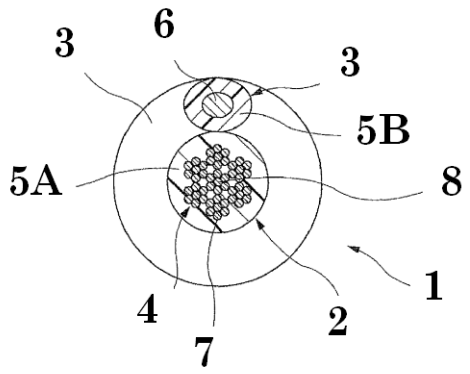
prevented from being displaced from the first rope when the second rope meshes with a gear.

In the present embodiment, the resin coating **5A** included in the rope body **2** and the resin coating **5B** included in the linear body **3** are directly fusion-bonded together. Therefore, unlike the helical toothed rope according to the related art, it is not necessary to use an adhesive. In addition, the helical toothed rope **1** can be manufactured without performing the step of applying an adhesive to the rope body **2** or the linear body **3**. The helical toothed rope **1** can be manufactured simply by helically winding the linear body **3** around the rope body **2**, and then causing the linear body **3** and the rope body **2** in this state to pass through an environment where the temperature is set to a certain temperature or irradiating contacting portions of the resin coating **5A** and the resin coating **5B** with far-infrared rays. Thus, the process of manufacturing the helical toothed rope is simplified.



Pat. 8,307,624

Figure 9: Cross sectional view of the helical toothed rope.

The helical toothed rope **1** applies an operational force to a gear **H** through the linear body **3**. Therefore, the linear body **3** must be shaped such that the operational force can be transmitted to the gear **H** after the linear body **3** is fusion-bonded to the rope body **2**. More specifically, although the adhesive can be saved and the manufacturing process can be simplified when the resin coating **5A** included in the rope body **2** and the resin coating **5B** included in the linear body **3** are directly fusion-bonded together, there is a possibility that the shape of the resin coating **5B** will change when the resin coating **5A** and the resin coating **5B** melt.

As a result of various studies conducted by the inventors of the present invention, it was found that the shape of the resin coating **5B** does not largely change after the melting process if the resin coating **5B** is softer than the resin coating **5A** at an ordinary temperature and has a higher viscosity than that of the resin coating **5A** in a molten state.

In particular, the resin coating **5B** and the resin coating **5A** were easily fusion-bonded together without changing the shape of the resin coating **5B** when the resin coating **53** and the resin coating **5A** were made of the following materials. That is, the resin coating **5B** was made of nylon having plasticizer contained therein (hereinafter referred to as plasticizer-containing nylon), and the resin coating **5A** was made of mixed resin of the plasticizer-containing nylon and resin containing less plasticizer than the plasticizer content in the plasticizer-containing nylon.

In the present embodiment, the resin coating **5B** and the resin coating **5A** are made of nylon **12**. Nylon **12** has high melting characteristics and high flexibility, and is suitable for use as a material of the helical toothed rope **1** of the present embodiment. As an example, the helical toothed rope **1**

continued on next page