

## CLAIMS

1. Motor vehicle (100) of the type comprising:

- at least one front wheel and at least one rear wheel arranged along a longitudinal axis (X-X);
- a frame (1);
- a motor (17);
- a first suspension (2) for the front wheel (20) of a motor vehicle; said first suspension (2) comprising, at one end, at least one first swinging arm (3) revolvingly pivoted to said frame (1) or said motor (17) and, at another end, coupled to the front wheel of the motor vehicle;
- a second swinging-arm suspension (4) for the rear wheel (21) of a motor vehicle comprising, at one end, at least one second swinging arm (5) revolvingly pivoted to said frame (1) or said motor (17) and, at another end, coupled to the rear wheel (21) of the motor vehicle;

characterized by comprising at least one anti-pitching device (10) comprising at least one torsion bar (6) extending along an extension axis (Y-Y) and arranged so that its extension axis (Y-Y) is substantially transversal to the longitudinal axis (X-X); said torsion bar (6) being combined with the first swinging arm (3) and the second swinging arm (5) so that to receive the angular displacements of said first and second swinging arms;

said torsion bar (6) being shaped so that if the angular displacement received from the first or the second swinging arm is different from the angular displacement of the remaining swinging arm, it opposes a resisting moment adapted to counter the pitching moment of the motor vehicle.

2. Motor vehicle (100) according to claim 1, characterized in that said resisting moment generated by said torsion bar (6) is proportional to the absolute value of the angular difference of angular displacements of said first (3) and second (5) swinging arms.

3. Motor vehicle (100) according to claim 1 characterized in that said torsion bar (6), at a first end, is combined with the first swinging arm (3) to receive the angular displacement thereof and, at a second end, is constrained to the second swinging arm (5) to receive the angular displacement thereof.
4. Motor vehicle (100) according to claim 1 characterized in that said torsion bar (6), at a first end, is constrained to the first swinging arm (3) to receive the angular displacement thereof and, at a second end, is combined with the second swinging arm (5) to receive the angular displacement thereof.
5. Motor vehicle (100) according to claim 1 characterized in that said torsion bar (6), at a first end, is combined with the first (3) and the second (5) swinging arms to receive the respective angular displacements thereof and, at a second end, is combined with the frame (1) or the motor (17).
6. Motor vehicle (100) according to claim 3 or 4, characterized in that said torsion bar (6) is arranged so that its extension axis (Y-Y) is coaxial to a pivot axis of the first swinging arm (3) or the second swinging arm (5).
7. Motor vehicle (100) according to any one of claims 1 to 6, characterized by comprising at least one kinematic assembly (7) combined with the first suspension (2) and/or the second suspension (4) so that the angular displacement of said first and/or second swinging arms is coherently transmitted to said torsion bar (6).
8. Motor vehicle according to claim 7, characterized in that said kinematic assembly (7) comprises:
  - at least one first connecting rod (8) combined, at one end, with said first front suspension (2);
  - at least one second connecting rod (9) combined, at one end, with said torsion bar (6); and
  - at least one return lever (11) interposed between said first connecting rod (8) and said second connecting rod (9), which is adapted to reverse the motion

direction from said first connecting rod (8) to said second connecting rod (9), and vice versa.

9. Motor vehicle according to claim 8, characterized in that said return lever (11) is hinged to the motor and/or said frame.

10. Motor vehicle according to any one of claims 6 to 9, characterized in that said kinematic assembly (7) further comprises a first anchoring element (12) for the anchorage to the first swinging arm (3) and shaped to transmit the angular rotation from the first swinging arm (3) to said first connecting rod (8).

11. Motor vehicle according to any one of claims 6 to 10, characterized in that said kinematic assembly (7) further comprises a second anchoring element (13) shaped to transmit the angular rotation from the return lever (11) to said torsion bar (6).

12. Motor vehicle according to any one of claims 6 to 9, characterized in that:

- said first anchoring element (12) for the anchorage to the front suspension (2), said first connecting rod (8) and said return lever (11) are all arranged to form a four-bar linkage; and
- said second anchoring element for the anchorage to the rear suspension, the second connecting rod and the return lever are all arranged to form an additional four-bar linkage.

13. Motor vehicle according to claim 1, characterized by comprising a constraining element (14) to rigidly constrain the torsion bar (6) to the rear suspension (4).