

see below... the original claim was objected to because it was not novel and made no inventive step over FTC prior art stretching back to James 2005. Additional limitations have now been imposed which appear after "Characterized in that". These limitations now describe how Equos wheel /s is /are released as speeds increase to become FTC and captured as speeds decrease to become direct steer by computerized calculations. This particular method of "capture and release" has not been described in prior art and so the claim is now compliant. Up to the point "Characterised in that" the claim describes my 2005 vehicle, as well as others that followed. If the Equos original claim had been successful and a patent had issued I could not have practised my own invention so the potential consequences were significant. As it now stands Equos are limited to the particular method of "capture and release" described AFTER "characterised in that" and I have no objection to a patent issue based on these methods. The original Equos claim if left to stand would have been very difficult and expensive to challenge AFTER a patent had issued. In 2005 I realised that the key to commercialisation of FTC rested on "capture and release" methods and this is why I disclosed the basic principle. P.

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Applicant: EQUOS RESEARCH CO., LTD.

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CLAIMS

1. A vehicle (10) comprising:

a vehicle body having three or more wheels including at least a steered wheel (12F) with a trail (L_T) and a pair of wheels (12L, 12R) provided in the vehicle width direction;

5 an operation input part (41a) that inputs a turning direction when being operated;

an inclining part that inclines the vehicle body; and

a steered wheel controller that controls the steering angle of the steered wheel (12F), wherein

10 when the vehicle speed of the vehicle (10) is lower than a predetermined vehicle speed (V_2), the vehicle (10) travels in a first mode in which the steered wheel controller controls the steering angle of the steered wheel (12F) according to an input from the operation input part (41a), and the inclining part inclines the vehicle body according to an input from the operation input part (41a), and

15 when the vehicle speed is changed to be equal to or higher than the predetermined vehicle speed (V_2), the vehicle (10) travels in a second mode in which the steered wheel controller makes the steered wheel (12F) freely turnable irrespective of the operation input part (41a), and the inclining part inclines the vehicle body according to an input from the operation input part (41a),

characterized in that

20 a turning radius (R) based on the inclination angle of the vehicle body at the predetermined vehicle speed (V_2) in the second mode is estimated, then the steering angle (δ_{w2}) of the steered wheel (12F) at the

predetermined vehicle speed (V2) is calculated from the estimated turning radius (R), and the steered wheel (12F) is controlled until the calculated steering angle (δ_w2) is reached.

5 2. The vehicle (10) according to claim 1, wherein
 in the first mode, the inclination angle of the vehicle body gradually
 increases along with an increase in the vehicle speed to be the inclination
 angle of the vehicle body at the predetermined vehicle speed (V2) in the
 second mode.

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— 3. The vehicle (10) according to claim 1 or 2, wherein
 the operation input part (41a) detects an input steering angle which
 is an angle to be steered, and the inclining part inclines the vehicle body at
 a constant imaginary gear ratio with respect to the input steering angle in
15 the second mode.

— 4. The vehicle (10) according to any one of claims 1 to 3, wherein
 the steered wheel (12F) is a front wheel.

20 5. The vehicle (10) according to any one of claims 1 to 3, wherein
 the inclining part inclines the pair of wheels (12L, 12R) to incline the
 vehicle body.

25 6. The vehicle (10) according to any one of claims 1 to 5, wherein
 the vehicle (10) travels in the first mode when being moved back.

30 7. The vehicle (10) according to any one of claims 1 to 6, wherein
 the predetermined speed (V2) at switching from the first mode to the
 second mode and a predetermined speed (Vht1, Vht2) at switching from the
 second mode to the first mode differ from each other.

 8. The vehicle (10) according to claim 7, wherein

when a deviation exists by a predetermined value or more between a detected steering angle of the steered wheel (12F) and a calculated steering angle of the steered wheel (12F) in the second mode, the predetermined vehicle speed (Vht1, Vht2) at switching from the second mode to the first mode is set higher than the predetermined vehicle speed (V2) at switching from the first mode to the second mode.

9. The vehicle (10) according to any one of claims 1 to 6, wherein when the steering angle of the steered wheel (12F) detected at switching from the second mode to the first mode differs from a target steering angle of the steered wheel (12F) in the first mode, the steering angle of the steered wheel (12F) is corrected so as to continuously approach the target steering angle of the steered wheel (12F).

10. The vehicle (10) according to any one claims 1 to 6, wherein the steering angle of the steered wheel (12F) at switching from the first mode to the second mode is detected, and a target steering angle of the steered wheel (12F) is changed in the first mode according to the steering angle at switching.