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Refrigerator appliance

Abstract

A refrigerator includes an evaporator, a drain pan, a heater tube, and a bracket. The evaporator has refrigerant tubes configured to route refrigerant through the evaporator and fins configured to facilitate heat exchange between the refrigerant and air being directed across the evaporator. The drain pan is configured to receive condensation formed on an exterior of the evaporator. The heater tube has a first section that is internal relative to first and second ends of the evaporator. The heater tube has a second section that is external relative to first and second ends of the evaporator. The second section extends to the drain pan. The bracket is secured to the evaporator, engages the second section of the heater tube, and biases the second section of the heater tube into engagement with the drain pan.

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Background/Summary

TECHNICAL FIELD

(1) The present disclosure relates to an appliance such as a refrigerator.

BACKGROUND

(2) In order to keep food fresh, a low temperature must be maintained within a refrigerator to reduce the reproduction rate of harmful bacteria. Refrigerators circulate refrigerant and change the refrigerant from a liquid state to a gas state by an evaporation process in order cool the air within the refrigerator. During the evaporation process, heat is transferred to the refrigerant. After evaporating, a compressor increases the pressure, and in turn, the temperature of the refrigerant. The gas refrigerant is then condensed into a liquid and the excess heat is rejected to the ambient surroundings. The process then repeats.

SUMMARY

(3) A refrigerator includes a cabinet, an evaporator, a drain pan, a heater tube, and a bracket. The cabinet defines an internal cavity configured to store food items. The evaporator is configured to cool the internal cavity. The evaporator has a plurality of tubes configured to route refrigerant through the evaporator and a plurality of fins configured to facilitate heat exchange between the

refrigerant flowing through the plurality of tubes and air that is being directed across the evaporator and into the internal cavity. The drain pan is disposed below the evaporator and is configured to catch condensation forming on and falling from the evaporator. The heater tube has a first portion winding through openings defined by the fins. The heater tube has a second portion extending from the first portion. The second portion is in contact with the drain pan. The heater tube is configured to prevent the formation of ice on and remove ice from the evaporator and the drain pan. The bracket is secured to the evaporator, engages the second portion of the heater tube, and biases the second portion of the heater tube into engagement with the drain pan.

(4) A refrigerator includes an evaporator, a drain pan, a heater tube, and a bracket. The evaporator has refrigerant tubes configured to route refrigerant through the evaporator and fins configured to facilitate heat exchange between the refrigerant and air being directed across the evaporator. The drain pan is configured to receive condensation formed on an exterior of the evaporator. The heater tube has a first section that is internal relative to first and second ends of the evaporator. The heater tube has a second section that is external relative to first and second ends of the evaporator. The second section extends to the drain pan. The bracket is secured to the evaporator, engages the second section of the heater tube, and biases the second section of the heater tube into engagement with the drain pan.

(5) A refrigerator includes a heat exchanger, a pan, a heating element, and a bracket. The heat exchanger has an array of tubes configured to route refrigerant through the heat exchanger. The pan is configured to catch condensation formed on an exterior of the heat exchanger. The heating element is secured to the heat exchanger and has a protruding portion extending from the heat exchanger to the pan. The bracket is secured to the heat exchanger, engages the protruding portion, and biases the protruding portion into engagement with the pan.

Description

BRIEF DESCRIPTION OF THE DRAWINGS

(1) FIG. **1** is an isometric view of a bottom-mount type refrigerator appliance with the refrigeration compartment door open;

(2) FIG. **2** is a diagram illustrating a refrigeration loop that is configured to cool the interior space (e.g., refrigerator compartment or freezer compartment) of the refrigerator and a control system configured to control the climate within the interior space of the refrigerator;

(3) FIG. **3** is a lower isometric view of an evaporator installed within the refrigerator appliance;

(4) FIG. **4** is an upper isometric view of a drain pan assembly;

(5) FIG. **5** is a cross-sectional view of the evaporator and the drain pan taken along line **5**-**5** in FIG. **3**;

(6) FIG. **6** is a magnified cross-sectional view illustrating a bracket that is configured to engage the evaporator and a heater taken along line **6**-**6** in FIG. **3**; and

(7) FIG. **7** is a magnified cross-sectional view illustrating an alternative embodiment of the bracket that is configured to engage the evaporator and the heater taken along line **6**-**6** in FIG. **3**.

DETAILED DESCRIPTION

(8) Embodiments of the present disclosure are described herein. It is to be understood, however, that the disclosed embodiments are merely examples and other embodiments may take various and alternative forms. The figures are not necessarily to scale; some features could be exaggerated or minimized to show details of particular components. Therefore, specific structural and functional details disclosed herein are not to be interpreted as limiting, but merely as a representative basis for teaching one skilled in the art to variously employ the embodiments. As those of ordinary skill in the art will understand, various features illustrated and described with reference to any one of the figures may be combined with features illustrated in one or more other figures to produce

embodiments that are not explicitly illustrated or described. The combinations of features illustrated provide representative embodiments for typical applications. Various combinations and modifications of the features consistent with the teachings of this disclosure, however, could be desired for particular applications or implementations.

(9) Referring to FIG. **1**, generally a refrigerator **10** of the two-door bottom mount type is illustrated. However, it should be understood that this disclosure could apply to any type of refrigerator, such as a side-by-side, French-Door Bottom Mount, or a top-mount type. As shown in FIG. **1**, the refrigerator **10** may have a first internal cavity, first internal storage chamber, or fresh food compartment **12** configured to refrigerate and not freeze consumables within the fresh food compartment **12**, and a second internal cavity, second internal storage chamber, or a freezer compartment **14** configured to freeze consumables within the freezer compartment **14** during normal use. It is generally known that the freezer compartment **14** is typically kept at a temperature below the freezing point of water, and the fresh food compartment **12** is typically kept at a temperature above the freezing point of water and generally below a temperature of from about 35° F. to about 50° F., more typically below about 38° F.

(10) The refrigerator **10** includes panels or internal walls **16** that define the fresh food compartment **12** and the freezer compartment **14**. The walls **16** may more specifically form an internal liner of the refrigerator **10**. The walls **16** may include a rear or back wall, a top wall, a bottom wall, and two side walls. One or more shelves **18** may be secured to the walls **16** within the fresh food compartment **12**. One of more drawers **20** may be slidably secured to the shelves **18** or the walls **16** within the fresh food compartment **12**. A crisper drawer **22** may be slidably secured to the shelves **18** or the walls **16** within the fresh food compartment **12**. The crisper drawer **22** may more specifically be a drawer defining a storage space that is kept at a desired humidity that may be different from the remainder of the fresh food compartment **12**, but that is optimal for maintaining freshness of fruits and vegetables.

(11) The refrigerator **10** includes an outer shell, frame, or housing that comprises several exterior panels or walls **24**. The outer shell, frame, or housing that comprises several exterior panels or walls **24** may also be referred to as the refrigerator cabinet wrapper. The exterior walls **24** may include a rear or back wall, a top wall, a bottom wall, and two side walls. The two side walls may be referred to as first and second side walls. An insulating material, such as an insulating foam, may be disposed between each exterior wall **24** and an adjacent corresponding interior wall **16** in order reduce the heat transfer from the ambient surroundings to the fresh food compartment **12** and the freezer compartment **14**, which increases the efficiency of the refrigerator **10**. Each exterior wall **24**, adjacent corresponding interior wall **16**, and the insulating material disposed therebetween may be collectively referred to as a single wall. The exterior walls **24**, interior walls **16**, and the insulating material may collectively form the cabinet **11** of the refrigerator **10**. The cabinet **11** may define the fresh food compartment **12** and the freezer compartment **14**.

(12) The refrigerator **10** may have one or more doors **26**, **28** that provide selective access to the interior volume of the refrigerator **10** where consumables may be stored. As shown, the fresh food compartment door is designated **26**, and the freezer door is designated **28**. The doors **26**, **28** may be rotatably secured to the frame or housing of the refrigerator **10** by one or more hinges.

(13) The doors **26**, **28** may each include an exterior panel **30** and an interior panel **32** that is disposed on an internal side of the respective exterior panel **30** of each door **26**, **28**. The interior panels **32** may be configured to face the fresh food compartment **12** and freezer compartment **14** when the doors **26**, **28** are in closed positions. The interior panels **32** may more specifically be door liners. An insulating material, such as an insulating foam, may be disposed between the exterior panels **30** and an adjacent corresponding interior panel **32** of each door **26**, **28** in order reduce the heat transfer from the ambient surroundings and increase the efficiency of the refrigerator **10**.

(14) The doors **26**, **28** may also include storage bins **34** that are able to hold food items or containers. The storage bins **34** may be secured to the interior panels **32** of each door **26**, **28**.

Alternatively, the storage bins **34** may integrally formed within or defined by the interior panels **32** of each door **26**, **28**. In yet another alternative, a portion of the storage bins **34** may be secured to the interior panels **32** the doors **26**, **28**, while another portion of the storage bins **34** may be integrally formed within or defined by the interior panels **32** the doors **26**, **28**. The storage bins **34** may include shelves (e.g., a lower surface upon, which a food item or container may rest upon) that extend from back and/or side surfaces of the interior panels **32** of the doors **26**, **28**.

(15) Referring to FIG. **2**, the refrigerator **10** includes a refrigeration loop or circuit **36** that is configured to cool the air the within the fresh food compartment **12** and the freezer compartment **14**. The refrigeration loop or circuit **36** may also be referred to as a refrigerant loop or circuit. The refrigeration loop or circuit **36** includes at least a compressor **38**, an evaporator **40** that cools air being delivered to the fresh food compartment **12** and/or the freezer compartment **14**, a condenser **42** that rejects heat to ambient surroundings, and an expansion device such as a thermal expansion valve **44**. The refrigeration loop or circuit **36** may also include an accumulator **46**. The accumulator **46** may be located between the evaporator **40** and the compressor **38**. The accumulator **46** prevents liquid refrigerant that did not evaporate in the evaporator **40** from flowing into the compressor **38**. The refrigeration loop or circuit **36** includes lines or tubes **48** that are configured to transport the refrigerant between the evaporator **40**, compressor **38**, condenser **42**, thermal expansion valve **44**, and accumulator **46**. The evaporator **40** and condenser **42** are each heat exchangers (e.g., tube and fin heat exchangers).

(16) Fans **50** may be utilized to direct air across the evaporator **40** and the condenser **42** to facilitate exchanging heat. The compressor **38** and the fans **50** may be connected to a controller **52**. Sensors **54** that measure the air temperature and/or humidity within the fresh food compartment **12** and the freezer compartment **14** may be in communication with the controller **52**. The controller may be configured to operate the compressor **38**, fans **50**, etc. in response to the air temperature and/or humidity within the within the fresh food compartment **12** and the freezer compartment **14** being less than a threshold.

(17) The controller **52** may be part of a larger control system and may be controlled by various other controllers throughout the refrigerator **10**, and one or more other controllers can collectively be referred to as a “controller” that controls various functions of the refrigerator **10** in response to inputs or signals to control functions of the refrigerator **10**. The controller **52** may include a microprocessor or central processing unit (CPU) in communication with various types of computer readable storage devices or media. Computer readable storage devices or media may include volatile and nonvolatile storage in read-only memory (ROM), random-access memory (RAM), and keep-alive memory (KAM), for example. KAM is a persistent or non-volatile memory that may be used to store various operating variables while the CPU is powered down. Computer-readable storage devices or media may be implemented using any of a number of known memory devices such as PROMs (programmable read-only memory), EPROMs (electrically PROM), EEPROMs (electrically erasable PROM), flash memory, or any other electric, magnetic, optical, or combination memory devices capable of storing data, some of which represent executable instructions, used by the controller **52** in controlling the refrigerator **10**.

(18) Control logic or functions performed by the controller **52** may be represented by flow charts or similar diagrams in one or more figures. These figures provide representative control strategies and/or logic that may be implemented using one or more processing strategies such as event-driven, interrupt-driven, multi-tasking, multi-threading, and the like. As such, various steps or functions illustrated may be performed in the sequence illustrated, in parallel, or in some cases omitted. Although not always explicitly illustrated, one of ordinary skill in the art will recognize that one or more of the illustrated steps or functions may be repeatedly performed depending upon the particular processing strategy being used. Similarly, the order of processing is not necessarily required to achieve the features and advantages described herein, but is provided for ease of illustration and description. The control logic may be implemented primarily in software executed

by a microprocessor-based controller, such as controller **52**. Of course, the control logic may be implemented in software, hardware, or a combination of software and hardware in one or more controllers depending upon the particular application. When implemented in software, the control logic may be provided in one or more computer-readable storage devices or media having stored data representing code or instructions executed by a computer to control the refrigerator **10** or its subsystems. The computer-readable storage devices or media may include one or more of a number of known physical devices which utilize electric, magnetic, and/or optical storage to keep executable instructions and associated calibration information, operating variables, and the like.

(19) Referring to FIGS. **3-6**, the evaporator **40** and associated subcomponents of the refrigerator **10** that may interact with the evaporator **40** are illustrated in further detail. The evaporator **40** has an array or plurality of refrigerant tubes **56** that are configured to route refrigerant through the evaporator **40**. The evaporator **40** also includes a plurality of fins **58** that are configured to facilitate heat exchange between the refrigerant flowing through the plurality of refrigerant tubes **56** and air that is being directed across the evaporator **40** and into the internal cavity (e.g., the fresh food compartment **12** or the freezer compartment **14**). A drain pan **60** is disposed below the evaporator **40**. It is noted that the drain pan **60** has been removed in FIG. **3** for illustrative purposes. The drain pan **60** is configured to receive condensation formed on an exterior of the evaporator **40**. More specifically, the drain pan **60** is configured to catch condensation that has formed on and then subsequently fallen downward from an exterior of the evaporator **40**.

(20) A first heater **62** and a second heater **64** are configured to prevent the formation of ice on and remove ice and from the evaporator **40** and the drain pan **60**. The first heater **62** and the second heater **64** may be referred to as defrost heaters. The first heater **62** and the second heater **64** may each comprise winding or bent heating elements or heating tubes. The winding or bent heating elements or heating tubes may form loops. The first heater **62** is secured to the evaporator **40**. The first heater **62** includes a first section or portion **65** winding through openings **66** defined by the plurality of fins **58** of the evaporator. The openings **66** may be slots, notches, through holes, etc. The first portion **65** is internal relative to first and second ends **68** of the evaporator **40**. The first and second ends **68** of the evaporator **40** may be lateral ends or edges of the evaporator **40**. The first heater **62** also includes a second section or portion **70** extending from the first portion **65**. The second portion **70** extends to and may be in contact with the drain pan **60**. The second portion **70** may be referred to as the protruding portion of the first heater **62** and is external relative to first and second ends **68** of the evaporator **40**. The second portion **70** may comprise one of the loops of the winding or bent heating elements or heating tubes that form the first heater **62**.

(21) The first heater **62** is attached to the evaporator **40** and may be more specifically configured to prevent the formation of ice on and remove ice and from the evaporator **40**. The second heater **64** is attached to the drain pan **60** and may be more specifically configured to prevent the formation of ice on and remove ice and from the drain pan **60**. The second heater **64** includes an extending or protruding portion **72** that extends into a funnel **74**. The funnel **74** is configured to route any water away from the drain pan **60**. The second heater **64** may be even more specifically secured to a lower end **76** of the drain pan **60**. Therefore, in order to ensure proper heating of an upper end **78** of the drain pan **60** to prevent the formation of ice on the upper end **78** of the drain pan **60**, the second portion **70** of the first heater **62** may be placed into contact with the upper end **78** of the drain pan **60**.

(22) During the assembly process, once the evaporator **40** is secured inside the internal cavity (e.g., the fresh food compartment **12** or the freezer compartment **14**), the cover sub-assembly **80**, which includes the drain pan **60**, can be installed, allowing the second portion **70** of first heater **62** to be in contact with the drain pan **60**. If the second portion **70** of the first heater **62** is kept in contact with the drain pan **60**, the heat generated by the first heater **62** is spread efficiently in front of the evaporator **40** eliminating the risk of ice accumulating on the drain pan **60**. In the event that the second portion **70** of the first heater **62** is not placed into proper contact with the drain pan **60**

during assembly or if the second portion **70** of the first heater **62** is accidently deformed or bent, a reduction in the contact area between second portion **70** of the first heater **62** and drain pan **60** could result, increasing the risk of ice accumulation on the drain pan **60** or other portions of the cover assembly **80**.

(23) In order to ensure proper contact between the second portion **70** of the first heater **62** and the drain pan **60**, a bracket **82** may be utilized to properly position the second portion **70** of the first heater **62** such that the second portion **70** of the first heater **62** remains in contact with the drain pan **60**. The bracket **82** is secured to the evaporator **40**. The bracket engages the second portion **70** of the first heater **62** and biases the second portion **70** of the first heater **62** into engagement (e.g., contact with) with the drain pan **60**. The bracket **82** includes a main body **84** and a biasing arm **86** protruding from the main body **84**. The biasing arm **86** engages the second portion **70** of the first heater **62** and biases the second portion **70** of the first heater **62** into engagement with the drain pan **60**.

(24) The bracket **82** also defines one or more first slots **88** that are configured to receive and maintain positions of an inlet tube **90** and an outlet tube **92** of the evaporator **40**. The inlet and outlet tubes **90**, **92** are configured to respectively direct the refrigerant from an adjacent component (e.g., the thermal expansion valve **44**) to the plurality of refrigerant tubes **56** and direct the refrigerant from the plurality of refrigerant tubes **56** to an adjacent component (e.g., the accumulator **46** or compressor **38**). The bracket **82** may also include one or more first clips **94** configured to retain the inlet and outlet tubes **90**, **92** of the evaporator **40** within the one or more first slots **88**. The one or more first clips **94** may be flexible such that the one or more first clips **94** flex outwards toward displaced positions during installation of the inlet and outlet tubes **90**, **92** into the one or more first slots **88**. Once the inlet and outlet tubes **90**, **92** are disposed within the one or more first slots **88**, the one or more first clips **94** may then inwardly snap back to original non-displaced positions to retain the inlet and outlet tubes **90**, **92** within the one or more first slots **88**.

(25) The bracket **82** also defines one or more second slots **96** that are configured to receive a first tube **98** and a second tube **100** of the plurality of refrigerant tubes **56** of to secure the bracket **82** to the evaporator **40**. The one or more second slots **96** may be defined on an opposing side of the bracket **82** relative to the one or more first slots **88**. The first and second tubes **98**, **100** may include an outer most pair of tubes of the plurality of refrigerant tubes **56**. The bracket **82** may also include one or more second clips **102** configured to retain the first and second tubes **98**, **100** within the one or more second slots **96**. The one or more second clips **102** may be flexible such that the one or more second clips **102** flex outwards toward displaced positions during installation of the first and second tubes **98**, **100** into the one or more second slots **96**. Once the first and second tubes **98**, **100** are disposed within the one or more second slots **96**, the one or more second clips **102** may then inwardly snap back to original non-displaced positions to retain the first and second tubes **98**, **100** within the one or more second slots **96**. Although only one bracket **82** is illustrated, it should be understood that multiple brackets that are identical or similar in function to bracket **82** may be utilized.

(26) Referring to FIG. **7**, an alternative bracket **82′** is illustrated. It should be understood that bracket **82′** has all the same subcomponents and functionality as bracket **82** unless otherwise stated or illustrated herein. Furthermore, it should be understood that any component having a callout number in FIG. **7** that includes a prime symbol (′) should be construed as having the same structure, subcomponents, and functionality as a component illustrated in FIGS. **3-6** that includes the same callout number but without the prime symbol, unless otherwise stated or illustrated herein.

(27) The bracket **82′** includes a main body **84′**, a biasing arm **86′**, defines one or more first slots **88′**, includes one or more first clips **94′**, defines one or more second slots **96′**, and includes one or more second clips **102′**. Bracket **82′** is illustrated to define one second slot **96′** and include one second clip **102′**, while bracket **82** is illustrated to define two second slots **96** and include two second clips

102. Although only one bracket **82**′ is illustrated, it should be understood that multiple brackets that are identical or similar in function to bracket **82**′ may be utilized.
(28) It should be understood that the designations of first, second, third, fourth, etc. for any component, state, or condition described herein may be rearranged in the claims so that they are in chronological order with respect to the claims. Furthermore, it should be understood that any component, state, or condition described herein that does not have a numerical designation may be given a designation of first, second, third, fourth, etc. in the claims if one or more of the specific component, state, or condition are claimed.
(29) The words used in the specification are words of description rather than limitation, and it is understood that various changes may be made without departing from the spirit and scope of the disclosure. As previously described, the features of various embodiments may be combined to form further embodiments that may not be explicitly described or illustrated. While various embodiments could have been described as providing advantages or being preferred over other embodiments or prior art implementations with respect to one or more desired characteristics, those of ordinary skill in the art recognize that one or more features or characteristics may be compromised to achieve desired overall system attributes, which depend on the specific application and implementation. As such, embodiments described as less desirable than other embodiments or prior art implementations with respect to one or more characteristics are not outside the scope of the disclosure and may be desirable for particular applications.

Claims

1. A refrigerator comprising: a cabinet defining an internal cavity configured to store food items; an evaporator (i) configured to cool the internal cavity, (ii) having a plurality of tubes configured to route refrigerant through the evaporator, and (iii) having a plurality of fins configured to facilitate heat exchange between the refrigerant flowing through the plurality of tubes and air that is being directed across the evaporator and into the internal cavity; a drain pan disposed below the evaporator and configured to catch condensation forming on and falling from the evaporator; a heater tube having (i) a first portion winding through openings defined by the fins and (ii) a second portion extending from the first portion and in contact with the drain pan, wherein the heater tube is configured to prevent formation of ice on and remove ice from the evaporator and the drain pan; and a bracket (i) secured to the evaporator, (ii) engaging the second portion of the heater tube, and (iii) biasing the second portion of the heater tube into contact with the drain pan, wherein (a) the bracket includes a main body and a biasing arm protruding from the main body, (b) the bracket engaging the second portion of the heater tube and biasing the second portion of the heater tube into contact the drain pan corresponds to the biasing am engaging the second portion of the heater tube and biasing the second portion of the heater tube into contact with the drain pan, and (c) the biasing arm engaging the second portion of the heater tube and biasing the second portion of the heater tube into contact with the drain pan corresponds to the biasing arm contacting a top of the second portion of the heater tube and biasing the second portion of the heater tube such that a bottom of the second portion of the heater tube contacts the drain pan.
2. The refrigerator of claim 1, wherein (i) the evaporator includes inlet and outlet tubes that are configured to respectively direct the refrigerant to and away from the plurality of tubes and (ii) the bracket defines at least one slot configured to receive and maintain positions of the inlet and outlet tubes of the evaporator.
3. The refrigerator of claim 2, wherein the bracket includes at least one clip configured to retain the inlet and outlet tubes of the evaporator within the at least one slot.
4. The refrigerator of claim 2, wherein the bracket defines at least one second slot configured to receive first and second tubes of the plurality of tubes to secure the bracket to the evaporator.
5. The refrigerator of claim 1, wherein the biasing arm contacts the second portion of the heater

tube but is not affixed to the second portion of the heater tube.

6. A refrigerator comprising: an evaporator (i) having refrigerant tubes configured to route refrigerant through the evaporator and (ii) fins configured to facilitate heat exchange between the refrigerant and air being directed across the evaporator; a drain pan configured to receive condensation formed on an exterior of the evaporator; a heater tube (i) having first section that is internal relative to first and second ends of the evaporator and (ii) a second section that is external relative to the first and second ends of the evaporator, the second section extending to the drain pan; and a bracket (i) secured to the evaporator, (ii) engaging the second section of the heater tube, and (iii) biasing the second section of the heater tube into contact with the drain pan, wherein (a) the bracket includes a main body and a biasing arm protruding from the main body (b) the bracket engaging the second section of the heater tube and biasing the second section of the heater tube into contact with the drain pan corresponds to the biasing arm engaging the second section of the heater tube and biasing the second section of the heater tube into contact with the drain pan, and (c) the biasing arm engaging the second section of the heater tube and biasing the second section of the heater tube into contact with the drain pan corresponds to the biasing arm contacting a top of the second section of the heater tube and biasing the second section of the heater tube such that a bottom of the second section of the heater tube contacts the drain pan.

7. The refrigerator of claim 6, wherein (i) the evaporator includes inlet and outlet tubes that are configured to respectively direct the refrigerant to and away from the refrigerant tubes and (ii) the bracket defines at least one slot configured to receive and maintain positions of the inlet and outlet tubes of the evaporator.

8. The refrigerator of claim 7, wherein the bracket includes at least one clip configured to retain the inlet and outlet tubes of the evaporator within the at least one slot.

9. The refrigerator of claim 7, wherein the bracket defines at least one second slot configured to receive first and second tubes of the refrigerant tubes to secure the bracket to the evaporator.

10. The refrigerator of claim 6, wherein the biasing arm contacts the second section of the heater tube but is not affixed to the second section of the heater tube heater tube.

11. A refrigerator comprising: a heat exchanger having an array of tubes configured to route refrigerant through the heat exchanger; a pan configured to catch condensation formed on an exterior of the heat exchanger; a heater (i) secured to the heat exchanger and (i)) having a protruding portion extending from the heat exchanger to the pan, and a bracket (i) secured to the heat exchanger, (ii) engaging the protruding portion, and (iii) biasing the protruding portion into contact with the pan, wherein (a) the bracket includes a main body and a biasing arm protruding from the main body, (b) the bracket engaging the protruding portion and biasing the protruding portion into contact with the pan corresponds to the biasing arm engaging the protruding portion and biasing the protruding portion into contact vi the pan, and (c) the biasing arm engaging the protruding portion and biasing the protruding portion into contact with the pan corresponds to the biasing arm contacting a top of the protruding portion and biasing the protruding portion such that a bottom of the protruding portion contacts the pan.

12. The refrigerator of claim 11, wherein (i) the heat exchanger includes inlet and outlet tubes that are configured to respectively direct the refrigerant to and away from the array of tubes and (ii) the bracket defines at least one slot configured to: receive and maintain positions of the inlet and outlet tubes.

13. The refrigerator of claim 12, wherein the bracket includes at least one clip configured to retain the inlet and outlet tubes within the at least one slot.

14. The refrigerator of claim 11, wherein the biasing arm contacts the protruding portion but is not affixed to the protruding portion.