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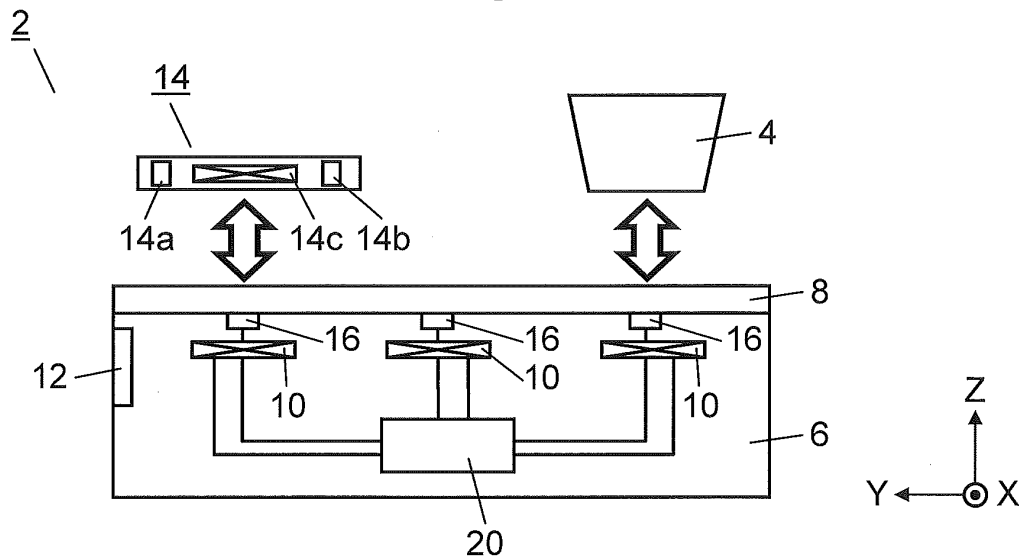
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(54) **INDUCTION HEATING COOKER**

(57) Induction heating cooker (2) includes top plate (8) on which heating target (4) is mounted, coil (10) that is provided under top plate (8) and induction-heats heating target (4) mounted on top plate (8); and body unit (6) that houses coil (10) and is disposed so as to support top plate (8). Induction heating cooker (2) further includes

display (14) displays cooking information about cooking of the induction heating cooker, and display (14) includes communication unit (14a) communicating with body unit (6) and is provided so as to be movable separately from body unit (6). Therefore, it is possible to provide induction heating cooker (2) in which convenience is improved.

FIG. 1



Description

TECHNICAL FIELD

5 **[0001]** The present disclosure relates to an induction heating cooker for induction heating a heating target such as a cooking pan.

BACKGROUND ART

10 **[0002]** In the related art, in an induction heating cooker, for example, a plurality of heating coils are disposed directly under a top plate. The induction heating cooker is configured such that a metal cooking pan that is the heating target mounted on the top plate or the like is induction-heated by the heating coils.

[0003] An induction heating cooker having a display unit for displaying cooking information about cooking or the like is also disclosed (for example, see PTL 1).

15 **[0004]** The induction heating cooker disclosed in PTL 1 includes an electrostatic capacitance type touch key, an operation dial, and a display unit. The display unit is fixed to a body of the induction heating cooker.

[0005] However, in the induction heating cooker of PTL 1, the display unit is fixed and disposed. A user cannot change a position of the display unit.

20 **[0006]** Recently, diversification of a cooking method by the induction heating cooker is processing. A configuration of the induction heating cooker of PTL 1 is inconvenient especially when a user confirms the display unit during cooking. That is, the induction heating cooker still has room for improvement from the viewpoint of convenience of cooking.

Citation List

25 Patent Literature

[0007] PTL 1: Japanese Patent Unexamined Publication No. 2009-163899

SUMMARY OF THE INVENTION

30 **[0008]** The present disclosure provides an induction heating cooker capable of improving convenience.

[0009] That is, an induction heating cooker of the disclosure includes a top plate on which a heating target is mounted; a coil that is provided under the top plate and induction-heats the heating target mounted on the top plate; and a body unit that houses the coil and is disposed so as to support the top plate. The induction heating cooker includes a display that displays cooking information about cooking of the induction heating cooker, in which the display includes a communication unit communicating with the body unit and is provided so as to be movable separately from the body unit.

35 **[0010]** According to the configuration, the display for displaying the cooking information is provided so as to be movable separately from the body unit. Therefore, it is possible to provide the induction heating cooker in which convenience of a user is improved.

40 **[0011]**

BRIEF DESCRIPTION OF DRAWINGS

[0011]

45 FIG. 1 is a vertical sectional view of an induction heating cooker according to an exemplary embodiment.
FIG. 2 is a plan view of the induction heating cooker according to the exemplary embodiment.
FIG. 3 is a flow chart illustrating a method of displaying a mountable region of a display in the induction heating cooker.
FIG. 4A is a plan view for explaining the method by the flow chart of FIG. 3.
FIG. 4B is a plan view for explaining the method by the flow chart of FIG. 3.
50 FIG. 4C is a plan view for explaining the method by the flow chart of FIG. 3.
FIG. 4D is a plan view for explaining the method by the flow chart of FIG. 3.
FIG. 5 is a plan view illustrating a modification example about a disposition configuration of coils of the induction heating cooker according to the exemplary embodiment.

DESCRIPTION OF EMBODIMENT

[0012] Hereinafter, an induction heating cooker of an exemplary embodiment of the disclosure will be described with reference to the drawings. The disclosure is not limited to the exemplary embodiment.

(Exemplary Embodiments)

[0013] Hereinafter, the induction heating cooker according to the exemplary embodiment of the disclosure will be described with reference to FIGS. 1 and 2.

[0014] FIG. 1 is a vertical sectional view of the induction heating cooker according to the exemplary embodiment. FIG. 2 is a plan view of the induction heating cooker according to the exemplary embodiment.

[0015] Induction heating cooker 2 is a cooker (IH cooker) having a configuration for induction heating, for example, heating target 4, or the like.

[0016] As illustrated in FIG. 1, induction heating cooker 2 of the exemplary embodiment includes body unit 6, top plate 8, a plurality of coils 10, and the like. If a user mounts heating target 4 on top plate 8, heating target 4 is heat-cooked by induction heating via coils 10 directly under heating target 4.

[0017] Induction heating cooker 2 of the exemplary embodiment further includes attached display unit (first display unit) 12, display (second display unit) 14, temperature detectors 16, light emitting units 18 (see FIG. 2), controller 20, and the like.

[0018] Hereinafter, each configuration of induction heating cooker 2 will be described in order.

[0019] Hereinafter, as illustrated in the drawings, a width direction will be described as an X direction, a depth direction as a Y direction, and a height direction as a Z direction in induction heating cooker 2.

[0020] Heating target 4 is configured of, for example, an object such as a cooking pan that is heated by induction heating cooker 2. At least a part of heating target 4 is formed of metal. Therefore, an eddy current flows through the metal due to magnetic force lines generated by coils 10 and induction heating of heating target 4 can be performed.

[0021] Body unit 6 configures a base portion for a user to cook using induction heating cooker 2. Top plate 8 is disposed on an upper portion of body unit 6. Top plate 8 is formed of, for example, crystallized glass having translucency or the like, and configures a top board of induction heating cooker 2. Heating target 4, display 14, or the like described below is mounted on the upper portion of top plate 8.

[0022] Coil 10 generates the magnetic force lines to perform induction heating of heating target 4, or to perform a supply of power, or charging display 14, or the like. As illustrated in FIG. 2, coil 10 of the exemplary embodiment is configured in a donut shape having a hollow center portion when viewed from above. Light emitting unit 18 which is described below is disposed around coil 10.

[0023] As illustrated in FIG. 2, coils 10 are arranged in a grid pattern (XY plane) composed of a plurality of columns (Y direction) and a plurality of rows (X direction). With this arrangement, even when heating target 4 is mounted on an arbitrary position in top plate 8, induction heating can be performed by one coil 10 disposed directly under at least heating target 4.

[0024] Attached display unit 12 is configured of, for example, a liquid crystal display or the like, and displays information (cooking information) about cooking of, for example, induction heating cooker 2. As illustrated in FIG. 1, attached display unit 12 is provided to be fixed to a front surface (front side in the Y direction) of body unit 6. The installation position of attached display unit 12 is not limited to the front surface of body unit 6 and, other than that, may be provided on, for example, the upper surface of body unit 6, or the like.

[0025] Similar to attached display unit 12, cooking information of induction heating cooker 2, or the like is displayed on display 14. Display 14 is configured of a touch panel type tablet having a screen for displaying, for example, cooking information, and the like. That is, unlike fixed type attached display unit 12, display 14 is provided separately from body unit 6 and top plate 8. Therefore, display 14 can be movably disposed at an arbitrary position.

[0026] Therefore, similar to heating target 4, display 14 can be used to be mounted on top plate 8.

[0027] In the exemplary embodiment, as illustrated in FIG. 2, a case where display 14 has a size corresponding to four coils 10 (two rows and columns respectively) is described as an example.

[0028] Display 14 internally includes communication unit 14a, battery 14b, power receiving coil 14c, and the like. Communication unit 14a communicates with controller 20 within body unit 6 described below.

[0029] Battery 14b is configured of, for example, a rechargeable lithium ion battery and the like, and configures a drive unit for driving display 14.

[0030] When display 14 is mounted on top plate 8, power receiving coil 14c receives an electromagnetic field generated by coils 10 which are placed directly under top plate 8 and generates power. Power receiving coil 14c is connected to battery 14b. Therefore, battery 14b is configured to be charged by receiving power supply generated by power receiving coil 14c. That is, display 14 is configured to be able to supply power via coil 10 of body unit 6 by battery 14b and power receiving coil 14c.

[0031] Temperature detector 16 is configured of, for example, a temperature sensor such as a thermistor and detects a temperature of top plate 8 above coil 10. Therefore, temperature detector 16 detects the temperature of heating target 4 via top plate 8. In the exemplary embodiment, one temperature detector 16 is provided for each coil 10. In FIG. 1, a configuration in which temperature detector 16 is provided to be in contact with a lower surface of top plate 8 is illustrated as an example, but is not limited to the example. For example, temperature detector 16 may be disposed around coil

10 or the like as long as it is a position at which the temperature of heating target 4 can be detected via top plate 8.

[0032] As illustrated in FIG. 2, light emitting units 18 are individually disposed around coils 10 respectively. Light emitting unit 18 makes the user can watch (visually recognizable) the position of coil 10 generating the electromagnetic field through top plate 8 using light emission. Light emitting unit 18, in the exemplary embodiment, is configured of, for example, a ring-shaped LED provided so as to surround coil 10. As described below, light emitting unit 18 functions as a guide unit for showing a mountable region of a non-contact power receiving device such as display 14.

[0033] Controller 20 is disposed within body unit 6 and controls an operation of induction heating cooker 2. Specifically, controller 20 is connected to the plurality of coils 10, attached display unit 12, and a plurality of temperature detectors 16 disposed within body unit 6, and controls the operations thereof.

[0034] Controller 20 is configured to be capable of wirelessly communicating with communication unit 14a of display 14. Therefore, controller 20 mutually communicates, for example, cooking information with display 14.

[0035] According to induction heating cooker 2 having the configured described above, freely movable display 14 is provided separately from body unit 6 in addition to attached display unit 12. Therefore, when the user cooks, the user can dispose display 14 at his/her favorite place (for example, a place that is easy to watch). Thus, the user can cook while watching cooking information displayed on a screen of display 14 only by turning his/her eyes. As a result, convenience for the user can be improved.

[0036] According to the exemplary embodiment, in a case where display 14 is mounted on top plate 8, the supply of power and charging can be performed to display 14 via coil 10 of body unit 6. Therefore, the user can perform cooking of heating target 4 while confirming cooking information of display 14 mounted on top plate 8. At the same time, it is possible to perform the supply of power and charging of battery 14b and the like via power receiving coil 14c of display 14. Therefore, the user can cook while watching display 14 without worrying about a remaining capacity of battery 14b of display 14. As a result, convenience for the user is improved. That is, coil 10 is used as a multifunctional coil having a function of performing the supply of power and charging of display 14, as well as performing cooking using induction heating of heating target 4.

[0037] In the exemplary embodiment, as illustrated in FIG. 2, a multi-coil configuration of layout free capable of mounting heating target 4 or display 14 on an arbitrary position on top plate 8 is employed. Therefore, it is possible to realize a configuration with a high degree of freedom in which display 14 is mounted on a desired position on top plate 8. In a state where display 14 is mounted on top plate 8, charging of display 14 can be performed. Therefore, it is possible to obtain particularly excellent effects from the viewpoint of convenience.

[0038] As described above, induction heating cooker 2 of the exemplary embodiment is configured.

[0039] Hereinafter, a method of showing the mountable region of display 14 on top plate 8 to the user using temperature detector 16 and light emitting unit 18 will be described with reference to FIGS. 3 and 4A to 4D.

[0040] FIG. 3 is a flow chart illustrating a method of displaying the mountable region of the display in the induction heating cooker. FIGS. 4A to 4D are plan views for explaining an example for displaying and showing the mountable region in order along the flow chart illustrated in FIG. 3.

[0041] As illustrated in FIG. 3, first, a signal is transmitted from display 14 to controller 20 of body unit 6 (step S1). Specifically, the user presses a button (not illustrated) provided in display 14. Therefore, communication unit 14a of display 14 transmits a signal to controller 20.

[0042] Controller 20 recognizes that display 14 is mounted on top plate 8 by the signal from communication unit 14a. In this case, controller 20 stores various types of information (for example, information of types and sizes of display 14, and the like) about display 14. Thus, when receiving the signal transmitted from display 14, controller 20 reads information about display 14.

[0043] Next, controller 20 confirms a state of heating using coil 10 (step S2). That is, controller 20 confirms whether or not each of the plurality of coils 10 is heating. In the exemplary embodiment, as illustrated in FIG. 4A, for example, it is confirmed that one coil 10a is heating. Therefore, it is possible to confirm that heating target 4 (not illustrated) receiving induction heating is mounted on the upper surface of top plate 8 that is positioned above coil 10a.

[0044] Next, controller 20 performs temperature determination of each coil 10 input from temperature detector 16 (step S3). Specifically, controller 20 determines whether or not a temperature detected by temperature detector 16 of coils 10 other than coil 10a that is confirmed being heated in step S2 and a peripheral region thereof is a predetermined temperature (for example, 60°C) or more. In this case, coil 10a that is confirmed being heated in step S2 and the peripheral region thereof correspond to region A1 illustrated in FIG. 4B. Thus, controller 20 determines whether or not the temperature detected by temperature detector 16 is the predetermined temperature or more in a region on top plate 8 excluding region A1.

[0045] As a result of the temperature determination, as illustrated in FIG. 4C, controller 20 determines that the temperature detected by temperature detector 16 is the predetermined temperature or more, for example, in region A2 corresponding to three coil 10b, coil 10c, and coil 10d adjacent to region A1 among the plurality of coils 10.

[0046] Next, controller 20 performs light emission display by light emitting unit 18 (step S4). Specifically, as illustrated in FIG. 4D, controller 20 performs light emission by light emitting unit 18 in a predetermined region A3 excluding region

A1 and region A2 of which the temperature is determined as the predetermined temperature or more in step S3. That is, controller 20 causes region A3 having a low temperature excluding a region (for example, region A1 and region A2) having a high temperature to emit light. Therefore, controller 20 emits light and displays region A3 as a preferable region for mounting display 14 and guides the user.

[0047] In this case, controller 20 does not determine that region A4 (region on a front side in the Y direction) adjacent to region A2 illustrated in FIG. 4D is the predetermined temperature or more in step S3. Nevertheless, controller 20 does not control to cause light emitting unit 18 to emit light in step S4 for the following reasons.

[0048] This is because, as described above, the size of display 14 corresponds to the region of coils 10 of a range of total four coils of two rows and two columns respectively. That is, region A4 cannot secure a region of the size of four coils on which display 14 is mounted. Therefore, controller 20 controls light emitting units 18 so as not to emit light excluding region A4 from the mountable region of display 14. Therefore, controller 20 causes only light emitting units 18 of region A3 to emit light as the mountable region of display 14. As a result, the mountable region of display 14 can be further reliably shown to the user.

[0049] Therefore, the mountable region of display 14 of top plate 8 is displayed by light emission of light emitting units 18.

[0050] That is, according to the exemplary embodiment, controller 20 causes light emitting units 18 of region A3 having a low temperature to emit light and to be displayed as the mountable region of display 14, and to show the mountable region to the user. Therefore, the user can mount display 14 on safe region A3 emitting light and having a low temperature. Therefore, it is possible to prevent display 14 from being mounted on a region having a high temperature. Therefore, troubles of display 14 itself and occurrence of defects due to contact of the user with a region having a high temperature are prevented. As a result, safety can be further improved.

[0051] According to the exemplary embodiment, the multi-coil configuration capable of mounting heating target 4 or display 14 at an arbitrary position on top plate 8 is employed. Therefore, in the configuration, a safe region having a low temperature is displayed as the mountable region. Therefore, heating target 4 or display 14 can be reliably mounted on a safe region having a low temperature. That is, induction heating cooker 2 of the exemplary embodiment is excellent in usefulness such as guiding display 14 to the mountable region.

[0052] According to the exemplary embodiment, controller 20 controls light emission of light emitting units 18 so as not to emit light to the periphery (for example, regions A1 and A2) of coils 10a being heated and the unmountable region A4 of display 14. Therefore, even in a case of a peripheral region of coils 10a being heated and the region having a low temperature, controller 20 does not guide display 14 as the mountable region.

[0053] That is, it is possible to reduce the following influence on the periphery by heat cooking of heating target 4 by coils 10a.

[0054] Specifically, for example, in a case where heating target 4 that is heated by coils 10a contains moisture, water droplets having a high temperature may scatter around coils 10a. Scattered water droplets may adhere to display 14 or the user. Therefore, there is a concern that a cause of failure of display 14 or defects to the user occur. In the exemplary embodiment, the periphery of coil 10a being heated is excluded from the mountable region and light emitting units 18 not to emit light. Therefore, the safety of induction heating cooker 2 can be further improved.

[0055] Next, another example of a display of a screen of display 14 will be described below.

[0056] That is, in the above description, an example, in which the cooking contents and the like are displayed on the screen of display 14, is described, but the disclosure is not limited to the example. For example, display 14 may further display situations inside a refrigerator/freezer's cabinet, contents of stored items, or the like. In this case, it is preferable that communication unit 14a of display 14 is configured to wirelessly communicate not only with induction heating cooker 2 (controller 20) but also with the refrigerator/ freezer's cabinet. Therefore, when display 14 is placed on top plate 8 of induction heating cooker 2 for cooking, the user can consider food materials and the like used for cooking from information such as an image inside the refrigerator/ freezer's cabinet. As a result, convenience during cooking can be further improved.

[0057] Display 14 may be configured to display, for example, a screen for managing vital data (physical information) of the user and recipe suggestion. In this case, for example, vital data such as a weight or a body fat percentage of the user, or the like may also be displayed on a part of the screen. Suggestion contents of recipes and the like that are recommended based on the displayed vital data may also be displayed. Specifically, for the user whose latest body weight and the body fat percentage are increased, a recipe with a low calorie is selected and displayed from a large number of recipes stored on display 14. Therefore, a recipe suitable for the vital data of the user can be displayed on the screen of display 14 and presented to the user. As a result, it can play a part of physical condition management of the user and the like.

[0058] Display 14 may display, for example, a recipe guide for a recipe selected by the user. In this case, for example, the calorie of the selected recipe, a cooking time, a quantity for each material, and the like may be displayed. Therefore, the user can prepare necessary ingredients for the recipe based on the displayed screen and cook.

[0059] Food cooked, for example, according to the displayed recipe that is imaged by the user may be displayed on the screen of display 14. In this case, an image of food imaged by the user with, for example, a camera incorporated in

display 14 is displayed in a part of the screen. In this case, images of recipes that are imaged in the past including the image described above may be displayed at other places of the same screen of display 14. Therefore, the user can manage a daily menu while referring to the past recipe.

[0060] In the above description, the disclosure is described with reference to the exemplary embodiment, but the disclosure is not limited to the exemplary embodiment described above.

[0061] That is, in the exemplary embodiment, a case in which the user cooks in a state where display 14 is mounted on top plate 8, is described as an example, but the disclosure is not limited to the example. For example, cooking may be performed in a state where display 14 is placed at a position (for example, a wall or the like) different from top plate 8. Also in this case, the user can cook while watching display 14 that is driven by built-in battery 14b. However, from the viewpoint of convenience, it is more preferable to cook while mounting display 14 on top plate 8 and charging display 14. The reason for this is that the user can concentrate and cook without concern about a state of charge of display 14.

[0062] In the exemplary embodiment, a case in which light emitting unit 18 is the ring-shaped LED provided so as to surround the periphery of coil 10, is described as an example, but the disclosure is not limited to the example. The configuration of light emitting unit 18 may be arbitrary as long as it is a light emitting unit that emits light so as to indicate the mountable region such as heating target 4 or display 14. For example, a configuration of light emitting unit 18 that emits light in a grid shape (grid pattern) may be adopted with a region of one coil as one unit (one grid).

[0063] In the exemplary embodiment, a grid pattern configuration, in which the plurality of coils 10 are arranged in a plurality of columns along the Y direction and a plurality of rows along the X direction, is described as an example, but the disclosure is not limited to the example. For example, as illustrated in a modification example of FIG. 5, a plurality of coils 22 may be alternately arranged (staggered) each other and arranged in an oblique direction different from the X direction and the Y direction. In this case, similar to the exemplary embodiment described above, light emitting unit 28 may be disposed around each coil 22. Therefore, since a space between coils 22 is narrowed, heating distribution during cooking is made more uniform. More power can be sent in the same area during power transmission.

[0064] For example, a configuration of displaying the mountable region of a non-contact power receiving device such as a blender may also be provided by another method described below without displacing light emitting unit 28 around each coil 22. Specifically, for example, the mountable region may be displayed on attached display unit 12. The mountable region may be displayed on an external display communicating with induction heating cooker 2, or the like. Therefore, since light emitting unit 28 is unnecessary, the cost can be reduced. Since it is possible to narrow a space between coils 22, distribution of a heating unit can be uniformed during cooking. It is possible to increase transmission power per unit area during power transmission.

[0065] In the exemplary embodiment, a configuration, which is visually displayed and shown by light emitting units 18 and 28, is described as an example, but the disclosure is not limited to the example. For example, a configuration, in which a voice guidance unit or the like is provided and the user is guided to the mountable region by voice, may also be provided. Therefore, for example, even a user having visual disability can conveniently use the configuration.

[0066] In the exemplary embodiment, the multi-coil configuration of layout free capable of mounting the non-contact power receiving device such as heating target 4 or display 14 at an arbitrary position on top plate 8 is described as an example, but the disclosure is not limited to the example. For example, the mounting places (heating regions) of heating target 4 and the non-contact power receiving device are determined in advance in a plurality of locations. The coil is provided corresponding to each mounting place that is set in advance. A configuration, in which the user mounts heating target 4 or the non-contact power receiving device on an arbitrary position among a plurality of mounting places, may be provided. In this case, a configuration, in which an operation unit configured of a liquid crystal, a segment display such as the LED, and the like provided corresponding to a region of each mounting place is lighted and the mountable region of the non-contact power receiving device is shown, may also be provided. Therefore, since the number of coils 22 is reduced, the cost of entire induction heating cooker 2 can be reduced. The user can more easily discriminate the mounting place of the non-contact power receiving device.

[0067] In the exemplary embodiment, in the example of the flowchart of FIG. 3, a case where one coil 10a is heating before display 14 is mounted in step S2 is described as an example, but the disclosure is not limited to the example. That is, a case where heating target 4 is already placed on top plate 8 is described as an example, but the disclosure is not limited to the example. For example, a case where there is no coil 10 being heated, that is, heating target 4 is not placed on top plate 8 may also be provided. In this case, first, in the temperature determination of step S3 illustrated in FIG. 3, controller 20 determines a temperature result of temperature detector 16 in all the regions. Controller 20 may perform light emission control of light emitting unit 18 in step S4 based on the determination result. In this case, the user mounts display 14 on top plate 8 based on mounting guide by light emission control of light emitting unit 18. Thereafter, heating target 4 is mounted on top plate 8 and heating control may be performed. Therefore, even in a case where a pan, a cooking material, or the like is placed on top plate 8, for example, after cooking with a high-temperature frying pan or another cooking equipment such as an oven after heating, display 14 can be placed in a low-temperature region and safely used.

[0068] In the exemplary embodiment, a case where one heating target 4 is disposed on top plate 8 is described as

an example, but the disclosure is not limited to the example. For example, a plurality of heating targets 4 may also be disposed on top plate 8. Also in this case, the same control as the control described in step S3 of FIG. 3 may be individually performed.

[0069] In the exemplary embodiment, in step S2 illustrated in FIG. 3, a case where the temperature determination of step S3 is performed except a region in which coil 10a is determined being heated and the surrounding region thereof is described as an example, but the disclosure is not limited to the example. For example, in step S2 of FIG. 3, the temperature determination of step S3 may also be performed except only the region in which coil 10a is determined being heated, that is, the region including the surrounding region of coil 10a. In this case, the "surrounding region" is not limited to a size of the range illustrated in FIG. 4B and the like, may be a range of an arbitrary size. Therefore, in a case where heating power is low and a temperature is not so high in coil 10a, it is possible to take a wider place on which the non-contact power receiving device can be safely mounted.

[0070] In the exemplary embodiment, in step S1 of FIG. 3, in a case where a signal is transmitted to controller 20 by pressing a button of display 14 by the user is described as an example, but the disclosure is not limited to the example. For example, only step S2 to step S4 of FIG. 3 are performed and light emission of the light emitting unit may also be controlled by pressing the button provided in body unit 6 of induction heating cooker 2 or the like. Therefore, step S1 of the flowchart illustrated in FIG. 3 can be omitted.

[0071] A configuration, in which communication unit 14a of display 14 automatically transmits a signal to controller 20 of body unit 6 when display 14 approaches body unit 6 instead of pressing the button, may also be provided. Therefore, the operation by the user is small and it can be used more easily.

[0072] In the exemplary embodiment, the display examples of display 14 are described as a few examples, but the disclosure is not limited to the examples. For example, as described in step S1 to step S4 illustrated in FIG. 3, a configuration, in which a screen indicating a light emitting state of light emitting unit 18 is displayed on display 14, may be provided.

[0073] For example, a dish-up example of the cooking material or the like may be displayed in display 14. In this case, first, for example, a transparent dish is placed on display 14. In this state, dish-up may be performed according to a display screen of display 14 disposed under a dish. In order to assist the user in cooking, an arbitrary moving image such as how to cut foodstuffs may be displayed on the display screen of display 14. Therefore, it is possible to shorten an operation time of dish-up, cooking, or the like. It is possible to improve an appearance of the cooking material or the like.

[0074] In the exemplary embodiment, a case where cooking information is displayed by communication with controller 20 of body unit 6 via communication unit 14a of display 14 is described as an example, but the disclosure is not limited to the example. For example, a configuration, in which display 14 itself functions as the controller of induction heating cooker 2, may be provided. Therefore, it is possible to dispose a coil at a location at which, for example, controller 20 of induction heating cooker 2 is occupied. As a result, it is possible to obtain an induction heating cooker which can take a wider heating region.

[0075] Arbitrary exemplary embodiments among the exemplary embodiments described above are appropriately combined. Therefore, it is possible to achieve effects included in each exemplary embodiment.

[0076] As described above, the induction heating cooker of the disclosure includes a top plate on which a heating target is mounted, a coil that is provided under the top plate and induction-heats the heating target mounted on the top plate, and a body unit that houses the coil and is disposed so as to support the top plate. The induction heating cooker includes a display that displays cooking information about cooking of the induction heating cooker, in which the display includes a communication unit communicating with the body unit and is provided so as to be movable separately from the body unit.

[0077] According to the configuration, the user can cook while placing the display at an arbitrary position. Therefore, it is possible to provide the induction heating cooker in which convenience of a user is improved.

[0078] The display of the induction heating cooker includes a power receiving coil that receives an electromagnetic field generated by the coil and generates power when the display is mounted on the top portion, and the display may be configured to be driven by the power generated by the power receiving coil.

[0079] According to the configuration, it is possible to supply power to the display on the top plate. Convenience of a user is improved.

[0080] The coil of the induction heating cooker of the disclosure may be configured of a plurality of coils disposed under the top plate. Therefore, the user can select various combination of places on which the heating targets and the display are mounted. As a result, it is possible to further improve convenience of a user.

[0081] The display of the induction heating cooker of the disclosure to which power is fed by at least one of the plurality of coils directly under a location on which the display is mounted, may be configured to be capable of being mounted on an arbitrary position on the top plate. Therefore, the user can also supply power while placing the display in an arbitrary convenient position on the top plate. Therefore, the display can be used for a long period of time and convenience of a user is further improved.

[0082] The display of the induction heating cooker of the disclosure may include a battery. Therefore, charging from

the induction heating cooker to the battery of the display can be provided. Therefore, the display can be used for a long period of time and the display can be further easily used after being moved.

[0083] The body unit of the induction heating cooker of the disclosure may include a light emitting unit that is disposed around the coil and a temperature detector that detects a temperature of the coil, and a controller. The controller may cause a predetermined light emitting unit to emit light based on the temperature detected by the temperature detector and may display a position on which the display is capable of being mounted. Therefore, it is possible to mount the display on the coil of the region having a low temperature.

INDUSTRIAL APPLICABILITY

[0084] According to the disclosure, a user can execute cooking and the like while watching cooking information displayed on the display provided separately and the like. Therefore, it is useful for an application such as an induction heating cooker which is required for further convenience during cooking.

REFERENCE MARKS IN THE DRAWINGS

[0085]

2	induction heating cooker
4	heating target
6	body unit
8	top plate
10, 10a, 10b, 10c, 10d, 22	coil
12	attached display unit (first display unit)
14	display (second display unit)
14a	communication unit
14b	battery
14c	power receiving coil
16	temperature detector
18, 28	light emitting unit
20	controller

Claims

1. An induction heating cooker comprising:

a top plate on which a heating target is mounted;
a coil that is provided under the top plate and induction-heats the heating target mounted on the top plate;
a body unit that houses the coil and is disposed so as to support the top plate; and
a display that displays cooking information about cooking of the induction heating cooker,
wherein the display includes a communication unit communicating with the body unit and is provided so as to be movable separately from the body unit.

2. The induction heating cooker of Claim 1,
wherein the display includes a power receiving coil that receives an electromagnetic field generated by the coil and generates power when the display is mounted on the top plate, and
wherein the display is driven by the power generated by the power receiving coil.

3. The induction heating cooker of Claim 1,
wherein the coil is configured of a plurality of coils disposed under the top plate.

4. The induction heating cooker of Claim 3,
wherein the display to which power is fed by at least one of the plurality of coils directly under a location on which the display is mounted, is capable of being mounted on an arbitrary position on the top plate.

5. The induction heating cooker of Claim 1,
wherein the display includes a battery.

6. The induction heating cooker of Claim 1,
wherein the body unit includes a light emitting unit that is disposed around the coil and a temperature detector that
detects a temperature of the coil, and a controller, and
wherein the controller causes a predetermined light emitting unit to emit light based on the temperature detected
by the temperature detector and displays a position on which the display is capable of being mounted.

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FIG. 1

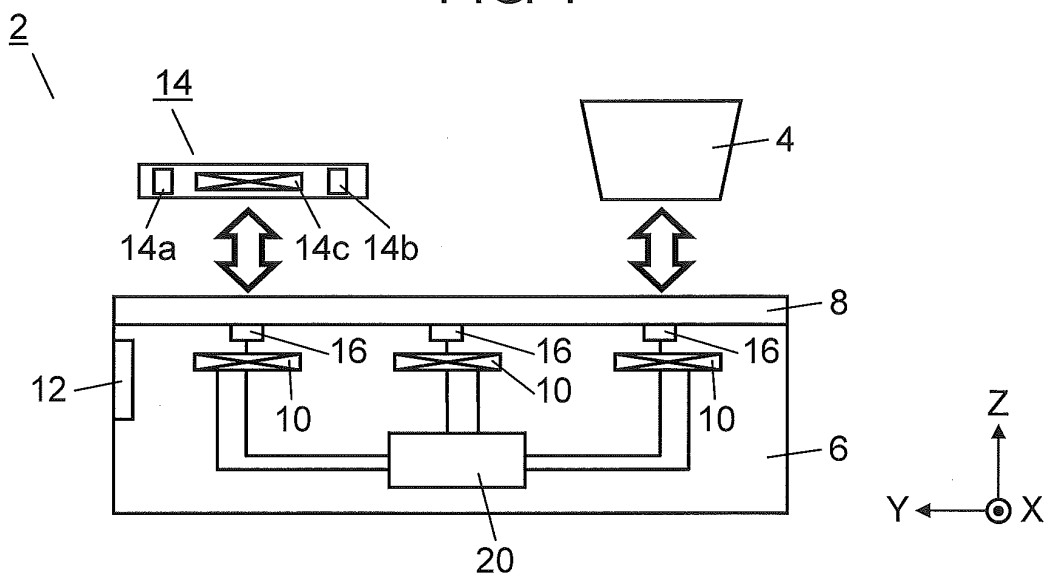


FIG. 2

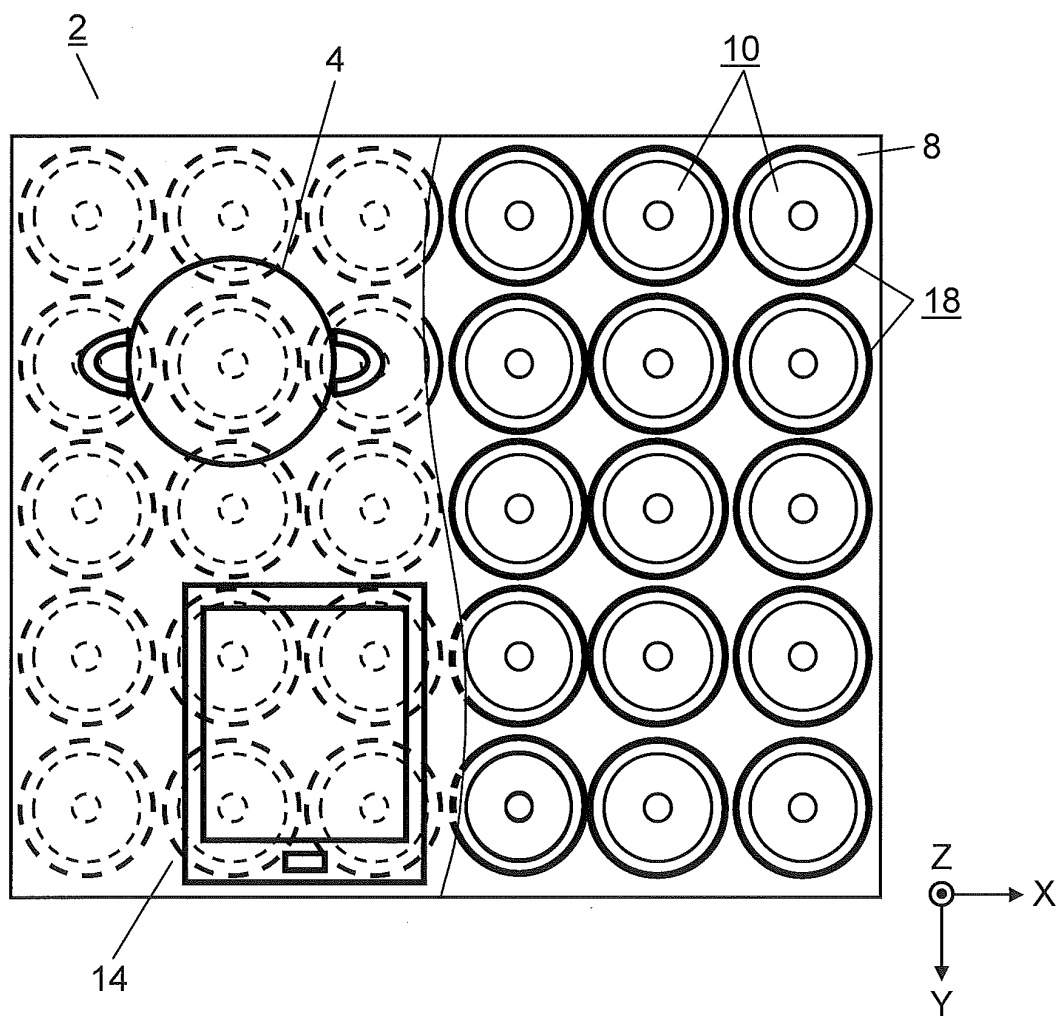


FIG. 3

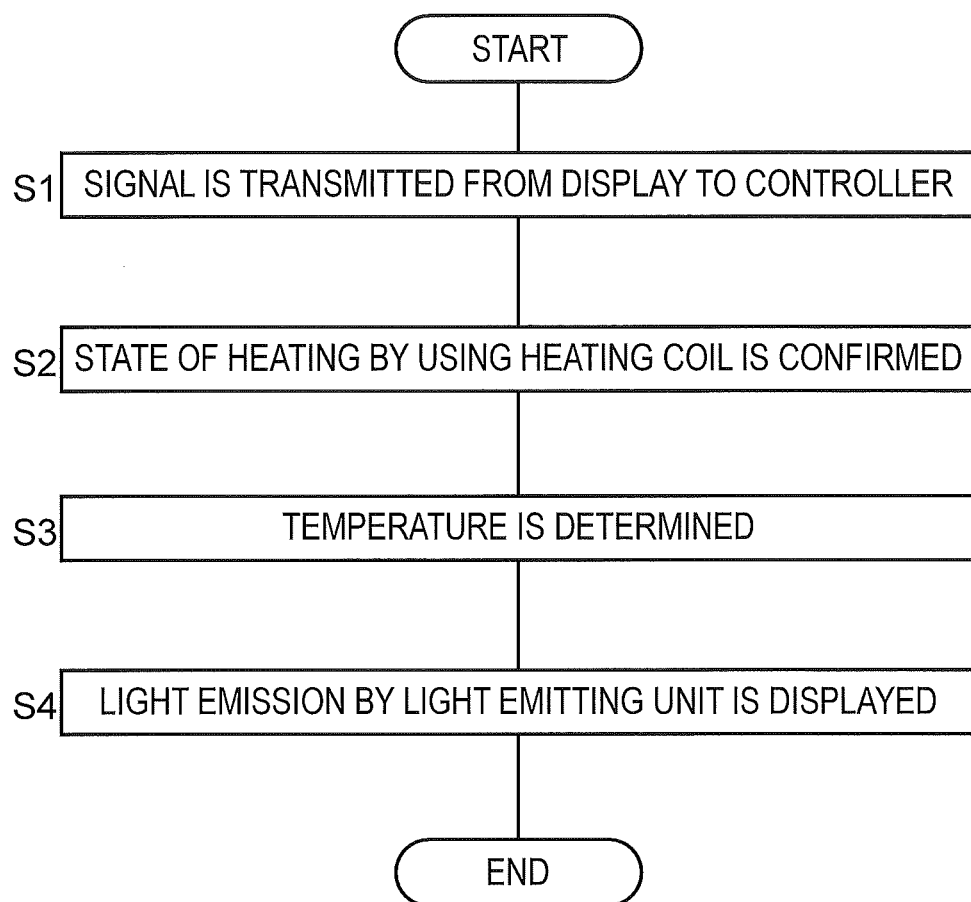


FIG. 4A

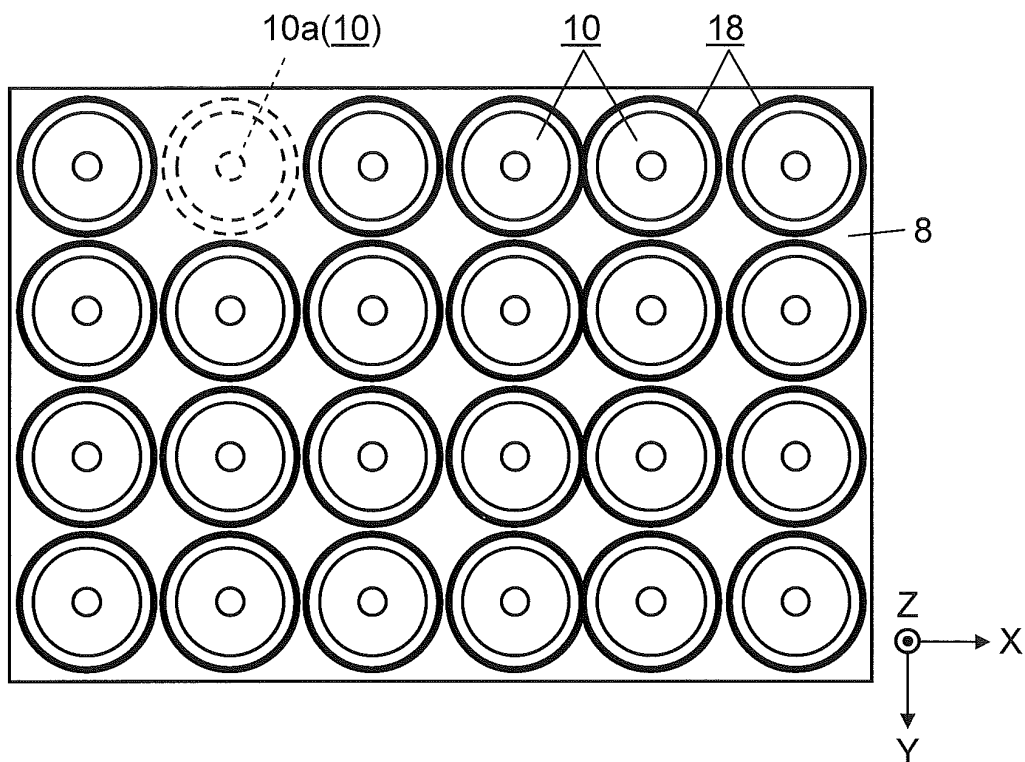


FIG. 4B

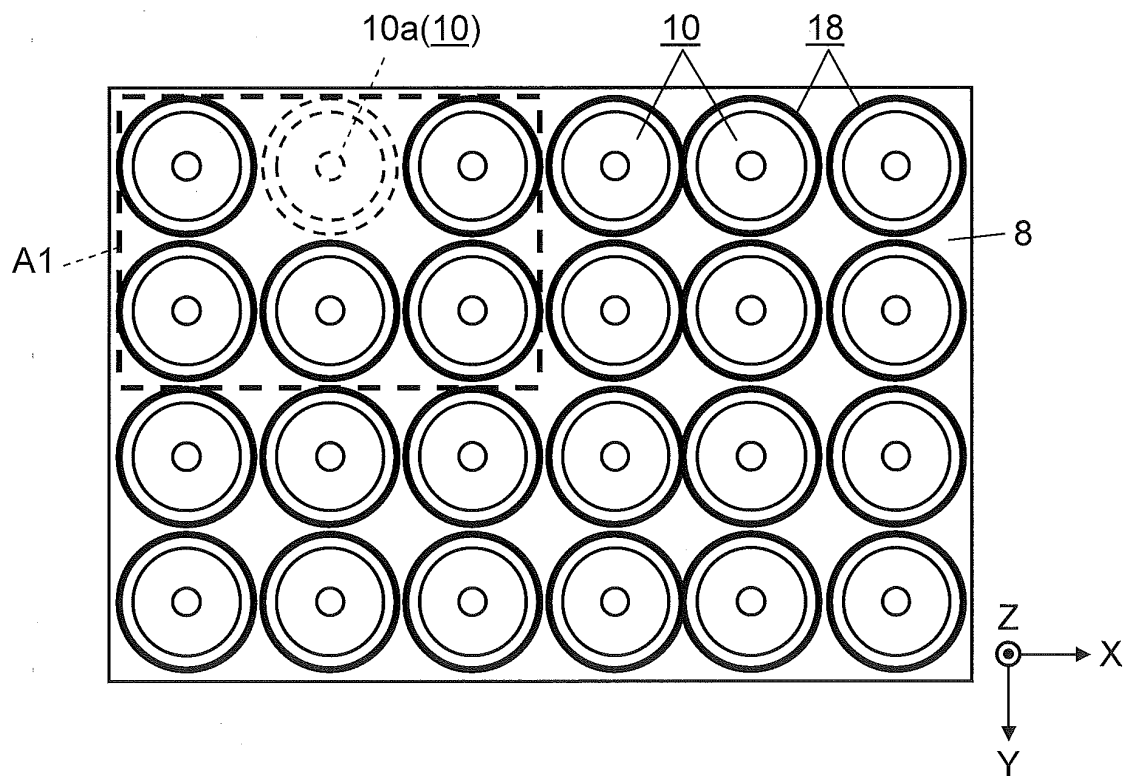


FIG. 4C

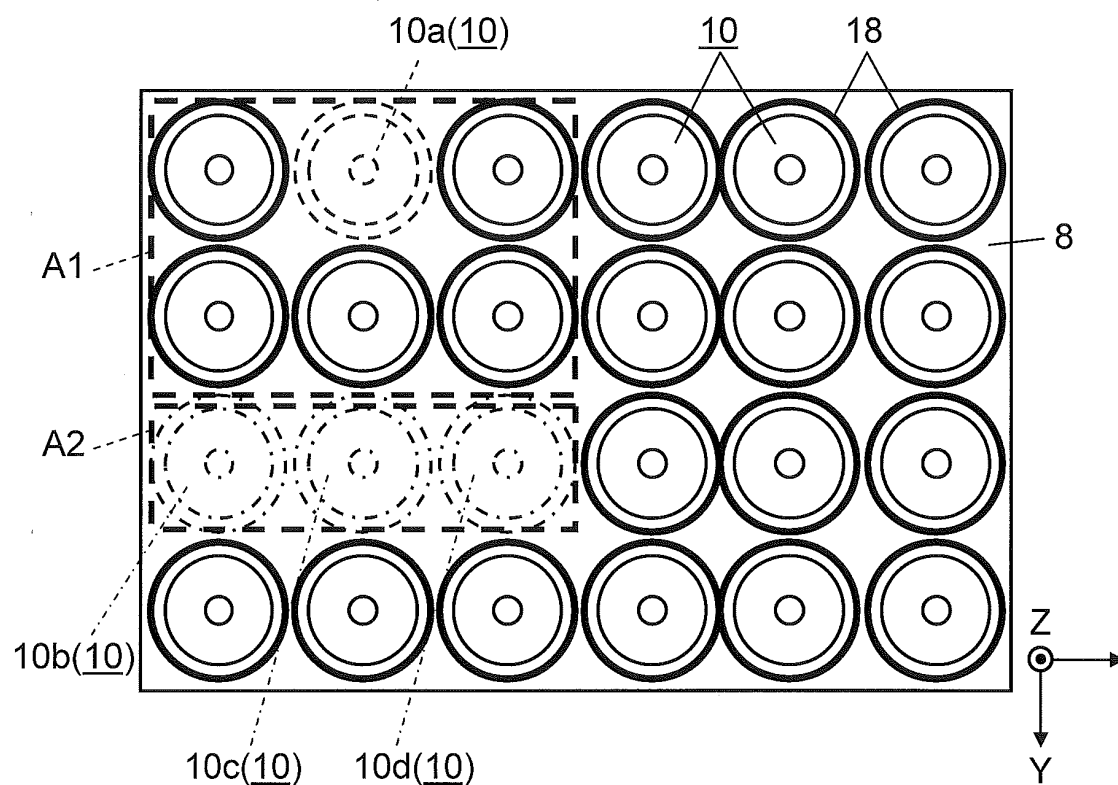


FIG. 4D

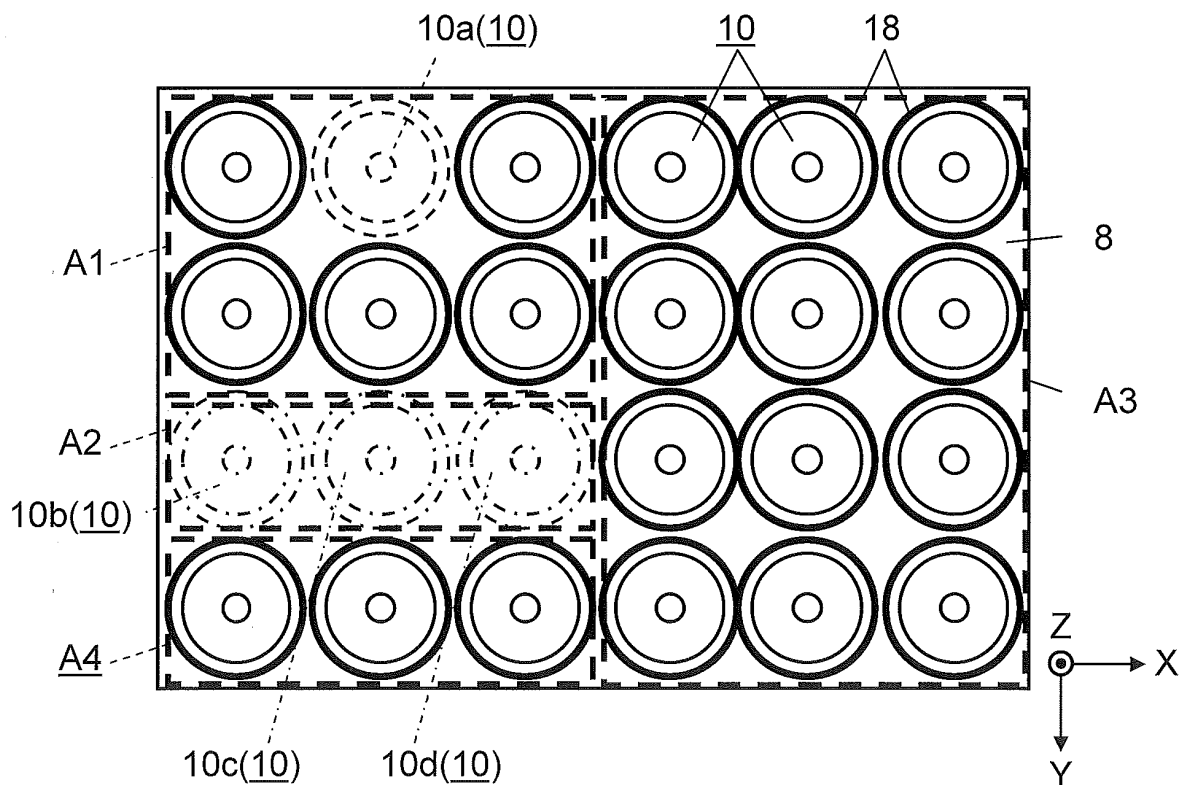
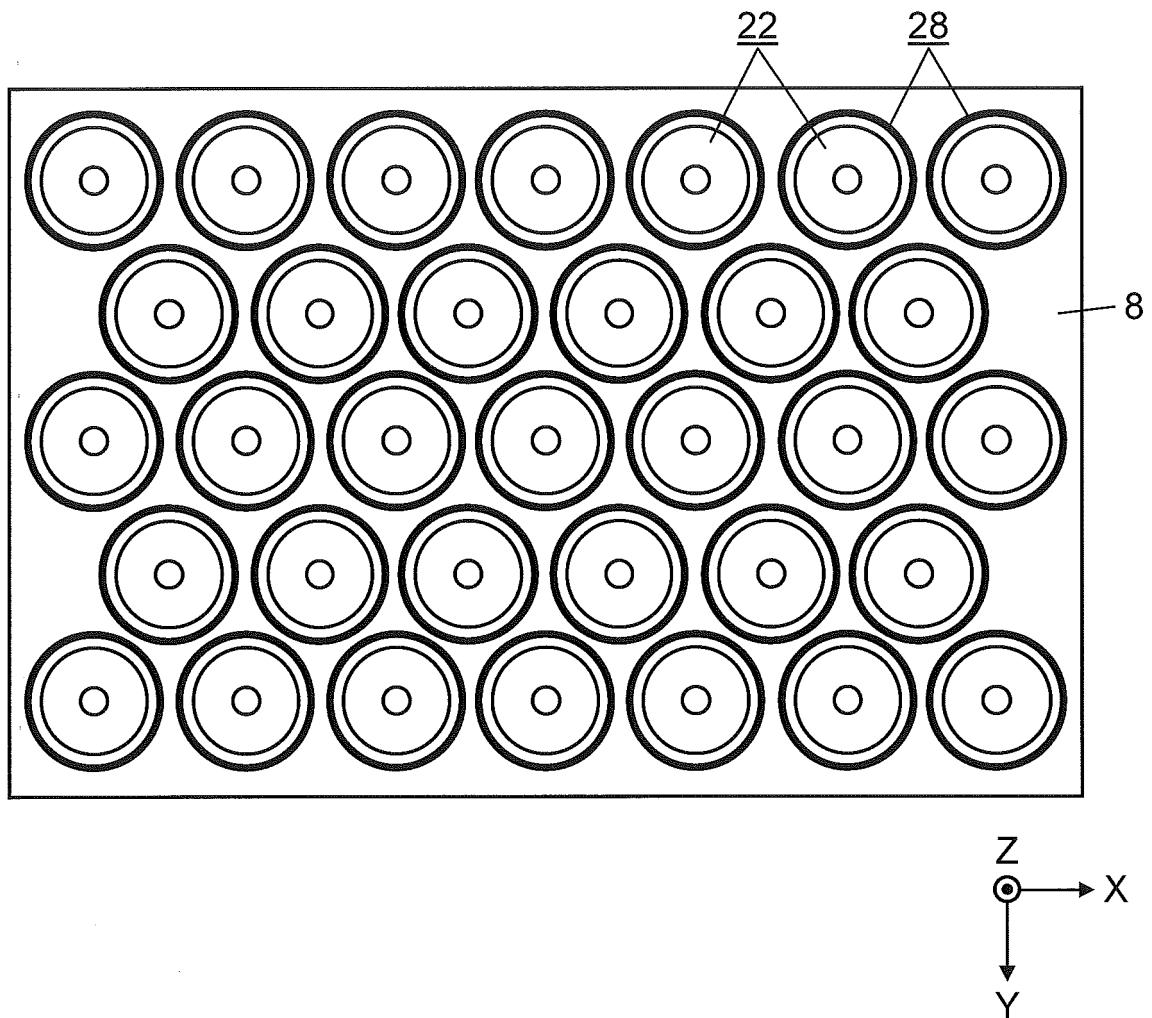


FIG. 5



INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2016/003637

A. CLASSIFICATION OF SUBJECT MATTER

H05B6/12(2006.01) i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

H05B6/12

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2016

Kokai Jitsuyo Shinan Koho 1971-2016 Toroku Jitsuyo Shinan Koho 1994-2016

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 2009-165291 A (Mitsubishi Electric Corp.),	1-4
Y	23 July 2009 (23.07.2009), paragraphs [0011] to [0012], [0102] to [0106]; fig. 1, 10 (Family: none)	5-6
X	JP 2005-135718 A (Hitachi Hometec, Ltd.),	1, 3, 5
Y	26 May 2005 (26.05.2005), paragraphs [0023] to [0032]; fig. 1 to 3 (Family: none)	5
Y	JP 2009-238613 A (Mitsubishi Electric Corp.), 15 October 2009 (15.10.2009), paragraphs [0010] to [0014]; fig. 1 to 5 (Family: none)	6



Further documents are listed in the continuation of Box C.



See patent family annex.

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"&" document member of the same patent family

Date of the actual completion of the international search
20 September 2016 (20.09.16)Date of mailing of the international search report
04 October 2016 (04.10.16)Name and mailing address of the ISA/
Japan Patent Office
3-4-3, Kasumigaseki, Chiyoda-ku,
Tokyo 100-8915, Japan

Authorized officer

Telephone No.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2016/003637

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 2007-134155 A (Mitsubishi Electric Corp.), 31 May 2007 (31.05.2007), paragraphs [0010] to [0017]; fig. 1 to 2 (Family: none)	1-6
A	JP 2014-044809 A (Panasonic Corp.), 13 March 2014 (13.03.2014), paragraphs [0012] to [0050]; fig. 1 to 7 & WO 2014/030315 A1 & DE 112013004163 T5	1-6

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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- JP 2009163899 A [0007]