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Structure for assembling worm and shaft

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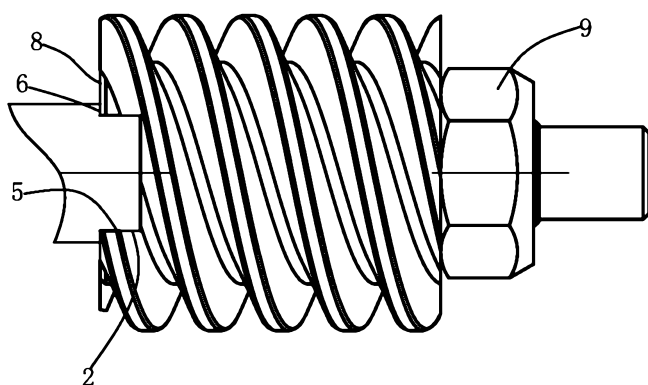
(71) Applicant(s)
Hengdian Group Linux Motor Co., Ltd.

(72) Inventor(s)
Ruan, Xiaoding

(74) Agent / Attorney
**Admiral Trademarks & Patents Services, Admiral Trademarks & Patents Services Suite
228, 9 Crofts Avenue, Hurstville, NSW, 2220**

Abstract

The invention relates to a structure for assembling a worm and a shaft, which belongs to the technical field of mechanical transmission fit. The structure for assembling the worm and the shaft comprises a rotating shaft and the worm, wherein a central shaft hole is formed on the worm, a rectangular open slot which extends radially is arranged at one end of the worm, the width of the rectangular open slot is larger than or equal to the hole diameter of the central shaft hole, a matching section matched with the central shaft hole of the worm is formed on the rotating shaft, two planar parts which are parallel to each other are arranged at the inner ends of the matching section, the two planar parts are matched with the rectangular open slot, steps are formed in the positions corresponding to the inner ends of the two planar parts on the rotating shaft, the steps are in contact with the end surface at the end of the worm, where the rectangular open slot is arranged, an external thread section is formed in the position corresponding to the outer end of the matching section of the rotating shaft, and the external thread section of the rotating shaft is matched with a nut. The structure is convenient to assemble and reliable for transmission and can solve the problems that the existing transmission fit between the worm and the shaft is inconvenient to assemble, unreliable for transmission and the like.



Structure for Assembling Worm and Shaft

Technical Field

The invention relates to a structure for assembling a worm and a shaft, which belongs to the technical field of mechanical transmission fit.

Background of the Invention

In order to facilitate manufacturing and processing, under the normal situations, a worm and a shaft are in split manufacturing and then assembled together. In the prior art, the worm and the shaft adopt the pin connection in most cases for realizing the transmission fit between the two. The before-mentioned transmission fit between the worm and the shaft has the problems of being inconvenient to assemble, being unreliable for transmission and the like.

Summary of the Invention

The invention aims at providing a structure for assembling a worm and a shaft, which is convenient to assemble and reliable for transmission and can solve the problems that the existing transmission fit between the worm and the shaft is inconvenient to assemble, unreliable for transmission and the like.

The above technical purpose of the invention is mainly solved through the following technical scheme: the structure for assembling the worm and the shaft comprises a rotating shaft and the worm, wherein a central shaft hole is formed on the worm, a rectangular open slot which extends radially is arranged at one end of the worm, the width of the rectangular open slot is larger than or equal to the hole diameter of the central shaft hole, a matching section matched with the central shaft hole of the worm is formed on the rotating shaft, two planar parts which are parallel to each other are arranged at the inner ends of the matching section, the two planar parts are matched with the rectangular open slot, steps are formed in the positions corresponding to the inner ends of the two planar parts on the rotating shaft, the steps are in contact with the end surface at the end of the worm, where the rectangular open slot is arranged, an external thread section is formed in the position corresponding to the outer end of the matching section of the rotating shaft, and the external thread section of the rotating shaft is matched with a nut. When in assembly, only the matching section of the rotating shaft needs to be inserted into the central shaft hole of the worm, then the two planar parts which are parallel to each other at the inner ends of the matching section on the rotating shaft are matched with the rectangular open slot of the worm, the end surface at the end of the worm, where the rectangular open slot is arranged, is in contact with the steps on the rotating shaft, and then the external thread section on the rotating shaft is matched with the nut, thereby realizing circumferential positioning and axial positioning between the rotating shaft and the worm, ensuring reliable

transmission between the worm and the rotating shaft and being convenient to assemble.

Preferentially, the width of the rectangular open slot of the worm is equal to the hole diameter of the central shaft hole of the worm, and the spacing interval between the two planar parts of the rotating shaft is equal to the shaft diameter of the matching section of the rotating shaft, thereby facilitating assembly operation between the rotating shaft and the worm.

Preferentially, two ends of the rectangular open slot form openings on the outer wall of the worm, thereby further facilitating the assembly between the worm and the rotating shaft.

Therefore, the invention has the characteristics of convenience in assembly, reliability in transmission and the like.

Brief Description of the Drawings

Figure 1 is a schematic diagram of stereo structure of worm of the invention;

Figure 2 is a sectional view of worm of the invention;

Figure 3 is a schematic diagram of structure of rotating shaft of the invention;

Figure 4 is a schematic diagram of assembly structure for worm and rotating shaft of the invention.

Detailed Description of the Invention

In combination of the figures, the technical scheme of the invention is further specifically described through the following embodiments.

Embodiment 1: as shown in Figure 1 and Figure 2, a central shaft hole 1 is formed on the worm, a rectangular open slot 2 which extends radially is arranged at one end of the worm, the width of the rectangular open slot 2 is equal to the hole diameter of the central shaft hole, and two ends of the rectangular open slot 2 form openings 3 on the outer wall of the worm; as shown in Figure 3, a matching section 4 matched with the central shaft hole 1 of the worm is formed on the rotating shaft, two planar parts 5 which are parallel to each other are arranged at the inner ends of the matching section 4, the spacing interval between the two planar parts 5 is equal to the shaft diameter of the matching section 4 of the rotating shaft, the two planar parts 5 are matched with the rectangular open slot 2, steps 6 are formed in the positions corresponding to the inner ends of the two planar parts on the rotating shaft, the steps 6 are in contact with the end surface at the end of the worm, where the rectangular open slot is arranged, an external thread section 7 is formed in the position corresponding to the outer end of the matching section of the rotating shaft, and the external thread section of the rotating shaft is matched with a nut.

As shown in Figure 4, when in assembly, only the matching section of the rotating shaft needs to be inserted into the central shaft hole of the worm, then the two planar parts 5 which are parallel to each other at the inner ends of the matching section on

the rotating shaft are matched with the rectangular open slot 2 of the worm, the end surface 8 at the end of the worm, where the rectangular open slot is arranged, is in contact with the steps 6 on the rotating shaft, and then the external thread section on the rotating shaft is matched with the nut 9, thereby realizing circumferential positioning and axial positioning between the rotating shaft and the worm, ensuring reliable transmission between the worm and the rotating shaft and being convenient to assemble.

What is claimed is:

1. A structure for assembling a worm and a shaft, comprising a rotating shaft and the worm, characterized in that a central shaft hole is formed on the worm, a rectangular open slot which extends radially is arranged at one end of the worm, the width of the rectangular open slot is larger than or equal to the hole diameter of the central shaft hole, a matching section matched with the central shaft hole of the worm is formed on the rotating shaft, two planar parts which are parallel to each other are arranged at the inner ends of the matching section, the two planar parts are matched with the rectangular open slot, steps are formed in the positions corresponding to the inner ends of the two planar parts on the rotating shaft, the steps are in contact with the end surface at the end of the worm, where the rectangular open slot is arranged, an external thread section is formed in the position corresponding to the outer end of the matching section of the rotating shaft, and the external thread section of the rotating shaft is matched with a nut.
2. The structure for assembling the worm and the shaft according to claim 1, characterized in that the width of the rectangular open slot of the worm is equal to the hole diameter of the central shaft hole of the worm, and the spacing interval between the two planar parts of the rotating shaft is equal to the shaft diameter of the matching section of the rotating shaft.
3. The structure for assembling the worm and the shaft according to claim 1 or 2, characterized in that two ends of the rectangular open slot form openings on the outer wall of the worm.

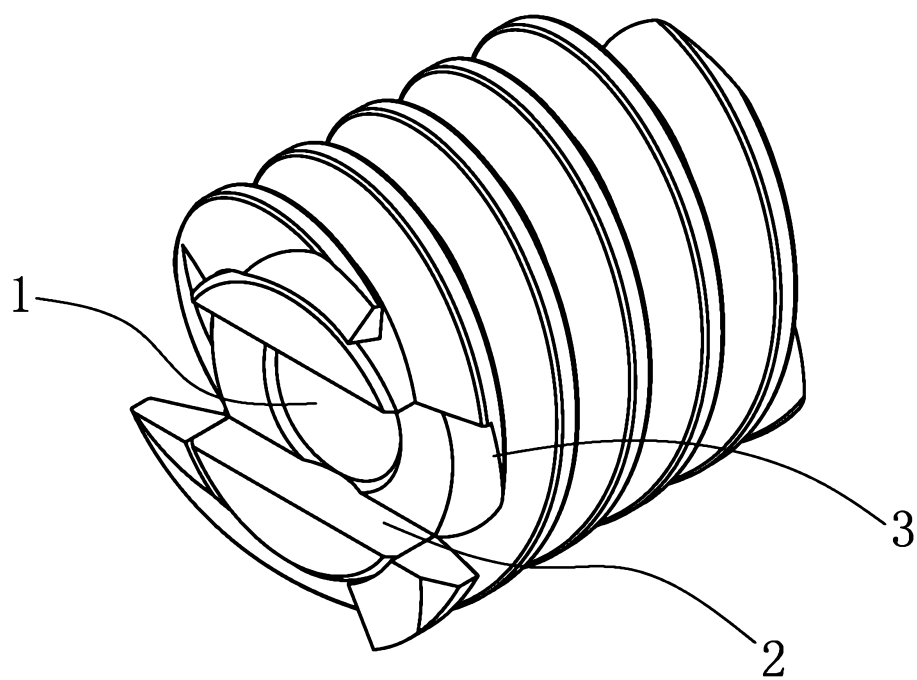


FIG. 1

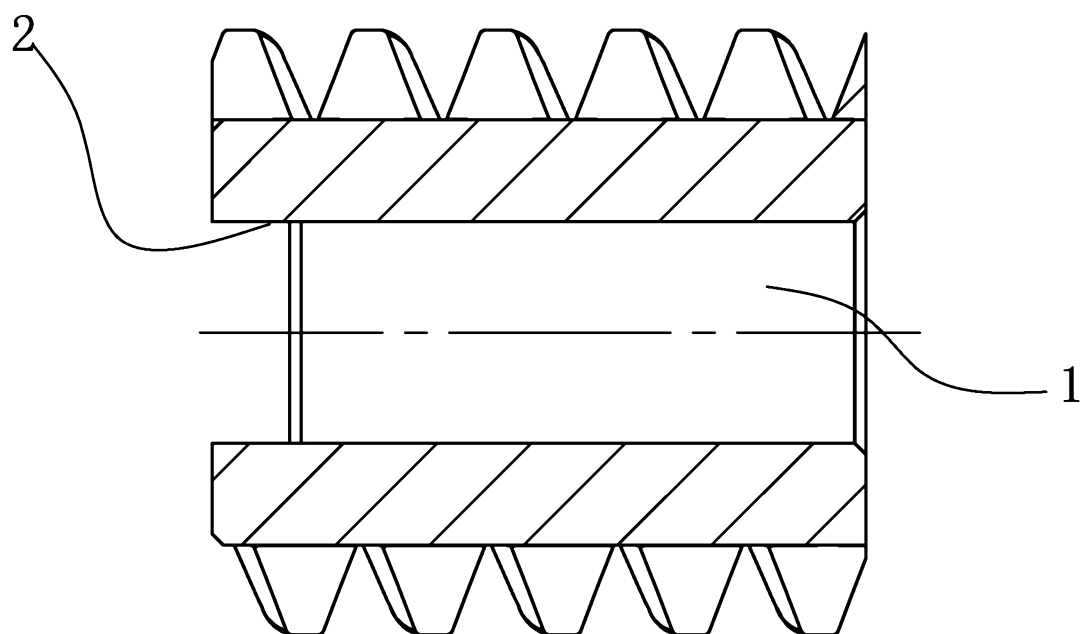


FIG. 2

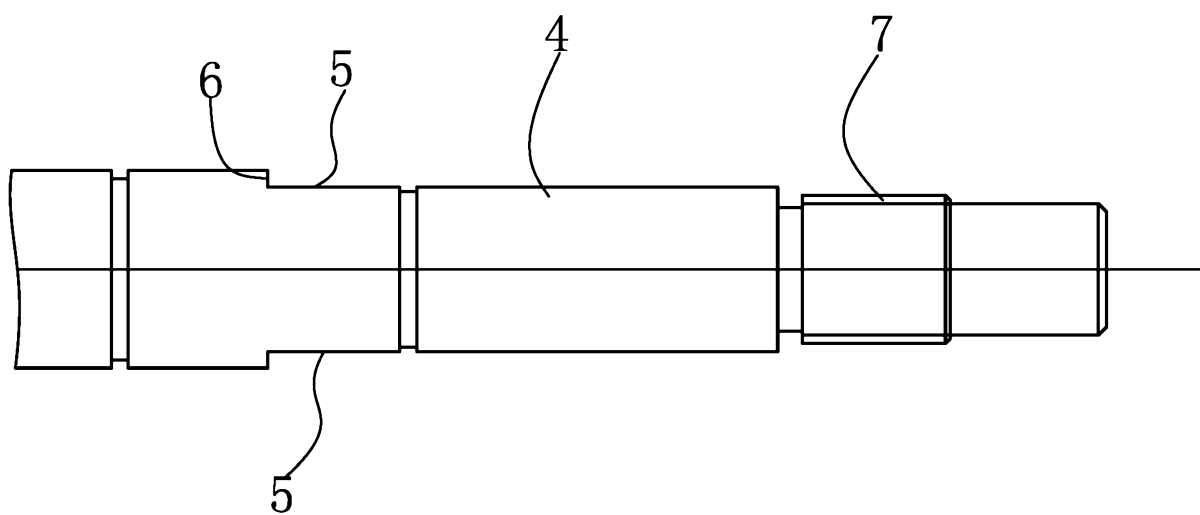


FIG. 3

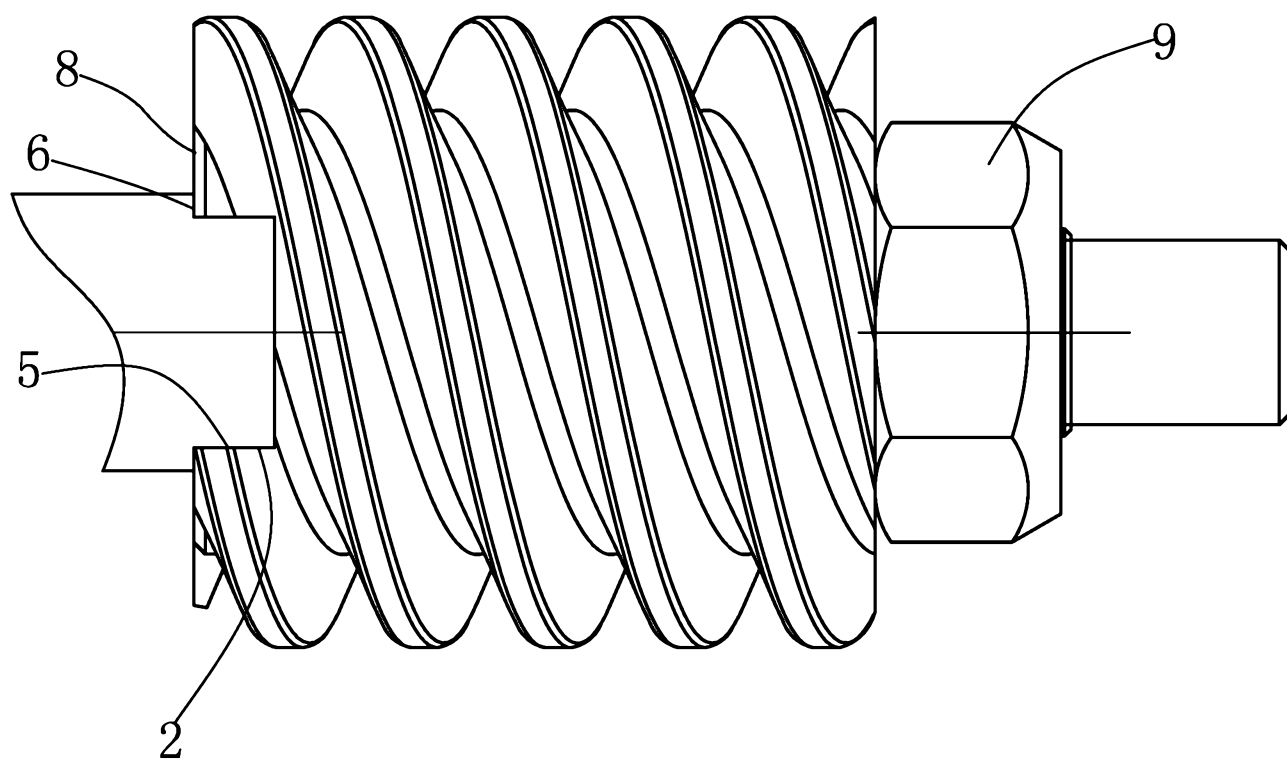


FIG. 4