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Kawashima

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(54) **ROLLING APPARATUS**

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See application file for complete search history.

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(57) **ABSTRACT**

In order to omit jostling caused between the adjacent rolling elements, a clearance is formed therebetween in a load region. A transfer path has a region that allows the rolling elements to contact only one of the transfer grooves of the transfer path, or a region that has a friction force acting between one of the transfer grooves of the transfer path and the rolling elements being greater than the friction force acting between another one of the transfer grooves of the transfer path and the rolling elements. The one of the transfer grooves in the region has a cross sectional shape taken in a direction perpendicular to the direction, in which the rolling elements are transferred, which cross sectional shape allowing two point contact with the rolling elements; and the rolling apparatus further has a contact-angle changing path that has a contact angle with the rolling elements that is greater than the contact angle of the other portion of the transfer path. Thus, the orbital motion speed of the rolling elements is changed.

17 Claims, 8 Drawing Sheets