CLAIMS

~~1. A washing machine comprising:~~

~~a housing;~~

~~a water tub provided in the housing;~~

~~a washing tub rotatably provided in the water tub;~~

~~a driving device that drives the washing tub to rotate; and~~

~~a heating device that is provided in the water tub and heats a washing liquid, wherein~~

~~the heating device is attached to an attachment portion disposed in the water tub, and~~

~~the attachment portion has a first side surface disposed to be inclined toward a rotation direction side of the washing tub, the first side surface being substantially orthogonal to the rotation direction of the washing tub during spin-drying.~~

~~2. The washing machine according to claim 1, wherein the attachment portion is disposed with an attachment opening of the heating device, on a second side surface substantially orthogonal to the first side surface.~~

~~3. The washing machine according to claim 1 or 2, wherein~~

~~the wawer tub includes a drain port and a bottom surface that is gradually lower toward the drain port, and~~

~~the heating device is provided substantially parallel to the bottom surface of the water tub.~~

~~4. The washing machine according to any one of claims 1 to 3, further~~

~~comprising a heat shield plate that shields transmission of heat generated by the heating device to the bottom surface of the water tub is provided between the bottom surface of the water tub and the heating device.~~

~~5. The washing machine according to any one of claims 1 to 4, further comprising a heating plate that covers an upper side of the heating device is provided between the bottom surface of the washing tub and the heating device.~~

~~6. A washing machine comprising:~~

~~a housing;~~

~~a water tub provided in the housing;~~

~~a washing tub rotatably provided in the water tub;~~

~~a driving device that drives the washing tub to rotate;~~

~~a drain port that is provided on a bottom surface of the water tub and drains a washing liquid in the water tub, and~~

~~a heating device that is provided at a bottom of the water tub and heats the washing liquid, wherein the drain port and the heating device are provided apart from each other.~~

~~7. The washing machine according to claim 6, further comprising a heat shield plate that shields transmission of heat generated by the heating device to the bottom surface of the water tub is provided between the bottom surface of the water tub and the heating device.~~

~~8. The washing machine according to claim 6 or 7, further comprising a heating plate that covers an upper side of the heating device is provided between the bottom surface of the washing tub and the heating device.~~

~~9. A washing machine comprising:~~

~~a housing;~~

~~a water tub provided in the housing;~~

~~a washing tub rotatably provided in the water tub;~~

~~a driving device that drives the washing tub to rotate; and~~

~~a heating device that is provided in the washing tub and heats the washing liquid, wherein~~

~~the housing has an opening that is openably closed by a door,~~

~~the water tub is provided with an attachment portion to which the heating device is attached, and~~

~~the attachment portion is disposed with an attachment opening through which the heating device is inserted into the water tub from outside of the water tub at a position facing the opening.~~

~~10. The washing machine according to claim 9, wherein the opening is disposed on a rear surface of the housing.~~

~~11. The washing machine according to claim 9, wherein the opening is disposed on a side surface of the housing.~~

~~12. A washing machine according to any one of claims 9 to 11, further comprising a heat shield plate that shields transmission of heat generated by the heating device to a bottom surface of the water tub is provided between the bottom surface of the water tub and the heating device.~~

~~13. The washing machine according to any one of claims 9 to 12,~~

~~further comprising a heating plate that covers an upper side of the heating device is provided between a bottom surface of the washing tub and the heating device.~~

~~14. A heated water generation device comprising:~~

~~a water tub;~~

~~a heating device that is provided at a bottom of the water tub and heats a liquid in the water tub;~~

~~a temperature sensor provided in the heating device; and~~

~~a heating plate provided above the heating device to cover the heating device, wherein the heating plate has a passage hole disposed substantially above the temperature sensor.~~

~~15. A washing machine comprising:~~

~~a housing;~~

~~a water tub provided in the housing;~~

~~a washing tub rotatably provided in the water tub;~~

~~a driving device that drives the washing tub to rotate;~~

~~a water supply device that supplies a washing liquid into the water tub;~~

~~a heating device that is provided at a bottom of the washing tub and heats the washing liquid;~~

~~a temperature sensor provided in the heating device; and~~

~~a heating plate provided above the heating device to cover the heating device, wherein the heating plate has a passage hole disposed substantially above the temperature sensor.~~

~~16. A washing machine comprising:~~

~~a housing;~~

~~a water tub provided in the housing;~~

~~a washing tub rotatably provided in the water tub;~~

~~a pulsator rotatably provided at an inner bottom of the washing tub;~~

~~a driving device that drives the washing tub and the pulsator to rotate;~~

~~a circulation path that circulates the washing liquid in the washing tub;~~

~~a circulation pump that forms a flow of the washing liquid in the circulation path;~~

~~a heating device that is provided in the water tub and heats the washing liquid; and~~

~~a control device that controls the driving device, the circulation pump, and the heating device, wherein the control device operates the circulation pump and the heating device simultaneously.~~

~~17. The washing machine according to claim 16, wherein~~

~~the control device operates the circulation pump and the heating device simultaneously when an amount of water in the washing tub is larger than a predetermined amount, and~~

~~the control device operates only the heating device when the amount of water in the washing tub is smaller than the predetermined amount.~~

~~18. The washing machine according to claim 16 or 17, wherein~~

~~the control device operates the circulation pump and the heating device simultaneously when an amount of clothes in the washing tub is larger than a predetermined amount, and~~

~~the control device operates only the heating device when the amount of clothes in the washing tub is smaller than the predetermined amount.~~

~~19. The washing machine according to any one of claims 16 to 18, wherein~~

~~the washing machine has a discharge port located in a middle of the washing tub,~~

~~the control device operates only the pulsator after energizing the heating device when the amount of water in the washing tub is smaller than the predetermined amount, and~~

~~the control device operates the circulation pump simultaneously with energization of the heating device when the amount of water in the washing tub is larger than the predetermined amount.~~

~~20. The washing machine according to any one of claims 16 to 19, wherein~~

~~the control device operates the pulsator after energizing the heating device when the amount of clothes in the washing tub is smaller than the predetermined amount, and~~

~~the control device operates the circulation pump simultaneously with energization of the heating device when the amount of clothes in the washing tub is larger than the predetermined amount.~~

~~21. A washing machine comprising:~~

~~a housing;~~

~~a water tub provided in the housing;~~

~~a washing tub rotatably provided in the water tub;~~

~~a driving device that drives the washing tub to rotate;~~

~~a heating device that is provided in the water tub and heats a washing~~

~~liquid; and~~

~~a circulation path that circulates the washing liquid in the water tub from above into the washing tub, wherein a circulation water port to the circulation path is disposed at a bottom of the water tub.~~

~~22. The washing machine according to claim 21, wherein the circulation water port is disposed near the heating device.~~

~~23. The washing machine according to claim 21 or 22, wherein the circulation water port is disposed to project upward from a bottom surface of the water tub toward the heating device.~~

1. A washing machine comprising:

a housing;

a water tub provided in the housing;

a washing tub rotatably provided in the water tub;

a driving device that drives the washing tub to rotate through a rotating shaft extending in a substantially vertical direction; and

a heating device that is provided in the washing tub and heats the washing liquid,

wherein the housing has an opening that is openably closed by a door on a front, rear, or side surface of the housing,

the bottom of the water tub is provided with an attachment portion to which the heating device is attached, and

an attachment opening, through which the heating device is inserted into the water tub from an outside of the water tub at a position facing the opening, is disposed on a side surface of the attachment portion, and

the side surface of the attachment portion where the attachment

opening is disposed is located on a downstream side in a rotation direction od the washing tub during spin-drying.

2. The washing machine according to claim 1, wherein the side surface of the attachment portion where the attachment opening is disposed is provided in the substantially vertical direction.

3. The washing machine according to claim 1, wherein the side surface of the attachment portion where the attachment opening is disposed is provided substantially orthogonal to the rotation direction of the washing tub.

4. The washing machine according to any one of claims 1 to 3, further comprising a heat shield plate that shields transmission of heat generated by the heating device to a bottom surface of the water tub is provided between the bottom surface of the water tub and the heating device.

5. The washing machine according to any one of claims 1 to 4, further comprising a heating plate that covers an upper side of the heating device is provided between a bottom surface of the washing tub and the heating device.