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(54) **DEVICE AND METHOD FOR ESTIMATING FRICTIONAL CONDITION OF GROUND SURFACE WITH WHICH VEHICLE IS IN CONTACT**

(57) Apparatus (or method) for estimating a gripping characteristic of a vehicle wheel of a vehicle on a ground contact surface includes first input section (or step), a second input section (or step) and an output section (or step). The first input section sets a first input which is a ratio of a first wheel force acting on the vehicle wheel in the ground contact surface in a first direction, and a first

wheel slip degree. The second input section sets a second input which is a ratio of a second wheel force acting on the vehicle wheel in the ground contact surface in a second direction, and a second wheel slip degree of the vehicle wheel. The output section determines, from the first and second inputs, an output which is a grip characteristic parameter indicative of the gripping characteristic of the vehicle wheel.

FIG.31

