[CLAIMS]

[Claim 1]

A brake apparatus of an elevator, comprising: a brake drum which is integrally connected to a hoist on which a rope for coupling a car and a counterweight to each other is wound; a brake lever which is provided with a brake shoe for braking the brake drum; a sensor which detects a surface state of the brake drum; and a determination portion which makes determination about condensation of dew on the surface of the brake drum based on a signal outputted from the sensor; wherein:

the sensor includes a dew condensation detection sensor which detects dew condensed on the surface of the brake drum;

the brake apparatus further comprises a dew condensation removal device which is operated to remove the dew condensed on the surface of the brake drum in accordance with a signal outputted from the dew condensation detection sensor; and

the dew condensation removal device includes:

a dew condensation determination portion which constitutes the determination portion and which determines whether it is necessary to remove the condensed dew or not based on the signal outputted from the dew condensation detection sensor;

a suction portion which abuts against the surface of the brake drum so as to be able to suck the dew condensed on the surface of the brake drum when the dew condensation

determination portion determines that it is necessary to remove the condensed dew; and

a suction portion driving unit which drives the suction portion to make the suction portion abut against the surface of the brake drum or to make the suction portion leave the surface of the brake drum based on the determination made by the dew condensation determination portion.

[Claim 2]

A brake apparatus of an elevator according to Claim 1, wherein:

the suction portion driving unit includes a lifting portion which lifts up/down the suction portion, and a motor which operates the lifting portion.

[Claim 3]

A brake apparatus of an elevator according to Claim 1 or 2, wherein:

the suction portion includes a water absorptive member and a rigid retention member which retains the water absorptive member.

[Claim 4]

A brake apparatus of an elevator according to Claim 3, wherein:

an entire shape including the water absorptive member and the retention member is set as a curved shape extending along a circumferential surface of the brake drum.

[Claim 5]

A brake apparatus of an elevator according to Claim 2, further comprising:

a control device which controls driving of the hoist to rotate the brake drum while the brake shoe provided in the brake lever is kept at a braking release state in which the brake shoe is separated from the brake drum when the lifting portion has been lifted up by driving of the motor, and which performs control to stop the driving of the hoist to stop the rotation of the brake drum when the lifting portion has been lifted down by driving of the motor.

CLAIMS

1. A brake apparatus for an elevator, comprising:

a brake drum which is integrally connected to a hoist on which a rope for coupling a car and a counterweight to each other is wound;

a brake lever which is provided with a brake shoe for braking the brake drum;

a sensor which detects a surface state of the brake drum;

a determination portion which makes determination about condensation of dew on the surface of the brake drum based on a signal outputted from the sensor; and

a control device which controls an operation of an elevator car, wherein:

the sensor includes a dew condensation detection sensor which detects dew condensed on the surface of the brake drum;

the brake apparatus further comprises a dew condensation removal device which is operated to remove the dew condensed on the surface of the brake drum in accordance with a signal outputted from the dew condensation detection sensor; and

the dew condensation removal device includes:

a dew condensation determination portion which constitutes the determination portion and which determines whether it is necessary to remove the condensed dew or not based on the signal outputted from the dew condensation detection sensor, information about car stop time acquired from the control device, and information about temperature/humidity;

a suction portion which abuts against the surface of the brake drum so as to be able to suck the dew condensed on the surface of the brake drum when the dew condensation determination portion determines that it is necessary to remove the condensed dew; and

a suction portion driving unit which drives the suction portion to make the suction portion abut against the surface

of the brake drum or to make the suction portion leave the surface of the brake drum based on the determination made by the dew condensation determination portion.

2. The apparatus according to Claim 1, wherein:

the dew condensation removal device is provided at the base of the brake drum in the normal attitude of operation of the apparatus.

3. The apparatus according to Claim 1 or Claim 2, wherein:

the suction portion driving unit includes a lifting portion adapted to move the suction portion into and out of engagement with the brake drum, and a motor which operates the lifting portion.

4. The apparatus according to Claim 3, wherein:

the dew condensation removal device includes a battery which supplies electric power to the suction portion driving unit.

5. The apparatus according to Claim 1 or Claim 2, wherein:

the suction portion includes a water absorptive member and a rigid retention member which retains the water absorptive member.

6. The apparatus according to Claim 5, wherein:

an entire shape including the water absorptive member and the retention member is set as a curved shape extending along a circumferential surface of the brake drum.

7. The apparatus according to Claim 3, further comprising:

the control device which controls driving of the hoist to rotate the brake drum while the brake shoe provided in the brake lever is kept at a braking release state in which the

brake shoe is separated from the brake drum when the lifting portion has been moved into engagement with the brake drum by driving of the motor, and which performs control to stop the driving of the hoist to stop the rotation of the brake drum when the lifting portion has been disengaged from the brake drum by driving of the motor.

8. The apparatus according to any one of the preceding Claims, wherein:

the dew condensation removal device includes a pair of springs that keeps a position of the suction portion, and

the lifting portion includes an engagement portion with which the elastic member is engaged so that the suction portion is kept at a position in which the suction portion is opposed to a surface of the brake drum when the suction portion is displaced in an axial direction of the brake drum.