【CLAIMS】

[Claim 1]

A thermo-therapeutic apparatus comprising:

a thermal ceramic module including a body, a first supporting plate located on the body, a second supporting plate located on the first supporting plate, an ascending and descending driving part coupled to a lower portion of the first supporting plate and configured to move the first supporting plate in a vertical direction on the basis of the body, and a ceramic member coupled to the second supporting plate;

a weight sensor provided on a lower surface of the second supporting plate to sense a body pressure of a user; and

a controller configured to control setting and performance of a massage mode of the thermal ceramic module, wherein the controller controls a driving height of the ascending and descending driving part according to the body pressure of the user sensed by the weight sensor, to provide the same pressure to the user through the ceramic member on the basis of a predetermined desired intensity,

wherein the controller determines whether the predetermined time passes without a predetermined change of the pressure after the weight sensor senses a pressure greater than or equal to a first reference pressure,

when the pressure is changed, the controller determines that the user is in a state of not being ready to receive the massage and initializes the time which has passed,

when the predetermined time passes without a predetermined change of the pressure after the weight sensor senses a pressure greater than or equal to a first reference pressure, the controller determines that the user is lying on the thermo-

therapeutic apparatus and waiting to receive the massage and controls the thermal ceramic module so that the massage mode is automatically started.

wherein the controller determines whether a predetermined time passes after the weight sensor senses a pressure lower than or equal to a second reference pressure which is less than the first reference pressure while the massage mode is performed,

when the predetermined time passes, the controller determines that the user gets up from thermo-therapeutic apparatus during the massage and controls the thermal ceramic module so that the massage mode is automatically paused.

[Claim 2]

The thermo-therapeutic apparatus of claim 1, further comprising a storage part in which reference height information of the ascending and descending driving part is stored according to the desired intensity,

wherein the controller calculates driving height adjustment information according to the body pressure sensed on the basis of the reference height information to store the driving height adjustment information in the storage part and controls the driving height of the ascending and descending driving part with reference to the driving height adjustment information according to the body pressure sensed by the weight sensor.

[Claim 3]

The thermo-therapeutic apparatus of claim 1, wherein the controller determines whether the predetermined time passes after the massage mode is paused,

and controls the thermal ceramic module so that the massage mode is automatically ended when the predetermined time passes.

[Claim 4]

The thermo-therapeutic apparatus of claim 1, further comprising a storage part in which user specific information including a body type, a weight, and massage mode setting information of the user is stored,

wherein the controller stores current massage mode setting information in the storage part as the user specific information when the massage mode of the thermal ceramic module is ended.

[Claim 5]

The thermo-therapeutic apparatus of claim 1, further comprising:

a horizontal conveying motor configured to horizontally drive the thermal ceramic module; and

a storage part configured to store body type information corresponding to at least one of body pressure distribution and a current variation amount of the horizontal conveying motor,

wherein the controller determines a body type of the user with reference to the body type information according to at least one of body pressure distribution of the user on the basis of a sensing result sensed by the weight sensor for a body part and a current variation amount of the horizontal conveying motor according to a location.

[Claim 6]

The thermo-therapeutic apparatus of claim 5, wherein:

the storage part stores user specific information including the body type, a weight, and massage mode setting information of the user ; and

the controller recognizes the user with reference to the user specific information according to the determined body type of the user and automatically sets the massage mode of the thermal ceramic module according to massage mode setting information of the recognized user.

[Claim 7]

A method for controlling a thermo-therapeutic apparatus comprising:

setting a massage mode of a thermal ceramic module including a body, a first supporting plate located on the body, a second supporting plate located on the first supporting plate, an ascending and descending driving part coupled to a lower portion of the second supporting plate and configured to move the first supporting plate in a vertical direction on the basis of the body, and a ceramic member coupled to the second supporting plate;

sensing a body pressure of a user through a weight sensor provided on a lower surface of the second supporting plate;

a first determining operation which determines whether a predetermined time passes without a predetermined change of the pressure after the weight sensor senses a pressure greater than or equal to a first reference pressure;

initializing the time which has passed when the pressure is changed and the controller determines that the user is in a state of not being ready to receive the massage;

automatically starting the massage mode of the thermal ceramic module when the predetermined time passes without a predetermined change of the pressure after the weight sensor senses a pressure greater than or equal to a first reference pressure and the controller determines that the user is lying on the thermo-therapeutic apparatus and waiting to receive the massage

controlling performance of the massage mode of the thermal ceramic module, wherein a driving height of the ascending and descending driving part is controlled according to the body pressure of the user sensed by the weight sensor to provide the same pressure to the user through the ceramic member on the basis of a predetermined desired intensity;

a second determining operation which determines whether a predetermined time passes after the weight sensor senses a pressure lower than or equal to a second reference pressure which is less than the first reference pressure while the massage mode is performed;

automatically pausing the massage mode of the thermal ceramic module when the predetermined time passes and the controller determines that the user gets up from thermo-therapeutic apparatus during the massage.

[Claim 8]

The method for controlling a thermo-therapeutic apparatus of claim 7, further comprising:

providing reference height information of the ascending and descending driving part according the desired intensity,

wherein the controlling includes calculating driving height adjustment information according to the body pressure sensed on the basis of the reference

height information and controlling the driving height of the ascending and descending driving part with reference to the driving height adjustment information according to the body pressure sensed by the weight sensor.

[Claim 9]

The method for controlling a thermo-therapeutic apparatus of claim 7, further comprising:

a third determining operation which determines whether a predetermined time passes after the massage mode is paused; and

automatically ending the massage mode of the thermal ceramic module when the predetermined time passes.

[Claim 10]

The method for controlling a thermo-therapeutic apparatus of claim 7, further comprising:

providing body type information corresponding to at least one of body pressure distribution and a current variation amount of a horizontal conveying motor configured to horizontally drive the thermal ceramic module;

sensing at least one of a body pressure for a body part of the user and a current change of the horizontal conveying motor according to a location;

determining a body type of the user with reference to the body type information according to at least one of body pressure distribution of the user on the basis of a sensing result sensed by the weight sensor and a current variation amount of the horizontal conveying motor according to a location;

recognizing the user with reference to user specific information according to the determined body type of the user in the case in which the user specific information including the body type, a weight, and massage mode setting information of the user is stored in advance when the former massage mode is ended; and

automatically setting the massage mode of the thermal ceramic module according to the massage mode setting information of the recognized user.