pressed on the groove by a block.

3. The windproof sunshade according to claim **1**, wherein a small cap is mounted on the top of said windproof top, ventilation outlets are existed between the small cap and the windproof top.

4. The windproof sunshade according to any of claims **1**, wherein said soft ribs are made of steel wire or elastic fiberglass.

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