What is claimed is:

1. A hoist for an elevator, comprising:

a housing;

a stator having an annular shape and disposed in the housing;

a main shaft with one end thereof fixed to a center of the stator;

a sheave rotatably disposed on the main shaft;

a brake disc integrally formed with the sheave;

an annular rotor integrally formed with the sheave;

an electromagnetic brake device configured to brake the brake disc with a pair of brake shoes; and

a brake bracket fixed to the housing and supporting the electromagnetic brake device,

wherein the electromagnetic brake device includes a brake body configured to hold one brake shoe and disposed on a side toward the housing with respect to a braking surface of the brake disc and an armature configured to hold the other brake shoe and disposed on a side toward the sheave with respect to the braking surface of the brake disc;

the brake bracket has a substantially C-shape cross section opening toward the brake disc in an axial direction and includes a support shaft configured to support the brake body movably in an axial direction in a side toward

the housing with respect to the braking surface of the brake disc; and

an inner periphery of the substantially C-shape cross section of the brake bracket is provided with:

a stopper bolt configured to restrict a range of sliding of the brake body in a direction apart from the brake disc, the stopper bolt passing through the brake body and fixed to an end of the brake bracket abutting the brake disc in an axial direction; and

a compression spring fitted on the stopper bolt between the brake body and the brake bracket to urge the brake body in a direction apart from the brake disc.

2. The hoist for an elevator according to claim 1, wherein the compression spring is disposed to be shifted relative to the support shaft by a predetermined distance in a direction toward an outer periphery of the brake disc.

3. The hoist for an elevator according to claim 1 or 2, wherein there is a plurality of the support shafts disposed in parallel to extend between opposite mounting holes provided respectively in opposite inner surfaces of the brake bracket formed in both ends of the bracket and cantilevered to support the electromagnetic brake device.

4. An elevator apparatus comprising:

an elevating body configured to move up and down in a hoistway in a building;

a counterweight;

a main rope from which the elevating body and the counterweight are suspended;

a hoist disposed in the hoistway or a machine room and configured to wind up the main rope; and

a guide rail configured to guide lifting and lowering of the elevating body,

the hoist including:

a housing;

a stator having an annular shape and disposed in the housing;

a main shaft with one end thereof fixed to a center of the stator;

a sheave rotatably disposed on the main shaft;

a brake disc integrally formed with the sheave;

an annular rotor integrally formed with the sheave;

an electromagnetic brake device configured to brake the brake disc with a pair of brake shoes; and

a brake bracket fixed to the housing and supporting the electromagnetic brake device,

wherein the electromagnetic brake device includes a brake body configured to hold one brake shoe and disposed

on a side toward the housing with respect to a braking surface of the brake disc and an armature configured to hold the other brake shoe and disposed on a side toward the sheave with respect to the braking surface of the brake disc;

the brake bracket has a substantially C-shape cross section opening toward the brake disc in an axial direction and includes a support shaft configured to support the brake body movably in an axial direction in a side toward the housing with respect to the braking surface of the brake disc; and

an inner periphery of the substantially C-shape cross section of the brake bracket is provided with a stopper bolt configured to restrict a range of sliding of the brake body in a direction apart from the brake disc, the stopper bolt passing through the brake body and fixed to an end of the brake bracket abutting the brake disc in an axial direction and a compression spring fitted on the stopper bolt between the brake body and the brake bracket to urge the brake body in a direction apart from the brake disc.