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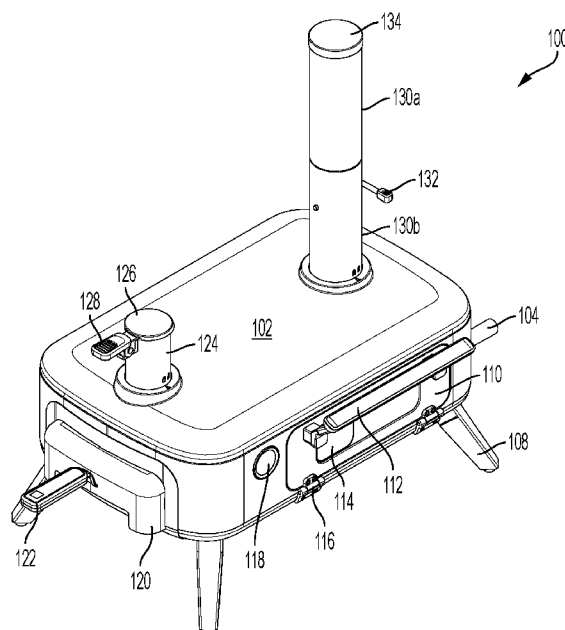


FIG. 1

(57) Abstract: A cooking apparatus comprising an oven. The oven includes a cooking chamber and an outer shell. The cooking apparatus includes a cooking chamber, a rotatable plate, fuel attachment, a heated air source, a hopper, a chimney, oven door, and a rotatable handle. The oven includes a number of rotational elements providing user-controlled cooking features. The oven is adapted to accept a number of fuel sources for cooking.

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NON-PROVISIONAL PATENT APPLICATION

for

COOKING APPARATUS OPERATIONAL  
WITH DIFFERENT FUEL SOURCES

## I. FIELD

[0001] The present invention relates to the technical field of food cooking technology, in particular to a rotary-pan pizza oven.

## II. BACKGROUND

[0002] Pizza and baked goods are generally made in wood fired ovens in restaurants and pizzerias. These wood-fired oven provide high temperatures necessary to cook yeast and dough-based products properly and to provide pizzas with wood smoke flavor. However, these ovens are typically too costly and complicated for normal domestic use.

[0003] Smaller sized and less costly ovens that are used in homes or portability have been made. Such wood fired ovens are generally better at cooking pizza than standard home ovens (e.g., electric, conduction, or gas domestic ovens). While these ovens cook pizzas and other baked goods better than standard ovens, it is still very hard to achieve the correct temperatures needed for an optimal cooking results that may be achieved in a restaurant or pizzeria without using the standard wood fuel source. These ovens also have limitations in design and concerns about user safety.

[0004] The present invention aims to provide an improved oven which permits controllable cooking temperatures to be achieved with multiple fuel sources. The present invention also aims to reach the higher cooking temperatures for dough cooking to be achieved with small scale amounts of fuel. Other embodiments of the invention aim to provide a cooking chamber configured to recirculate or reuse the heated air to maintain an even oven temperature to reduce waste. Other embodiments of the present invention aim to improve the functional use and design of portable cooking devices.

[0005] The oven provides for viewing to allow user to visibly determine desired cooked/backed level and rotation of the pizza for a good and evenly cooked pizza. The oven also provides easy viewing and rotation of the pizza inside the pizza oven. The product is used to make restaurant stone baked pizzas in a short period of time at the consumer's home. The product is not only used for cooking pizzas, but meat, fish, bread, and cookies for a great cooking experience. The product is needed to bring the restaurant experience to the consumers backyard. They will own an oven that is simple to use, heats up quickly, and allows the user to make the perfect pizza every single time.

[0006] While current portable ovens provide capability to cook pizza, there exists a need for an improved cooking apparatus able to use multiple fuel sources, control over cooking temperatures, control cooking variations, provide multi-use ovens, and/or provide safe user handling. There also exists a need for an improved cooking apparatus to improve the functionality and design of portable ovens. The prior mentioned ovens lack these features. Therefore, there exists a need for an improved cooking apparatus.

### III. SUMMARY OF THE INVENTION

[0007] One aspect of the invention provides an improved baking oven including an oven body, the oven being including a baking chamber, a rotatable tray, a fuel tray, the fuel tray configured to accept a number of fuel sources for heating the oven body, an oven door, the oven door included on at least one wall of the oven body, a chimney, a control member, the control member is provided on an exterior surface of the oven body, and wherein the fuel chamber and the oven door are offset to one another.

[0008] One other aspect of the invention provides a cooking apparatus comprising an oven, the oven comprising a cooking chamber, a heated air source, a fuel chamber, the fuel chamber adaptable for different fuel input, a door, the door being perpendicular from the fuel chamber, a chimney; and wherein the cooking chamber extending between the heated air source and the chimney, thereby defining, in use, a heated air flow path between said heated air source and said chimney, and wherein the fuel drawer and the chimney are at distal ends of the oven.

[0009] Another aspect of the invention provides an improved rotating cooking oven comprising an oven body, the oven being including a baking chamber, a chimney, a fuel chamber, a rotating plate, a drive shaft, at least one gear; and wherein the rotating plate is operatively connected with the drive shaft.

[0010] Yet another aspect of the invention provides an improved cooking oven, comprising an oven body, the oven being including a baking chamber, a fuel drawer assembly, the fuel drawer assembly being removable from the oven, a rotatable tray, a chimney, and a control member, the control member is provided on an exterior surface of the oven body to manipulate the rotatable tray.

[0011] Another aspect of the invention provides an improved cooking machine including an oven body, the oven being including a cooking chamber, a fuel chamber, a rotatable tray, an oven door, the oven door included on at least one wall of the oven body, a chimney, a control member, the control member is provided on an exterior surface of the oven body to control

rotation of the rotatable tray, and wherein the fuel chamber and the oven door are perpendicular to one another.

**[0012]** Another aspect of the invention provides an oven with an inner cooking chamber and an outer shell, with an air gap in between. The overall shape of the oven includes a cooking chamber, rotatable plate, chimney including a rotatable flap within the chimney to control airflow, hopper, fuel tray, door, rotating handle, and folding legs.

**[0013]** The oven may securely couple into carrying bag. There can be a height adjustable cart or table operatively attached, such as for latched, for the oven to sit on during use.

**[0014]** According to another exemplary embodiment of the present invention, an oven with a gas burner attachment configured to provide the fuel source is provided.

**[0015]** According to another exemplary embodiment of the present invention, an oven with latchable attachment to a carrying bag is provided.

**[0016]** According to another exemplary embodiment of the present invention, an oven with latchable attachment to a cart or table is provided.

**[0017]** The terminology used herein is for the purpose of describing particular embodiments only and is not intended to be limiting of the invention. As used herein, the singular forms, “a”, “an” and “the” are intended to include the plural forms as well, unless the context clearly indicates otherwise. It will be further understood that the root terms “include” and/or “have”, when used in this specification, specify the presence of stated features, steps, operations, elements, and/or components, but do not preclude the presence or addition of at least one other feature, step, operation, element, component, and/or groups thereof.

**[0018]** As used herein, the terms “comprises,” “comprising,” “includes,” “including,” “has,” “having” or any other variation thereof, are intended to cover a non-exclusive inclusion. For example, a process, method, article, or apparatus that comprises a list of features is not necessarily limited only to those features but may include other features not expressly listed or inherent to such process, method, article, or apparatus.

**[0019]** For definitional purposes and as used herein, “connected” or “attached” includes physical or electrical, whether direct or indirect, affixed or adjustably mounted. Thus, unless specified, “connected” or “attached” is intended to embrace any operationally functional connection. When an element or layer is referred to as being “on,” “engaged to,” “connected to,” or “coupled to” another element or layer, it may be directly on, engaged, connected or coupled to the other element or layer, or intervening elements or layers may be present. For example, the

fuel drawer or gas burner attachment may be selectively coupled into an opening of the oven configured to provide a heated air source.

[0020] In contrast, when an element is referred to as being "directly on," "directly engaged to," "directly connected to," or "directly coupled to" another element or layer, there may be no intervening elements or layers present. Other words used to describe the relationship between elements should be interpreted in a like fashion (e.g., "between" versus "directly between," "adjacent" versus "directly adjacent," etc.). As used herein, the term "and/or" includes any and all combinations of one or more of the associated listed items.

[0021] As used herein, "substantially," "generally," "slightly" and other words of degree are relative modifiers intended to indicate permissible variation from the characteristic so modified. It is not intended to be limited to the absolute value or characteristic which it modifies but rather possessing more of the physical or functional characteristic than its opposite, and approaching or approximating such a physical or functional characteristic.

[0022] In the following description, reference is made to the accompanying attachments and drawings which are provided for descriptive and illustration purposes as representative of specific exemplary embodiments in which the invention may be practiced. Given the following description of the specification and drawings, the apparatus, methods, and systems should become evident to a person of ordinary skill in the art. Further areas of applicability of the present teachings will become apparent from the description and illustrations provided herein. It is to be understood that other embodiments can be utilized and that structural changes based on presently known structural and/or functional equivalents can be made without departing from the scope of the invention.

#### IV. BRIEF DESCRIPTION OF THE DRAWINGS

[0023] The above-mentioned and other features, embodiments, and advantages of this invention, and the manner of attaining them, will become more apparent and the invention will be better understood by reference to the following descriptions of embodiments of the invention taken in conjunction with the accompanying drawings, wherein:

[0024] The detailed description of the drawings refers to the accompanying figures in which:

[0025] Fig. 1 is perspective view of an exemplary oven structure having a plurality of operative attachments.

- [0026] FIG. 1 is perspective view of an exemplary oven structure having a plurality of operative attachments.
- [0027] FIG. 2 is perspective rear view of the exemplary oven of FIG. 1.
- [0028] FIG. 3 is another perspective view of an exemplary oven with a different fuel compartment cap.
- [0029] FIG. 4 is a front view of the oven of FIG. 1.
- [0030] FIG. 5 is another side view of FIG. 1.
- [0031] FIG. 6 is another side view of the oven of FIG. 1.
- [0032] FIG. 7 is another perspective view of an exemplary oven with an open oven door.
- [0033] FIG. 8 is a side view of the oven of FIG. 1.
- [0034] FIG. 9 is a top view of the oven of FIG. 1 showing the physical dimensions.
- [0035] FIG. 10 is a front view of the oven of FIG. 1 showing the chimney and hopper attached to the oven and a plurality of legs collapsed against the oven.
- [0036] FIG. 11 is a front view of the oven of FIG. 1 showing the chimney unattached to the oven and a plurality of legs collapsed against the oven.
- [0037] FIG. 12 is a bottom view of the oven of FIG. 1 showing a plurality of legs collapsed against the oven.
- [0038] FIG. 13 is a perspective, partly exploded view of the oven of FIG. 1.
- [0039] FIG. 14 is a perspective view of a hopper.
- [0040] FIG. 15 is a side view of the hopper of FIG. 14 and hopper feeder of FIG. 16.
- [0041] FIG. 16 is a hopper feeder designed to add a plurality of fuel to the fuel chamber.
- [0042] FIG. 17 is a top perspective view of a part of the chimney including a rotatable flap and handle.
- [0043] FIG. 18A is a partly exploded perspective view of a sleeve, temperature probe and temperature gauge.
- [0044] FIG. 18B is a partly cross-sectioned view of the sleeve and probe affixed to the temperature gauge.
- [0045] FIG. 18C is a perspective view of a sleeve configured to attach to the temperature probe of FIG. 18A.
- [0046] FIG. 19A is a perspective view of a chimney bracket.
- [0047] FIG. 19B is another perspective of the chimney bracket.
- [0048] FIG. 20A is a perspective of an internal hopper baffle.
- [0049] FIG. 20B is another perspective view of the internal hopper baffle of FIG. 20A.

- [0050] FIG. 21 is a perspective view of the fuel drawer brace.
- [0051] FIG. 22 is a partly exploded view of the chimney of FIG. 1
- [0052] FIG. 23 is a perspective view of the rotatable handle operatively connected to the chimney.
- [0053] FIG. 24 is a perspective, front view of the fuel drawer and fuel tray exploded from of the oven of Fig. 1.
- [0054] FIG. 25 is a perspective view of the fuel draw, fuel tray, with connection to the corresponding opening in the oven.
- [0055] FIG. 26 is a perspective view of another embodiment of the fuel draw, fuel tray, and a fuel drawer brace with connection to the corresponding opening in the oven.
- [0056] FIG. 27 is a perspective view of FIG. 1 and the fuel drawer and fuel tray of FIG. 15 removed from the oven.
- [0057] FIGS. 28A-28C are exemplary fuels sources of wood pellets, wood sticks, and charcoal for operation of the oven.
- [0058] FIG. 29A is a perspective view of the FIG. 1, fuel from FIG. 28C, and the fuel drawer removed from the oven.
- [0059] FIG. 29B is a perspective view of the FIG. 1 and the fuel from FIG. 28C inserted into the fuel drawer that is partly inserted the oven.
- [0060] FIG. 30A is a partial, perspective view of the open oven door and flames/smoke rising from the interior.
- [0061] FIG. 30B is a partial, perspective view of the open oven door with a pizza on an oven peel to bake in the oven of FIG. 1
- [0062] FIG. 31 is an internal, top view of the oven illustrating the flow path of the heated air through the oven and the hot plate module of FIG. 1.
- [0063] FIG. 32 is a top view of the oven of FIG. 1 showing the fuel drawer, rotatable plate, rotatable handle, and insulation of the walls of the oven.
- [0064] FIG. 33 is a side internal view of the oven illustrating the heated air from the fire of the fuel source.
- [0065] FIG. 34 is an internal view of oven of FIG. 1 depicting a fire source operating from a fuel drawer.
- [0066] FIG. 35 is a front internal view of the oven illustrating the flow path of the heated air through the oven and the hot plate module through the chimney of FIG. 1.

- [0067] FIG. 36 is a rear internal view of the oven illustrating the various brackets and baffles of FIGs. 19A-20B to direct the flow path of the heated air of FIG. 1 and the hot plate module.
- [0068] FIG. 37 is a top view of the oven of FIG. 1 showing a top view of the chimney and hopper without a cap or cover.
- [0069] FIG. 38A is a rear view of the internal structure of the exemplary oven of FIG. 1 having a plurality of operative attachments.
- [0070] FIG. 38B is a side view of FIG. 1 depicting the internal structure of the oven.
- [0071] FIG. 39A is a rear view of the oven of FIG. 1 depicting the internal parts.
- [0072] FIG. 39B is a side view of the oven of FIG. 1 depicting the internal parts.
- [0073] FIG. 40 is a front view of the oven of FIG. 1 with the door open depicting the insulation in the door.
- [0074] FIG. 41 is a partial, front view of the oven of FIG. 1 with the rotatable plate shown from the open door.
- [0075] FIG. 42 is a partial, front view of the oven of FIG. 41 without the rotatable plate showing a number of braces to surround the rotatable plate.
- [0076] FIG. 43 is a perspective, top view of the rotation assembly depicting the rotatable handle operatively connected to the rotation assembly containing a number of braces.
- [0077] FIG. 44 is a bottom view of the oven of FIG. 1 showing a plurality of legs open for user operation.
- [0078] FIG. 45 is a bottom view of operational connection of the rotatable handle of FIG. 44, a drive shaft, and a gear set.
- [0079] FIG. 46-48 are views of the spring-loaded, rotatable handle of FIG. 1.
- [0080] FIG. 49 is a partial, side view of operational connection of the rotatable handle of FIG. 46, a drive shaft, and a gear set.
- [0081] FIG. 50 is a side view of the internal components of the rotational operation of the rotatable plate.
- [0082] FIG. 51 is a top perspective view of the rotation assembly depicting the rotatable handle operatively connected to the rotation assembly and showing the rotational direction.
- [0083] FIG. 52 is a perspective view of another embodiment of an exemplary oven structure including a propane gas attachment burner.
- [0084] FIG. 53 is a perspective, front view of FIG. 52 illustrating the gas attachment burner operatively connected into the fuel drawer opening.

- [0085] FIG. 54 is a perspective view of the gas attachment burner of FIG. 52.
- [0086] FIG. 55 is a perspective, side view of the gas attachment burner of FIG. 52.
- [0087] FIG. 56 is a perspective, rear view of the gas attachment burner of FIG. 52.
- [0088] FIG. 57 is a front, internal view of the gas attachment burner of FIG. 55 and the oven of FIG. 52.
- [0089] Corresponding illustrated images and attachments indicate corresponding parts throughout the several views of the present invention. The exemplifications set out herein illustrate embodiments of the present invention, and such exemplifications are not to be construed as limiting the scope of the present invention in any manner.

## V. DETAILED DESCRIPTION OF THE DRAWINGS

[0090] A detailed description of apparatuses, methods, and systems, consistent with embodiments of the present disclosure is provided below. While several embodiments are described, it should be understood that the disclosure is not limited to any one embodiment, but instead encompasses numerous alternatives, modifications, and equivalents. In addition, while numerous specific details are set forth in the following description in order to provide a thorough understanding of the embodiments disclosed herein, some embodiments can be practiced without some or all of these details. Moreover, for the purpose of clarity, certain technical material that is known in the related art has not been described in detail in order to avoid unnecessarily obscuring the disclosure.

[0091] Referring now to Figures 1-57, there is illustrated a plurality of figures and descriptions of embodiments of an oven 100 according to the present invention. FIG. 1 is a perspective view of an exemplary oven structure 100 having a plurality of operative attachments. This embodiment of the oven 100 includes a horizontal wall loading feature and includes an insulated oven body 102 with temperature gauge 118, a hinged door 110 with handle 112, and a glass viewing window 114. The oven 100 also includes a removeable oven stone that may have a diameter that can be shown in this invention implementation as between 9-13 inches. The oven 100 also includes a plurality of folding legs 108 for easy setup and stability. The legs 108 may also include a security hole 109 in at least one leg for providing an option to secure the oven 100 to fixed location, such as to prevent theft. The oven door 110 includes a handle 112 for opening and closing the door 110. The oven includes a fold out pivoting handle 104 for rotating a food item such as a pizza 171 (not shown) inside the oven 100. The handle 104 can be any

material configured to withstand or not retain heat, such as polypropylene, silicon, or type of thermosetting phenol formaldehyde resin material, and is not limited in this regard. The oven 100 also includes a fuel tray drawer assembly (120, 140).

**[0092]** The oven 100 also includes a hopper 124 with a handle 128 for handling high temperatures. The handle 128 can be any material configured to withstand or not retain heat, such as polypropylene, silicon, or type of thermosetting phenol formaldehyde resin material, and is not limited in this regard. The oven may also include a stainless wood/coal cap 136. The oven 100 includes a chimney 130a, 130b with chimney handle 132. While the chimney 130a, 130b is shown in two parts, the chimney is not limited in this regard can be one entire part or multiple parts configured to provide same function. The chimney handle 132 can be any material configured to withstand or not retain heat, such as polypropylene, silicon, or type of thermosetting phenol formaldehyde resin material, and is not limited in this regard. The chimney 130a, 130b can include an operational fuel feeder 134 (shown in FIG. 13) to move fuel into the hopper 124. The fuel feeder 134 that can be housed into the chimney 130a when the oven 100 is not in use and can be removed from the chimney 130a to allow air flow through the chimney 130a, 130b when the oven 100 is in use.

**[0093]** This load orientation oven 100 can reduce the learning curve and limitations of most commercial ovens by simplifying the process of adding fuel to the oven and starting it. It also makes it easy to place a food or a pizza inside the oven 100 and view the entire pizza during the cooking process to prevent overcooking or burnt edges. The temperature gauge 118 on the front of the oven body 102 works in correlation with the heating temperature of the stone to let the user know when the oven is ready for use and maintaining cooking temperature. The manual rotating handle 104 allows the user to easily rotate the pizza with the door 110 closed or open to cook their pizza. Finally, this load orientation on one side of the oven body 102 also allows the user to easily cool down and clean up the entire unit 100 at the end of the day by removing the fuel tray 120, opening the front door 110, the hopper door 126 by pressing down on the hopper handle 128, and letting air flow thru the unit 102 to quickly cool the unit 102.

**[0094]** FIG. 2 is perspective rear view of the exemplary oven 100 of FIG. 1. FIG. 2 depicts the rear side of the oven body 102 and shows more details of the rotating handle 104 and the handle hinge 106 to allow the handle to be compacted against the oven body 102. It also shows the side walls 103 of the oven 102, the plurality of folding legs 108. The legs 108 may also include a security hole 109 in at least one leg for providing an option to secure the oven 100 to a fixed location, such as to prevent theft. FIG. 3 illustrates another perspective view of an

exemplary oven with a different fuel compartment cap 136 than the hopper cap 126. The different fuel compartment cap 136 is for use when there is a difference fuel source such as seen in FIGs. 28a-28c or FIGs. 55-56.

**[0095]** FIG. 4 depicts a front view of the oven 100 of FIG. 1. This embodiment of the oven 100 includes a side loading feature and includes an insulated oven body 102 with temperature gauge 118, the hinged door 110 with accompanying handle 112, and the glass viewing window 114. The oven body 102 shows additional details of the rotating handle 104 and the hinge 106 to allow the handle 104 to be compacted against the oven body 102. A part or end of the handle 104 is shown placed into part of the hinge 106. The figure also shows the side walls 103 of the oven body 102 and the plurality of folding legs 108.

**[0096]** FIG. 5 illustrates a rear view of the oven 100 of FIG. 1. It shows the various attributes described above in FIG. 1 and the side wall 103 of the oven body 102. Also shown is another angle of a part or end of the handle 104 where the handle 104 is shown placed into part of the hinge 106. FIG. 6 shows another side view of the oven 100 of FIG. 1. In this Fig. the side profile of the rotating handle 104 is shown. Also shown is the side profile of the handle 112 and the two-part chimney 130a, 130b. The legs 108 may also include a security hole 109 in at least one leg for providing an option to secure the oven 100 to fixed location, such as to prevent theft.

**[0097]** FIG. 7 depicts another perspective view of the exemplary oven 100 of FIG. 1. The oven 100 includes the oven body 102 with an open oven door 110. Shown in this figure the oven door 110 is in an open position to allow a food item, such as a pizza, to be placed into the oven body 102. Also shown in this figure is another perspective view of the rotatable handle 104. The hinge 106 operatively attached to the rotatable handle 104 to be selectively placed against the oven body 102.

**[0098]** FIG. 8 shows a side view of the oven 100 of FIG. 1 with the oven door 110 in an open position. The plurality of legs 108 are also depicted and include a hinge 111 on each leg to allow placement of the plurality of legs against the bottom of the oven body 102. The legs 108 may also include a security hole 109 in at least one leg for providing an option to secure the oven 100 to fixed location, such as to prevent theft.

**[0099]** FIG. 9 illustrates a top view of the oven 100 of FIG. 1 showing the oven 100 physical dimensions. Shown in this figure Reference A shows a first dimensions or measurement of the oven along a first , such as between 5-45 inches in length. Reference B shows a second dimensions or measurement showing the physical range of the oven along the same axis, such as

between 5- 25 inches. Both Reference A and Reference B depict the measurement of the oven body 102 and oven attachments such as the rotatable handle 104 and the fuel tray handle 122.

**[00100]** FIG. 10 portrays a front view of the oven 100 of FIG. 1 showing the chimney 130a, 130b operatively attached to the oven body 102. Also shown is the hopper 124 attached to the oven body 102 and a plurality of legs 108 collapsed against the oven 102. The plurality of legs 108 are also depicted against the bottom of the oven body 102 via the hinge 111. FIG. 11 portrays a front view of the oven 102 of FIG. 11 showing the chimney 130a, 130a and the hopper 124 unattached to the oven body 102. The plurality of legs 108 are also depicted against the bottom of the oven body 102 via the hinge 111. FIG. 12 depicts a bottom view of the oven 102 of FIG. 1 showing a plurality of legs 108 collapsed against the oven 108, such as when the oven 102 is not in use.

**[00101]** FIG. 13 illustrates a perspective, partly exploded view of the oven 100 and oven body 102 attachments of FIG. 1. In this figure the fuel drawer 120, and fuel tray 140 are shown exploded and unattached from each other. Both the fuel drawer 120 and the fuel tray 140 are shown outside of the oven body 102. As illustrated in this figure, the fuel drawer 120 includes a number of openings or vents adapted to allow air to flow from the exterior of the oven 100 to the interior of the fuel chamber. This openings or vents of the fuel drawer 120 can be covered by a covering intended for cosmetic covering while still allowing airflow through the openings or vents (see FIG. 26). The fuel tray 140 includes slots or openings to allow any ash, such as from a fuel source in FIGS. 28A-28C, to drop to the bottom of the fuel drawer 120 for dumping.

**[00102]** Also shown in FIG. 13 the fuel drawer 120 and fuel tray 140 are exploded and unattached from the oven body 102 are the hopper 124, the chimney 130a, 130b and fuel feeder 134. The hopper in this figure is shown with a silicon handle 128, and a notch 142. The fuel feeder 134 is shown outside of the chimney to depict the structure and arrangement into the chimney 130a, 130b. Both the hopper 124 and the chimney 130b includes notches 142, 150 that are adapted to removably attach to the oven body 102 into corresponding protruding parts 143, 151 of the oven body 102 for notches 142, 151. The notches 142, 150 provide capability for the hopper 124 and chimney 130b to drop atop the unit into corresponding parts 143, 151 to twist or lock in place on the oven body 102.

**[00103]** FIG. 14 shows a perspective view of a hopper 124. The hopper in this embodiment includes the cap 126 and the notch 142 that can be placed into the corresponding receiving protruding part 143 (not shown) of the oven body 102. Also shown on the hopper in this embodiment is a glass window 144 that can be used to determine the fuel level in the fuel

drawer 120. FIG. 15 shows a side view of the hopper 124 of FIG. 14 and fuel feeder 134 of FIG. 16. In this Figure, the fuel feeder 134 is removed from the chimney 130a to be used to provide fuel to the fuel drawer 120, such as Figs. 28a-28c, to provide additional fuel to the oven body 102 while in operation.

**[00104]** FIG. 16 depicts the fuel feeder 134 designed to add a plurality of fuel to the fuel drawer 120. The fuel feeder 134 is shown with a slanted or slope at one end to provide an easy way to scoop fuel for the oven 100. The fuel feeder 134 can be housed into the chimney 130a when the oven 100 is not in use and can be removed from the chimney 130a to allow air flow through the chimney 130a, 130b when the oven 100 is in use.

**[00105]** FIG. 17 illustrates a top perspective view of a part of the chimney 130 including a rotatable flap 146 and handle 132. The rotatable flap 146 can be opened at various degrees or angles by a user by operation of the chimney handle 132 to allow oven air flow or ventilation during oven 100 operation.

**[00106]** FIG. 18A illustrates a partly exploded perspective view of the temperature gauge 118, sleeve 148, and a temperature probe 149. The sleeve 148 is shown in line with the temperature probe 149 to show the placement of the sleeve 148 to be overlapped over the temperature probe 149. FIG. 18B illustrates the parts shown in FIG. 18A as a composite part and partly cross-sectioned view of the sleeve and probe affixed to the temperature gauge.

**[00107]** FIG. 18C depicts another perspective view of a sleeve 148 configured to attach to the temperature probe 149 of FIG. 18A. The sleeve 148 may be made of any material configured withstand or resist heat within the oven 102, such as a metallic material including aluminum, copper, or steel, but is not limited in this regard.

**[00108]** FIGs. 19A-19B illustrate perspective views of a chimney bracket 152. The chimney bracket 152 is configured to allow airflow and the flow of heated air 176 from the oven body chamber 107. The bracket 152 includes an opening at the top that is adapted to move the flow of heated air 176 from the oven chamber 107 into the chimney 130b, 130a. The bracket 152 includes a number of holes along the bracket 152 configured to receive fasteners to attach the bracket 152 to the oven body 102.

**[00109]** FIG. 20A illustrates a perspective of an internal hopper baffle 156. The hopper baffle 156 is configured to allow receipt of different fuel sources. FIG. 20B illustrates another perspective view of the internal hopper baffle 156 of FIG. 20A. The hopper baffle 156 includes an opening at the top that is adapted to receive different fuel from the hopper 124 such as from

transfer from the fuel feeder 134. The hopper baffle 156 includes a number of holes configured to receive fasteners to attach the baffle to the oven body 102.

**[00110]** FIG. 21 depicts a perspective view of the fuel drawer brace 158. The fuel drawer brace 158 is configured to assist in conducting airflow and the flow of heated air through the oven body chamber 107. The fuel drawer brace 158 includes a number of holes configured to receive fasteners to attach the baffle to the oven body 102, such as to the oven body interior and the hopper baffle 156.

**[00111]** FIG. 22 shows a partly exploded view of the chimney 130a, 130b of FIG. 13. As shown in FIG. 22 chimney 130b is attached to the oven body 102, the chimney 130a is shown unattached to the chimney 130b. The chimney 130a is shown in alignment to depict the structural arrangement of how chimney 130a can fixedly overlap part of chimney 130b. The fuel feeder 134 is also shown and can be housed into the chimney 130a when the oven 100 is not in use and can be removed from the chimney 130a to allow air flow through the chimney 130a, 130b when the oven 100 is in use.

**[00112]** FIG 23 shows a perspective view of the rotatable handle 132 operatively connected to the chimney. The rotatable handle 132 is used to operate the rotatable flap 146 of FIG. 17. The rotatable handle 132 may be made of any material configured withstand or resist heat from the chimney 130a, 130b including a polypropylene, silicon, or type of thermosetting phenol formaldehyde resin material.

**[00113]** FIG. 24 illustrates a perspective, front view of the fuel drawer 120 and fuel tray 140 exploded from of the oven of Fig. 1. Also shown in this figure is the different fuel compartment cap 136 of FIG. 3. The different fuel compartment cap 136 is for use when there is a difference fuel source such as seen in FIGs. 28a-28c or FIGs. 55-56.

**[00114]** FIG. 25 illustrates a perspective, partial view of the fuel drawer 120, fuel tray 140, with connection to a corresponding opening 162 (shown in FIG. 27) in the oven body 102. The hopper 124 is also shown in this figure and shows an approximate placement over the fuel drawer assembly (120, 140). Now referring to FIG. 26 there is illustrated a perspective view of another embodiment of the fuel drawer 120, fuel tray 140, and an exemplary fuel drawer insert brace 160 to fit within the corresponding opening 162 in the oven body 102. The fuel drawer insert brace 160 is an additional part but not needed for operation of the fuel sources 28a-28c or the oven 100 in FIG. 1.

**[00115]** FIG. 27 depicts a perspective view of FIG. 1 and the fuel drawer 120 and fuel tray 140 of FIG. 15 with both assembled together (e.g., fuel drawer assembly ) and removed from the

oven 102. In this figure, a corresponding opening 162 of the oven 100 is configured to receive the fuel drawer assembly (120, 140).

**[00116]** FIGs. 28A-28C shows exemplary fuels sources of wood pellets 164a, wood sticks 164b, and charcoal 164c for operation of the oven 100. The fuel sources 164a, 164b, 164c shown in FIGs. 28A-28C are configured to be placed for consumption into the fuel drawer assembly (120, 140) to heat the oven 102. The fuel sources 164a, 164b, 164c can be placed into either the fuel tray assembly (120,140) or into the top of the hopper 124.

**[00117]** FIG. 29A illustrates a perspective view of the oven 100 in FIG. 1, fuel 164c from FIG. 28C, and the fuel drawer assembly (120, 140) removed from the oven 102. In this figure, the fuel is shown separated from the fuel drawer assembly (120, 140) to show the order of operation to use the oven 102. The figure also shows the fuel drawer assembly (120, 140) removed the corresponding opening 162 of the oven 100. FIG. 29B depicts a perspective view of the FIG. 1 and the next step in the oven operational order from FIG. 29A. Shown in this figure the fuel 164c from FIG. 28C inserted into the fuel drawer assembly (120, 140) and partly inserted oven body 102 to show the order of operation to use the oven 102. Illustrated in both FIGs. 29A-29B, the chimney is in operational mode with the fuel feeder 134 removed and the chimney handle 132 in an upright position so that the chimney flap 146 is open is open to allow gas 177 distribution from the oven chamber 107 through the chimney 130.

**[00118]** FIG. 30A illustrates a partial, perspective view of the oven door 110 in an open position and heated air/ smoke 176 rising within the oven chamber interior 107. In this figure the oven door 110 is shown in an operational open position to place a food item into the oven body 102 and a temperature gauge 118 to monitor the heat inside of the oven chamber interior 107. The figure also shows a latch 166 on a surface of the oven door 110 and a receiving opening 168 on surrounding surface of the oven body 102 to keep the door 100 closed during use of the oven 100. FIG. 30B illustrates a partial, perspective view of the open oven door 110 with an exemplary food item, such as a pizza 171 on the oven peel 169 to bake in the oven 100 of FIG. 1. Also shown in this figure, the plurality of the legs 108 are shown in an upright position to permit operation of the oven 100.

**[00119]** FIG. 31 shows an internal, top view of the oven 100 illustrating the flow path of the heated air through the oven body 102 and the plate module 178. In this figure the heated air 176 is shown in directive form and is provided to flow as a result from the fuel consumption, such as the fuel 164c from Fig 28C being consumed in the fuel drawer assembly (120, 140) and

air flow. As shown in this figure, the fire 174 is shown creating the heated air 176 that moves through the oven body chamber 107 and encompassing the area of the heat plate module 178.

**[00120]** FIG. 32 depicts an internal, top view of the oven 100 of FIG. 1 showing the fuel drawer assembly (120, 140), plate module 178, rotatable handle 104, and insulation 180 of the walls, such as walls 103, of the oven 102. Also shown in this figure, the rotatable handle 104 is operatively connected to the drive shaft 210 and gear set 204, 206 to turn the plate module 178 (see Fig 51). The plurality of legs 108 also include a security hole 109 in at least one leg for providing an option to secure the oven 100 to fixed location, such as to prevent theft.

**[00121]** FIG. 33 shows an internal, side view of the oven 102 illustrating the heated air from the fire 174 of the fuel source 164c. The figure also shows smoke 177 that typically results from a fire, such as fire 174 and coincides with the heated air 176. FIG. 34 depicts an internal view of oven body 102 of FIG. 1 depicting a fire source 174 operating from a fuel drawer 140. The figure also depicts the fuel brackets 158 and the chimney bracket 152 assists in conducting the heated air flow 176 through the oven chamber 107 into the chimney 130a, 130b. Shown in FIGS. 33-34, there is an oven door bridge 113 that is between the oven door 110 and 112. The bridge 113 is any material configured to resist or withstand heat without reduced heat transfer to the handle 112, including a polypropylene, silicon, or type of thermosetting phenol formaldehyde resin material.

**[00122]** FIG. 35 illustrates a front internal view of the oven 100 illustrating the flow path 182 of the heated air 176 resulting from the fire 174 through the oven chamber body 107 and into chimney 130a, 130b of FIG. 1. The figure also illustrates the point of attachment for the hopper 124 at the notch 142 area and the chimney 130 at the notch 150 area. Illustrated in this figure the heated flow path 182 from the fire 174 is unable to travel out of the oven and is prevented from escape from the chimney 130a, 130b as the chimney handle 132 is not in position to open the flap 146. Further, the fuel feeder cap 134 is still in the chimney 130a, 130b that will prevent the heated flow path 182 from the fire 174 to travel out of the oven.

**[00123]** FIG. 36 illustrates a rear internal view of the oven 100 illustrating the various brackets 152, 156, 158 of FIGs. 19A-20B to direct the flow path 182 of the heated air 176 resulting from the fire 174. Illustrated in this figure the heated flow path 182 from the fire 174 is now able to travel out of the oven body 102 and escape from the chimney 130a, 130b as the chimney handle 132 is now in an upright position to open the flap 146. Further, the fuel feeder cap 134 is removed from the chimney 130a, 130b to assist in the movement of the heated flow path 182 from the fire 174.

**[00124]** FIG. 37 shows a top view of the oven 100 of FIG. 1. In this figure a top view of the chimney 130 and hopper 124 without a cap 126 or fuel feeder 134. The figure also shows a top view of the fuel tray 140 and the chimney bracket 152 inside of the oven 100 through the structural locations where each of the hopper 124 and the chimney 130a, 130b are shown removed from the oven body 102.

**[00125]** FIG. 38A depicts a rear view of the internal structure of the exemplary oven 100 of FIG.1 having a plurality of operative attachments. The oven 102 includes a plurality of folding legs 108 for easy setup and stability. The oven 102 also includes a fuel tray drawer assembly (120, 140). The oven also includes a hopper 124 with door 126 with silicone handle 128 for handling high temperatures. The oven includes a 2-piece chimney 130a, 130b with flume handle assembly with high temp silicone tip 132. Each of the hopper 124 and chimney 130 includes a notch 142, 150 for selective attachment to the oven 102. The fuel feeder 134 that can be housed into the chimney 130a, 130b when the oven 100 is not in use and can be removed from the chimney 130a, 130b to allow air flow through the chimney 130a, 130b when the oven 100 is in use. FIG. 38B shows a side view of FIG. 1 depicting the internal structure of the oven 102. In this figure the plate module 178 is shown inside of the brackets 158 and adjacent to the hopper baffle 156. The hopper baffle 156 is configured to allow placement or insertion of fuel sources into the oven 100 via the fuel drawer assembly while before or while the oven is in operation. The hopper baffle 156 includes an opening 154 at the top that is adapted to affix into the oven body 102. The opening 156 in the hopper baffle 156 is adapted to allow passage of different fuels, such as wood pellets 164a, wood sticks 164b, and charcoal 164c, into the fuel drawer assembly for fuel consumption and providing a heated air source.

**[00126]** FIG. 39A shows a rear view of the oven 100 of FIG. 1 depicting the internal parts. In this figure, the oven body 102 includes insulation 180 of the oven 100 to assist in retaining baking heat of the oven 100 from the heated air 176 resulting from the fire 174 through the oven body chamber 107 and into chimney 130a, 130b. The oven 100 also includes a fuel tray drawer assembly (120, 140). FIG. 39B shows an internal side view of the oven 100 of FIG. 1 depicting the internal parts, including the insulation 180. In this figure the plate module 178 is shown inside of the brackets 158 and under the chimney bracket 152. The chimney bracket 152 is configured to allow airflow and the flow of heated air 176 from the oven body chamber 107 to the chimney 130.

**[00127]** The oven body 102 includes insulation 180 on the various walls of the oven body, such as wall 103 and the oven body covering configured to selectively attach the hopper 124 and

the chimney 130. FIG. 40 depicts a front view of the oven 100 of FIG. 1 with the oven door 110 in an open position depicting the insulation 180 in the door 110. The insulations shown in FIG. 40 and FIG. 39B illustrate the improved capability of the cooking apparatus to use multiple fuel sources for cooking, control the food cooking through visual inspection, and provide safe user handling. FIG. 40 also depicts the oven door bridge 113 that is adapted to insulate or reduce heat transfer between the door and the oven door bridge 113. The oven door bridge 113 can be any material configured to withstand or not retain heat, such as polypropylene, silicon, or type of thermosetting phenol formaldehyde resin material, and is not limited in this regard.

**[00128]** FIG. 41 illustrates a partial, front view of the oven 100 of FIG. 1 with the plate module 178 shown from the open oven door 110 and handle 112. The plate module 178 can be any material configured to cook on top and withstand heat without structural damage to the plate module 178 including stone and metal but is not limited in this regard.

**[00129]** FIG. 42 depicts a partial, front view of the oven 100 of FIG. 41 without the plate module 178 showing a number of rotatable braces 184 to surround and assist in rotating the plate module 178 (not shown). The rotatable braces 184 are operative as a result of force exerted on the rotatable handle 104 that is operatively connected to the oven body 102 to turn the plate module 178. Also illustrated in this figure are brackets 186 that can surround and enclose the plate module 178. The braces can be used in addition to the braces 184 to secure the plate module 178 inside the oven body 102. Also shown in this figure are temperature gauge 118 and the latch 166 on a surface of the oven door 110 and a receiving opening on surrounding surface of the oven 168.

**[00130]** FIG. 43 illustrates a perspective, top view of the rotation assembly depicting the rotatable handle 104 that is operatively connected to the rotation assembly containing a number of braces 186 surround the plate module 178 (not shown). Also illustrated in this figure is an assembly composite covering 188 to house or surround the rotation assembly and which the rotatable braces 184 are placed on top of. The rotatable braces 184a, 184b are affixed to the assembly composite covering 188 and the brackets 186 by a fastener 190.

**[00131]** FIG. 44 depicts a bottom view of the oven 100 of FIG. 1 showing a plurality of legs 108 in an open position for user operation. The figure also includes a bottom covering 192 configured to surround the rotation assembly and the oven body 102 bottom. FIG. 45 illustrates a bottom view of operational connection between the rotatable handle of FIG. 44, a drive shaft, and a gear set, 204, 206. The rotatable handle 104 is operatively connected to the drive shaft 210, the drive shaft 210 is operatively connected to the gear 204 by the gear 206 affixed to the

end of the drive shaft 210. Each of the gear 206 and gear 204 are intermeshed to turn the plate module 178 (see Fig 51) from force applied on the rotatable handle 104.

**[00132]** FIG. 46-48 depicts views of the rotatable handle of FIG. 1. Illustrated in FIG. 46 the rotatable handle is shown in a perspective view to show a part or end of the handle 104 placed into part of the hinge 106. As shown in Fig. 47, the rotatable handle 104 is shown in a side, cross-sectioned view to depict the placement of the rotatable handle 104 to the hinge 106. The rotatable handle 104 can be spring-loaded and includes a spring 216, and a plurality of moveable pins 214, 218 configured to push into and pull out of the hinge 106 to allow selective compartment against the oven body 102. FIG. 48 depicts the retraction of the pin 214 of a hole 209 of the hinge 106 and the rotatable handle 104 placed against a side of the hinge 106 that is adjacent to a wall 103 of the oven body 102.

**[00133]** FIG. 49 shows a partial, internal view of operational connection of the rotatable handle of FIG. 46, the drive shaft 210, and the gear set 204, 206 as described in Fig. 45 and Fig. 51. Each of the gear 206 and gear 204 are interconnected to turn the plate module 178 (see Fig 51) placed onto the assembly covering 188 from the force applied on the drive shaft 210 via the rotatable handle (not shown). FIG. 50 shows a partial, internal view of the internal components of the rotational operation of the plate module 178 inside of the oven body chamber 107. The figure also shows the fuel tray 140 inside of the oven body 102. Illustrated in this figure the gear 204 is shown affixed to the assembly covering by the fastener 190.

**[00134]** FIG. 51 illustrates a top perspective view of the rotation assembly depicting the rotatable handle 104 operatively connected to the rotation assembly (e.g., handle 104, gears 204, 206, drive shaft 210, braces 184a, 184b and assembly composite covering 188). The assembly covering 188 can be one composite piece including a recessed area that the braces 184a, 184b are affixed into the assembly covering 188 by a fastener such as the bolt 190 (not shown). The figure illustrates the rotational direction of the rotatable handle 104 along a first axis as depicted by the arrows surrounding the rotatable handle 104. A force that is applied on the rotatable handle 104 moves the handle 104 along the first axis is transferred along the drive shaft 210 to the gear set 204, 206 to result in a rotational direction of the braces 184a, 184b along a second axis as illustrated by the arrows surrounding the braces 184a, 184b to allow selective movement of the plate module 178. The rotatable handle 104 is configured to move along the first axis in multiple directions. Similarly, the braces 184a, 184b are configured to move along the second axis in multiple directions as a result of the force transferred from the rotatable handle 104 to the braces 184a, 184b. Although both the handle 104 is configured to move along a first axis and the braces

184a, 184b are configured to move along the second axis, both the handle 104 and the braces 18a, 184b can move along each respective axis in a user selected direction.

**[00135]** FIG. 52 illustrates a perspective view of another embodiment of an exemplary oven structure 100 including a gas attachment burner 220. This embodiment of the oven 100 includes an offset or perpendicular arrangement of the oven door 100 to the gas burner attachment 220. The oven 100 includes an insulated oven body 102 with temperature gauge 118, hinged door 110 with handle 112, glass viewing window 114. The oven 100 also includes a removeable oven plate module 178 that may have a diameter that can be shown in this implementation as between 6-24 inches. The oven 100 also includes a plurality of folding legs 108 for easy setup and stability. The oven door 110 includes a handle 112 opening the oven door 110 for opening and closing the oven door 110 to cast a food item, such as a pizza 171, inside of the oven body 102. The oven 100 includes a fold-out handle 104 for rotating the food item inside the oven body 102. The oven 100 also includes a hopper 124 with a cap 126 and handle 128 for handling high temperatures. The oven 100 includes a 2-piece chimney 130a, 130b with chimney handle with high temp tip 132. 11. The chimney 130a, 130b can include an operational fuel feeder 134 (shown in FIG. 13) to move fuel into the hopper 124. The fuel feeder 134 that can be housed into the chimney 130a, 130b when the oven 100 is not in use and can be removed from the chimney 130a, 130b to allow air flow through the chimney 130a, 130b when the oven 100 is in use.

**[00136]** FIG. 53 depicts a perspective, front view of FIG. 52 illustrating the gas burner attachment 220 operatively connected into the fuel drawer opening 162 (shown in FIG. 27) in the oven body 102. This figure depicts the gas burner attachment 220 latched or coupled into the oven body 102 through the fuel drawer opening 162. Similar to the fuel drawer coupled into the oven body 102 shown in FIGs. 29A-29B and FIGs. 38A and 39A, the gas burner attachment 220 is shown clipped into, fastened to, appended to, connected, joined, or secured to the oven body such as male to female couple or slidable into the opening 162 of the oven 100.

**[00137]** FIG. 54 depicts a perspective view of the gas burner attachment 220 of FIG. 52 and a gas igniter 230. The gas igniter 230 is shown protruding out of an opening of the gas burner attachment 220 and in use will be located within the oven body 102. FIG. 55 illustrates a perspective, side view of the gas burner attachment 220 of FIG. 52. Illustrated in this figure are also the burner base 220 to keep the gas burner attachment 220 stable within the opening 162 of the oven body 102 where the fuel tray 120 would typically be placed. The figure illustrates the slot 224 of the burner attachment 220 to direct gas flow. The gas igniter 230 is also illustrated in

this figure and shown as protruding from the slot or opening 224 of the burner attachment 220. The gas igniter 230 can spark and/or continue heating the gas or flame emitted from the slot 224 towards the oven body chamber 107. In FIG. 55 the slot 224 is shown as angled or sloped but it is not limited in this regard and any shape configured to provide an opening for the gas to be emitted is desired.

**[00138]** FIG. 56 illustrates a perspective, rear view of the gas burner attachment 220 of FIG. 52. In this figure there is shown a dial or button 22 configured to start and operate the flames. In this embodiment the dial 222 is a rotatable dial to control or operate the flame level of the corresponding gas. In alternate embodiment, the dial 222 can also act as a push button to start, stop or pause the gas ignitor 230.

**[00139]** FIG. 57 illustrates a front, cross-sectioned view of the gas burner attachment 220 of FIG. 55, the dial 222, and the oven body 102 of FIG. 52. In FIG. 57, there is illustrated a tunnel 238 that is funnel the gas, such as gas received from a propane tank, through the burner attachment 230 and ends at the slot 224. There is also illustrated a gas regulator assembly (234, 236, 240) that is configured to control and/or maintain a rate of flow of the gas. The gas regulator assembly (234, 236, 240) also configured to determine and/or define the rate of pressure of the gas through the gas burner attachment 230, such as by cutting off or reducing the flow of a gas such as when it reaches a set pressure. Also illustrated in this figure, the gas ignitor assembly is illustrated in further detail with a line 232 operatively connected to the gas regulator 234 to spark or ignite through ignition end 231 to gas ignitor 230.

**[00140]** While different terms are reserved for cooking apparatuses such as ovens, the word is synonymous with furnace, oven, stove, roaster, chamber or receptacle in which food is baked or cooked by continuous heat radiated from the structure.

**[00141]** The example and alternative embodiments described above may be combined in a variety of ways with each other. It should be noted that the present invention may, however, be embodied in many different forms and should not be construed as limited to the embodiments set forth herein; rather, the embodiments set forth herein are provided so that the disclosure will be thorough and complete, and will fully convey the scope of the invention to those skilled in the art. Furthermore, the steps and number of the various steps illustrated in the figures may be adjusted from that shown. The accompanying figures and attachments illustrate exemplary embodiments of the invention.

**[00142]** Although the present invention has been described in terms of particular example and alternative embodiments, it is not limited to those embodiments. Alternative embodiments,

examples, and modifications which would still be encompassed by the invention may be made by those skilled in the art, particularly in light of the foregoing teachings.

**[00143]** Those skilled in the art will appreciate that various adaptations and modifications of the example and alternative embodiments described above can be configured without departing from the scope and spirit of the invention. Therefore, it is to be understood that, within the scope of the appended claims, the invention may be practiced other than as specifically described herein.

## WHAT IS CLAIMED IS:

1. An improved baking oven comprising:  
an oven body, the oven being including a baking chamber;  
a rotatable tray;  
a fuel tray, the fuel tray configured to accept a number of fuel sources for heating the oven body;  
an oven door, the oven door included on at least one wall of the oven body;  
a chimney;  
a control member, the control member is provided on an exterior surface of the oven body; and  
wherein the fuel chamber and the oven door are offset to one another.
2. The improved baking oven of claim 1, wherein the control member is operatively connected with at least one of a drive rod and at least one gear to operate the rotation of the rotatable tray in the baking chamber.
3. The improved baking oven of claim 1, wherein the control member includes a spring-enabled handle configured to be movable against and from the oven body.
4. The improved baking oven of claim 1, further comprising:  
a temperature gauge, the temperature gauge is placed approximately adjacent to the oven chamber and the fuel chamber.
5. The improved baking oven of claim 1, wherein the chimney includes a rotatable flap operatively connected into the chimney to control airflow.
6. A cooking apparatus comprising:  
an oven, the oven comprising a cooking chamber;  
a heated air source;  
a fuel chamber, the fuel chamber adaptable for different fuel input;  
a door, the door being perpendicular from the fuel chamber;  
a chimney; and

wherein the cooking chamber extending between the heated air source and the chimney, thereby defining, in use, a heated air flow path between said heated air source and said chimney, and wherein the fuel drawer and the chimney are at distal ends of the oven.

7. The cooking apparatus of claim 6, wherein, in use, deflection of heated air, when deployed in the heated air flow path, causes circulation of heated air within the cooking chamber, thereby increasing preservation of heated air.

8. The cooking apparatus of claim 6, further comprising:

an inner cooking chamber;

a hopper;

a rotatable plate;

a rotatable handle; and

a plurality of folding legs.

9. The cooking apparatus of claim 6, wherein the rotatable handle is provided on an exterior surface of the cooking apparatus body.

10. The cooking apparatus of claim 6, further comprising:

a drive shaft; and

a gear set.

11. The cooking apparatus of claim 10, wherein the rotatable handle is meshed with at least one of the drive shaft and gear set to drive the rotating tray to rotate in the cooking chamber.

12. The cooking apparatus of claim of claim 6, further including a temperature gauge having a probe adapted to extend into the oven body to correlate the temperatures from the fuel chamber to the rotating tray.

13. The cooking apparatus of claim of claim 6, wherein the rotatable handle is a spring-loaded and configured to be movable against and from the oven body.

14. The cooking apparatus of claim 6, wherein door is perpendicular to the fuel drawer.
15. The cooking apparatus of claim 6 , wherein the door includes at least one window.
16. The cooking apparatus of claim 6, wherein the chimney is a multi-part chimney and at least one part of the chimney includes a rotatable flap within the chimney to control airflow;
17. The cooking apparatus of claim 6, wherein the rotatable plate is removable, and wherein the cooking chamber includes a plurality of braces adapted to surround the rotatable plate.
18. The cooking apparatus of claim 6, wherein the fuel drawer is configured to accept a number of fuel sources including wood sticks, wood pellets, charcoal, etc.
19. The cooking apparatus of claim 6, wherein the cooking apparatus includes a number of notches or recesses to selectively affix at least one of the hopper and the chimney.
20. An improved rotatable cooking oven, comprising:
  - an oven body, the oven being including a baking chamber;
  - a chimney;
  - a fuel chamber;
  - a rotating plate;
  - a drive shaft;
  - at least one gear; and wherein the rotating plate is operatively connected with the drive shaft;
21. The improved rotatable cooking oven of claim 20 further comprising:
  - a control member, the control member is provided on an exterior surface of the oven body, and wherein the control member is operatively connected with at least one of the drive shaft and at least one gear to drive the rotating tray to rotate in the baking chamber.

22. The improved rotatable cooking oven of claim 20, further comprising:  
a control member, the control member is provided on an exterior surface of the oven body, and wherein the control member is operatively connected with at least one of the drive shaft and a gear set to drive the rotating tray to rotate in the baking chamber.
23. The improved rotatable cooking oven of claim 20 further comprising:  
at least one leg, the at one leg configured to be collapsible against a surface of the oven body.
24. The improved rotatable cooking oven of claim 20, wherein the fuel chamber is removable from the oven body.
25. The improved rotatable cooking oven of claim 20, wherein the chimney is removable from the oven body.
26. The improved rotatable cooking oven of claim 20, further including a temperature gauge having a probe adapted to extend into the oven body to correlate the temperatures from the fuel chamber to the rotating tray.
27. The improved rotatable cooking oven of claim 20, wherein the control member included a spring-loaded handled configured to be movable to and from the oven body.
28. The improved rotatable cooking oven of claim 20, wherein the door includes at least one window.
29. The improved rotatable cooking oven of claim 20, further comprising the chimney including a rotatable flap, the rotatable flap integrated to the chimney to control flame distribution.
30. The improved rotatable cooking oven of claim 20, wherein the chimney is a multi-part chimney and at least one part of the chimney includes a rotatable flap integrated to chimney to control airflow.

31. The improved rotatable cooking oven of claim 20, wherein the rotatable plate is removable, and wherein the baking chamber includes a plurality of braces adapted to surround the rotatable tray.

32. The improved rotatable cooking oven of claim 20, wherein the fuel drawer is configured to accept a number of fuel sources including wood sticks, wood pellets, charcoal, etc.

33. The improved rotatable cooking oven of claim 20, wherein the fuel chamber is configured to receive a gas attachment for baking and cooking.

34. The improved rotatable cooking oven of claim 20, wherein the cooking oven includes a number of notches or recesses to selectively affix at least one of the hopper and the chimney.

35. An improved oven, comprising:  
an oven body, the oven being including a baking chamber;  
a fuel drawer assembly, the fuel drawer assembly being removable from the oven;  
a rotatable tray;  
a chimney;  
and  
a control member, the control member is provided on an exterior surface of the oven body to manipulate the rotatable tray.

36. The improved oven of claim 35, wherein the oven body includes a hopper, wherein the hopper is configured to attach to the oven body and is configured to receive a number of fuel sources.

37. The improved oven of claim 35, wherein the control member is operatively connected with at least one of a drive shaft and at least one gear to drive the rotatable tray to rotate in the baking chamber.

38. The improved oven of claim 35, wherein the control member is operatively connected with at least one of a drive shaft and a gear set to drive the rotatable tray to rotate in the baking chamber.

39. The improved oven of claim 35, wherein the chimney includes a rotatable flap operatively connected into the chimney to control airflow.

40. The improved oven of claim 35, wherein the rotatable flap is operated by a knob on the exterior of the chimney.

41. The improved oven of claim 35, wherein the cooking chamber extends between the fuel drawer and at least one of a baffle and bracket, thereby defining, in use, a heated air flow path between a heated air source from the fuel drawer and the chimney, and wherein the fuel drawer and the chimney are at distal ends of the oven.

42. The improved oven of claim 35, wherein the cooking chamber extending between a heated air source and at least one of a baffle and bracket, thereby defining, in use, a heated air flow path between said heated air source from the fuel drawer and the chimney.

43. The improved oven of claim 35, wherein the chamber includes a number of baffles affixed within the said chamber, said number of baffles extending between the fuel chamber and the chimney, wherein the fuel drawer and the drawer are at distal ends of the oven.

44. The improved oven of claim 35, wherein the receptacle for the fuel drawer assembly in the oven body is configured to receive a gas attachment for baking and cooking.

45. The improved oven of claim 35, wherein there are a plurality of brackets configured contain a heating plate or stone.

46. An improved cooking machine comprising:  
an oven body, the oven being including a cooking chamber;  
a fuel chamber;  
a rotatable tray;  
an oven door, the oven door included on at least one wall of the oven body;  
a chimney;  
a control member, the control member is provided on an exterior surface of the oven body to control rotation of the rotatable tray; and  
wherein the fuel chamber and the oven door are perpendicular to one another.

47. The improved cooking machine of claim 46, wherein the fuel chamber in the oven body is configured to receive a gas attachment for baking and cooking.

48. The improved cooking machine of claim 46, wherein the control member is operatively connected with at least one of a drive shaft and a gear to drive the rotatable tray to rotate in the baking chamber.

49. The improved cooking machine of claim 46, wherein the control member is operatively connected with at least one of a drive shaft and a gear set to drive the rotatable tray to rotate in the baking chamber.

50. The improved cooking machine of claim 46, wherein the control member included a spring-loaded handle configured to be movable to and from the oven body.

51. The cooking machine of claim 46, further including a temperature gauge having a probe adapted to extend into the oven body to correlate the temperatures from the fuel chamber to the rotating tray.

52. The improved cooking machine of claim 46, wherein the control member includes a spring-enabled handle configured to be movable against and from the oven body.

53. The improved cooking machine of claim 46, wherein the rotatable tray is removable, and wherein the baking chamber includes a plurality of braces adapted to surround the rotatable tray.

54. The improved cooking machine of claim 46, wherein the fuel chamber in the oven body is configured to receive at least one of a fuel tray and a fuel drawer.

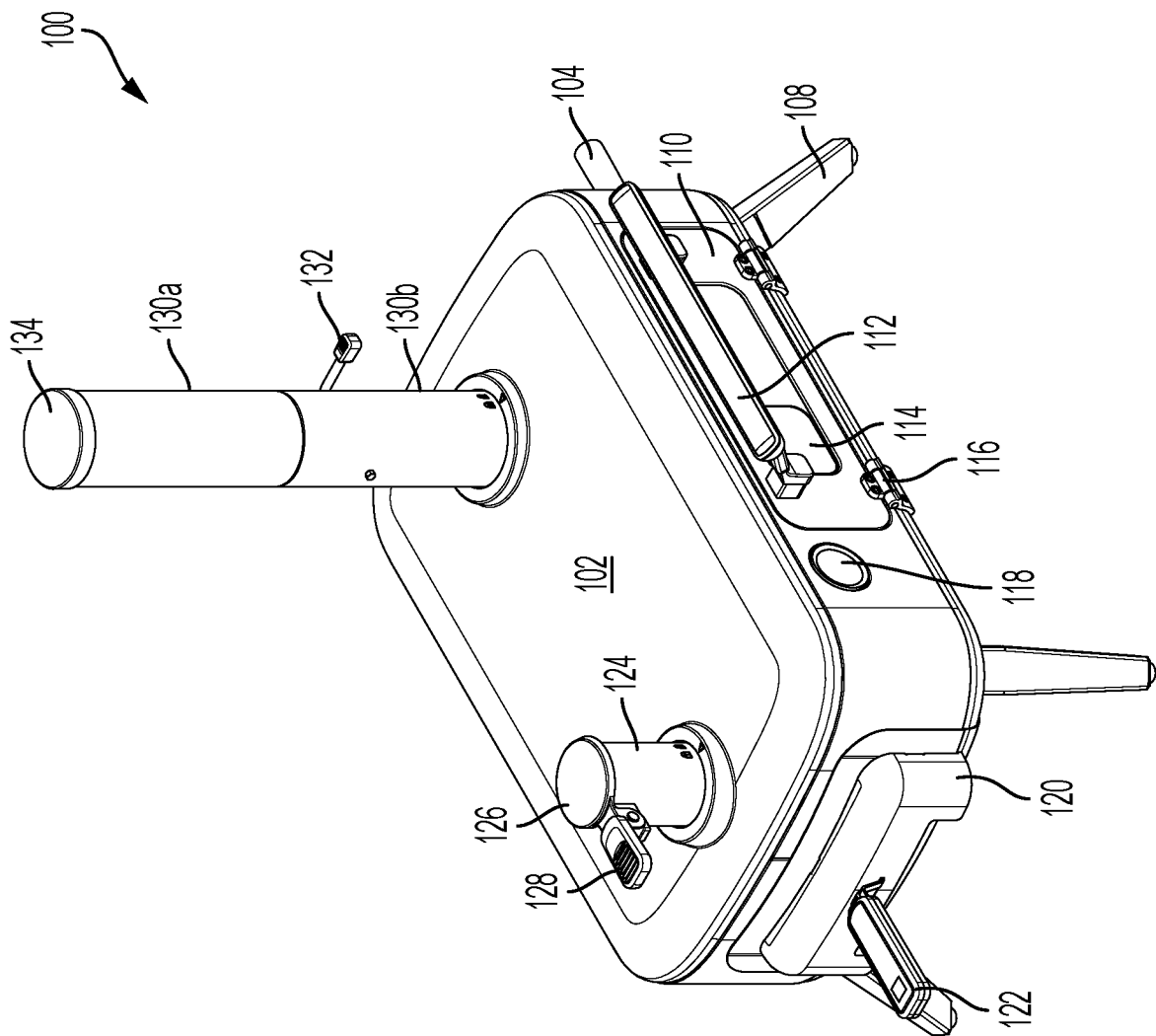


FIG. 1

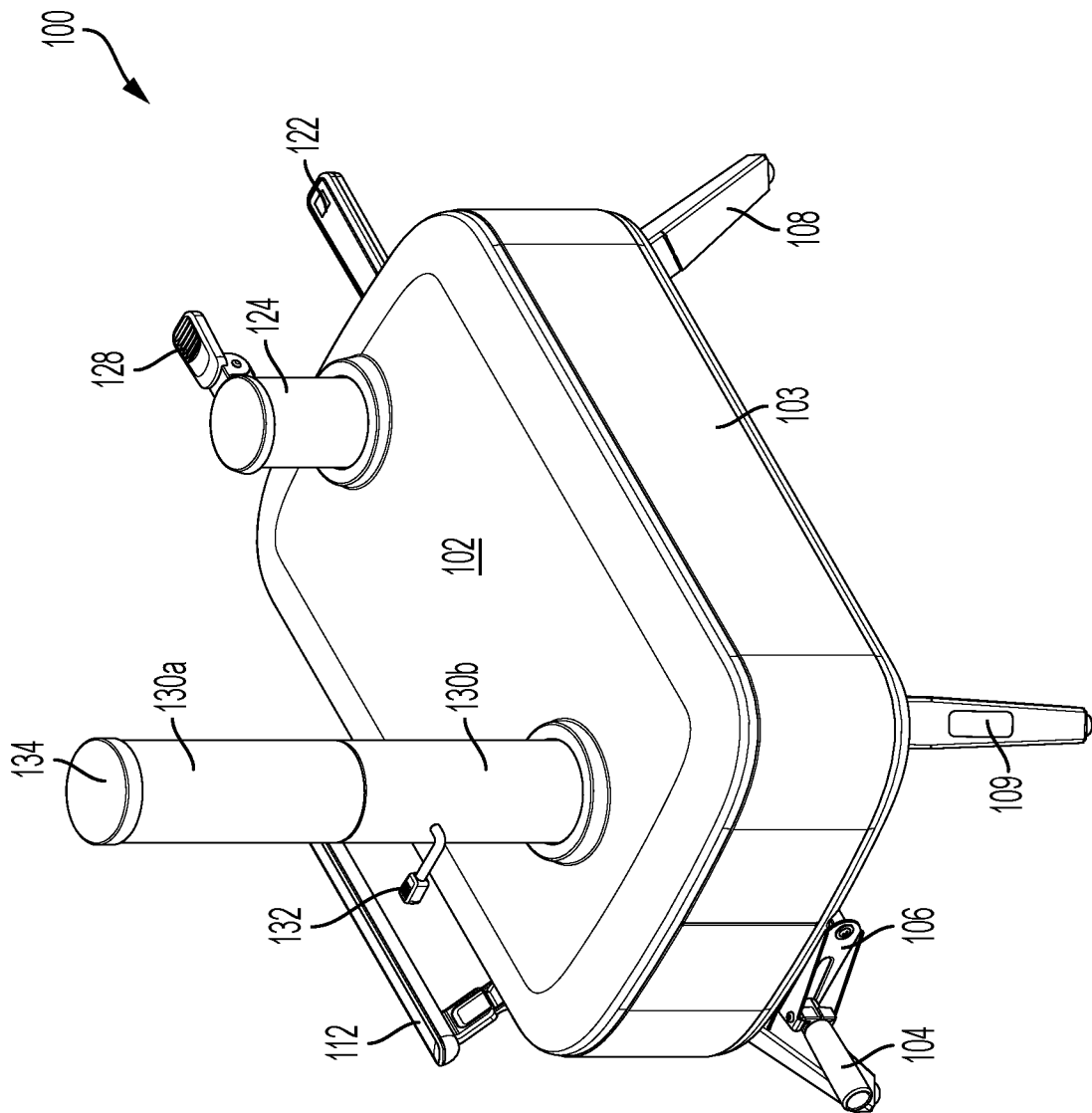


FIG. 2

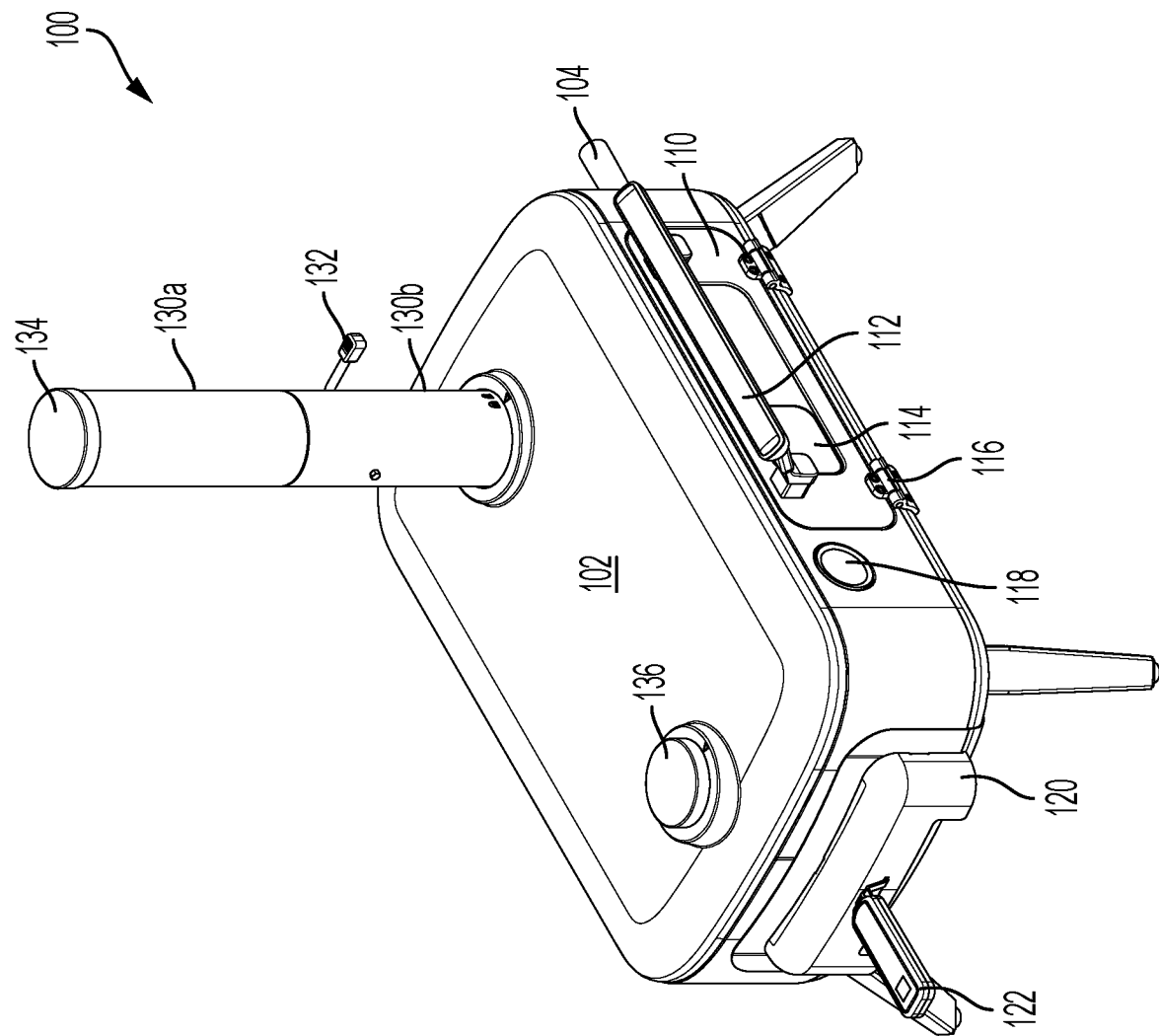


FIG. 3

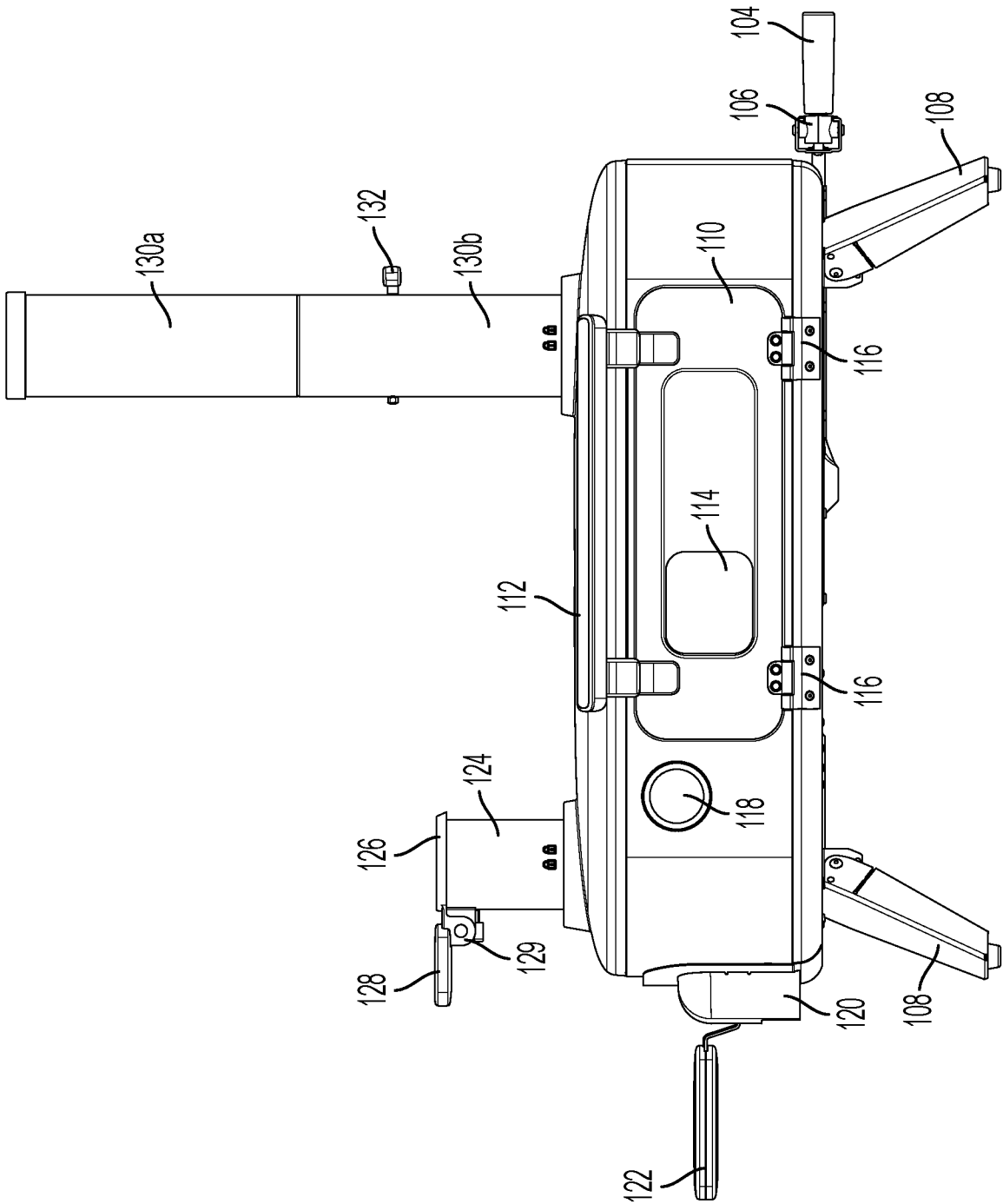


FIG. 4

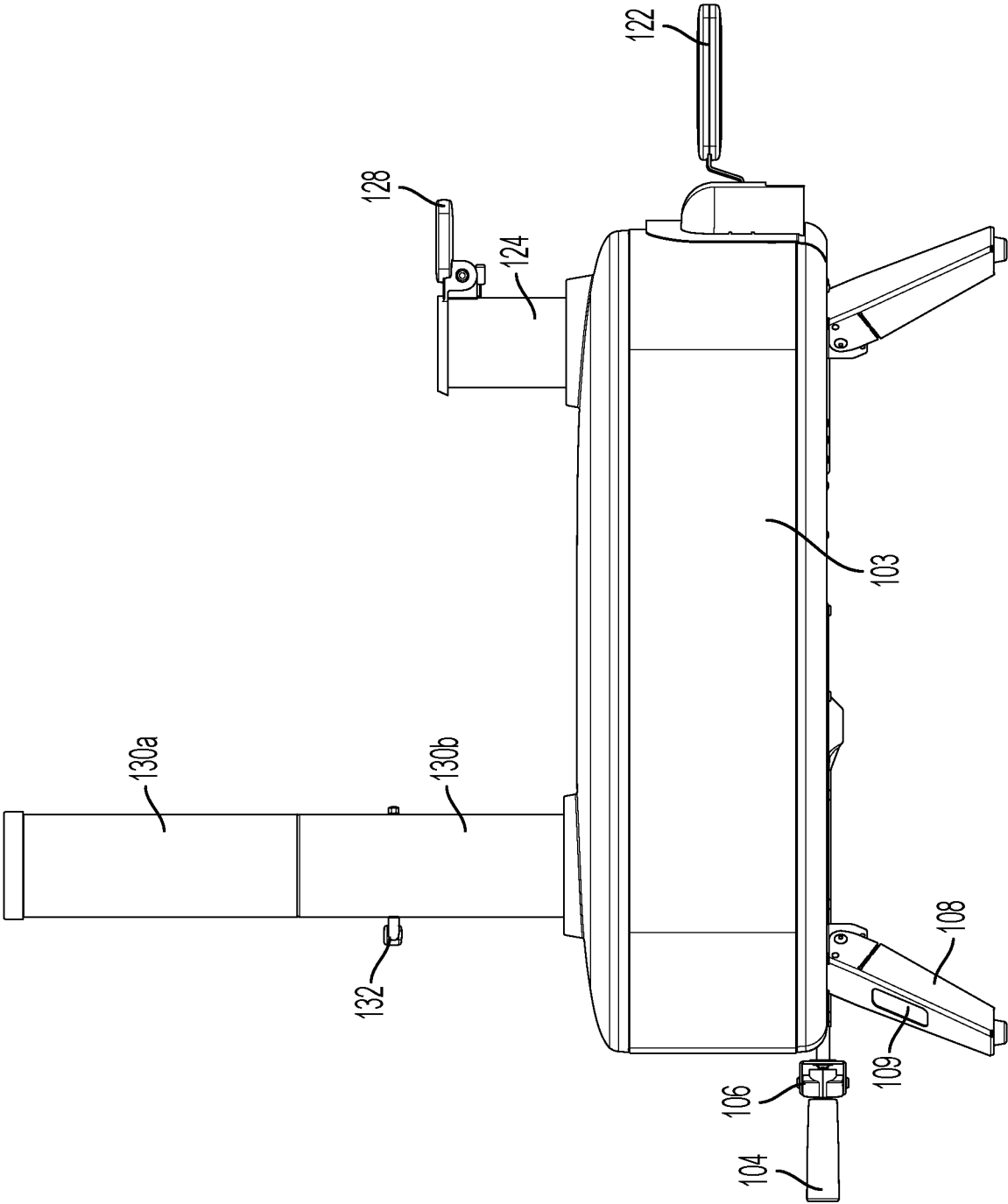


FIG. 5

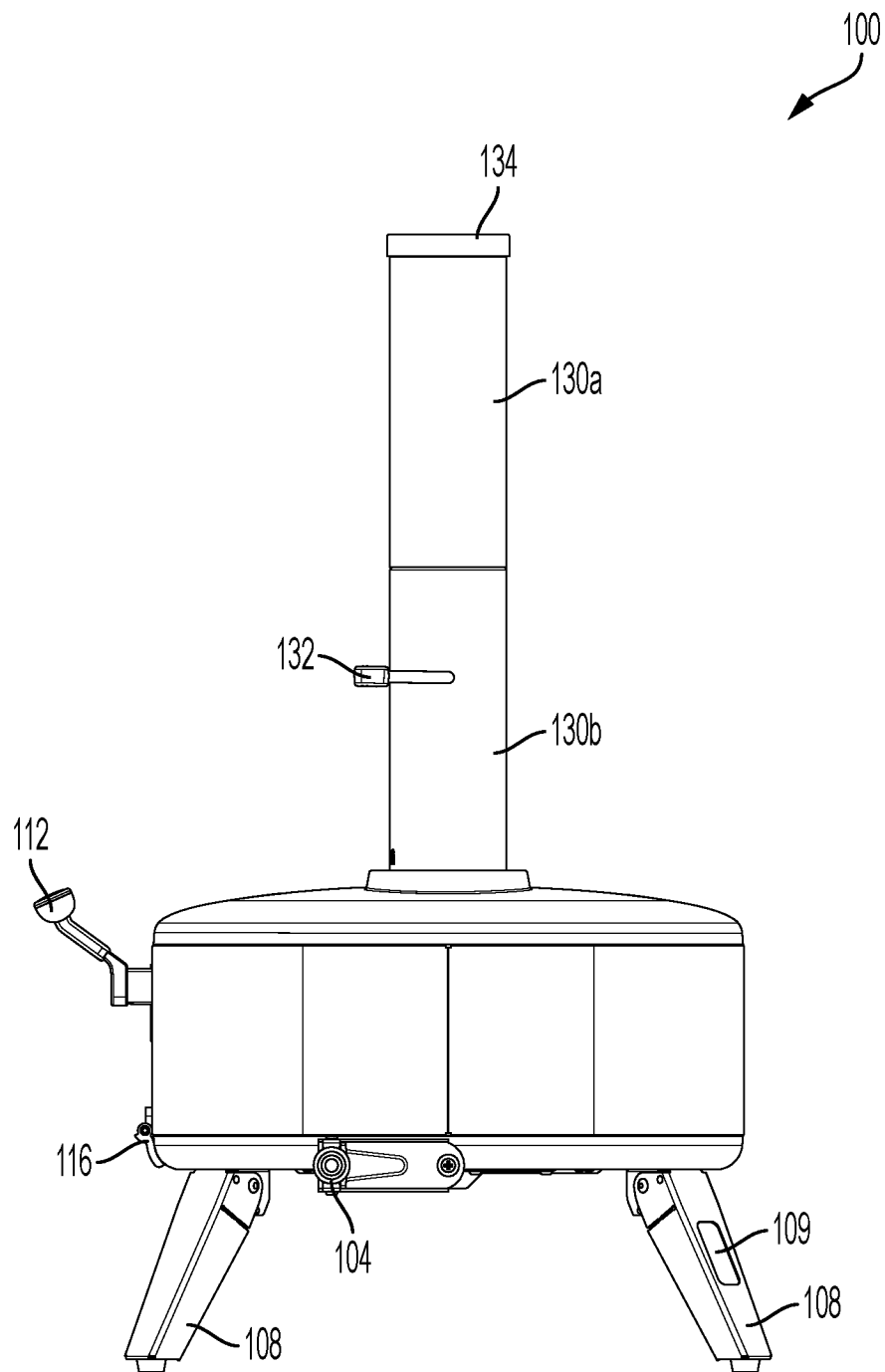
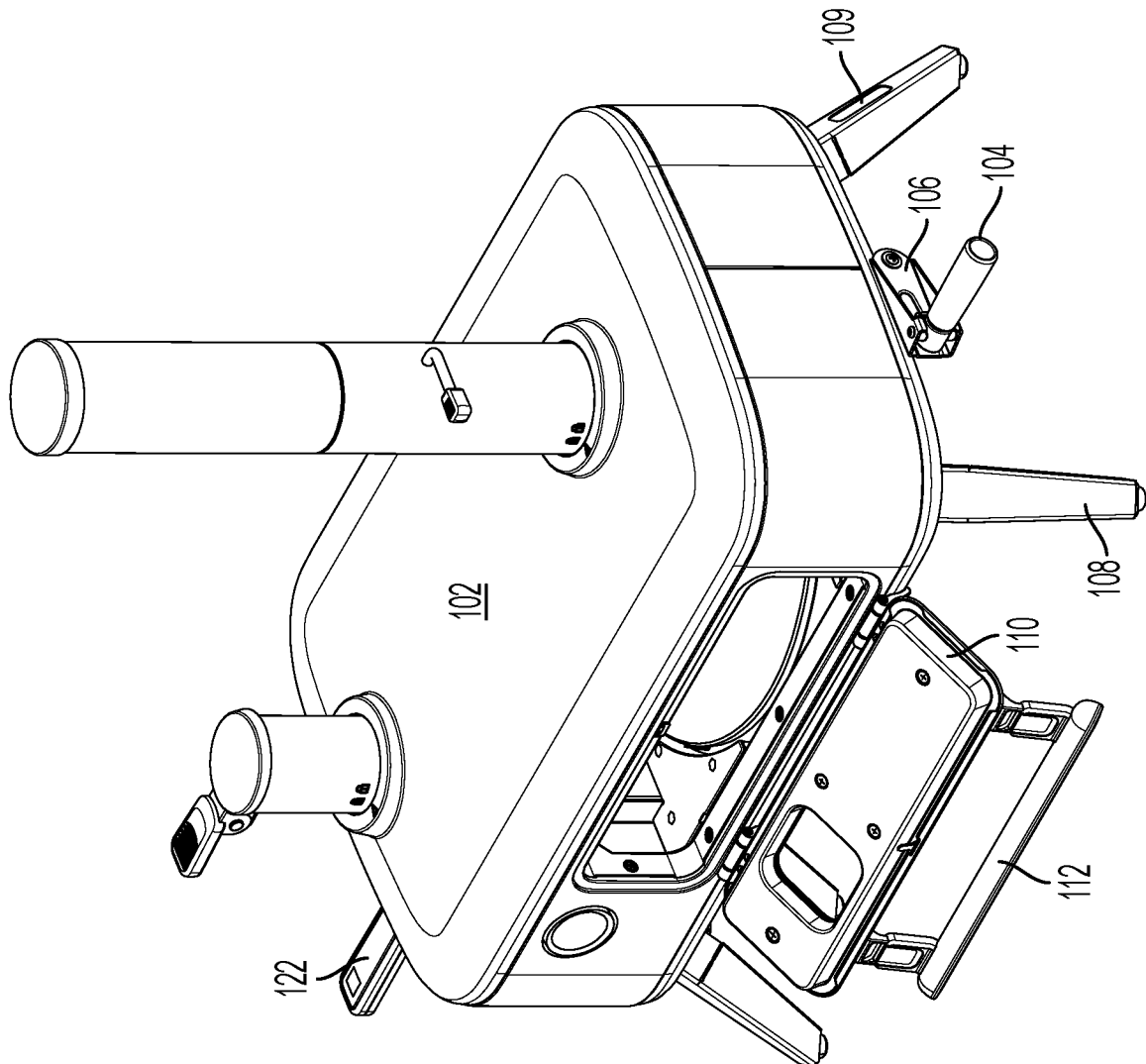
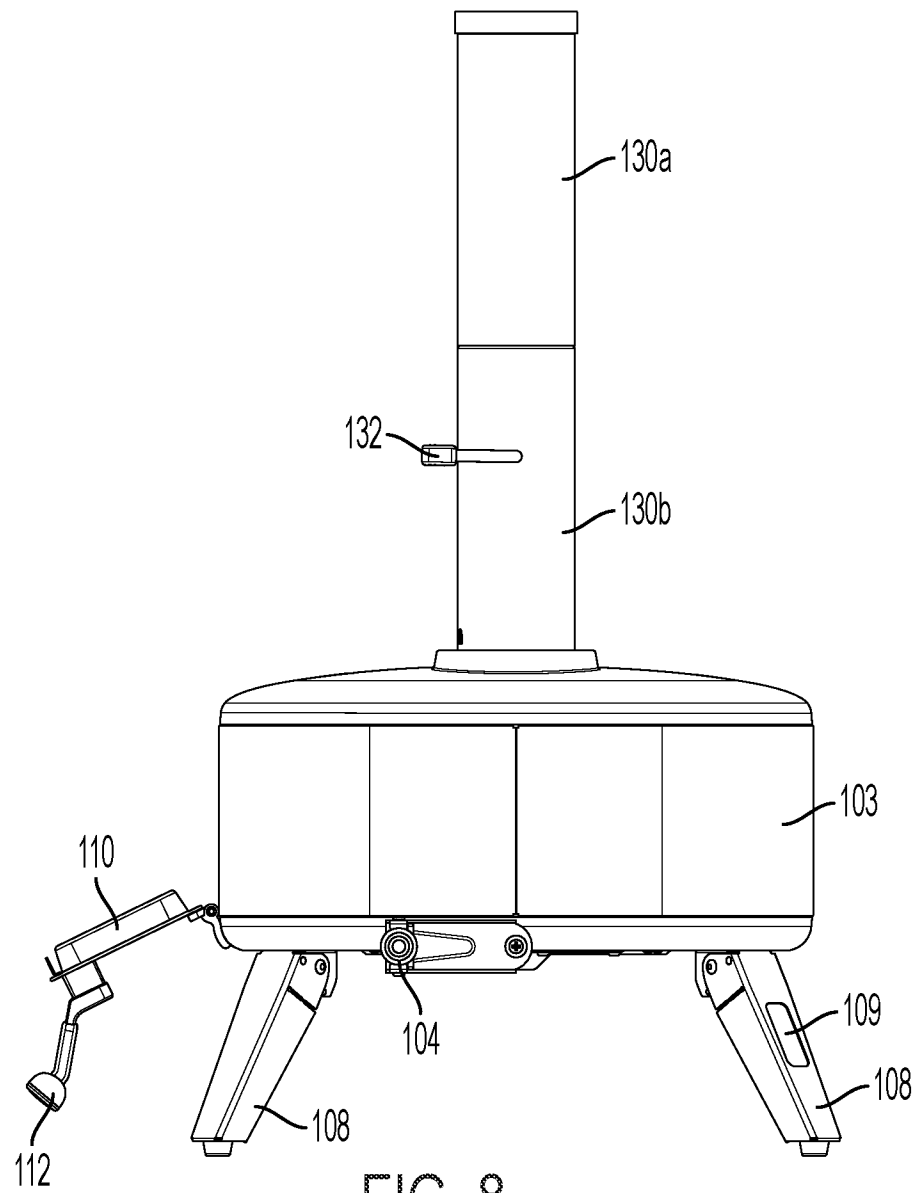


FIG. 6





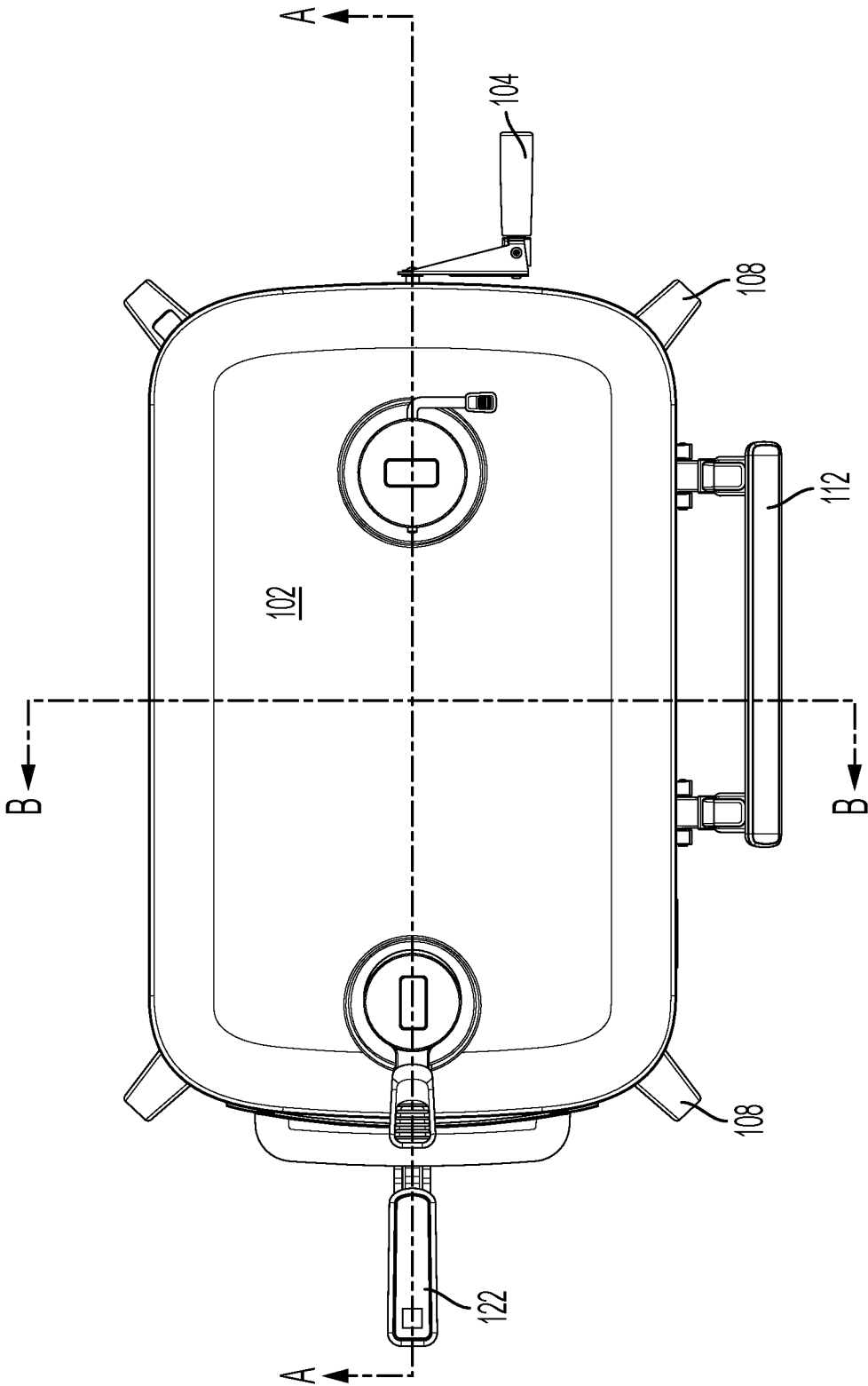


FIG. 9

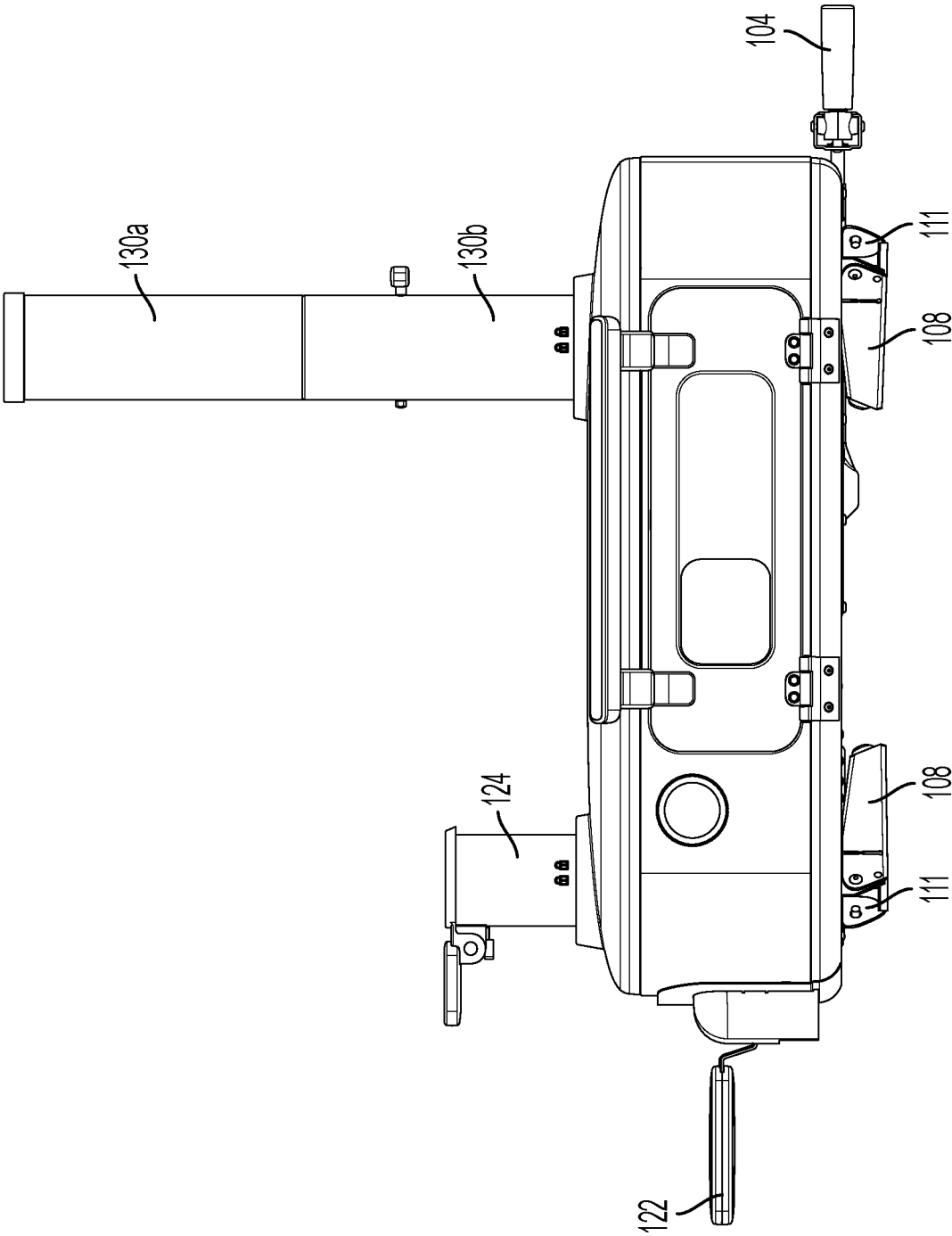


FIG. 10

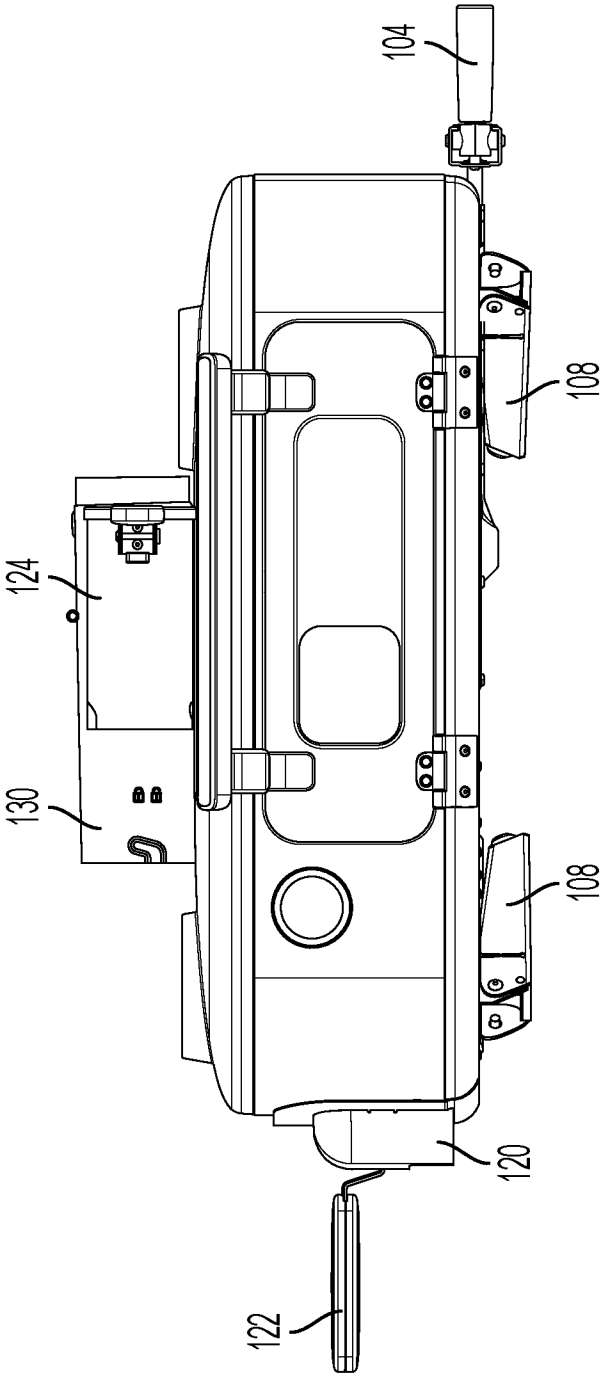


FIG. 11

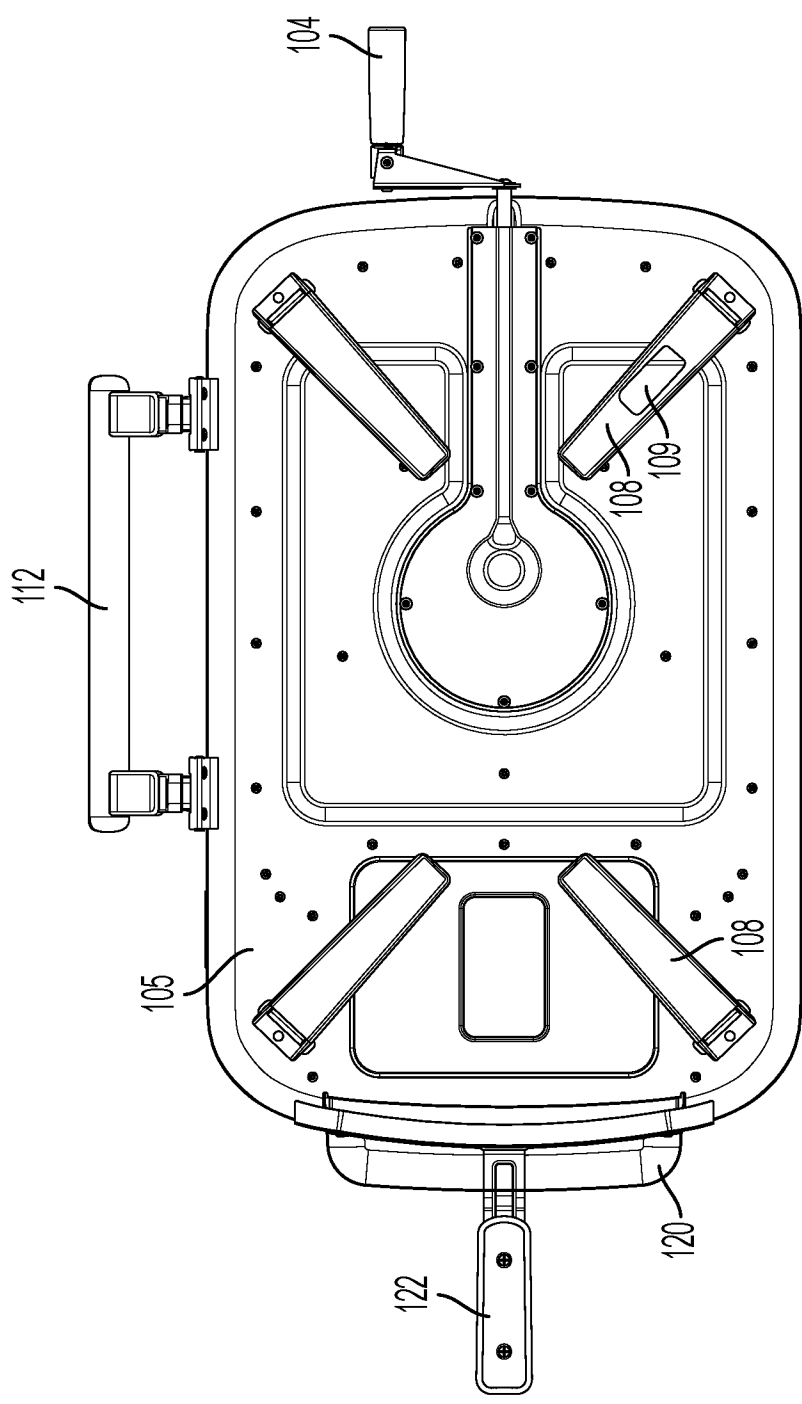


FIG. 12

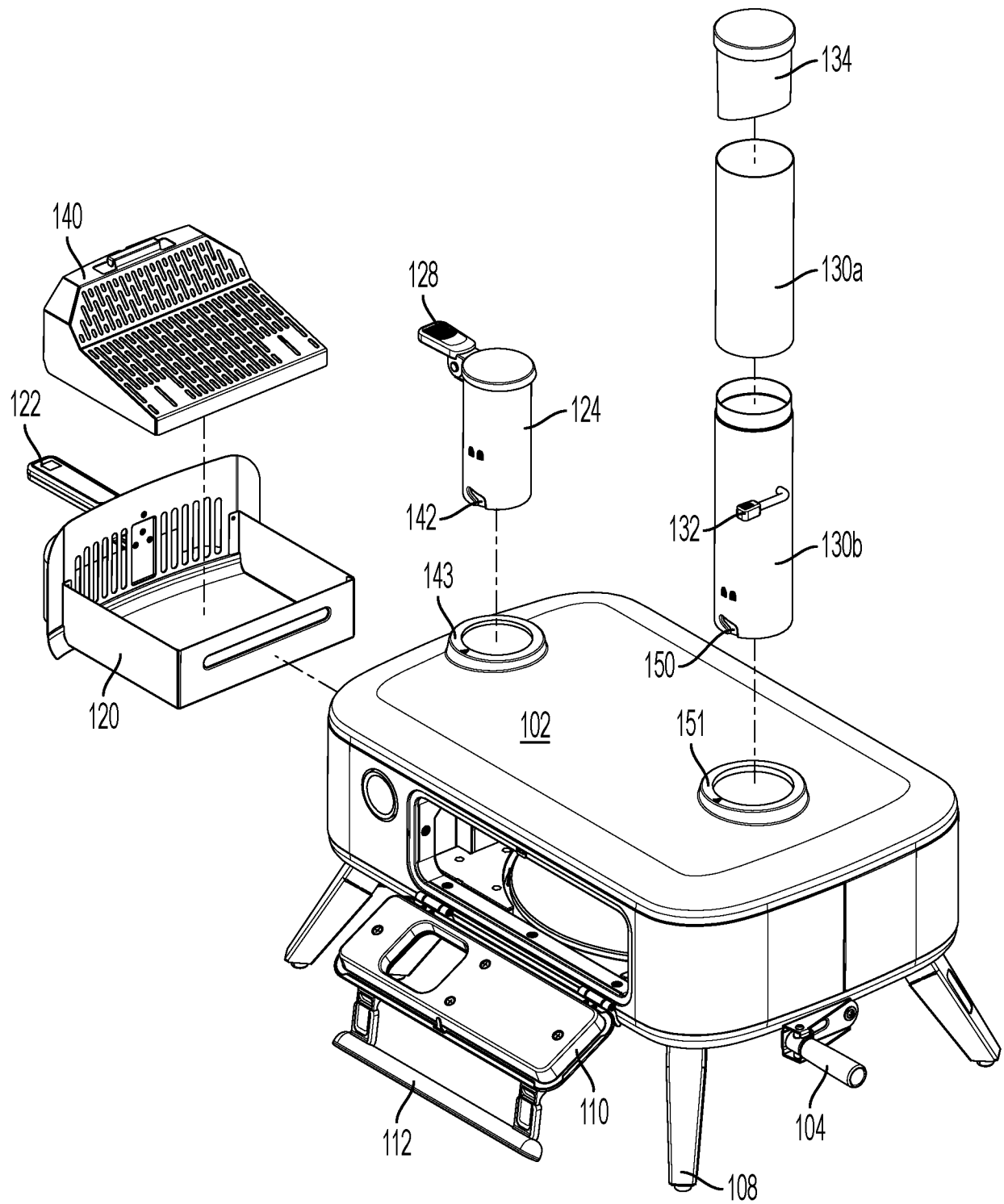


FIG. 13

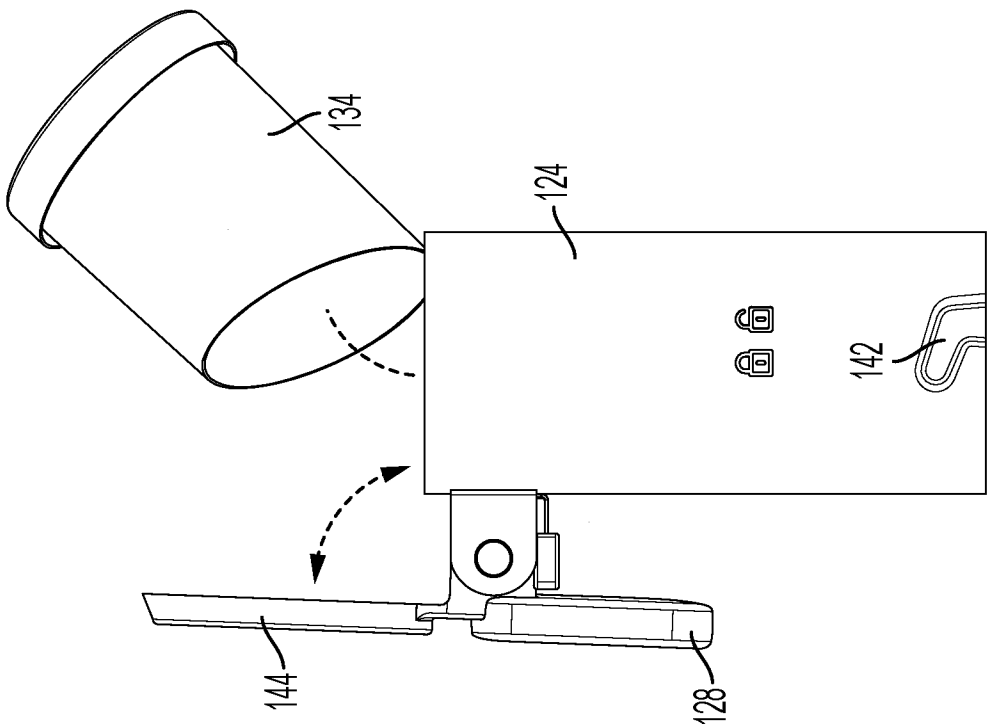


FIG. 15

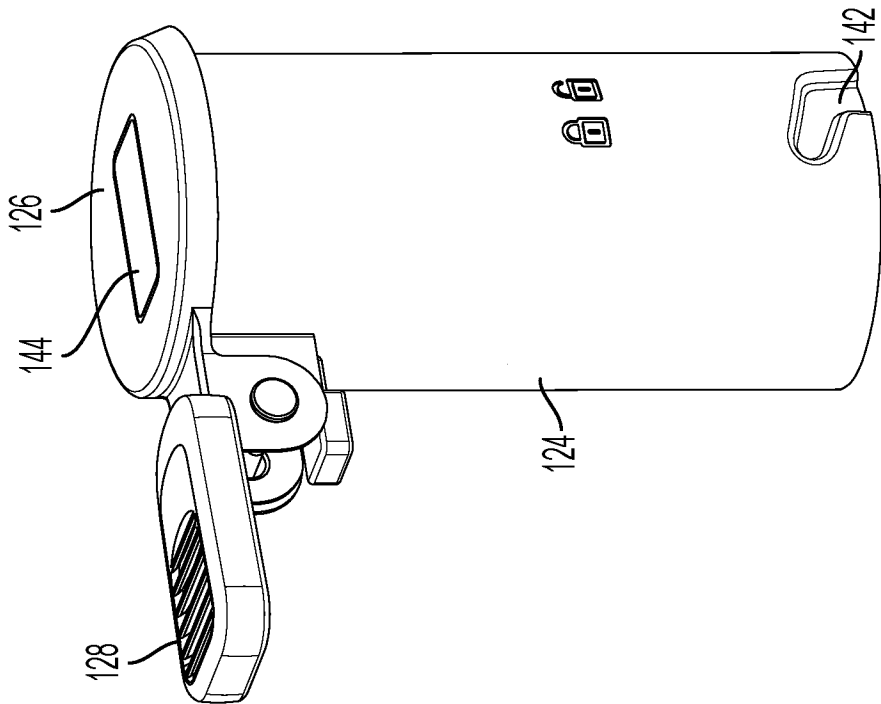


FIG. 14

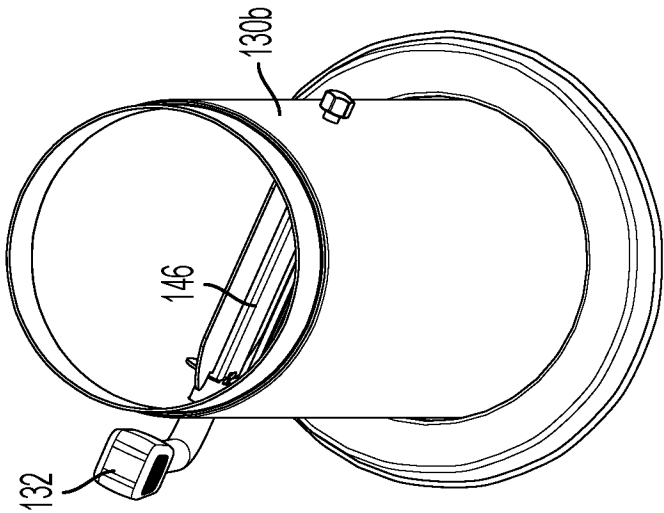


FIG. 17

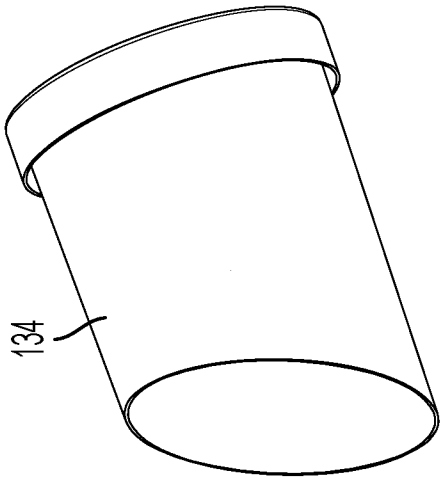


FIG. 16

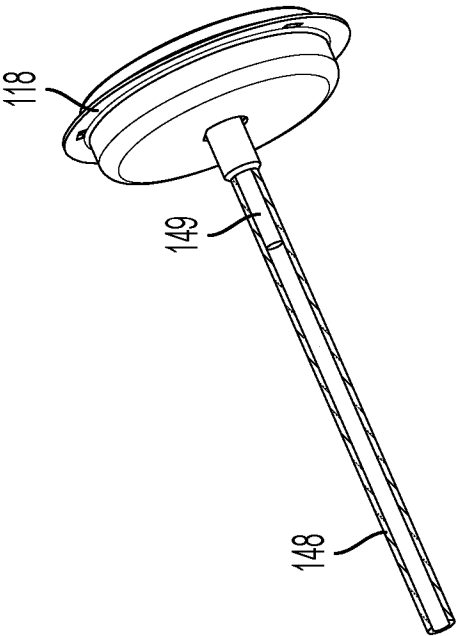


FIG. 18B

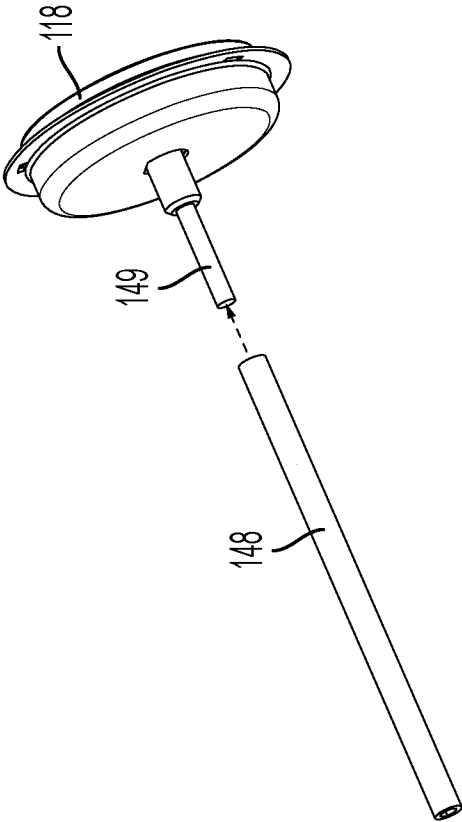


FIG. 18A

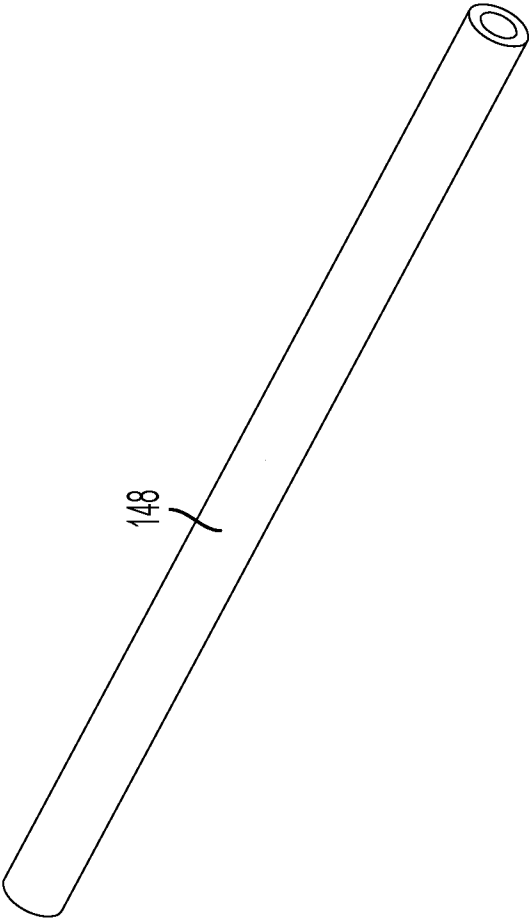


FIG. 18C

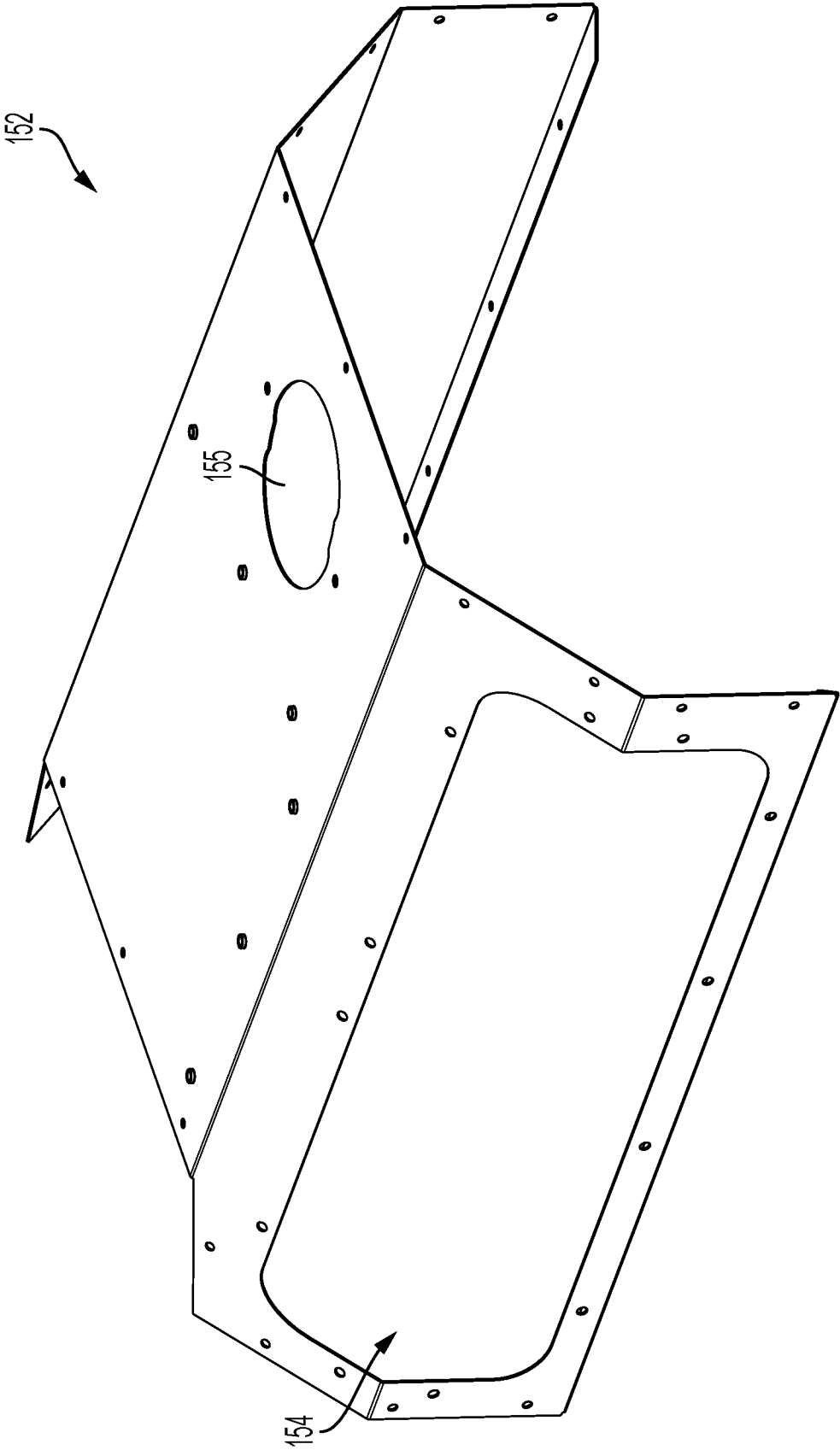


FIG. 19A

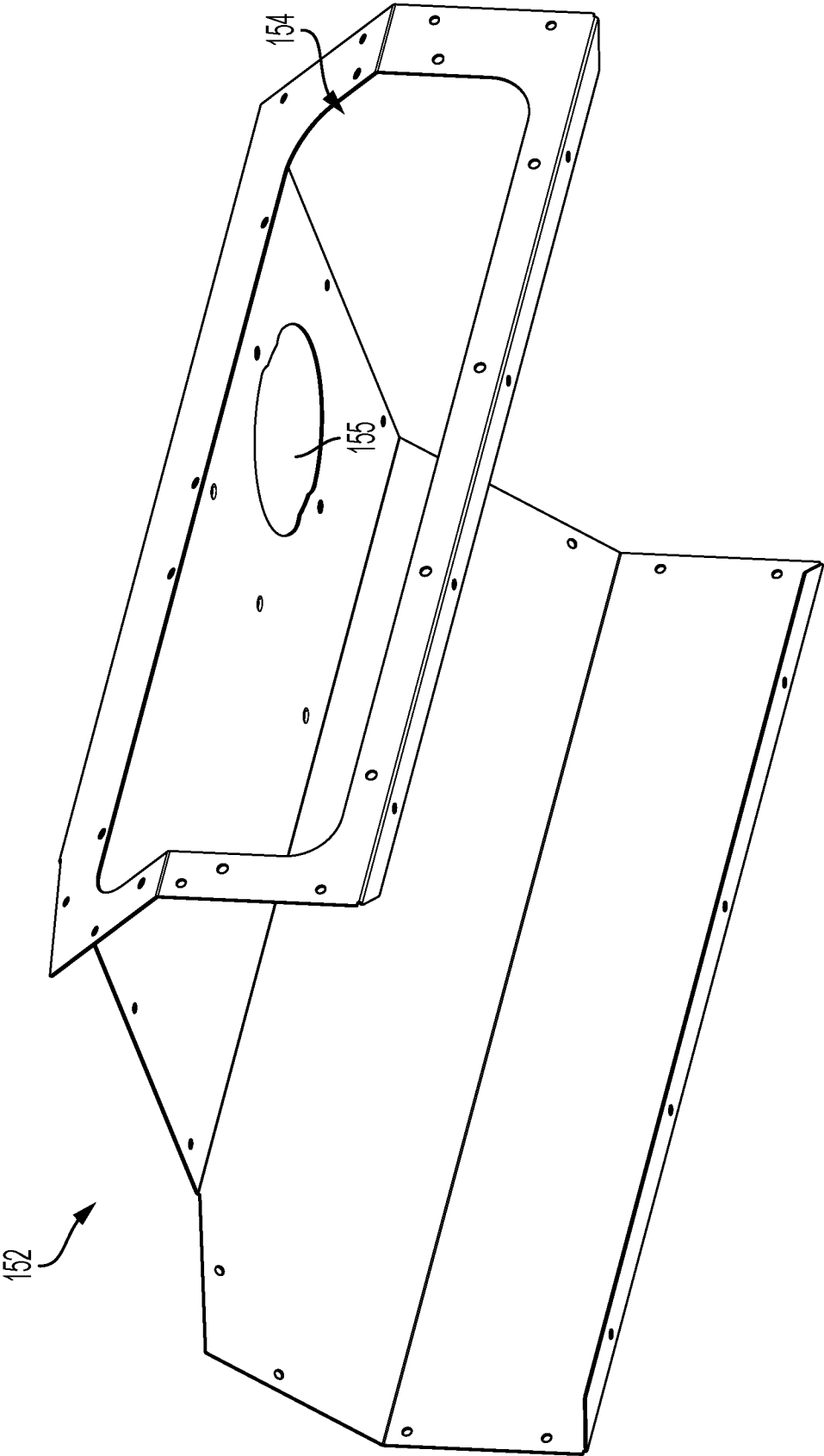


FIG. 19B

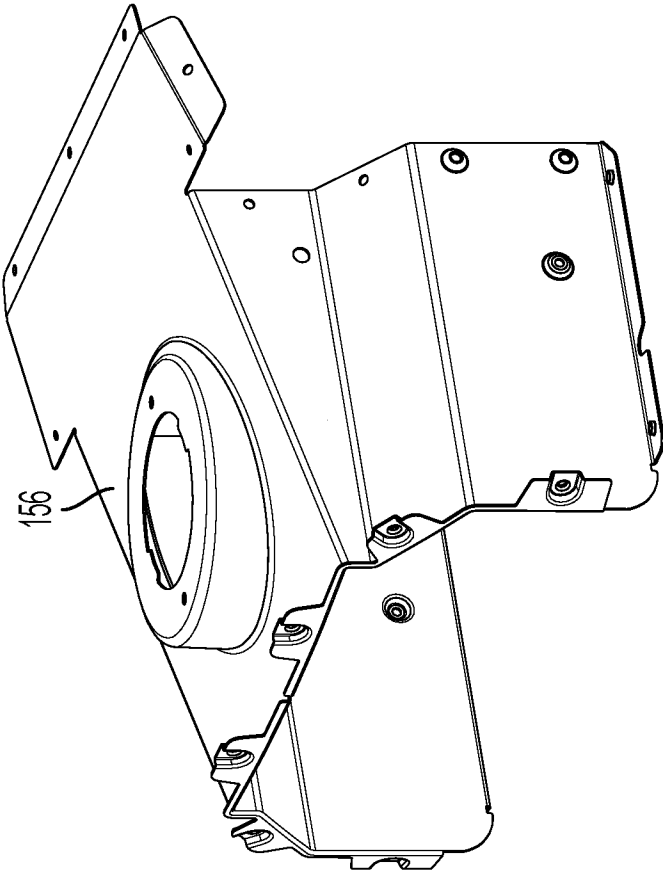


FIG. 20A

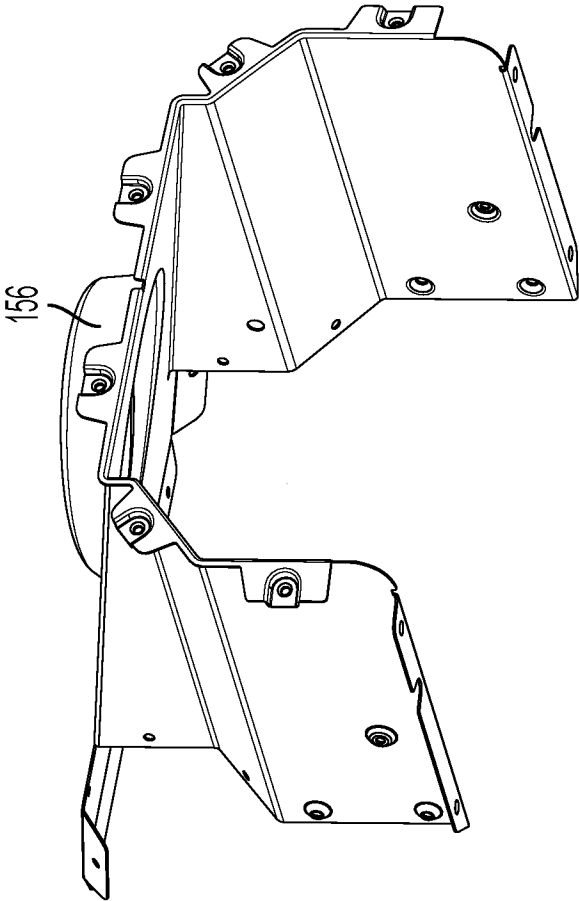


FIG. 20B

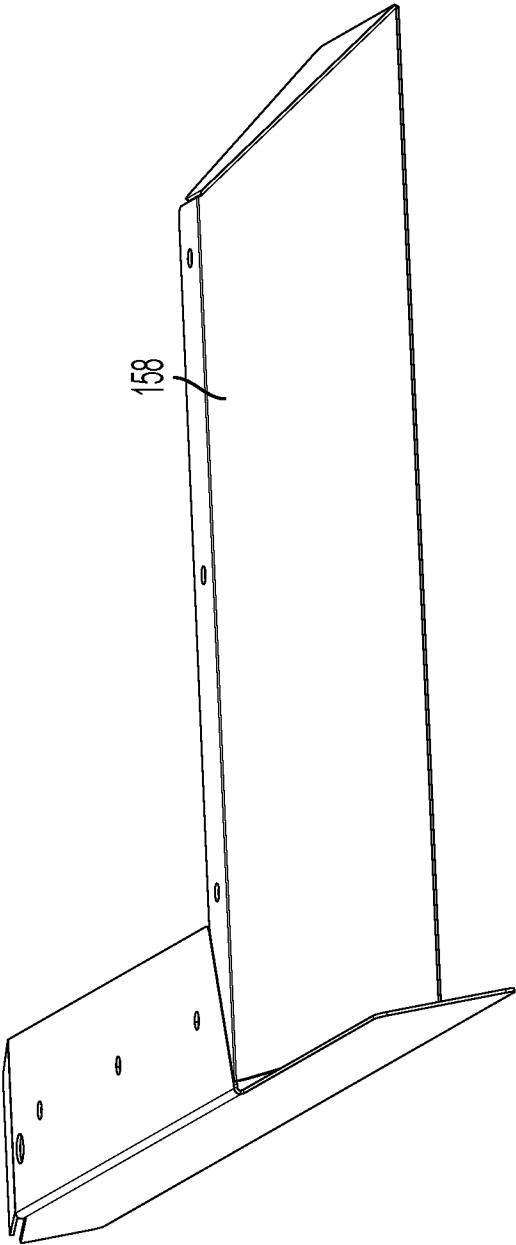


FIG. 21

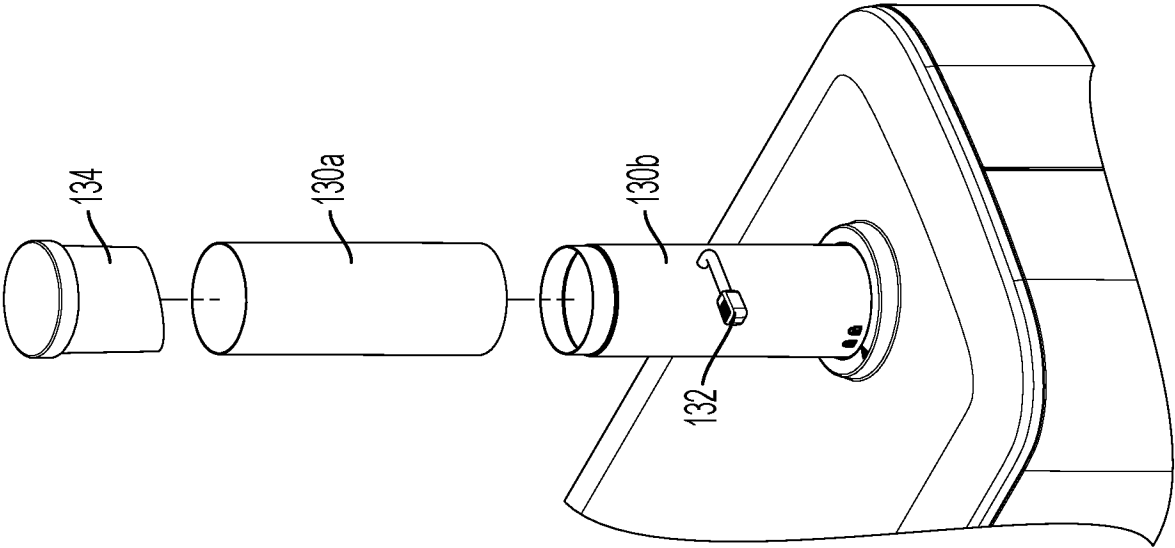


FIG. 22

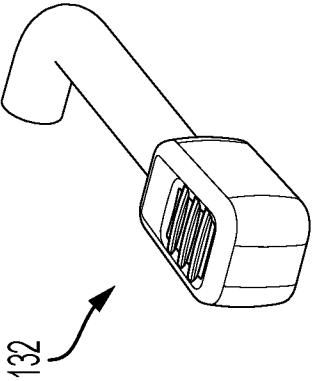


FIG. 23

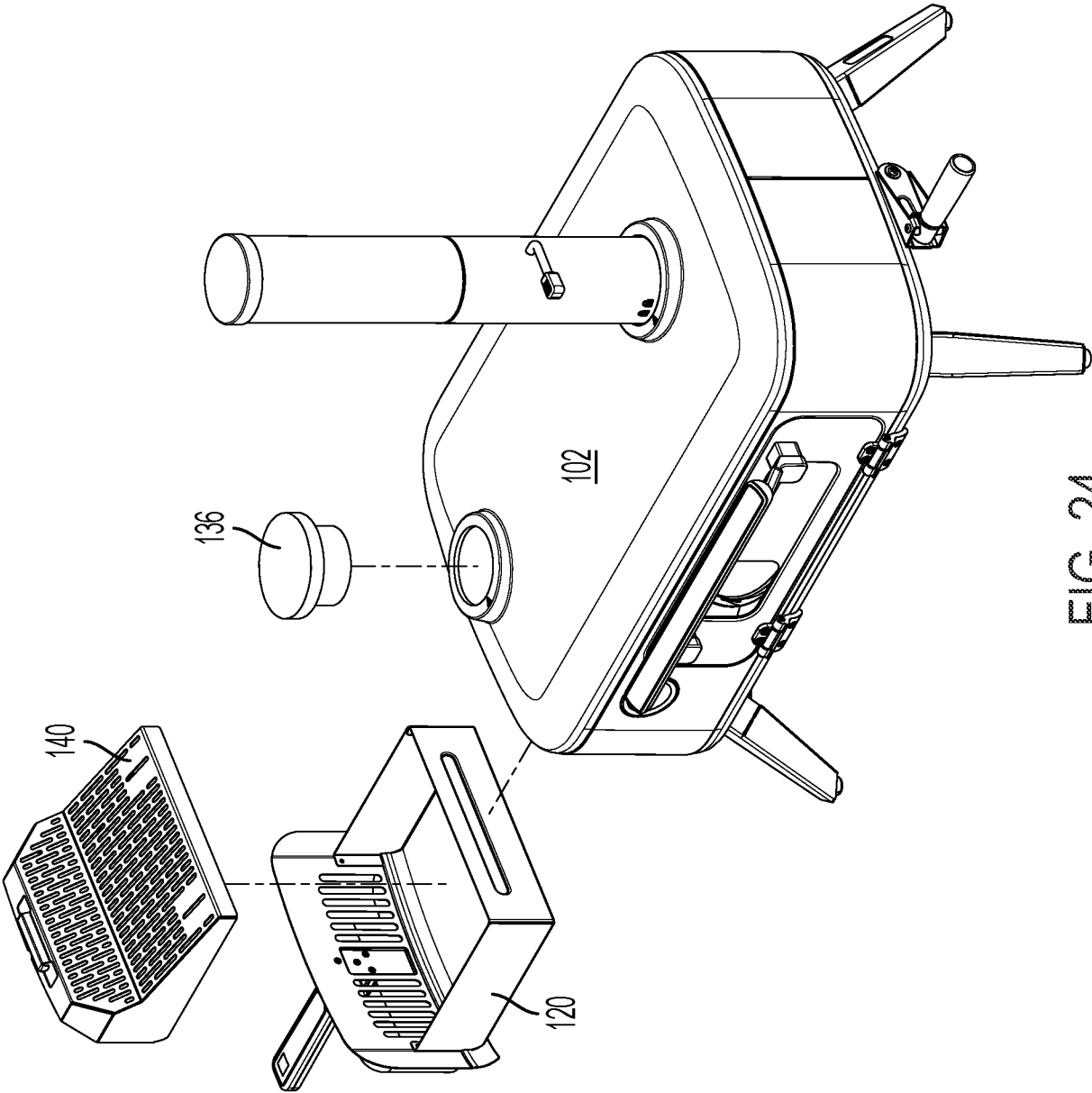


FIG. 24

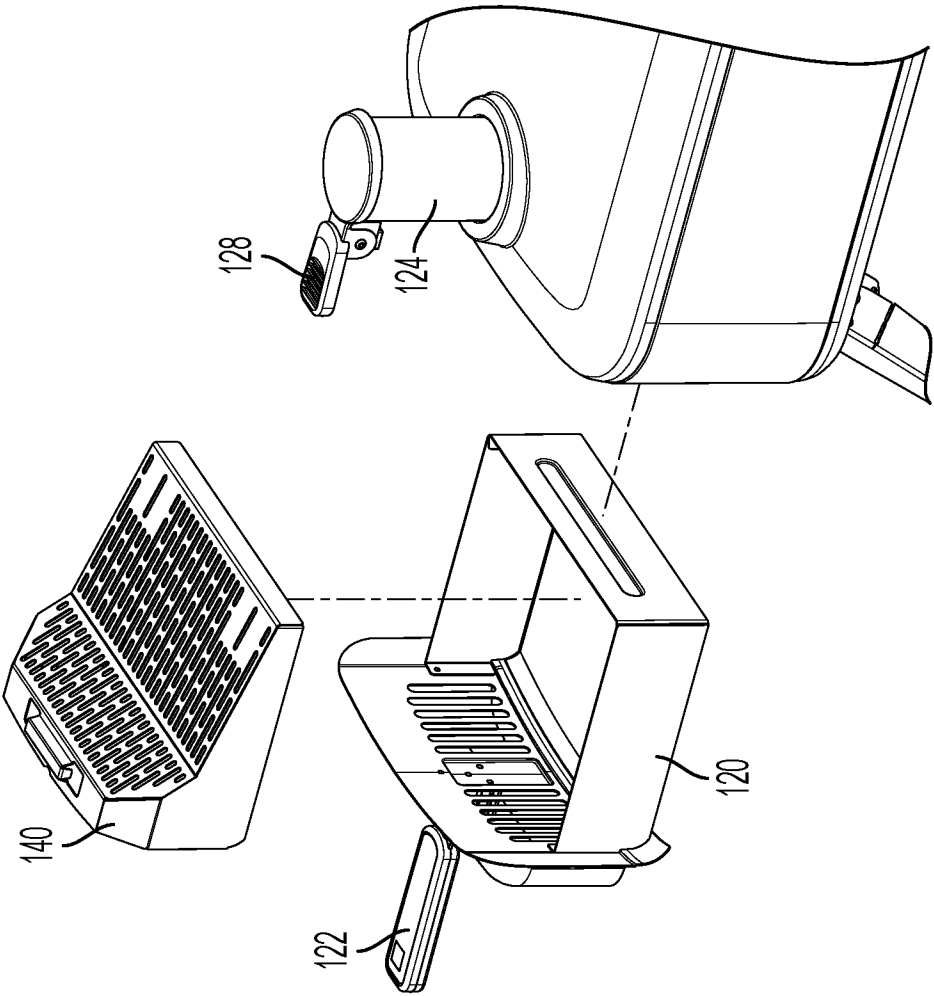


FIG. 25

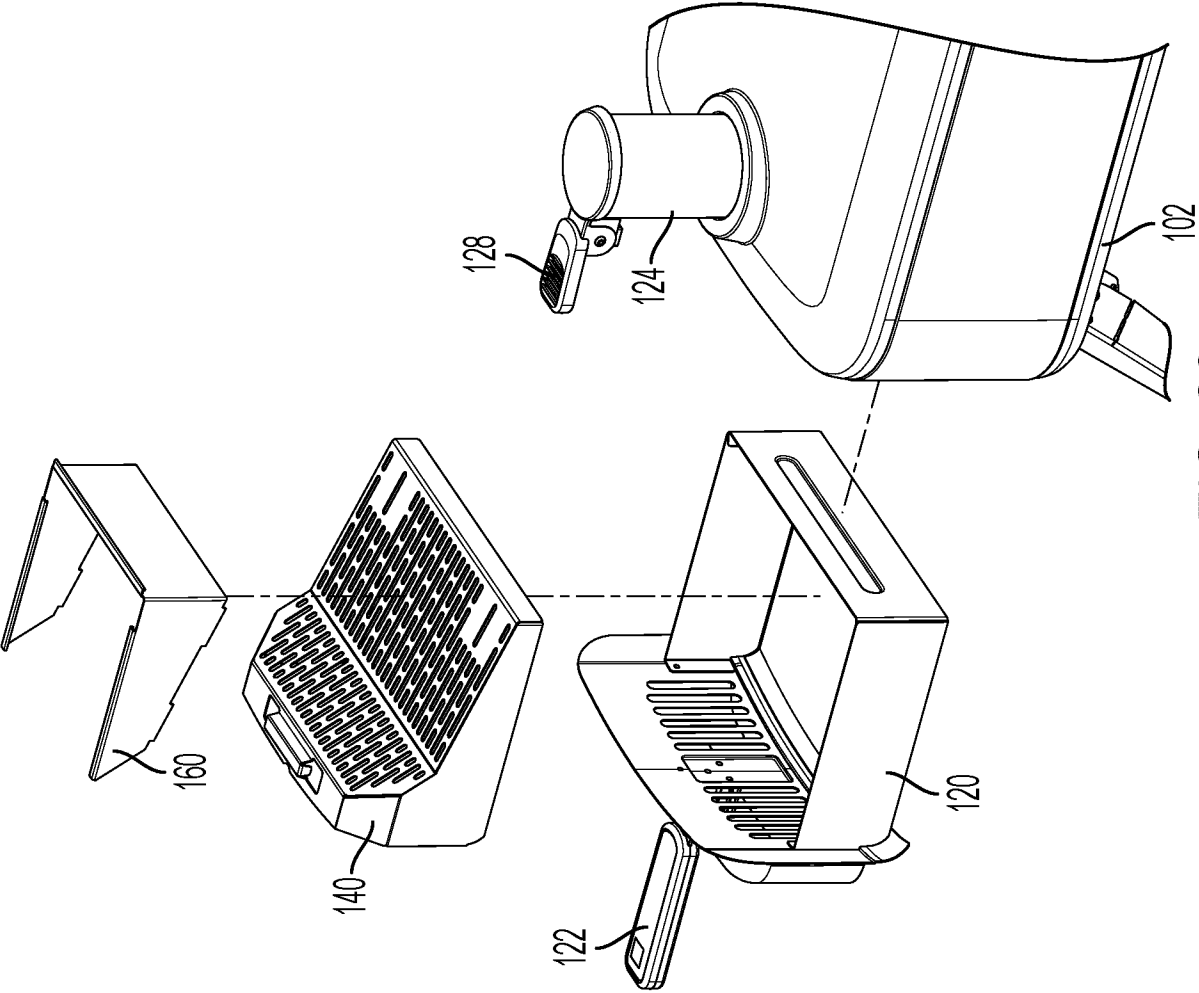


FIG. 26

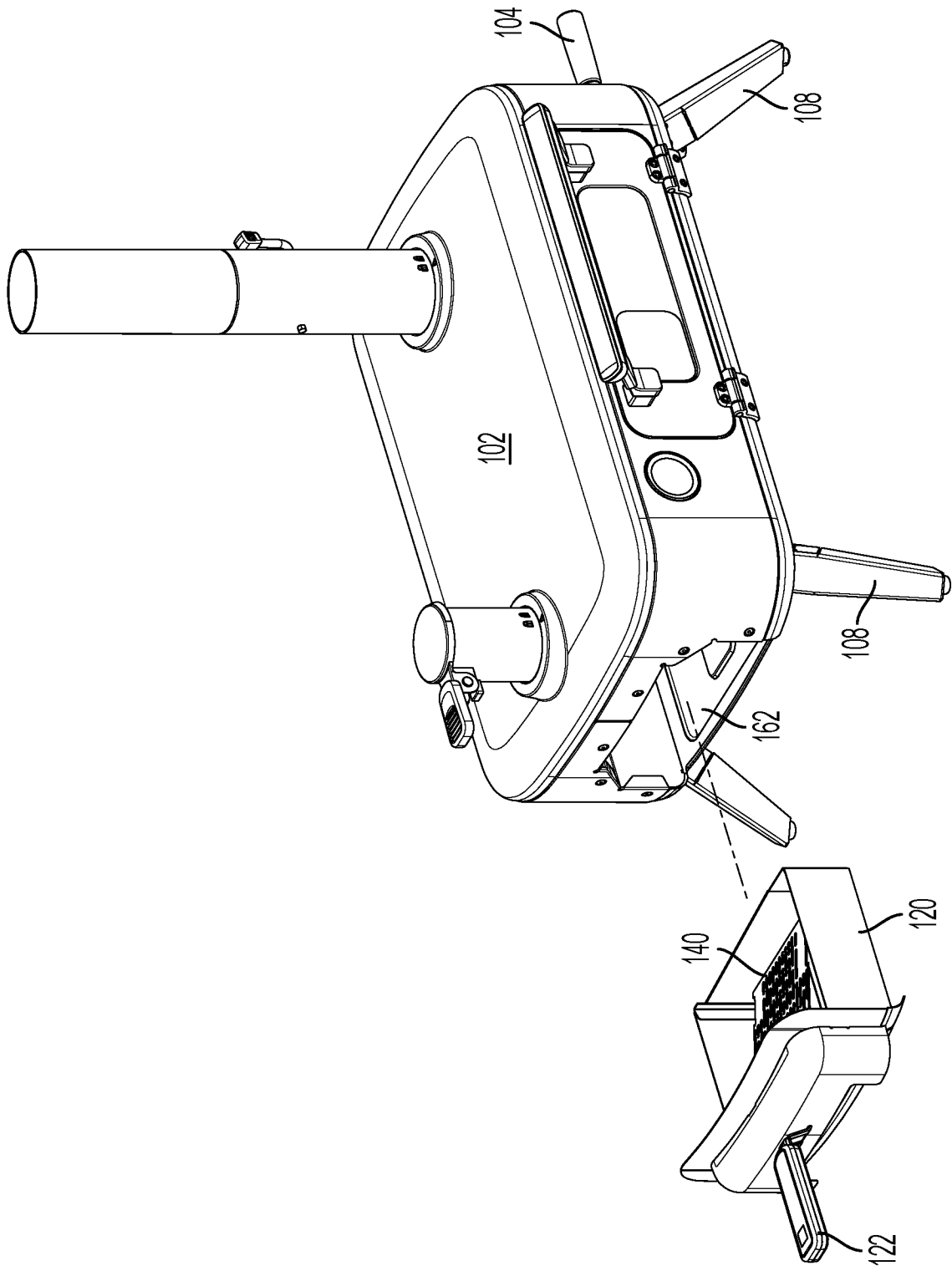


FIG. 27

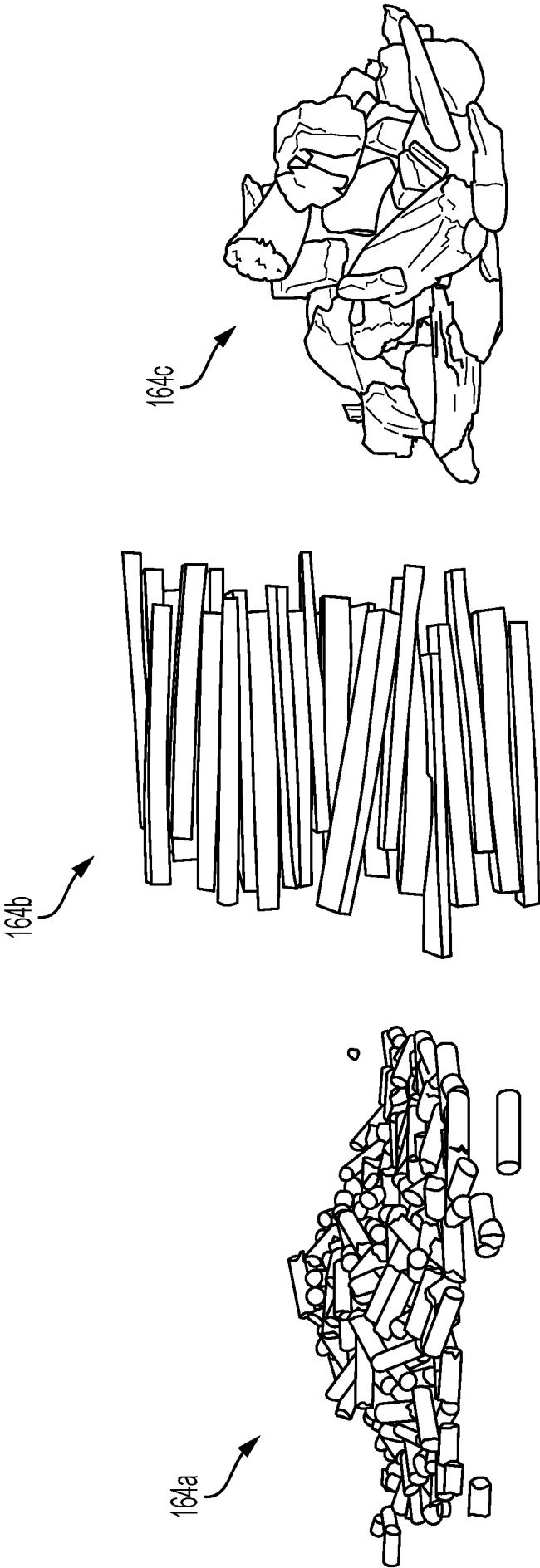


FIG. 28A

FIG. 28B

FIG. 28C

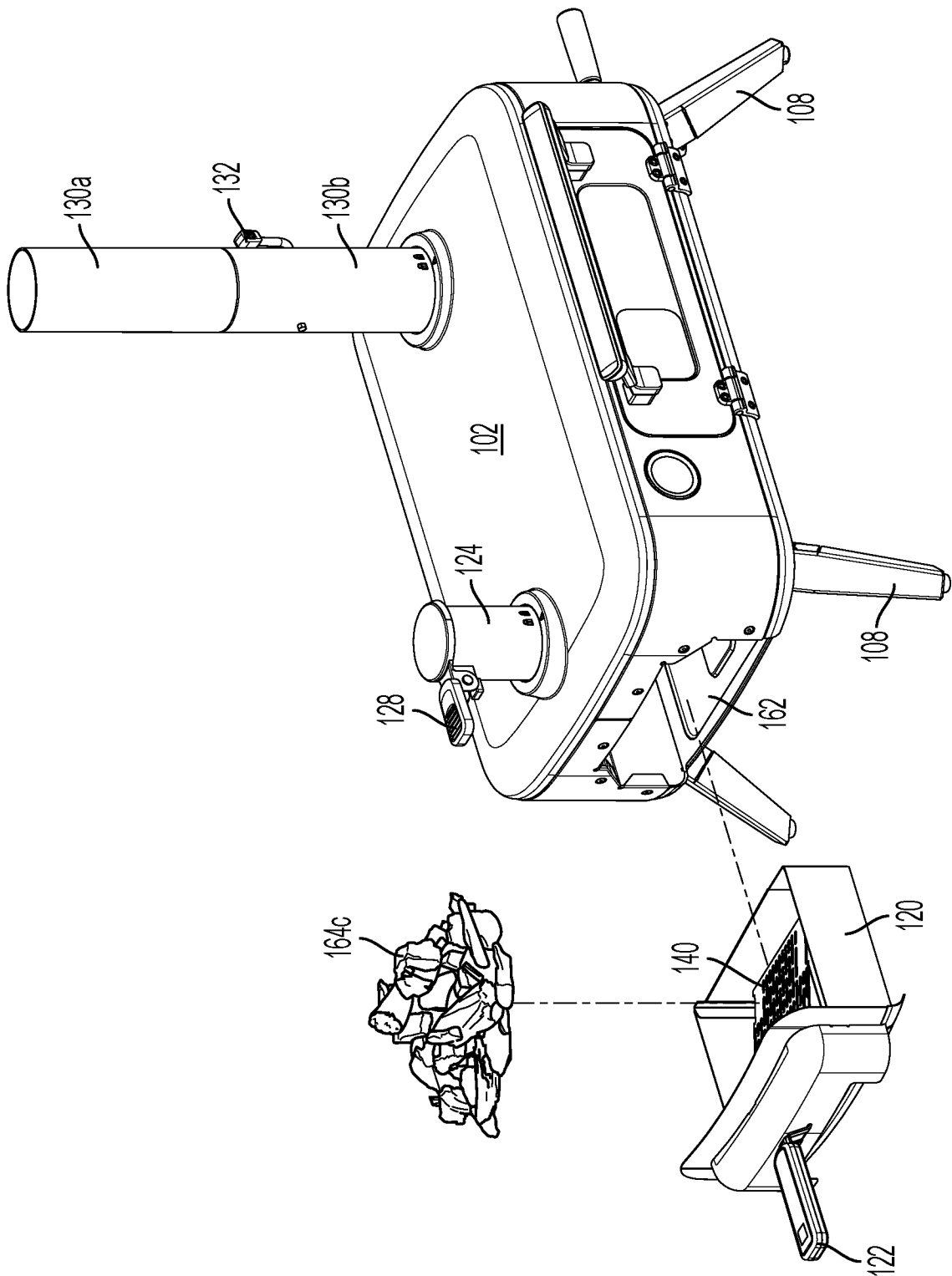


FIG. 29A

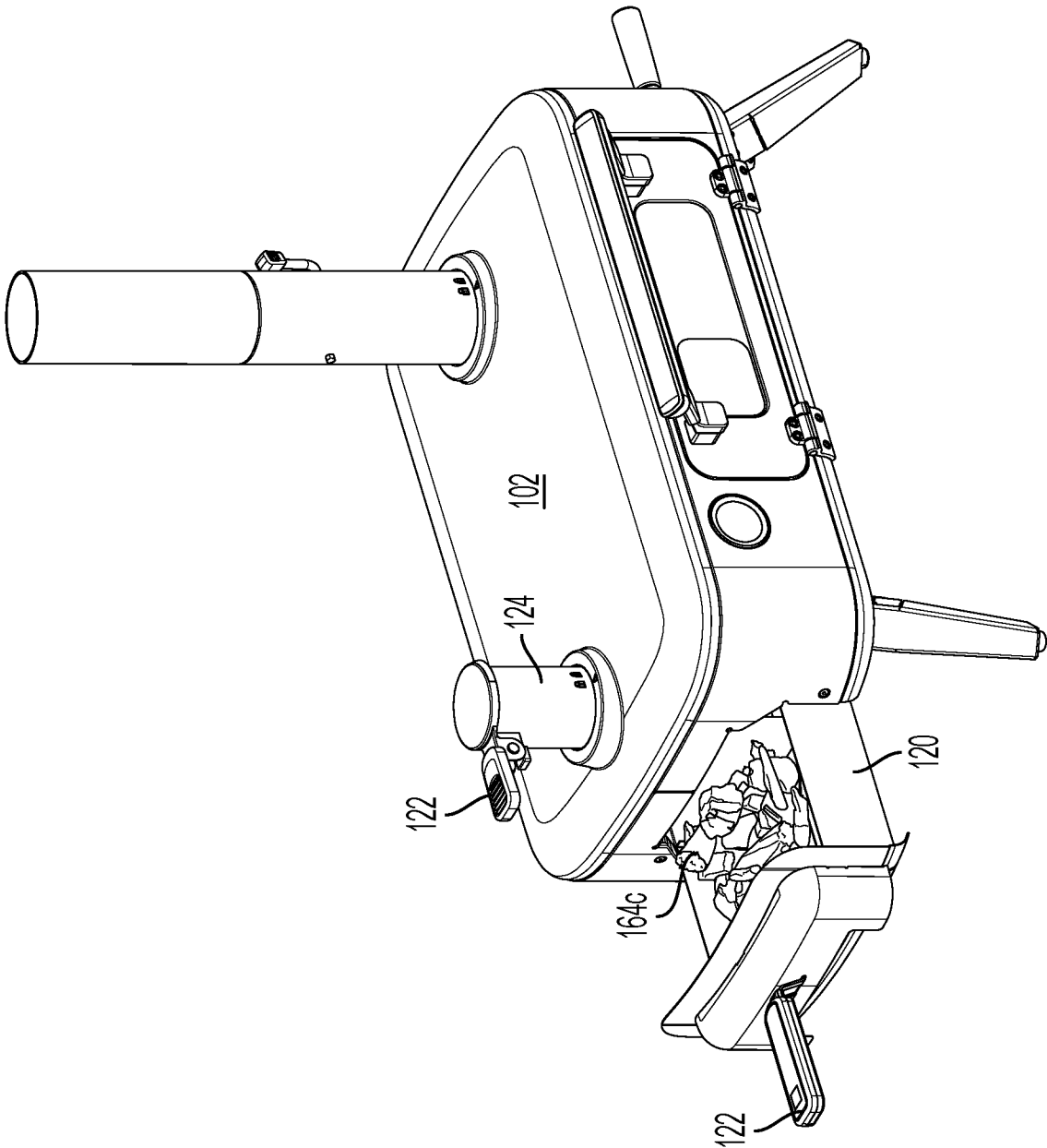


FIG. 29B

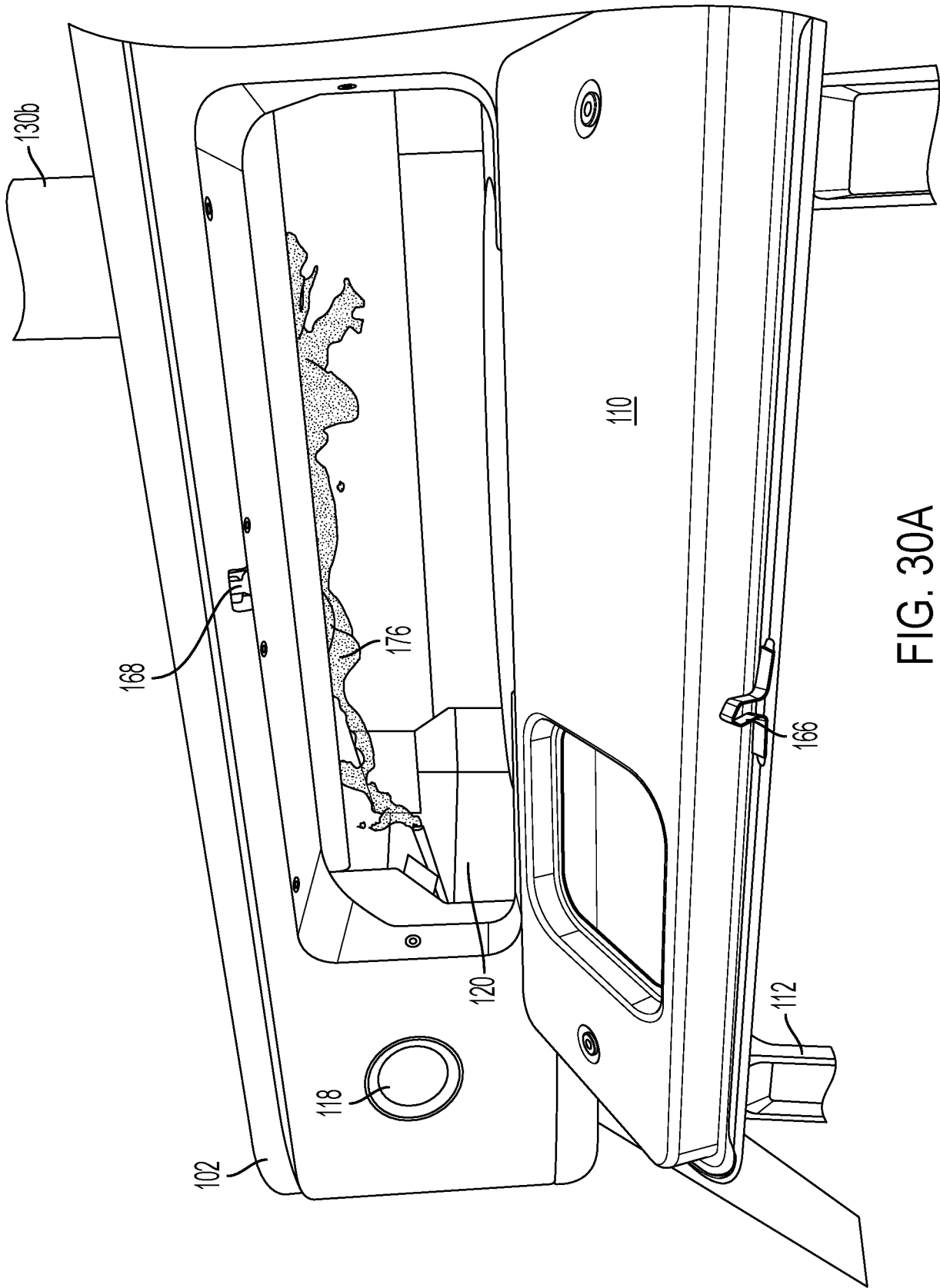


FIG. 30A

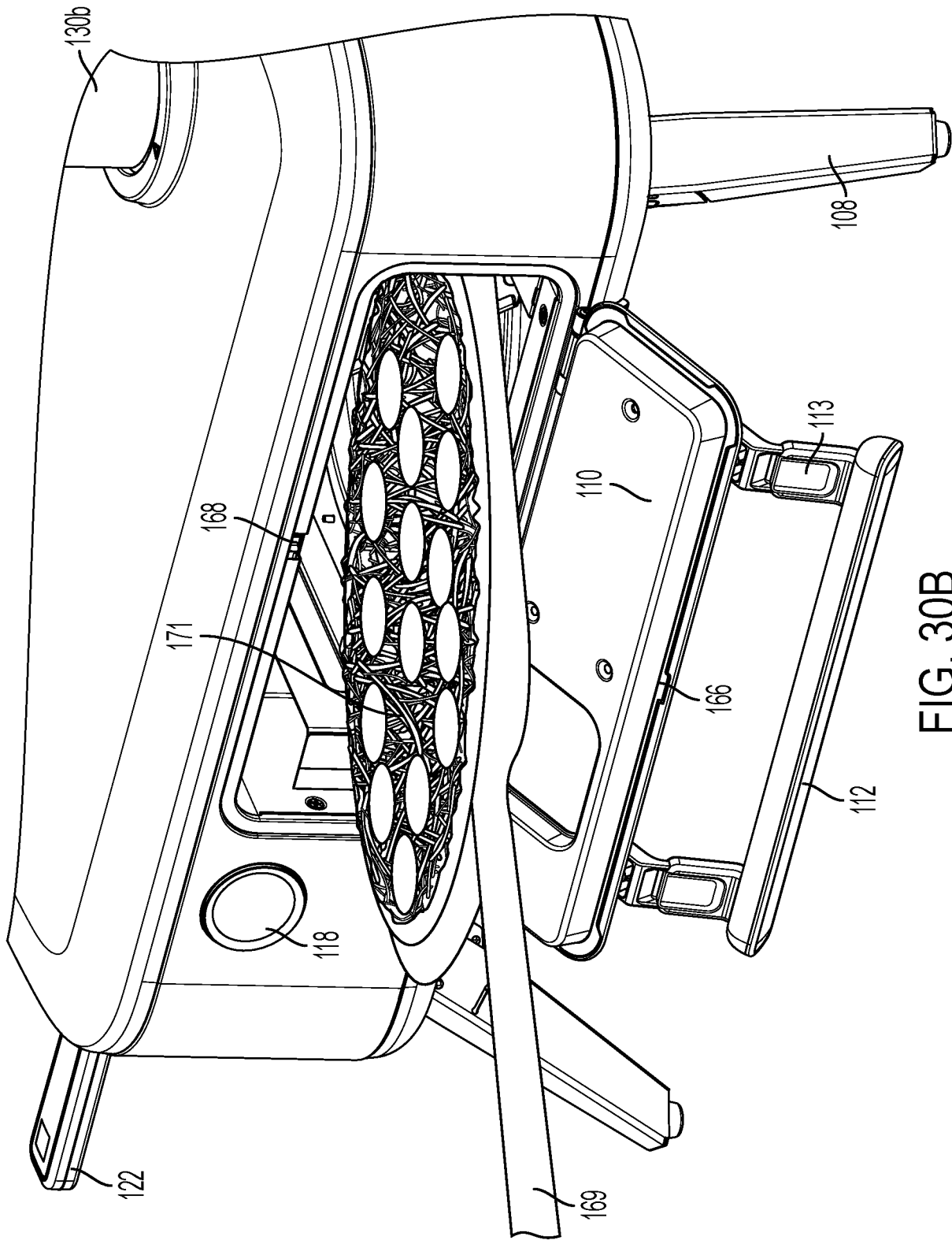
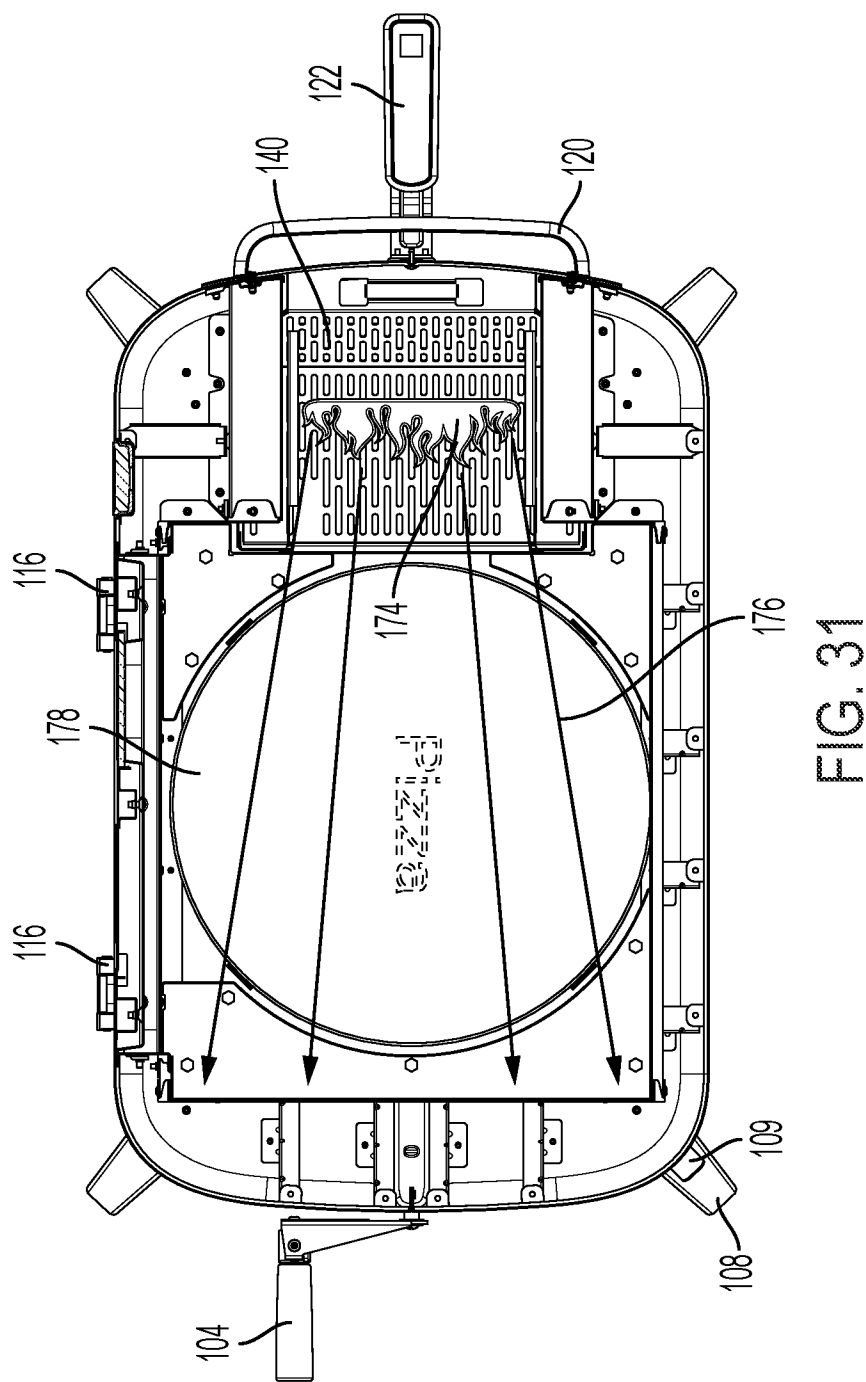


FIG. 30B



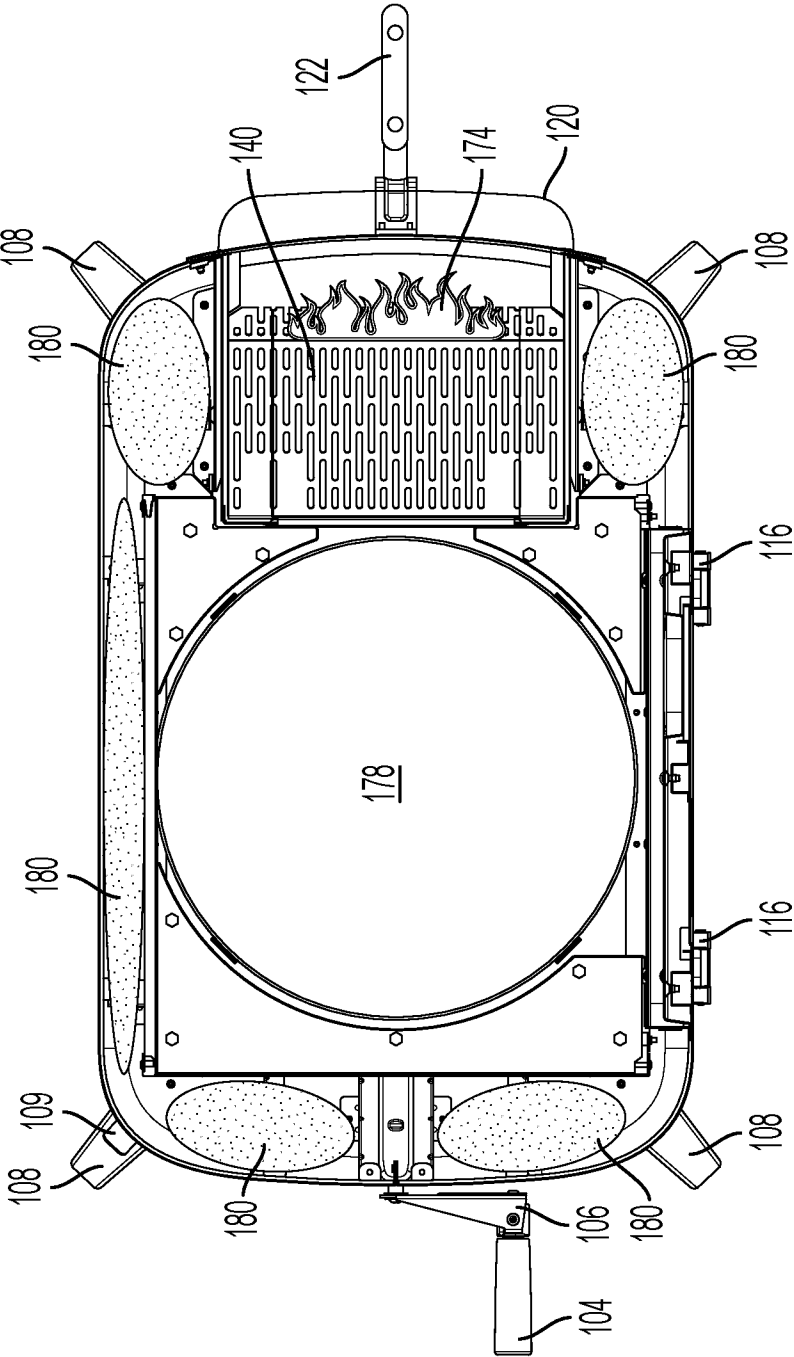


FIG. 32

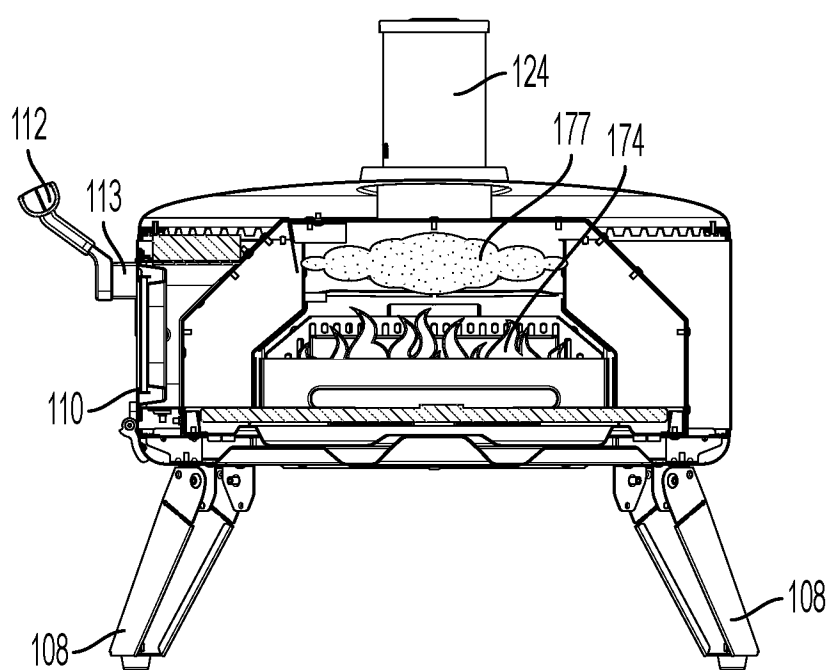


FIG. 33

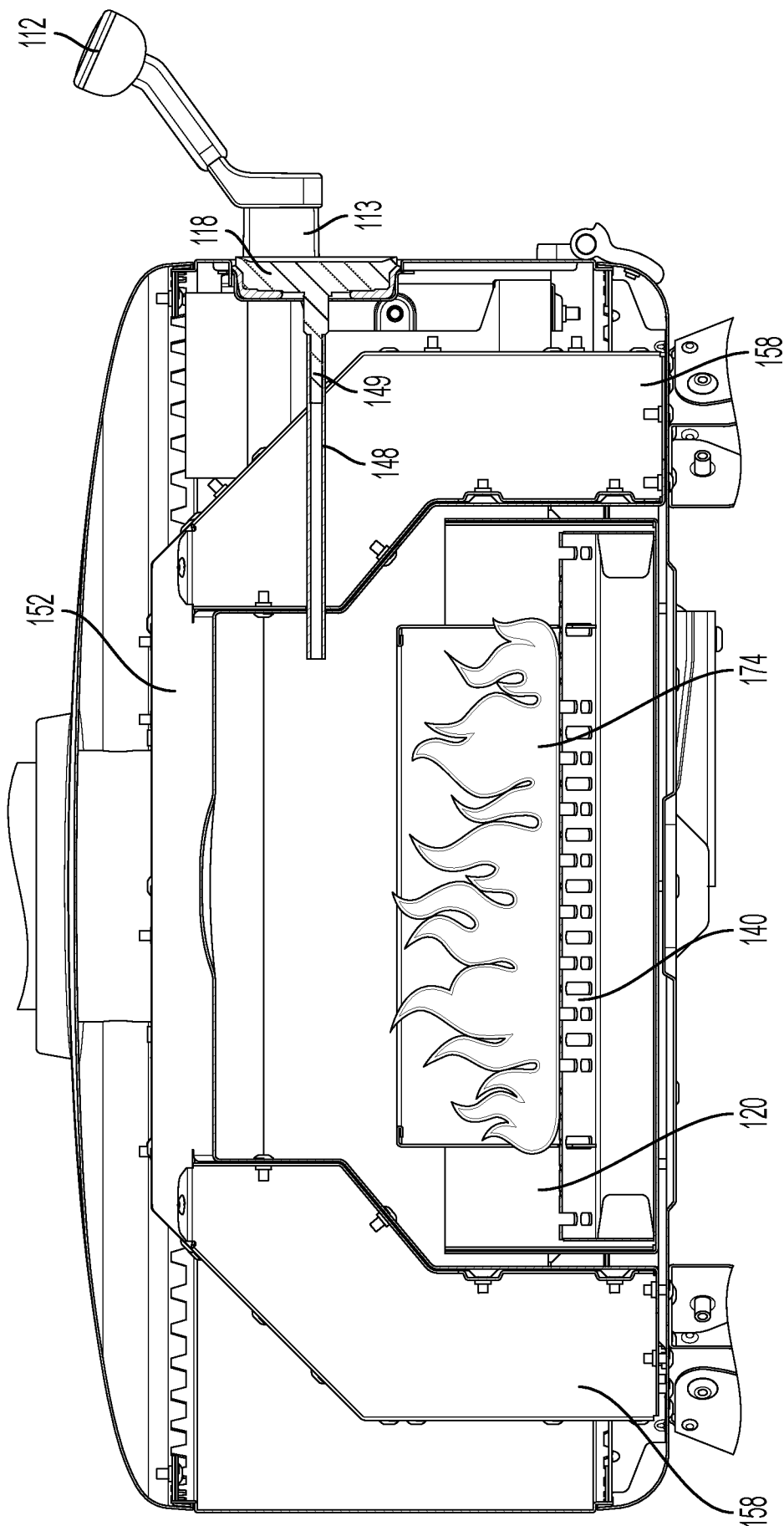


FIG. 34

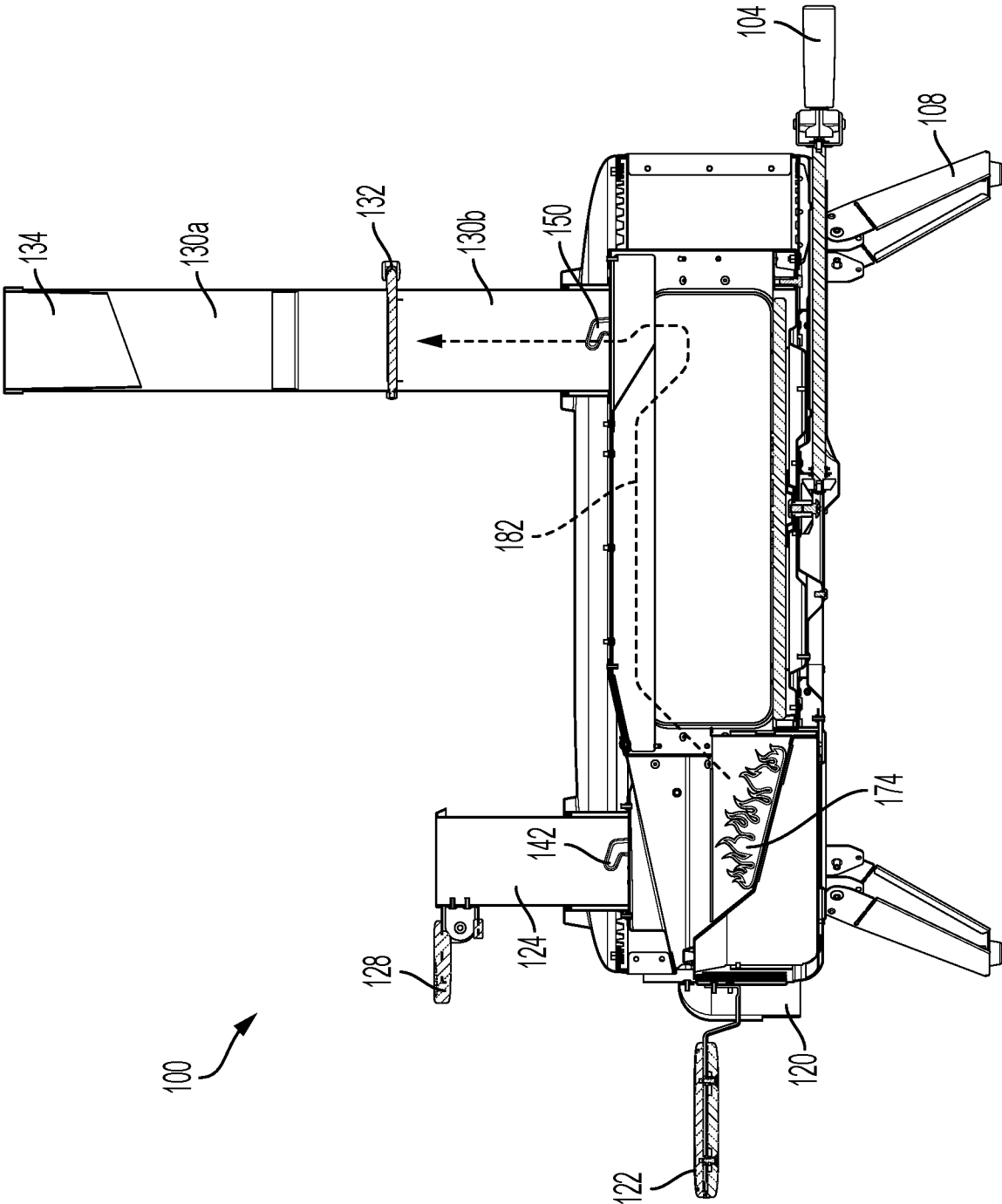


FIG. 35

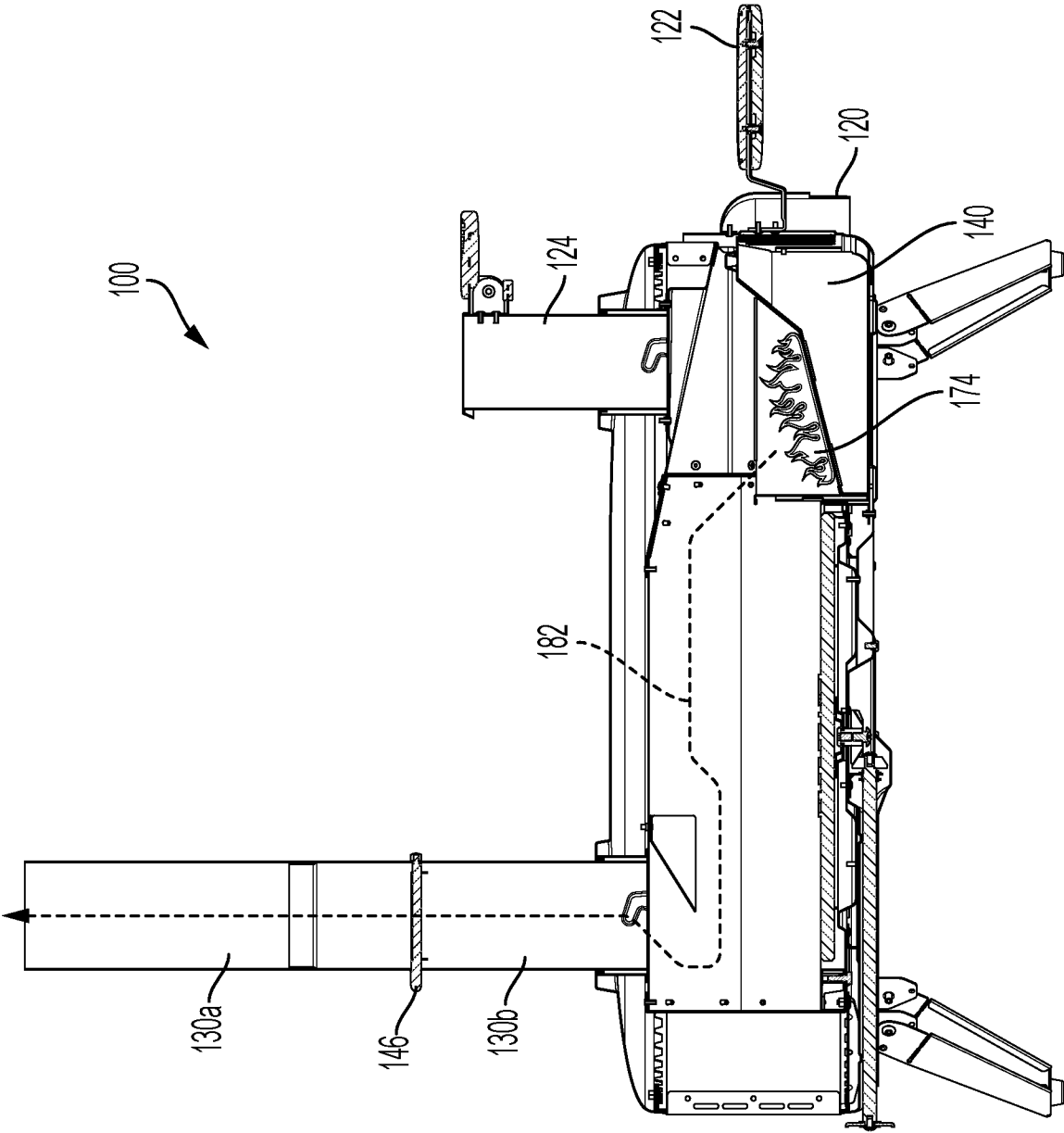


FIG. 36

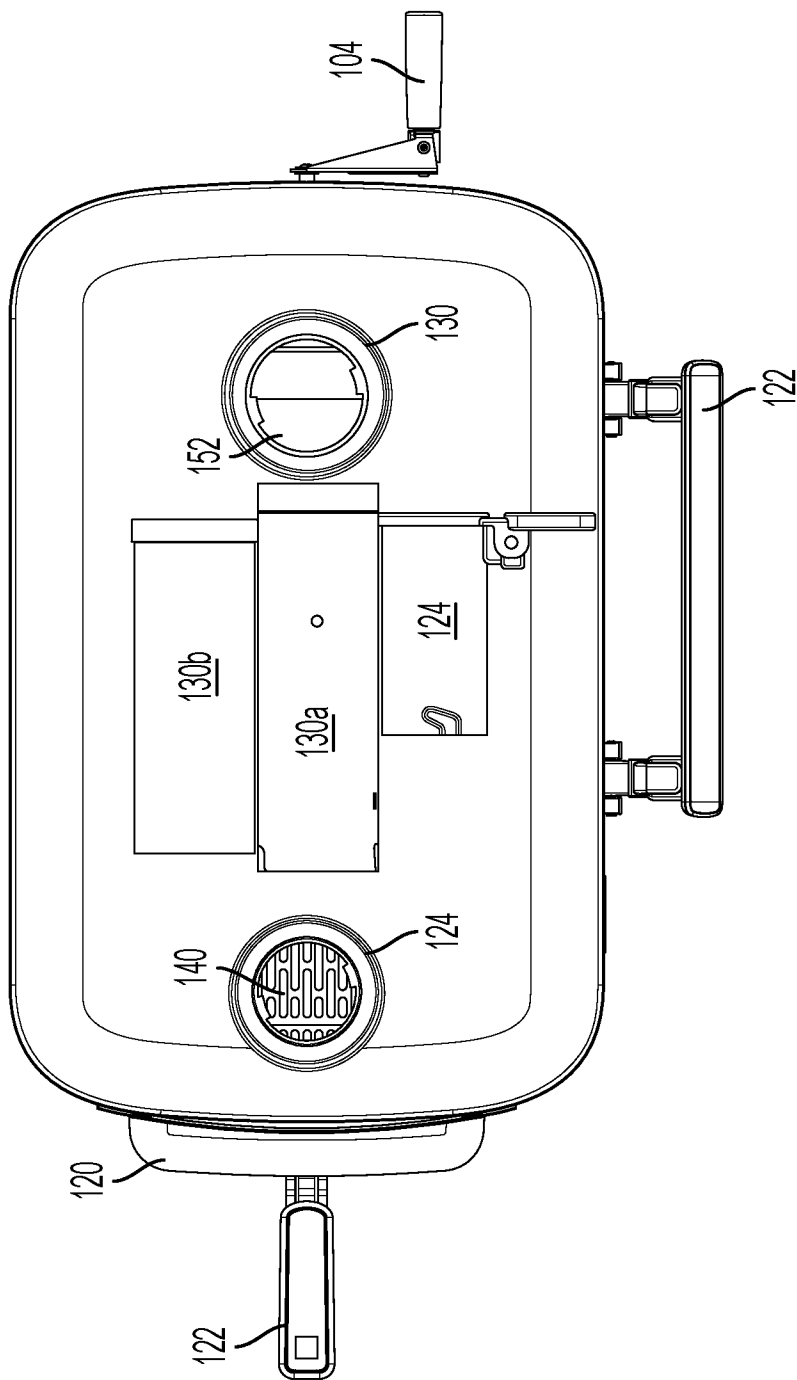


FIG. 37

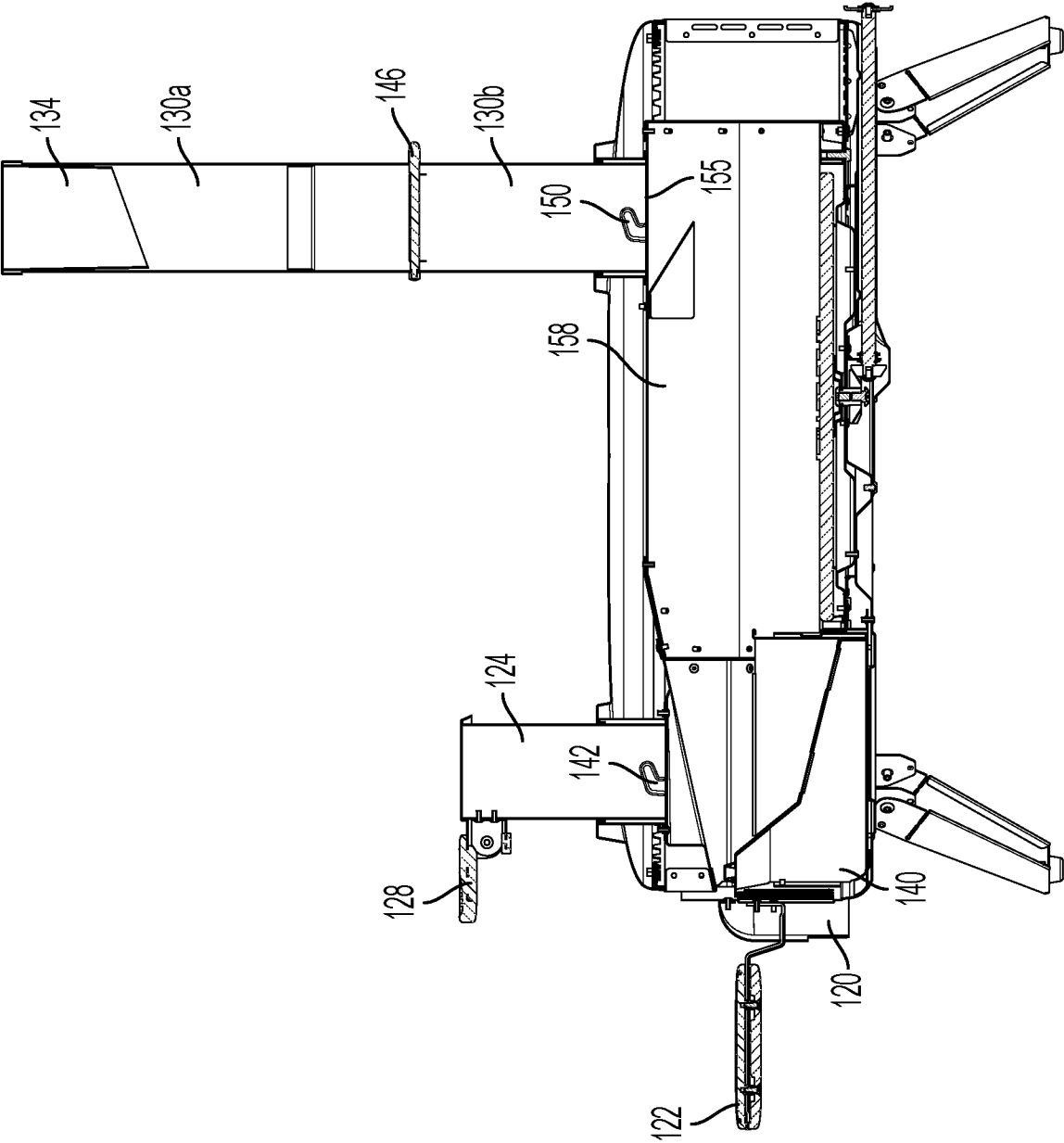


FIG. 38A

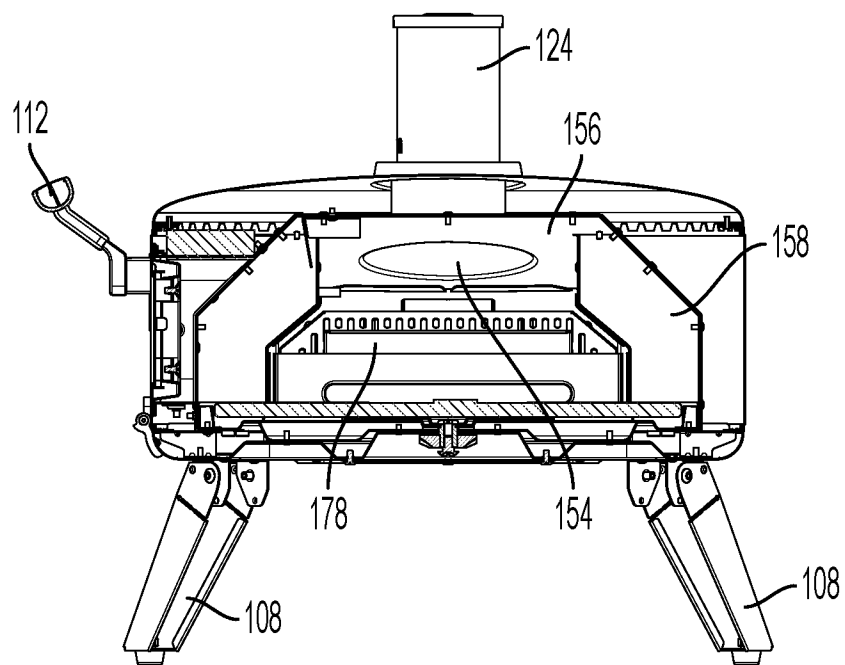


FIG. 38B

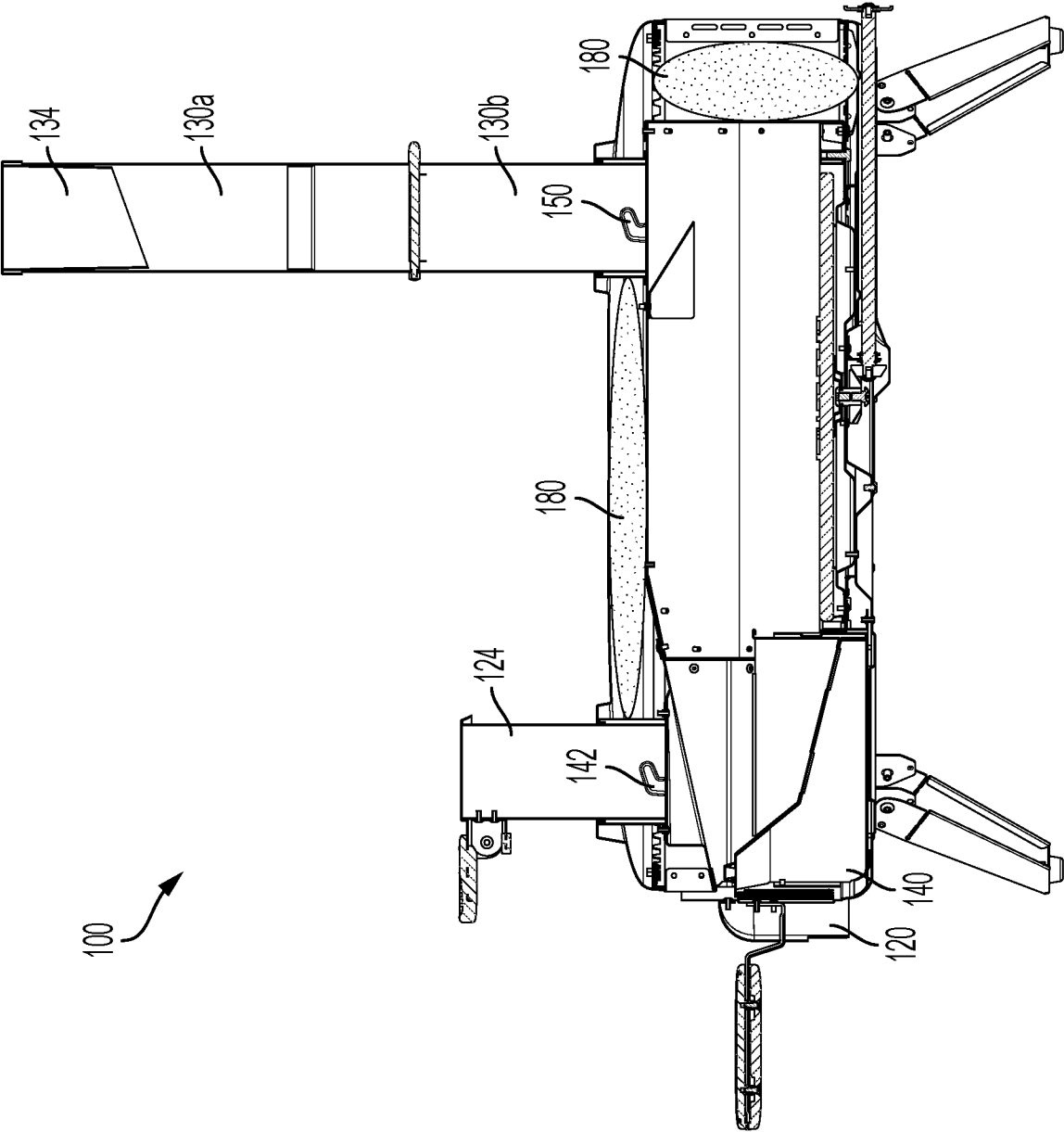


FIG. 39A

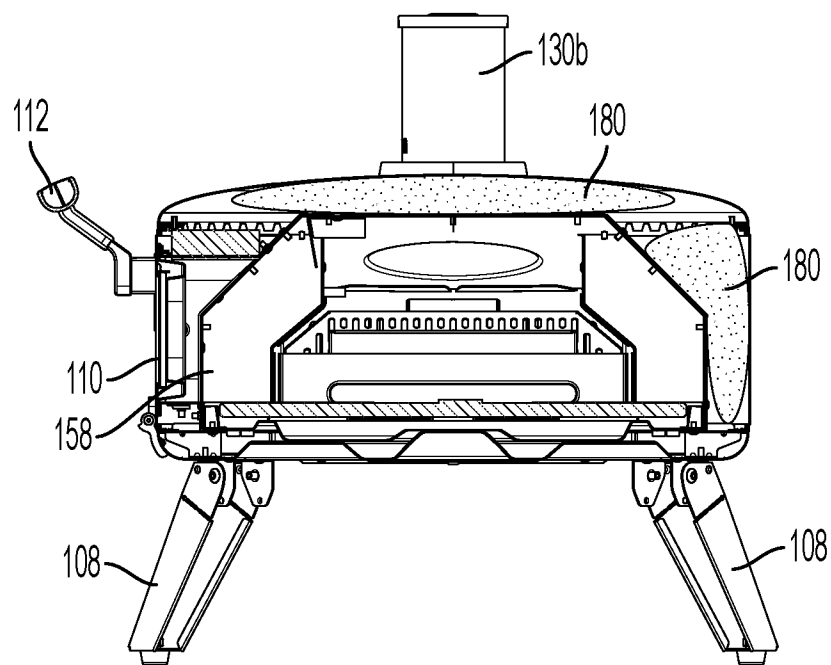
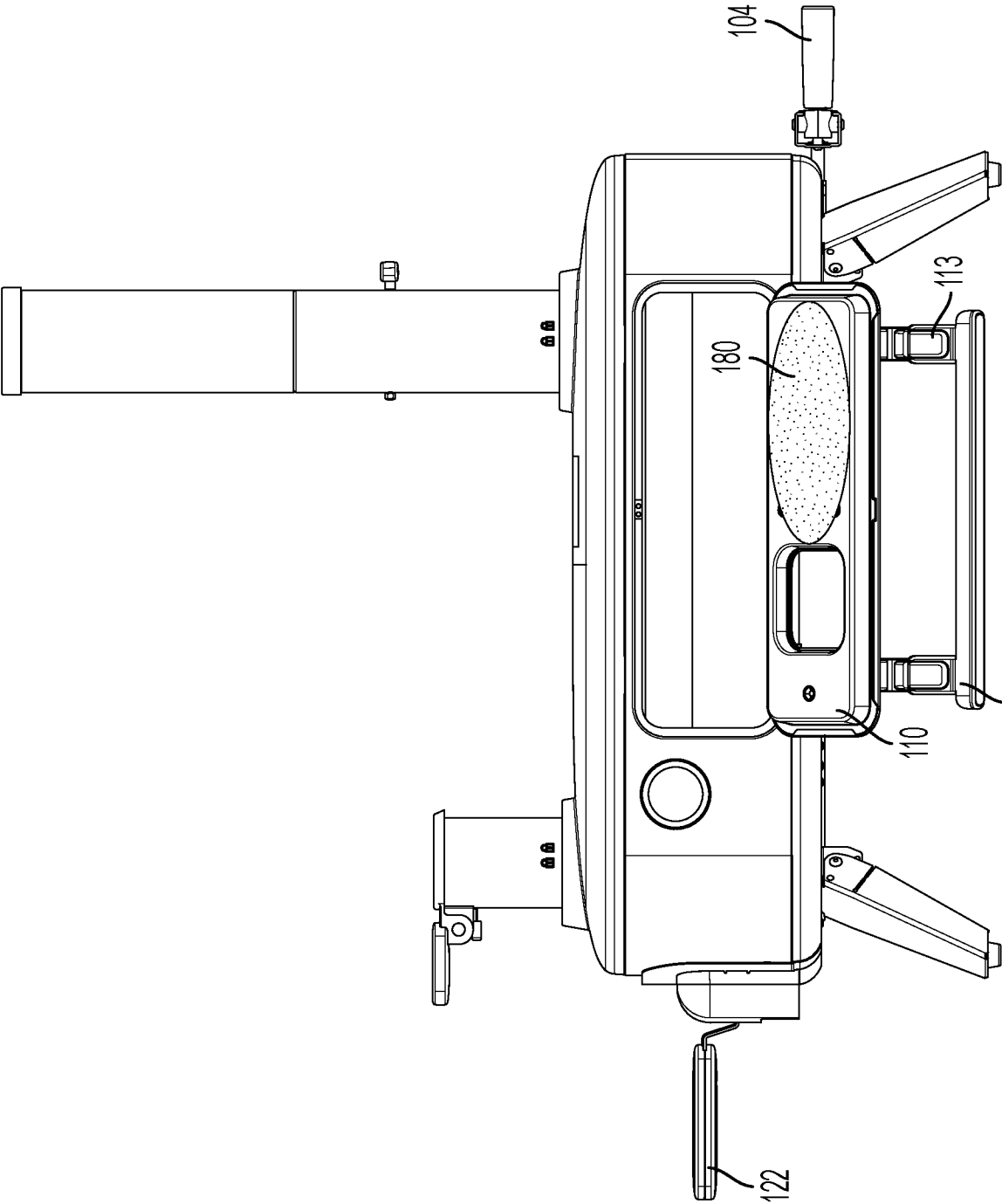


FIG. 39B



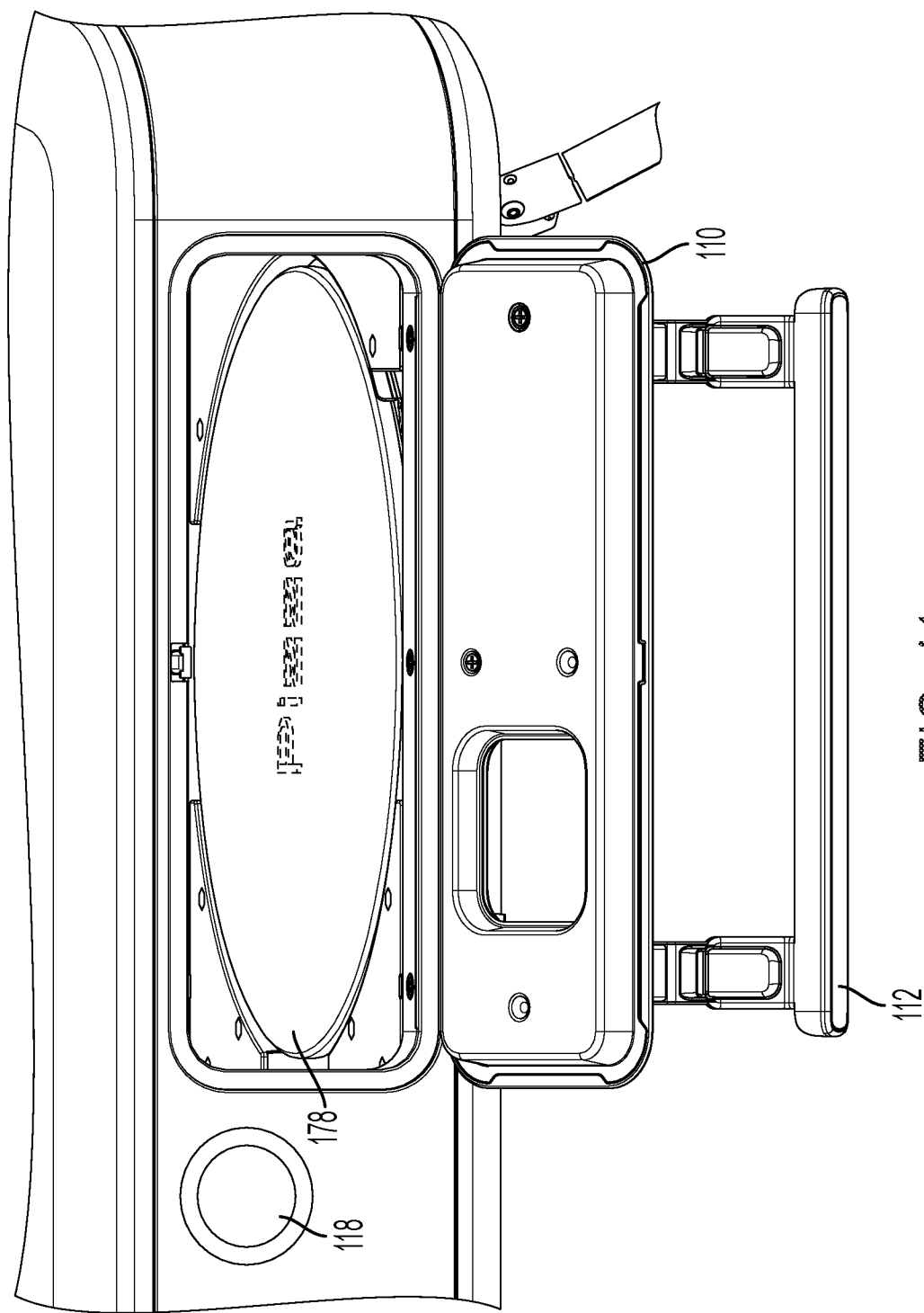


FIG. 41

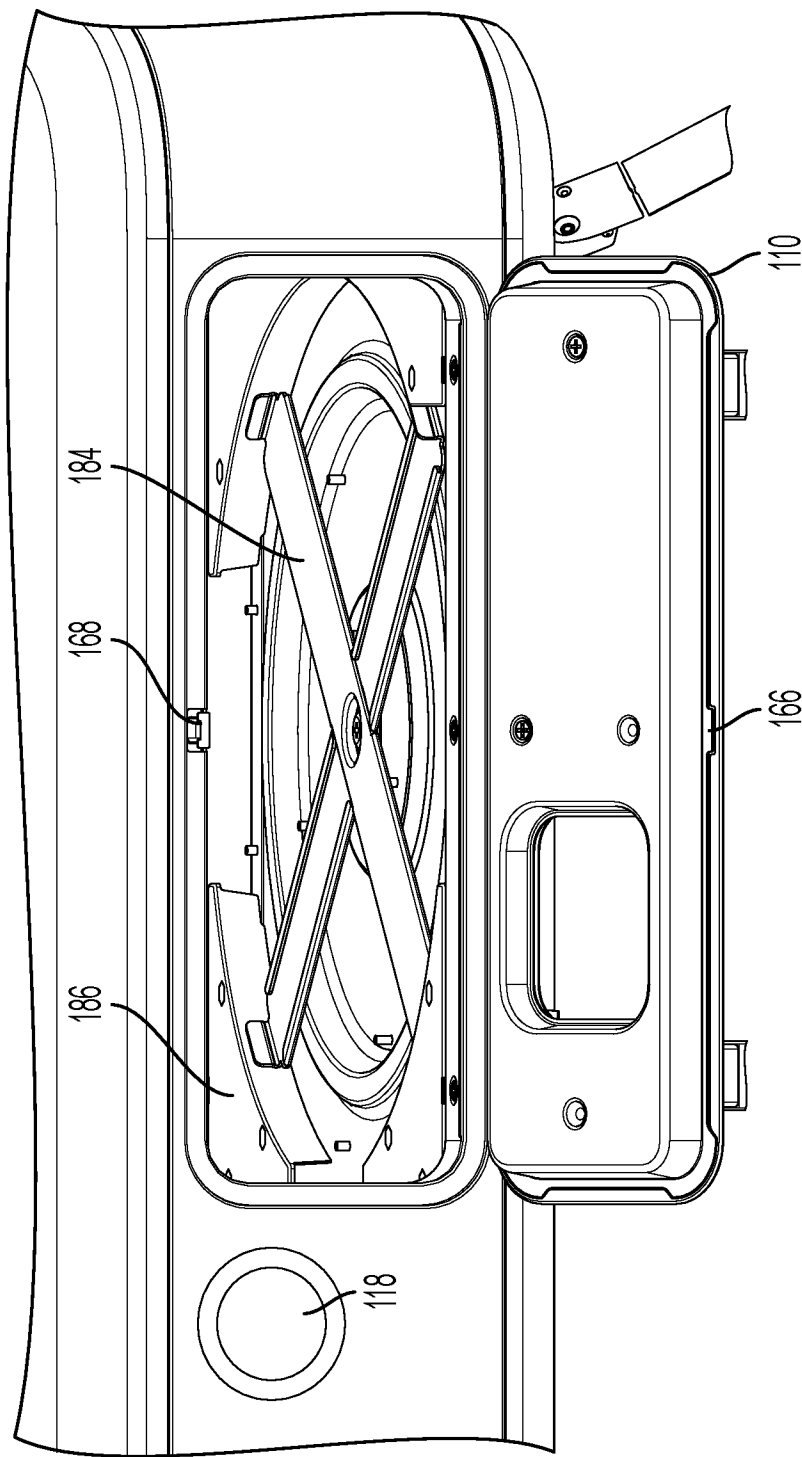


FIG. 42

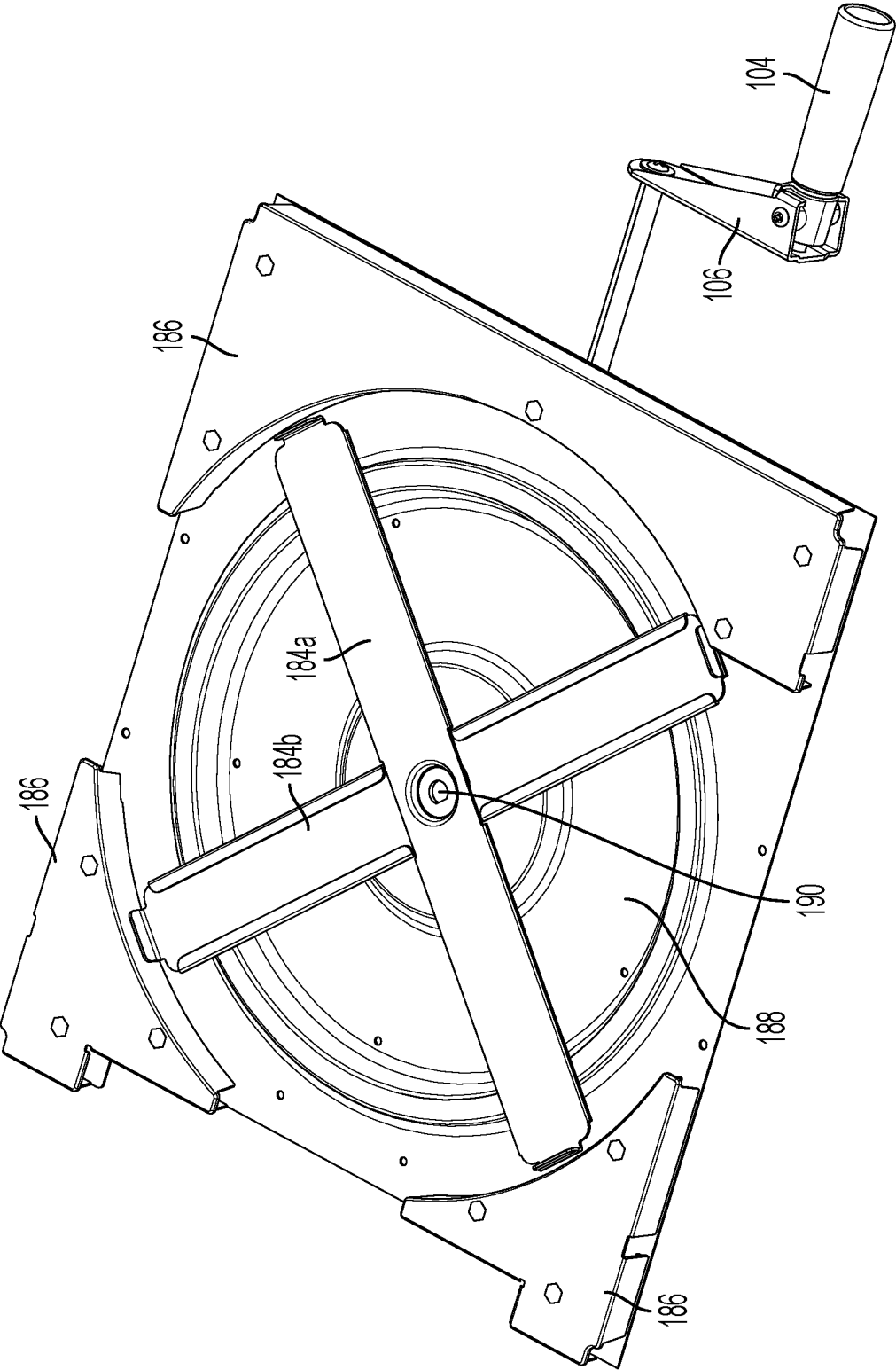


FIG. 43

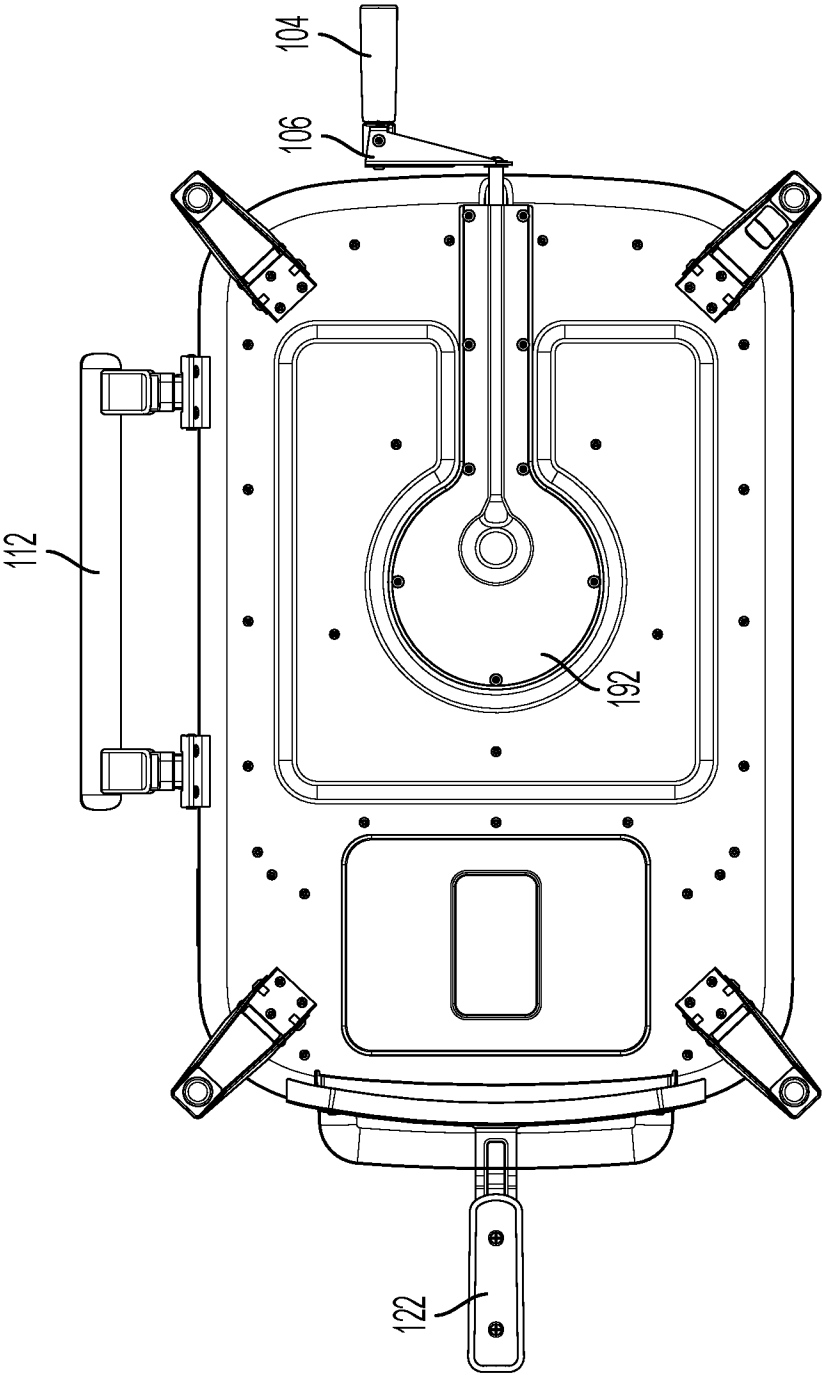


FIG. 44

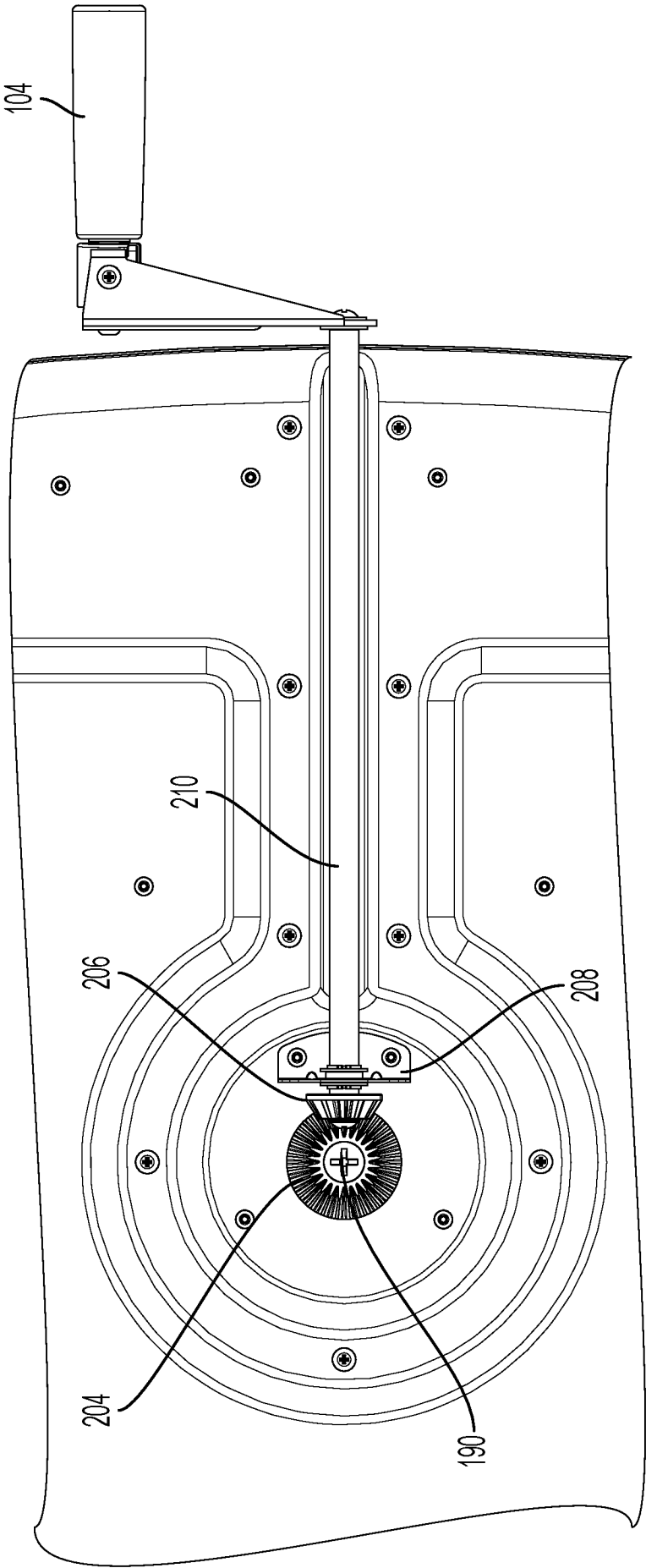


FIG. 45

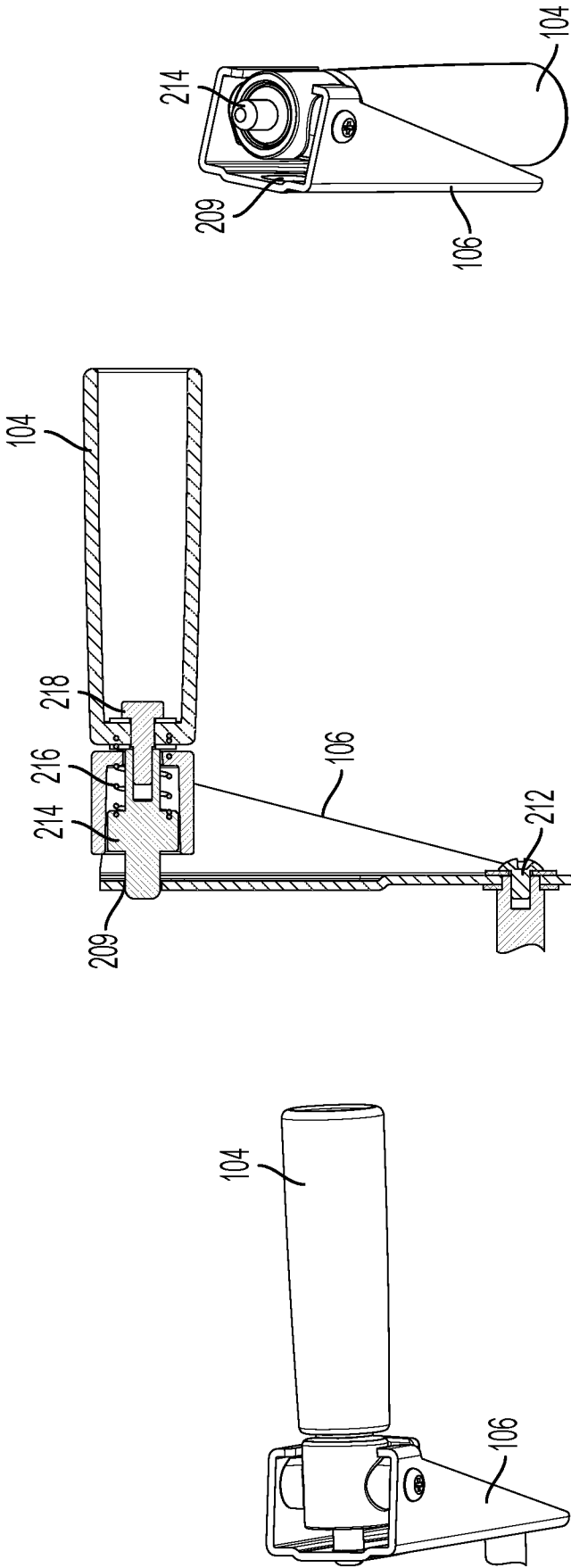


FIG. 46

FIG. 47

FIG. 48

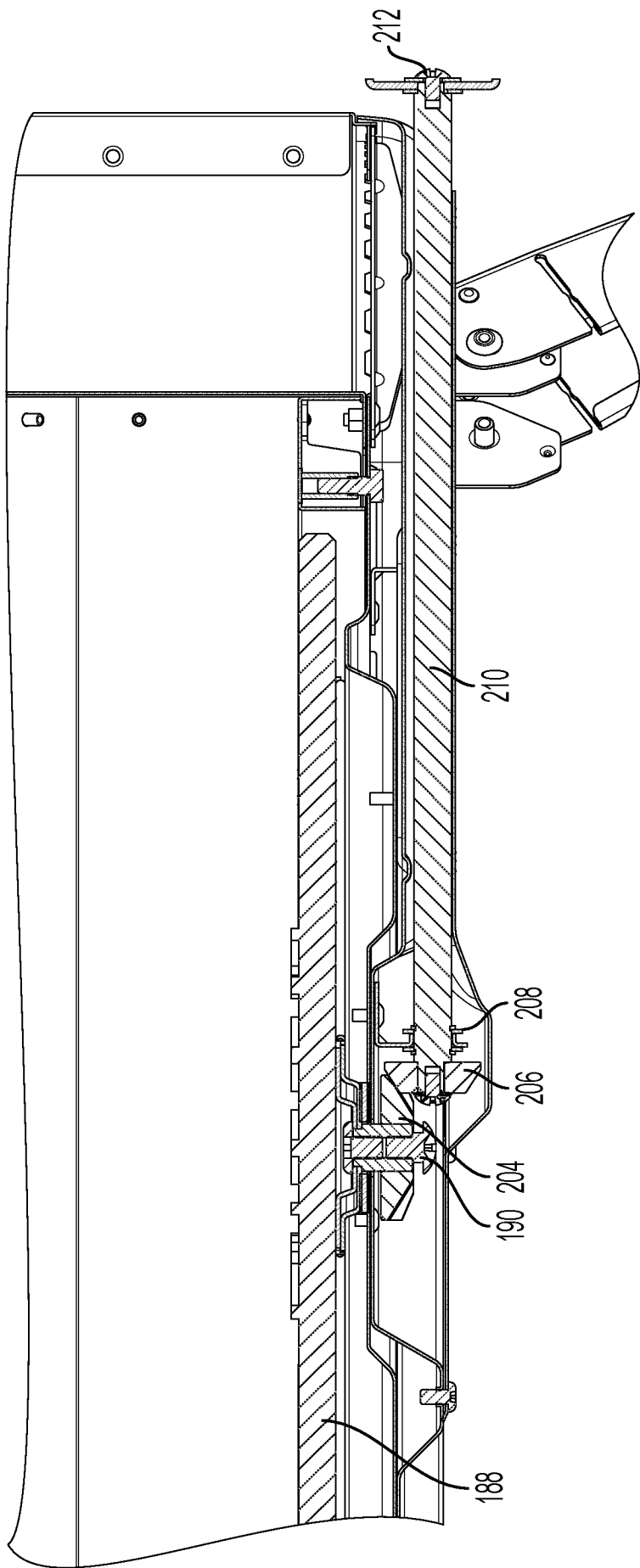


FIG. 49

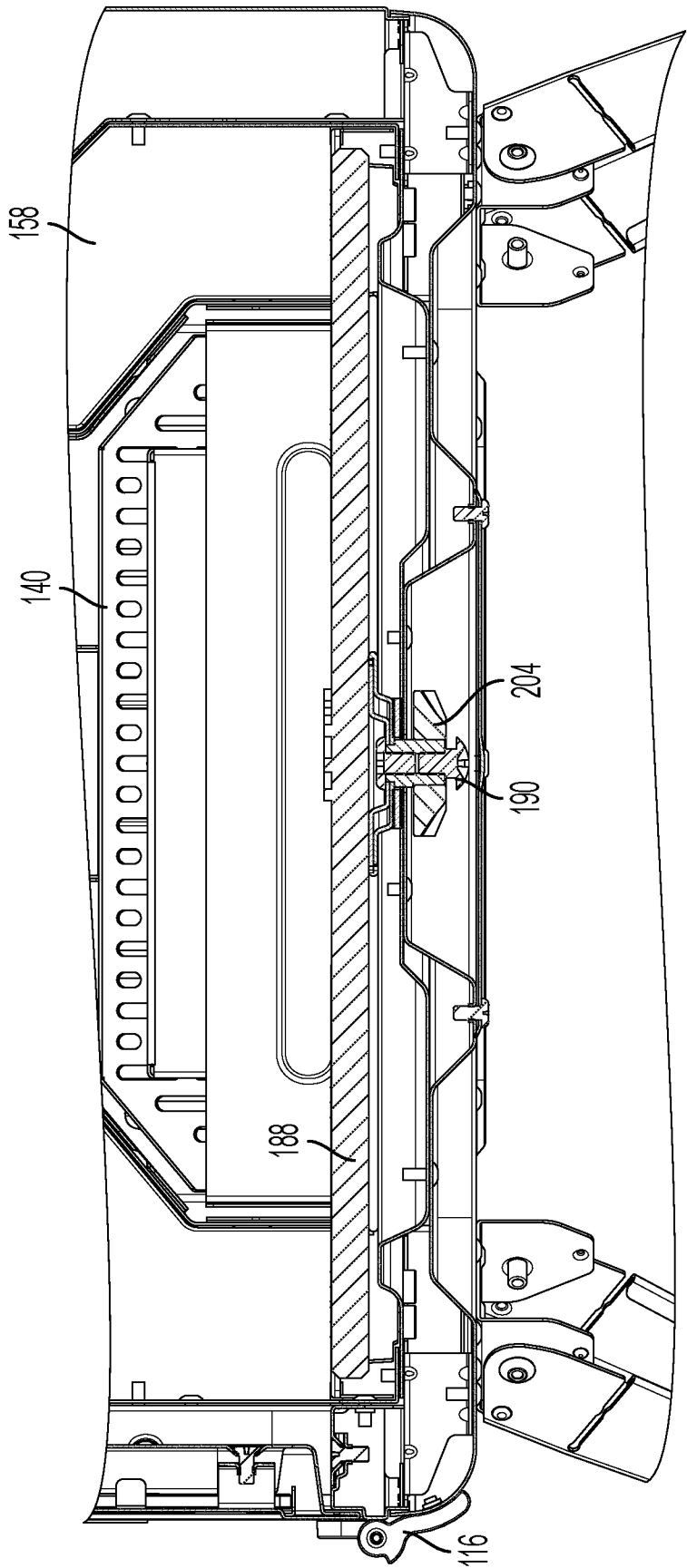


FIG. 50

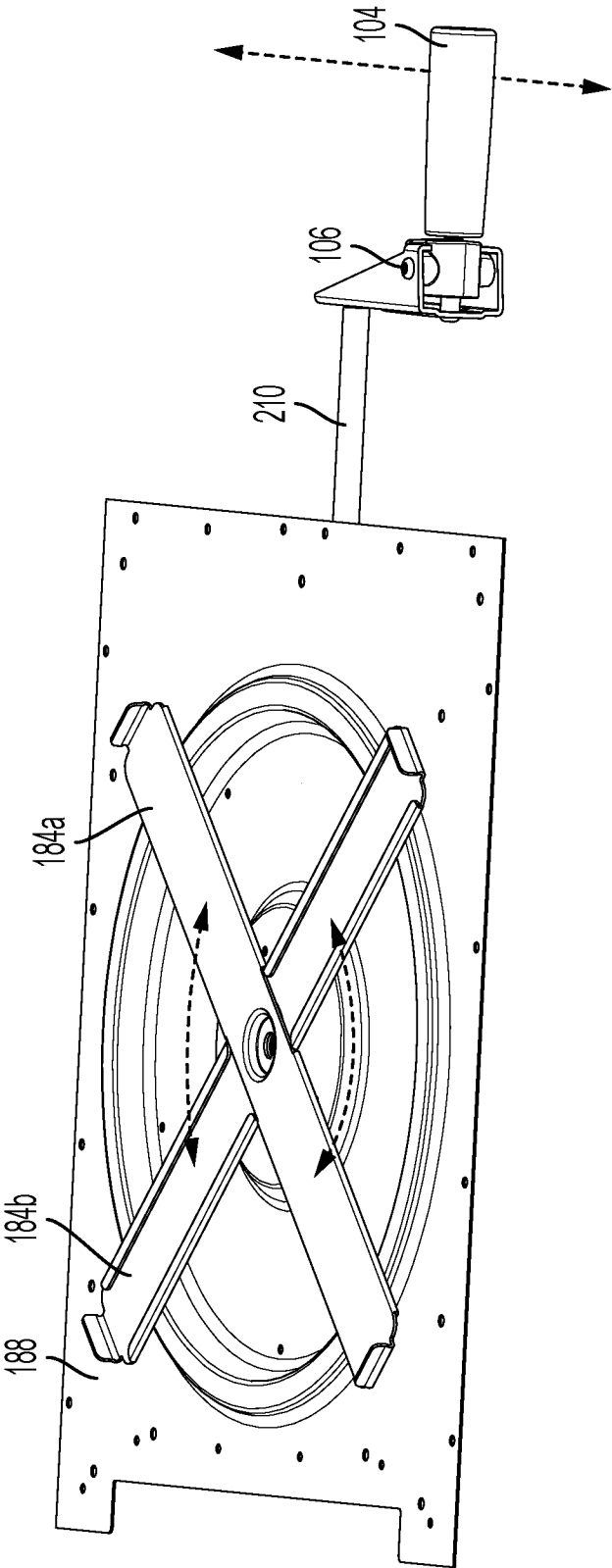
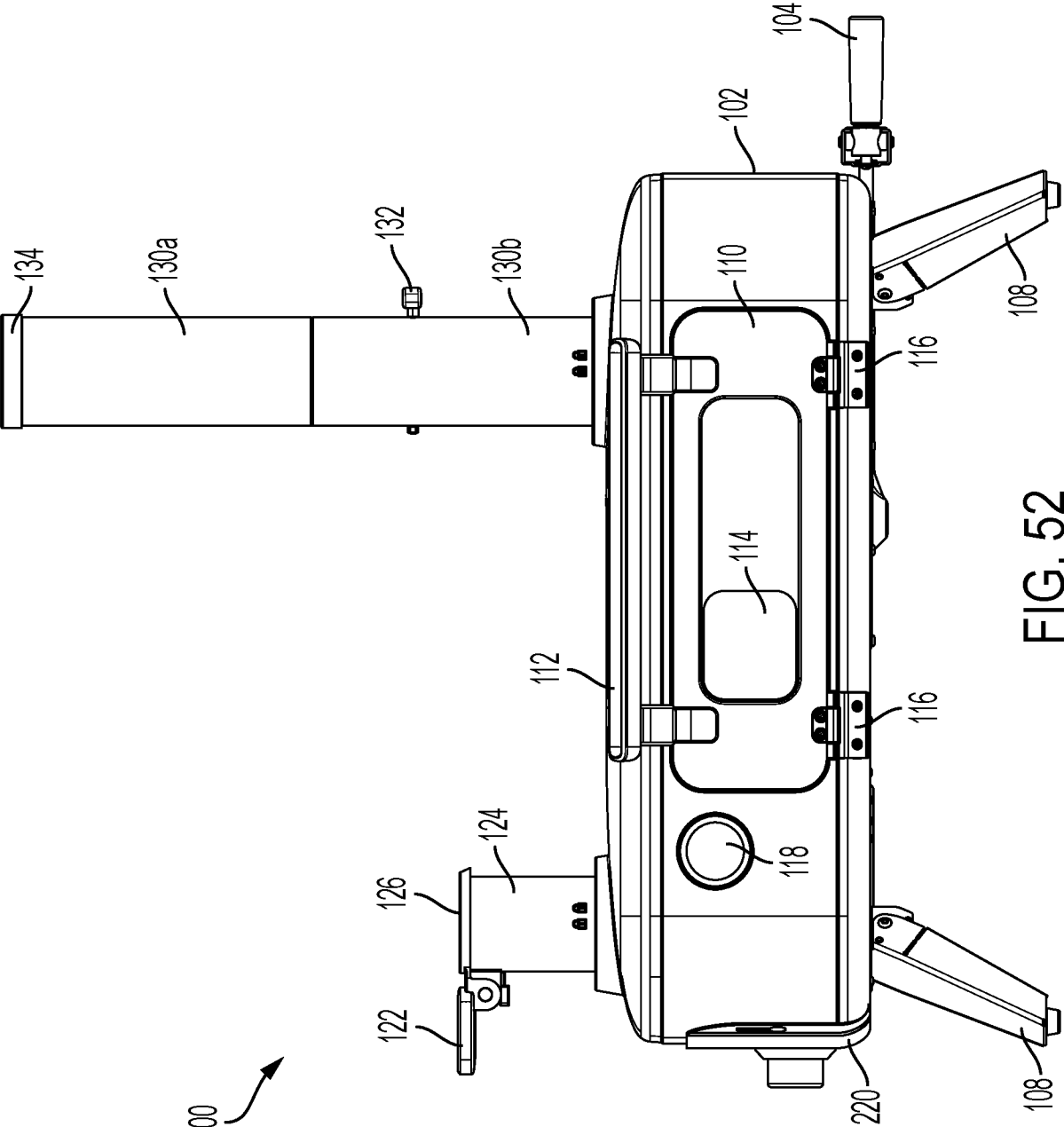


FIG. 51



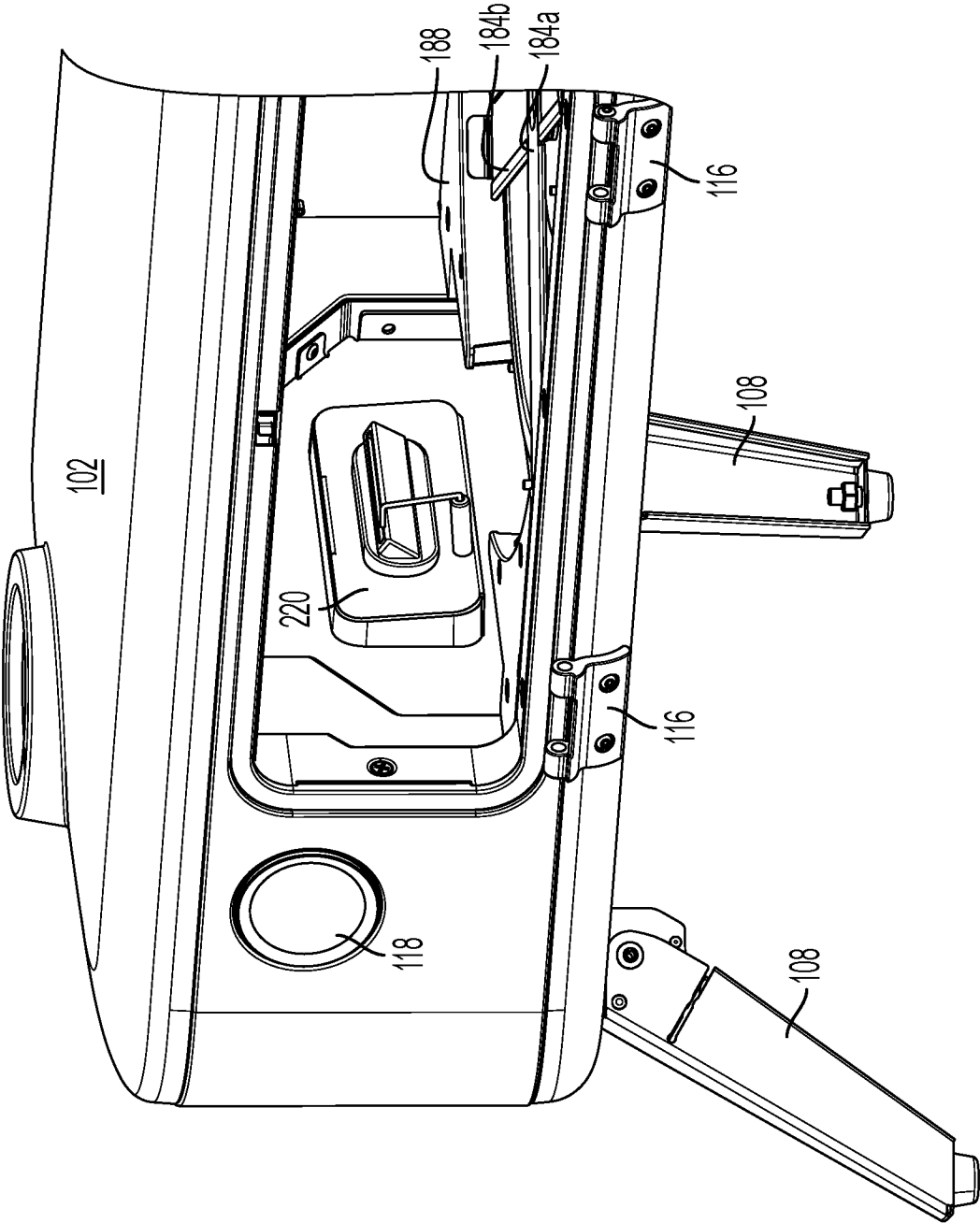


FIG. 53

220

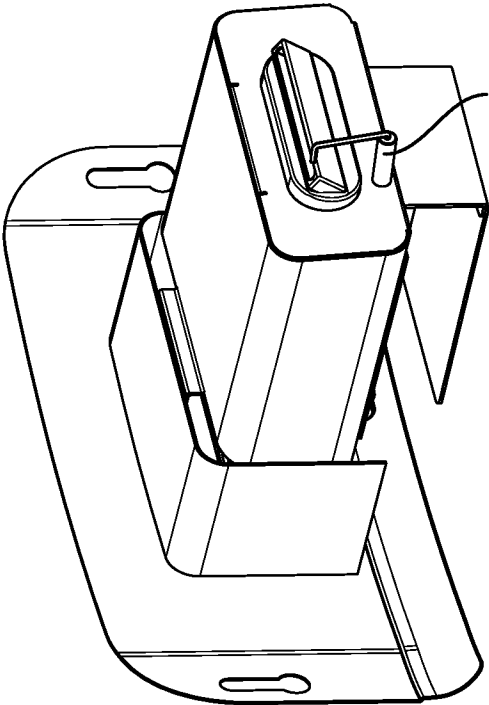


FIG. 54

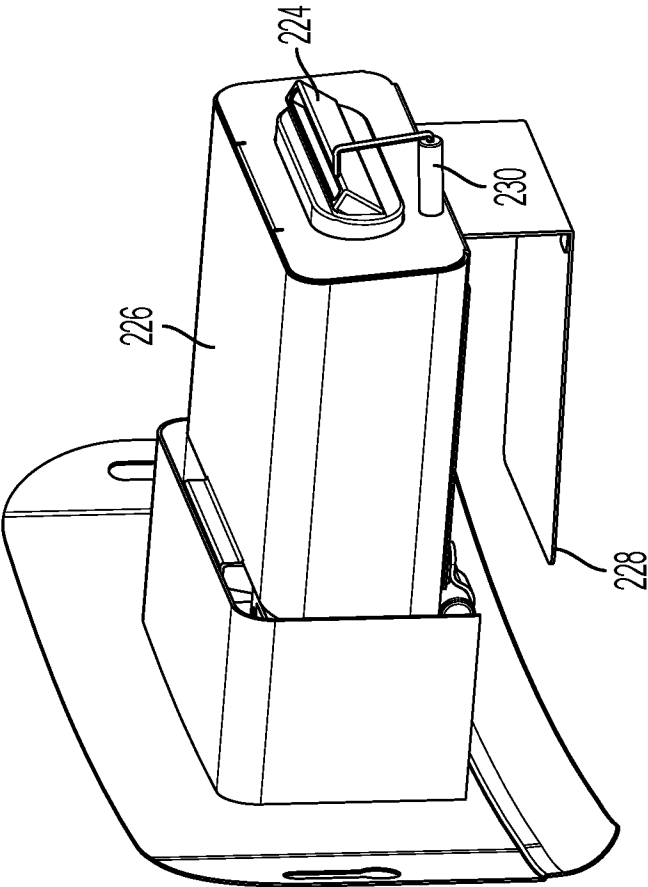


FIG. 55

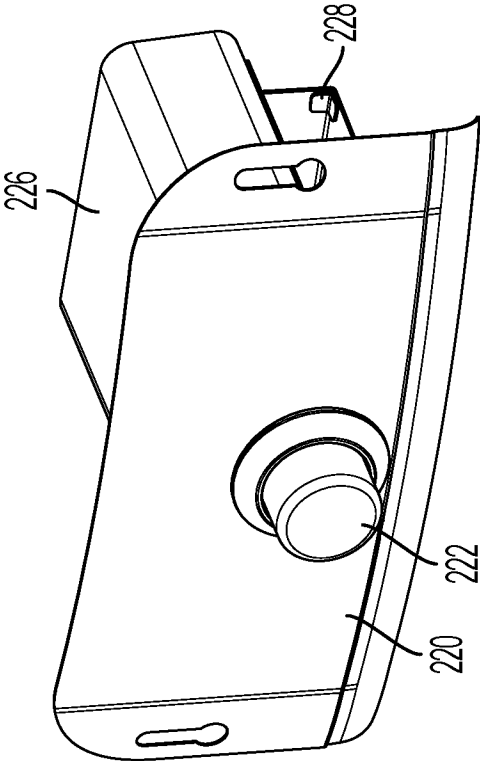


FIG. 56

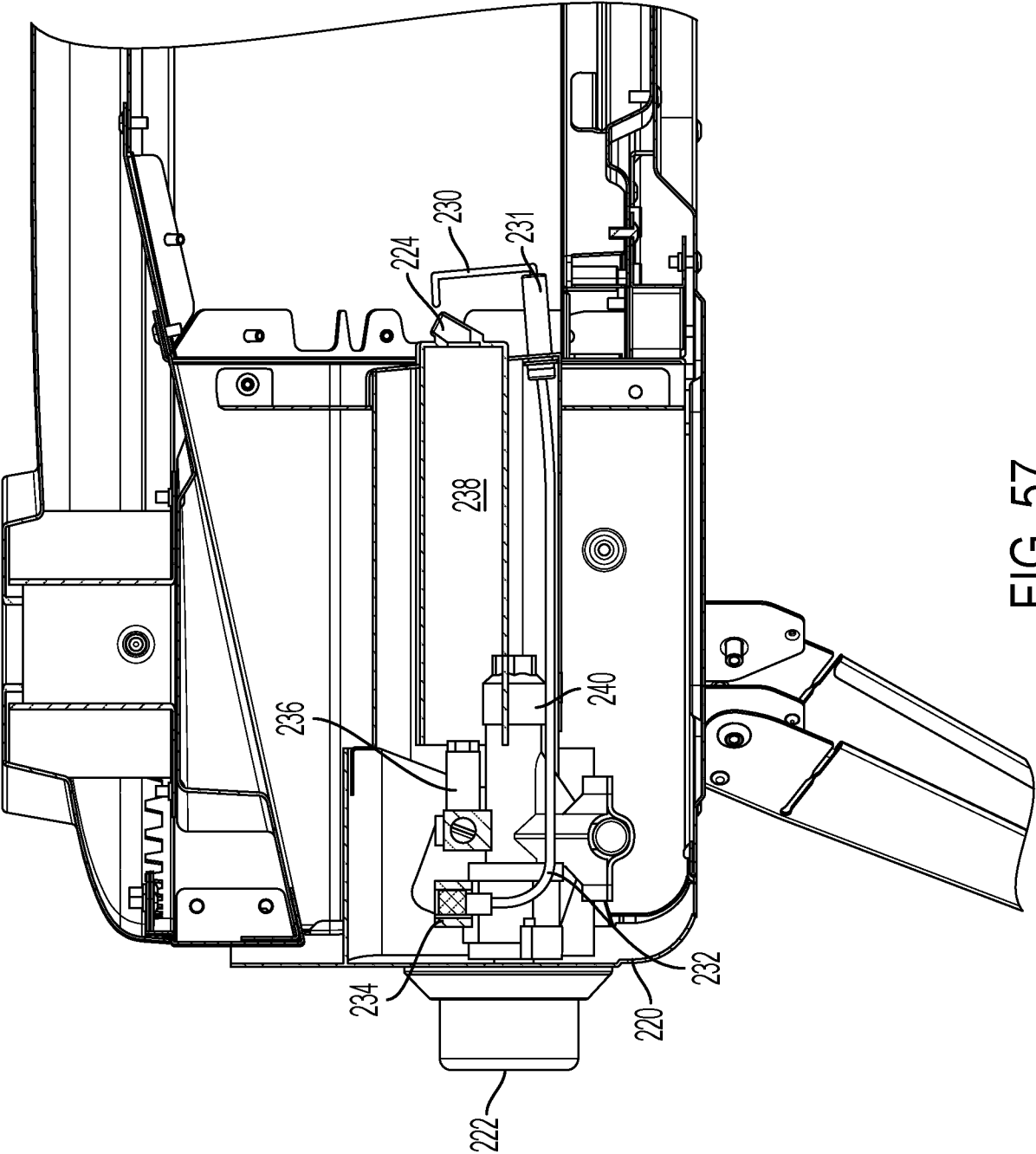


FIG. 57

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2023/085259

**A. CLASSIFICATION OF SUBJECT MATTER**IPC: **A47J 37/06** (2024.01); **A21B 1/44** (2024.01); **A21B 1/28** (2024.01)CPC: **A47J 37/0658**; **A21B 1/44**; **A21B 1/28**

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)

See Search History Document

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

See Search History Document

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

See Search History Document

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category* | Citation of document, with indication, where appropriate, of the relevant passages                                       | Relevant to claim No.           |
|-----------|--------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| X         | US 2022/0061588 A1 (DONGGUAN HAOHONG OUTDOOR PRODUCTS TECHNOLOGY CO. LTD.) 03 March 2022 (03.03.2022)<br>entire document | 1, 4, 35, 38, 44-49, 51, 53, 54 |
| Y         | entire document                                                                                                          | 2, 3, 5, 36, 37, 39-43, 50, 52  |
| Y         | US 2022/0386626 A1 (GUANGDONG SHENG BAO INDUSTRIAL CO. LTD.) 08 December 2022 (08.12.2022)<br>entire document            | 2, 37                           |
| Y         | US 4,089,319 A (TAMADA et al.) 16 May 1978 (16.05.1978)<br>entire document                                               | 3, 50, 52                       |
| Y         | US 5,027,787 A (GORTON) 02 July 1991 (02.07.1991)<br>entire document                                                     | 5, 39, 40                       |
| Y         | US 2022/0304505 A1 (OONI LIMITED) 29 September 2022 (29.09.2022)<br>entire document                                      | 36                              |



Further documents are listed in the continuation of Box C.



See patent family annex.

\* Special categories of cited documents:

“A” document defining the general state of the art which is not considered to be of particular relevance

“D” document cited by the applicant in the international application

“E” earlier application or patent but published on or after the international filing date

“L” document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

“O” document referring to an oral disclosure, use, exhibition or other means

“P” document published prior to the international filing date but later than the priority date claimed

“T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

“X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

“Y” document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

“&” document member of the same patent family

Date of the actual completion of the international search

**27 February 2024 (27.02.2024)**

Date of mailing of the international search report

**10 April 2024 (10.04.2024)**

Name and mailing address of the ISA/US

**Mail Stop PCT, Attn: ISA/US**  
**Commissioner for Patents**  
**P.O. Box 1450, Alexandria, VA 22313-1450**

Facsimile No. **571-273-8300**

Authorized officer

**MATOS**  
**TAINA**

Telephone No. **571-272-4300**

**INTERNATIONAL SEARCH REPORT**

International application No.

**PCT/US2023/085259**

| <b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b> |                                                                                                            |                       |
|-----------------------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------|
| Category*                                     | Citation of document, with indication, where appropriate, of the relevant passages                         | Relevant to claim No. |
| Y                                             | WO 2022/246073 A2 (HYPERDESIGN LLC) 24 November 2022 (24.11.2022)<br>entire document                       | 41-43                 |
| A                                             | US 2020/0390111 A1 (HAIER US APPLIANCE SOLUTIONS INC.) 17 December 2020<br>(17.12.2020)<br>entire document | 1-5, 35-54            |

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2023/085259

**Box No. III      Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: **1-5, 35-54**

**Remark on Protest**

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claims 1-5 and 35-54, is drawn to an improved baking oven comprising: an oven body, the oven being including a baking chamber; a rotatable tray.

Group II, claims 6-19, is drawn to a cooking apparatus comprising: an oven, the oven comprising a cooking chamber; a heated air source.

Group III, claims 20-34, is drawn to an improved rotatable cooking oven, comprising: a rotating plate; a drive shaft.

The inventions listed as Groups I, II and III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical feature of the Group I invention: the oven being including a baking chamber; a rotatable tray; a fuel tray, the fuel tray configured to accept a number of fuel sources for heating the oven body; an oven door, the oven door included on at least one wall of the oven body; a chimney; a control member, the control member is provided on an exterior surface of the oven body; and wherein the fuel chamber and the oven door are offset to one another as claimed therein is not present in the invention of Groups II and III. The special technical feature of the Group II invention: a heated air source; a fuel chamber, the fuel chamber adaptable for different fuel input; a door, the door being perpendicular from the fuel chamber; a chimney; and wherein the cooking chamber extending between the heated air source and the chimney, thereby defining, in use, a heated air flow path between said heated air source and said chimney, and wherein the fuel drawer and the chimney are at distal ends of the oven as claimed therein is not present in the invention of Groups I or III. The special technical feature of the Group III invention: a rotating plate; a drive shaft; at least one gear; and wherein the rotating plate is operatively connected with the drive shaft as claimed therein is not present in the invention of Groups I or II.

Groups I, II and III lack unity of invention because even though the inventions of these groups require the technical feature of an improved cooking oven, comprising: an oven body, the oven being including a baking chamber; a chimney; a fuel chamber; and a door, this technical feature is not a special technical feature as it does not make a contribution over the prior art.

Specifically, US 2020/0390111 to Haier US Appliance Solutions, Inc. teaches an improved cooking oven, comprising: an oven body, the oven being including a baking chamber; a chimney; a fuel chamber (oven appliance 100 includes a seal (not shown) between door 106 and cabinet 102 that maintains heat and cooking fumes within cooking chamber 104 when door 106 is closed as shown in FIGS. 1 and 2. Multiple parallel glass panes 122 provide for viewing the contents of cooking chamber 104 when door 106 is closed and provide insulation for cooking chamber 104. A baking rack 124 is positioned in cooking chamber 104 for receipt of food items or utensils containing food items. Baking rack 124 is slidably received onto embossed ribs or sliding rails 126 such that rack 124 may be conveniently moved into and out of cooking chamber 104 when door 106 is open, para. 0019. The housing 200 may enclose the burner 202 and the tubular combustion chamber 204 on five sides, para. 0029. The secondary air 402 may be drawn into and through the tubular combustion chamber 204 by the combustion products 500 from the burner 202, e.g., due to chimney effect, para. 0042).

Since none of the special technical features of the Group I, II or III inventions are found in more than one of the inventions, unity of invention is lacking.