The present invention provides an oven appliance and for operation of an oven appliance. The oven appliance and method for operating the oven appliance include features such that the door of the oven appliance may be locked or unlocked using one or more voice commands by a user of the oven appliance.
FIG. -2-
START

DETECT SELF-CLEAN INPUT

PROMPT FOR CONFIRMATION

COUNT $t_{CONFIRM}$

SELF-CLEAN CONFIRMED?

LOCK

START SELF-CLEAN

COUNT $t_{sc}$ &/or MONITOR $T_{sc}$

SELF-CLEAN FINISHED?

UNLOCK

END
FIG. 4
VOICE LATCHING OF APPLIANCE DOOR

FIELD OF THE INVENTION

[0001] The subject matter of the present disclosure relates generally to methods and systems for locking and unlocking appliance doors, in particular the door of an oven appliance.

BACKGROUND OF THE INVENTION

[0002] Oven appliances generally include a cabinet that defines a cooking chamber for baking or broiling food items therein. Oven appliances also usually include a door that, with normal use, pivots about one or more hinges between an open and a closed position to allow access to the cooking chamber of the cabinet. When in the open position, the door may be parallel to the floor and at a vertical distance above the floor such that, e.g., to a child, the door may appear to provide a step for reaching items on or near the oven appliance that may be out of reach from the floor. The door may otherwise be used abnormally, e.g., for a child to climb on or into the oven appliance. Such abnormal use of the oven door could allow a child to access potentially harmful objects or could cause the oven appliance to tip over. To prevent abnormal use of the door, it may be desirable to lock the door in the closed position when the cooking chamber is not being used for baking or broiling food items. However, typical oven appliance door locks are engaged or disengaged using one or more buttons, knobs, or the like within the reach of a child such that the door lock may be ineffectual.

[0003] Accordingly, an oven appliance with features for locking and unlocking the door of the oven appliance following a voice command by a user of the oven appliance would be beneficial. A method for operating an oven appliance to lock and unlock the door of the oven appliance following a voice command by a user also would be useful.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] The present invention provides an oven appliance and for operation of an oven appliance. The oven appliance and method for operating the oven appliance include features such that the door of the oven appliance may be locked or unlocked using one or more voice commands by a user of the oven appliance. Additional aspects and advantages of the invention will be set forth in part in the following description, may be apparent from the description, or may be learned through practice of the invention.

[0005] In a first exemplary embodiment, a method for operating an oven appliance is provided. The method includes the steps of detecting an input to start a self-clean cycle of the oven appliance; prompting for a confirmation command to start the self-clean cycle; determining whether the confirmation command has been received and, if so, then locking a door of the oven appliance; starting the self-clean cycle; and determining whether the self-clean cycle has finished and, if so, then unlocking the door of the oven appliance.

[0006] In a second exemplary embodiment, a method for operating an oven appliance is provided. The method includes the steps of detecting an input to activate a door lock of the oven appliance to lock a door of the oven appliance; prompting for a confirmation command to lock the door; determining whether the confirmation command to lock the door has been received and, if so, then locking the door; detecting an input to activate the door lock to unlock the door; prompting for a confirmation command to unlock the door; and determining whether the confirmation command to unlock the door has been received and, if so, then unlocking the door.

[0007] In a third exemplary embodiment, an oven appliance is provided. The oven appliance includes a cabinet defining an opening at a front portion of the cabinet, the cabinet also defining a cooking chamber configured for receipt of food items for cooking; a door mounted to the cabinet at the opening of the cabinet, the door being selectively adjustable between an open position and a closed position to permit selective access to the cooking chamber through the opening of the cabinet; a door lock; a heating element configured to heat the cooking chamber; and a controller in operative communication with the door lock. The controller is configured for detecting an input to activate a door lock of the oven appliance to lock a door of the oven appliance; prompting for a confirmation command to lock the door; determining whether the confirmation command to lock the door has been received and, if so, then locking the door; detecting an input to activate the door lock to unlock the door; prompting for a confirmation command to unlock the door; and determining whether the confirmation command to unlock the door has been received and, if so, then unlocking the door.

[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.

DETAILED DESCRIPTION OF THE INVENTION

[0010] FIG. 1 provides a perspective view of an oven range appliance received within a set of kitchen cabinets according to an exemplary embodiment of the present subject matter.

[0011] FIG. 2 provides a cross-section view of the oven range appliance of FIG. 1.

[0012] FIG. 3 provides a chart illustrating an exemplary method for operating an oven appliance according to the present subject matter.

[0013] FIG. 4 provides a chart illustrating another exemplary method for operating an oven appliance according to the present subject matter.
range appliance 12 is provided by way of example only and is not intended to limit the present subject matter in any aspect. Thus, the present subject matter may be used with other oven appliance configurations, e.g., that define one or more interior cavities for the receipt of food and/or that are wall mounted. Further, the present subject matter may be used in any other suitable appliance.

FIG. 1 also illustrates a microwave appliance 10, commonly referred to as an over-the-range microwave, mounted to an upper set of kitchen cabinets 14 above oven range appliance 12, e.g., along a vertical direction V. Upper set of kitchen cabinets 14 is positioned above a base set of kitchen cabinets 16, e.g., along the vertical direction V. Base set of kitchen cabinets 16 includes countertops 18 and drawers 17. Oven range appliance 12 is received within base set of kitchen cabinets 16 below microwave appliance 10 such that a cooking surface 30 of oven range appliance 12 is positioned, e.g., directly below microwave appliance 10 along the vertical direction V. Microwave appliance 10 can include features such as an air handler or fan (not shown) that can draw cooking vapors and/or smoke away from cooking surface 30 and out of the kitchen containing microwave and oven range appliances 10 and 12.

Cooking surface 30 of range 12 includes heated portions 32 that may be heated by heating elements (not shown), e.g., electrical resistive heating elements, gas burners, induction heating elements, and/or any other suitable heating element or combination of heating elements. Cooking utensils, such as cooking utensil 28, may be placed on heated portions 32 to cook or heat food items. Oven range appliance 12 also includes a door 36 that permits access to a cooking chamber 42 (FIG. 2) of oven range appliance 12, e.g., for cooking or baking of food items therein. One or more controls 60 on a control panel 34 of oven range appliance 12 can permit a user to make selections for cooking of food items, e.g., a duration of a cooking cycle of oven range appliance 12 and/or a power setting for the cooking cycle of oven range appliance 12.

FIG. 2 provides a cross-section view of oven range appliance 12. As illustrated, oven range appliance 12 includes an insulated cabinet 40 with an interior cooking chamber 42 defined by an interior surface 44 of cabinet 40. Cooking chamber 42 is configured for the receipt of one or more food items. Oven range appliance 12 includes a door 36 pivotedally mounted to cabinet 40, e.g., with one or more hinges (not shown). A handle 37 is mounted to door 36 and assists a user with opening and closing door 36 to access cooking chamber 42. For example, a user can pull or push on handle 37 to open or close door 36 and access cooking chamber 42.

Oven range appliance 12 includes a door lock 38 that, when engaged, prevents door 36 from opening. Door lock 38 may be an electromechanical lock, or other suitable locking device, positioned on cabinet 40 adjacent the front portion of cabinet 40 and may include a hook that engages door 36. Alternatively, door lock 38 may be positioned on door 36 near the front portion of cabinet 40 and include a hook that engages cabinet 40. The operation of door lock 38 is further described below, and in other embodiments, door lock 38 may be any appropriate mechanism for locking door 36 as described.

Further, oven range appliance 12 can include a seal (not shown) between door 36 and cabinet 40 that assists with maintaining heat and cooking fumes within cooking chamber 42 when door 36 is closed as shown in FIG. 2. Multiple parallel glass panes 39 assist with insulating cooking chamber 42 and provide for viewing the contents of cooking chamber 42 when door 36 is closed. A baking rack 46 is positioned in cooking chamber 42 for the receipt of food items or utensils containing food items. Baking rack 46 is slidably received onto embossed ribs or sliding rails 48 such that rack 46 may be conveniently moved into and out of cooking chamber 42 when door 36 is open.

A gas fueled or electric bottom heating element 50 (e.g., a gas burner or a bake gas burner) is positioned in cabinet 40, e.g., at a bottom portion 41 of cabinet 40. Bottom heating element 50 is used to heat cooking chamber 42 for both cooking and cleaning of oven appliance 12. The size and heat output of bottom heating element 50 can be selected based on the e.g., the size of oven appliance 12.

A top heating element 52 is also positioned in cooking chamber 42 of cabinet 40, e.g., at a top portion 43 of cabinet 40. Top heating element 52 is used to heat cooking chamber 42 for both cooking/broiling and cleaning of oven appliance 12. Like bottom heating element 50, the size and heat output of top heating element 52 can be selected based on the e.g., the size of oven appliance 12. In the exemplary embodiment shown in FIG. 2, top heating element 52 is shown as an electric resistance heating element. However, in alternative embodiments, a gas, microwave, halogen, or any other suitable heating element may be used instead of electric resistance heating element 52. Additionally, other heating elements, such as a convection heating element, also may be included in the oven appliance to be used during cooking and cleaning cycles of the oven appliance.

The operation of oven appliance 12, including heating elements 50 and 52, is controlled by a processing device such as a controller 56 (FIG. 1), which may include a microprocessor or other device that is in communication with such components. Such controller 56 also may be in communication with a temperature sensor 54 that is used to measure temperature inside cooking chamber 42 and provide such measurements to the controller 56. Temperature sensor 54 is shown in the top and rear of cooking chamber 42. However, other locations may be used and, if desired, multiple temperature sensors may be applied as well.

Controller 56 may include a memory and microprocessor, such as a general or special purpose microprocessor operable to execute programming instructions or micro-control code associated with a cleaning cycle. The memory may represent random access memory such as DRAM, and/or read only memory such as ROM 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 56 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. Controls 60 and other components of oven range appliance 12 may be in communication with controller 56 via one or more signal lines or shared communication busses.

Moreover, controller 56 is operatively coupled or in communication with various other components of microwave appliance 10, including controls 60 and door lock 38. For example, in response to user manipulation of controls 60, controller 56 operates the various components of oven range appliance 12 to execute selected cycles and features. Control-
controller 56 may also be in communication with door lock 38 to lock and unlock door 36, e.g., to prevent abnormal use of door 36. For example, a child may consider door 36 of oven range appliance 12 useful as a step to reach the cooktop and/or items thereon or the surfaces in the vicinity of oven range appliance 12. In addition to providing access to potentially harmful items, abnormal use of door 36 could cause oven range appliance 12 to tip over. Accordingly, if door 36 of oven range appliance 12 may be selectively locked, e.g., during particular cycles of oven appliance 12 or when oven appliance 12 is not in use, abnormal use of door 36 can be avoided, as well as other potentially harmful uses of oven appliance 12.

[0026] In an exemplary embodiment of oven range appliance 12, controller 56 activates door lock 38 to lock door 36 during, e.g., a self-clean cycle of oven appliance 12. In other embodiments, controller 56 may lock or unlock door 36 in response to inputs by a user of oven range appliance 12. For example, controller 56 may be configured to detect as inputs voice commands of a user of the oven appliance, e.g., to initiate or cancel operations of oven appliance 12. Such commands may include “Start self-clean cycle” or “GE, lock the door.” The voice commands may be authenticated, i.e., distinguished from attempts by a child or operate oven appliance 12, and/or confirmed through the use of a unique spoken phrase. The unique phrase may be any phrase chosen by the user and programmed into, e.g., controller 56, and multiple users may each have a unique programmed phrase. Alternatively, the voice commands may be authenticated and/or confirmed through the use of voice biometrics, which may distinguish an adult voice from a juvenile voice, identify an exact voice, or otherwise authenticate commands such that only adults or specific persons may initiate or cancel operations of oven appliance 12.

[0027] The voice commands may be detected and utilized by controller 56 in whole or in part, as discussed. In other embodiments, the voice commands may be detected and utilized by any combination of, e.g., a stand-alone or embedded microphone, a smartphone, a tablet computer, and a computing system. Other devices may also be used to detect and utilize a user’s voice commands.

[0028] As a further example, controller 56 may be configured to detect gestures of a user of the oven appliance through Swept Frequency Capacitive Sensing (SF/CS). In such embodiments, oven door 36 may include a conductive surface, such as front panel 70, and controller 56 may detect touch inputs to door 36 such that when a user touches door 36 with her fingers in a preprogrammed sequence, controller 56 accepts the input, e.g., to initiate or cancel operations of oven appliance 12. For example, the user may program the sequence 5-3-2-4 as, e.g., a confirmation gesture. Then, when controller 56 prompts the user to confirm the initiation or cancellation of an operation of appliance 12, and the user touches door 36 with five fingers, then three fingers, then two fingers, and finally four fingers (thereby inputting the sequence 5-3-2-4), controller 56 senses the input sequence as the confirmation gesture to initiate or cancel the operation. The user may program one or more sequences to initiate, confirm, or cancel actions of oven appliance 12 or to otherwise operate the oven.

[0029] Additionally, oven appliance 12 may include one or more controls 60 that, when utilized separately or in combination, may signal to controller 56 to start a self-clean cycle and/or to lock or unlock door 36. For example, control panel 34 may include a door lock element 62, such as, e.g., a button, knob, or the like, that a user may utilize to indicate door 36 should be locked or unlocked. Alternatively, door lock elements 62 may consist of several controls 60 that, when utilized in a programmed sequence, indicate to controller 56 to lock or unlock door 36. Other configurations of door lock element 62 may be used as well. Thus, oven range 12 may include one or more features for locking door 36 such that abnormal use of door 36 can be prevented.

[0030] Referring now to FIG. 3, an exemplary method for operating oven range appliance 12 is illustrated. Method 300 or portions thereof may be performed by controller 56 or any other suitable device or devices. At step 302, controller 56 detects an input to start a self-clean cycle of oven appliance 12. The self-clean cycle input may be a voice command by a user of the appliance. For example, the user could voice the command “GE, start self-clean cycle” or “GE, lock the door until it is over.” Alternatively, the self-clean cycle input may be the use of one or more controls 60 by the user. For example, oven range appliance 12 may include a button control element that, when depressed, signals controller 56 to start the self-clean cycle. Other ways of indicating a self-clean cycle should be started may be used as well.

[0031] At step 304 of method 300, oven range appliance 12 prompts the user to confirm that a self-clean cycle should be started. Oven appliance 12 may prompt for confirmation of the self-clean cycle by, e.g., any audible and/or visual prompt that indicates to the user that a confirmation is needed to start the self-clean cycle. By way of example, the prompt may be a notification displayed on control panel 34 of appliance 12, a LED light, a buzzer, a verbal prompt such as “Start self-clean cycle?”, and/or any other appropriate visual and/or audible prompt. Other prompts for confirming the self-clean cycle may also be used.

[0032] After prompting for a confirmation, at step 306, controller 56 may begin counting a predetermined time t confirm, which may be any appropriate time interval that allows the user sufficient time to confirm the self-clean cycle. At step 308, controller 56 determines whether a confirmation has been given. The user may confirm that a self-clean cycle should be started by giving a confirmation command, such as, e.g., “Yes, start self-clean cycle;” “Self-clean cycle confirmed;” or simply “Yes.” Other confirmation commands may also be used, such as a unique phrase that authenticates the user as described above. The user may also give a confirmation through other means, such as, e.g., by utilizing one of controls 60 or by utilizing one or more controls 60 in a preprogrammed sequence. In other embodiments, the user may give a confirmation gesture, such as the 5-3-2-4 touch sequence previously described. The confirmation gesture may be input on front panel 70 of door 36 or any other appropriate conductive surface of oven range appliance 12, such as, e.g., a portion of control panel 34.

[0033] If a confirmation is given before time t confirm elapses, method 300 may proceed to step 310. However, if a confirmation is not given during time t confirm, controller 56 may determine that the self-clean cycle should not be started. Further, in some embodiments, the confirmation step may be omitted, e.g., when a user gives a one-shot command such as, “Start self-clean and lock the door.”

[0034] At step 310, door lock 38 is activated to lock oven door 36, and at step 312, the self-clean cycle is started. As shown at step 314, controller 56 may count the time t dirty elapsed during the self-clean cycle. Controller 56 may also...
monitor the temperature $T_{ch}$ of the cooking chamber during the self-clean cycle using, e.g., temperature sensor $S_{ch}$. At step 316, controller $C_{56}$ determines whether the self-clean cycle is finished. If $C_{56}$ determines that the self-clean cycle is finished, it compares the current time $t_{self}$ to time $t_{lock}$ and sets $T_{ch}$ is at least equal to $T_{clean}$, which is completed. Alternatively, $C_{56}$ may determine that the self-clean cycle is finished if $t_{lock}$ has reached at least a threshold temperature $T_{th}$, which is set at $T_{lock}$, and if $t_{lock}$ is at least equal to $T_{lock}$, controller $C_{56}$ determines that the self-clean cycle is finished. In other embodiments, controller $C_{56}$ may determine the self-clean cycle is complete if both $t_{lock}$ and temperature $T_{ch}$ have reached at least threshold values $t_{lock}$ and $T_{th}$. Time $t_{lock}$ and temperature $T_{th}$ may be determined experimentally and may be, e.g., the time to complete a self-clean cycle under typical conditions and a maximum temperature reached during a self-clean cycle under typical conditions. Other ways of determining whether the self-clean cycle is finished may also be used.

If controller $C_{56}$ determines at step 316 that the self-clean cycle is not finished, controller $C_{56}$ continues to count time $t_{lock}$ and/or monitor temperature $T_{ch}$. However, if controller $C_{56}$ determines at step 316 that the self-clean cycle is finished, method 300 proceeds to step 318, where door lock 38 is activated to unlock oven door 36.

Fig. 4 illustrates another exemplary method for operating oven appliance 12. Method 400 or portions thereof may be performed by controller $C_{56}$ or any other suitable device or devices. As shown, method 400 includes step 402 of detecting an input to activate door lock 38 to lock door 36. The lock input may be a voice command by a user of the appliance. For example, the user could voice the command “GE, lock the door.” In alternative embodiments, the lock input may be the use of one or more controls $C_{60}$ by the user. For example, oven range appliance 12 may include a door locking element 62 that, when depressed, creates the lock input that may be detected by controller $C_{56}$. In still other embodiments, the user could voice the command “GE, start self-clean cycle” or utilize one or more of controls $C_{60}$ to indicate a self-clean cycle should be started. Controller $C_{56}$ may detect such a self-clean cycle input as the input to activate door lock 38 to lock door 36. Other ways of indicating door lock 38 should be activated to lock door 36 may be used as well.

At step 404, oven appliance 12 prompts the user to confirm that door lock 38 should be activated to lock door 36. As described with respect to confirming a self-clean cycle, oven appliance 12 may prompt for confirmation by, e.g., any audible and/or visual prompt that indicates to the user that a confirmation is needed to lock oven door 36. By way of example, the prompt may be a notification displayed on control panel 34, a LED light, a buzzer, a verbal prompt such as “Lock door?”, and/or any other appropriate visual and/or audible prompt. Other prompts for confirming controller $C_{56}$ should activate door lock 38 to lock door 36 may also be used.

After prompting for a confirmation, at step 406, controller $C_{56}$ may begin counting a predetermined time $t_{confirm}$, which may be any appropriate time interval that allows the user sufficient time to confirm that door 36 should be locked. At step 408, controller $C_{56}$ determines whether a confirmation has been given. The user may confirm that door 36 should be locked by giving a confirmation command, such as, e.g., “Yes, lock door,” “Lock door,” or simply, “Yes.” Alternatively, the confirmation command may be a unique phrase that authenticates the user as described above. The user may also give a confirmation by, e.g., utilizing one of controls $C_{60}$ or utilizing one or more controls $C_{60}$ in a preprogrammed sequence. In other embodiments, the user may confirm activation of door lock 38 at step 406 by giving a confirmation gesture, such as the 5-3-2-4 touch sequence previously described.

If a confirmation is given before time $t_{confirm}$ elapses, method 400 may proceed to step 410. However, if a confirmation is not given during time $t_{confirm}$, controller $C_{56}$ may determine that door lock 38 should not be activated and door 36 remains unlocked. Further, in some embodiments, the confirmation step may be omitted.
may determine that door lock 38 should not be activated and door 36 remains locked. As indicated, in some embodiments, the confirmation step may be omitted.

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 language of the claims.

What is claimed is:

1. A method for operating an oven appliance, the method comprising the steps of:
   detecting an input to start a self-clean cycle of the oven appliance;
   prompting for a confirmation command to start the self-clean cycle;
   determining whether the confirmation command has been received and, if so, then
   locking a door of the oven appliance;
   starting the self-clean cycle; and
   determining whether the self-clean cycle has finished and, if so, then
   unlocking the door of the oven appliance.

2. The method of claim 1, wherein the input is a voice command by a user of the oven appliance.

3. The method of claim 1, wherein the input is use of a control element of the oven appliance by a user of the oven appliance.

4. The method of claim 1, wherein prompting for a confirmation command to start the self-clean cycle comprises a verbal prompt by the oven appliance.

5. The method of claim 1, further comprising the step of counting a predetermined time \( t_{\text{confirm}} \) during the step of determining whether the confirmation command has been received.

6. The method of claim 1, wherein the step of determining whether the self-clean cycle is finished comprises comparing a time \( t_{\text{self}} \) of operation of the self-clean cycle to a threshold time \( t_{\text{thr}} \).

7. The method of claim 1, wherein the step of determining whether the self-clean cycle is finished comprises comparing a temperature \( T_{\text{sec}} \) of the cooking chamber using a temperature sensor of the oven appliance to a threshold temperature \( T_{\text{thr}} \).

8. A method for operating an oven appliance, the method comprising the steps of:
   detecting an input to activate a door lock of the oven appliance to lock a door of the oven appliance;
   prompting for a confirmation command to lock the door;
   determining whether the confirmation command to lock the door has been received and, if so, then
   locking the door;
   detecting an input to activate the door lock to unlock the door;
   prompting for a confirmation command to unlock the door; and
   determining whether the confirmation command to unlock the door has been received and, if so, then
   unlocking the door.

9. The method of claim 8, wherein the input to activate the door lock to lock the door is a voice command by a user of the oven appliance.

10. The method of claim 8, wherein the input to activate the door lock to unlock the door is a voice command by a user of the oven appliance.

11. The method of claim 8, wherein prompting for a confirmation command to lock the door comprises a verbal prompt by the oven appliance.

12. The method of claim 8, wherein prompting for a confirmation command to unlock the door comprises a verbal prompt by the oven appliance.

13. The method of claim 8, further comprising the step of counting a predetermined time \( t_{\text{confirm}} \) during the step of determining whether the confirmation command to lock the door has been received.

14. The method of claim 8, further comprising the step of counting a predetermined time \( t_{\text{confirm}} \) during the step of determining whether the confirmation command to unlock the door has been received.

15. An oven appliance, comprising:
   a cabinet defining an opening at a front portion of the cabinet, the cabinet also defining a cooking chamber configured for receipt of food items for cooking;
   a door mounted to the cabinet at the opening of the cabinet, the door being selectively adjustable between an open position and a closed position to permit selective access to the cooking chamber through the opening of the cabinet;
   a door lock;
   a heating element configured to heat the cooking chamber; and
   a controller in operative communication with the door lock, the controller configured for
   detecting an input to activate a door lock of the oven appliance to lock a door of the oven appliance;
   prompting for a confirmation command to lock the door;
   determining whether the confirmation command to lock the door has been received and, if so, then
   locking the door;
   detecting an input to activate the door lock to unlock the door;
   prompting for a confirmation command to unlock the door; and
   determining whether the confirmation command to unlock the door has been received and, if so, then
   unlocking the door.

16. The oven appliance of claim 15, wherein the input to activate the door lock to lock the door is a voice command by a user of the oven appliance to start a self-clean cycle of the oven appliance.

17. The oven appliance of claim 16, wherein the input to activate the door lock to unlock the door is a signal that the self-clean cycle is finished.

18. The oven appliance of claim 15, wherein the input to activate the door lock to lock the door is a voice command by a user of the oven appliance to lock the door.

19. The oven appliance of claim 15, wherein the input to activate the door lock to unlock the door is a voice command by a user of the oven appliance to unlock the door.

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