

受験番号 : 341PM029

問 1

[0002].

White lines and road markings laid on road surfaces are often used to show information to pedestrians and vehicle drivers passing on the roads.

[0003]

Patent Document 1 discloses a road marking paint as an example of materials for the road markings described above. The road marking paint of Patent Document 1 includes a solution or dispersion of a synthetic resin and a filler, and is applied on a road surface, followed by sprinkling a retroreflective material, such as glass beads, over the applied road marking paint. The road marking paint is then dried to form a paint layer.

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[0007].

The paint layer of the road marking formed by applying the road marking paint of Patent Documents 1 to 3 easily wear off due to abrasion caused by contact with pedestrians and vehicles. For this reason, it is necessary to maintain the road marking by periodically applying a retroreflective material (e.g., glass beads) and the road marking paint onto the existing road marking. Once the maintenance is performed, long hours of traffic control are required. Therefore, there has been a demand for a method of forming a road marking that requires less frequent maintenance.

[0008]

In this regard, it is conceivable to apply a road marking paint in a thick paint layer to make it unlikely for the road marking to wear off due to contact with pedestrians or vehicles. However, such a thick paint layer of a road marking paint allows the road marking to receive an increased force especially on the underside thereof due to contact with pedestrians and vehicles, thereby making it more likely for the road marking to peel off to come off the road surface.

問 2

START

[0014]

Here, according to the present invention, in order to adjust backlash in the gear train of the above-described reduction gear apparatus 6, the gearbox 8 is provided with the reference surface 8b, and the intermediate gear assembly 20 is slidably and displaceably provided above the reference surface 8b before being fixed, as described above. Furthermore, the input shaft 14 of the input gear assembly 10 and the intermediate shaft 26 of the intermediate gear assembly 20 have recesses 18 and 34 to be described later, respectively. The recesses 18 and 34 are each formed on a top portion of the respective shaft along the axis of the respective shaft.

[0015].

According to the present invention, a simple jig is used to adjust the backlash in the gear train described above. As illustrated in FIGS. 2 to 4, this jig is configured as a restraining jig 50 that fixes and restrains a distance L between the center axis of the input shaft 14 of the input gear assembly 10 and the center axis of the intermediate shaft 26 of the intermediate gear assembly 20. The restraining jig 50 includes a rod member 52 and engagement pins 54 and 56 protruding from both ends of the rod member 52. The restraining jig 50 is designed and formed such that the distance L between the centers of the engagement pins 54 and 56 with respect to the rod member 52 has a value substantially equal to the sum of the pitch circle radius of the input gear 16 and the pitch circle radius of the first-stage gear 22 of the intermediate gear assembly 20. Engaging the engagement pins 54 and 56 of the restraining jig 50 with the recesses 18 and 34 respectively formed on the top portions of the input shaft 14 of the input gear assembly 10 and the intermediate shaft 26 of the intermediate gear assembly 20 allows the distance between the gears 16 and 22 to be restrained. Nevertheless, it would be evident that the same or similar restraining operation is performed by way of a configuration in which pin-shaped projections corresponding to the engagement pins 54 and 56 of the restraining jig 50 are formed on the end of the input shaft 14 and the end of the intermediate shaft 26, and recesses corresponding to the recesses 18 and 34 are formed at both ends of the rod member 52 of the restraining jig 50.

END

問 3

[Claim 1]

A sealing device (A) comprising:

an inner member (11) that is rotatable and an outer member (12) that is stationary, the inner member (11) and the outer member (12) forming an annular space therebetween;

a first sealing plate (1) and a second sealing plate (2) that have an annular shape and are attached to the inner member (11) and the outer member (12), respectively, in the annular space; and

a sealing lip in the annular space, wherein

the first sealing plate (1) has an L-shape and includes an upright plate portion (1a) and a cylindrical portion (1b) fitted to the inner member,

the second sealing plate (2) has an L-shape and includes a cylindrical portion (2b) fitted to the outer member,

the first sealing plate (1) and the second sealing plate (2) face each other, the upright plate (1a) is located axially outward of the first sealing plate (1),

the upright plate portion (1a) has an end facing the cylindrical portion of the second sealing plate (2) with a radial gap interposed therebetween,

the second sealing plate (2) has a side lip (3a) and radial lips (3b, 3c), the side lip (3a) is in contact with and slides on a flat inner side surface of the upright plate portion (1a) of the first sealing plate (1) and inclines increasingly radially outward toward the end thereof,

the radial lips (3b, 3c) are in contact with and slide on the cylindrical portion (1b) of the first sealing plate (1),

the first sealing plate (1) is a magnetic steel plate,

the upright plate portion (1a) has an elastomer that contains magnetic powder and is circumferentially vulcanized and bonded to an outer surface of the upright plate portion (1a), and

the upright plate portion (1a) is provided with alternating magnetic poles formed thereon (such that the number of the poles is adjusted).