



US 20240358129A1

(19) **United States**

(12) **Patent Application Publication**
ZHU et al.

(10) **Pub. No.: US 2024/0358129 A1**

(43) **Pub. Date: Oct. 31, 2024**

(54) **OUTDOOR SUNSHADE**

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(21) Appl. No.: **18/582,756**

(22) Filed: **Feb. 21, 2024**

(30) **Foreign Application Priority Data**

Feb. 28, 2023 (CN) 202320395096.0
Mar. 15, 2023 (CN) 202310270009.3

Publication Classification

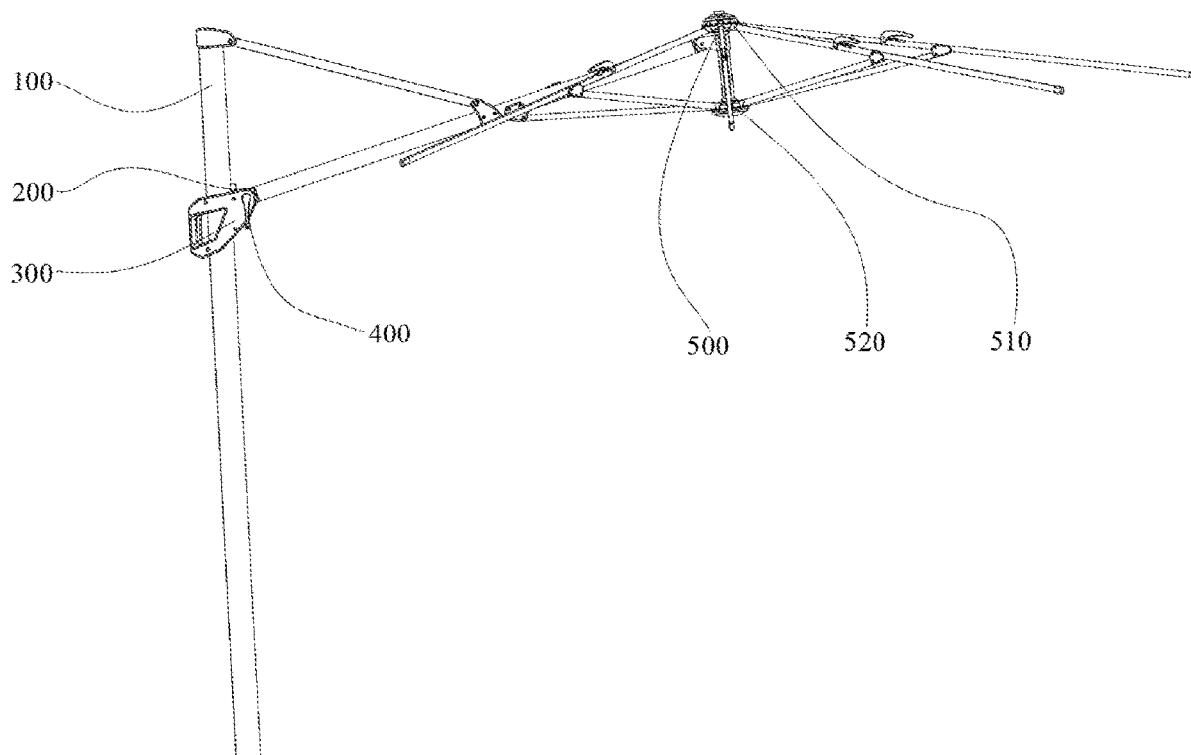
(51) **Int. Cl.**
A45B 25/06 (2006.01)
A45B 23/00 (2006.01)
A45B 25/14 (2006.01)

(52) **U.S. Cl.**

CPC **A45B 25/06** (2013.01); **A45B 25/14**
(2013.01); **A45B 2023/0037** (2013.01); **A45B**
2023/0068 (2013.01)

(57) **ABSTRACT**

An outdoor sunshade includes a sunshade post, a sunshade frame on one side of the sunshade post, a handle shell on and movable along the sunshade post, an inclined pull rod on the handle shell in a matching manner with its other end matching the sunshade frame, a sunshade cord, and a sunshade cord winding/unwinding assembly configured to wind/unwind the sunshade cord so as to unfold or fold the sunshade frame and including a first power component and a second power component that are in power transmission fit. The first power component is located in the handle shell and completes power input via a driving component. A cord winding wheel is on the second power component in a matching manner, and the second power component extends outwards in an axial direction of the inclined pull rod such that the cord winding wheel is located outside the handle shell.



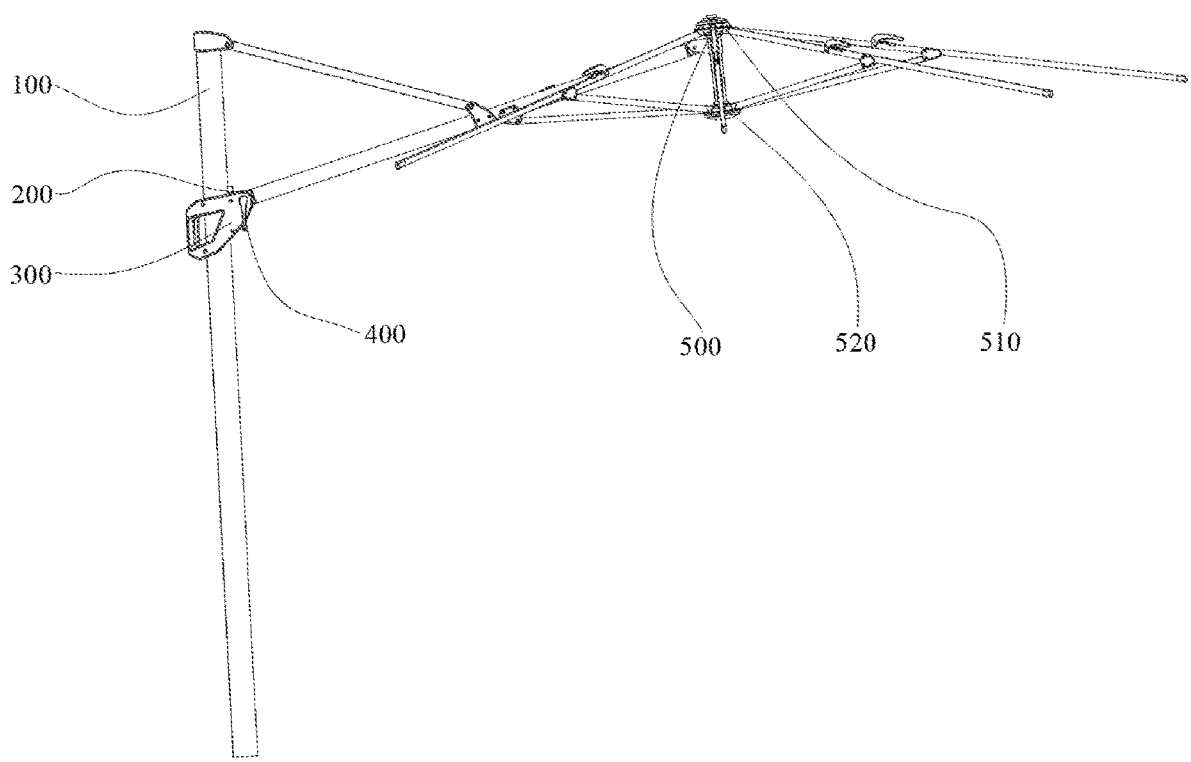


FIG. 1

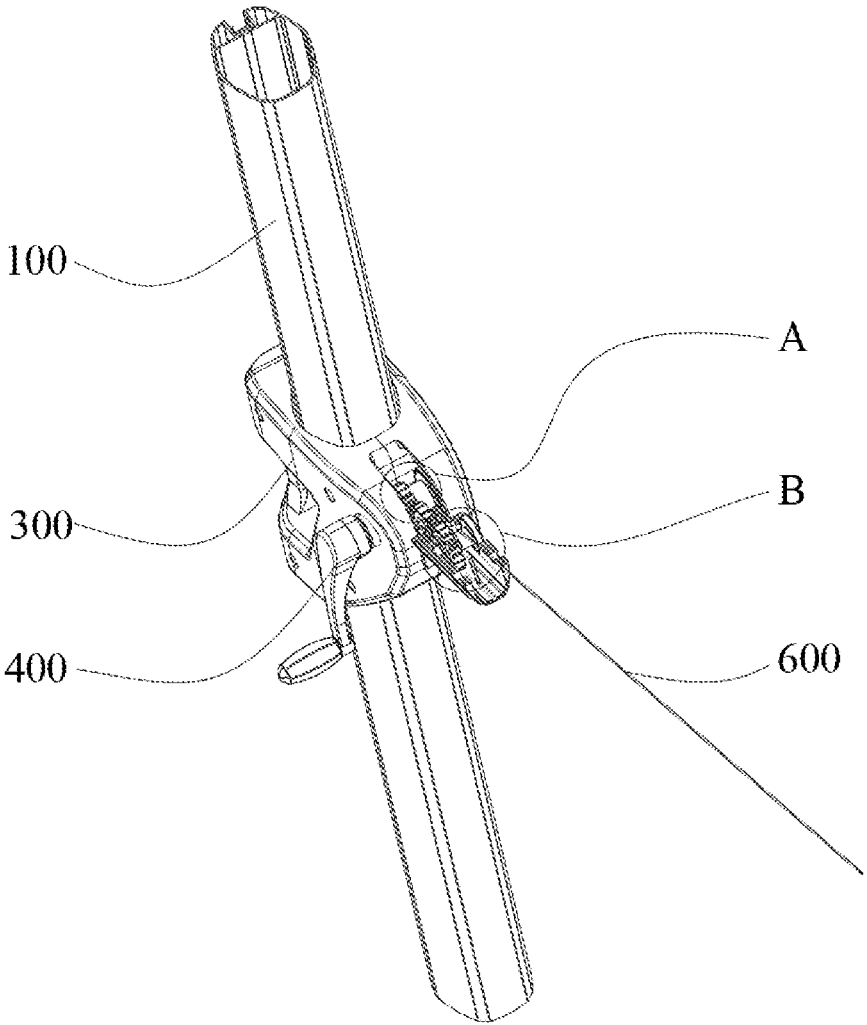


FIG. 2

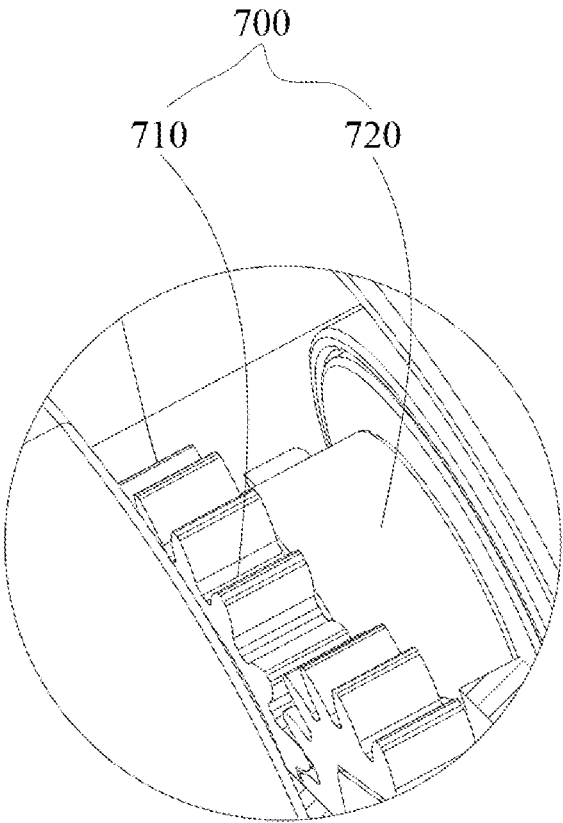


FIG. 3

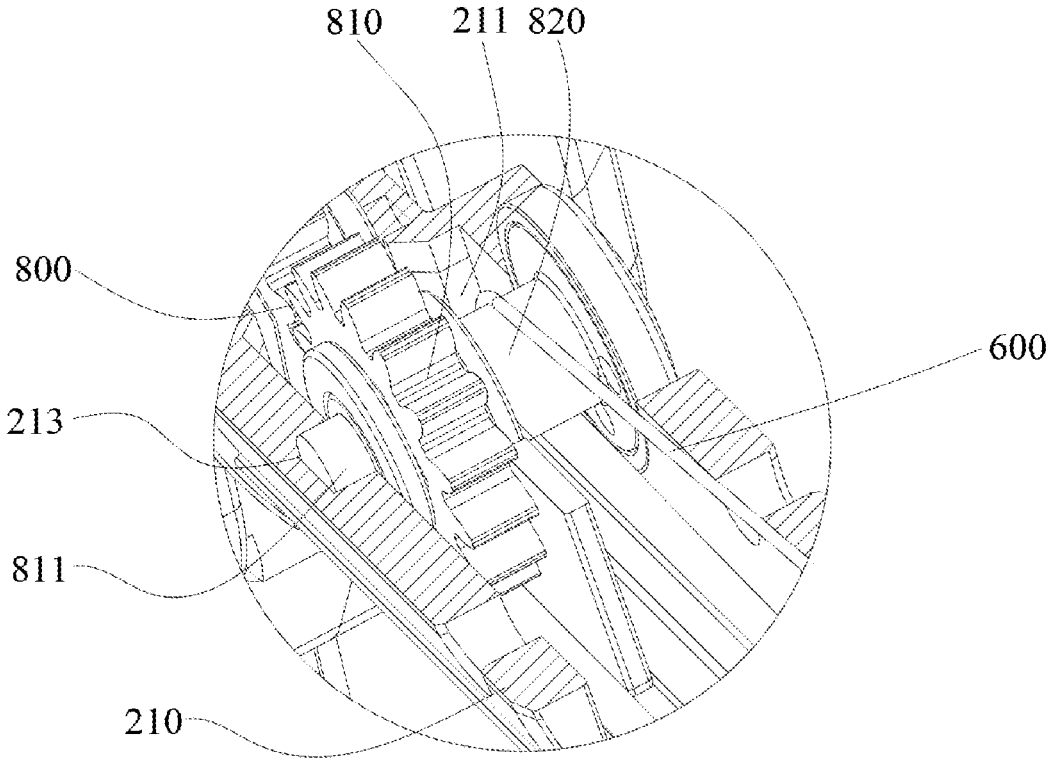


FIG. 4

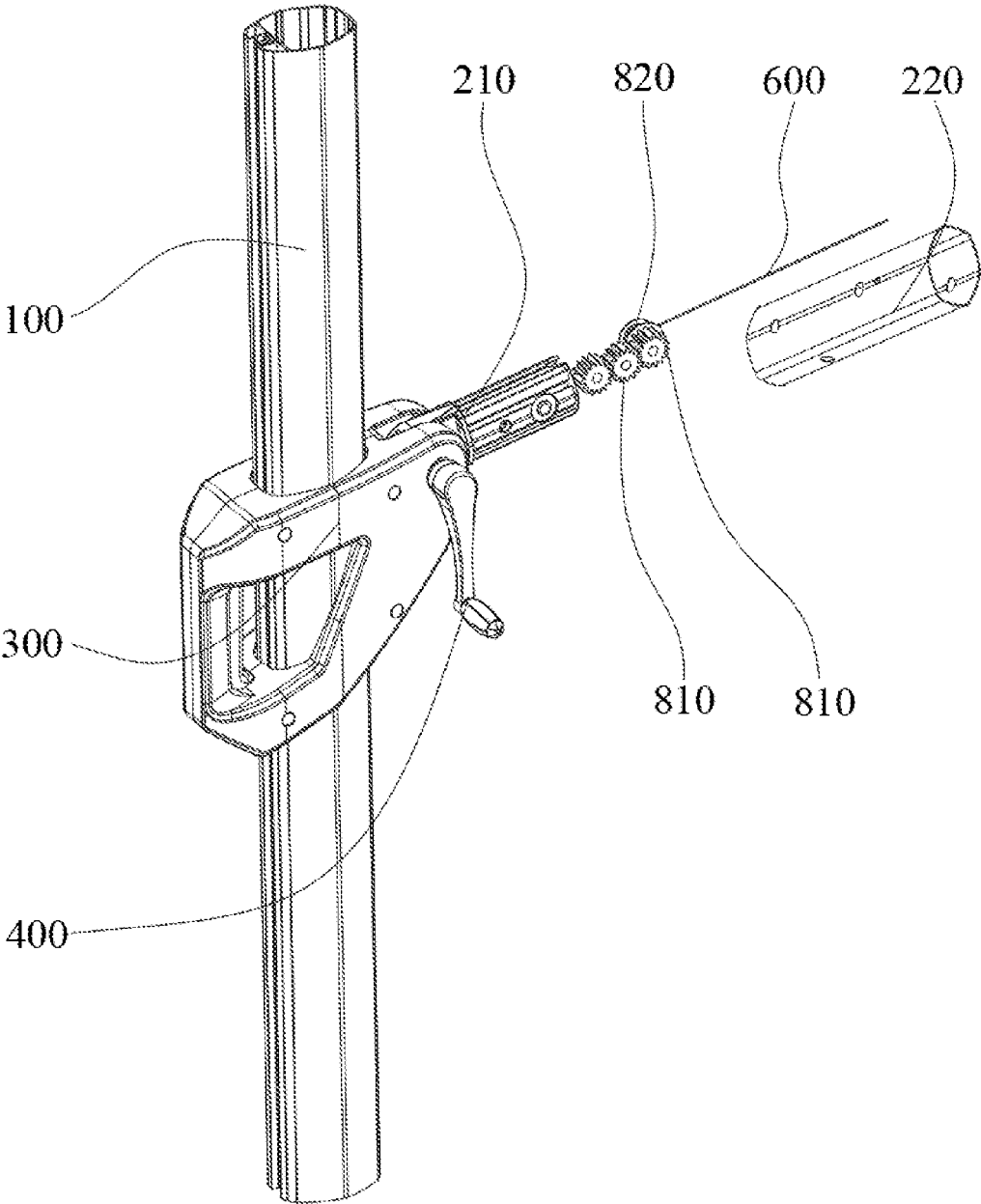


FIG. 5

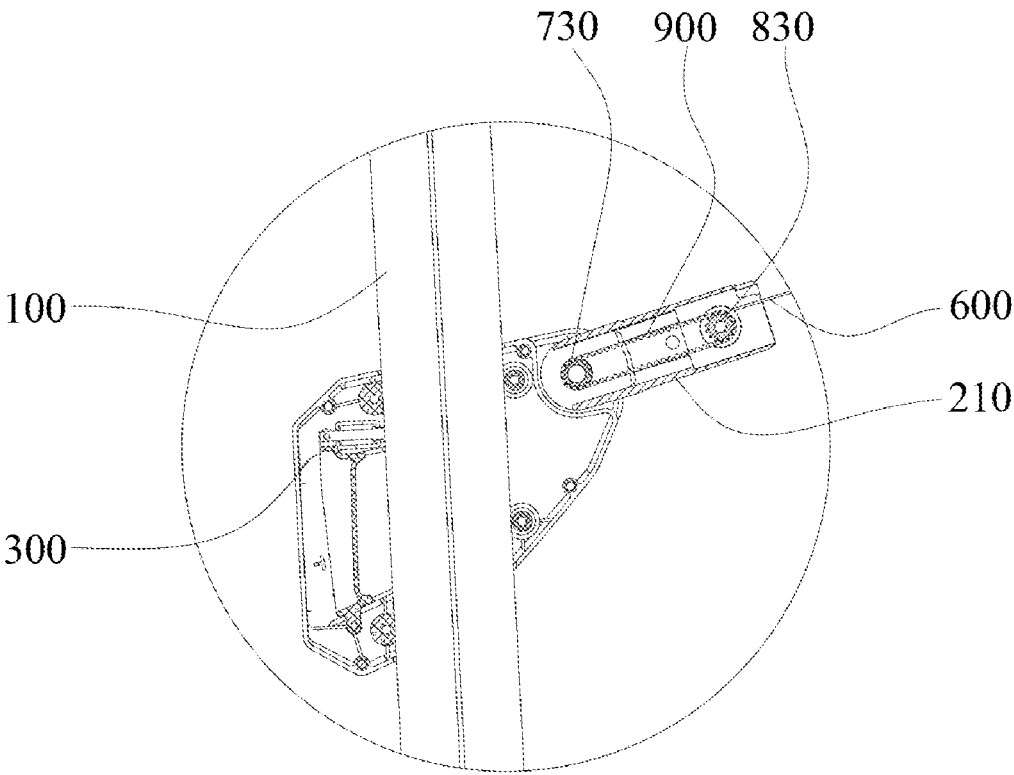


FIG. 6

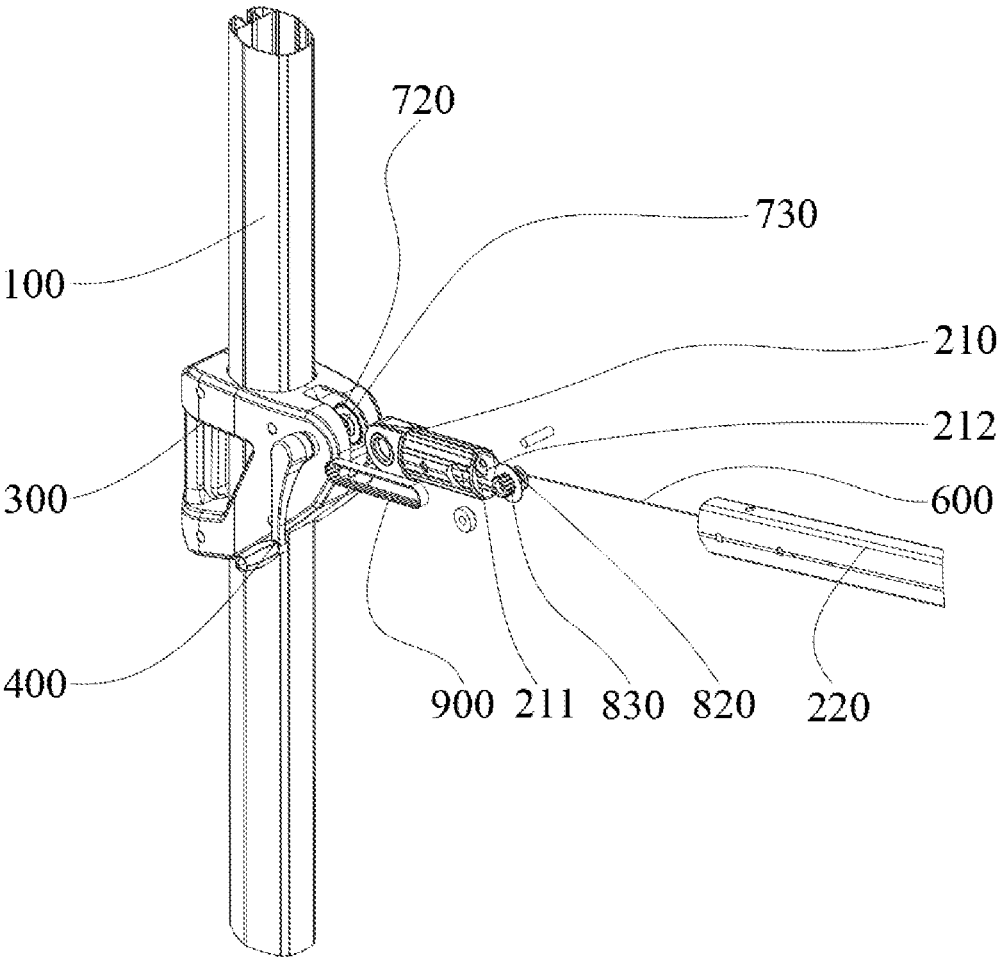


FIG. 7

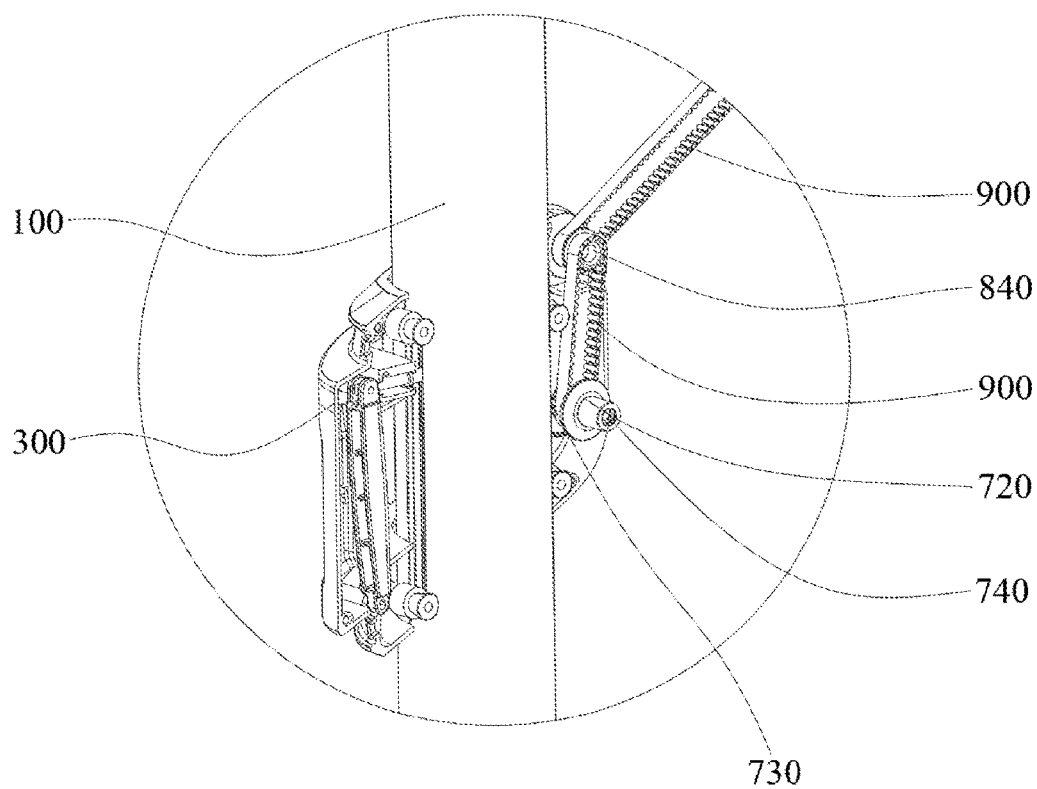


FIG. 8

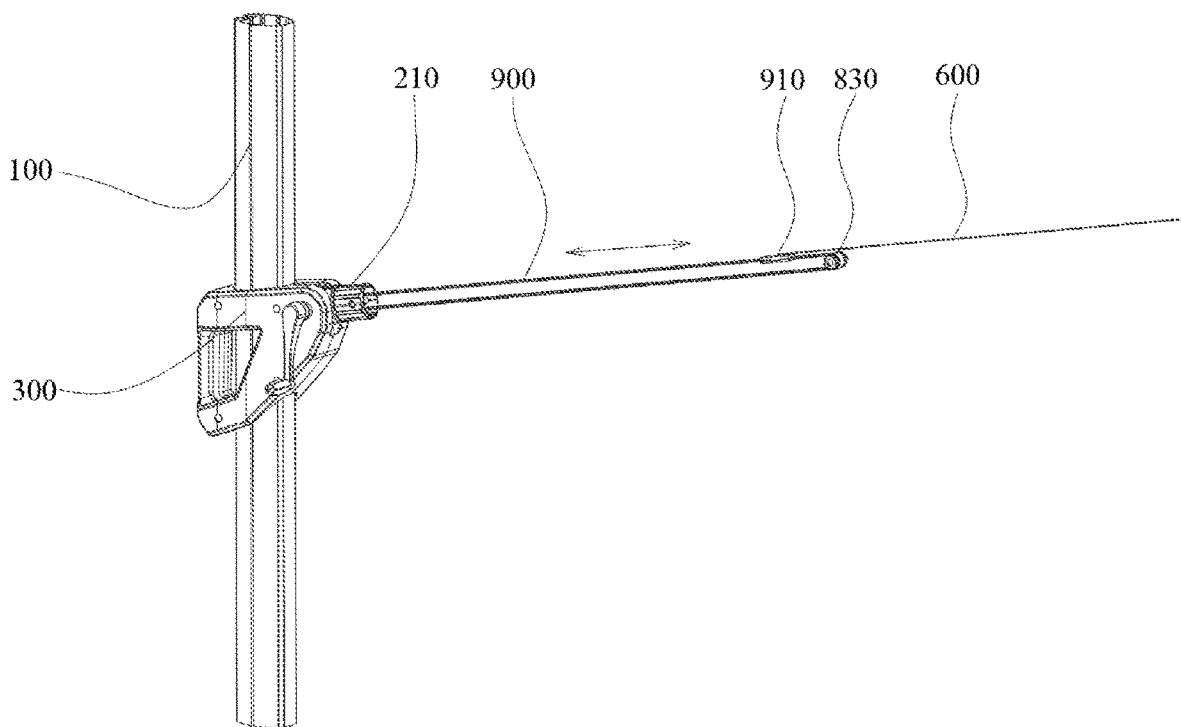


FIG. 9

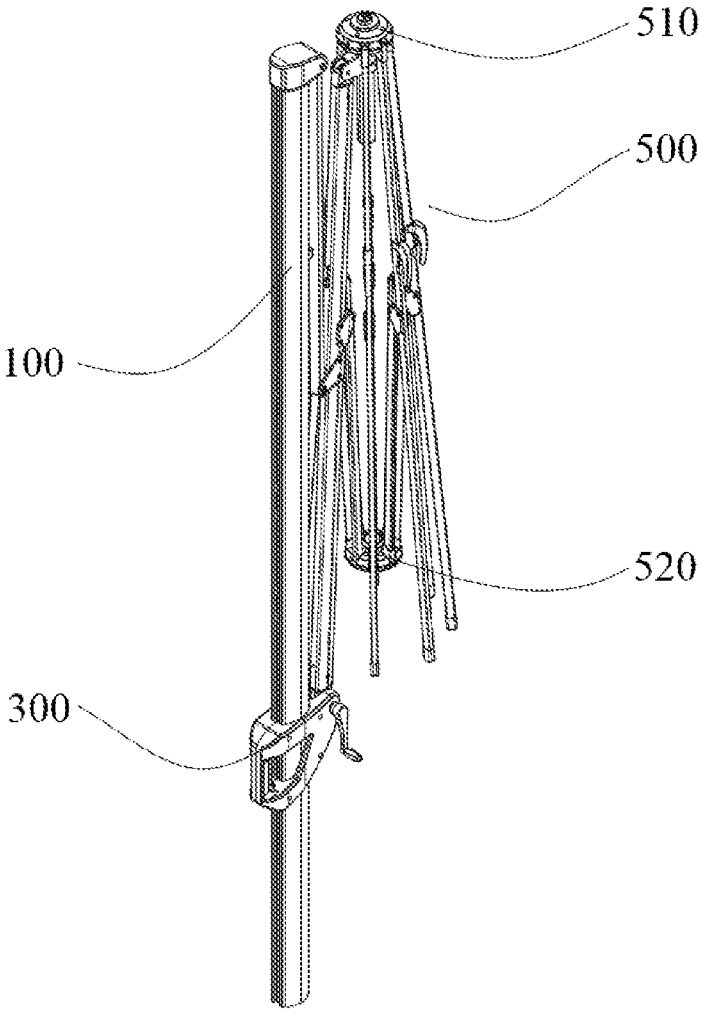


FIG.10

OUTDOOR SUNSHADE

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority to Chinese patent application No. 202320395096.0, filed Feb. 28, 2023, and Chinese Patent Application No. 202310270009.3, filed Mar. 15, 2023, which are hereby incorporated by reference in their entireties.

TECHNICAL FIELD

[0002] The present invention relates to the technical field of outdoor goods, in particular to an outdoor sunshade.

BACKGROUND

[0003] Outdoor sunshades are widely applied to people's daily life. The outdoor sunshades include hanging umbrellas and straight-rod umbrellas, wherein the hanging umbrellas further include Roman umbrellas, banana umbrellas, elbow umbrellas and other products. The areas below umbrella covers of the hanging umbrellas are wide, so that outdoor furniture can be placed casually; and the directions of the umbrella covers can be turned freely, so that the sunlight can be blocked casually.

[0004] The Roman umbrellas are the outdoor sunshades that have many functions and the good market response in the hanging umbrellas, the traditional Roman umbrellas are controlled by handle shells to rotate, rise and fall, and umbrella cords are usually provided in the handle shells to be combined with rotating handles to fold and unfold the umbrella covers. The specific structure is as shown in an umbrella disclosed in the publication number US2010051074A1, an umbrella cord winding mechanism is arranged in a handle shell of the structure, and an umbrella cord is wound by means of an operating handle to open and close an umbrella cover. However, the above-mentioned structure design is an umbrella unfolding or folding structure transmission design that is relatively common in the existing Roman umbrellas, during the umbrella cord winding operation of the structure, a cord winding wheel arranged in the handle shell is directly driven by the handle to wind the umbrella cord, and thus the winding operation is relatively laborious. Besides, existing handle shells are required to be internally provided with cord winding wheels, and the cord winding wheels necessarily have large structures during the umbrella cord winding operation, so that the overall structures of the handle shells are relatively large, and embedded mounting structures are relatively complex.

SUMMARY

[0005] With regard to the above-mentioned problems, the present invention aims to provide an outdoor sunshade, a sunshade cord winding and unwinding assembly is optimized, the operating force during sunshade folding is reduced, operation and usage by a user are facilitated, meanwhile, an internal structure is stable in transmission, and a handle shell is convenient to mount.

[0006] The technical problems can be solved by the present invention through the following technical solution:

[0007] an outdoor sunshade, comprising a sunshade post and a sunshade frame located on one side of the sunshade post, wherein a handle shell is arranged on the sunshade post, the handle shell can move vertically

along the sunshade post, an inclined pull rod is arranged on the handle shell in a matching manner, and the other end of the inclined pull rod matches the sunshade frame; the outdoor sunshade further comprises a sunshade cord and a sunshade cord winding and unwinding assembly; the sunshade cord winding and unwinding assembly is configured to wind or unwind the sunshade cord so as to unfold or fold the sunshade frame; and the sunshade cord winding and unwinding assembly comprises a first power component and a second power component, the first power component is located in the handle shell and completes power input by means of a driving component, the first power component and the second power component are in power transmission fit, a cord winding wheel is arranged on the second power component in a matching manner, and the second power component extends outwards in an axial direction of the inclined pull rod such that the cord winding wheel is located outside the handle shell.

[0008] The first power component comprises a power gear and a shaft sleeve set matching the power gear, the power gear is mounted and sleeved on the shaft sleeve set, the shaft sleeve set is configured to match the handle shell for mounting, a power input end is arranged on the shaft sleeve set, and the power gear is configured to match an adjacent transmission gear unit in the second power component in a meshing manner.

[0009] The second power component comprises at least one transmission gear unit, the transmission gear units match in sequence in a meshing manner, and the transmission gear unit located at the other end is configured to match the cord winding wheel for mounting.

[0010] The transmission gear unit and the cord winding wheel are of an integrated mounting structure or a split mounting structure.

[0011] The inclined pull rod comprises an inclined pull rod body and an inclined pull rod connecting shaft located at one end of the inclined pull rod body, one end of the inclined pull rod connecting shaft is configured to match the handle shell in a hinged manner, the inclined pull rod connecting shaft is sleeved on and fixed to the inclined pull rod body, a groove cavity is formed in the inclined pull rod connecting shaft, and the transmission gear units are mounted in the groove cavity in sequence.

[0012] The first power component comprises a driving wheel and a shaft sleeve set matching the driving wheel, the driving wheel is mounted and sleeved on the shaft sleeve set, the shaft sleeve set is configured to match the handle shell for mounting, a power input end is arranged on the shaft sleeve set, and the driving wheel is in transmission fit with a driven wheel in the second power component by means of belt wheels.

[0013] The cord winding wheel is arranged on the driven wheel in an integral or split matching manner.

[0014] A cord carrying portion is arranged on the belt wheel, the cord carrying portion is configured to fixedly match one end of the sunshade cord, and the cord carrying portion moves with rotation of the driving wheel to unfold or fold the sunshade frame.

[0015] The inclined pull rod comprises an inclined pull rod body and an inclined pull rod connecting shaft located at one end of the inclined pull rod body, one end of the inclined pull rod connecting shaft is configured to match the

handle shell in a hinged manner, the inclined pull rod connecting shaft is sleeved on and fixed to the inclined pull rod body, a groove cavity is formed in the inclined pull rod connecting shaft, and the belt wheels wind around the driving wheel and the driven wheel located at the other end of the groove cavity.

[0016] The inclined pull rod comprises an inclined pull rod body and an inclined pull rod connecting shaft located at one end of the inclined pull rod body, one end of the inclined pull rod connecting shaft is configured to match the handle shell in a hinged manner, the inclined pull rod connecting shaft is sleeved on and fixed to the inclined pull rod body, a groove cavity is formed in the inclined pull rod connecting shaft, and the belt wheels extend into an inner cavity of the inclined pull rod body along the groove cavity and match the driven wheel, located in the inner cavity of the inclined pull rod body, for mounting.

[0017] There are two or more belt wheels.

[0018] A transition wheel is arranged between every two adjacent belt wheels, and the driven wheel is located on the belt wheel at the tail end.

[0019] A cord carrying portion is arranged on the belt wheel at the tail end, and the cord carrying portion is configured to fixedly match one end of the sunshade cord.

[0020] Compared with the prior art, the present invention has the following beneficial effects: according to the present invention, the sunshade cord winding and unwinding assembly is optimized, at least two stages of power transmission structures are adopted, thus the sunshade cord can be more easily wound by the cord winding wheel, the operating force during sunshade folding is reduced, and operation and usage by a user are facilitated; the external cord winding wheel is optimized and used, mounting components of the handle shell are reduced, and meanwhile, the characteristics of stable transmission structures and convenience in mounting of the handle shell are achieved; and in other alternative embodiments, sunshade cover folding and unfolding operations can be realized without the cord winding wheel structure.

[0021] The features of the present invention can be clearly understood by referring to drawings of this case and detailed description of following preferred embodiments.

BRIEF DESCRIPTION OF THE DRAWINGS

[0022] FIG. 1 is an overall unfolded structure diagram of the present invention;

[0023] FIG. 2 is a first schematic diagram of a mounting structure of a sunshade cord winding and unwinding assembly of the present invention;

[0024] FIG. 3 is a partial enlarged structure diagram at part A in FIG. 2;

[0025] FIG. 4 is a partial enlarged structure diagram at part B in FIG. 2;

[0026] FIG. 5 is a second schematic diagram of the mounting structure of the sunshade cord winding and unwinding assembly of the present invention;

[0027] FIG. 6 is a schematic diagram of a mounting section structure of the sunshade cord winding and unwinding assembly of the present invention;

[0028] FIG. 7 is a third schematic diagram of the mounting structure of the sunshade cord winding and unwinding assembly of the present invention;

[0029] FIG. 8 is a fourth schematic diagram of the mounting structure of the sunshade cord winding and unwinding assembly of the present invention;

[0030] FIG. 9 is a fifth schematic diagram of the mounting structure of the sunshade cord winding and unwinding assembly of the present invention; and

[0031] FIG. 10 is an overall folded structure diagram of the present invention.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0032] In order to make the technical means, creative features, achievement goals and effects achieved by the present invention easy to understand, the present invention will be further described below in conjunction with specific illustrations.

[0033] It should be noted that all directional indications (such as up, down, left, right, front, back, etc.) in the embodiments of the present invention are only used to explain the relative position relationship and motions of components in a specific attitude (as shown in the accompanying drawings), and if the specific attitude is changed, the directional indications will be changed accordingly. In addition, the descriptions of “first”, “second” and the like in the present invention are used for the purpose of description only, and are not to be construed as indicating or implying their relative importance or implicitly indicating the number of technical features indicated. Thus, a feature defined by “first” or “second” may explicitly or implicitly comprise at least one of the features.

Embodiment 1

[0034] As shown in FIGS. 1-5, this embodiment discloses an outdoor sunshade, comprising a sunshade post **100** and a sunshade frame **500** located on one side of the sunshade post **100**, wherein a handle shell **300** is arranged on the sunshade post **100**, the handle shell **300** can move vertically along the sunshade post **100**, an inclined pull rod **200** is arranged on the handle shell **300** in a matching manner, the other end of the inclined pull rod **200** matches the sunshade frame **500**, the inclined pull rod **200** comprises an inclined pull rod body **220** and an inclined pull rod connecting shaft **210** located at one end of the inclined pull rod body **220**, one end of the inclined pull rod connecting shaft **210** is configured to match the handle shell **300** in a hinged manner, the inclined pull rod connecting shaft **210** is sleeved on and fixed to the inclined pull rod body **220**, and the inclined pull rod body **220** is fixed to the inclined pull rod connecting shaft **210** in an embedding manner.

[0035] The outdoor sunshade further comprises a sunshade cord **600** and a sunshade cord winding and unwinding assembly; the sunshade cord winding and unwinding assembly is configured to wind or unwind the sunshade cord **600** so as to unfold or fold the sunshade frame **500**; the sunshade cord winding and unwinding assembly comprises a first power component **700** and a second power component **800**, the first power component **700** is located in the handle shell **300** and completes power input by means of a driving component **400**, the first power component **700** and the second power component **800** are in power transmission fit, a cord winding wheel **820** is arranged on the second power component **800** in a matching manner, and the second power component **800** extends outwards in an axial direction of the

inclined pull rod **200** such that the cord winding wheel **820** is located outside the handle shell **300**; the sunshade cord winding and unwinding assembly is optimized, at least two stages of power transmission structures are adopted, thus the sunshade cord **600** can be more easily wound by the cord winding wheel **820**, the operating force during sunshade folding is reduced, and operation and usage by a user are facilitated; and the external cord winding wheel **820** is optimized and used, mounting components of the handle shell **300** are reduced, and meanwhile, the characteristics of stable transmission structures and convenience in mounting of the handle shell **300** are achieved.

[0036] The first power component **700** comprises a power gear **710** and a shaft sleeve set **720** matching the power gear **710**, the power gear **710** is mounted and sleeved on the shaft sleeve set **720**, the shaft sleeve set **720** is configured to match the handle shell **300** for mounting, a power input end **740** is arranged on the shaft sleeve set **720**, and the power gear **710** is configured to match an adjacent transmission gear unit **810** in the second power component **800** in a meshing manner; the power input end **740** is usually configured to match a crank handle **300**, and power input is completed through rotation of the crank handle **300**; and in the remaining alternative embodiments, an electric driving structure such as a micro motor can be added to drive a driving handle, and the driving handle matches the power input end so as to drive the power gear **710** on the shaft sleeve set **720** to rotate.

[0037] Combined with the above, the second power component **800** comprises at least one transmission gear unit **810**, the transmission gear units **810** match in sequence in a meshing manner, and the transmission gear unit **810** located at the other end is configured to match the cord winding wheel **820** for mounting.

[0038] Combined with the above, in one of the embodiments, there is one transmission gear unit **810**, the transmission gear unit **810** is configured to match the power gear **710** in a meshing manner, the cord winding wheel **820** is usually located on one side of the transmission gear unit **810**, the cord winding wheel and the transmission gear unit are arranged adjacently side by side, the transmission gear unit **810** is mounted in a groove cavity **211** of the inclined pull rod connecting shaft **210**, after being combined with the above power input, the power gear **710** rotates to drive the transmission gear unit **810** to rotate, the transmission gear unit **810** drives the cord winding wheel **820**, arranged side by side, to complete synchronous transmission, and the cord winding wheel **820** winds or unwinds the sunshade cord **600**.

[0039] Combined with the above, in one of the embodiments, there are two transmission gear units **810**, one of the transmission gear units **810** is configured to match the power gear **710** in a meshing manner, the cord winding wheel **820** is located on one side of the other transmission gear unit **810**, the cord winding wheel and the transmission gear unit are arranged adjacently side by side, the two transmission gear units **810** are mounted in sequence in the groove cavity **211** of the inclined pull rod connecting shaft **210**, after being combined with the above power input, the power gear **710** rotates to drive the adjacent transmission gear unit **810** to rotate, the transmission gear units **810** perform transmission in sequence to drive the transmission gear unit **810**, provided with the cord winding wheel **820** side by side, to perform transmission to complete synchronous transmission of the

cord winding wheel **820**, and the cord winding wheel **820** winds or unwinds the sunshade cord **600**.

[0040] Combined with the above, in one of the embodiments, there are three or more transmission gear units **810**, one of the transmission gear units **810** is configured to match the power gear **710** in a meshing manner, the cord winding wheel **820** is arranged on one side of the transmission gear unit **810** at the other end, the middle transmission gear units **810** match in sequence in a meshing manner, and the cord winding wheel **820** is driven through sequential power input to wind or unwind the sunshade cord **600**.

[0041] In the above-mentioned structures, according to transmission power output requirements, the transmission gear units **810** may be of various specifications and sizes to match each other, thereby improving the convenience in power input operation.

[0042] In the above-mentioned structures, the transmission gear unit **810** and the cord winding wheel **820** are of an integrated mounting structure or a split mounting structure.

[0043] In the above-mentioned structures, a shaft groove **213** is usually provided in the groove cavity **211** of the inclined pull rod connecting shaft **210** in a matching manner, and matching of the transmission gear units **810** and the groove cavity **211** usually realizes running fit for arranged gear shafts **811**; and a cavity body configured to match the cord winding wheel **820** is usually provided at one end of the groove cavity **211** so as to facilitate mounting of the cord winding wheel **820**.

[0044] According to this embodiment, the sunshade cord winding and unwinding assembly is designed in an optimized manner, the core is of a multi-stage gear transmission structure, and the characteristics of convenience in operation and stable transmission structure are achieved.

Embodiment 2

[0045] Combined with Embodiment 1, as shown in FIGS. 6-8, this embodiment discloses an outdoor sunshade, comprising a sunshade post **100** and a sunshade frame **500** located on one side of the sunshade post **100**, wherein a handle shell **300** is arranged on the sunshade post **100**, the handle shell **300** can move vertically along the sunshade post **100**, an inclined pull rod **200** is arranged on the handle shell **300** in a matching manner, the other end of the inclined pull rod **200** matches the sunshade frame **500**, the inclined pull rod **200** comprises an inclined pull rod body **220** and an inclined pull rod connecting shaft **210** located at one end of the inclined pull rod body **220**, one end of the inclined pull rod connecting shaft **210** is configured to match the handle shell **300** in a hinged manner, the inclined pull rod connecting shaft **210** is sleeved on and fixed to the inclined pull rod body **220**, and the inclined pull rod body **220** is fixed to the inclined pull rod connecting shaft **210** in an embedding manner.

[0046] The outdoor sunshade further comprises a sunshade cord **600** and a sunshade cord winding and unwinding assembly; the sunshade cord winding and unwinding assembly is configured to wind or unwind the sunshade cord **600** so as to unfold or fold the sunshade frame **500**; the sunshade cord winding and unwinding assembly comprises a first power component **700** and a second power component **800**, the first power component **700** is located in the handle shell **300** and completes power input by means of a driving component **400**, the first power component **700** and the second power component **800** are in power transmission fit,

a cord winding wheel **820** is arranged on the second power component **800** in a matching manner, and the second power component **800** extends outwards in an axial direction of the inclined pull rod **200** such that the cord winding wheel **820** is located outside the handle shell **300**; the sunshade cord winding and unwinding assembly is optimized, at least two stages of power transmission structures are adopted, thus the sunshade cord **600** can be more easily wound by the cord winding wheel **820**, the operating force during sunshade folding is reduced, and operation and usage by a user are facilitated; and the external cord winding wheel **820** is optimized and used, mounting components of the handle shell **300** are reduced, and meanwhile, the characteristics of stable transmission structures and convenience in mounting of the handle shell **300** are achieved.

[0047] Combined with the above, the first power component **700** comprises a driving wheel **730** and a shaft sleeve set **720** matching the driving wheel **730**, the driving wheel **730** is mounted and sleeved on the shaft sleeve set **720**, the shaft sleeve set **720** is configured to match the handle shell **300** for mounting, a power input end **740** is arranged on the shaft sleeve set **720**, and the driving wheel **730** is in transmission fit with a driven wheel **830** in the second power component **800** by means of belt wheels **900**; the power input end **740** is usually configured to match a crank handle, and power input is completed through rotation of the crank handle so as to complete rotating driving of the driving wheel **730**; and in the remaining alternative embodiments, an electric driving structure such as a micro motor can be added to drive a driving handle, and the driving handle matches the power input end so as to drive the driving wheel on the shaft sleeve set to rotate.

[0048] Combined with the above, the cord winding wheel **820** is arranged on the driven wheel **830** in an integral or split matching manner, the cord winding wheel **820** is usually located on one side of the driven wheel **830**, the cord winding wheel and the driven wheel are arranged side by side, and synchronous transmission can be realized; the belt wheels **900** are wound between the driving wheel **730** and the driven wheel **830**, the groove cavity **211** is formed in the inclined pull rod connecting shaft **210**, and the belt wheels **900** are wound on the driving wheel **730** and the driven wheel **830** located at the other end of the groove cavity **211**; thus the whole second power component **800** is located in the groove cavity **211**, one end of the groove cavity **211** is usually configured to match the driven wheel **830** and the cord winding wheel **820** to realize running fit, with the power input, the driving wheel **730** drives the belt wheels **900** to rotate, and the belt wheels **900** drive the driven wheel **830** to rotate so as to synchronously drive the cord winding wheel **820** to wind or unwind the sunshade cord **600**.

Embodiment 3

[0049] On the basis of Embodiment 2, as shown in FIG. 8 or FIG. 9, this embodiment discloses an outdoor sunshade, compared with Embodiment 1, there may be two or more belt wheels **900**, facilitating arrangement of different mounting positions of a driving wheel **730** and a handle shell **300**, a transition wheel **840** is arranged between every two adjacent belt wheels **900**, a driven wheel **830** is located on the belt wheel **900** at the tail end, and one transition wheel **840** is arranged for transition to realize power transmission.

[0050] In one of the embodiments, a groove cavity **211** is formed in an inclined pull rod connecting shaft **210**, the belt

wheels **900** extend into an inner cavity of an inclined pull rod body **220** along the groove cavity **211** and match the driven wheel **730**, located in the inner cavity of the inclined pull rod body **220**, for mounting, a cord carrying portion **910** is arranged on the belt wheel **900** at the tail end, and the cord carrying portion **910** is configured to fixedly match one end of a sunshade cord **600**; the cord carrying portion **910** is arranged on the belt wheel **900**, the cord carrying portion **910** is configured to fixedly match one end of the sunshade cord **600**, the cord carrying portion **910** moves with rotation of the driving wheel **730** to unfold or fold a sunshade frame **500**; preferably, the movement distance of the cord carrying portion **910** is usually the winding length of the sunshade cord **600** during folding and unfolding of the sunshade frame **500**, usually, when the cord carrying portion **910** is located at the driving wheel **730** or is close to the driving wheel, the sunshade frame **500** is in an unfolded state, and when the cord carrying portion **910** is located at the driven wheel **830** or is close to the driven wheel, the sunshade frame is in a folded state; and the cord carrying portion **910** may be a carrying platform provided with a cord locking structure on the belt wheel **900**, or one end of the sunshade cord may be directly fixed to the belt wheel **900**.

[0051] In this embodiment, a belt wheel transmission structure is preferred, which is the added structure design of Embodiment 2; the multiple stages of belt wheels **900** are used for transmission, thereby facilitating arrangement of the driving wheel **730** at different positions of the handle shell, increasing the design space of a product, achieving the external structure of a cord winding wheel **820**, achieving the effect of reducing the folding operation force while reducing the overall length of the sunshade cord **600**.

Embodiment 4

[0052] Combined with any one of the above-mentioned embodiments, as shown in FIG. 9, this embodiment discloses an outdoor sunshade, comprising a sunshade post **100** and a sunshade frame **500** located on one side of the sunshade post **100**, wherein a handle shell **300** is arranged on the sunshade post **100**, the handle shell **300** can move vertically along the sunshade post **100**, an inclined pull rod **200** is arranged on the handle shell **300** in a matching manner, the other end of the inclined pull rod **200** matches the sunshade frame **500**, the inclined pull rod **200** comprises an inclined pull rod body **220** and an inclined pull rod connecting shaft **210** located at one end of the inclined pull rod body **220**, one end of the inclined pull rod connecting shaft **210** is configured to match the handle shell **300** in a hinged manner, the inclined pull rod connecting shaft **210** is sleeved on and fixed to the inclined pull rod body **220**, and the inclined pull rod body **220** is fixed to the inclined pull rod connecting shaft **210** in an embedding manner.

[0053] The outdoor sunshade further comprises a sunshade cord **600** and a sunshade cord winding and unwinding assembly; the sunshade cord winding and unwinding assembly is configured to wind or unwind the sunshade cord **600** so as to unfold or fold the sunshade frame **500**; the sunshade cord winding and unwinding assembly comprises a first power component **700** and a second power component **800**, the first power component **700** is located in the handle shell **300** and completes power input by means of a driving component **400**, the first power component **700** and the second power component **800** are in power transmission fit, a cord winding wheel **820** is arranged on the second power

component **800** in a matching manner, and the second power component **800** extends outwards in an axial direction of the inclined pull rod **200** such that the cord winding wheel **820** is located outside the handle shell **300**; the sunshade cord winding and unwinding assembly is optimized, at least two stages of power transmission structures are adopted, thus the sunshade cord **600** can be more easily wound by the cord winding wheel **820**, the operating force during sunshade folding is reduced, and operation and usage by a user are facilitated; and the external cord winding wheel **820** is optimized and used, mounting components of the handle shell **300** are reduced, and meanwhile, the characteristics of stable transmission structures and convenience in mounting of the handle shell **300** are achieved.

[0054] Combined with the above, the first power component **700** comprises a driving wheel **730** and a shaft sleeve set **720** matching the driving wheel **730**, the driving wheel **730** is mounted and sleeved on the shaft sleeve set **720**, the shaft sleeve set **720** is configured to match the handle shell **300** for mounting, a power input end **740** is arranged on the shaft sleeve set **720**, and the driving wheel **730** is in transmission fit with a driven wheel **830** in the second power component **800** by means of belt wheels **900**; the power input end **740** is usually configured to match a crank handle, and power input is completed through rotation of the crank handle so as to complete rotating driving of the driving wheel **730**; and in the remaining alternative embodiments, an electric driving structure such as a micro motor can be added to drive a driving handle, and the driving handle matches the power input end so as to drive the driving wheel on the shaft sleeve set to rotate.

[0055] Combined with the above, a groove cavity **211** is formed in an inclined pull rod connecting shaft **210**, the belt wheels **900** extend into an inner cavity of the inclined pull rod body **220** along the groove cavity **211** and match the driven wheel **730**, located in the inner cavity of the inclined pull rod body **220**, for mounting, a cord carrying portion **910** is arranged on the belt wheel **900**, the cord carrying portion **910** is configured to fixedly match one end of the sunshade cord **600**, and the cord carrying portion **910** moves with rotation of the driving wheel **730** to unfold or fold the sunshade frame **500**; preferably, the movement distance of the cord carrying portion **910** is usually the winding length of the sunshade cord **600** during folding and unfolding of the sunshade frame **500**, usually, when the cord carrying portion **910** is located at the driving wheel **730** or is close to the driving wheel, the sunshade frame **500** is in an unfolded state, and when the cord carrying portion **910** is located at the driven wheel **830** or is close to the driven wheel, the sunshade frame is in a folded state; and the cord carrying portion **910** may be a carrying platform provided with a cord locking structure on the belt wheel **900**, or one end of the sunshade cord may be directly fixed to the belt wheel **900**.

[0056] According to the embodiment, the design is optimized, and the winding stroke of the sunshade cord is replaced by the transmission stroke of the belt wheels, so that the cord winding wheel can be removed from the overall structure, a cord winding wheel structure in the prior art is not needed, there are more innovative structure designs for winding of the sunshade cord, and expansion of various structures for the sunshade folding and unfolding structure for the outdoor sunshade is facilitated.

[0057] In conjunction with any one of the above-mentioned embodiments, as shown in FIG. 1 and FIG. 10, the

sunshade frame **500** is unfolded and folded on the basis of the sunshade cord **600** and the sunshade cord winding and unwinding assembly; when the sunshade cord winding and unwinding assembly is used for winding the sunshade cord **600**, the sunshade frame **500** is in a folded state at this moment, and as shown in FIG. 10, along with winding of the sunshade cord **600**, a lower sunshade disc **520** on the sunshade frame **500** gradually moves upwards to get close to an upper sunshade disc **510** until the sunshade frame **500** is completely unfolded; and when the sunshade cord winding and unwinding assembly is used for unwinding the sunshade cord **600**, the sunshade frame **500** is in an unfolded state at this moment, and as shown in FIG. 1, along with unwinding of the sunshade cord **600**, the lower sunshade disc **520** on the sunshade frame **500** gradually moves downwards to get away from the upper sunshade disc **510** until the sunshade frame **500** is completed folded.

[0058] The above embodiments are only the preferred embodiments of the present invention, and are not intended to limit the present invention in any way. Any simple amendment, equivalent change, or modification made to the above embodiments in accordance with the technical principles of the present invention still falls within the scope of the technical solution of the present invention.

1. An outdoor sunshade, comprising:

- a sunshade post;
 - a sunshade frame located on one side of the sunshade post;
 - a handle shell arranged on the sunshade post, wherein the handle shell can move vertically along the sunshade post;
 - an inclined pull rod arranged on the handle shell in a matching manner, the other end of the inclined pull rod matching the sunshade frame;
 - a sunshade cord;
 - a sunshade cord winding and unwinding assembly configured to wind or unwind the sunshade cord so as to unfold or fold the sunshade frame; the sunshade cord winding and unwinding assembly comprising a first power component and a second power component, wherein the first power component is located in the handle shell and completes power input by means of a driving component, and wherein the first power component and the second power component are in power transmission fit; and
 - a cord winding wheel arranged on the second power component in a matching manner,
- wherein the second power component extends outwards in an axial direction of the inclined pull rod such that the cord winding wheel is located outside the handle shell.

2. The outdoor sunshade according to claim 1, wherein the first power component comprises a power gear and a shaft sleeve set matching the power gear, the power gear is mounted and sleeved on the shaft sleeve set, the shaft sleeve set is configured to match the handle shell for mounting, a power input end is arranged on the shaft sleeve set, and the power gear is configured to match an adjacent transmission gear unit in the second power component in a meshing manner.

3. The outdoor sunshade according to claim 2, wherein the second power component comprises at least one transmission gear unit, the transmission gear units match in sequence

in a meshing manner, and the transmission gear unit located at the other end is configured to match the cord winding wheel for mounting.

4. The outdoor sunshade according to claim 3, wherein the transmission gear unit and the cord winding wheel are of an integrated mounting structure or a split mounting structure.

5. The outdoor sunshade according to claim 1, wherein the inclined pull rod comprises an inclined pull rod body and an inclined pull rod connecting shaft located at one end of the inclined pull rod body, one end of the inclined pull rod connecting shaft is configured to match the handle shell in a hinged manner, the inclined pull rod connecting shaft is sleeved on and fixed to the inclined pull rod body, a groove cavity is formed in the inclined pull rod connecting shaft, and the transmission gear units are mounted in the groove cavity in sequence.

6. The outdoor sunshade according to claim 1, wherein the first power component comprises a driving wheel and a shaft sleeve set matching the driving wheel, the driving wheel is mounted and sleeved on the shaft sleeve set, the shaft sleeve set is configured to match the handle shell for mounting, a power input end is arranged on the shaft sleeve set, and the driving wheel is in transmission fit with a driven wheel in the second power component by means of belt wheels.

7. The outdoor sunshade according to claim 6, wherein the cord winding wheel is arranged on the driven wheel in an integral or split matching manner.

8. The outdoor sunshade according to claim 6, wherein a cord carrying portion is arranged on the belt wheel, the cord carrying portion is configured to fixedly match one end of the sunshade cord, and the cord carrying portion moves with rotation of the driving wheel to unfold or fold the sunshade frame.

9. The outdoor sunshade according to claim 1, wherein the inclined pull rod comprises an inclined pull rod body and an inclined pull rod connecting shaft located at one end of the inclined pull rod body, one end of the inclined pull rod connecting shaft is configured to match the handle shell in a hinged manner, the inclined pull rod connecting shaft is sleeved on and fixed to the inclined pull rod body, a groove cavity is formed in the inclined pull rod connecting shaft, and the belt wheels wind around the driving wheel and the driven wheel located at the other end of the groove cavity.

10. The outdoor sunshade according to claim 1, wherein the inclined pull rod comprises an inclined pull rod body and

an inclined pull rod connecting shaft located at one end of the inclined pull rod body, one end of the inclined pull rod connecting shaft is configured to match the handle shell in a hinged manner, the inclined pull rod connecting shaft is sleeved on and fixed to the inclined pull rod body, a groove cavity is formed in the inclined pull rod connecting shaft, and the belt wheels extend into an inner cavity of the inclined pull rod body along the groove cavity and match the driven wheel, located in the inner cavity of the inclined pull rod body, for mounting.

11. The outdoor sunshade according to claim 6, wherein there are two or more belt wheels.

12. The outdoor sunshade according to claim 11, wherein a transition wheel is arranged between every two adjacent belt wheels, and the driven wheel is located on the belt wheel at the tail end.

13. The outdoor sunshade according to claim 12, wherein a cord carrying portion is arranged on the belt wheel at the tail end, and the cord carrying portion is configured to fixedly match one end of the sunshade cord.

14. The outdoor sunshade according to claim 7, wherein there are two or more belt wheels.

15. The outdoor sunshade according to claim 6, wherein the inclined pull rod comprises an inclined pull rod body and an inclined pull rod connecting shaft located at one end of the inclined pull rod body, one end of the inclined pull rod connecting shaft is configured to match the handle shell in a hinged manner, the inclined pull rod connecting shaft is sleeved on and fixed to the inclined pull rod body, a groove cavity is formed in the inclined pull rod connecting shaft, and the belt wheels wind around the driving wheel and the driven wheel located at the other end of the groove cavity.

16. The outdoor sunshade according to claim 6, wherein the inclined pull rod comprises an inclined pull rod body and an inclined pull rod connecting shaft located at one end of the inclined pull rod body, one end of the inclined pull rod connecting shaft is configured to match the handle shell in a hinged manner, the inclined pull rod connecting shaft is sleeved on and fixed to the inclined pull rod body, a groove cavity is formed in the inclined pull rod connecting shaft, and the belt wheels extend into an inner cavity of the inclined pull rod body along the groove cavity and match the driven wheel, located in the inner cavity of the inclined pull rod body, for mounting.

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