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Miller

(54) **REFRIGERATOR APPLIANCE AND AN ICE MAKING ASSEMBLY FOR A REFRIGERATOR APPLIANCE**

(71) Applicant: **General Electric Company**, Schenectady, NY (US)

(72) Inventor: **Charles Benjamin Miller**, Louisville, KY (US)

(73) Assignee: **General Electric Company**, Schenectady, NY (US)

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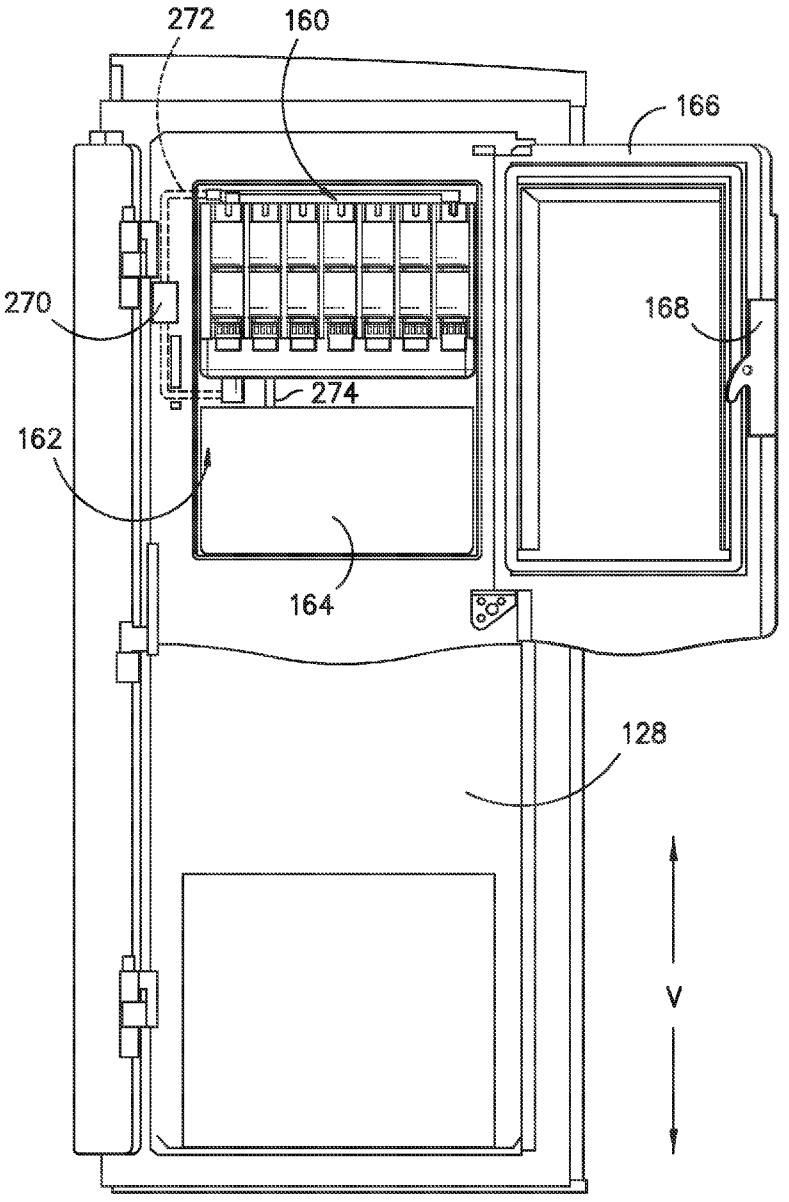
(57) **ABSTRACT**

A refrigerator appliance and an ice making assembly for the same are provided. The ice making assembly includes an ice formation panel, a chilled air duct and a water distribution manifold. The ice formation panel may be cooled by chilled air passing through the chilled air duct, and the water distribution panel may direct liquid water over the ice formation panel. Ice cubes can be formed on the ice formation panel from the liquid water.



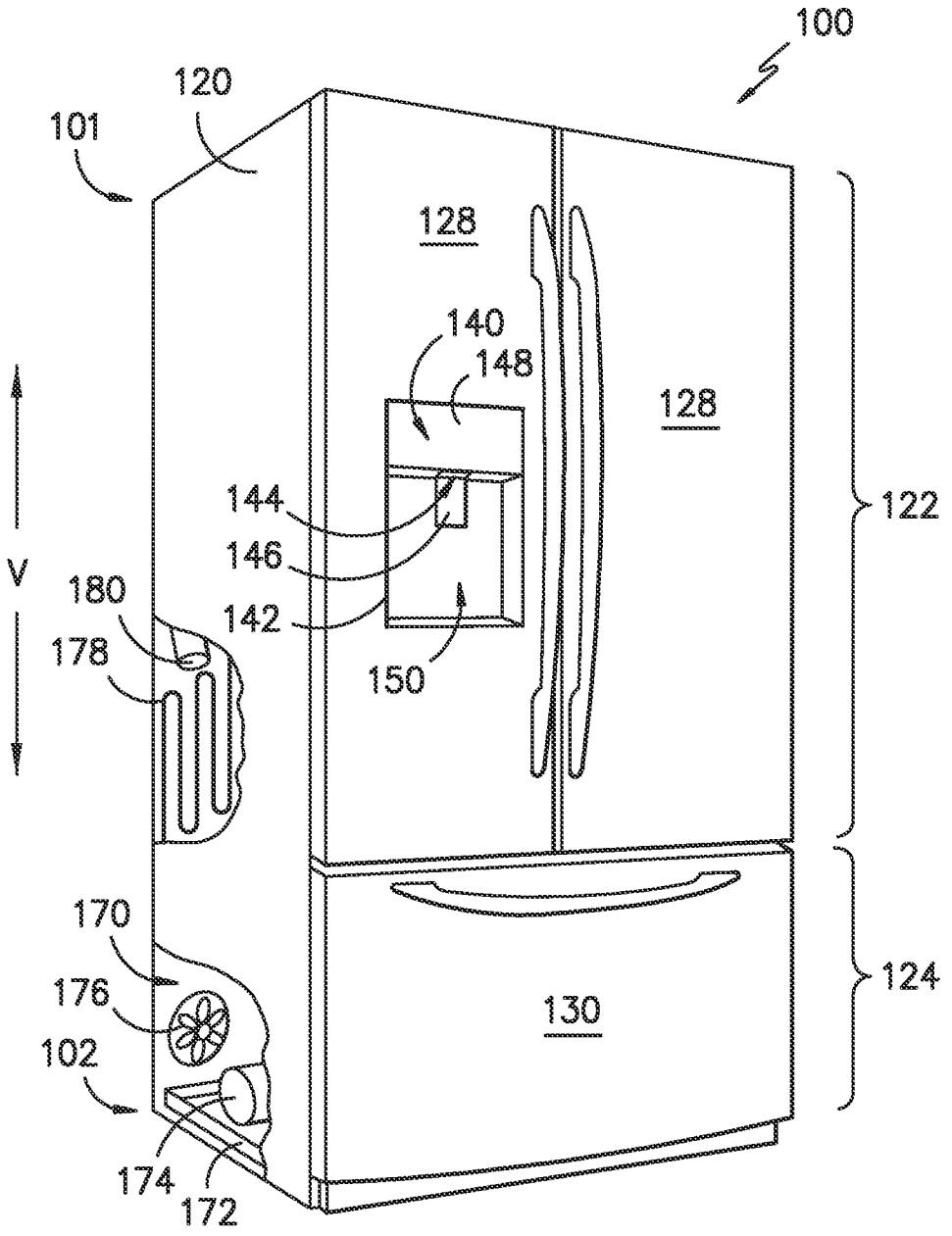

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FIG. –1–

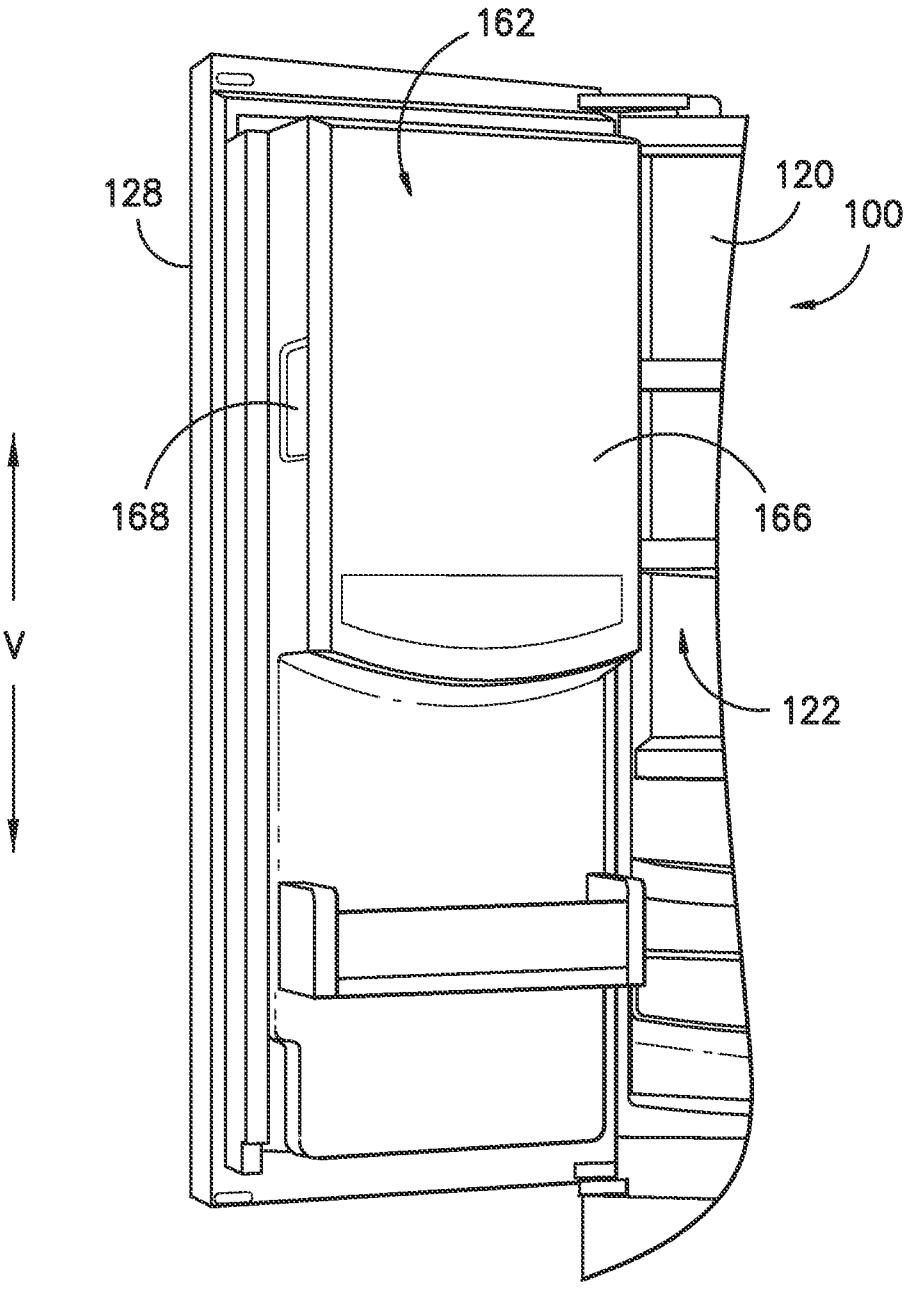

FIG. 2

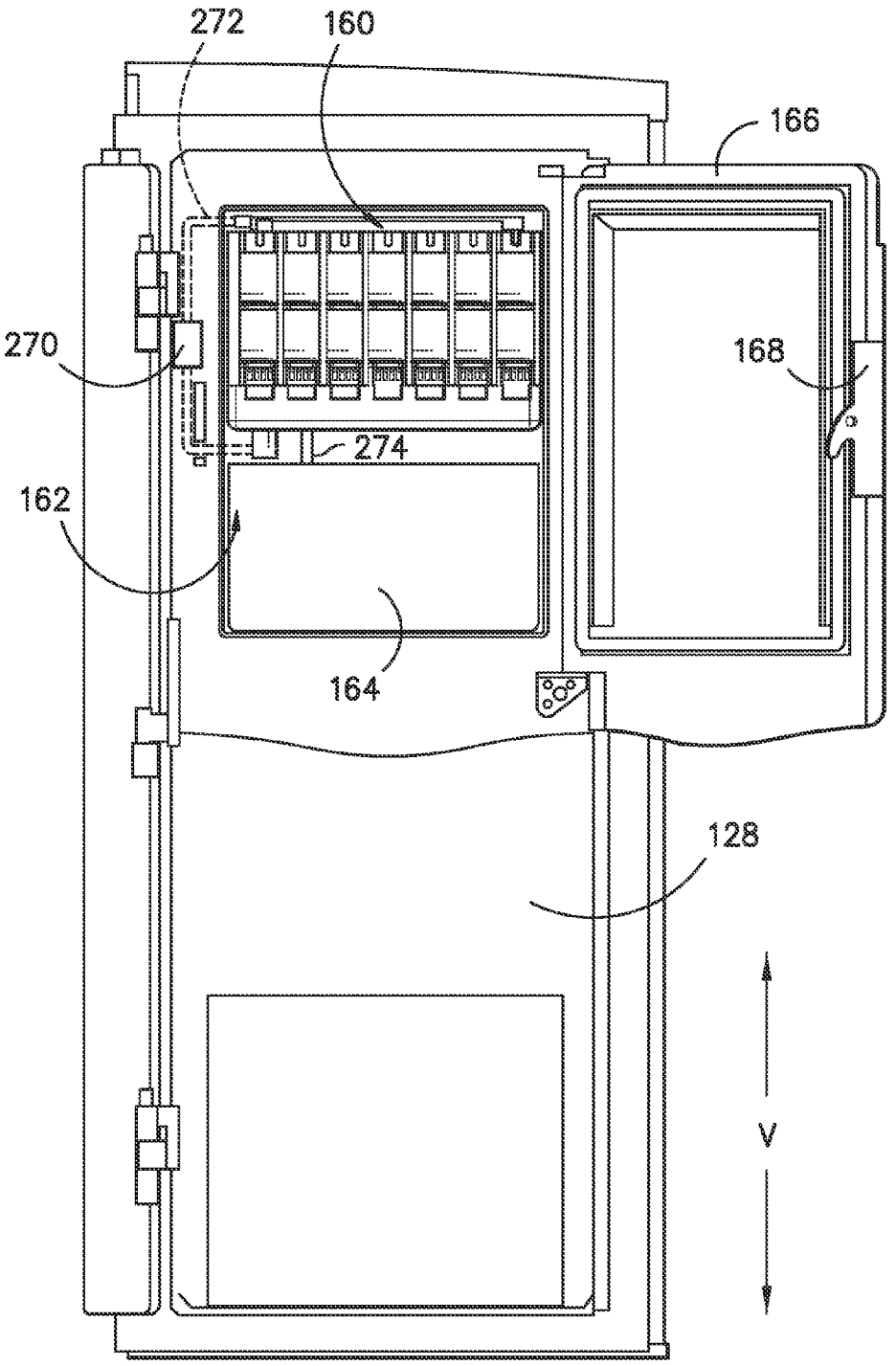

FIG. -3-

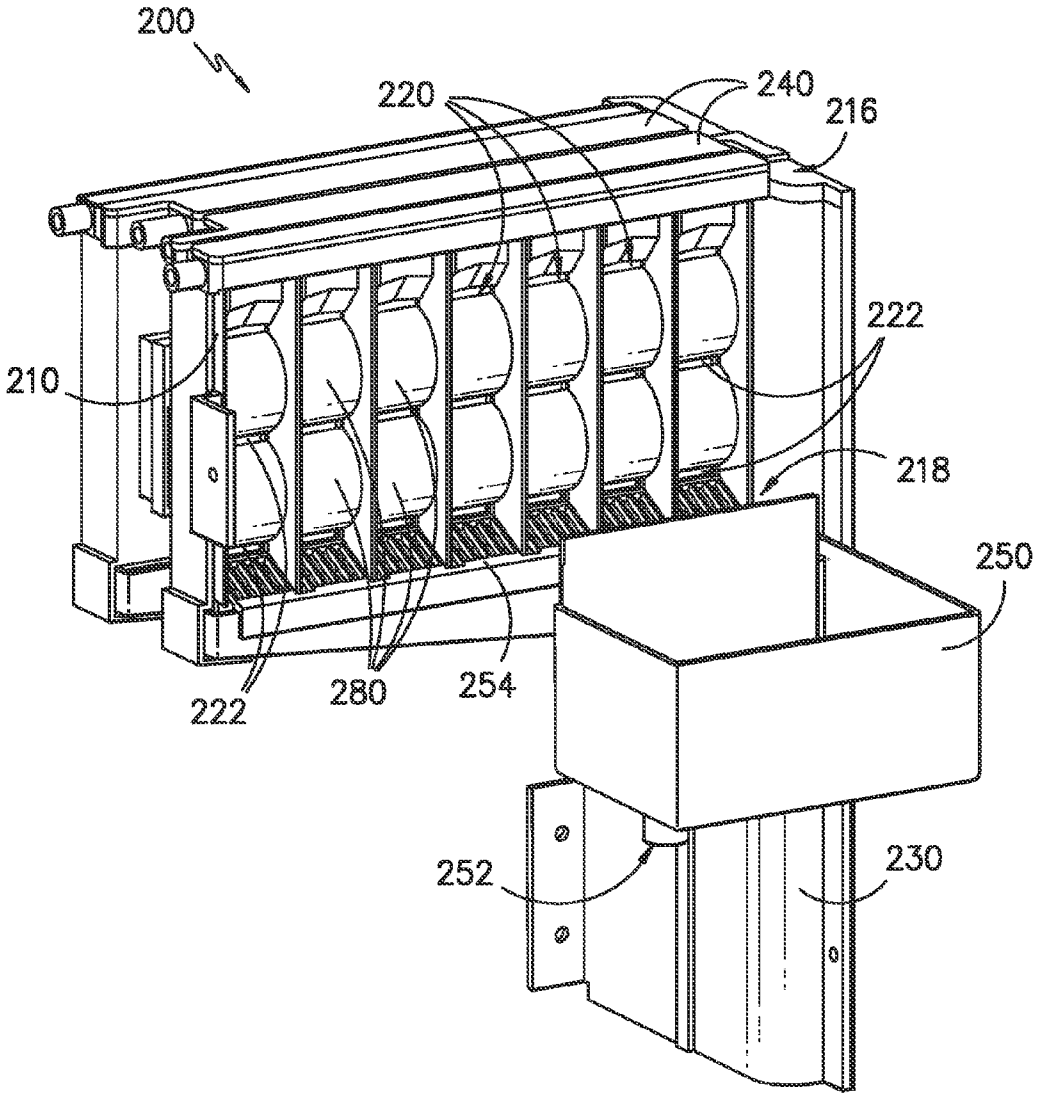

FIG. —4—

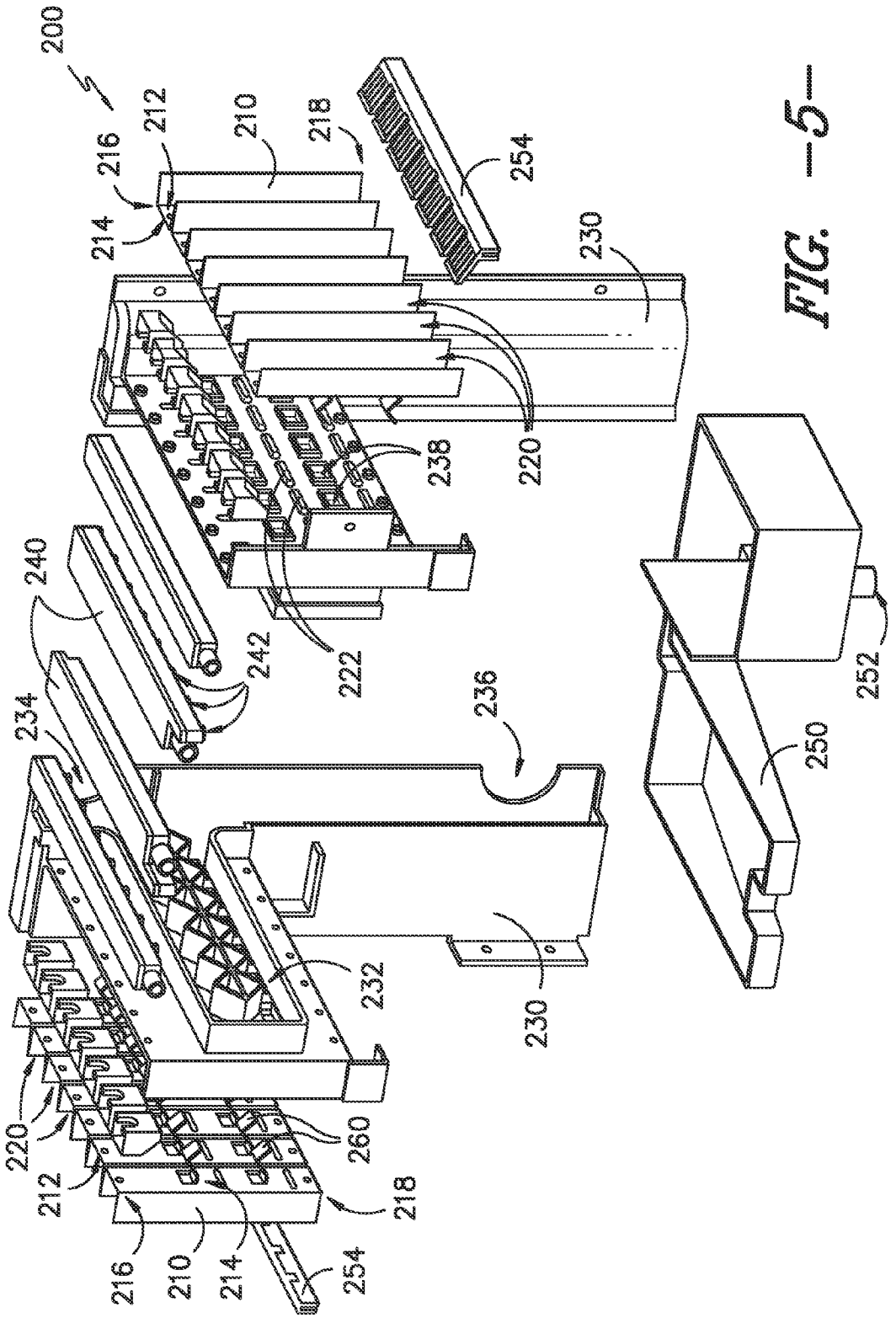
200
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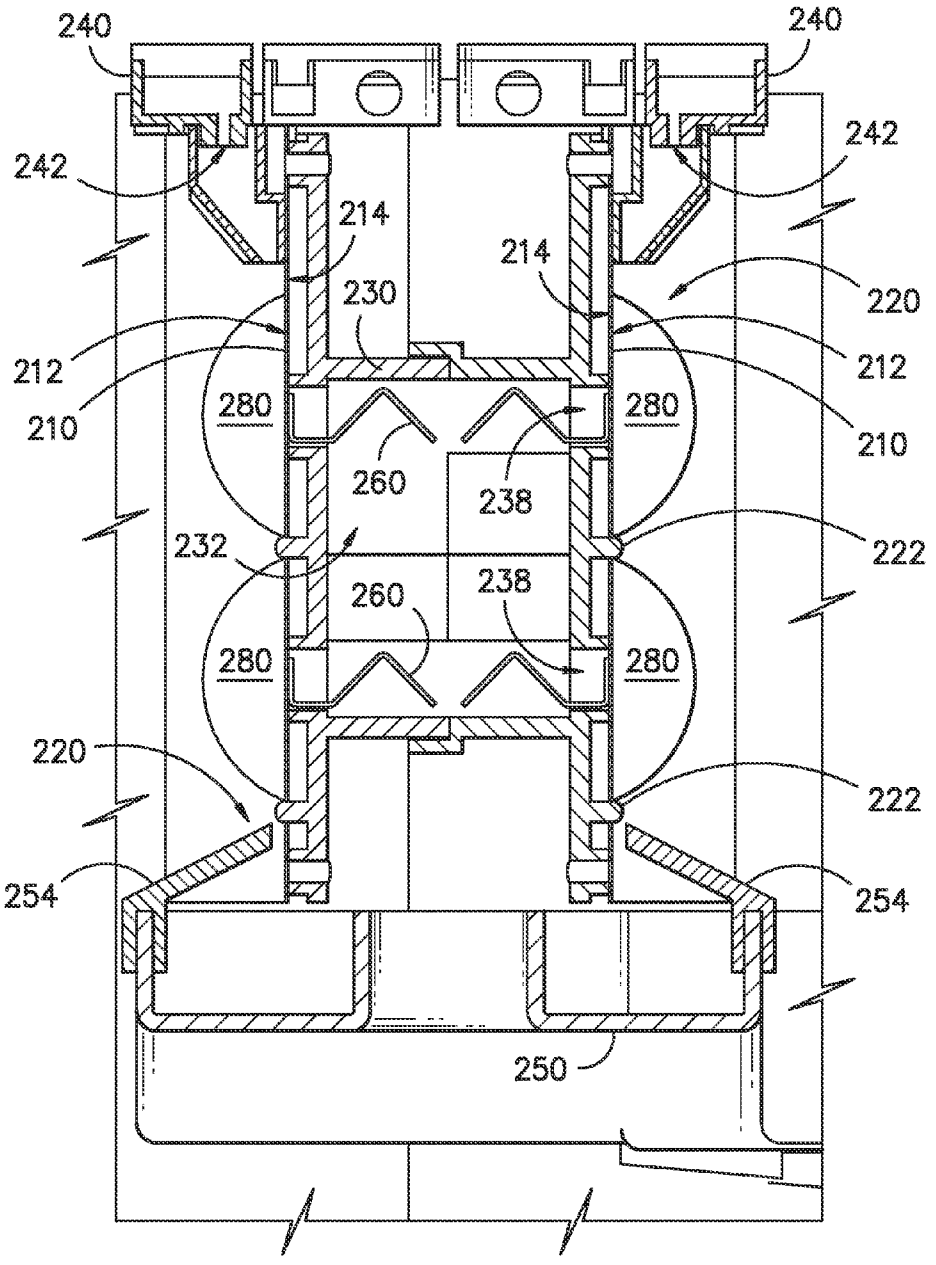
FIG. 5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220
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254
254
250

FIG. —6—

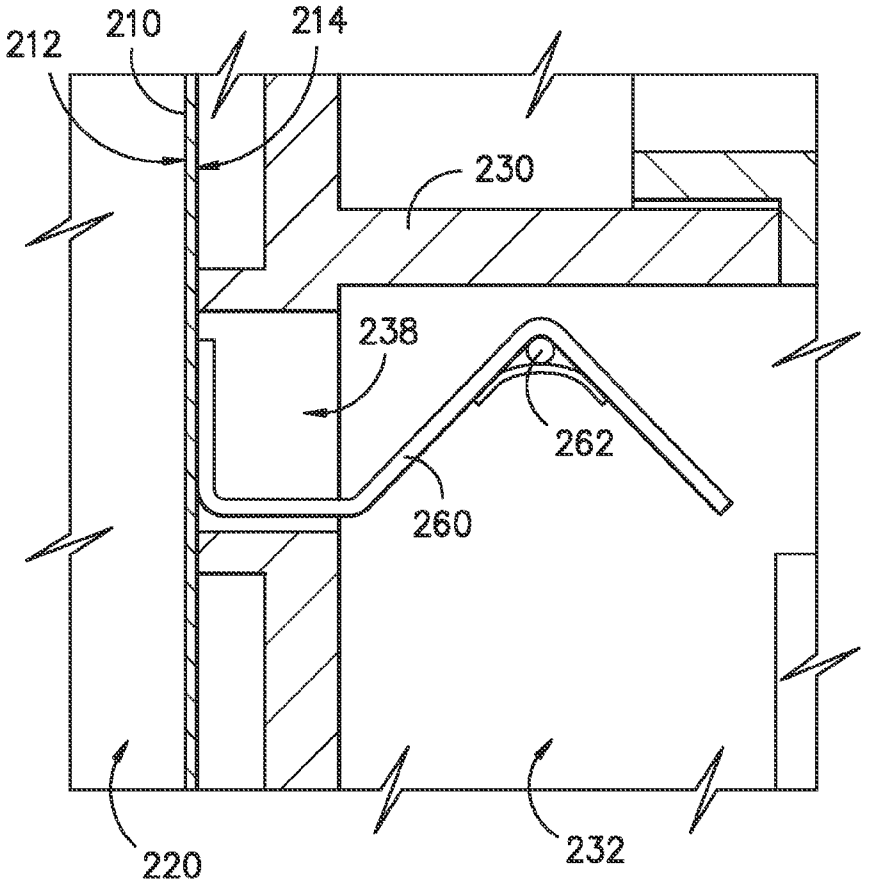

FIG. —7—

REFRIGERATOR APPLIANCE AND AN ICE MAKING ASSEMBLY FOR A REFRIGERATOR APPLIANCE

FIELD OF THE INVENTION

[0001] The present subject matter relates generally to refrigerator appliances and ice makers for the same.

BACKGROUND OF THE INVENTION

[0002] Certain refrigerator appliances include an ice maker. To produce ice, liquid water is directed to the ice maker and frozen. A variety of ice types can be produced depending upon the particular ice maker used. For example, certain ice makers include a mold body for receiving liquid water. Within the mold body, liquid water freezes to form ice cubes. Such ice makers can also include a heater and/or an auger for harvesting ice cubes from the mold body.

[0003] Freezing water within a mold body to form ice cubes has certain drawbacks. For example, ice cubes produced in such a manner can be cloudy or opaque, and certain consumers prefer clear ice cubes. In addition, harvesting ice cubes from the mold body with the heater and auger can be energy intensive such that an efficiency of an associated refrigerator appliance is decreased. Ice formation within the mold body can also be relatively slow such that maintaining a sufficient supply of ice cubes during periods of high demand is difficult. Further, ice makers with mold bodies can occupy large volumes of valuable space within refrigerator appliances.

[0004] Accordingly, an ice making assembly for a refrigerator appliance with features for generating relatively clear ice cubes would be useful. In addition, an ice making assembly for a refrigerator appliance with features for generating ice cubes quickly and/or efficiently would be useful. Also, an ice making assembly for a refrigerator appliance that occupies a relatively small volume within the refrigerator appliance would be useful.

BRIEF DESCRIPTION OF THE INVENTION

[0005] The present subject matter provides a refrigerator appliance and an ice making assembly for the same. The ice making assembly includes an ice formation panel, a chilled air duct and a water distribution manifold. The ice formation panel may be cooled by chilled air passing through the chilled air duct, and the water distribution panel may direct liquid water over the ice formation panel. Ice cubes can be formed on the ice formation panel from the liquid water. Additional 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 a first exemplary embodiment, a refrigerator appliance is provided. The refrigerator appliance includes a cabinet that defines a chilled chamber, a door mounted to the cabinet and an ice making assembly is mounted to the door. The ice making assembly includes an ice formation panel having a front surface and a back surface. The ice formation panel extends between a top portion and a bottom portion. The ice formation panel defines a plurality of channels at the front surface of the ice formation panel. A chilled air duct is positioned at the back surface of the ice formation panel. A water distribution manifold is positioned at the top portion of the ice formation panel. The water distribution manifold has a plurality of outlets. Each outlet of the plurality of outlets is aligned with a respective one of the plurality of channels of the ice formation panel. A water collection sump is positioned at the bottom portion of the ice formation panel.

[0007] In a second exemplary embodiment, an ice making assembly for a refrigerator appliance is provided. The ice making assembly includes an ice formation panel having a front surface and a back surface. The ice formation panel extends between a top portion and a bottom portion. The ice formation panel defines a plurality of channels at the front surface of the ice formation panel. A chilled air duct is positioned at the back surface of the ice formation panel. A water distribution manifold is positioned at the top portion of the ice formation panel. The water distribution manifold has a plurality of outlets. Each outlet of the plurality of outlets is aligned with a respective one of the plurality of channels of the ice formation panel. A water collection sump is positioned at the bottom portion of the ice formation panel.

[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.

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 perspective view of a refrigerator appliance according to an exemplary embodiment of the present subject matter.

[0011] FIG. **2** provides a perspective view of a door of the exemplary refrigerator appliance of FIG. **1**.

[0012] FIG. **3** provides an elevation view of the door of the exemplary refrigerator appliance of FIG. **2** with an access door of the door shown in an open position.

[0013] FIG. **4** provides a perspective view of an ice making assembly according to an exemplary embodiment of the present subject matter.

[0014] FIG. **5** provides an exploded view of the exemplary ice making assembly of FIG. **4**.

[0015] FIG. **6** provides a partial, section view of the exemplary ice making assembly of FIG. **4**.

[0016] FIG. **7** provides a section view of certain components of the exemplary ice making assembly of FIG. **6**.

DETAILED DESCRIPTION

[0017] 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.

[0018] FIG. **1** provides a perspective view of a refrigerator appliance **100** according to an exemplary embodiment of the present subject matter. Refrigerator appliance **100** includes a cabinet or housing **120** that extends between a top portion **101** and a bottom portion **102** along a vertical direction V. Housing **120** defines chilled chambers for receipt of food items for storage. In particular, housing **120** defines fresh food chamber **122** positioned at or adjacent top portion **101** of housing **120** and a freezer chamber **124** arranged at or adjacent bottom portion **102** of housing **120**. As such, refrigerator appliance **100** is generally referred to as a bottom mount refrigerator. It is recognized, however, that the benefits of the present disclosure apply to other types and styles of refrigerator appliances such as, e.g., a top mount refrigerator appliance or a side-by-side style refrigerator appliance. Consequently, the description set forth herein is for illustrative purposes only and is not intended to be limiting in any aspect to any particular chilled chamber configuration.

[0019] Refrigerator doors **128** are rotatably hinged to an edge of housing **120** for selectively accessing fresh food chamber **122**. In addition, a freezer door **130** is arranged below refrigerator doors **128** for selectively accessing freezer chamber **124**. Freezer door **130** is coupled to a freezer drawer (not shown) slidably mounted within freezer chamber **124**. Refrigerator doors **128** and freezer door **130** are shown in a closed configuration in FIG. **1**.

[0020] Refrigerator appliance **100** also includes a dispensing assembly **140** for dispensing liquid water and/or ice. Dispensing assembly **140** includes a dispenser **142** positioned on or mounted to an exterior portion of refrigerator appliance **100**, e.g., on one of doors **128**. Dispenser **142** includes a discharging outlet **144** for accessing ice and liquid water. An actuating mechanism **146**, shown as a paddle, is mounted below discharging outlet **144** for operating dispenser **142**. In alternative exemplary embodiments, any suitable actuating mechanism may be used to operate dispenser **142**. For example, dispenser **142** can include a sensor (such as an ultrasonic sensor) or a button rather than the paddle. A user interface panel **148** is provided for controlling the mode of operation. For example, user interface panel **148** includes a plurality of user inputs (not labeled), such as a water dispensing button and an ice-dispensing button, for selecting a desired mode of operation such as crushed or non-crushed ice.

[0021] Discharging outlet **144** and actuating mechanism **146** are an external part of dispenser **142** and are mounted in a dispenser recess **150**. Dispenser recess **150** is positioned at a predetermined elevation convenient for a user to access ice or water and enabling the user to access ice without the need to bend-over and without the need to open doors **128**. In the exemplary embodiment, dispenser recess **150** is positioned at a level that approximates the chest level of a user.

[0022] FIG. **2** provides a perspective view of a door of refrigerator doors **128**. FIG. **3** provides an elevation view of refrigerator door **128** with an access door **166** shown in an open position. Refrigerator appliance **100** includes a sub-compartment **162** defined on refrigerator door **128**. Sub-compartment **162** is often referred to as an "icebox." Sub-compartment **162** extends into fresh food chamber **122** when refrigerator door **128** is in the closed position.

[0023] As may be seen in FIG. **3**, an ice maker or ice making assembly **160** and an ice storage bin **164** are positioned or disposed within sub-compartment **162**. Thus, ice is supplied to dispenser recess **150** (FIG. **1**) from the ice making assembly **160** and/or ice storage bin **164** in sub-compartment **162** on a back side of refrigerator door **128**. Chilled air from a sealed system (not shown) of refrigerator appliance **100** may be directing into ice making assembly **160** in order to cool components of ice making assembly **160**. In particular, an evaporator **178**, e.g., positioned at or within fresh food chamber **122** or freezer chamber **124**, is configured for generating cooled or chilled air. A supply conduit **180**, e.g., defined by or positioned within housing **120**, extends between evaporator **178** and components of ice making assembly **160** in order to cool components of ice making assembly **160** and assist ice formation by ice making assembly **160**.

[0024] During operation of ice making assembly **160**, chilled air from the sealed system cools components of ice making assembly **160** to or below a freezing temperature of liquid water. Thus, ice making assembly **160** is an air cooled ice making assembly. Chilled air from the sealed system also cools ice storage bin **164**. In particular, air around ice storage bin **164** can be chilled to a temperature above the freezing temperature of liquid water, e.g., to about the temperature of fresh food chamber **122**, such that ice cubes in ice storage bin **164** melt over time due to being exposed to air having a temperature above the freezing temperature of liquid water. In addition, ice making assembly **160** may be also be exposed to air having a temperature above the freezing temperature of liquid water. As an example, air from fresh food chamber **122** can be directed into sub-compartment **162** such that ice making assembly **160** and/or ice storage bin **164** is exposed to air from fresh food chamber **122**.

[0025] Liquid water generated during melting of ice cubes in ice storage bin **164**, is directed out of ice storage bin **164**. In particular, turning back to FIG. **1**, liquid water from melted ice cubes is directed to an evaporation pan **172**. Evaporation pan **172** is positioned within a mechanical compartment **170** defined by housing **120**, e.g., at bottom portion **102** of housing **120**. A condenser **174** of the sealed system can be positioned, e.g., directly, above and adjacent evaporation pan **172**. Heat from condenser **174** can assist with evaporation of liquid water in evaporation pan **172**. A fan **176** configured for cooling condenser **174** can also direct a flow air across or into evaporation pan **172**. Thus, fan **176** can be positioned above and adjacent evaporation pan **172**. Evaporation pan **172** is sized and shaped for facilitating evaporation of liquid water therein. For example, evaporation pan **172** may be open topped and extend across about a width and/or a depth of housing **120**. In alternative exemplary embodiments, excess liquid water from melted ice cubes in ice storage bin **164** and/or from ice making assembly **160** can be directed to a drain, e.g., that leads to a sewer or septic waste water system.

[0026] Access door **166** is hinged to refrigerator door **128**. Access door **166** permits selective access to sub-compartment **162**. Any manner of suitable latch **168** is configured with sub-compartment **162** to maintain access door **166** in a closed position. As an example, latch **168** may be actuated by a consumer in order to open access door **166** for providing access into sub-compartment **162**. Access door **166** can also assist with insulating sub-compartment **162**.

[0027] FIG. **4** provides a perspective view of an ice making assembly **200** according to an exemplary embodiment of the present subject matter. FIG. **5** provides an exploded view of ice making assembly **200**. Ice making assembly **200** can be used in any suitable refrigerator appliance. For example, ice making assembly **200** may be used in refrigerator appliance **100** (FIG. **1**) as ice making assembly **160**.

[0028] As may be seen in FIGS. **4** and **5**, ice making assembly **200** includes ice formation panels **210**. Ice formation panels **210** have a front surface **212** and a back surface **214**. Front and back surfaces **212** and **214** are positioned opposite each other on ice formation panel **210**, e.g., such that front and back surfaces **212** and **214** face opposite directions. Ice formation panels **210** also extend between a top portion **216** and a bottom portion **218**. Top and bottom portions **216** and **218** are, e.g., vertically, spaced apart from each other. Ice formation panel **210** also defines a plurality of channels **220**. Channels **220** are positioned at or adjacent front surface **212** of ice formation panel **210**. Ice formation panel **210** can be constructed of or with any suitable material. For example, ice formation panel **210** may be constructed of or with stainless steel.

[0029] A plurality of, e.g., horizontal, projections **222** are disposed or positioned within channels **220**. Projections **222** assist with hindering or preventing bridging of ice cubes **280**. Thus, projections **222** can assist with keeping ice cubes **280** separate or distinct. As shown in FIG. **5**, projections **222** may be formed on a chilled air duct **230**. In alternative exemplary embodiments, projections **222** may be formed on ice formation panel **210**. For example, projections **222** may be embossed on ice formation panel **210**.

[0030] Ice making assembly **200** also includes chilled air duct **230**. Chilled air duct **230** is positioned at or adjacent back surface **214** of ice formation panel **210**. Thus, chilled air duct **230** is positioned opposite channels **220** on ice formation panel **210**. Chilled air duct **230** defines an interior volume **232**, an entrance **234** and an exit **236**. Chilled air duct **230** is configured or arranged for receiving a flow of chilled air, e.g., from supply conduit **180** and evaporator **178** (FIG. **1**). In particular, the flow of chilled air enters interior volume **232** of chilled air duct **230** at entrance **234** of chilled air duct **230** and exits interior volume **232** of chilled air duct **230** at exit **236** of chilled air duct **230**. Chilled air within interior volume **232** of chilled air duct **230** can cool ice formation panel **210**, e.g., to permit or facilitate ice cube formation on ice formation panel **210**, as discussed in greater detail below. Chilled air duct **230** can be constructed of or with any suitable material. For example, chilled air duct **230** may be constructed of or with molded plastic.

[0031] A water distribution manifold **240** is positioned at or adjacent top portion **216** of ice formation panel **210**. Water distribution manifold **240** has or defines a plurality of outlets **242**. Each outlet of outlets **242** is aligned with a respective one of channels **220**. In particular, each outlet of outlets **242** may be positioned, e.g., directly, above the respective one of channels **220**. Liquid water within water distribution manifold **240** can flow out of outlets **242** into channels **220**. Due to chilled air within interior volume **232** of chilled air duct **230**, ice formation panel **210** is chilled to or below the freezing temperature of water such that liquid water flowing within channels **220** can freeze on ice formation panel **210** and form ice cubes **280** on ice formation panel **210**. Ice cubes **280** can have any suitable shape. For example, ice cubes **280** may be crescent shaped.

[0032] Ice making assembly **200** can be exposed to or operate within air having a temperature greater than a freezing temperature of liquid water. Thus, liquid water within water distribution manifold **240** can be hindered from freezing during operation of ice making assembly **200**. However, as discussed above, chilled air within chilled air duct **230** can permit formation of ice cubes **280** on ice formation panel **210**, e.g., despite ice making assembly **200** being exposed to or operating within air having a temperature greater than a freezing temperature of liquid water.

[0033] A water collection sump **250** is positioned at bottom portion **218** of ice formation panel **210**. In particular, water collection sump **250** may be positioned, e.g., directly, below channels **220** of ice formation panel **210**. Thus, water collection sump **250** can receive liquid water runoff from channels **220** during operation of ice making assembly **200**. A grate **254** is also positioned at bottom portion **218** of ice formation panel **210**. Grate **254** may also be positioned, e.g., directly, above water collection sump **250**. Grate **254** is oriented for directing harvested ice cubes **280** away from water collection sump **250**. For example, grate **254** may be sloped downwardly away from ice formation panel **210** such that harvested ice cubes **280** impact grate **254** rather than falling into water collection sump **250**.

[0034] By forming ice cubes **280** on ice formation panel **210** with circulating water, ice cubes **280** produced with ice making assembly **200** can be relatively clear or unclouded, e.g., due to collection of impurities or particles within water collection sump **250**. In addition, ice making assembly **200** can generate ice cubes **280** quickly and/or efficiently, e.g., while occupying a relatively small volume within refrigerator appliance **100**.

[0035] FIG. **6** provides a partial, section view of ice making assembly **200**. As may be seen in FIG. **6**, chilled air duct **230** defines a plurality of openings **238**. Each opening of openings **238** extends between interior volume **232** of chilled air duct **230** and back surface **214** of ice formation panel **210**. In particular, each opening of openings **238** is positioned opposite a respective one of channels **220** of ice formation panel **210**. Openings **238** can assist with cooling ice formation panel **210**, e.g., by permitting chilled air in interior volume **232** of chilled air duct **230** to contact ice formation panel **210**. Openings **238** can have any suitable shape. For example, openings **238** may have a circular shape, an oval shape, a rectangular shape, etc. in a plane that is parallel to back surface **214** of ice formation panel **210**.

[0036] Ice making assembly **200** also includes a plurality of fins **260**. Each fin of fins **260** is mounted to ice formation panel **210**, e.g., at back surface **214** of ice formation panel **210**. In addition, fins **260** are positioned with a respective one of openings **238**. Fins **260** can assist with cooling ice formation panel **210**, e.g., by facilitating or assisting heat transfer between chilled air in interior volume **232** of chilled air duct **230** and ice formation panel **210**. Fins **260** can be constructed of or with any suitable, e.g., conductive, material. For example, fins **260** may be constructed of or with aluminum or stainless steel.

[0037] FIG. **7** provides a section view of certain components of ice making assembly **200**. In particular, one of fins **260** and a heating element **262** of ice making assembly **200** may be seen in FIG. **7**. Heating element **262** is mounted to fins **260**. For example, heating element **262** may be taped or adhered to fins **260**. Heating element **262** can be any suitable heating mechanism. For example, heating element **262** may be an electric resistance heating element. Heating element **262** is operable to heat fins **260** and ice formation panel **210**. Heating ice formation panel **210** with heating element **262** can assist with harvesting of ice cubes **280** from ice formation panel **210**. In alternative exemplary embodiments, heating element **262** can by mounted to any other suitable component of ice making assembly **200**. For example, heating element

262 may be mounted to ice formation panel **210** or chilled air duct **230**. Warm water can also be directed through passages between channels **222** to assist with heating ice formation panel **210** and harvesting ice cubes **280**.

[0038] As may be seen in FIG. **7**, each fin of fins **260** extends from back surface **214** of ice formation panel **210** through opening **238** into interior volume **232** of chilled air duct **230**. Such positioning of fins **260** can assist with cooling ice formation panel **210**. In particular, by extending into interior volume **232** of chilled air duct **230**, fins **260** can be at least partially disposed within the flow of chilled air through interior volume **232** of chilled air duct **230** and heat transfer between chilled air in interior volume **232** of chilled air duct **230** and ice formation panel **210** can be facilitated.

[0039] Turning back to FIG. **3**, ice making assembly **200** can also include a circulation pump **270** and a circulation conduit **272**. Circulation conduit **272** extends between water collection sump **250**, e.g., an outlet **252** of water collection sump **250**, and water distribution manifold **240**. Circulation pump **270** is operable pump liquid water from water collection sump **250** to water distribution manifold **240** through circulation conduit **272**. Thus, circulation conduit **272** can place water collection sump **250** and water distribution manifold **240** in fluid communication with each other and permit liquid water to be recirculated within ice making assembly **200**.

[0040] Ice making assembly **200** can further include a drain conduit **274**. Drain conduit **274** extends between water collection sump **250** and evaporation pan **172** (FIG. **1**). Thus, drain conduit **274** can place water collection sump **250** and evaporation pan **172** in fluid communication with each other and permit excess liquid water to drain from ice making assembly **200** to evaporation pan **172**. In alternative exemplary embodiments, drain conduit **274** can extend between water collection sump **250** and a drain, e.g., that leads to a sewer or septic waste water system. Thus, drain conduit **274** can direct excess liquid water out of ice making assembly **200**, e.g., to the sewer or septic waste water system.

[0041] It should be understood that front surface **212** of ice formation panel **210** need not be planar in alternative exemplary embodiments. For example, front surface **212** of ice formation panel **210** can define or be constructed with a grid, e.g., of conductive material, such as aluminum or copper, within channels **220**. Horizontal partitions of the grid can be angled downward. In such exemplary embodiments, liquid water from water distribution manifold **240** flows into each grid cell of the grid, and at least a portion of the liquid water freezes within each grid cell to form a, e.g., cube shaped, ice cube therein.

[0042] 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.

What is claimed is:

1. A refrigerator appliance, comprising:

a cabinet defining a chilled chamber;

a door mounted to the cabinet;

an ice making assembly mounted to the door, the ice making assembly comprising

an ice formation panel having a front surface and a back surface, the ice formation panel extending between a top portion and a bottom portion, the ice formation panel defining a plurality of channels at the front surface of the ice formation panel;

a chilled air duct positioned at the back surface of the ice formation panel;

a water distribution manifold positioned at the top portion of the ice formation panel, the water distribution manifold having a plurality of outlets, each outlet of the plurality of outlets aligned with a respective one of the plurality of channels of the ice formation panel; and

a water collection sump positioned at the bottom portion of the ice formation panel.

2. The refrigerator appliance of claim **1**, further comprising an evaporator configured for generating cooled air and a supply conduit, the chilled air duct defining an interior volume, the supply conduit extending between the evaporator and the chilled air duct such that the supply conduit is configured for directing the cooled air from the evaporator into the interior volume of the chilled air duct.

3. The refrigerator appliance of claim **2**, wherein the chilled air duct defines a plurality of openings, each opening of the plurality of openings extending between the interior volume of the chilled air duct and the back surface of the ice formation panel opposite a respective one of the plurality of channels of the ice formation panel.

4. The refrigerator appliance of claim **3**, wherein the ice making assembly further comprises a plurality of fins, each fin mounted to ice formation panel at the back surface of the ice formation panel and positioned within a respective one of the plurality of openings.

5. The refrigerator appliance of claim **4**, wherein the ice making assembly further comprises a heating element mounted to the plurality of fins.

6. The refrigerator appliance of claim **4**, wherein each fin of the plurality of fins extends from the back surface of the ice formation panel into the interior volume of the chilled air duct.

7. The refrigerator appliance of claim **1**, wherein the ice making assembly further comprises a plurality of substantially horizontal projections, each horizontal projection of the plurality of horizontal projections mounted to the ice formation panel within a respective one of the plurality of channels of the ice formation panel.

8. The refrigerator appliance of claim **1**, wherein the ice making assembly further comprises a circulation pump and a circulation conduit, the circulation conduit extending between the water collection sump and the water distribution manifold, the circulation pump configured for selectively pumping water from the water collection sump to the water distribution manifold through the circulation conduit.

9. The refrigerator appliance of claim **1**, further comprising a drain conduit and an evaporation pan, the evaporation pan positioned within a mechanical chamber defined by the cabinet, the drain conduit extending between the water collection sump and the evaporation pan such that excess water within the water collection sump is directed into the evaporation pan via the drain conduit.

10. The refrigerator appliance of claim **1**, further comprising a drain conduit and a drain, the drain conduit extending between the water collection sump and the drain such that excess water within the water collection sump is directed to the drain.

11. The refrigerator appliance of claim **1**, wherein the ice formation panel is constructed with stainless steel.

12. An ice making assembly for a refrigerator appliance, comprising:

an ice formation panel having a front surface and a back surface, the ice formation panel extending between a top portion and a bottom portion, the ice formation panel defining a plurality of channels at the front surface of the ice formation panel;

a chilled air duct positioned at the back surface of the ice formation panel;

a water distribution manifold positioned at the top portion of the ice formation panel, the water distribution manifold having a plurality of outlets, each outlet of the plurality of outlets aligned with a respective one of the plurality of channels of the ice formation panel; and

a water collection sump positioned at the bottom portion of the ice formation panel.

13. The ice making assembly of claim **12**, further comprising an evaporator configured for generating cooled air and a supply conduit, the chilled air duct defining an interior volume, the supply conduit extending between the evaporator and the chilled air duct such that the supply conduit is configured for directing the cooled air from the evaporator into the interior volume of the chilled air duct.

14. The ice making assembly of claim **12**, wherein the chilled air duct defines an interior volume and a plurality of openings, each opening of the plurality of openings extending between the interior volume of the chilled air duct and the back surface of the ice formation panel opposite a respective one of the plurality of channels of the ice formation panel.

15. The ice making assembly of claim **14**, wherein the ice making assembly further comprises a plurality of fins, each fin mounted to ice formation panel at the back surface of the ice formation panel and positioned within a respective one of the plurality of openings.

16. The ice making assembly of claim **15**, wherein the ice making assembly further comprises a heating element mounted to the plurality of fins.

17. The ice making assembly of claim **15**, wherein each fin of the plurality of fins extends from the back surface of the ice formation panel into the interior volume of the chilled air duct.

18. The ice making assembly of claim **12**, wherein the ice making assembly further comprises a plurality of substantially horizontal projections, each horizontal projection of the plurality of horizontal projections mounted to the ice formation panel within a respective one of the plurality of channels of the ice formation panel.

19. The ice making assembly of claim **12**, wherein the ice making assembly further comprises a circulation pump and a circulation conduit, the circulation conduit extending between the water collection sump and the water distribution manifold, the circulation pump configured for selectively pumping water from the water collection sump to the water distribution manifold through the circulation conduit.

20. The ice making assembly of claim **12**, wherein the ice making assembly further comprises a drain conduit and a drain, the drain conduit extending between the water collection sump and the drain such that excess water within the water collection sump is directed to the drain.

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