A gas burner assembly for an oven appliance is provided. The gas burner assembly includes a pair of burner tubes and a runner tube that extends between the pair of burner tubes. The gas burner assembly also includes features for obstructing a flow of gaseous fuel within the pair of burner tubes and/or directing gaseous fuel from the pair of burner tubes into the runner tube.
GAS BURNER ASSEMBLY FOR AN OVEN APPLIANCE

FIELD OF THE INVENTION

[0001] The present subject matter relates generally to oven appliances and gas burner assemblies of the same.

BACKGROUND OF THE INVENTION

[0002] Oven appliances generally include a cabinet that defines a cooking chamber for receipt of food items for cooking. Heating elements, such as gas burners, can be positioned within the cooking chamber to heat food items located therein. In certain oven appliances, a broil gas burner assembly is positioned at a top of the cooking chamber, and a bake gas burner assembly is positioned at a bottom of the cooking chamber. Performance of a gas burner assembly can be measured by its ability to provide heat uniformly and quickly over a large area.

[0003] Certain oven appliances include gas burner assemblies having a single burner tube. Gas burner assemblies with a single burner tube can be inexpensive and easy to manufacture and/or prototype. However, the single burner tube is generally positioned down a center line of the oven appliance, and achieving uniform heat intensity in such a configuration can be difficult. In particular, food items positioned away from the oven appliance’s center line can receive less heat intensity than those located relatively close to the oven appliance’s center line.

[0004] To avoid such drawbacks, certain oven appliances utilize non-tubular gas burners. Such non-tubular gas burners can distribute gaseous fuel over a larger effective area thereby spreading out the radiant energy generated by combustion of gaseous fuel over a larger area. However, such non-tubular gas burners can be costly to manufacture and prototype. Thus, such designs can have increased development times and thereby hamper modular use of such designs. Further, the relatively high cost of prototyping such designs can limit use of such designs on multiple oven systems which may have different design needs.

[0005] In another approach, certain oven appliances include long burner tubes bent into different shapes to increase coverage of the oven appliances’ gas burners. This approach suffers from certain difficulties. In particular, outlet holes (ports) in gas burners are preferably consistent and uniform. In such designs, ports are generally punched in the long burner tubes prior to bending. However, once the long burner tubes are bent, ports in the bent areas deform. This can make port sizing in such regions difficult to control. Further, due to the excessive lengths of such burner tubes, pressure gradients from fuel flowing through the burner tubes can create non-uniform flow out of the ports and uneven heating and burning of gaseous fuel can result. Welding pieces of tubes together into a burner assembly can overcome some of these problems. However, welding is costly and difficult to control, particularly at high production volumes.

[0006] In addition, certain portions of an oven appliance’s cooking chamber can be relatively cool compared to other portions of the cooking chamber. In particular, gas broil systems tend to be cooler in a rear portion of the cooking chamber. Such cooler areas can be caused by venting located in the rear portion of the oven appliance. In addition, internal wall pressure of the gas broil burners near the mixing throat, typically at the rear portion of the cooking chamber, can be low. In turn, such low pressure can prevent placement of ports near the rear portion of the cooking chamber because such low pressure cannot support flame. Without ports, gaseous fuel cannot be combusted in the rear portion of the cooking chamber, and such areas can receive less heat.

[0007] Accordingly, an oven appliance having a gas burner assembly with features for providing heat uniformly and quickly over a large area would be useful. In particular, an oven appliance having a gas burner assembly with features for providing heat uniformly and quickly over a large area that is easy and inexpensive to produce would be useful.

BRIEF DESCRIPTION OF THE INVENTION

[0008] The present subject matter provides a gas burner assembly for an oven appliance. The gas burner assembly includes a pair of burner tubes and a runner tube that extends between the pair of burner tubes. The gas burner assembly also includes features for obstructing a flow of gaseous fuel within the pair of burner tubes and/or directing gaseous fuel from the pair of burner tubes into the runner tube. 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.

[0009] In a first exemplary embodiment, an oven appliance is provided. The oven appliance defines a vertical direction, a lateral direction, and a transverse direction. The vertical, lateral, and transverse directions are mutually perpendicular. The oven appliance includes a cabinet that defines a cooking chamber for receipt of food items for cooking. The cooking chamber of the cabinet extends between a top portion and a bottom portion along the vertical direction. A broil gas burner assembly is positioned at the top portion of the cooking chamber. The broil gas burner assembly includes a first burner tube that defines a passage for receipt of gaseous fuel for combusting. A second burner tube is spaced apart from the first burner tube along the transverse direction. The second burner tube defines a passage for receipt of gaseous fuel for combusting. A runner tube extends between a first end portion and a second end portion along the transverse direction. The first end portion of the runner tube is positioned at the first burner tube. The second end portion of the runner tube is positioned at the second burner tube. A first scoop is mounted at the first end portion of the runner tube and positioned within the passage of the first burner tube. A second scoop is mounted at the second end portion of the runner tube and positioned within the passage of the second burner tube.

[0010] In a second exemplary embodiment, a gas burner assembly for an oven appliance is provided. The gas burner assembly defines a vertical direction, a lateral direction, and a transverse direction. The vertical, lateral, and transverse directions are mutually perpendicular. The gas burner assembly includes a pair of burner tubes spaced apart from each other along the transverse direction. Each burner tube of the pair of burner tubes defines a passage for directing a flow of gaseous fuel therethrough. A runner tube extends between the pair of burner tubes along the transverse direction and fluidly connects the passages of the pair of burner tubes. A pair of projections is mounted on opposite transverse ends of the runner tube. Each projection of the pair of projections is positioned within a respective passage of the passages of the pair of burner tubes.

[0011] In a third exemplary embodiment, a gas burner assembly for an oven appliance is provided. The gas burner assembly defines a vertical direction, a lateral direction, and a
transverse direction. The vertical, lateral, and transverse directions are mutually perpendicular. The gas burner assembly includes a pair of burner tubes spaced apart from each other along the transverse direction. Each burner tube of the pair of burner tubes defines a passage for direct flow of gaseous fuel therethrough. A runner tube extends between the pair of burner tubes along the transverse direction and fluidly connects the passages of the pair of burner tubes. A scoop is mounted at an end portion of the runner tube. The scoop is positioned within one of the passages of the pair of burner tubes.

[0012] 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

[0013] 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, in which:

[0014] FIG. 1 provides a perspective view of an oven range appliance according to an exemplary embodiment of the present subject matter.

[0015] FIG. 2 provides a section view of the oven range appliance of FIG. 1 taken along the 2-2 line of FIG. 1.

[0016] FIG. 3 provides a bottom, perspective view of a gas burner assembly according to an exemplary embodiment of the present subject matter.

[0017] FIG. 4 provides a top, perspective view of the gas burner assembly of FIG. 3.

[0018] FIG. 5 provides a partial, section view of the gas burner assembly of FIG. 3.

[0019] FIG. 6 provides a partial, perspective view of the gas burner assembly of FIG. 3.

DETAILED DESCRIPTION OF THE INVENTION

[0020] 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.

[0021] FIG. 1 provides a perspective view of an oven range appliance 10 according to an exemplary embodiment of the present subject matter. FIG. 2 provides a section view of oven range appliance 10 taken along the 2-2 line of FIG. 1. Oven range appliance 10 shown in FIGS. 1 and 2 is provided by way of example only. Thus, as will be understood by those skilled in the art, the present subject matter may be used with other oven appliance configurations, such as wall oven appliances or stand-alone oven appliances. In addition, the present subject matter may be used with oven appliances that define multiple interior cavities for the receipt of food and/or having different pan or rack arrangements than what is shown in FIG. 2. Still other configurations may also be used as will be understood by one of skill in the art using the teachings disclosed herein.

[0022] Oven range appliance 10 defines a vertical direction V, a lateral direction L, and a transverse direction T. The vertical direction V, lateral direction L, and transverse direction T are mutually perpendicular and form an orthogonal direction system. It should be understood that the orientation of the lateral direction L and transverse direction T shown in FIGS. 1 and 2 is provided by way of example only. Thus, in alternative exemplary embodiments, the transverse direction T and lateral direction L may be switch or inverted relative to each other.

[0023] Oven range appliance 10 also includes an insulated cabinet 12 with an interior cooking chamber 14 defined by an interior surface 15 of cabinet 12. Cooking chamber 14 is configured for the receipt of one or more food items to be cooked and extends between a top portion 30 and a bottom portion 32, e.g., along the vertical direction V. Cooking chamber 14 also extends between a front portion 40 and a rear portion 42, e.g., along the lateral direction L. Oven range appliance 10 also includes a door 16 rotatably mounted to cabinet 12, e.g., with a hinge (not shown). A handle 18 is mounted to door 16 and assists a user with opening and closing door 16 in order to access cooking chamber 14. For example, a user can pull on handle 18 to open or close door 16 and access cooking chamber 14.

[0024] A seal (not shown) can be provided for maintaining heat and cooking fumes within cooking chamber 14 when door 16 is closed as shown in FIG. 2. Multiple parallel glass panes 22 provide for viewing the contents of cooking chamber 14 when door 16 is closed and assist with insulating cooking chamber 14. A baking rack 24 is positioned in cooking chamber 14 for the receipt of food items or utensils containing food items. Baking rack 24 is slidably received onto embossed ribs or sliding rails 26 such that rack 24 may be conveniently moved into and out of cooking chamber 14 when door 16 is open.

[0025] A gas fueled, top heating element or broil gas burner 28 is positioned in cooking chamber 14 of cabinet 12, e.g., at or adjacent top portion 30 of cooking chamber 14. Broil gas burner 28 is used to heat cooking chamber 14 for both cooking/broiling and cleaning of oven range appliance 10. The size and heat output of broil gas burner 28 can be selected based on the e.g., the size of oven range appliance 10. In alternative embodiments, oven range appliance 10 can include an electric, gas, microwave, halogen, or any other suitable bake heating element positioned below broil gas burner 28 along the vertical direction V, e.g., at or adjacent bottom portion 32 of cooking chamber 14.

[0026] As may be seen in FIG. 2, a fuel system 35 (shown schematically) can supplying gaseous fuel, such as natural gas or propane, to oven range appliance 10 and/or broil gas burner 28. Fuel system 35 includes a fuel supply 34. Fuel supply 34 can be any suitable mechanism for supplying or providing a volume of gaseous fuel. For example, fuel supply 34 can be a tank or a utility supply line.

[0027] Fuel system 35 also includes conduits or tubing 38 for directing gaseous fuel from fuel supply 34 to broil gas burner 28 and a valve 36 for regulating a flow of gaseous fuel through tubing 38. Valve 36 can selectively adjust between an open configuration and a closed configuration to selectively
terminate or hinder the flow of gaseous fuel through tubing 38. Tubing 38 can supply gaseous fuel to broil gas burner 28, and such gaseous fuel can be combusted by broil gas burner 28, e.g., to heat cooking chamber 14.

[0028] FIG. 3 provides a bottom, perspective view of a gas burner assembly 100 according to an exemplary embodiment of the present subject matter. FIG. 4 provides a top, perspective view of gas burner assembly 100. Gas burner assembly 100 may be used in any suitable oven appliance, such as oven range appliance 10 as broil gas burner 28 (FIG. 2).

[0029] Gas burner assembly 100 includes a pair of burner tubes 110 that each define a passage 172 for receipt of gaseous fuel for combustion. Burner tubes 110 are spaced apart from each other, e.g., along the transverse direction T. Also, each burner tube of burner tubes 110 defines a series of laterally spaced apart ports 115. Ports 115 can direct a flow of air and gaseous fuel, such as natural gas and/or propane, out of passages 172 of burner tubes 110 where such air/fuel mixture can be combusted, e.g., to heat cooking chamber 14 (FIG. 2).

[0030] Burner tubes 110 include a first burner tube 112 and a second burner tube 114. Second burner tube 114 is positioned such that second burner tube 114 is spaced apart from first burner tube 112, e.g., along the transverse direction T. First and second burner tubes 112 and 114 can be spaced apart from each other by any suitable distance. For example, first and second burner tubes 112 and 114 can be spaced apart from each other along the transverse direction T by more than about six inches, more than about seven inches, or more than about eight inches. Further, first and second burner tubes 112 and 114 can be positioned such that first and second burner tubes 112 and 114 are substantially parallel to each other. However, in alternative exemplary embodiments, first and second burner tubes 112 and 114 need not be parallel.

[0031] A flame spreader 136 is positioned above at least one burner tube 110, e.g., along the vertical direction V. Thus, flame spreader 136 is positioned above at least one of first burner tube 112 and second burner tube 114. In the exemplary embodiment shown in FIGS. 3 and 4, first and second burner tubes 112 and 114 are mounted to flame spreader 136. In particular, first and second burner tubes 112 and 114 are positioned at or on a bottom surface 138 of flame spreader 136, e.g., such that burner tubes 110 face bottom surface 138 of flame spreader 136.

[0032] Flame spreader 136 assists with distributing heat generated by gas burner assembly 100 via combustion of gaseous fuel. In particular, such combustion can heat flame spreader 136, and flame spreader 136 can direct radiant heat, e.g., into cooking chamber 14 (FIG. 2), as flame spreader 136 heats up due to such combustion. Flame spreader 136 can be constructed from any suitable material, such as a metal. As an example, flame spreader 136 can be constructed or formed from a sheet of steel.

[0033] First burner tube 112 extends between a first end portion 124 and a second end portion 126, e.g., along the lateral direction L. First burner tube 112 defines a series of outlets 116 (ports 115 on first burner tube 112) spaced apart from one another or dispersed, e.g., along the lateral direction L, between first end portion 124 of first burner tube 112 and second end portion 126 of first burner tube 112. Like first burner tube 112, second burner tube 114 extends between a first end portion 128 and a second end portion 130, e.g., along the lateral direction L. Second burner tube 114 defines a series of exits 118 (ports 115 on second burner tube 114) spaced apart from one another or dispersed, e.g., along the lateral direction L, between first end portion 128 of second burner tube 114 and second end portion 130 of second burner tube 114. Series of outlets and exits 116 and 118 can direct the flow of air and gaseous fuel out of first and second burner tubes 112 and 114, respectively, where such air/fuel mixture can be combusted, e.g., to heat cooking chamber 14 (FIG. 2).

[0034] Each burner tube of burner tubes 110 includes a Venturi throat 140. Thus, first and second burner tubes 112 and 114 each include a respective Venturi throat 140. Venturi throat 140 of first burner tube 112 is positioned adjacent first end portion 124 of first burner tube 112. Similarly, Venturi throat 140 of second burner tube 114 is positioned adjacent first end portion 128 of second burner tube 114. As may be seen in FIG. 3, Venturi throats 140 have a smaller cross-sectional area than other portions of burner tubes 110. Thus, a flow of gaseous and air flowing through Venturi throats 140 can increase in velocity and decrease in pressure thereby assisting with mixing of the gaseous fuel and air.

[0035] To light or ignite the flow of air/fuel exiting ports 115, gas burner assembly 100 also includes an igniter or ignition device 154, such as a spark ignition device or glow igniter. As an example, ignition device 154 can create a spark that can ignite the flow of air/fuel exiting ports 115. Ignition device 154 can be located at any suitable position on gas burner assembly 100. As an example, ignition device 154 can be positioned adjacent, e.g., above along the vertical direction V, first burner tube 112 or second burner tube 114. In particular, ignition device 154 can be mounted on or at a top surface 137 of flame spreader 136, e.g., at an aperture 139 defined by flame spreader 136 between top and bottom surfaces 137 and 138. To light gas burner assembly 100, gaseous fuel from ports 115 can flow through aperture 139, and ignition device 154 can light or ignite such gaseous fuel.

[0036] As discussed above, gas burner assembly 100 includes a single ignition device 154 that can be positioned adjacent first burner tube 112 or second burner tube 114, and first and second burner tubes 112 and 114 are spaced apart from each other. Gas burner assembly 100 includes features to facilitate or assist lighting of both burner tubes of burner tubes 110. Such features can assist with distributing or carrying flame generated by ignition device 154 to all ports of ports 115 despite first and second burner tubes 112 and 114 being spaced apart from each other.

[0037] As may be seen in FIG. 3, gas burner assembly 100 includes a runner tube 156 that extends between and fluidly connects the burner tubes of burner tubes 110. In particular, runner tube 156 extends between first and second burner tubes 112 and 114, e.g., along the transverse direction T. As discussed in greater detail below, runner tube 156 can assist with carrying flames between the burner tubes of burner tubes 110.

[0038] FIG. 5 provides a partial, section view of gas burner assembly 100. FIG. 6 provides a partial, perspective view of gas burner assembly 100. As may be seen in FIG. 6, runner tube 156 defines a series of transversely spaced apart openings 158. In particular, runner tube 156 defines openings 158 such that openings 158 are distributed, e.g., along the transverse direction T, between first and second burner tubes 112 and 114. Openings 158 are positioned adjacent or at outlets 116 of first burner tube 112 and exits 118 of second burner tube 114.

[0039] Gaseous fuel and air within burner tubes 110 can enter runner tube 156. In turn, such gaseous fuel and air can exit runner tube 156 through openings 158. At or outside of
openings 158, such gaseous fuel can be combusted. By extending between and connecting first and second burner tubes 112 and 114, runner tube 156 can carry flames between first and second burner tubes 112 and 114. As an example, if ignition device 154 operates to ignite gaseous fuel exiting openings 158 of runner tube 156, openings 158 can carry the flame of such combustion along the length of runner tube 156 to both first and second burner tubes 112 and 114. In turn, gaseous fuel exiting outlets 116 of first burner tube 112 and exits 118 of second burner tube 114 can be ignited, and outlets 116 of first burner tube 112 and exits 118 of second burner tube 114 can carry the flame of such combustion along the length of first and second burner tubes 112 and 114, respectively.

In such a manner, runner tube 156 can assist with lighting both burner tubes of burner tubes 110 despite only having a single ignition device 154 and burner tubes 110 being spaced apart from each other.

[0040] As may be seen in FIG. 6, each set of ports 115 includes a first set of ports 120 and a second set of ports 122. First and second sets of ports 120 and 122 are positioned on opposite transverse sides of each burner tube of burner tubes 110. Thus, first and second set of ports 120 and 122 are spaced apart from each other, e.g., along the transverse direction T, on each burner tube of burner tubes 110. By providing each burner tube of burner tubes 110 with first and second set of ports 120 and 122, burner tubes 110 can, e.g., provide more heat within cooking chamber 14 of oven range appliance 10 (FIG. 2) and/or more evenly heat food items within cooking chamber 14.

[0041] Each burner tube of burner tubes 110 also defines a set of carryover ports 160 that are distributed between first and second sets of ports 120 and 122. Thus, set of carryover ports 160 extends between first and second sets of ports 120 and 122 on each burner tube of burner tubes 110. Carryover ports 160 assist with carrying flame from first and second sets of ports 120 and 122. As an example, if ignition device 154 ignites gaseous fuel at first set of ports 120 then carryover ports 160 can carry flame from such combustion to second set of ports 120, e.g., despite first and second sets of ports 120 and 122 being separated along the transverse direction T.

[0042] As may be seen in FIG. 6, runner tube 156 is positioned adjacent first end portions 124 and 128 of first and second burner tubes 112 and 114, respectively. In particular, turning back to FIG. 3, runner tube 156 is positioned adjacent and, e.g., immediately, downstream of Venturi throats 140. As will be understood by those skilled in the art, an internal wall pressure within passages 172 of burner tubes 110 can be relatively low near or adjacent Venturi throats 140 relative to portions of passages 172 disposed further downstream of Venturi throats 140. In particular, a flow of gaseous fuel and air exiting Venturi throats 140 can have a relatively high velocity such that the static pressure of the flow of gaseous fuel and air is low. Due to such low pressure, directing sufficient gaseous fuel and air into runner tube 156 can be difficult. Thus, gas burner assembly 100 includes features for directing gaseous fuel and/or air into runner tube 156, e.g., by obstructing or impeding a portion of the flow of gaseous fuel and air in passages 172 of burner tubes 110.

[0043] In particular, as may be seen in FIG. 5, gas burner assembly 100 includes a pair of projections or scoops 166, e.g., mounted on opposite transverse ends of runner tube 156. In particular, runner tube 156 extends between a first end portion 162 and a second end portion 164, e.g., along the transverse direction T. First end portion 162 of runner tube 156 is positioned at or adjacent first burner tube 112, and second end portion 164 of runner tube 156 is positioned at or adjacent second burner tube 114. Scoops 166 include a first scoop 168 and a second scoop 170. First scoop 168 is mounted at or adjacent first end portion 162 of runner tube 156. Similarly, second scoop 170 is mounted at or adjacent second end portion 164 of runner tube 156. In the exemplary embodiment shown in FIG. 5, scoops 166 are, e.g., integrally, mounted to runner tube 156. However, in alternative exemplary embodiments, scoops 166 can be mounted to any suitable component of gas burner assembly 100. For example, scoops 166 can be mounted to burner tubes 110.

[0044] Each scoop of scoops 166 is positioned within or projects into a respective passage of passages 172. In particular, first scoop 168 is positioned within first burner tube 112, and second scoop 170 is positioned within second burner tube 114. Within passages 172, scoops 166 can obstruct a portion of a flow of gaseous fuel and air through passages 172, e.g., in order to direct fuel into runner tube 156. In particular, as discussed above, the flow of gaseous fuel and air can have a relatively high velocity exiting Venturi throats 140. However, within passages 172, a portion of the flow of gaseous fuel and air can impact scoops 166 and, e.g., slow down due to such impact. As the flow of gaseous fuel and air slows down, pressure at scoops 166 increases. Such increase in pressure can facilitate a flow of gaseous fuel and air into runner tube 156, e.g., to openings 158. In such a manner, scoops 166 can direct gaseous fuel and/or air into runner tube 156 and facilitate operation of runner tube 156.

[0045] Gas burner assembly 100 also includes a pair of orifices 142. Orifices 142 are configured for receiving gaseous fuel, e.g., from fuel source 34 via tubing 38 (FIG. 2), and directing such gaseous fuel into burner tubes 110. Each burner tube of burner tubes 110 defines an entrance or inlet 132. Each orifice of orifices 142 is positioned at a respective inlet 132 of burner tubes 110 and is configured for directing gaseous fuel into the respective inlet 132 of burner tubes 110.

[0046] In particular, orifices 142 include a first orifice 144 and a second orifice 146. Further, first burner tube 112 defines one inlet or inlets 132 at first end portion 124 of first burner tube 112, and second burner tube 114 defines another inlet of inlets 132 at first end portion 128 of second burner tube 114. First orifice 144 is positioned at or adjacent first end portion 124 of first burner tube 112 and is configured for directing gaseous fuel into inlet 132 of first burner tube 112. Similarly, second orifice 146 is positioned at first end portion 128 of second burner tube 114 and is configured for directing gaseous fuel into inlet 132 of second burner tube 114. Valve 36 (FIG. 2) can be utilized to selectively terminate or hinder the flow of gaseous fuel to first and second orifices 144 and 146 and burner tubes 110.

[0047] In the exemplary embodiment shown in FIG. 5, runner tube 156 is spaced apart from orifices 142, e.g., along the lateral direction L. Runner tube 156 can be spaced apart from orifices 142 by any suitable distance. For example, runner tube 156 can be spaced apart from orifices 142, e.g., along the lateral direction L, by less than about six inches, less than about eight inches, or less than about ten inches.

[0048] Runner tube 156 has an upstream portion 176 and a downstream portion 178 (relative to a flow of gaseous fuel and air through burner tubes 110), e.g., spaced apart from each other along the lateral direction L. The scoops of scoops 166 are mounted to runner tube 156 at or adjacent downstream portion 178 of runner tube 156. Further, scoops 166
each have an upstream surface 174. Each upstream surface 174 of scoops 166 faces a respective orifice of orifices 142 and is configured for obstructing a portion of a flow of gaseous fuel through a respective passage of passages 172. In particular, upstream surface 174 of first scoop 168 faces first orifice 144 and is configured for obstructing a flow of fuel through first burner tube 112, e.g., in order to direct gaseous fuel into runner tube 156. Similarly, upstream surface 174 second scoop 170 faces second orifice 146 and is configured for obstructing a portion of a flow of gaseous fuel through second burner tube 114, e.g., in order to direct gaseous fuel into runner tube 156.

[0049] When mounted within oven range appliance 10 (FIG. 2), runner tube 156 can be positioned at or adjacent back portion 42 of cooking chamber 14. As will be understood by those skilled in the art, back portion 42 of cooking chamber 14 can be cool relative to front portion 40 of cooking chamber 14, e.g., due to venting of cooking chamber 14 at back portion 42 and/or lack of ports 115 due to lack of sufficient wall pressure to facilitate flow out of ports 115 proximate passages 172). Placement of runner tube 156 at back portion 42 of cooking chamber 14 can, e.g., assist with providing additional heat at back portion 42 of cooking chamber 14 and heating cooking chamber 14 more evenly. In particular, combustion of gaseous fuel at openings 158 of runner tube 156 can, e.g., assist with providing additional heat at back portion 42 of cooking chamber 14 and heating cooking chamber 14 more evenly.

[0050] In addition, scoops 166 can permit placement of ports 115 closer to back portion 42 of cooking chamber 14 and/or Venturi throats 140 relative to a burner assembly without scoops 166. In turn, placing ports 115 closer to back portion 42 of cooking chamber 14 can, e.g., assist with providing additional heat at back portion 42 of cooking chamber 14 and heating cooking chamber 14 more evenly. For example, without scoops 166, a wall pressure of fluids within passages 172 of burner tubes 110 immediately downstream of Venturi throats 140 can be too low to support stable flames at ports 115 for a distance roughly equal to five diameters of burner tubes 110 downstream of orifices 142. Beyond such distance, flame can be supported, but a flow volume of gaseous fuel and air out of ports 115 within roughly another diameter along the length of burner tubes 110 can be about half of an average flow volume for ports 115 disposed further downstream. However, placing scoops 166 within burner tubes 110, e.g., immediately, downstream of Venturi throats 140 can permit pressure downstream of scoops 166 to immediately develop enough to support flame, and the flow volume distribution along the length of burner tubes 110 can be substantially more even. In particular, ports 115 can be approximately seven tenths of the diameter of burner tubes 110 closer to back portion 42 of cooking chamber 14 and/or Venturi throats 140 due to scoops 166.

[0051] 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. An oven appliance defining a vertical direction, a lateral direction, and a transverse direction, the vertical, lateral, and transverse directions being mutually perpendicular, the oven appliance comprising:
   a cabinet that defines a cooking chamber for receipt of food items for cooking, the cooking chamber of said cabinet extending between a top portion and a bottom portion along the vertical direction;
   a broil gas burner assembly positioned at the top portion of the cooking chamber, said broil gas burner assembly comprising
   a first burner tube defining a passage for receipt of gaseous fuel for combusting;
   a second burner tube spaced apart from said first burner tube along the transverse direction, said second burner tube defining a passage for receipt of gaseous fuel for combusting;
   a runner tube extending between a first end portion and a second end portion along the transverse direction, the first end portion of said runner tube positioned at said first burner tube, the second end portion of said runner tube positioned at said second burner tube;
   a first scoop mounted at the first end portion of said runner tube and positioned within the passage of said first burner tube; and
   a second scoop mounted at the second end portion of said runner tube and positioned within the passage of said second burner tube.

2. The oven appliance of claim 1, wherein said first and second scoop are integrally mounted to said runner tube.

3. The oven appliance of claim 1, further comprising a first orifice and a second orifice, said first burner tube defining an inlet, said second burner tube defining an entrance, said first orifice positioned at the inlet of said first burner tube and configured for directing fuel into the passage of said first burner tube, said second orifice positioned at the entrance of said second burner tube and configured for directing fuel into the passage of said second burner tube.

4. The oven appliance of claim 3, wherein said runner tube is spaced apart from said first orifice and said second orifice by less than about six inches along the lateral direction.

5. The oven appliance of claim 3, wherein said first and second scoops each have an upstream surface, the upstream surface of said first scoop facing said first orifice and configured for obstructing at least a portion of a flow of fuel through the passage of said first burner tube in order to direct fuel into said runner tube, the upstream surface of said second scoop facing said second orifice and configured for obstructing at least a portion of a flow of fuel through the passage of said second burner tube in order to direct fuel into said runner tube.

6. The oven appliance of claim 1, further comprising an ignition device positioned adjacent said first burner tube, said second burner tube, or said runner tube.

7. The oven appliance of claim 1, wherein the cooking chamber of said cabinet extends between a front portion and a back portion along the lateral direction, said runner tube positioned adjacent the back portion of the cooking chamber.
8. The oven appliance of claim 1, further comprising a flame spreader positioned above at least one of said first burner tube and said second burner tube along the vertical direction.

9. The oven appliance of claim 1, wherein said first and second burner tubes each include a respective Venturi throat, said runner tube positioned adjacent and downstream of the Venturi throats of said first and second burner tubes.

10. The oven appliance of claim 1, wherein said runner tube has an upstream portion and a downstream portion, said first and second scoops mounted to said runner tube at the downstream portion of said runner tube.

11. A gas burner assembly for an oven appliance, the gas burner assembly defining a vertical direction, a lateral direction, and a transverse direction, the vertical, lateral, and transverse directions being mutually perpendicular, the gas burner assembly comprising:
   a pair of burner tubes spaced apart from each other along the transverse direction, each burner tube of said pair of burner tubes defining a passage for directing a flow of gaseous fuel therethrough; a runner tube extending between said pair of burner tubes along the transverse direction and fluidly connecting the passages of said pair of burner tubes; and
   a pair of projections mounted on opposite transverse ends of said runner tube, each projection of said pair of projections positioned within a respective passage of the passages of said pair of burner tubes.

12. The gas burner assembly of claim 11, wherein the projections of said pair of projections are integrally mounted to said runner tube.

13. The gas burner assembly of claim 11, further comprising a pair of orifices, each burner tube of said pair of burner tubes defining an inlet, each orifice of said pair of orifices positioned at a respective inlet of said pair of burner tubes and configured for directing fuel into a respective passage of said pair of burner tubes.

14. The gas burner assembly of claim 13, wherein said runner tube is spaced apart from said pair of orifices by less than about six inches along the lateral direction.

15. The gas burner assembly of claim 13, wherein each projection of said pair of projections has an upstream surface, each upstream surface of said pair of projections facing a respective orifice of said pair of orifices and configured for obstructing a flow of fuel through the respective passage of said pair of burner tubes.

16. The gas burner assembly of claim 11, further comprising an ignition device positioned adjacent one of said pair of burner tubes.

17. The gas burner assembly of claim 11, further comprising a flame spreader positioned above at least one of said pair of burner tubes along the vertical direction.

18. The gas burner assembly of claim 11, wherein each burner tube of said pair of burner tubes includes a Venturi throat, said runner tube positioned adjacent and downstream of the Venturi throats of said pair of burner tubes.

19. The gas burner assembly of claim 11, wherein said runner tube has an upstream portion and a downstream portion, said pair of projections mounted to said runner tube at the downstream portion of said runner tube.

20. A gas burner assembly for an oven appliance, the gas burner assembly defining a vertical direction, a lateral direction, and a transverse direction, the vertical, lateral, and transverse directions being mutually perpendicular, the gas burner assembly comprising:
   a pair of burner tubes spaced apart from each other along the transverse direction, each burner tube of said pair of burner tubes defining a passage for directing a flow of gaseous fuel therethrough; a runner tube extending between said pair of burner tubes along the transverse direction and fluidly connecting the passages of said pair of burner tubes; and
   a scoop mounted at an end portion of said runner tube, said scoop positioned within one of the passages of said pair of burner tubes.