Pulley Unit with One Way Clutch

Publication No. : Japanese Laid-Open Publication No. 2003-113924
Inventors : T. ICHIHARA, H. FUJIWARA

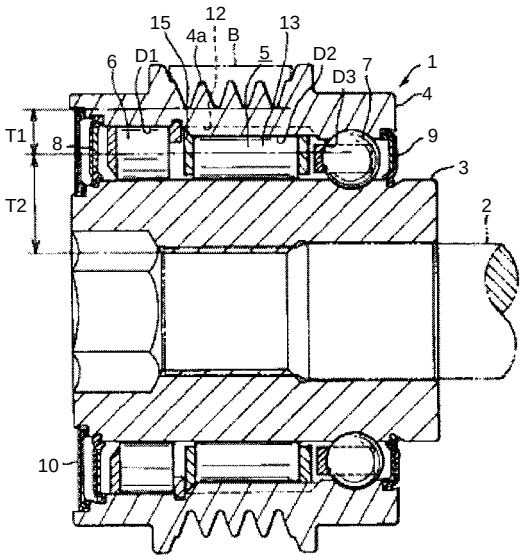
[Abstract of the Invention]

An object of this invention is to provide a pulley unit with one-way clutch whose pulley has dual function of one-way clutch's outer ring and bearing's outer ring, and also that is easy to be assembled.

Pulley 4, the outer ring of one-way clutch 5 and the outer rings of bearings 6 and 7 are integrated.

One-way clutch 5 is placed between bearings 6 and 7, where bearing 6 is a roller bearing using rollers as rolling elements and bearing 7 is a ball bearing with balls used as rolling elements. The bore shape of pulley 4 is stepped. The relationship among D1 (the inner diameter of the outer ring raceway section of roller bearing 6), D2 (the outer ring's smallest inner diameter of one-way clutch 5) and D3 (outer ring raceway shoulder section's inner diameter of ball bearing 7) can be expressed as:

$D1 > D2 \geqq D3$.



Pulley Unit with One Way Clutch

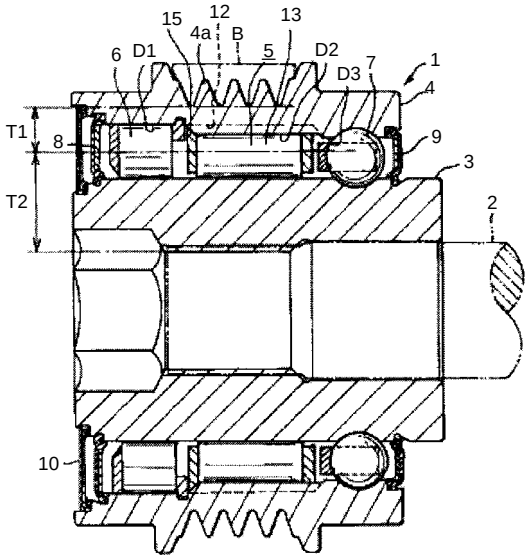
Publication No. : Japanese Laid-Open Publication No. 2003-113925
Inventors :T. ICHIHARA, H. FUJIWARA

[Abstract of the Invention]

This pulley unit with one-way clutch reduces the number of parts and provides space for assembling the one-way clutch, moreover contributes to the reduction in production cost.

Shaft 3, the inner ring of one-way clutch 5 and the inner rings of bearings 6 and 7 are integrated.

One-way clutch 5 is placed between bearings 6 and 7, where bearing 6 is a roller bearing using rollers as rolling elements and bearing 7 is a ball bearing with balls used as rolling elements. The outside diameter of each part contacting on shaft 3 is designed to be the same: i.e., the outside diameters of the inner ring raceway section of roller bearing 6, the inner ring of one-way clutch 5 and the inner ring raceway shoulder of ball bearing 7.



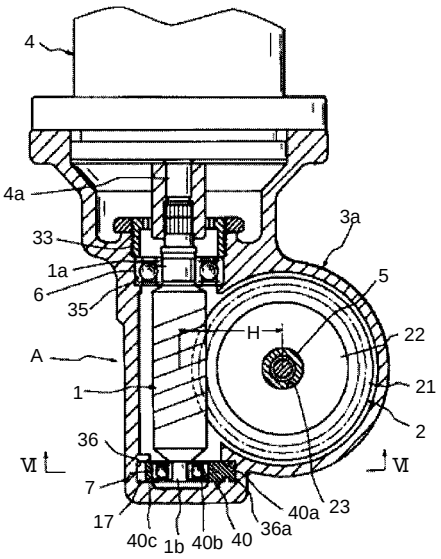
Reduction Gear Mechanism Applied to Power Steering System

Publication No. : Japanese Laid-Open Publication No. 2003-74676
Inventors : A. SHIINA, M. KUZE, M. SAKUDA, K. YOSHIOKA, H. MATSUBARA

[Abstract of the Invention]

Reduction gear mechanism which can compensate the backlash to proper amount when the rotational center distance between the pinion and the gear wheel becomes longer or shorter due to the change in temperature or humidity of the reduction gear.

The gear consists of worm wheel 2 in which at least gear teeth section 21 is made of synthetic resin, worm 1 that is meshing with the worm wheel 2, and housing 3a which supports to rotate the worm wheel 2 and the worm 1 via transmission shaft 5 and shaft section 1b. Synthetic resin-made slide bearing 40 is fitted between the housing 3a and the above shaft section 1b, which is possible to change the rotational center distance H between the worm wheel 2 and the worm 1, so as to compensate the backlash to proper amount.



Steering System for Vehicle

Publication No. : Japanese Laid-Open Publication No. 2003-26030
Inventor : K. NISHIZAKI

[Abstract of the Invention]

This steering system improves the stability of vehicle posture and braking effect when the brake is applied on the μ split road.

Steering angle changes in response to the motion of steering actuator 2 that is driven through the rotation of steering wheel 1. When the brake is applied and at the same time when the frictional-coefficient-difference-response-value, that is equivalent to the difference in frictional coefficients between coefficient of left-hand wheel 4fl and road surface, and coefficient of right-hand wheel 4fr and road surface, exceeds the defined value, the actuator 2 is controlled to apply additional-steering-control-angle corresponding to the yaw moment applied on the vehicle to target- steering-angle in accordance with the operational level of steering wheel 1 and make the steering angle correspond to the sum of the target-steering-angle and the additional-control-steering-angle.

That additional-control-steering-angle steers the vehicle either to the left or to the right whichever direction with smaller coefficient of friction between the wheels, either left 4fl or right 4fr, and the road surface.