Resin Pulley

Inventors : H. ARAI, T. TSUDA

[Abstract of the Invention]

Pulley made of such resin that excels in dimensional stability and strength and also in resistance to abrasive wear particularly in dusty environments, and that can replace metallic pulley for its superior performance.

The base resin is phenolic resin compounded with the following additional ingredients, and the pulley is injection-molded.

- Inorganic powders of Moh's hardness 6.5 min. : 15 ~ 50 wt%
- Reinforcing fiber: 20 ~ 40 wt%
- Lubricant: 1 ~ 5wt%

Rolling Bearing Unit for Vehicle Axle

Inventor : M. INOUE

[Abstract of the Invention]

Rolling bearing unit for vehicle axle that can precisely detect the rotating condition of the rotating body.

In the rolling bearing unit 1 for vehicle axle comprised of the outer ring 31 and the hub shaft 2 assembled with such many rolling elements 33 that allow the assembly to rotate freely inside the outer ring 31, the VR type brushless resolver 10 is integrated to detect the rotating motion of the hub shaft 2. The VR type brushless resolver 10 consists of the rotor (hexagonal nut 6) integrally equipped on the hub shaft 2, the stator 12, the exciting winding 13 and the first and second output windings 14 & 15, integrally provided on the outer ring 31. When the hub shaft 2 is stationary, the brushless resolver 10 outputs the continued signal of virtually constant amplitude, whereas when the hexagonal nut 6 integrated on the hub shaft 2 is in rotating motion, it outputs the signal whose amplitude varies without steps in accordance with the mode of rotating condition.
Torque Sensor

Inventor : S. NAGASE

[Abstract of the Invention]
A high resolving, low cost, high precision torque sensor.
The torque sensor generates the first alternating signal whose phase changes in response to the change of rotating angle of the first shaft and the second alternating signal whose phase changes in response to the change of the rotating angle of the second shaft which is allowed to have elastic relative rotation by the first shaft. The device also outputs the phase difference signal that corresponds to the change of the phase difference between the first and second alternating signals, from which the value corresponding to the torque transmitted by the first and second shafts can be obtained.

Universal Joint

Inventors : K. AOTA, T. KAMIKAWA, N. MINAMOTO, K. MIZUNO, M. OZAKI

[Abstract of the Invention]
A universal joint that is capable of smoothly transmitting the rotation by way of minimizing the looseness between the cross pin and the bearing for support thereof.

In the universal joint 1 which is assembled by first pressing a bearing 14 into a hole 13 mounted on the tip of the connecting arm 11 which is branched from one side of the yoke, and then inserting one end of the cross pin 12 into the bearing 14, expansion of the hole bore diameter at the open end which occurs after pressing of bearing is compensated for by providing a certain taper on the bearing inside diameter with smaller diameter adjacent the open end, thereby providing for uniform bore diameter D0 throughout the entire length of the bearing.