sensor detects a rotation of the rotation plate through the protrusion unit of the rotation plate.

~~【Claim 5】~~

~~The refuse collection apparatus of claim 4, wherein the rotation detection sensor is formed from a magnetic sensor configured to detect a magnetic substance or a photo sensor configured to detect a light.~~

【Claim ~~6~~】

The refuse collection apparatus of claim 2, wherein the refuse compression unit includes:

A compression plate configured to contact to the refuse to apply pressure to the refuse;

A height regulation unit configured to be combined with the compression plate to be driven in order to regulate a height of the compression plate; and

A driving unit configured to be combined with the height regulation unit and provide a driving power to the height regulation unit.

【Claim ~~7~~】

The refuse collection apparatus of claim ~~6~~, wherein the driving unit includes:

a driving motor configured to provide a driving power;

a driving power transmission unit configured to be connected to the driving motor to transmit a driving power of the driving motor; and

a rotation driving axis configured to be combined with the driving power transmission unit to rotate.

【Claim ~~8~~】

The refuse collection apparatus of claim ~~7~~, wherein the rotation plate is combined with the rotation driving axis and interlocked with a rotation of the rotation driving axis to rotate.

【Claim ~~9~~】

The refuse collection apparatus of claim ~~8~~, further comprising

a control unit configured to measure an over-current flowing by an overload applied to the driving motor to control in order to remove a compression of the compression plate when the compression plate compresses the refuse by a driving power provided from the driving motor.

【Claim ~~10~~】

The refuse collection apparatus of claim ~~9~~, wherein the control unit calculates a height of the height regulation unit at a compression removal point of the compression plate through a rotation number of the rotation plate when removing a compression of the compression plate.

~~【Claim 11】~~

~~The refuse collection apparatus of claim 10, wherein the control unit calculates an accumulation amount of the refuse compressed in the main body unit from a position of the height regulation unit at a compression removal point of the compression plate.~~

【Claim ~~12~~】

The refuse collection apparatus of claim ~~6~~, further comprising

a height regulation unit protection cover configured to be combined with one side of the height regulation unit for protecting the height regulation unit.

【Claim ~~13~~】

The refuse collection apparatus of claim ~~12~~, wherein the a height regulation unit protection cover includes

a cover plate configured to cover the height regulation unit; and

a sliding unit configured to be combined with the cover plated to be capable of sliding.

【Claim ~~14~~】

The refuse collection apparatus of claim ~~7~~, wherein the driving power transmission unit includes

a bevel gear configured to be connected to the driving motor;

a connection axis configured to be combined with the bevel gear to rotate; and

a belt unit configured for an one side of the belt unit to be combined with the connection axis and for an other side of the of the belt unit to be combined with the rotation driving axis to transmit a rotation power of the connection axis to the rotation driving axis.

【Claim ~~15~~】

The refuse collection apparatus of claim ~~7~~, wherein a circumference of the rotation driving axis includes

a first screw thread formed toward an one side direction from a reference position, the reference position which is a pre-determined position of the rotation driving axis; and

a second screw thread formed toward an opposite direction to the first screw thread from the reference position.

【Claim ~~16~~】

The refuse collection apparatus of claim ~~15~~, further comprising

a first guide block configured to be combined with the first screw thread and to move along with the first screw thread when the rotation driving axis rotates; and

a second guide block configured to be combined with the second screw thread and to move along with the second screw thread toward the opposite direction of the first guide block when the rotation driving axis rotates.

~~【Claim 17】~~

~~The refuse collection apparatus of claim 16, further comprising~~

~~an at least one horizontal bar configured to horizontally connect the first guide block and the second guide block.~~

~~【Claim 18】~~

~~The refuse collection apparatus of claim 17, the height regulation unit includes~~

~~a first link unit configured to be combined with the first guide block and to be interlocked with a driving of a left and right direction of the first guide block to be driven in a up and down direction; and~~

~~a second link unit configured to be combined with the first link unit, to be~~

~~combined with the second guide block and to be interlocked with a driving of a left and right direction of the second guide block to be driven in a up and down direction.~~

【Claim ~~19~~】

The refuse collection apparatus of claim ~~16~~, further comprising

a sensor for ascending height regulation separately configured to be located from an at least one of the first guide block and the second guide block and to detect an approach of an at least one of the first guide block and the second guide block for controlling of an ascending height of the compression plate.

【Claim ~~20~~】

The refuse collection apparatus of claim 1, further comprising

a fire outbreak detection unit configured to be installed in the main body unit to detect whether a fire outbreaks.

【Claim ~~21~~】

The refuse collection apparatus of claim 1, further comprising

an object detection unit configured to be installed in an inside of the main body unit for detecting an object inserted from an outside of the main body unit, wherein when the object is detected by the object detection unit, a driving of the refuse compression unit is stopped.

【Claim ~~22~~】

The refuse collection apparatus of claim 1, further comprising

an advertisement frame configured to be combined with the main body unit.

【Claim ~~23~~】

The refuse collection apparatus of claim 1, further comprising

a power supply unit, wherein the power supply unit configured to use a solar energy.

【Claim ~~24~~】

The refuse collection apparatus of claim 1, further comprising

a communication unit configured to be combined with the main body unit, wherein the communication unit configured to transmit an at least one stated of the main body unit, the refuse compression unit, the moving range detection unit and the power supply unit to an external sever.

sensor detects a rotation of the rotation plate through the protrusion unit of the rotation plate.

【Claim 5】

The refuse collection apparatus of claim 2, wherein the refuse compression unit includes:

A compression plate configured to contact to the refuse to apply pressure to the refuse;

A height regulation unit configured to be combined with the compression plate to be driven in order to regulate a height of the compression plate; and

A driving unit configured to be combined with the height regulation unit and provide a driving power to the height regulation unit.

【Claim 6】

The refuse collection apparatus of claim 5, wherein the driving unit includes:

a driving motor configured to provide a driving power;

a driving power transmission unit configured to be connected to the driving motor to transmit a driving power of the driving motor; and

a rotation driving axis configured to be combined with the driving power transmission unit to rotate.

【Claim 7】

The refuse collection apparatus of claim 6, wherein the rotation plate is combined with the rotation driving axis and interlocked with a rotation of the rotation driving axis to rotate.

【Claim 8】

The refuse collection apparatus of claim 7, further comprising

a control unit configured to measure an over-current flowing by an overload applied to the driving motor to control in order to remove a compression of the compression plate when the compression plate compresses the refuse by a driving power provided from the driving motor.

【Claim 9】

The refuse collection apparatus of claim 8, wherein the control unit calculates a height of the height regulation unit at a compression removal point of the compression plate through a rotation number of the rotation plate when removing a compression of the compression plate.

【Claim 10】

The refuse collection apparatus of claim 5, further comprising

a height regulation unit protection cover configured to be combined with one side of the height regulation unit for protecting the height regulation unit.

【Claim 11】

The refuse collection apparatus of claim 10, wherein the a height regulation unit protection cover includes

a cover plate configured to cover the height regulation unit; and

a sliding unit configured to be combined with the cover plated to be capable of sliding.

【Claim 12】

The refuse collection apparatus of claim 6, wherein the driving power transmission unit includes

a bevel gear configured to be connected to the driving motor;

a connection axis configured to be combined with the bevel gear to rotate; and

a belt unit configured for an one side of the belt unit to be combined with the connection axis and for an other side of the of the belt unit to be combined with the rotation driving axis to transmit a rotation power of the connection axis to the rotation driving axis.

【Claim 13】

The refuse collection apparatus of claim 6, wherein a circumference of the rotation driving axis includes

a first screw thread formed toward an one side direction from a reference position, the reference position which is a pre-determined position of the rotation driving axis; and

a second screw thread formed toward an opposite direction to the first screw thread from the reference position.

【Claim 14】

The refuse collection apparatus of claim 13, further comprising

a first guide block configured to be combined with the first screw thread and to move along with the first screw thread when the rotation driving axis rotates; and

a second guide block configured to be combined with the second screw thread and to move along with the second screw thread toward the opposite direction of

the first guide block when the rotation driving axis rotates.

【Claim 15】

The refuse collection apparatus of claim 14, further comprising

a sensor for ascending height regulation separately configured to be located from an at least one of the first guide block and the second guide block and to detect an approach of an at least one of the first guide block and the second guide block for controlling of an ascending height of the compression plate.

【Claim 16】

The refuse collection apparatus of claim 1, further comprising

a fire outbreak detection unit configured to be installed in the main body unit to detect whether a fire outbreaks.

【Claim 17】

The refuse collection apparatus of claim 1, further comprising

an object detection unit configured to be installed in an inside of the main body unit for detecting an object inserted from an outside of the main body unit, wherein when the object is detected by the object detection unit, a driving of the refuse compression unit is stopped.

【Claim 18】

The refuse collection apparatus of claim 1, further comprising

an advertisement frame configured to be combined with the main body unit.

【Claim 19】

The refuse collection apparatus of claim 1, further comprising

a power supply unit, wherein the power supply unit configured to use a solar energy.

【Claim 20】

The refuse collection apparatus of claim 1, further comprising

a communication unit configured to be combined with the main body unit, wherein the communication unit configured to transmit an at least one stated of the main body unit, the refuse compression unit, the moving range detection unit and the power supply unit to an external sever.