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ANTI-TIP BRACKET FOR AN OVEN APPLIANCE

Abstract

A method of operating an oven appliance includes determining that an access control mode is enabled, determining that a period of inactivity has occurred while the access control mode is enabled, activating the access control mode, the access control mode comprising providing a limited user interface input selection, detecting a user interaction with the oven appliance, determining that the user interaction is not in compliance with the access control mode, and implementing a responsive action in response to determining that the user interaction is not in compliance with the access control mode.

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Background/Summary

FIELD OF THE INVENTION

[0001] The present subject matter relates generally to oven appliances, and more particularly, to

oven appliances including anti-tip features.

BACKGROUND OF THE INVENTION

[0002] Conventional residential and commercial oven appliances generally include a cabinet that includes a cooking chamber for receipt of food items for cooking. Multiple heating elements are positioned within the cooking chamber to provide heat to food items located therein. In addition, conventional oven appliances include a cooktop positioned on a top of the appliance that includes one or more heating elements, such as electric heaters, gas burners, or induction heating elements. Cooking appliances that include both an oven and a cooktop are commonly referred to as “ranges.”

[0003] Particularly in residential settings, freestanding ranges may pose a hazardous situation of not properly installed. For example, adults, children, and other users of a range oven appliance may be injured if the oven appliance tips over or moves in an undesirable manner. Leaning on the unit, opening the door too quickly, or putting too much weight on the door may all lead to tipping situations. Accordingly, certain conventional oven appliances include structures to prevent the tipping of the oven appliance, but such structures are frequently installed incorrectly or not installed at all.

[0004] Accordingly, an oven appliance with improved safeguards for appliance operation and interactions is desirable. More particularly, an oven appliance that includes features to prevent tipping or undesirable movement of the oven appliance would be especially beneficial.

BRIEF DESCRIPTION OF THE INVENTION

[0005] Aspects and advantages of the invention will be set forth in part in the following description, or may be apparent from the description, or may be learned through practice of the invention.

[0006] In one exemplary embodiment, an oven appliance defining a vertical direction, a lateral direction, and a transverse direction is provided. The oven appliance includes a cabinet defining a cooking chamber, a cooktop positioned at a top of the cabinet and comprising one or more heating elements, an anti-tip leg extending from a bottom of the cabinet, the anti-tip leg comprising a shaft and a foot, and an anti-tip bracket configured for receipt of the anti-tip leg to secure the anti-tip leg to a floor. The anti-tip bracket includes a ramp defined at a front of the anti-tip bracket, an elevated platform defined at a top of the ramp, and a locking flange spaced apart from the elevated platform along the vertical direction, wherein the locking flange defines a groove for receiving the shaft of the anti-tip leg and a foot slot for receiving the foot of the anti-tip leg.

[0007] In another exemplary embodiment, an anti-tip bracket for securing an oven appliance is provided. The oven appliance defines a vertical direction and includes a cabinet and an anti-tip leg extending from a bottom of the cabinet, the anti-tip leg including a shaft and a foot. The anti-tip bracket includes a ramp defined at a front of the anti-tip bracket, an elevated platform defined at a top of the ramp, and a locking flange spaced apart from the elevated platform along the vertical direction, wherein the locking flange defines a groove for receiving the shaft of the anti-tip leg and a foot slot for receiving the foot of the anti-tip leg.

[0008] These and other features, aspects and advantages of the present invention will become better understood with reference to the following description and appended claims. The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate embodiments of the invention and, together with the description, serve to explain the principles of the invention.

Description

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] A full and enabling disclosure of the present invention, including the best mode thereof, directed to one of ordinary skill in the art, is set forth in the specification, which makes reference to

the appended figures.

[0010] FIG. 1 provides a front perspective view of an oven appliance according to an example embodiment of the present subject matter.

[0011] FIG. 2 provides a side cross-sectional view of the example oven appliance of FIG. 1 according to an example embodiment of the present subject matter.

[0012] FIG. 3 is a perspective of an anti-tip leg of the example oven appliance of FIG. 1 according to an example embodiment of the present subject matter.

[0013] FIG. 4 is another perspective view of the example anti-tip leg according to an example embodiment of the present subject matter.

[0014] FIG. 5 provides a perspective view of a bottom half of an anti-tip bracket according to an example embodiment of the present subject matter.

[0015] FIG. 6 provides a perspective view of a top half of the example anti-tip bracket of FIG. 5 according to an example embodiment of the present subject matter.

[0016] FIG. 7 provides a perspective view of the example anti-tip bracket of FIG. 5 according to an example embodiment of the present subject matter.

[0017] FIG. 8 provides a side schematic view of the example anti-tip bracket of FIG. 5 according to an example embodiment of the present subject matter.

[0018] FIG. 9 provides a perspective view of an anti-tip bracket according to another example embodiment of the present subject matter.

[0019] FIG. 10 provides a side schematic view of the example anti-tip bracket of FIG. 9 according to an example embodiment of the present subject matter.

[0020] Repeat use of reference characters in the present specification and drawings is intended to represent the same or analogous features or elements of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0021] Reference now will be made in detail to embodiments of the invention, one or more examples of which are illustrated in the drawings. Each example is provided by way of explanation of the invention, not limitation of the invention. In fact, it will be apparent to those skilled in the art that various modifications and variations can be made in the present invention without departing from the scope or spirit of the invention. For instance, features illustrated or described as part of one embodiment can be used with another embodiment to yield a still further embodiment. Thus, it is intended that the present invention covers such modifications and variations as come within the scope of the appended claims and their equivalents.

[0022] As used herein, the terms “includes” and “including” are intended to be inclusive in a manner similar to the term “comprising.” Similarly, the term “or” is generally intended to be inclusive (i.e., “A or B” is intended to mean “A or B or both”). Approximating language, as used herein throughout the specification and claims, is applied to modify any quantitative representation that could permissibly vary without resulting in a change in the basic function to which it is related. Accordingly, a value modified by a term or terms, such as “about,” “approximately,” and “substantially,” are not to be limited to the precise value specified. In at least some instances, the approximating language may correspond to the precision of an instrument for measuring the value. For example, the approximating language may refer to being within a 10 percent margin.

[0023] FIG. 1 provides a front, perspective view of an oven appliance **100** as may be employed with the present subject matter. Oven appliance **100** generally defines a vertical direction V, a lateral direction L, and a transverse direction T, each of which is mutually perpendicular, such that an orthogonal coordinate system is generally defined. As illustrated, oven appliance **100** includes an insulated cabinet **102**. Cabinet **102** of oven appliance **100** extends between a top **104** and a bottom **106** along the vertical direction V, between a first side **108** (left side when viewed from front) and a second side **110** (right side when viewed from front) along the lateral direction L, and between a front **112** and a rear **114** along the transverse direction T.

[0024] Within cabinet **102** is a single cooking chamber **120** which is configured for the receipt of

one or more food items to be cooked. However, it should be appreciated that oven appliance **100** is provided by way of example only, and aspects of the present subject matter may be used in any suitable cooking appliance, such as a double oven range appliance. Thus, the example embodiment shown in FIG. **1** is not intended to limit the present subject matter to any particular cooking chamber configuration or arrangement. Indeed, aspects of the present subject matter may be applied to display assemblies for any suitable appliance.

[0025] Oven appliance **100** includes a door **124** rotatably attached to cabinet **102** in order to permit selective access to cooking chamber **120**. Handle **126** is mounted to door **124** to assist a user with opening and closing door **124** in order to access cooking chamber **120**. As an example, a user can pull on handle **126** mounted to door **124** to open or close door **124** and access cooking chamber **120**. One or more transparent viewing windows **128** (FIG. **1**) may be defined within door **124** to provide for viewing the contents of cooking chamber **120** when door **124** is closed and also assist with insulating cooking chamber **120**.

[0026] In general, cooking chamber **120** is defined by a plurality of chamber walls **130**. Specifically, cooking chamber **120** may be defined by a top wall, a rear wall, a bottom wall, and two sidewalls **130**. These chamber walls **130** may be joined together to define an opening through which a user may selectively access cooking chamber **120** by opening door **124**. In order to insulate cooking chamber **120**, oven appliance **100** includes an insulating gap defined between the chamber walls **130** and cabinet **102**. According to an exemplary embodiment, the insulation gap is filled with an insulating material **132**, such as insulating foam or fiberglass, for insulating cooking chamber **120**.

[0027] Oven appliance **100** also includes a cooktop **140**. Cooktop **140** is positioned at or adjacent top **104** of cabinet **102** such that it is positioned above cooking chamber **120**. Specifically, cooktop **140** includes a top panel **142** positioned proximate top **104** of cabinet **102**. By way of example, top panel **142** may be constructed of glass, ceramics, enameled steel, and combinations thereof. One or more grates **144** are supported on a top surface of top panel **142** for supporting cooking utensils, such as pots or pans, during a cooking process.

[0028] Oven appliance **100** may further include one or more heating elements (identified generally by reference numeral **150**) for selectively heating cooking utensils positioned on grates **144** or food items positioned within cooking chamber **120**. For example, referring to FIG. **1**, heating elements **150** may be gas burners **150**. Specifically, a plurality of gas burners **150** are mounted within or on top of top panel **142** underneath grates **144** that supports cooking utensils over the gas burners **150** while gas burners **150** provide thermal energy to cooking utensils positioned thereon, e.g., to heat food and/or cooking liquids (e.g., oil, water, etc.). Gas burners **150** can be configured in various sizes so as to provide e.g., for the receipt of cooking utensils (i.e., pots, pans, etc.) of various sizes and configurations and to provide different heat inputs for such cooking utensils. According to alternative embodiments, oven appliance **100** may have other cooktop configurations or burner elements.

[0029] In addition, heating elements **150** may be positioned within or may otherwise be in thermal communication with cooking chamber **120** for regulating the temperature within cooking chamber **120**. Specifically, an upper gas heating element **154** (also referred to as a broil heating element or gas burner) may be positioned in cabinet **102**, e.g., at a top portion of cooking chamber **120**, and a lower gas heating element **156** (also referred to as a bake heating element or gas burner) may be positioned at a bottom portion of cooking chamber **120**. Upper gas heating element **154** and lower gas heating element **156** may be used independently or simultaneously to heat cooking chamber **120**, perform a baking or broil operation, perform a cleaning cycle, etc. The size and heat output of gas heating elements **154**, **156** can be selected based on, e.g., the size of oven appliance **100** or the desired heat output. Oven appliance **100** may include any other suitable number, type, and configuration of heating elements **150** within cabinet **102** and/or on cooktop **140**. For example, oven appliance **100** may further include electric heating elements, induction heating elements, or

any other suitable heat generating device.

[0030] A control panel assembly **160** is located within convenient reach of a user of the oven appliance **100**. For this example embodiment, control panel assembly **160** is positioned at a top **104** and front **112** of cabinet **102**, e.g., above door **124** along the vertical direction V and forward of cooktop **140** along the transverse direction T. Control panel assembly **160** includes knobs **162** that are each associated with one of heating elements **150**. In this manner, knobs **162** allow the user to activate each heating element **150** and determine the amount of heat input provided by each heating element **150** for cooking food items within cooking chamber **120** or on cooktop **140**. Although shown with knobs **162**, it should be understood that knobs **162** and the configuration of oven appliance **100** shown in FIG. 1 is provided by way of example only. More specifically, control panel assembly **160** may include various input components, such as one or more of a variety of touch-type controls, electrical, mechanical or electro-mechanical input devices including rotary dials, push buttons, and touch pads. Control panel assembly **160** may also be provided with one or more graphical display devices or display components, such as a digital or analog display device designed to provide operational feedback or other information to the user such as e.g., whether a particular heating element **150** is activated and/or the rate at which the heating element **150** is set. Indeed, according to the illustrated embodiment, control panel assembly **160** includes a display assembly **164**, such as a liquid crystal display with an interactive display and interface.

[0031] Generally, oven appliance **100** may include a controller **166** in operative communication with control panel assembly **160**. Control panel assembly **160** of oven appliance **100** may be in communication with controller **166** via, for example, one or more signal lines or shared communication busses, and signals generated in controller **166** operate oven appliance **100** in response to user input via user input devices, e.g., control knobs **162** and/or display assembly **164**. Input/Output (“I/O”) signals may be routed between controller **166** and various operational components of oven appliance **100** such that operation of oven appliance **100** can be regulated by controller **166**. In addition, controller **166** may also be in communication with one or more sensors, such as temperature sensor **168**, which may be used to measure temperature inside cooking chamber **120** and provide such measurements to the controller **166**. Although temperature sensor **168** is illustrated at a top and rear of cooking chamber **120**, it should be appreciated that other sensor types, positions, and configurations may be used according to alternative embodiments.

[0032] Controller **166** is a “processing device” or “controller” and may be embodied as described herein. Controller **166** may include a memory and one or more microprocessors, microcontrollers, application-specific integrated circuits (ASICs), CPUs or the like, such as general or special purpose microprocessors operable to execute programming instructions or micro-control code associated with operation of oven appliance **100**, and controller **166** is not restricted necessarily to a single element. The memory may represent random access memory such as DRAM, or read only memory such as ROM, electrically erasable, programmable read only memory (EEPROM), or FLASH. In one embodiment, the processor executes programming instructions stored in memory. The memory may be a separate component from the processor or may be included onboard within the processor. Alternatively, controller **166** may be constructed without using a microprocessor, e.g., using a combination of discrete analog and/or digital logic circuitry (such as switches, amplifiers, integrators, comparators, flip-flops, AND gates, and the like) to perform control functionality instead of relying upon software.

[0033] Referring still to FIG. 1, a schematic diagram of an external communication system **170** will be described according to an exemplary embodiment of the present subject matter. In general, external communication system **170** is configured for permitting interaction, data transfer, and other communications between oven appliance **100** and one or more external devices. For example, this communication may be used to provide and receive operating parameters, user instructions or notifications, performance characteristics, user preferences, or any other suitable information for improved performance of oven appliance **100**. In addition, it should be appreciated that external

communication system **170** may be used to transfer data or other information to improve performance of one or more external devices or appliances and/or improve user interaction with such devices.

[0034] For example, external communication system **170** permits controller **166** of oven appliance **100** to communicate with a separate device external to oven appliance **100**, referred to generally herein as an external device **172**. As described in more detail below, these communications may be facilitated using a wired or wireless connection, such as via a network **174**. In general, external device **172** may be any suitable device separate from oven appliance **100** that is configured to provide and/or receive communications, information, data, or commands from a user. In this regard, external device **172** may be, for example, a personal phone, a smartphone, a tablet, a laptop or personal computer, a wearable device, a smart home system, or another mobile or remote device.

[0035] In addition, a remote server **176** may be in communication with oven appliance **100** and/or external device **172** through network **174**. In this regard, for example, remote server **176** may be a cloud-based server **176**, and is thus located at a distant location, such as in a separate state, country, etc. According to an exemplary embodiment, external device **172** may communicate with a remote server **176** over network **174**, such as the Internet, to transmit/receive data or information, provide user inputs, receive user notifications or instructions, interact with or control oven appliance **100**, etc. In addition, external device **172** and remote server **176** may communicate with oven appliance **100** to communicate similar information.

[0036] In general, communication between oven appliance **100**, external device **172**, remote server **176**, and/or other user devices or appliances may be carried using any type of wired or wireless connection and using any suitable type of communication network, non-limiting examples of which are provided below. For example, external device **172** may be in direct or indirect communication with oven appliance **100** through any suitable wired or wireless communication connections or interfaces, such as network **174**. For example, network **174** may include one or more of a local area network (LAN), a wide area network (WAN), a personal area network (PAN), the Internet, a cellular network, any other suitable short- or long-range wireless networks, etc. In addition, communications may be transmitted using any suitable communications devices or protocols, such as via Wi-Fi®, Bluetooth®, Zigbee®, wireless radio, laser, infrared, Ethernet type devices and interfaces, etc. In addition, such communication may use a variety of communication protocols (e.g., TCP/IP, HTTP, SMTP, FTP), encodings or formats (e.g., HTML, XML), and/or protection schemes (e.g., VPN, secure HTTP, SSL).

[0037] External communication system **170** is described herein according to an exemplary embodiment of the present subject matter. However, it should be appreciated that the exemplary functions and configurations of external communication system **170** provided herein are used only as examples to facilitate description of aspects of the present subject matter. System configurations may vary, other communication devices may be used to communicate directly or indirectly with one or more associated appliances, other communication protocols and steps may be implemented, etc. These variations and modifications are contemplated as within the scope of the present subject matter.

[0038] Although aspects of the present subject matter are described herein in the context of a single oven appliance, it should be appreciated that oven appliance **100** is provided by way of example only. Other oven or range appliances having different configurations, different appearances, and/or different features may also be utilized with the present subject matter, e.g., double ovens, connected oven/cooktop units, etc. Moreover, aspects of the present subject matter are equally applicable to standalone cooktops (e.g., without cooking chambers) or other cooking appliances.

[0039] Referring now generally to FIGS. 3 through 8, anti-tip features of an oven appliance will be described according to example embodiments of the present subject matter. Although the anti-tip features are described with respect to oven appliance **100**, it should be appreciated that the features described herein may be used for any other suitable oven appliance. In addition, it should be

appreciated that variations and modifications to the anti-tip features may be made while remaining within the scope of the present subject matter.

[0040] As shown in FIGS. 2 and 4, oven appliance **100** may include a plurality of legs (identified herein generally by reference numeral **200**). Each of the legs **200** may be mounted to cabinet **102** for supporting oven appliance **100** on a floor (not shown) of a dwelling. In general, each of the legs **200** may be adjustable along the vertical direction V relative to a bottom **106** of cabinet **102**. For example, legs **200** may include a threaded portion **202** and may be received within a threaded aperture **204** defined by or on cabinet **102**. In this manner, rotating legs **200** in the clockwise or counterclockwise reduces or increases a leg height **206** that is measured between bottom **106** of cabinet **102** and a bottom **208** of legs **200** along the vertical direction V. In this manner, an installer of oven appliance **100** may rotate legs to ensure that cabinet **102** is level and stable on floor of the dwelling.

[0041] Notably, as explained briefly above, oven appliances, whether properly leveled or not, may pose a risk of tipping over when not installed with anti-tip features. However, conventional anti-tip brackets supplied with or purchased for oven appliances are optional features that are burdensome to install and are frequently not installed at all. Accordingly, aspects of the present subject matter are generally directed to anti-tip features that are encouraged to be installed with oven appliance **100**, e.g., by requiring additional steps to properly install the oven appliance without the anti-tip features. In other words, attempting to install oven appliance without the anti-tip features may result in a burdensome and time-consuming process, thereby encouraging their installation.

[0042] Specifically, according to the illustrated embodiment, oven appliance may further include one or more anti-tip legs **210** that extend from bottom **106** a cabinet **102**. In general, legs **200** are standard, adjustable appliance legs, while anti-tip legs **210** are specifically designed for use with the presently described anti-tip system. Anti-tip leg **210** (similar to legs **200**) may generally include a shaft **212** (e.g., a threaded shaft similar to legs **200**) and a foot **214** that is positioned at a distal end of shaft **212**. The description here refers to the installation and use of a single anti-tip leg **210**. However, it should be appreciated that oven appliance **100** may include more than one anti-tip leg **210**. For example, both of the rear legs of oven appliance **100** may be anti-tip legs **210**.

[0043] Notably, anti-tip legs **210** may generally be fixed or adjustable relative to cabinet **102**. For a fixed anti-tip leg **210**, the anti-tip leg **210** may be a fixed stub that is not adjustable relative to cabinet **102**. In addition, as explained in more detail below, such an anti-tip leg **210** may be shorter than the fully inserted legs **200**, thereby preventing proper leveling of oven appliance **100** unless an appropriate anti-tip bracket is installed, as described more below. By contrast, according to an alternative embodiment, oven appliance may include an anti-tip leg **210** that is adjustable along the vertical direction V, but which includes a locking feature **220** for temporarily locking anti-tip leg **210** in the fully inserted position. Whether fixed or adjustable, anti-tip leg **210** defines a minimum leg height **222** measured between bottom **106** of cabinet **102** and a bottom **224** of foot **214**.

According to the illustrated embodiment, cabinet **102** may define a screw hole **226** and the locking feature **220** may be a set screw **228** that is configured for receipt in screw hole **226** to engage anti-tip leg **210** and secure it in a fully inserted position where it defines minimum leg height **222**. Other suitable locking features (e.g., such as latches, pins, or other setting features) are possible and within the scope of the present subject matter.

[0044] Referring now specifically, to FIGS. 5 through 10, oven appliance **100** may further include an anti-tip bracket **240** that is generally configured for receiving anti-tip leg **210** to secure anti-tip leg **210** to a floor of the dwelling where oven appliance **100** is located. According to an example embodiment, anti-tip bracket **240** may be formed from a single piece of rigid and durable material, e.g., such as metal. According to alternative embodiments, anti-tip bracket **240** may be a multi-piece assembly that is joined, e.g., via welding, adhesives, etc. Although an exemplary anti-tip bracket **240** is described herein, it should be appreciated that variations and modifications may be made while remaining within the scope of the present subject matter.

[0045] According to the illustrated embodiment, anti-tip bracket **240** may generally define a ramp **242** at a front **244** of anti-tip bracket **240**. In general, ramp **242** is intended to facilitate the lifting of cabinet **102** and/or anti-tip leg **210** along the vertical direction V as oven appliance **100** is pushed back into its mounting position. Anti-bracket **240** may further include an elevated platform **246** that is defined at a top of ramp **242** and which extends substantially along the horizontal direction (e.g., defined by the lateral direction L and the transverse direction T). Anti-tip bracket **240** may further include a locking flange **248** that is spaced apart from elevated platform **246** along the vertical direction V.

[0046] To help visualize the construction of anti-tip bracket **240**, FIG. 5 illustrates anti-tip bracket **240** only showing ramp **242** and elevated platform **246**, i.e., with locking flange **248** removed for clarity. By contrast, FIG. 6 illustrates anti-tip bracket **240** only showing locking flange **248**, i.e., with ramp **242** and elevated platform **246** removed for clarity. FIG. 6 shows the complete anti-tip bracket **240** and FIG. 7 shows a schematic view of anti-tip leg **210** being received within anti-tip bracket **240**. As shown, anti-tip bracket **240** may define a plurality of apertures **250** that are configured for receiving mechanical fasteners (not shown) that are intended to secure anti-tip bracket **240** to a floor or wall of the dwelling where oven appliance **100** is located.

[0047] Locking flange **248** may be generally designed to restrict movement of anti-tip leg **210** when oven appliance **100** is in the installed position. In this regard, for example, locking flange **248** may define a groove **260** that is configured for slidably receiving shaft **212** of anti-tip leg **210**. In addition, locking flange **248** may be spaced apart from elevated platform **246** to define a foot slot **262** position therebetween along the vertical direction V. Foot slot **262** may be configured for receiving the foot **214** of anti-tip leg **210**. More specifically, foot slot **262** may define a slot height **264** that is greater than or equal to a foot height **266** measured along the vertical direction V. In this manner, foot **214** of anti-tip leg **210** may slide freely within foot slot **262**. Notably, however, foot **214** of anti-tip leg **210** may not be removed through groove **260**, such that locking flange **248** secures anti-tip leg **210** within anti-tip bracket **240**.

[0048] Anti-tip bracket **240** may generally support cabinet **102** and/or anti-tip leg **210** while preventing tipping. In this regard, as illustrated for example in FIGS. 5 through 8, an anti-tip leg **210** is illustrated that where a bottom **106** of cabinet **102** may be seated on a top surface **270** of locking flange **248**. According to such an embodiment, foot **214** may hang freely within foot slot **262**. According to another embodiment, as illustrated for example in FIGS. 9 and 10, another anti-tip bracket **240** is illustrated where a bottom **224** of foot **214** may be seated on a top surface **272** of elevated platform **246**, e.g., such that bottom **106** of cabinet **102** is not directly contacting anti-tip bracket **240**.

[0049] As explained briefly above, it may be desirable to set minimum leg height **222** of anti-tip leg **210** such that cabinet **102** may only be balanced if installed with anti-tip bracket **240**. In this regard, for example, legs **200** of oven appliance (e.g., not anti-tip legs **210**) are generally adjustable between a minimum leg height and a maximum leg height (leg height of legs **200** is identified in FIG. 2 generally by reference numeral **206**) to facilitate leveling of cabinet **102**. According to an example embodiment, minimum leg height **222** of anti-tip leg is shorter than the minimal leg height **206** of the other legs **200**. In this manner, additional height must be added to anti-tip leg **210** in order to level oven appliance **100** using the other legs **200**.

[0050] Accordingly, according to an example embodiment where the anti-tip leg **210** is supported by elevated platform **246**, elevated platform **246** may define a platform height **280** and the sum of platform height **280** and minimum leg height **222** may be greater than the minimal leg height **274** of the other legs **200**. By contrast, according to an example embodiment where cabinet **102** is supported by locking flange **248**, a flange height **282** of locking flange **248** may be greater than the minimal leg height **274** of the other legs **200**.

[0051] As explained herein, aspects of the present subject matter are generally directed to an anti-tip bracket for a cooking appliance (e.g., free-standing range) that includes a bottom plate and a top

plate. The cooking appliance may be provided with a short stub (non-adjustable rear leveling leg) that slides into the anti-tip bracket. The bottom plate may include a ramp that provides proper elevation to level (balance) the appliance legs, and the top plate may guide and locks the legs, such that the top and the bottom plates are assembled and anchored to the floor to provide a proper locking mechanism (e.g., to prevent the appliance from tipping or tilting over). Further, this anti-tip bracket may force an installer to use the anti-tip bracket or go through an additional process to balance the appliance unit.

[0052] This written description uses examples to disclose the invention, including the best mode, and also to enable any person skilled in the art to practice the invention, including making and using any devices or systems and performing any incorporated methods. The patentable scope of the invention is defined by the claims, and may include other examples that occur to those skilled in the art. Such other examples are intended to be within the scope of the claims if they include structural elements that do not differ from the literal language of the claims, or if they include equivalent structural elements with insubstantial differences from the literal languages of the claims.

Claims

1. An oven appliance defining a vertical direction, a lateral direction, and a transverse direction, the oven appliance comprising: a cabinet defining a cooking chamber; a cooktop positioned at a top of the cabinet and comprising one or more heating elements; an anti-tip leg extending from a bottom of the cabinet, the anti-tip leg comprising a shaft and a foot; and an anti-tip bracket configured for receipt of the anti-tip leg to secure the anti-tip leg to a floor, the anti-tip bracket comprising: a ramp defined at a front of the anti-tip bracket; an elevated platform defined at a top of the ramp; and a locking flange spaced apart from the elevated platform along the vertical direction, wherein the locking flange defines a groove for receiving the shaft of the anti-tip leg and a foot slot for receiving the foot of the anti-tip leg.
2. The oven appliance of claim 1, wherein a bottom of the cabinet is seated on a top surface of the locking flange.
3. The oven appliance of claim 1, wherein a bottom of the foot is seated on a top surface of the elevated platform of the anti-tip bracket.
4. The oven appliance of claim 1, wherein the anti-tip leg is adjustable along the vertical direction, and wherein the oven appliance further comprises: a locking feature for temporarily locking the anti-tip leg in a fully inserted position where the anti-tip leg defines a minimum leg height relative to a bottom of the cabinet.
5. The oven appliance of claim 4, wherein the cabinet defines a screw hole and the locking feature is a set screw that is configured for receipt within the screw hole to engage the anti-tip leg and secure the anti-tip leg in a fully inserted position where the anti-tip leg defines a minimum leg height relative to a bottom of the cabinet.
6. The oven appliance of claim 1, wherein the anti-tip leg has a fixed height and is not adjustable along the vertical direction.
7. The oven appliance of claim 1, wherein the anti-tip leg is one of a plurality of legs of the oven appliance, other legs of the plurality of legs are adjustable between a minimal leg height and a maximum leg height, and wherein a height of the anti-tip leg is shorter than the minimal leg height of the other legs.
8. The oven appliance of claim 7, wherein a height of the elevated platform plus a height of the anti-tip leg is greater than the minimal leg height of the other legs.
9. The oven appliance of claim 7, wherein a height of the locking flange is greater than the minimal leg height of the other legs.
10. The oven appliance of claim 1, wherein a slot height of the foot slot is greater than a foot height

of the foot.

- 11.** The oven appliance of claim 1, wherein the anti-tip leg is a rear leg of the oven appliance.
 - 12.** The oven appliance of claim 1, wherein the anti-tip leg is a first anti-tip leg for installation on a first rear leg of the oven appliance, the oven appliance further comprising a second anti-tip leg for installation on a second rear leg of the oven appliance.
 - 13.** The oven appliance of claim 1, wherein a plurality of apertures are defined through the anti-tip bracket for receiving fasteners that secure the anti-tip bracket to a floor or a wall.
 - 14.** The oven appliance of claim 1, wherein the anti-tip bracket is formed from a single piece of metal.
 - 15.** An anti-tip bracket for securing an oven appliance, the oven appliance defining a vertical direction and comprising a cabinet and an anti-tip leg extending from a bottom of the cabinet, the anti-tip leg comprising a shaft and a foot, the anti-tip bracket comprising: a ramp defined at a front of the anti-tip bracket; an elevated platform defined at a top of the ramp; and a locking flange spaced apart from the elevated platform along the vertical direction, wherein the locking flange defines a groove for receiving the shaft of the anti-tip leg and a foot slot for receiving the foot of the anti-tip leg.
 - 16.** The anti-tip bracket of claim 15, wherein a bottom of the cabinet is seated on a top surface of the locking flange.
 - 17.** The anti-tip bracket of claim 15, wherein a bottom of the foot is seated on a top surface of the elevated platform of the anti-tip bracket.
 - 18.** The anti-tip bracket of claim 15, wherein the anti-tip leg is one of a plurality of legs of the oven appliance, other legs of the plurality of legs are adjustable between a minimal leg height and a maximum leg height, and wherein a height of the anti-tip leg is shorter than the minimal leg height of the other legs.
 - 19.** The anti-tip bracket of claim 18, wherein a height of the elevated platform plus a height of the anti-tip leg is greater than the minimal leg height of the other legs.
 - 20.** The anti-tip bracket of claim 18, wherein a height of the locking flange is greater than the minimal leg height of the other legs.
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