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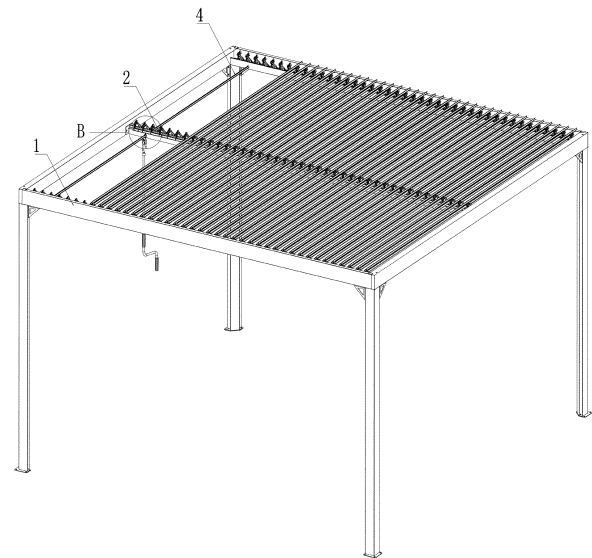
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(54) **STABLE TRANSMISSION STRUCTURE FOR LONG LOUVER CANOPY**

(57) The utility model pertains to the field of outdoor supplies and specifically relates to a stable transmission structure for a long louver canopy. The stable transmission structure for a long louver canopy comprises a tent frame, a driving mechanism is mounted in the middle part of the upper end of the tent frame in a fit manner, two ends of the driving mechanism are in transmission fit with a transmission rod, the transmission rod is in transmission fit with a louver transmission mechanism, and the louver transmission mechanism is used for driving ends of louver boards to flip, thereby achieving opening and closing of the louver boards. The driving mechanism in the present utility model is mounted on the middle beam and drives the louver transmission mechanism on the two sides by means of the transmission rod to open and close the louver boards. As the driving mechanism is on the middle beam, the errors and torsions after conduction to the two sides are similar, thereby achieving synchronous motions on the two sides and avoiding distortion of the louver boards.



[Figure No.] Fig. 1

Description

TECHNICAL FIELD

[0001] The present utility model pertains to the field of outdoor supplies and specifically relates to a stable transmission structure for a long louver canopy.

BACKGROUND ART

[0002] An existing transmission structure for a louver canopy tent generally comprises a driving mechanism, a transmission rod and a louver transmission mechanism. The louver transmission mechanism comprises a rotating part, a transmission part and linkage bars, the driving mechanism is normally mounted on one side of the louver boards, the end of each louver board adjacent to a worm gear mechanism is relatively flat in a closed state, while the closure at the other end relies on the drive of the closure of the left end. Due to process limitations, when the length of the pipe reaches a certain amount, it is prone to distortions and other problems, thereby causing failure of complete closure of the right end of the louver board in a closed state and other functional failures.

SUMMARY OF THE UTILITY MODEL

[0003] In order to make up for the defects of the prior art, the present utility model provides a technical solution for a stable transmission structure for a long louver canopy.

[0004] The stable transmission structure for a long louver canopy, wherein the stable transmission structure comprises a tent frame, a driving mechanism is mounted in the middle part of the upper end of the tent frame in a fit manner, two ends of the driving mechanism are in transmission fit with a transmission rod, the transmission rod is in transmission fit with a louver transmission mechanism, and the louver transmission mechanism is used for driving ends of louver boards to flip, thereby achieving opening and closing of the louver boards.

[0005] The stable transmission structure for a long louver canopy, wherein the louver transmission mechanism comprises a rotating part, a transmission part and linkage bars, one end of the rotating part is in transmission fit with a transmission rod, the other end is articulated with the transmission part, the transmission part is articulated with the linkage bars, and the linkage bars are used for driving the louver boards to open or close.

[0006] The stable transmission structure for a long louver canopy, wherein the driving mechanism is in transmission fit with a rotating shaft, each of the two ends of the rotating shaft is in transmission and insertion fit with a transmission rod, and the transmission rod is in transmission and insertion fit with the corresponding rotating part.

[0007] The stable transmission structure for a long louver canopy, wherein the cross section of the rotating shaft

is rectangular, the transmission rod has a rectangular hole corresponding thereto, and the rotating shaft is in transmission and insertion fit with the rectangular hole.

[0008] The stable transmission structure for a long louver canopy, wherein the exterior of the transmission rod is designed to be an irregularly shaped structure, the rotating part is in transmission and insertion fit with a corresponding irregularly shaped hole, and the transmission rod is in transmission and insertion fit with the irregularly shaped hole.

[0009] The stable transmission structure for a long louver canopy, wherein the tent frame comprises first ring beams located on the left end and the right end of the tent frame, respectively and a middle beam located between the two first ring beams, and a driving mechanism is mounted on the middle beam in a fit manner.

[0010] The stable transmission structure for a long louver canopy, wherein the driving mechanism is a worm and gear driving mechanism.

[0011] Compared with the prior art, the present utility model has the following beneficial effects: The driving mechanism in the present utility model is mounted on the middle beam and drives the louver transmission mechanism on the two sides by means of the transmission rod to open and close the louver boards. As the driving mechanism is on the middle beam, the errors and torsions after conduction to the two sides are similar, thereby achieving synchronous motions on the two sides and avoiding distortion of the louver boards.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012]

Fig. 1 is a structural schematic view of a use state of the stable transmission structure for a long louver canopy;

Fig. 2 is an enlarged view of Area B in Fig. 1;

Fig. 3 is a schematic view of the connection among a middle beam, a driving mechanism, a rotating shaft and a transmission rod in the present utility model;

Fig. 4 is a structural schematic view of the connection among a ring beam, a louver transmission mechanism and a transmission rod in the present utility model;

Fig. 5 is a structural schematic view of the connection between a driving mechanism and a rotating shaft in the present utility model;

Fig. 6 is a structural schematic view of a louver transmission mechanism in the present utility model;

Fig. 7 is a structural schematic view of a transmission rod in the present utility model.

DETAILED DESCRIPTION

[0013] The present utility model will be further illustrated with reference to accompanying drawings.

[0014] The figures show a stable transmission structure for a long louver canopy. The stable transmission structure comprises a tent frame, a driving mechanism 3 is mounted in the middle part of the upper end of the tent frame in a fit manner, two ends of the driving mechanism 3 are in transmission fit with a transmission rod 4, the transmission rod 4 is in transmission fit with a louver transmission mechanism, and the louver transmission mechanism is used for driving ends of louver boards to flip, thereby achieving opening and closing of the louver boards.

[0015] As an optimization: The louver transmission mechanism comprises a rotating part 5a, a transmission part 5b and linkage bars 5c, one end of the rotating part 5a is in transmission fit with a transmission rod 4, the other end is articulated with the transmission part 5b, the transmission part 5b is articulated with the linkage bars 5c, and the linkage bars 5c are used for driving the louver boards to open or close. In actual implementation, the linkage bars 5c are used in cooperation with louver board rotating parts and louver board fixing seats, a set of first articulating portions 5ca are arranged along the length direction of the linkage bars 5c, the first articulating portions 5ca of the linkage bars 5c are articulated with the louver board rotating parts 7, and when the linkage bars 5c move, the linkage bars 5c drive the louver boards to flip open and close through the louver board rotating parts and the louver board fixing seats.

[0016] As an optimization: The driving mechanism 3 is in transmission fit with a rotating shaft 3a, each of the two ends of the rotating shaft 3a is in transmission and insertion fit with a transmission rod 4, and the transmission rod 4 is in transmission and insertion fit with the corresponding rotating part 5a. In actual implementation, the driving mechanism 3 is a conventional worm and gear mechanism, and is in transmission fit with the rotating shaft 3a in a known manner.

[0017] In the foregoing structure, the cross section of the rotating shaft 3a is rectangular, the transmission rod 4 has a rectangular hole 4a corresponding thereto, the rotating shaft 3a is in transmission and insertion fit with the rectangular hole 4a, and the rotating shaft 3a and the transmission rod 4 transfer power through the matched shapes.

[0018] In the foregoing structure, the exterior of the transmission rod 4 adopts an irregularly shaped structure similar to a spline, the rotating part 5a is in insertion fit with an irregularly shaped hole 5aa corresponding thereto, the transmission rod 4 is in insertion fit with the irregularly shaped hole 5aa, and the transmission rod 4 and the rotating part 5a transfer power through the matched shapes.

[0019] As an optimization: The tent frame comprises first ring beams 1 located on the left end and the right

end of the tent frame, respectively and a middle beam 2 located between the two first ring beams 1, and a driving mechanism 3 is mounted on the middle beam 2 in a fit manner. In actual implementation, the tent frame further comprises four columns and two second ring beams, which form a square structure with the first ring beams 1. The middle beam 2 is fixed between the two second ring beams. The linkage bars 5c are arranged on the two first ring beams 1 and the middle beam 2, but only the linkage bars 5c on the first ring beams 1 are used in cooperation with the rotating part 5a and the transmission part 5b. Nevertheless, if needed, corresponding rotating parts 5a and transmission parts 5b can be added for the linkage bars 5c on the middle beam 2.

[0020] During work, the driving mechanism 3 drives the rotating shaft 3a to rotate, the rotating shaft 3a drives the transmission rod 4 to rotate, the transmission rod 4 drives the rotating part 5a to rotate, the rotating part 5a drives the transmission part 5b to rotate, the transmission part 5b drives the linkage bars 5c to move, the linkage bars 5c drive the louver board rotating parts to rotate with the louver board fixing seats as fulcrums, and the louver board rotating parts drive the louver boards to flip to achieve the opening and closure of the louver boards.

[0021] The present utility model has the following features: The driving mechanism is mounted on the middle beam, synchronously drives the two ends of the louver boards to realize complete closure of the louver, makes the power transfer more balanced and can avoid distortion of the louver boards;

[0022] Further description of the foregoing features: It is set that the driving mechanism is mounted on the middle beam and drives the louver transmission mechanism on the two sides by means of the transmission rod to open and close the louver boards. As the driving mechanism is on the middle beam, the errors and torsions after conduction to the two sides are similar, thereby achieving synchronous motions on the two sides.

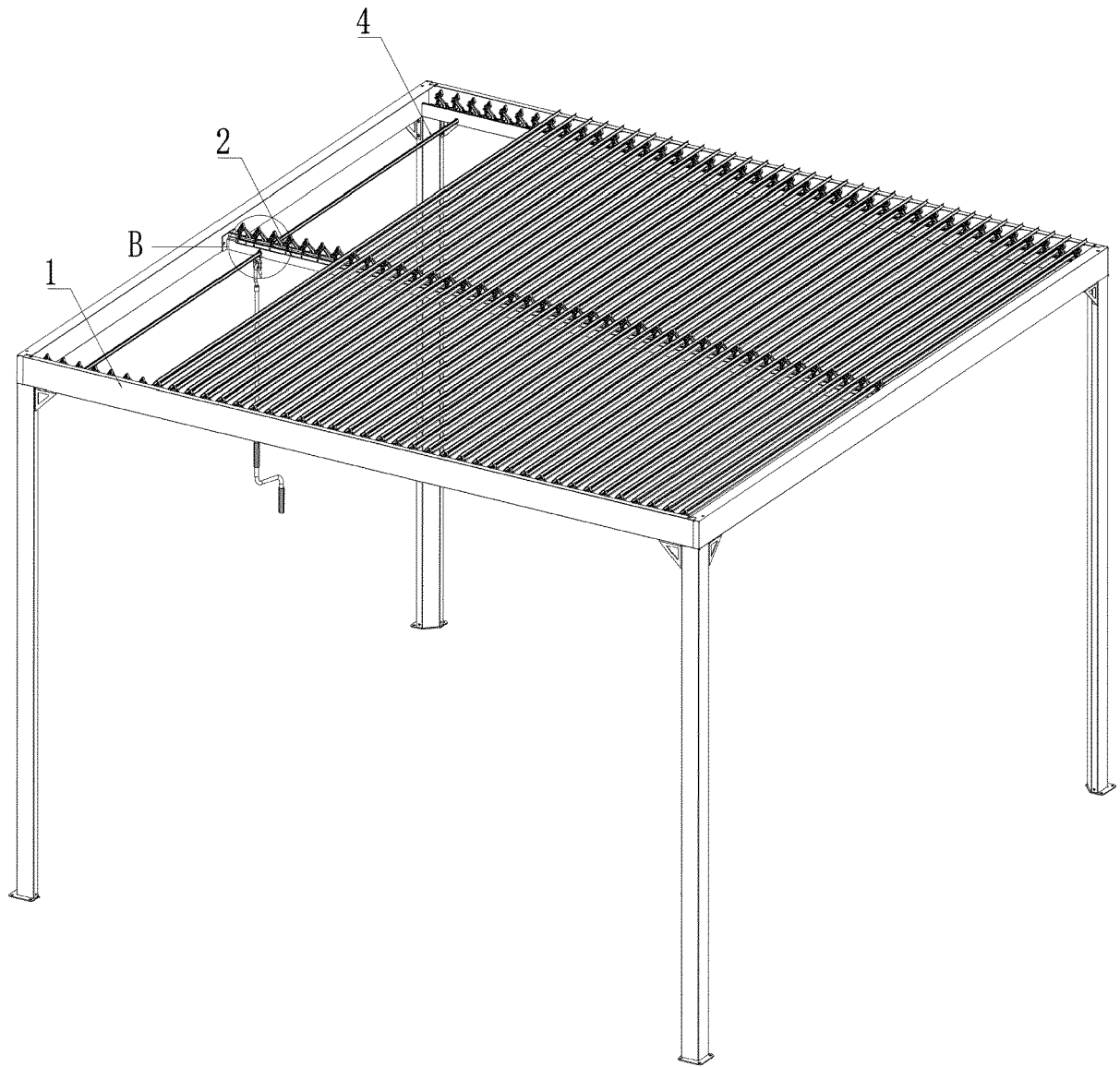
[0023] Lastly it should be noted that the foregoing embodiments are intended to describe and not to limit the technical solutions of the present utility model. Although the present utility model has been illustrated by referring to the foregoing embodiments, those of ordinary skills in the art should understand that they still can modify the technical solutions of the foregoing embodiments, or equivalently replace some or all of the technical features therein; and such modifications or replacements will not result in essential departure of the corresponding technical solutions from the scope of the technical solutions of the embodiments of the present utility model.

Claims

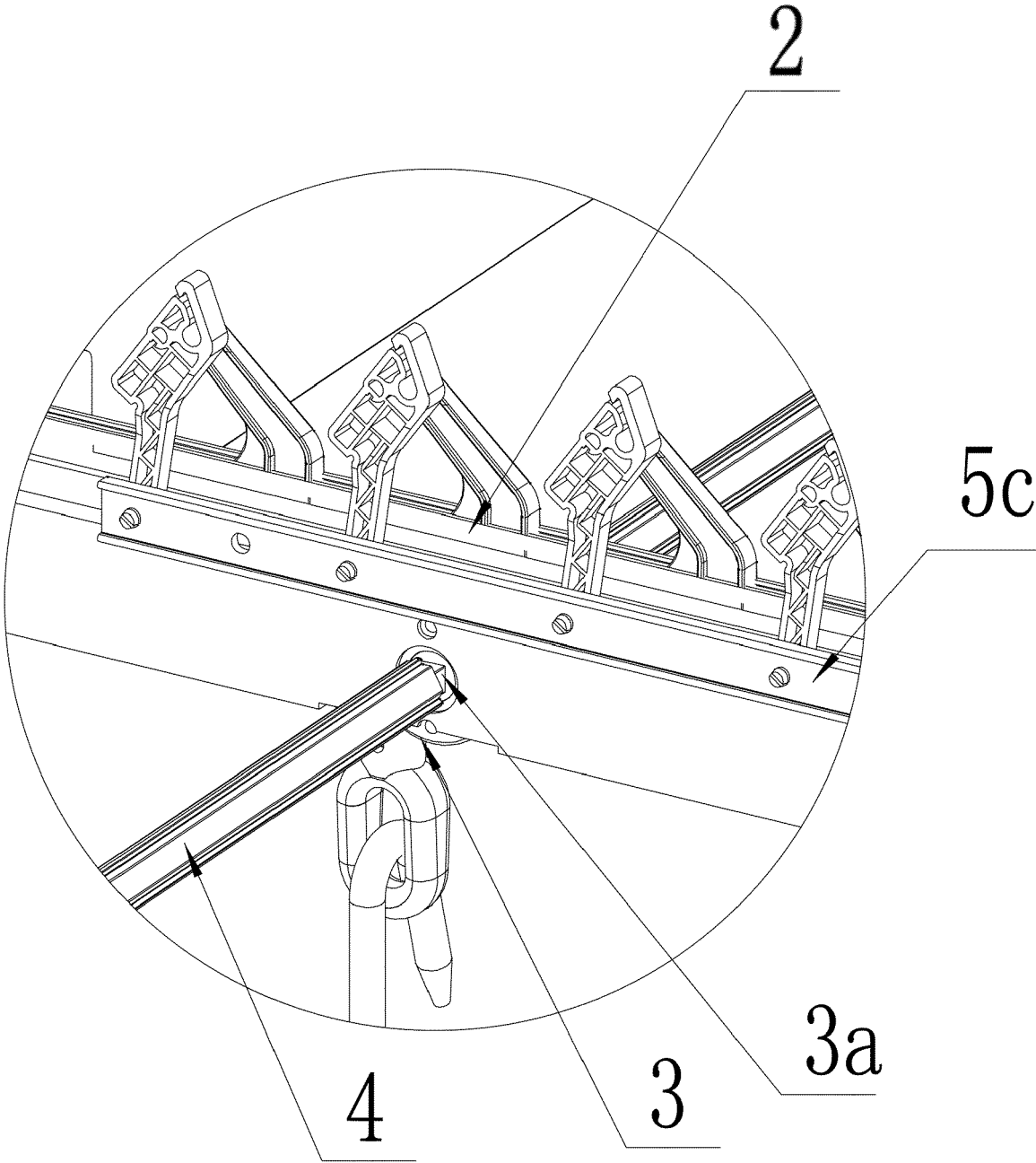
1. A stable transmission structure for a long louver canopy, wherein the stable transmission structure comprises a tent frame, a driving mechanism (3) is mounted in the middle part of the upper end of the

tent frame in a fit manner, two ends of the driving mechanism (3) are in transmission fit with a transmission rod (4), the transmission rod (4) is in transmission fit with a louver transmission mechanism, and the louver transmission mechanism is used for driving ends of louver boards to flip, thereby achieving opening and closing of the louver boards. 5

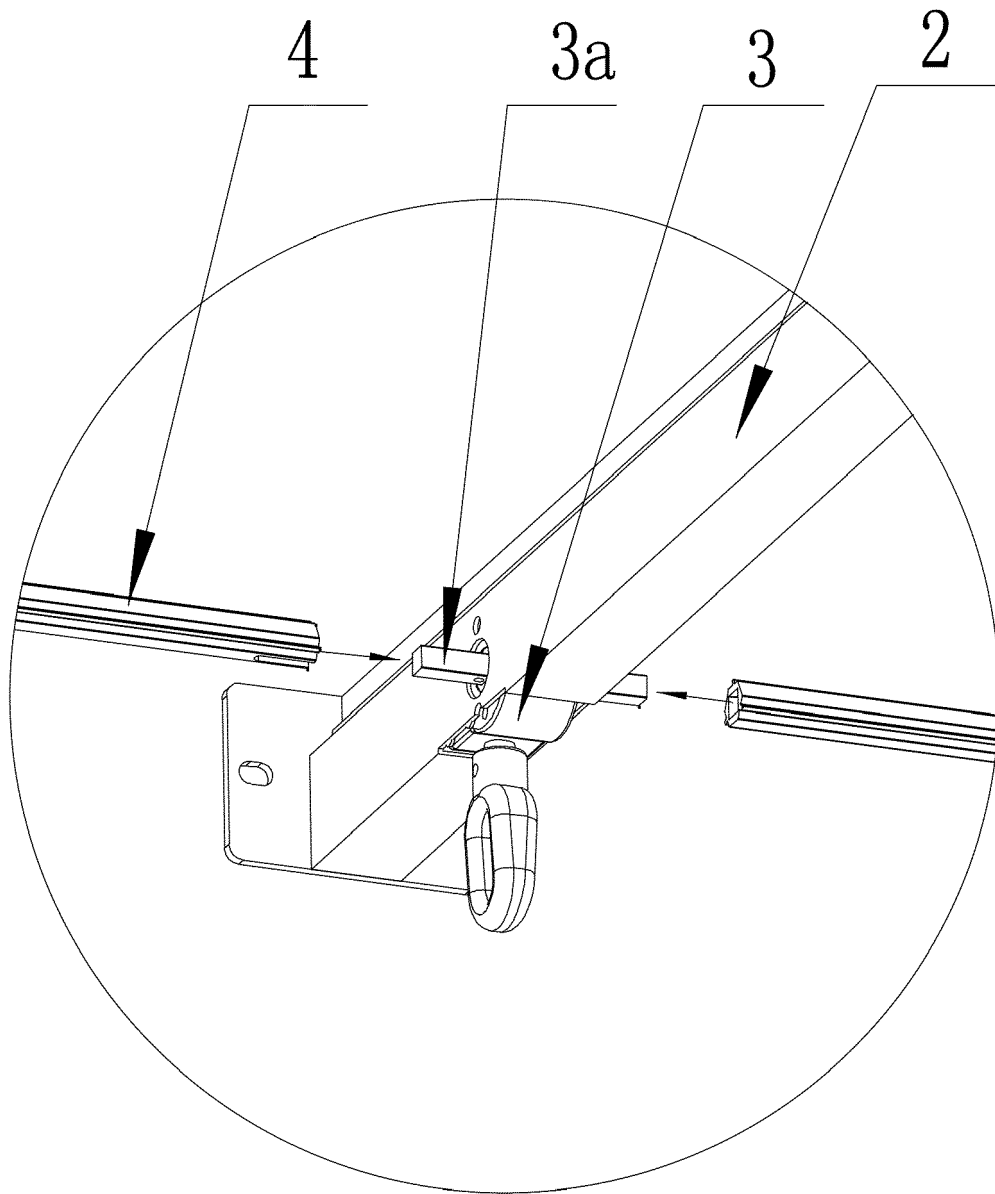
2. The stable transmission structure for a long louver canopy according to claim 1, wherein the louver transmission mechanism comprises a rotating part (5a), a transmission part (5b) and linkage bars (5c), one end of the rotating part (5a) is in transmission fit with a transmission rod (4), the other end is articulated with the transmission part (5b), the transmission part (5b) is articulated with the linkage bars (5c), and the linkage bars (5c) are used for driving the louver boards to open or close. 10 15
3. The stable transmission structure for a long louver canopy according to claim 2, wherein the driving mechanism (3) is in transmission fit with a rotating shaft (3a), each of the two ends of the rotating shaft (3a) is in transmission and insertion fit with a transmission rod (4), and the transmission rod (4) is in transmission and insertion fit with the corresponding rotating part (5a). 20 25
4. The stable transmission structure for a long louver canopy according to claim 3, wherein the cross section of the rotating shaft (3a) is rectangular, the transmission rod (4) has a rectangular hole (4a) corresponding thereto, and the rotating shaft (3a) is in transmission and insertion fit with the rectangular hole (4a). 30 35
5. The stable transmission structure for a long louver canopy according to claim 3, wherein the exterior of the transmission rod (4) is designed to be an irregularly shaped structure, the rotating part (5a) is in transmission and insertion fit with a corresponding irregularly shaped hole (5aa), and the transmission rod (4) is in transmission and insertion fit with the irregularly shaped hole (5aa). 40 45
6. The stable transmission structure for a long louver canopy according to any of claims 1 to 5, wherein the tent frame comprises first ring beams (1) located on the left end and the right end of the tent frame, respectively and a middle beam (2) located between the two first ring beams (1), and a driving mechanism (3) is mounted on the middle beam (2) in a fit manner. 50
7. The stable transmission structure for a long louver canopy according to any of claims 1 to 5, wherein the driving mechanism (3) is a worm and gear driving mechanism. 55



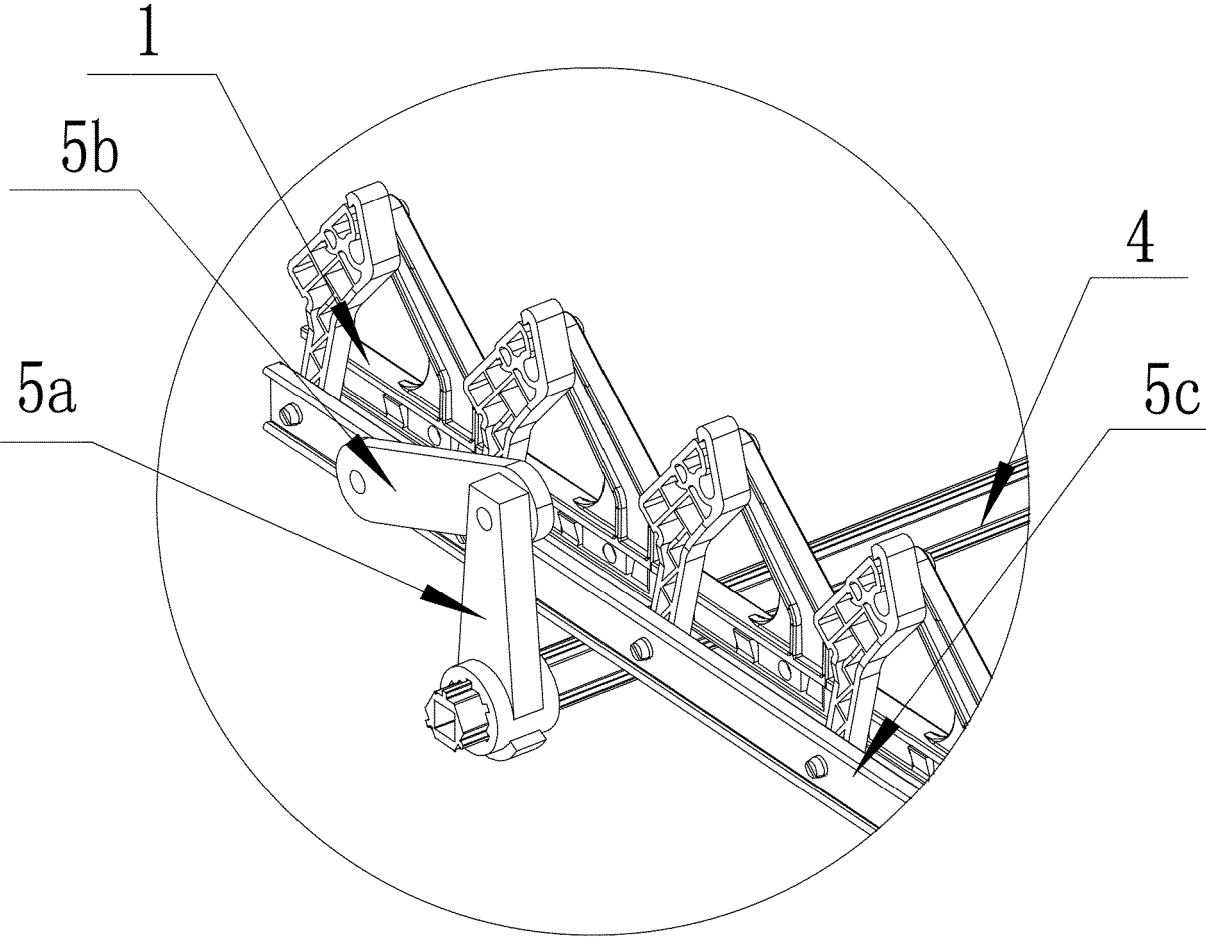
[Figure No.] Fig. 1



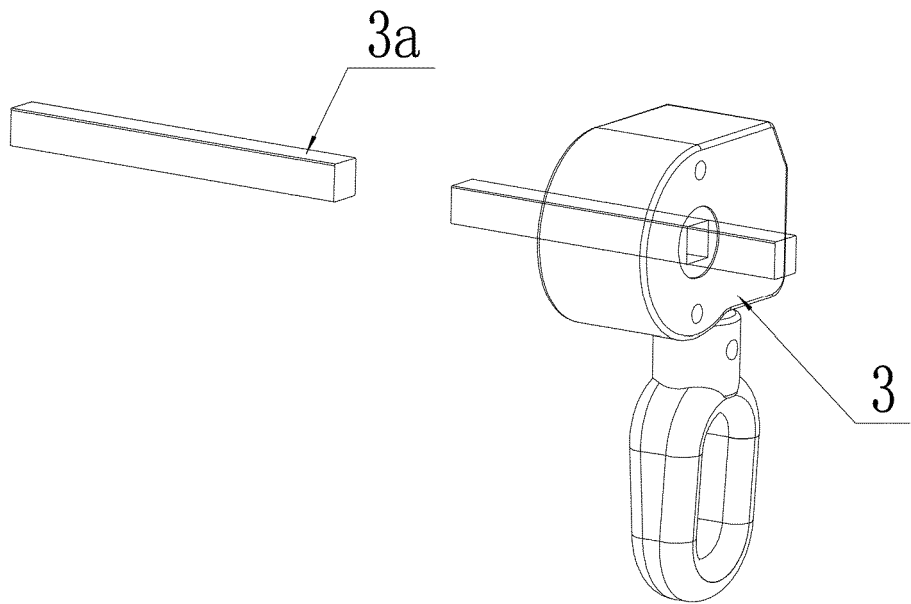
[Figure No.] Fig. 2



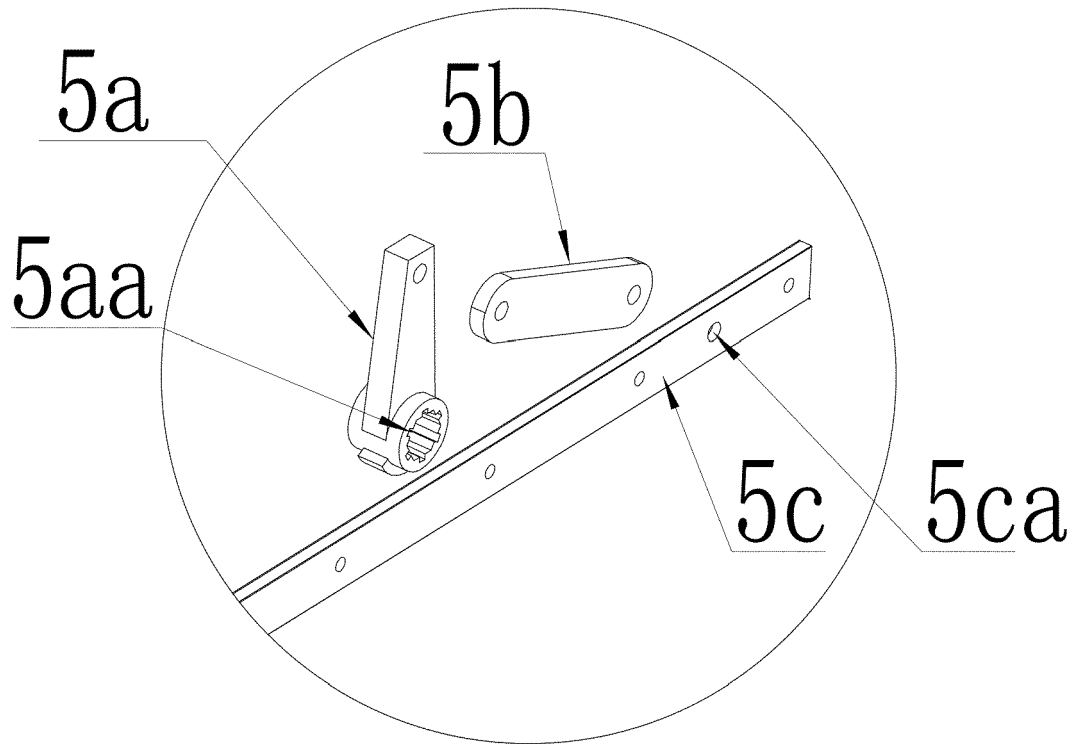
[Figure No.] Fig. 3



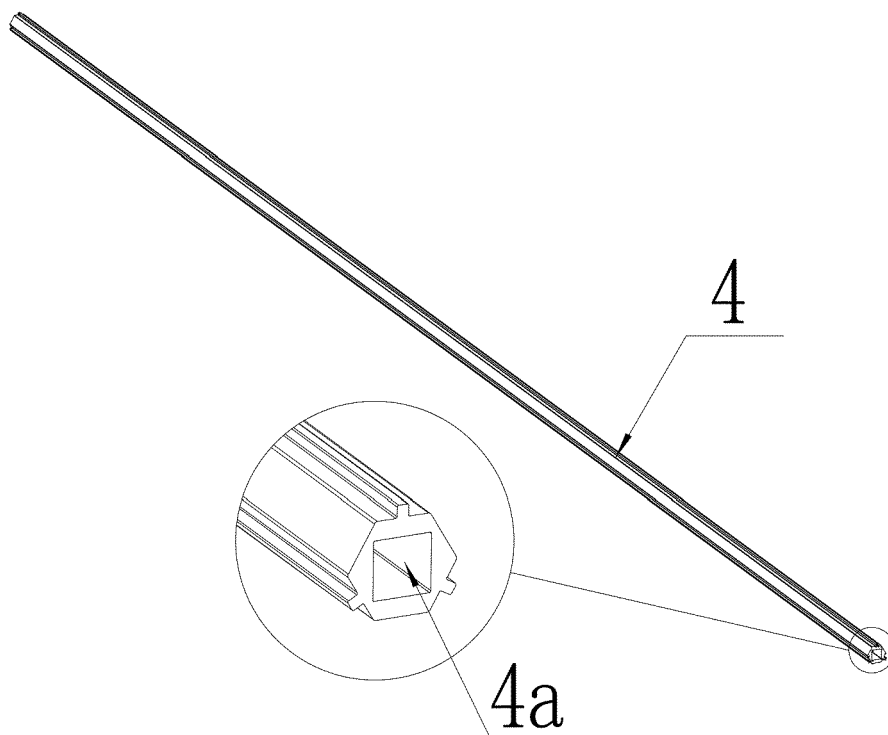
[Figure No.] Fig. 4



[Figure No.] Fig. 5



[Figure No.] Fig. 6



[Figure No.] Fig. 7



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Application Number
EP 21 17 8653

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Place of search Munich		Date of completion of the search 23 November 2021	Examiner Tänzler, Ansgar
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