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(54) FOLDABLE TENT

(57) Disclosed is a foldable canopy, including a canopy frame body (2) and cornice rods (3), wherein the canopy frame body (2) includes a plurality of leg rods (1) and eave frames (21), each eave frame being connected between two adjacent leg rods (1). The cornice rod (3) has an unfolded state after the foldable canopy is unfolded, and when the cornice rod (3) is in the unfolded state, an inner end portion of the cornice rod (3) is connected to the canopy frame body (2), an outer end portion of the cornice rod (3) is a distance away from the corresponding leg rod (1), and the cornice rod (3) is transverse to the leg rod (1). The foldable canopy further includes cross rods (4). Two ends of each cross rod (4) are configured to be connected with the corresponding eave frame (21) and cornice rod (3) respectively, such that the strength of the cornice rod (3) is enhanced when the cornice rod (3) of the foldable canopy is in the unfolded state. **In** the foldable canopy, the cornice rods (3) can be flexibly unfolded or folded as desired, and meanwhile, the cornice rods (3) have good strength after unfolded.

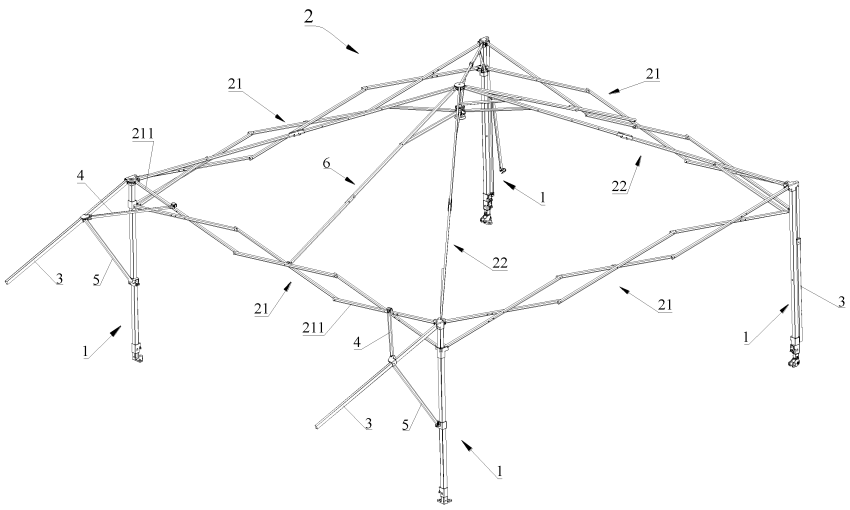

FIG. 3

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Description

FIELD OF TECHNOLOGY

[0001] The present disclosure pertains to the field of outdoor articles, and relates to a foldable canopy, and in particular, to a foldable canopy with an overhanging rod.

BACKGROUND

[0002] A canopy is widely used in outdoor activities, such as outdoor camping, or the like, which has functions of windproof, rainproof, anti-mosquito and warmth keeping. An existing foldable canopy has a small sunshade area, and in order to increase the sunshade area of the unfolded canopy, an overhanging type canopy with an overhanging structure emerges, wherein extending overhanging rods are provided at top corners of the canopy, and the purpose of increasing the sunshade area is achieved by a surrounding cloth provided on the overhanging rods. In the canopy, the overhanging rods are mainly pivoted on or inserted in top rods which form a canopy top bracket, and after a canopy body is unfolded, the overhanging rods can be selectively extended out to increase the sunshade area. However, the existing canopy may have the problem that its strength is insufficient after the overhanging rod is extended out.

SUMMARY

[0003] An aspect of the present disclosure relates to an improved foldable canopy in which an overhanging rod can be flexibly unfolded or folded as desired, and meanwhile, the overhanging rod has good strength after unfolded.

[0004] An aspect of the present disclosure provides a foldable canopy, including:

a canopy frame body including a plurality of legs and a plurality of eave frames, each eave frame being connected between two adjacent legs;

an overhanging rod having an unfolded state after the foldable canopy is unfolded; when the overhanging rod is in the unfolded state, an inner end portion of the overhanging rod being connected to the canopy frame body, an outer end portion of the overhanging rod being offset away from the corresponding leg, and the overhanging rod being transverse to the leg; and

A cross rod having two ends being configured to be connected with one of the plurality of eave frames and the overhanging rod respectively, such that strength of the overhanging rod is enhanced when the overhanging rod of the foldable canopy is in the unfolded state.

[0005] In an embodiment, the foldable canopy further includes a surrounding cloth, and the overhanging rod further has a folded state after the foldable canopy is unfolded; when the overhanging rod is in the unfolded state, the overhanging rod is configured to support the surrounding cloth; when the overhanging rod is in the folded state, the surrounding cloth hangs down to a side of the canopy frame body. After the foldable canopy is unfolded, the overhanging rod can be flexibly unfolded or folded as desired, and the overhanging rod can be quickly and conveniently unfolded and folded; particularly, after the overhanging rod is unfolded, the cross rod is arranged and connected between the overhanging rod and the eave frame, such that the overhanging rod has good strength after unfolded.

[0006] In an embodiment, the cross rod has a first end portion rotatably connected to the overhanging rod and a second end portion for being detachably connected with one of the plurality of eave frames; the overhanging rod has a folded state and an unfolded state, and when the overhanging rod is in the folded state, the second end portion of the cross rod is disconnected from the eave frame, and the outer end portion of the overhanging rod is drawn close to one of the plurality of legs; when the overhanging rod is in the unfolded state, the second end portion of the cross rod is connected with the eave frame, and the outer end portion of the overhanging rod is offset from one of the plurality of legs; during folding the foldable canopy from an unfolded position to a folded position, the second end portion of the cross rod is disconnected from the eave frame, and the overhanging rod is converted from the unfolded state to the folded state. In the canopy, the overhanging rod can be flexibly unfolded or folded as desired, and meanwhile, damage to a canopy structure in the canopy folding process caused when the overhanging rod is forgotten to be folded is avoided. After the foldable canopy is unfolded, the overhanging rod can be flexibly unfolded or folded as desired, and the overhanging rod can be quickly and conveniently unfolded and folded; particularly, when the canopy is folded, if the overhanging rod is forgotten to be folded, the second end portion of the cross rod can be disconnected from the eave frame under the action of an external force along with folding of the eave frame, thus avoiding accident breaking of the overhanging rod or damage to the structure of the canopy frame body caused when the overhanging rod is forgotten to be folded.

[0007] In an embodiment, the inner end portion of the overhanging rod is rotatably connected to one of the plurality of legs, the canopy further includes a support rod having a first end portion and a second end portion, the first end portion is rotatably connected to one of the plurality of legs and capable of sliding in an up-down direction, and the second end portion is rotatably connected to the overhanging rod.

[0008] In an embodiment, the first end portion of the support rod is rotatably connected to a support base, and the support base is connected to one of the plurality of legs and capable of sliding in the up-down direction.

[0009] In an embodiment, an overhanging locking me-

chanism is arranged between the support base and the leg, and the overhanging locking mechanism locks the support base and the leg when the overhanging rod is in the unfolded state.

[0010] In an embodiment, a fixed base is arranged between the inner end portion and the outer end portion of the overhanging rod, the first end portion of the cross rod is rotatably connected to the fixed base by a first pivot, the second end portion of the support rod is rotatably connected to the fixed base by a second pivot, and an included angle formed between an axis of the first and/or second pivot and a horizontal plane is smaller than 10 degrees when the overhanging rod is in the folded state. When the overhanging rod is in the folded state, the axis of the first pivot and the axis of the second pivot are preferably parallel to the horizontal plane or only inclined by a small angle, such that the overhanging rod and the cross rod can automatically fall down under the action of gravity and hang on the sides of the leg, and the leg can be reinforced.

[0011] In an embodiment, a fixed base is arranged between the inner end portion and the outer end portion of the overhanging rod, the fixed base is rotatably connected with a rotating base, one of the first end portion of the cross rod and the second end portion of the support rod is rotatably connected to the fixed base, and the other of the first end portion of the cross rod and the second end portion of the support rod is rotatably connected to the rotating base.

[0012] In an embodiment, a fixed base is arranged between the inner end portion and the outer end portion of the overhanging rod, one of the first end portion of the cross rod and the second end portion of the support rod is pivotally connected to the fixed base, and the other of the first end portion of the cross rod and the second end portion of the support rod is rotatably connected to the fixed base by a universal rotating joint.

[0013] In an embodiment, when the overhanging rod is in the folded state, the support rod is drawn close to a front side or a rear side of the overhanging rod, and the support rod is completely shielded by the overhanging rod when viewed from the front side or the rear side.

[0014] In an embodiment, when the overhanging rod is in the folded state, the outer end portion of the overhanging rod and the first end portion of the support rod are drawn close to a lower end portion of one of the plurality of legs.

[0015] In an embodiment, at least one of the plurality of eave frames includes a connecting rod capable of rotating downwards when the canopy frame body is folded, and the second end portion of the cross rod is provided with a clamping groove portion capable of being clamped on the connecting rod.

[0016] In an embodiment, the clamping groove portion has a notch facing downwards.

[0017] In an embodiment, a clamping groove formed by the clamping groove portion extends upwards from a lower surface of the clamping groove portion. Further, in a cross section of the clamping groove portion perpendicular to a length direction of the connecting rod, a profile of the clamping groove is approximately in an inverted U shape.

[0018] In an embodiment, the connecting rod is provided with a positioning protrusion, and the clamping groove portion is provided with a positioning groove fitted with the positioning protrusion. Still further, the positioning groove has two opposite limiting walls, the limiting walls as a whole are not parallel to the length direction of the connecting rod, and the positioning protrusion is located between the two limiting walls to prevent the clamping groove portion from moving back and forth on the connecting rod.

[0019] In an embodiment, the outer end portion of the overhanging rod is connected with the surrounding cloth to drive the surrounding cloth to be unfolded to block the sun or hang down to a side of a canopy body.

[0020] In an embodiment, the overhanging rod is detachably inserted into one of the plurality of legs, and when the overhanging rod is in the unfolded state, the inner end portion of the overhanging rod is inserted into one of the plurality legs; when the overhanging rod is in the folded state, the inner end portion of the overhanging rod is disconnected from the leg.

[0021] In an embodiment, each overhanging rod extends along a length direction of one eave frame when in the unfolded state.

[0022] In an embodiment, each leg corresponds to at least one overhanging rod, and each overhanging rod is connected with at least one cross rod.

[0023] In an embodiment, when the foldable canopy is folded, the overhanging rod applies a force to the cross rod, such that the cross rod is automatically disconnected from the eave frame.

[0024] In an embodiment, the canopy frame body further includes a plurality of foldable top rod units, each top rod unit includes an inner top rod and an outer top rod, one end portion of the inner top rod and one end portion of the outer top rod are rotatably connected, the other end portion of the outer top rod is rotatably connected to an upper end portion of the leg, and the other end portion of the inner top rod of each top rod unit is rotatably connected to a central locking mechanism; the canopy frame body further includes at least one reinforcing mechanism connected between the eave frame and the top rod unit or between the eave frame and the central locking mechanism. The reinforcing mechanism can counteract or reduce a pushing force applied by the cross rod to the eave frame, so as to avoid the problem that the eave frame is recessed inwards and deformed by pretension of a cloth cover.

[0025] In an embodiment, the reinforcing mechanism includes a reinforcing rod, and the reinforcing rod has one end portion rotatably connected to the inner top rod and the other end portion rotatably connected to the eave frame.

[0026] In an embodiment, the reinforcing mechanism

includes an outer reinforcing rod and an inner reinforcing rod, one end portion of the outer reinforcing rod is rotatably connected with one end portion of the inner reinforcing rod, the other end portion of the outer reinforcing rod is rotatably connected to the eave frame, and the other end portion of the outer reinforcing rod is rotatably connected to the central locking mechanism.

[0027] In an embodiment, the eave frame includes at least one connecting rod assembly rotatably connected between the legs, the connecting rod assembly includes a first connecting rod and a second connecting rod which can be relatively unfolded and closed, middles of the first connecting rod and the second connecting rod are rotatably connected by a third pivot, the other end portion of the outer reinforcing rod is rotatably connected to a connecting piece, and the connecting piece is connected to the third pivot.

[0028] In an embodiment, the central locking mechanism includes a top cap and a bottom cap which can be locked to or disconnected from each other, the other end portion of the inner top rod is rotatably connected to the top cap, each top rod unit further includes an auxiliary top rod, one end portion of the auxiliary top rod is rotatably connected to the inner top rod, the other end portion is rotatably connected to the bottom cap, the reinforcing mechanism further includes an auxiliary reinforcing rod, one end portion of the auxiliary reinforcing rod is rotatably connected to the inner reinforcing rod, and the other end portion is rotatably connected to the bottom cap.

[0029] With the above solution, the present disclosure has the following advantages.

[0030] In the foldable canopy according to the present disclosure, after the overhanging rod is unfolded, the cross rod is provided and connected between the overhanging rod and the eave frame, such that the overhanging rod has good strength after unfolded.

BRIEF DESCRIPTION OF THE DRAWINGS

[0031] To describe the technical solution of the present application more clearly, the following briefly describes the accompanying drawings required for describing the embodiments. Apparently, the accompanying drawings in the following description show merely some embodiments of the present disclosure, and a person of ordinary skill in the art may still derive other drawings from these accompanying drawings without creative efforts.

FIG. 1 is a schematic structural diagram of a canopy according to the present disclosure, wherein all the overhanging rods are not extended.

FIG. 2a is a partial enlarged view of part A in FIG. 1.

FIG. 2b is a partial enlarged view of part B in FIG. 1.

FIG. 3 is a schematic structural diagram of the canopy shown in FIG. 1, wherein two overhanging rods on the left side are extended.

FIG. 4 is a schematic structural diagram of the canopy shown in FIG. 1, wherein all the overhanging rods are extended.

FIG. 5 is a front view of the canopy shown in FIG. 4.

FIG. 6 is a schematic structural diagram of the folded canopy of FIG. 1.

FIG. 7 is a schematic partial diagram of the canopy shown in FIG. 1, wherein the overhanging rods are not extended.

FIG. 8 is a schematic diagram of the portion shown in FIG. 7, wherein the overhanging rods are extended.

FIG. 9 is another schematic partial exploded diagram of the canopy shown in FIG. 1.

FIG. 10a is still another schematic partial structural diagram of the canopy shown in FIG. 1.

FIG. 10b is a schematic diagram of the portion shown in FIG. 10, wherein the cross rod is not shown.

FIG. 11 is a schematic diagram showing a connecting process of a second end portion of the cross rod and a connecting rod.

FIG. 12 is a schematic structural diagram of the second end portion of the cross rod.

FIG. 13 is a schematic structural diagram of another canopy according to the present disclosure, wherein the overhanging rods are not extended.

FIG. 14 is a schematic structural diagram of the canopy shown in FIG. 13, wherein two overhanging rods on the left side are extended.

FIG. 15 is a schematic structural diagram of the canopy shown in FIG. 13, wherein all the overhanging rods are extended.

FIG. 16 is a front view of the canopy shown in FIG. 15.

FIG. 17 is a schematic partial structural diagram of still another canopy according to the present disclosure.

FIG. 18 is a schematic diagram of the overhanging rod in an unfolded state of the still another canopy.

FIG. 19 is a schematic diagram of the overhanging rod separated from a leg of the still another canopy.

FIG. 20 is a schematic partial structural diagram of a fourth canopy according to the present disclosure.

FIG. 21 is a schematic diagram of the overhanging rod of the fourth canopy which is separated from the leg.

FIG. 22 is a schematic partial exploded diagram of a fifth canopy according to the present disclosure.

FIG. 23 is a schematic partial diagram of the fifth canopy, wherein the overhanging rod is in the unfolded state.

FIG. 24 is a schematic partial diagram of the fifth canopy, wherein the overhanging rod is in the folded state.

FIG. 25 is a schematic partial exploded diagram of a sixth canopy according to the present disclosure.

FIG. 26 is a schematic partial diagram of the sixth canopy, wherein the overhanging rod is in the unfolded state.

FIG. 27 is a schematic partial diagram of the sixth canopy, wherein the overhanging rod is in the folded state.

[0032] Reference numerals:

1-leg; 10-leg body; 101-sliding sleeve; 101a-slot; 102-locking hole; 11-fixed joint; 11a-slot; 12-foot pad; 13-roller;
2-canopy frame body; 21-eave frame; 210-connecting rod assembly; 211-connecting rod; 211a-positioning protrusion; 212-third pivot; 22-top rod unit; 221-outer top rod; 222-inner top rod; 223-auxiliary top rod; 224-inclined rod; 23-central locking mechanism; 231-top cap; 232-bottom cap;
3-overhanging rod; 30-fixed base; 301-first pivot; 302-second pivot; 31-rotating base; 32-universal rotating joint;
4-cross rod; 41-clamping groove portion; 410-notch; 411-positioning groove;
5-support rod; 51-support base; 52-unlock button;
6-reinforcing mechanism; 610-reinforcing rod; 611-connector; 621-outer reinforcing rod; 621a-fourth pivot; 622-inner reinforcing rod; 623-auxiliary reinforcing rod; 624-connecting piece;
7-surrounding cloth.

DETAILED DESCRIPTION

[0033] Preferred embodiments of the present disclosure are described in detail below with reference to the accompanying drawings, such that the advantages and features of the present disclosure can be more readily understood by those skilled in the art. It should be noted here that the description of these embodiments is intended to assist in understanding of the present disclosure, but does not constitute a limitation of the present disclosure. Furthermore, the technical features involved in the embodiments of the present disclosure described below may be combined with each other as long as they do not conflict with each other.

[0034] FIGS. 1 to 12 show an example of a foldable canopy. Referring to FIGS. 1 to 12, the foldable canopy has an unfolded position and a folded position, and includes a foldable canopy frame body 2; the canopy frame body 2 can be independently supported on the ground, and the canopy frame body 2 is covered with a cloth cover (not shown) for blocking the sun, sheltering from wind and rain, or the like; a part (for example, an edge part) of the cloth cover, which is called surrounding cloth, can hang down to a side of the canopy frame body 2. As shown in FIGS. 1 and 3 to 5, the canopy frame body 2 includes a plurality of legs 1 extending in an up-down direction and a top frame connected to upper portions of the legs 1, and is supported on the ground by the legs 1, and the cloth cover mainly covers on the top frame. The canopy further includes an overhanging rod 3 having an inner end portion and an outer end portion, and the inner end portion of the overhanging rod 3 is rotatably connected to the leg 1, particularly by a pivot. A plurality of overhanging rods 3 are provided, and a number and positions of the overhanging rods are in one-to-one correspondence with a number and positions of the legs 1; that is, the inner end portion of each overhanging rod 3 is rotatably connected to one corresponding leg 1, and the surrounding cloth is connected to the outer end portions of the overhanging rods 3, can be spread out by the overhanging rods 3 to increase a sunshade area as an eave, and can also hang down to the side of the canopy along with folding of the overhanging rods 3 to be used as side surrounding cloth. Each overhanging rod 3 has a folded state and an unfolded state, and the outer end portion of the overhanging rod 3 is drawn close to the leg 1 in the folded state and is offset from the leg 1 in the unfolded state. That is, the overhanging rod 3 has a folded state in which the overhanging rod is drawn close to the leg 1 and an unfolded state in which the overhanging rod is unfolded relative to the leg 1. After the overhanging rod 3 is unfolded, the surrounding cloth is extended outwards, such that the sunshade area of the canopy can be increased. Further, the overhanging rod 3 on the left side extends leftwards in the unfolded state; that is, the outer end portion of the overhanging rod 3 is located on the left side of the leg 1. The overhanging rod 3 on the right side extends rightwards in the unfolded state; that is, the outer end portion of the overhanging rod 3 is located on the right side of the leg 1. Therefore, the surrounding clothes on the left side and the right side can be unfolded, eave areas on the left side and the right side of the canopy are increased, and the sunshade areas on the left side and the right side are increased. When the overhanging rod 3 is in the folded state, the surrounding cloth hangs down and is located on the side of the canopy.

[0035] The top frame includes a plurality of foldable eave frames 21, and the eave frames 21 are connected between adjacent legs 1. The canopy further includes a plurality of cross rods 4, and a number and positions of the plural cross rods 4 are in one-to-one correspondence with the number and the positions of the plural overhanging rods 3. As shown in FIGS. 7 to 12, each cross rod 4 has a first end portion rotatably connected to the overhanging rod 3 and a second end portion for being detachably connected with one of the eave frames 21. The second end portion of the cross rod 4 is disconnected from the eave frame 21 when the overhanging rod 3 is in the folded state, and the second end portion of the cross rod 4 is connected with the eave frame 21 when the overhanging rod 3 is in the unfolded state. During folding the canopy frame body 2 from an unfolded position to a folded position, the second end portion of the cross rod 4 is disconnected from the eave frame 21, and the overhanging rod 3 is converted from the unfolded state to the folded state. The second end portion of the cross rod 4 is detachably connected with a rod piece of the eave frame 21 and configured to be automatically disconnected from the eave frame 21 by a force from the overhanging rod 3 when the eave frame 21 is folded, an implementation of which is described in detail below.

[0036] It should also be noted that in the present em-

bodiment, the overhanging rod 3 is directly and rotatably connected to the leg 1 by the pivot; in some other embodiments, the overhanging rod 3 can be indirectly and rotatably connected to the leg 1 by other components, such as a sliding sleeve, a connecting cap, or the like, on the leg 1.

[0037] The eave frame 21 includes a connecting rod 211 which can be rotated downwards when the canopy frame body 2 is folded; the second end portion of the cross rod 4 is provided with a clamping groove portion 41 capable of being clamped on the connecting rod 211, and the clamping groove portion 41 has a downwards facing notch 410, as shown in FIG. 12. A clamping groove formed by the clamping groove portion 41 preferably extends upwards from a lower surface of the clamping groove portion 41, and a profile of the clamping groove is approximately in an inverted U shape in a cross section of the clamping groove portion 41 perpendicular to a length direction of the connecting rod 211. When the canopy frame body 2 is folded, the connecting rod 211 may be rotated downwards to be disconnected from the clamping groove of the clamping groove portion 41, and the cross rod 4 and the eave frame 21 are disconnected, thus avoiding that since the overhanging rod 3 is forgotten to be folded, the canopy frame body 2 cannot be folded, or the overhanging rod 3 and the rod piece of the canopy frame body 2 are damaged. In the present embodiment, the overhanging rods 3 are not unfolded in a diagonal direction of the canopy; as shown in FIGS. 3 and 4, each of the overhanging rods 3 extends in a length direction of a first eave frame 21 (for example, the eave frame located on the front side); that is, the overhanging rod 3 extends in substantially the same direction as the first eave frame 21 in a top view. The cross rod 4 connected with the overhanging rod 3 is detachably connected with a second eave frame 21, and the second eave frame 21 intersects with the above-mentioned first eave frame 21, for example, the eave frame located on the left side.

[0038] As shown in FIGS. 10b to 12, a positioning protrusion 211a is formed on the connecting rod 211 fitted with the cross rod 4, and a positioning groove 411 fitted with the positioning protrusion 211a is provided in the clamping groove portion 41 to restrict sliding of the clamping groove portion 41 in the length direction of the connecting rod 211. The positioning groove 411 is communicated with the clamping groove formed by the clamping groove portion 41 and extends upwards from the lower surface of the clamping groove portion 41, and the positioning protrusion 211a enters the positioning groove 411 when the clamping groove portion 41 is clamped on the connecting rod 211; the positioning groove 411 has two opposite limiting walls, the limiting walls as a whole are not parallel to the length direction of the connecting rod 211, and the positioning protrusion 211a is located between the two limiting walls to prevent the clamping groove portion 41 from moving back and forth on the connecting rod 211. The positioning protrusion 211a specifically includes a pin, a pop-rivet, or a rivet fixed on the connecting rod 211; still further, the positioning protrusion 211a is located at a pivot position of the connecting rod 211 and another rod piece (preferably, another rod piece of the eave frame), and may be a part of or provided on the pivot for pivoting the connecting rod 211 and the other rod piece. In the present embodiment, each cross rod 4 is a single rod; while in some other embodiments, the cross rod 4 may be formed by a plurality of rod pieces.

[0039] The canopy further includes a plurality of support rods 5 with first end portions and second end portions, and a number and positions of the plurality of support rods 5 are in one-to-one correspondence with the number and the positions of the plurality of overhanging rods 3. As shown in FIGS. 2b and 7 to 12, the first end portion of each support rod 5 is rotatably connected to the leg 1 in a mode of being slidable in the up-down direction, and the second end portion is rotatably connected to the overhanging rod 3. Specifically, the first end portion of the support rod 5 is rotatably connected to a support base 51, and the support base 51 is connected to the leg 1 in a mode of being slidable in the up-down direction. The support base 51 is preferably a sliding sleeve which is fitted over the leg 1 in a mode of being slidable in the up-down direction, and the support rod 5 has a lower end portion pivotally connected to the sliding sleeve and an upper end portion pivotally connected to the overhanging rod 3. An overhanging locking mechanism is provided between the support base 51 and the leg 1, and the overhanging locking mechanism locks the support base 51 and the leg 1 when the overhanging rod 3 is in the unfolded state. The overhanging locking mechanism can be of a known structure; for example, the support base 51 is provided with a movable locking piece (not shown), the leg 1 is provided with a locking hole 102 fitted with the locking piece, and the locking piece is detachably inserted into the locking hole 102. In the unfolded state, the locking piece on the support base 51 is inserted into the locking hole 102 to lock the overhanging rod 3 in the unfolded state, such that the overhanging rod is stably unfolded; when the state is required to be converted to the folded state, an unlock button 52 on the support base 51 is pressed to detach the locking piece from the locking hole 102, the support base 51 slides down to a lower portion of the leg 1 to drive the overhanging rod 3 to be folded until the outer end portion of the overhanging rod and the leg 1 are drawn close, and meanwhile, the first end portion (lower end portion) of the support rod 5 and the lower end portion of the leg 1 are also drawn close.

[0040] Further, a fixed base 30 is provided between the inner end portion and the outer end portion of the overhanging rod 3, and the fixed base 30 is approximately located in the middle of the overhanging rod 3. The first end portion of the cross rod 4 is rotatably connected to the fixed base 30 by a first pivot 301, and the second end portion (upper end portion) of the support rod 5 is rotatably connected to the fixed base 30 by a second pivot

302. An included angle formed between an axis of the first pivot 301 and/or the second pivot 302 and a horizontal plane is smaller than 10 degrees when the overhanging rod 3 is in the folded state. Specifically, when the overhanging rod 3 is in the folded state, the axes of the first pivot 301 and the second pivot 302 are preferably parallel to the horizontal plane or only inclined by a small angle, and the axis of the pivot connecting the overhanging rod 3 and the leg 1 is also preferably parallel to the horizontal plane or only inclined by a small angle, such that the overhanging rod 3 and the cross rod 4 can automatically fall down under the action of gravity and hang down to the side of the leg 1. Further, when the overhanging rod 3 is in the folded state, the support rod 5 is drawn close to a front side or a rear side of the overhanging rod 3; moreover, the support rod 5 is completely shielded by the overhanging rod 3 when viewed from the front side or the rear side.

[0041] As shown in FIGS. 2b and 7 to 9, the leg 1 includes a leg body 10 extending in the up-down direction, a fixed joint 11 fixed to an upper end portion of the leg body 10, and a foot pad 12 fixed to a lower end portion of the leg body 10; the inner end portion of the overhanging rod 3 is pivotally connected to the fixed joint 11, the support base 51 is slidably fitted over the leg body 10, and the locking hole 102 is formed in the leg body 10. The foot pad 12 provides a large contact area with the ground, and rollers 13 are provided on the foot pads 12 of some legs 1 (for example, the two legs 1 on the right side) to facilitate transportation of the canopy. Hereinafter, the "upper end portion of the leg 1" and the "lower end portion of the leg 1" refer to the fixed joint 11 and the foot pad 12 respectively, unless otherwise specified. Further, some or all of the foot pads 12 are provided with insertion holes; after the canopy is folded, the canopy can be covered with a protective bag with an opened lower end, and the lower end of the protective bag is connected to the insertion hole by a connecting assembly; for example, the protective bag is connected to the canopy by inserting a bolt on a connecting band into the insertion hole of the foot pad 12.

[0042] As shown in FIGS. 1 and 3 to 5, the top frame in the present embodiment includes a plurality of foldable eave frames 21 and a plurality of foldable top rod units 22. The eave frames 21 are connected between adjacent legs 1; the number of the legs 1 is four, and each of the front, rear, left and right sides of the canopy is provided with one eave frame 21. Each eave frame 21 includes at least one connecting rod assembly 210 rotatably connected between adjacent legs 1, each connecting rod assembly 210 includes two connecting rods 211 capable of being relatively unfolded and closed, and middles of the two connecting rods 211 are rotatably connected by a third pivot 212 to form a cross-shaped and scissor-like structure. The upper end portion (specifically, the fixed joint 11) of the leg 1 is pivotally connected with an end portion of one connecting rod 211 in the connecting rod assembly 210 connected therewith; the leg 1 (specifically, the leg body 10) is further provided with a sliding sleeve 101, the sliding sleeve 101 is fitted over the leg 1 in a mode of being slidable in the up-down direction, and the sliding sleeve 101 is pivotally connected with an end portion of the other connecting rod 211 in the connecting rod assembly 210. During folding, the sliding sleeve 101 is slid downwards, and the two connecting rods 211 of the connecting rod assembly 210 get close to each other in a lateral direction, such that the legs 1 are close to each other, thereby reducing sizes of the canopy in front-rear and left-right directions, as shown in FIG. 6. Specifically, in the present embodiment, each eave frame 21 is formed by three connecting rod assemblies 210 which are rotatably connected in sequence. The above-mentioned clamping groove portion 41 is preferably detachably connected with the upper end portion of the connecting rod 211 connected with the upper end portion of the leg 1, and the above-mentioned positioning protrusion 211a is also formed on the upper end portion of the connecting rod 211.

[0043] Each top rod unit 22 includes an inner top rod 222 and an outer top rod 221, one end portion of the inner top rod is rotatably connected with one end portion of the outer top rod, the other end portion of the outer top rod 221 is rotatably connected to the upper end portion of the leg 1, and the other end portion of the inner top rod 222 of each top rod unit 22 is rotatably connected to a central locking mechanism 23. The central locking mechanism 23 includes a top cap 231 and a bottom cap 232 which can be locked to or disconnected from each other, and the other end portion of the inner top rod 222 is rotatably connected to the top cap 231; each top rod unit 22 further includes an auxiliary top rod 223, one end portion of the auxiliary top rod 223 is rotatably connected to the inner top rod 222, and the other end portion is rotatably connected to the bottom cap 232. Each top rod unit 22 further includes an inclined rod 224, an upper end portion of the inclined rod 224 is rotatably connected to the outer top rod 221, and a lower end portion is rotatably connected to the sliding sleeve 101 on the leg 1. After the top cap 231 and the bottom cap 232 are locked, the canopy frame body 2 is locked in the unfolded position by the central locking mechanism 23; when the top cap 231 and the bottom cap 232 are unlocked, the inclined rod 224 moves downwards along with the sliding sleeve 101, and pulls the top rod unit 22 to be folded; that is, the outer top rod 221 and the inner top rod 222 rotate downwards, such that the inner end portion of the outer top rod 221 and the outer end portion of the inner top rod 222 are drawn close to the lower end portion of the leg 1, the top cap 231 and the upper end portion of the leg 1 are drawn close to each other, and the lower end portion of the auxiliary top rod 223, the bottom cap 232 and the outer end portion of the inner top rod 222 are drawn close to each other.

[0044] The canopy frame body 2 further includes a reinforcing mechanism 6 connected between one of the eave frames 21 and the central locking mechanism 23. Specifically, the reinforcing mechanism 6 includes an outer reinforcing rod 621 and an inner reinforcing rod 622,

one end portion of the outer reinforcing rod is rotatably connected with one end portion of the inner reinforcing rod, the other end portion of the outer reinforcing rod 621 is rotatably connected to the eave frame, and the other end portion of the inner reinforcing rod 622 is rotatably connected to the central locking mechanism 23, specifically, the top cap 231. The reinforcing mechanism 6 further includes an auxiliary reinforcing rod 623, one end portion of the auxiliary reinforcing rod 623 is rotatably connected to the inner reinforcing rod 622, and the other end portion is rotatably connected to the bottom cap 232. In the present embodiment, the other end portion of the outer reinforcing rod 621 is rotatably connected to a cross connection position of the middle connecting rod assembly 210. Specifically, the other end portion of the outer reinforcing rod 621 is rotatably connected to a connecting piece 624 by a fourth pivot 621a, the connecting piece 624 is fixedly connected to the third pivot 212, and an axis of the fourth pivot 621a and an axis of the third pivot 212 form an included angle greater than zero and less than 180 degrees, and preferably are perpendicular to each other. The canopy according to the present embodiment has two reinforcing mechanisms 6 provided on left and right sides of the top frame respectively.

[0045] A using method of the canopy includes: unfolding the canopy frame body 2, locking the top cap 231 and the bottom cap 232 to each other after unfolding to stably unfold the canopy, as shown in FIG. 1, and unfolding the overhanging rods 3 on one side as required, as shown in FIG. 3; or unfolding the overhanging rods 3 on both sides, as shown in FIGS. 4 and 5. A specific process of unfolding the overhanging rod 3 is as follows: the overhanging rod 3 is lifted, the support base 51 moves upwards therewith, the second end portion of the cross rod 4 is clamped to the positioning protrusion 211a on the connecting rod 211, and the overhanging locking mechanism is locked to enable the overhanging rod 3 to be stably in the unfolded state. A specific process of folding the overhanging rod 3 is as follows: the overhanging locking mechanism is unlocked, the second end portion of the cross rod 4 is disconnected from the connecting rod 211, the support base 51 slides downwards under the action of the gravity, and the overhanging rod 3 and the cross rod 4 automatically drop to the side of the leg body 10. When the canopy is required to be folded, the overhanging rod 3 can be folded in advance; if the overhanging rod is forgotten to be folded, in the process of folding the canopy frame body 2, the cross rod 4 can be automatically disconnected from the connecting rod 211 and released under the pressing action of an external force, and the process is specifically as follows: the top cap 231 and the bottom cap 232 are unlocked, the sliding sleeve 101 on the leg body 10 moves downwards, the connecting rods 211 of the eave frame 21 rotate to approach each other, and especially, the connecting rod 211 connected with the cross rod 4 rotates downwards to be disconnected from the notch 410 on the clamping groove portion 41, and the canopy frame body 2 is normally folded.

[0046] After the canopy is unfolded, the overhanging rod 3 can be flexibly unfolded or folded as desired, and the overhanging rod can be quickly and conveniently unfolded and folded; the cross rod 4 can reinforce the overhanging rod 3 after the overhanging rod 3 is unfolded, and good strength is realized; particularly, when the canopy is folded, if the overhanging rod 3 is forgotten to be folded, the second end portion of the cross rod 4 can be automatically disconnected from the connecting rod 211 of the eave frame 21 under the action of the external force along with the folding of the eave frame 21, thus avoiding accident breaking of the overhanging rod 3 or damage to the structure of the canopy frame body 2 caused when the overhanging rod 3 is forgotten to be folded. Furthermore, the foldable reinforcing mechanism 6 is provided between the eave frame 21 and the central locking mechanism 23, such that when the canopy frame body 2 is unfolded and folded, a pushing force applied by the cross rod 4 to the eave frame 21 can be counteracted or reduced, thus avoiding the problem that the eave frame 21 is recessed and deformed due to the pushing force of the cross rod 4. The canopy frame body 2 is locked by the central locking mechanism 23 and can be quickly unfolded and folded.

[0047] FIGS. 14 to 16 show another example of the foldable canopy which differs from the above foldable canopy only in the reinforcing mechanism 6. Referring to FIGS. 14 to 16, the reinforcing mechanism 6 in the present embodiment is connected between the eave frames 21 and the top rod units 22. The reinforcing mechanism 6 includes a reinforcing rod 610, one end portion of the reinforcing rod 610 is rotatably connected to the inner top rod 222, and the other end portion is rotatably connected to the eave frame 21 (specifically, an upper rotary connection position of two adjacent connecting rod assemblies 210). Specifically, one end portion of the reinforcing rod 610 is pivotally connected to the inner top rod 222, and a distance between the connection position of the two and the inner end portion of the inner top rod 222 is less than one third of a length of the inner top rod 222; the other end portion of the reinforcing rod 610 is pivotally connected to a connector 611, and the connecting rods 211 of the two adjacent connecting rod assemblies 210 are rotatably connected by the connector 611. The canopy according to the present embodiment has eight reinforcing rods 610, each eave frame 21 is rotatably connected to the inner top rods 222 of two adjacent top rod units 22 by two reinforcing rods 610, and four groups of eave frames 21 and top rod units 22 are connected to form a reinforcing structure, so as to solve the problem that the eave frames 21 are recessed and deformed due to the pushing forces of the cross rods 4. The reinforcing rods 610 can rotate along with the unfolding and folding of the canopy frame body 2 without affecting the unfolding and folding of the canopy frame body 2.

[0048] FIG. 14 shows a canopy with surrounding clothes 70. The two overhanging rods 3 on the left side are unfolded, such that the surrounding cloth 70 on the

left side is unfolded to increase a shading area; and the two overhanging rods 3 on the right side are not unfolded, and the surrounding cloth 70 on the right side hangs on the right side of the canopy, and is specifically located on the right sides of the two legs 1 on the right side. Further, a connection position of the cross rod 4 and the eave frame 21 is lower than the surrounding cloth 70.

[0049] FIGS. 17 to 19 show still another example of the foldable canopy which differs from the foldable canopy shown in FIGS. 1 to 12 only in that a connection mode of the overhanging rod 3 and the canopy frame body is different. As shown in FIGS. 17 to 19, the overhanging rod 3 is detachably inserted to the leg 1, instead of being rotatably connected with the leg 1. Specifically, the inner end portion of the overhanging rod 3 is detachably inserted to the leg 1 by the sliding sleeve 101 on the leg 1. The sliding sleeve 101 is provided with a slot 101a, and the slot 101a extends substantially obliquely. When the overhanging rod 3 is in the unfolded state, the inner end portion of the overhanging rod 3 is inserted into the slot 101a to be connected with the leg 1; when the overhanging rod 3 is in the folded state, the inner end portion of the overhanging rod 3 is pulled out of the slot 101a to be separated from the leg 1. The cross rod 4 can also be automatically disconnected from the connecting rod 211 of the eave frame 21 when the canopy frame body is folded.

[0050] FIGS. 20 and 21 show a fourth example of the foldable canopy which differs from the foldable canopy shown in FIGS. 1 to 12 only in that the connection mode of the overhanging rod 3 and the canopy frame body is different. As shown in FIGS. 20 and 21, the overhanging rod 3 is detachably inserted to the leg 1, instead of being rotatably connected with the leg 1. Specifically, the inner end portion of the overhanging rod 3 is detachably inserted to the fixed joint 11 of the leg 1. The fixed joint 11 is provided with a slot 11a, and the slot 11a extends substantially obliquely. When the overhanging rod 3 is in the unfolded state, the inner end portion of the overhanging rod 3 is inserted into the slot 11a to be connected with the leg 1; when the overhanging rod 3 is in the folded state, the inner end portion of the overhanging rod 3 is pulled out of the slot 11a to be separated from the leg 1. The cross rod 4 can also be automatically disconnected from the connecting rod 211 of the eave frame 21 when the canopy frame body is folded.

[0051] FIGS. 22 to 24 show a fifth example of the foldable canopy which differs from the foldable canopy shown in FIGS. 1 to 12 only in that a connection mode of the overhanging rod 3, the cross rod 4 and the support rod 5 is different. Specifically, as shown in FIGS. 22 to 24, the fixed base 30 on the overhanging rod 3 is rotatably connected with a rotating base 31, the first end portion of the cross rod 4 is rotatably connected with the rotating base 31 by a pivot al, and the second end portion of the support rod 5 is rotatably connected with the fixed base 30 by a pivot a2. Further, the rotating base 31, the fixed base 30 and the second end portion of the support rod 5 are rotatably connected by the pivot a2.

[0052] FIGS. 25 to 27 show a sixth example of the foldable canopy which differs from the foldable canopy shown in FIGS. 1 to 12 only in that the connection mode of the overhanging rod 3, the cross rod 4 and the support rod 5 is different. Specifically, as shown in FIGS. 25 to 27, the first end portion of the cross rod 4 is rotatably connected to the fixed base 30 on the overhanging rod 3 by a universal rotating joint 32, and the second end portion of the support rod 5 is rotatably connected to the fixed base 30 by a pivot a3.

[0053] In any of the three connection modes described above, the lower end portion of the overhanging rod 3, the second end portion of the cross rod 4, the first end portion of the support rod 5 and the leg 1 are drawn close to each other when the overhanging rod 3 is in the folded state.

[0054] As used in the specification and the appended claims, the terms "includes" and "comprises" only suggest the inclusion of the explicitly recited steps and elements, these steps and elements do not constitute an exclusive list, and the method or device may include other steps or elements. The term "and/or" used herein includes any combination of one or more related listed items.

[0055] It should be noted that, unless otherwise specified, when a feature is referred to as being "fixed" or "connected" to another feature, it can be directly or indirectly fixed or connected to the other feature. Furthermore, the descriptions "upper", "lower", "left", "right", or the like, used in the present disclosure are only given with respect to the positional relationship of the components of the present disclosure in the drawings.

[0056] As used in the specification and the appended claims, the terms "includes" and "comprises" only suggest the inclusion of the explicitly recited steps and elements, these steps and elements do not constitute an exclusive list, and the method or device may include other steps or elements. The term "and/or" used herein includes any combination of one or more related listed items.

[0057] The indefinite articles "a" and "an" preceding an element or component herein are intended to describe without limitation the number of instances (i.e., occurrences) of the element or component, unless the context clearly indicates. Therefore, "a" and "an" are to be understood as including one or at least one, and the singular form of the element or component also includes the plural form.

[0058] It should be noted that, unless otherwise specified, when a feature is referred to as being "fixed" or "connected" to another feature, it can be directly or indirectly fixed or connected to the other feature. Furthermore, the descriptions "upper", "lower", "left", "right", or the like, used in the present disclosure are only given with respect to the positional relationship of the components of the present disclosure in the drawings.

[0059] It will be further understood that the terms "first", "second", or the like, are used to describe various infor-

mation, but the information should not be limited by these terms. These terms are only used to distinguish information of the same type, and do not indicate a particular order or degree of importance. Indeed, the expressions "first", "second", or the like, are used interchangeably throughout. For example, first information may also be referred to as second information, and similarly, second information may also be referred to as first information, without departing from the scope of the present disclosure.

[0060] The above-mentioned embodiments are merely illustrative of the technical concepts and features of the present disclosure, and are preferred embodiments, which are intended to enable those skilled in the art to understand the contents of the present disclosure and implement the present disclosure, and not to limit the protection scope of the present disclosure. All equivalent changes or modifications made in accordance with the principles of the present disclosure are intended to be included within the protection scope of the present disclosure.

Claims

1. A foldable canopy, comprising:

a canopy frame body comprising a plurality of legs and a plurality of eave frames, each eave frame being connected between two adjacent legs;
an overhanging rod having an unfolded state after the foldable canopy is unfolded; when the overhanging rod is in the unfolded state, an inner end portion of the overhanging rod being connected to the canopy frame body, an outer end portion of the overhanging rod being offset from the legs, and the overhanging rod being transverse to the legs; and
a cross rod having two ends being configured to be connected with one of the plurality of eave frames and the overhanging rod respectively, such that strength of the overhanging rod is enhanced when the overhanging rod of the foldable canopy is in the unfolded state.

2. The foldable canopy of claim 1, wherein the foldable canopy further comprises a surrounding cloth, and the overhanging rod further has a folded state after the foldable canopy is unfolded; when the overhanging rod is in the unfolded state, the overhanging rod is configured to support the surrounding cloth; when the overhanging rod is in the folded state, the surrounding cloth hangs down to a side of the canopy frame body.

3. The foldable canopy of claim 2, wherein the cross rod has a first end portion rotatably connected to the overhanging rod and a second end portion for being detachably connected with one of the plurality of eave frames; when the overhanging rod is in the folded state, the second end portion of the cross rod is disconnected from the eave frame, and the outer end portion of the overhanging rod is drawn close to one of the plurality of legs; when the overhanging rod is in the unfolded state, the second end portion of the cross rod is connected with the eave frame, and the outer end portion of the overhanging rod is offset from the leg; during folding the foldable canopy from an unfolded position to a folded position, the second end portion of the cross rod is disconnected from the eave frame, and the overhanging rod is converted from the unfolded state to the folded state.

4. The foldable canopy of claim 3, wherein the inner end portion of the overhanging rod is rotatably connected to one of the plurality of legs, the canopy further comprises a support rod having a first end portion and a second end portion, the first end portion is rotatably connected to one of the plurality of legs and capable of sliding in an up-down direction, and the second end portion is rotatably connected to the overhanging rod.

5. The foldable canopy of claim 4, wherein the first end portion of the support rod is rotatably connected to a support base, and the support base is connected to one of the plurality of legs and capable of sliding in the up-down direction.

6. The foldable canopy of claim 4 or 5, wherein a fixed base is arranged between the inner end portion and the outer end portion of the overhanging rod, the first end portion of the cross rod is rotatably connected to the fixed base by a first pivot, the second end portion of the support rod is rotatably connected to the fixed base by a second pivot, and an included angle formed between an axis of the first and/or second pivot and a horizontal plane is smaller than 10 degrees when the overhanging rod is in the folded state; or

a fixed base is arranged between the inner end portion and the outer end portion of the overhanging rod, the fixed base is rotatably connected with a rotating base, one of the first end portion of the cross rod and the second end portion of the support rod is rotatably connected to the fixed base, and the other of the first end portion of the cross rod and the second end portion of the support rod is rotatably connected to the rotating base; or
a fixed base is arranged between the inner end portion and the outer end portion of the overhanging rod, one of the first end portion of the

cross rod and the second end portion of the support rod is pivotally connected to the fixed base, and the other of the first end portion of the cross rod and the second end portion of the support rod is rotatably connected to the fixed base by a universal rotating joint.

7. The foldable canopy of any one of claims 4 to 6, wherein when the overhanging rod is in the folded state, the outer end portion of the overhanging rod and the first end portion of the support rod are drawn close to a lower end portion of one of the plurality of legs.

8. The foldable canopy of any one of claims 4 to 6, wherein an overhanging locking mechanism is arranged between the support base and the leg, and the overhanging locking mechanism locks the support base and the leg when the overhanging rod is in the unfolded state.

9. The foldable canopy of any one of the preceding claims, wherein the outer end portion of the overhanging rod is connected with the surrounding cloth.

10. The foldable canopy of claim 2, wherein the overhanging rod is detachably inserted into one of the plurality of legs, and when the overhanging rod is in the unfolded state, the inner end portion of the overhanging rod is inserted into one of the plurality of legs; when the overhanging rod is in the folded state, the inner end portion of the overhanging rod is disconnected from the leg.

11. The foldable canopy of any one of the preceding claims, wherein the overhanging rod extends along a length direction of one of the plurality of eave frames when in the unfolded state.

12. The foldable canopy of any one of the preceding claims, wherein each leg corresponds to at least one overhanging rod, and each overhanging rod is connected with at least one cross rod.

13. The foldable canopy of any one of the preceding claims, wherein when the foldable canopy is folded, the overhanging rod applies a force to the cross rod, such that the cross rod is automatically disconnected from the eave frame.

14. The foldable canopy of claim 13, wherein at least one of the plurality of eave frames comprises a connecting rod capable of rotating downwards when the canopy frame body is folded, and the second end portion of the cross rod is provided with a clamping groove portion capable of being clamped on the connecting rod.

15. The foldable canopy of claim 14, wherein the clamping groove portion has a notch facing downward.

16. The foldable canopy of claim 14 or 15, wherein the connecting rod is provided with a positioning protrusion, and the clamping groove portion is provided with a positioning groove fitted with the positioning protrusion.

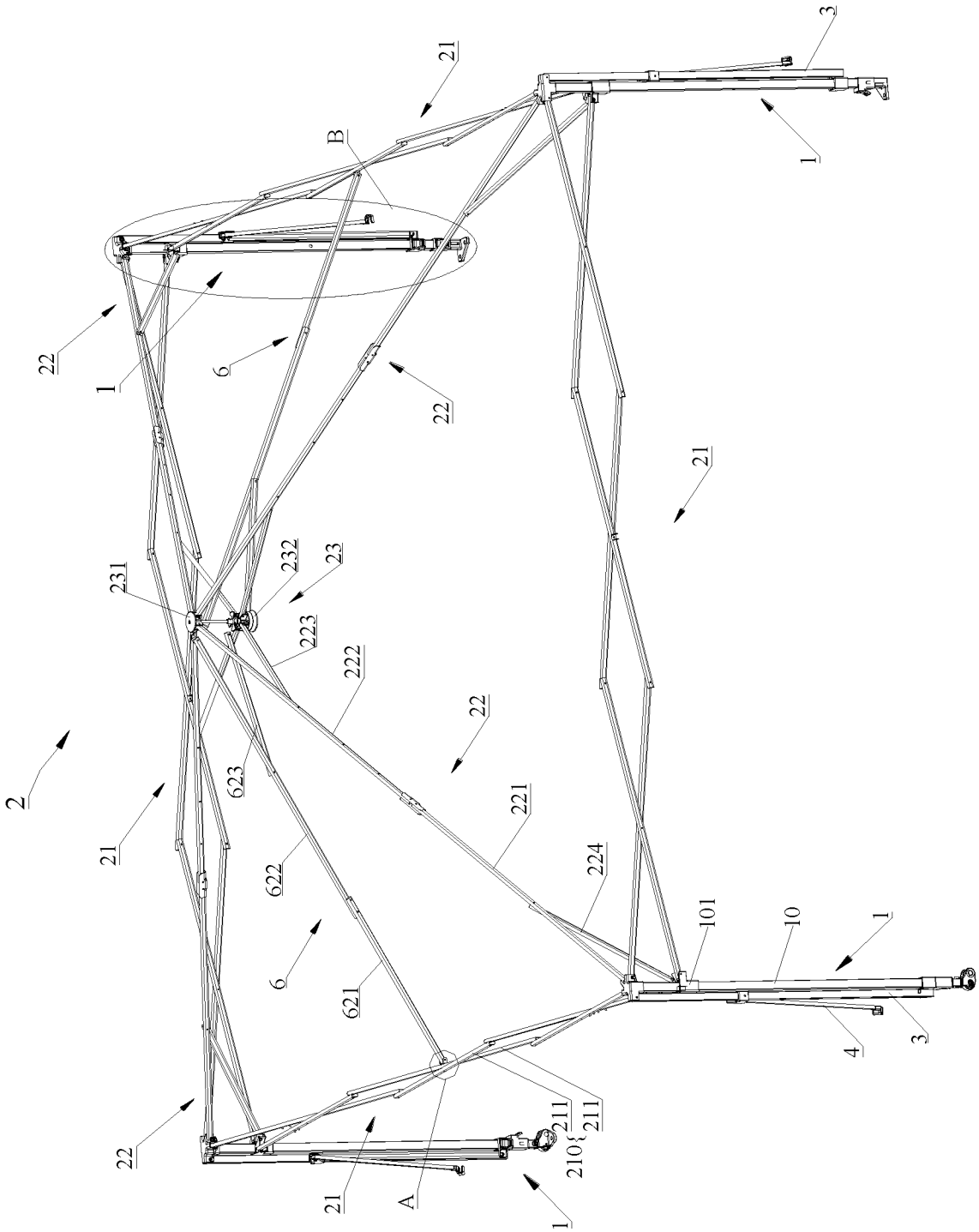
17. The foldable canopy of any one of the preceding claims, wherein the canopy frame body further comprises a plurality of foldable top rod units, each top rod unit comprises an inner top rod and an outer top rod, one end portion of the inner top rod and one end portion of the outer top rod are rotatably connected, the other end portion of the outer top rod is rotatably connected to an upper end portion of one of the plurality of legs, and the other end portion of the inner top rod of each top rod unit is rotatably connected to a central locking mechanism; the canopy frame body further comprises at least one reinforcing mechanism connected between one of the plurality of eave frames and the top rod unit or between one of the plurality of eave frames and the central locking mechanism.

18. The foldable canopy of claim 17, wherein the reinforcing mechanism comprises a reinforcing rod, and the reinforcing rod has one end portion rotatably connected to the inner top rod and the other end portion rotatably connected to the eave frame.

19. The foldable canopy of claim 17, wherein the reinforcing mechanism comprises an outer reinforcing rod and an inner reinforcing rod, one end portion of the outer reinforcing rod is rotatably connected with one end portion of the inner reinforcing rod, the other end portion of the outer reinforcing rod is rotatably connected to the eave frame, and the other end portion of the inner reinforcing rod is rotatably connected to the central locking mechanism.

20. The foldable canopy of claim 19, wherein the eave frame comprises at least one connecting rod assembly rotatably connected between the legs, the connecting rod assembly comprises a first connecting rod and a second connecting rod which are capable of being relatively unfolded and closed, middles of the first connecting rod and the second connecting rod are rotatably connected by a third pivot, the other end portion of the outer reinforcing rod is rotatably connected to a connecting piece, and the connecting piece is connected to the third pivot; and/or the central locking mechanism comprises a top cap and a bottom cap which can be locked to or disconnected from each other, the other end portion of the inner top rod is rotatably connected to the top cap, each top rod unit further comprises an auxiliary top

rod, one end portion of the auxiliary top rod is rotatably connected to the inner top rod, the other end portion is rotatably connected to the bottom cap, the reinforcing mechanism further comprises an auxiliary reinforcing rod, one end portion of the auxiliary reinforcing rod is rotatably connected to the inner reinforcing rod, and the other end portion is rotatably connected to the bottom cap.


3
21
B
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1
6
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232
23
223
222
22
2
623
21
221
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3
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211
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210
21
A
1

FIG. 1

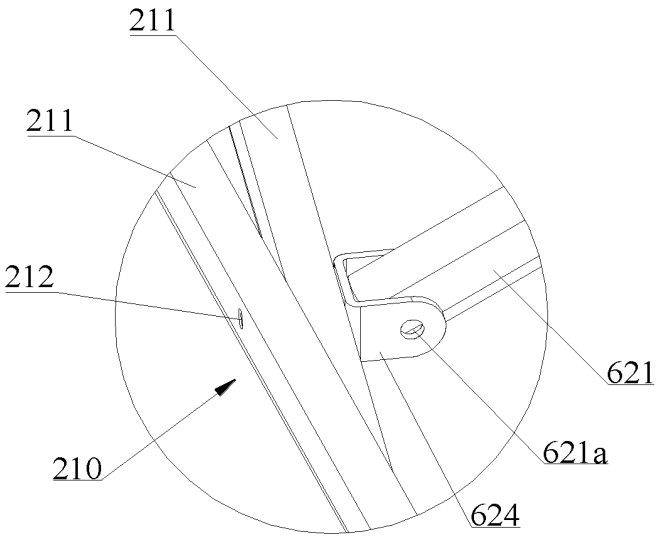

FIG. 2a

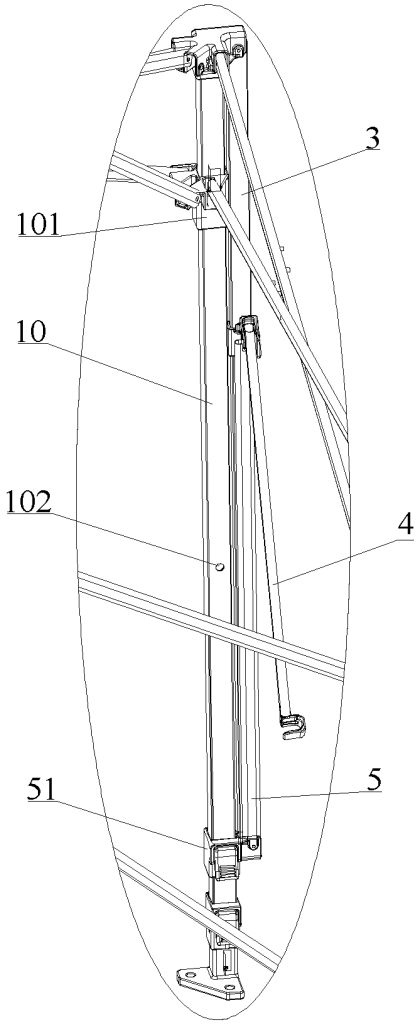

FIG. 2b

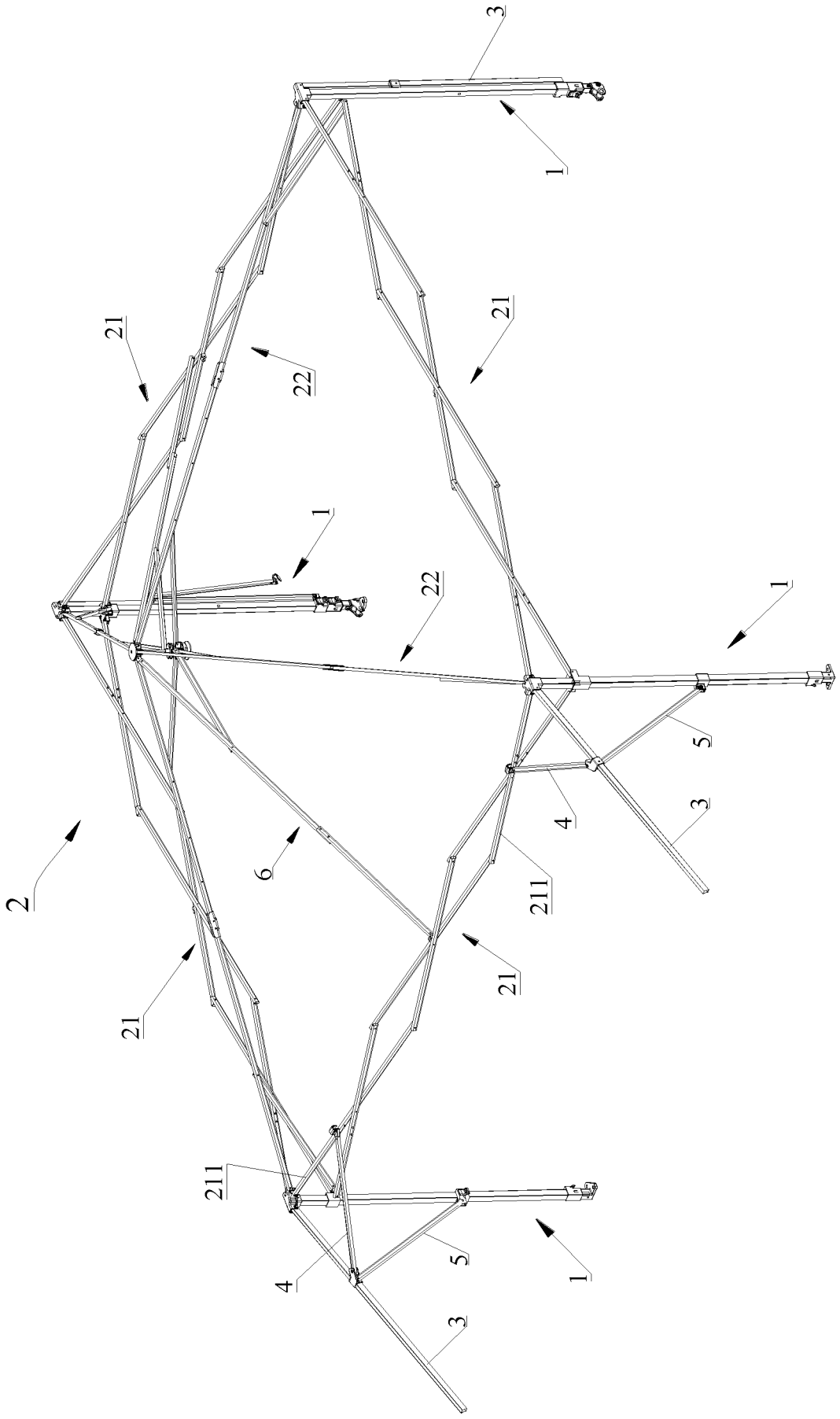

FIG. 3

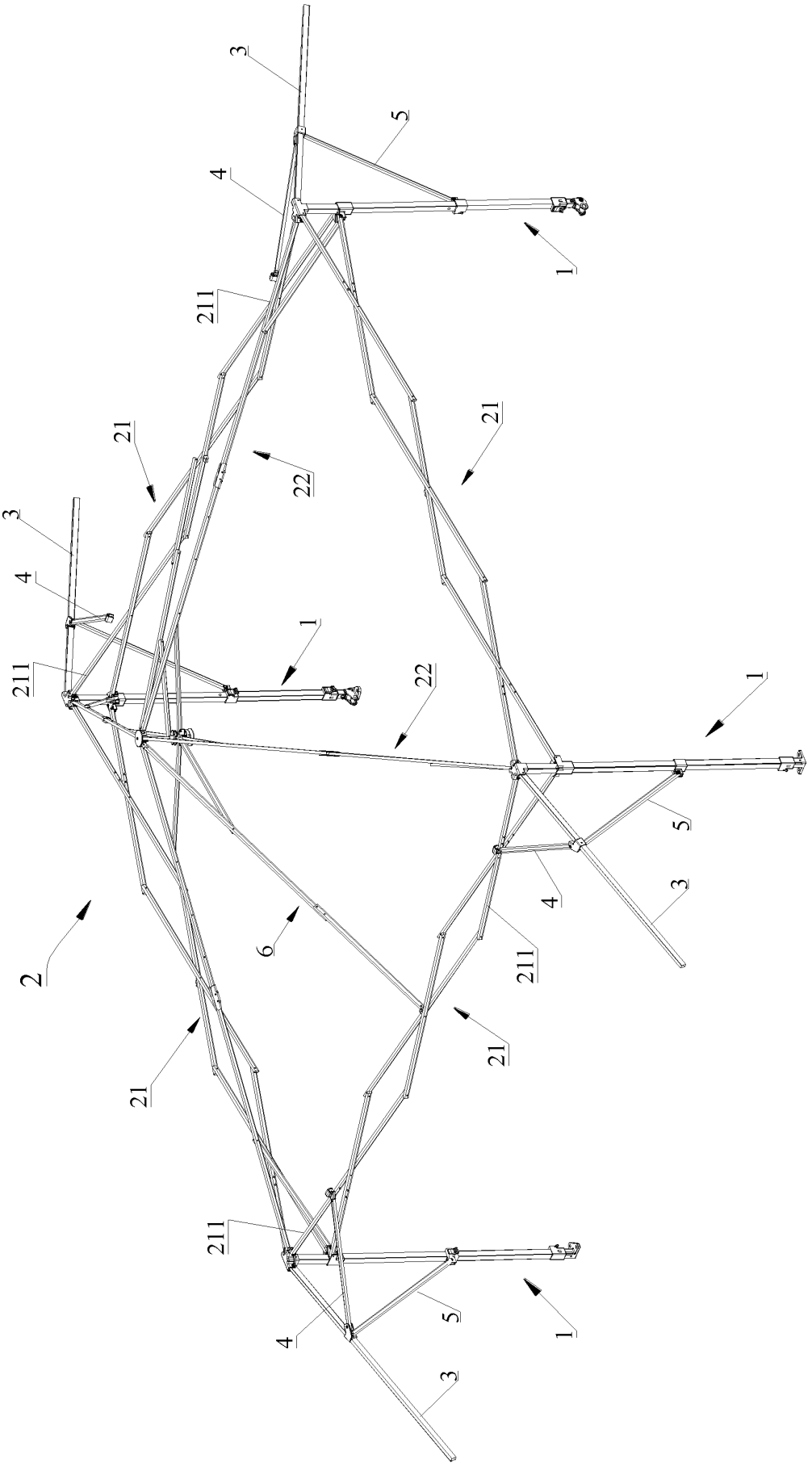

FIG. 4

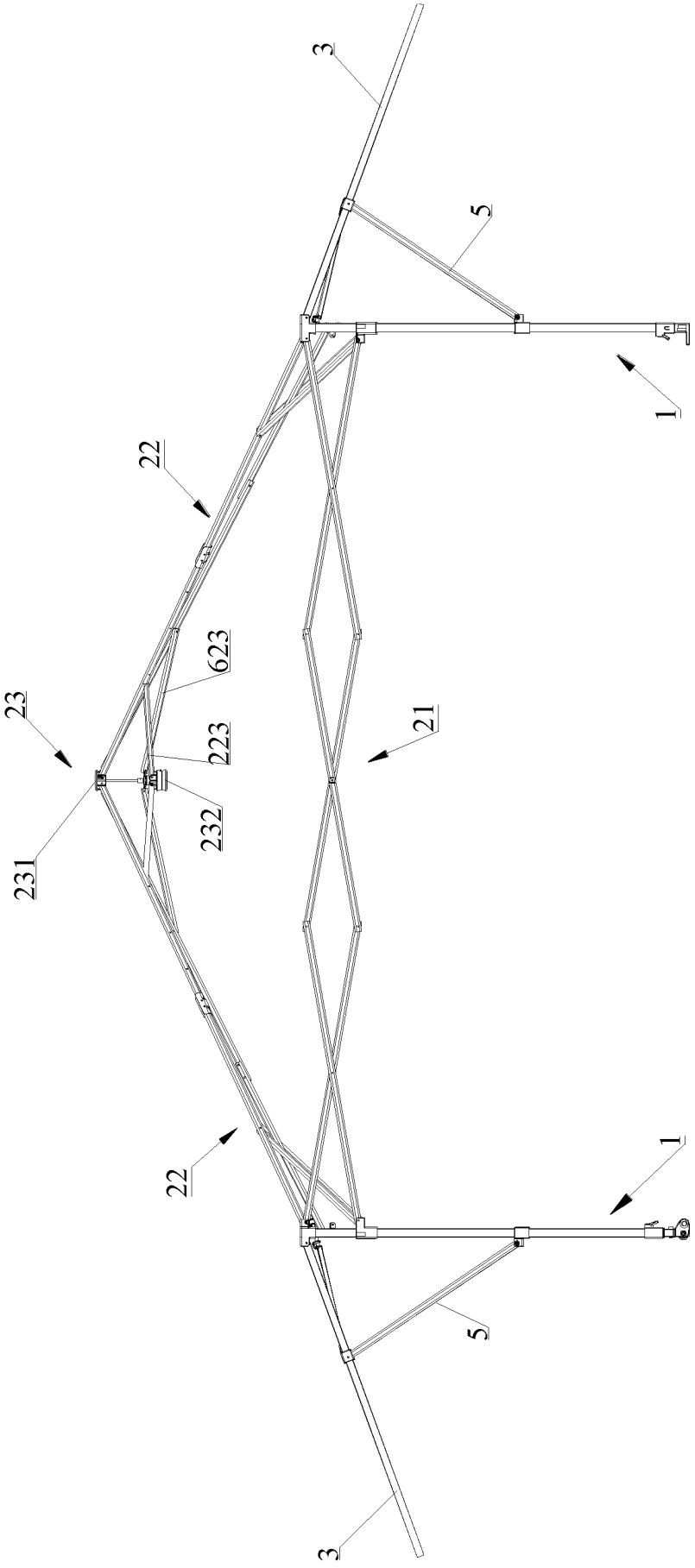

FIG. 5

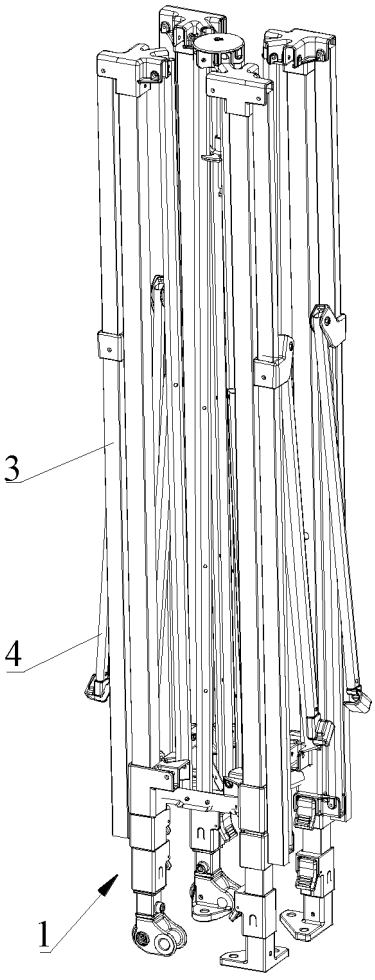

FIG. 6

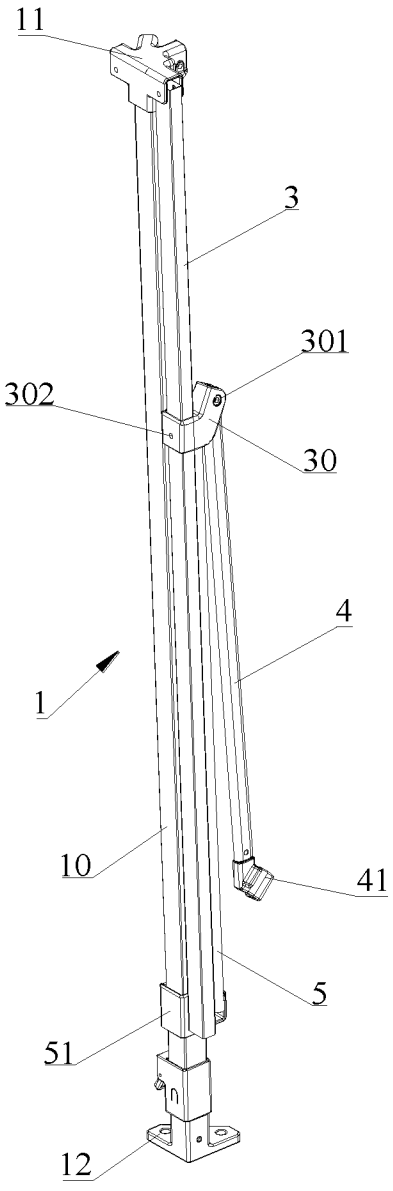

FIG. 7

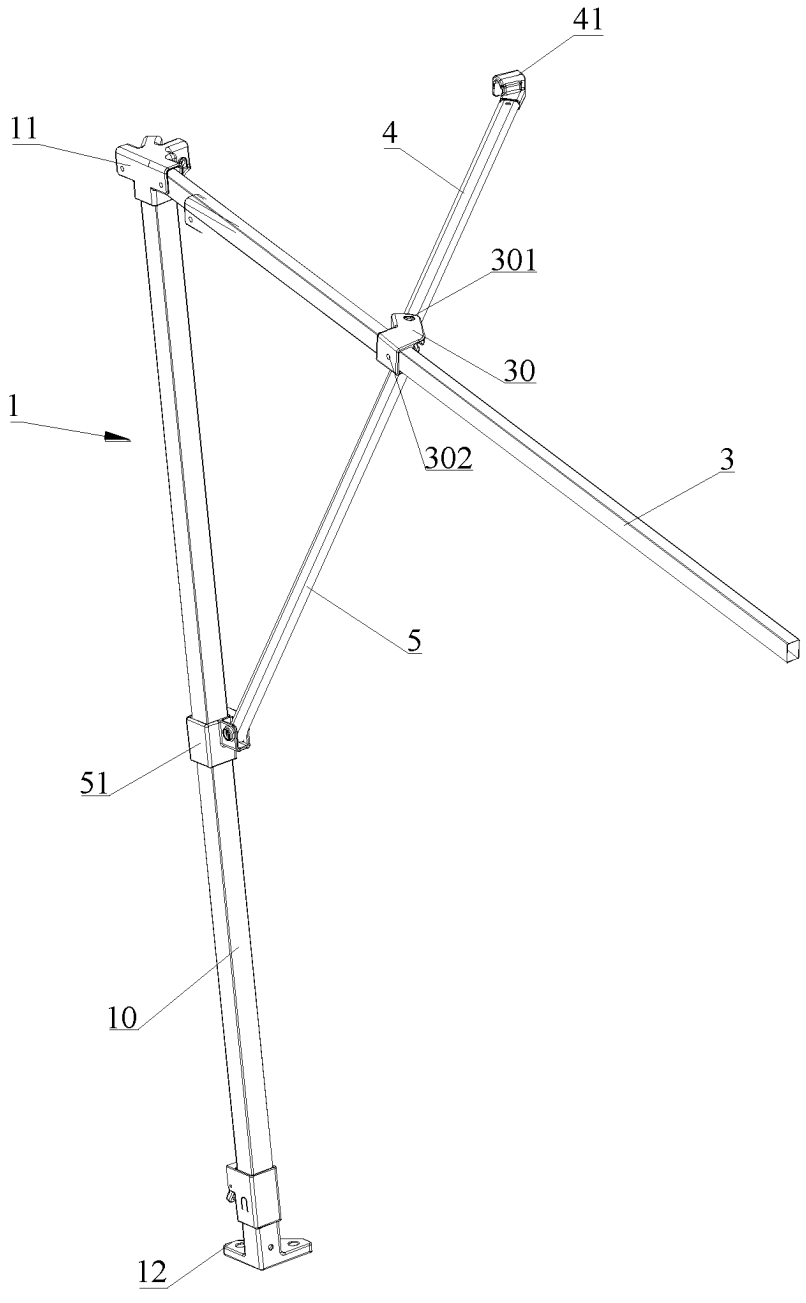

FIG. 8

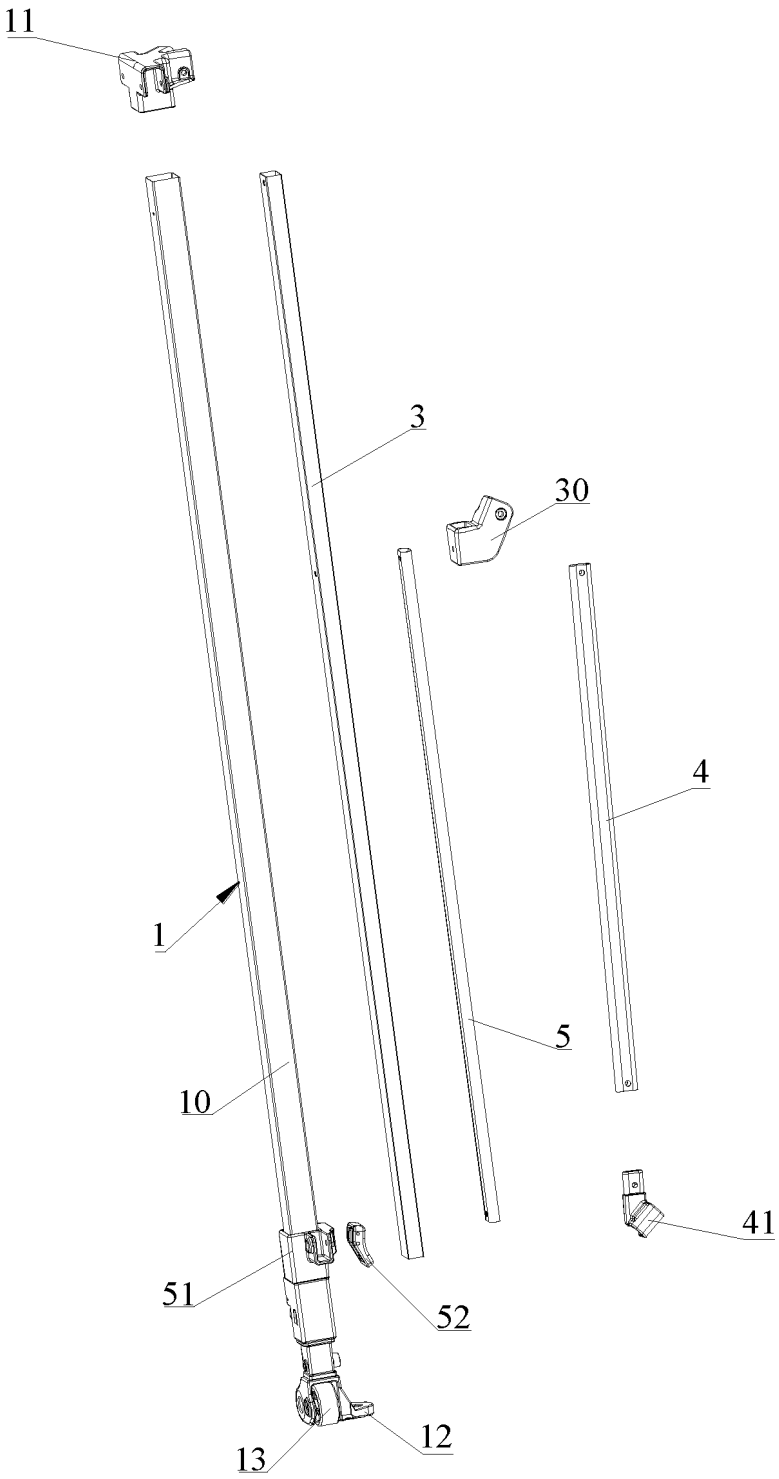

FIG. 9

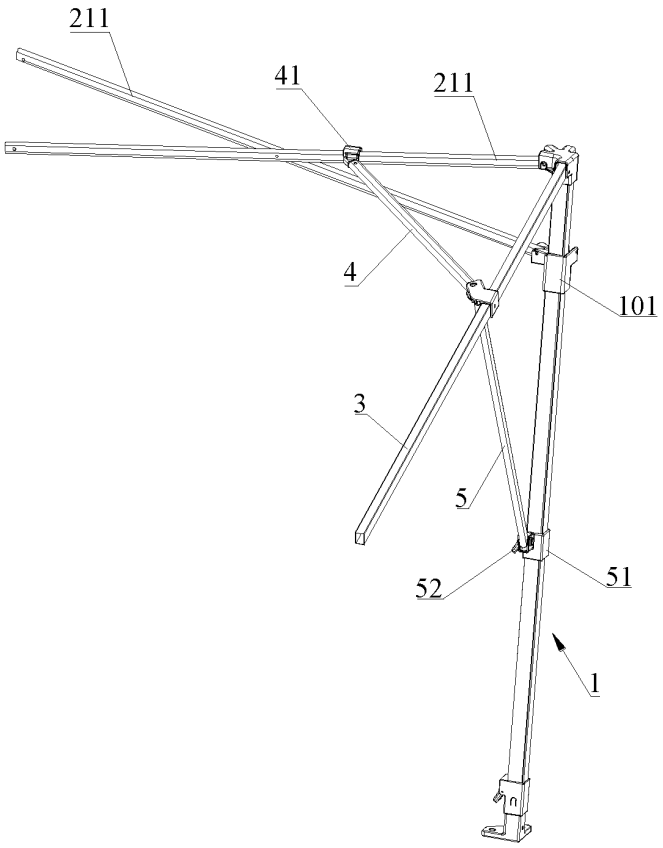

FIG. 10a

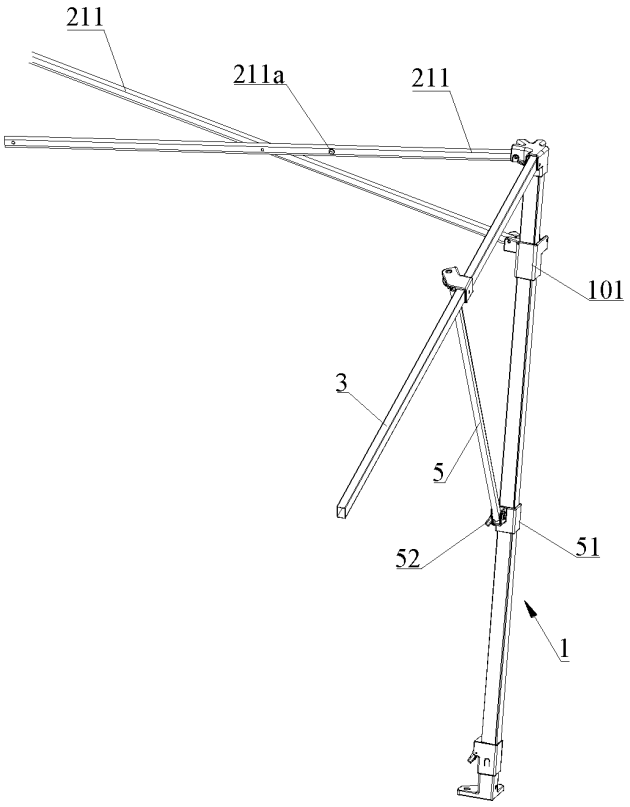

FIG. 10b

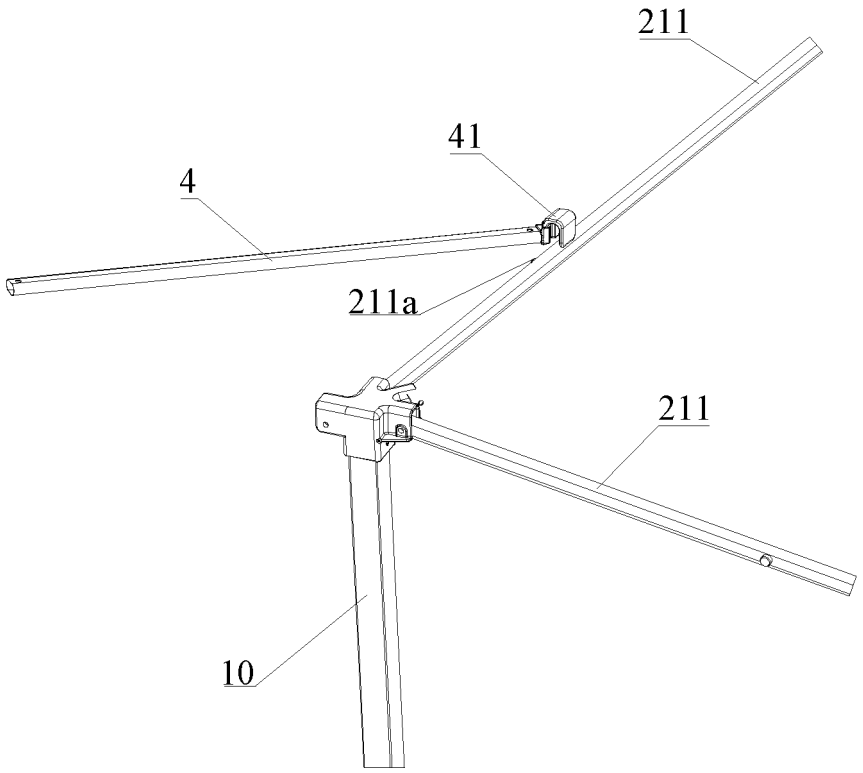

FIG. 11

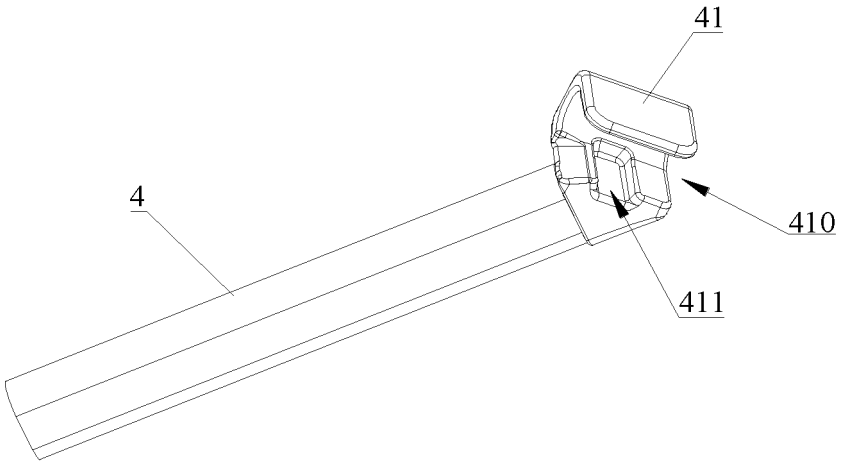

FIG. 12

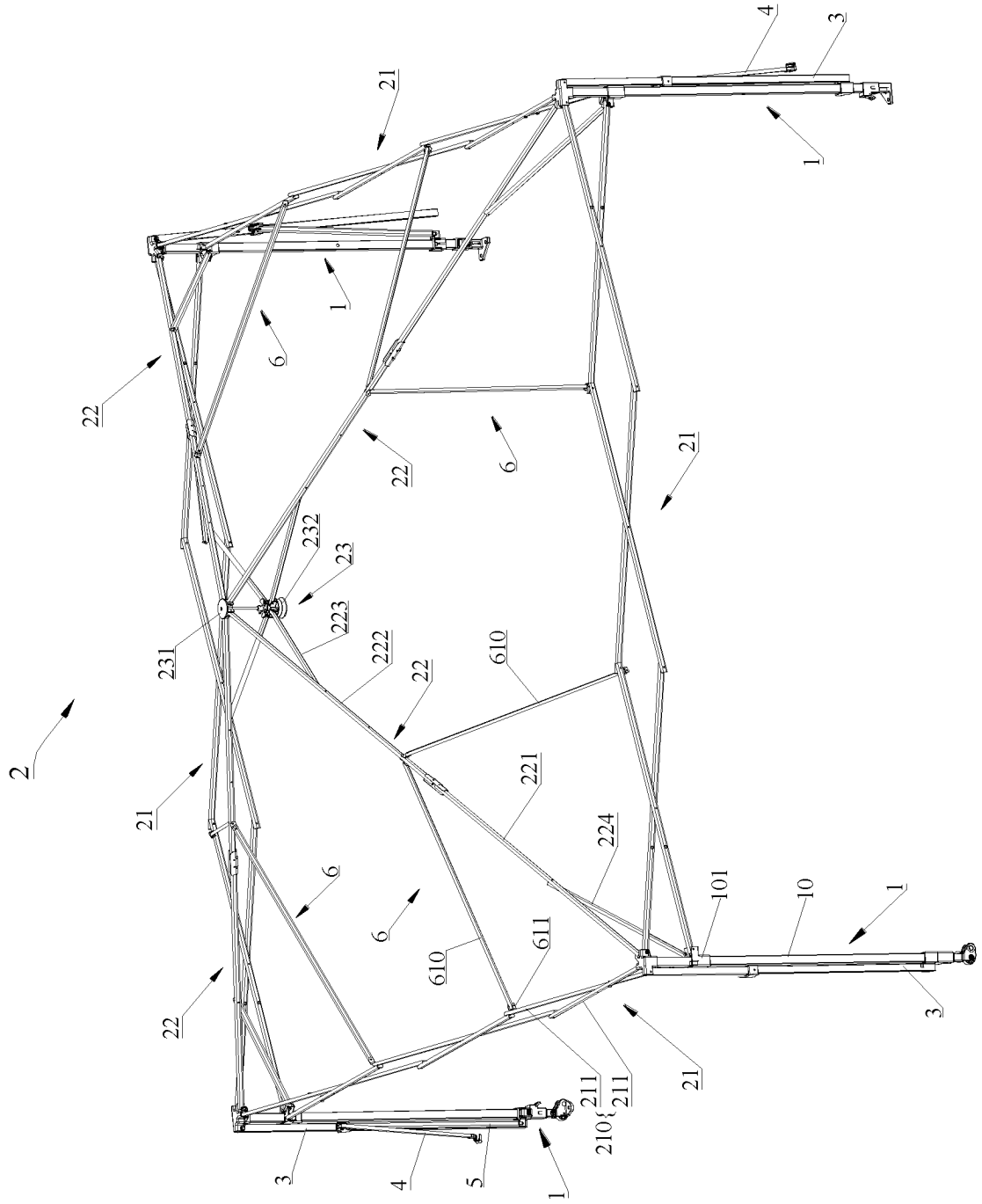

FIG. 13

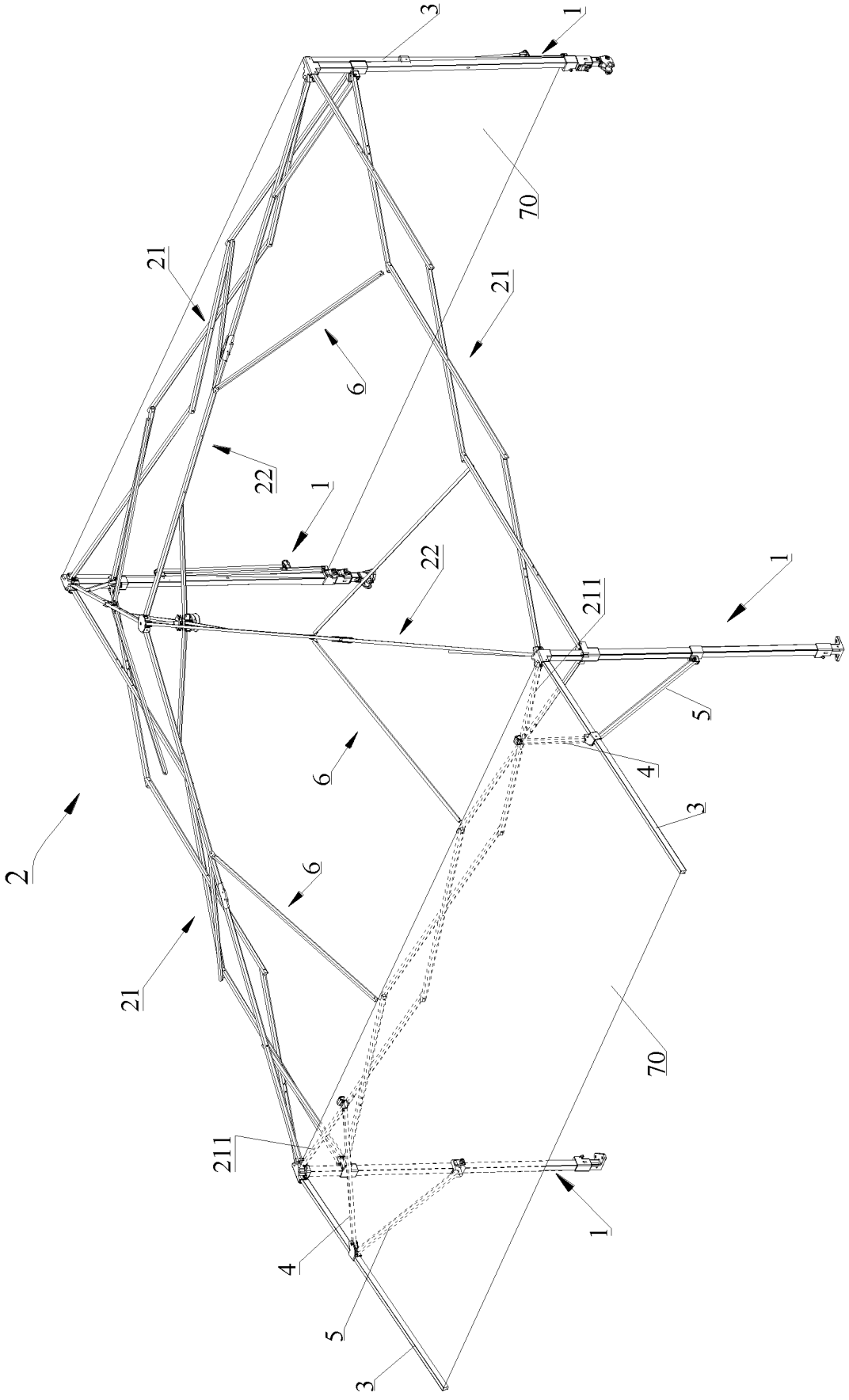

FIG. 14

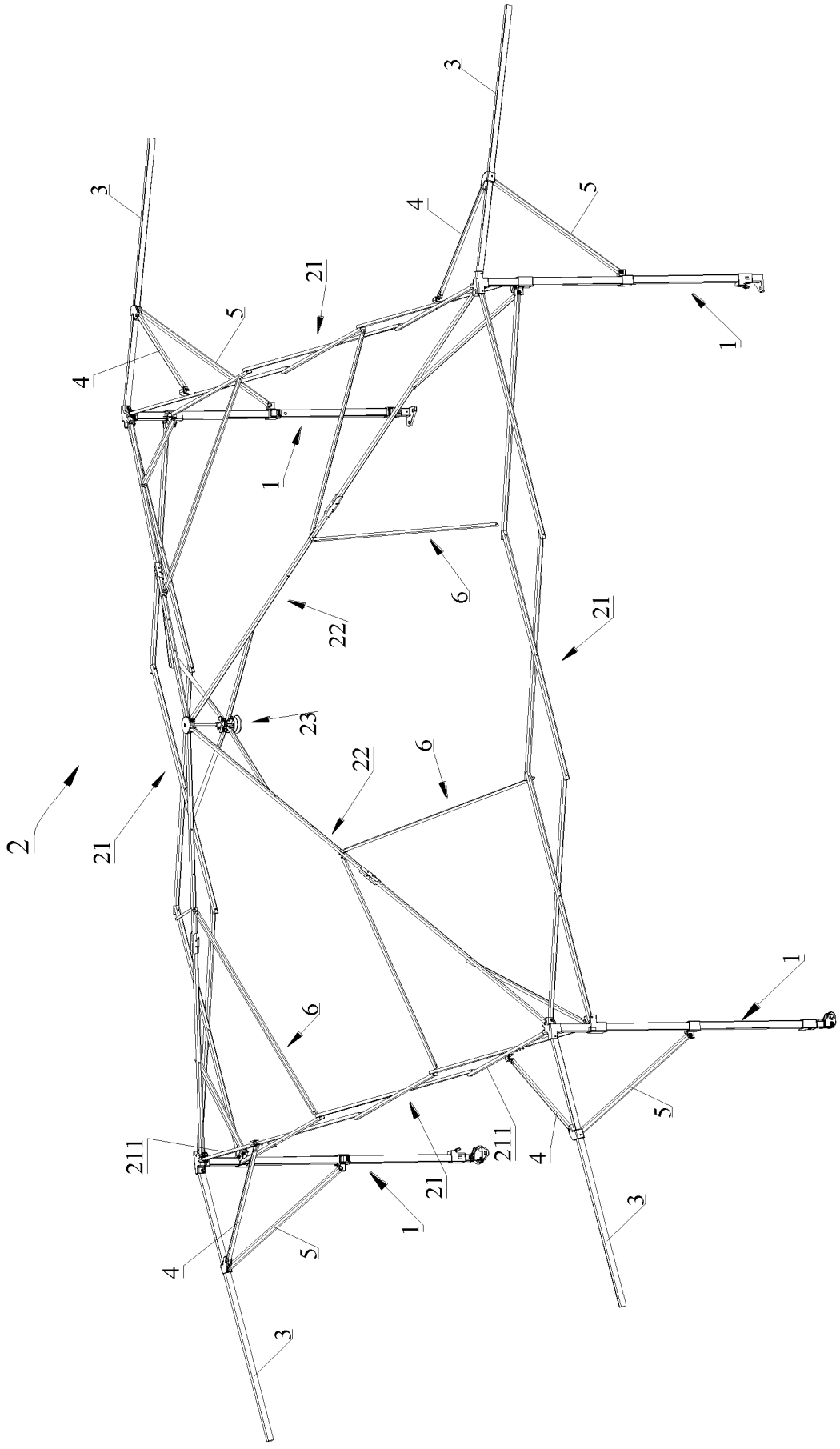

FIG. 15

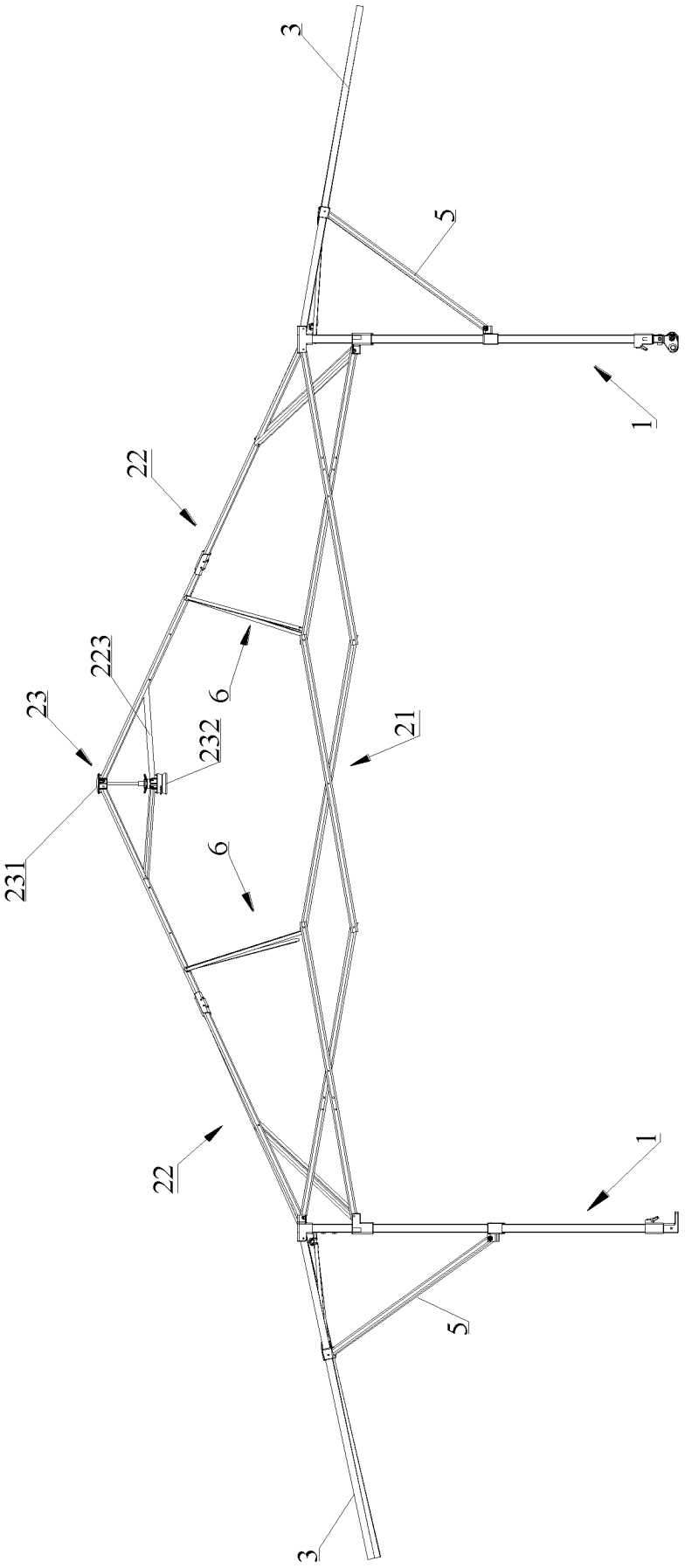

FIG. 16

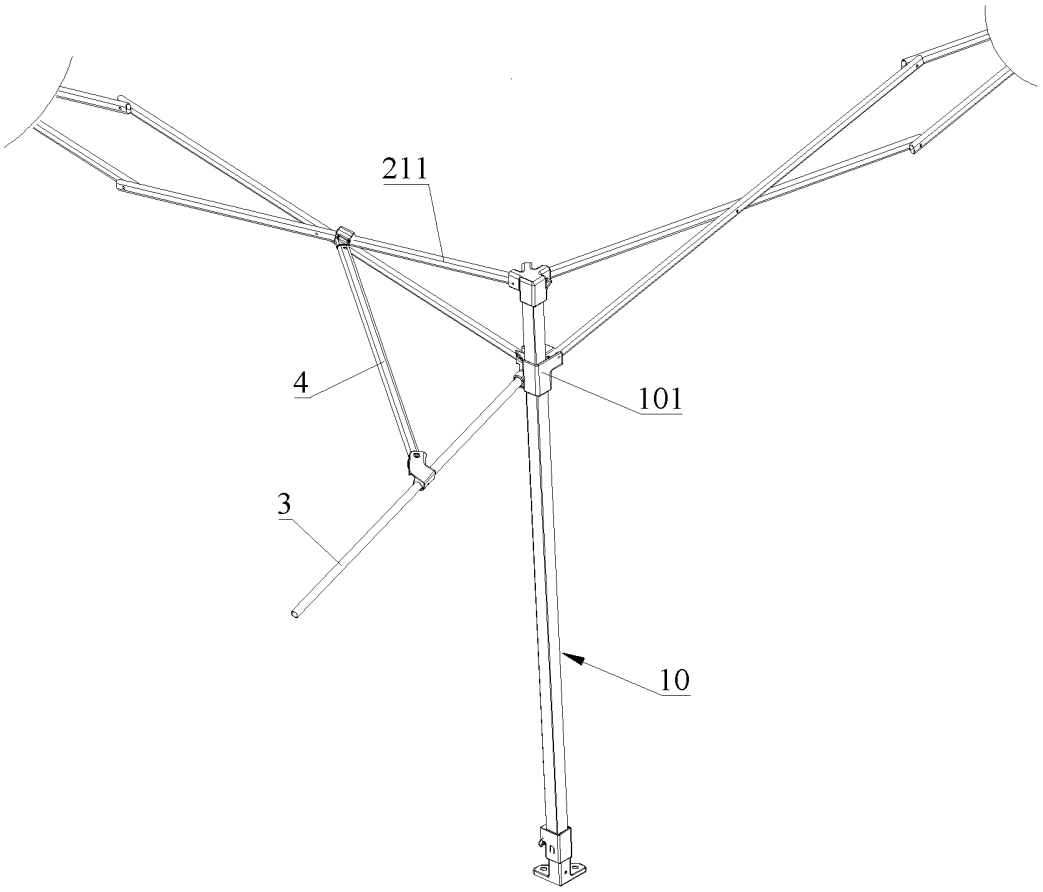

FIG. 17

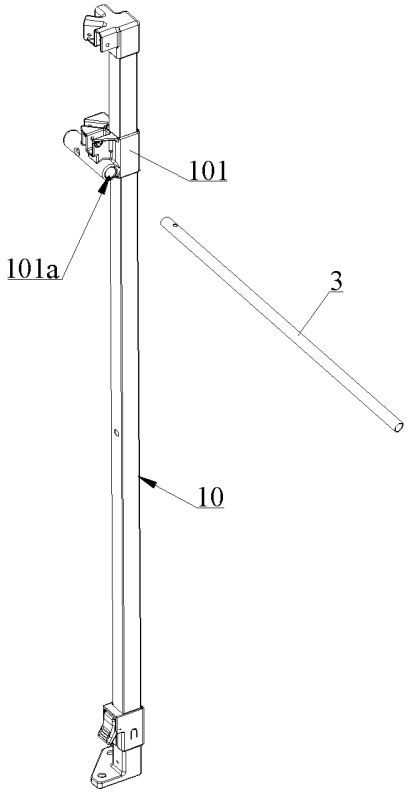

FIG. 18

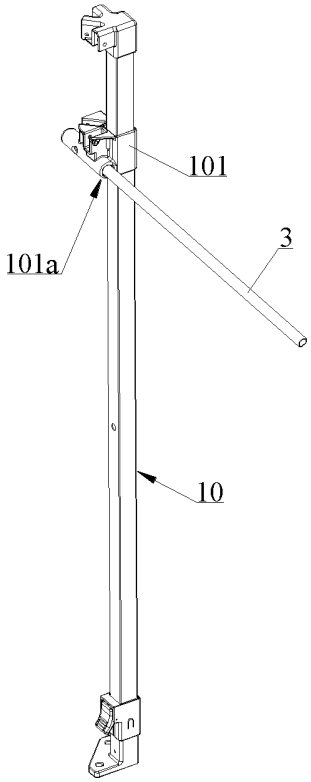

FIG. 19

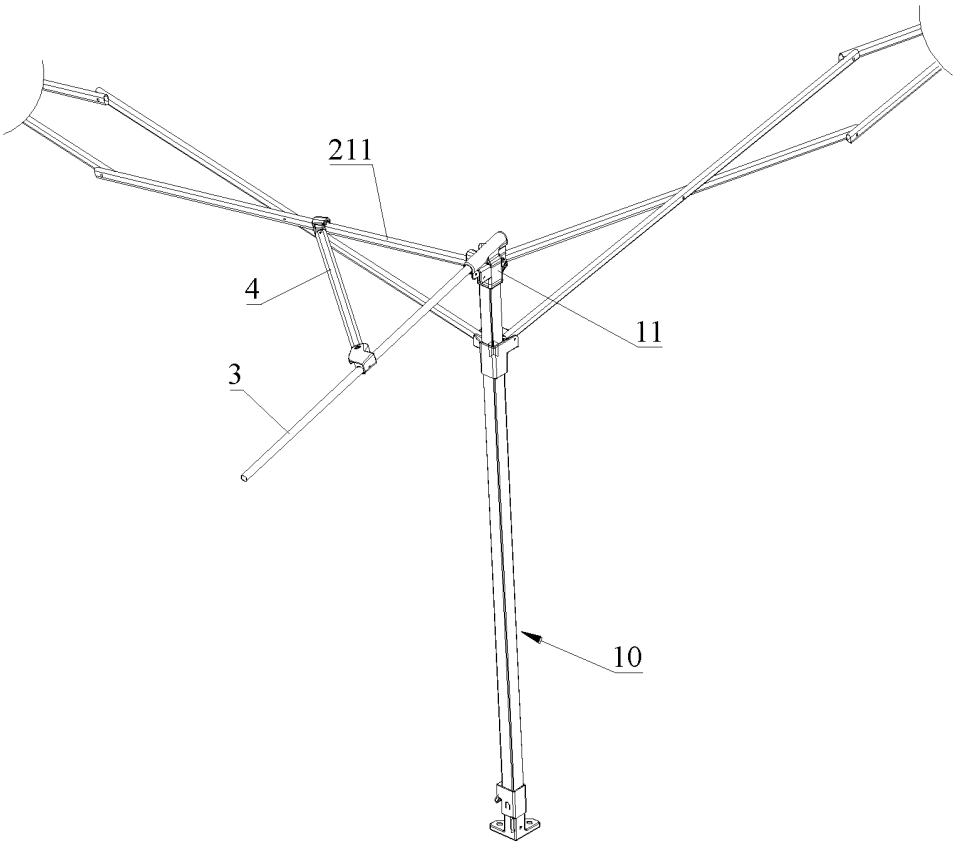

FIG. 20

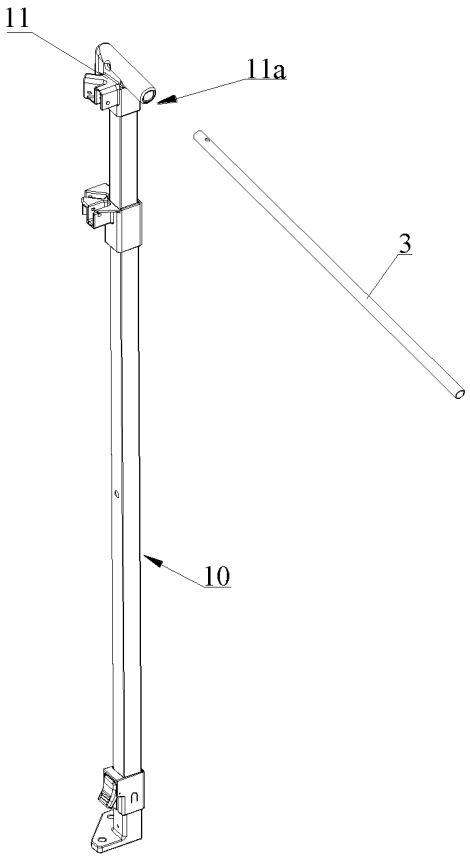

FIG. 21

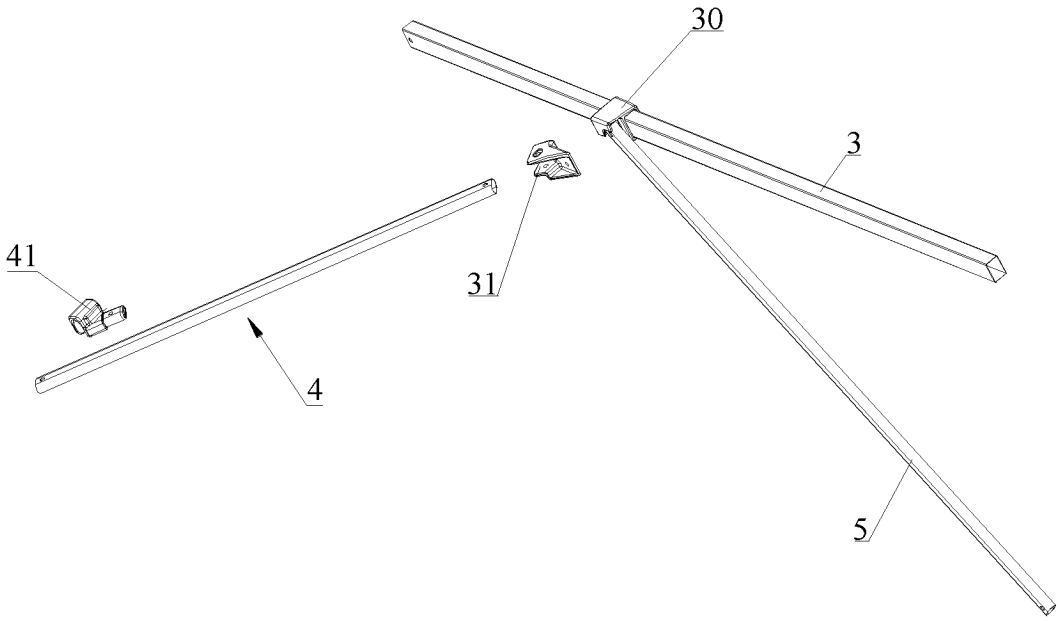

FIG. 22

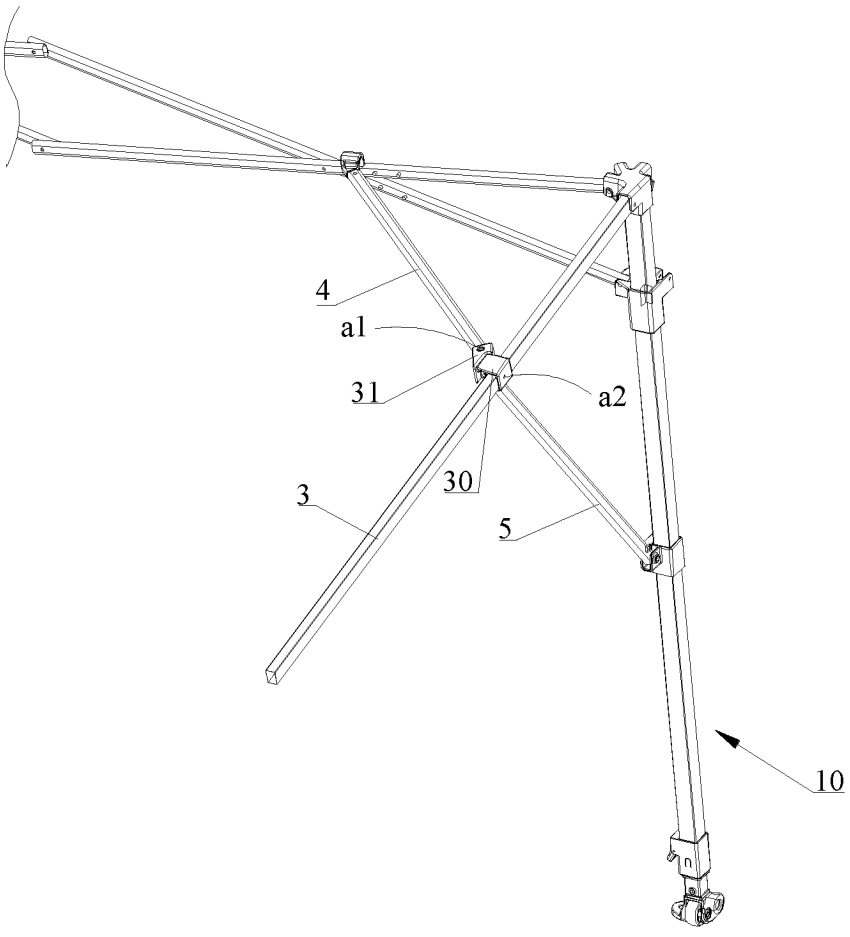

FIG. 23

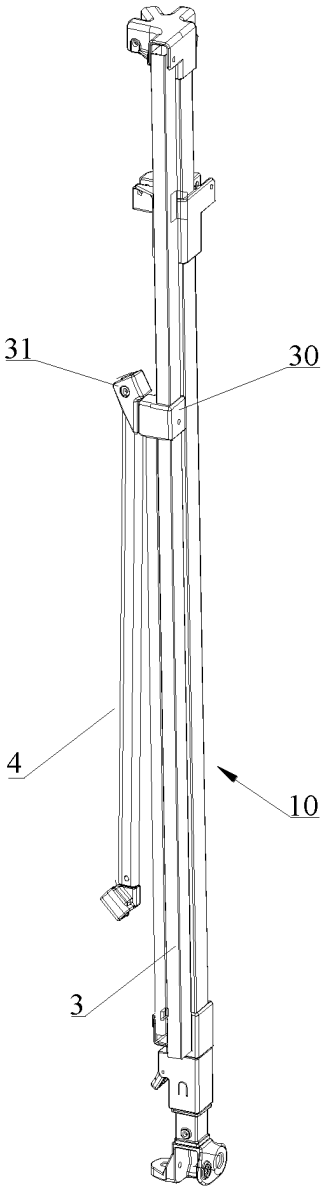

FIG. 24

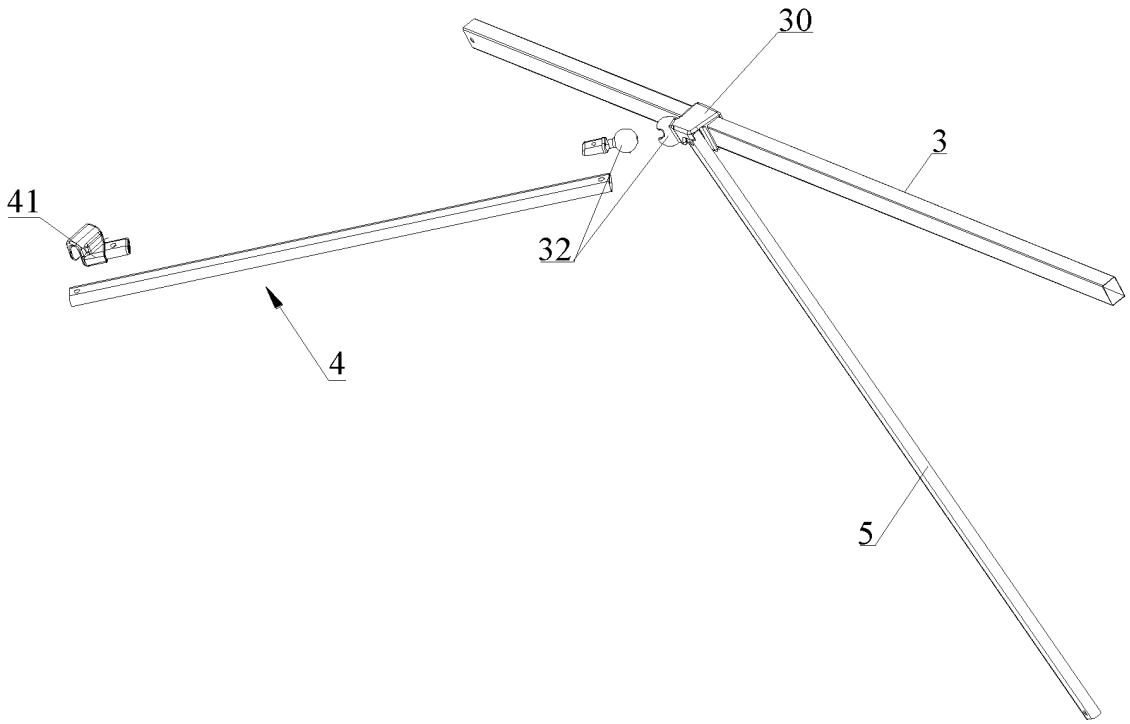

FIG. 25

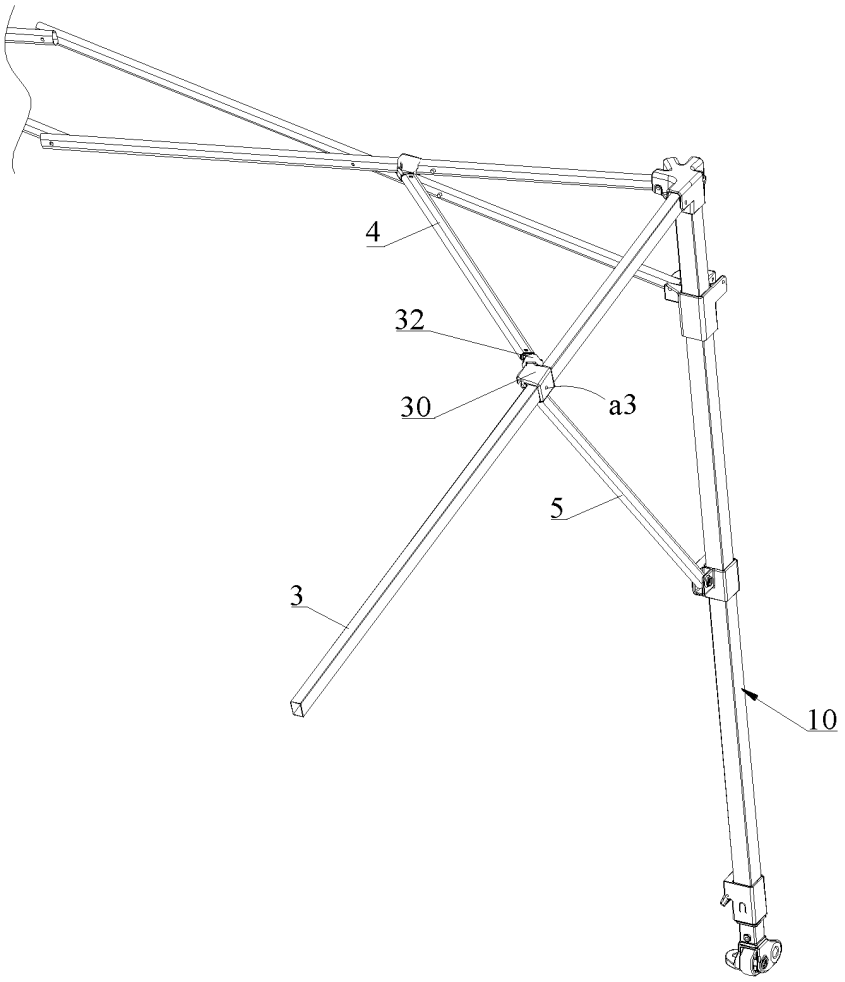

FIG. 26

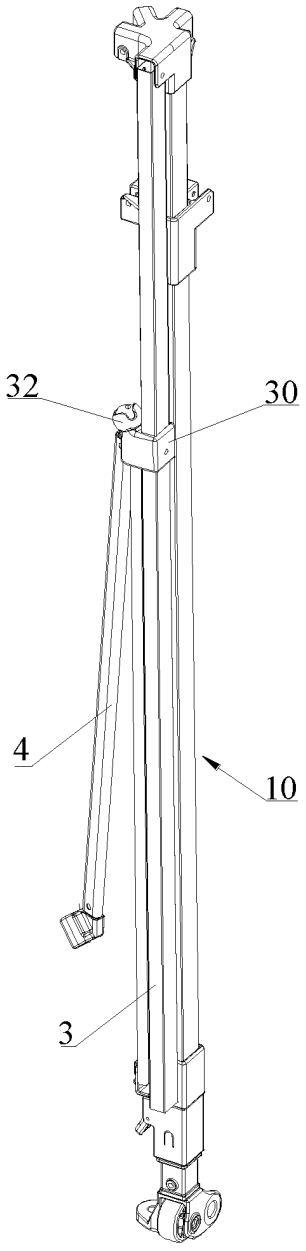

FIG. 27

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2023/084057

A. CLASSIFICATION OF SUBJECT MATTER

E04H15/50(2006.01)i; E04H15/32(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC:E04H15; E04F10; F16B17

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CNABS, CNTXT, ENTXTC, VEN, CNKI: 帐篷, 遮篷, 折叠, 收折, 檐, 加强, 加固, 支撑, 定位, 限位, 锁定, U型, 卡槽, 脱离, 拆卸, tent, awning, canopy, collapsible, eave, reinforcement, strut, support, position, limit, latch, groove, detachable

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	CN 114809796 A (WEIZI E-COMMERCE (SHANGHAI) CO., LTD.) 29 July 2022 (2022-07-29) claims 1-15, description, paragraphs [0072]-[0097], and figures 1-27	1-20
PX	CN 216949765 U (WEIZI E-COMMERCE (SHANGHAI) CO., LTD.) 12 July 2022 (2022-07-12) claims 1-15, description, paragraphs [0072]-[0097], and figures 1-27	1-20
X	US 2002092555 A1 (CHEN DINGXING et al.) 18 July 2002 (2002-07-18) description, paragraphs [0015]-[0019], and figures 1-7	1-9, 11-13
Y	US 2002092555 A1 (CHEN DINGXING et al.) 18 July 2002 (2002-07-18) description, paragraphs [0015]-[0019], and figures 1-7	10, 14, 15, 17-20
X	US 2007186967 A1 (ZINGERLE GEORG) 16 August 2007 (2007-08-16) description, paragraphs [0016]-[0027], and figures 1-10	1-9, 11-13
Y	US 2007186967 A1 (ZINGERLE GEORG) 16 August 2007 (2007-08-16) description, paragraphs [0016]-[0027], and figures 1-10	10, 14, 15, 17-20

☑ Further documents are listed in the continuation of Box C. ☑ See patent family annex.

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"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
27 June 2023	**29 June 2023**
Name and mailing address of the ISA/CN **China National Intellectual Property Administration (ISA/CN)** **China No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088**	Authorized officer Telephone No.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2023/084057

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Y	CN 211923769 U (ZHEJIANG HUIGUAN LEISURE PRODUCTS CO., LTD.) 13 November 2020 (2020-11-13) description, paragraphs [0048]-[0055], and figures 1-7	10
Y	CN 208380484 U (JIAXING DONGYU CONSTRUCTION CO., LTD.) 15 January 2019 (2019-01-15) description, paragraphs [0032]-[0033], and figures 1-2	14, 15
Y	CN 109441211 A (LUHUA (XIAMEN) TRADING CO., LTD.) 08 March 2019 (2019-03-08) description, paragraphs [0021]-[0025], and figures 1-7	17-20
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A	CN 101657588 A (VITABRI SA (FR)) 24 February 2010 (2010-02-24) entire document	2-20
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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2023/084057

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CN 216949765 U	12 July 2022	None	
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CN 213683474 U	13 July 2021	None	

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