CLAIMS

1. An elevator comprising:
a car;
a counterweight;
a rotatable drive member;
one or more suspension ropes interconnecting the car and the counterweight and passing over the rotatable drive member;
a drive machinery for controlling rotation of the drive member;
a sensor mounted on the counterweight and arranged to sense a state of an elevator component;
a hitch plate connected to the one or more suspension ropes; and
at least one spring mounted to said hitch plate and a counterweight frame, such that the at least one spring is located between the hitch plate and the counterweight frame,
wherein each of said one or more suspension ropes comprise at least one electrically conducting member extending continuously along the length of the rope forming an electrically conducting connection between the car and counterweight,
wherein the sensor is functionally connected with the drive machinery via said electrically conducting connection between the car and counterweight such that a predetermined state change sensed by the sensor triggers the drive machinery to brake rotation of the drive member and/or to stop rotating the drive member, and
wherein the sensor is provided adjacent to the hitch plate.

2. The elevator according to claim 1, wherein:
each suspension rope has a first rope section on a first side of the drive member and a second rope section on a second side of the drive member, the first section being connected to the car to suspend the car, and the second section being connected to the counterweight to suspend the counterweight;

the sensor is a rope tension sensor mounted on the counterweight and arranged to sense tension of the second section; and

the rope tension sensor is functionally connected with the drive machinery via said electrically conducting connection between the car and counterweight such that a reduced rope tension of the second rope section sensed by the rope tension sensor triggers the drive machinery to brake rotation of the drive member and/or to stop rotating the drive member.

3. The elevator according to claim 2, wherein each electrically conducting member is embedded in a polymer isolating the electrically conducting member from other electrically conducting members of the rope.

4. The elevator according to claim 2, wherein each electrically conducting member is a load bearing member, which load bearing member is made of composite material comprising reinforcing fibers embedded in a polymer matrix, which reinforcing fibers are carbon fibers.

5. The elevator according to claim 2, wherein the elevator comprises a car unit mounted on the car, which car unit is electrically connected to the sensor by said at least one electrically conducting member.

6. The elevator according to claim 1, wherein each electrically conducting member is embedded in a polymer isolating the electrically conducting member from other electrically conducting members of the rope.

7. The elevator according to claim 6, wherein each electrically conducting member is a load bearing member of the rope in question, which load bearing member is made of composite material comprising reinforcing fibers embedded in a polymer matrix, which reinforcing fibers are carbon fibers.

8. The elevator according to claim 1, wherein each electrically conducting member is a load bearing member, which load bearing member is made of composite material comprising reinforcing fibers embedded in a polymer matrix, which reinforcing fibers are carbon fibers.

9. The elevator according to claim 1, wherein the elevator comprises a car unit mounted on the car, which car unit is electrically connected to the sensor by said at least one electrically conducting member.

10. The elevator according to claim 1, wherein:

the elevator comprises a safety circuit, breaking of which is arranged to cause the drive machinery to brake rotation of the drive member and/or to stop rotating the drive member; and

a predetermined state change sensed by the sensor is arranged to trigger via the electrically conducting connection between the car and the counterweight to break the safety circuit, and thereby to trigger the drive machinery to brake rotation of the drive member and/or to stop rotating the drive member.

11. The elevator according to claim 1, wherein each of said one or more suspension ropes comprise two electrically conducting members connected to each other by said sensor, said two electrically conducting members forming consecutive parts of an electrical circuit between the car and counterweight.

12. The elevator according to claim 1, wherein each electrically conducting member forms part of an electrical circuit breaking of which causes breaking of a safety circuit of the elevator, and the sensor is configured to break the electrical circuit between the car and counterweight if a predetermined state change is sensed by the sensor.

13. The elevator according to claim 1, wherein each electrically conducting member forms part of an electrical circuit between the car and

counterweight, and the sensor is configured to break the electrical circuit between the car and counterweight if a predetermined state change is sensed by the sensor, and the car is arranged to break the safety circuit if said electrical circuit between the car and counterweight is broken.

14. The elevator according to claim 1, wherein said sensor comprises one or more rope tension sensors.

15. The elevator according to claim 1, wherein each electrically conducting member forms part of an electrical circuit between the car and counterweight, and the sensor is configured to change an electrical property of the electrical circuit between the car and counterweight if predetermined state change is sensed by the sensor, and a predefined change in said electrical properties is configured to cause breaking of a safety circuit of the elevator.

16. The elevator according to claim 1, wherein each said electrically conducting member forms part of an electrical circuit between the car and counterweight, and the sensor is configured to change an electrical property of the electrical circuit between the car and counterweight if a predetermined state change is sensed by the sensor, and the car unit is arranged to break the safety circuit if it detects a predefined change in the electrical properties of the circuit between the car and counterweight.

17. The elevator according to claim 1, wherein said sensor comprises one or more force sensors via which the one or more suspension ropes suspend the counterweight.

18. The elevator according to claim 1, wherein the elevator comprises a traveling cable connected to the elevator car inside which traveling cable a safety circuit passes.

19. The elevator according to claim 1, wherein said one or more suspension ropes are belt-shaped.

20. The elevator according to claim 1, wherein said sensor comprises one or more force sensors via which the one or more suspension ropes suspend the counterweight, via which the second section of each rope is fixed to the counterweight.