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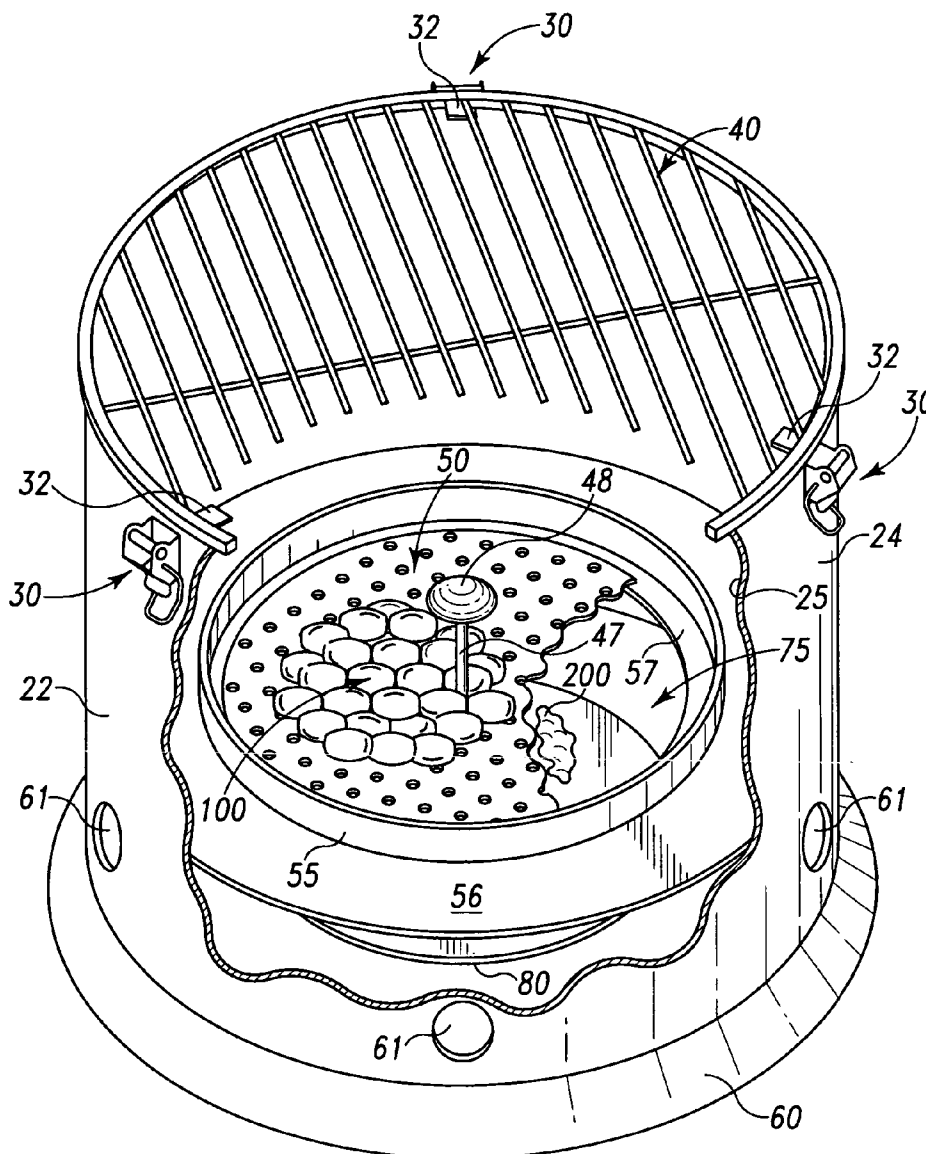
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(57) **ABSTRACT**

A pellet-fired cooking apparatus is provided. The cooking apparatus may include an outer shell into which are mounted at least a fuel support member and a food support member. Pellet fuel may be placed on the fuel support member and may be used to cook food placed on the food support member. The fuel support member may have a construction that allows for controlled combustion of the pellet fuel, providing for desired cooking characteristics of the pellet fuel. Intake air for combustion may be provided to the pellet fuel through one or more hollow supports for the cooking apparatus.

(22) Filed: **Dec. 16, 2005**



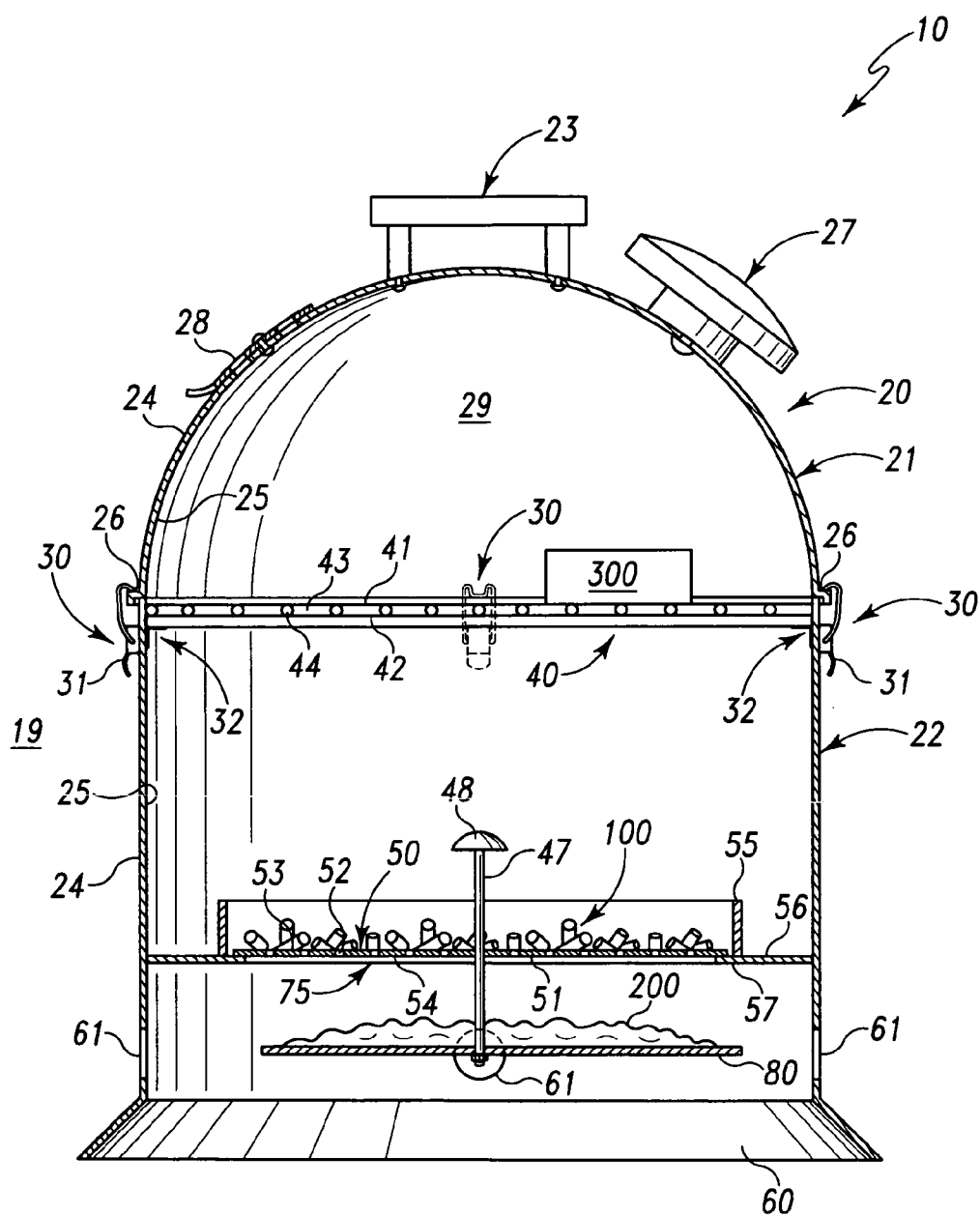


Fig. 1

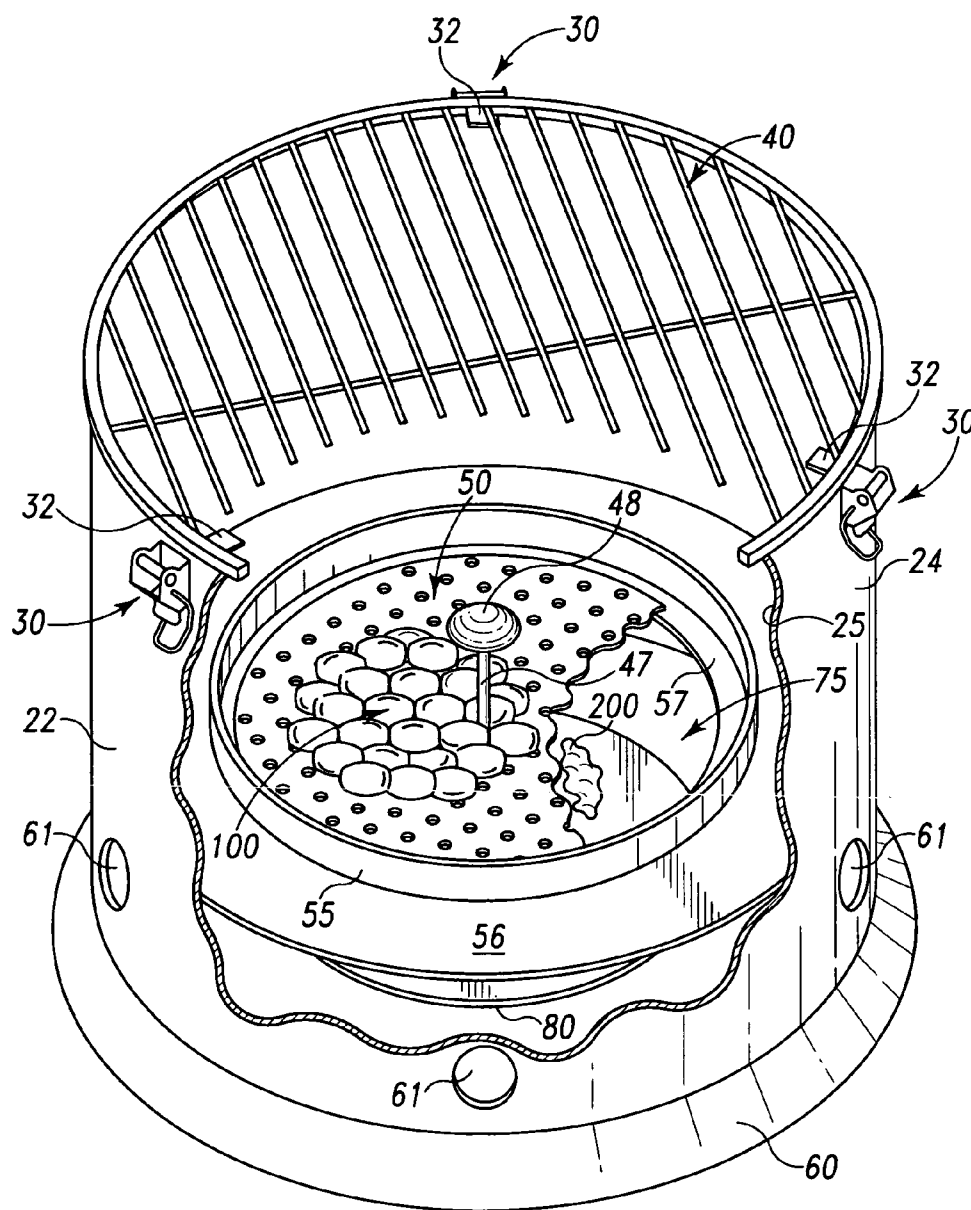


Fig. 2

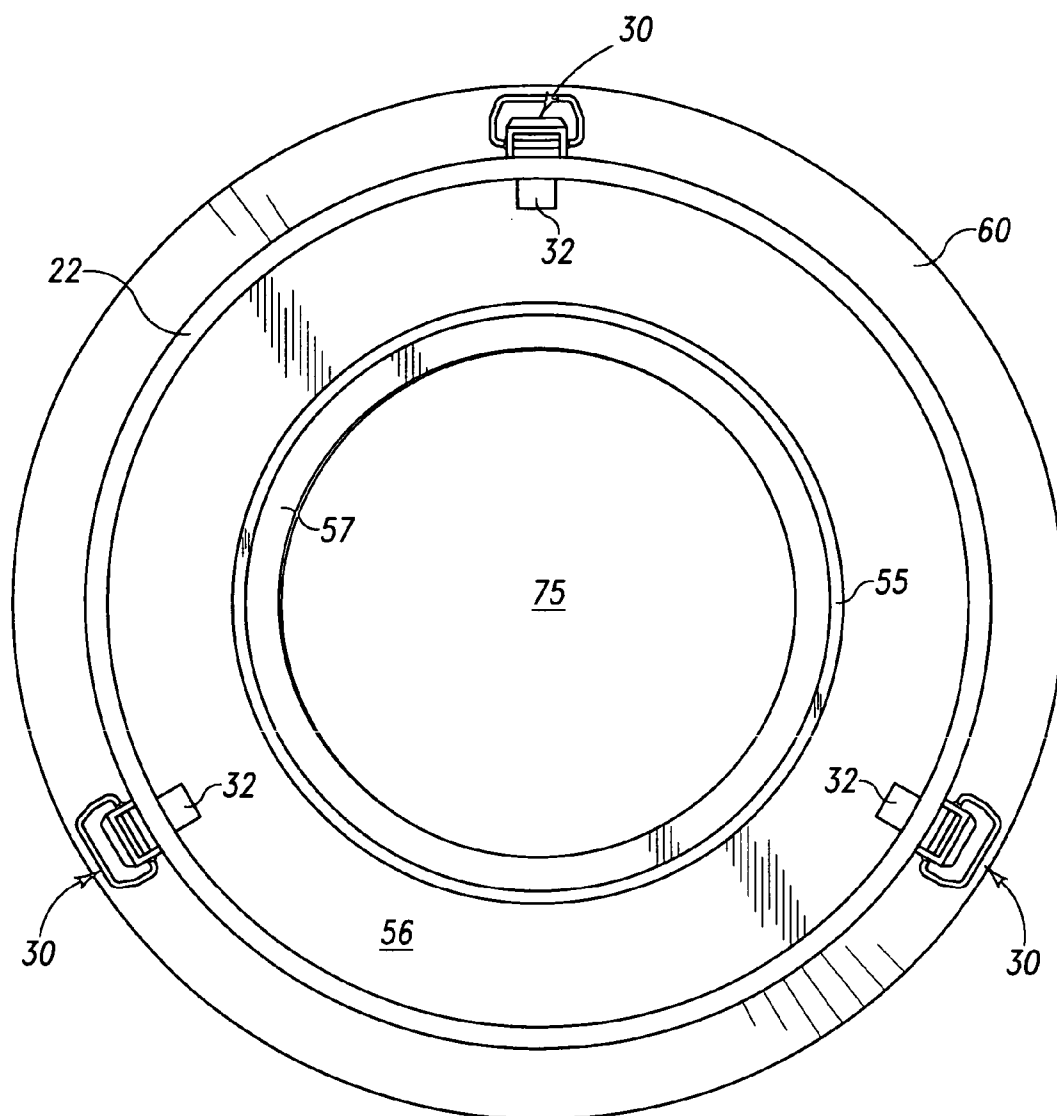


Fig. 3

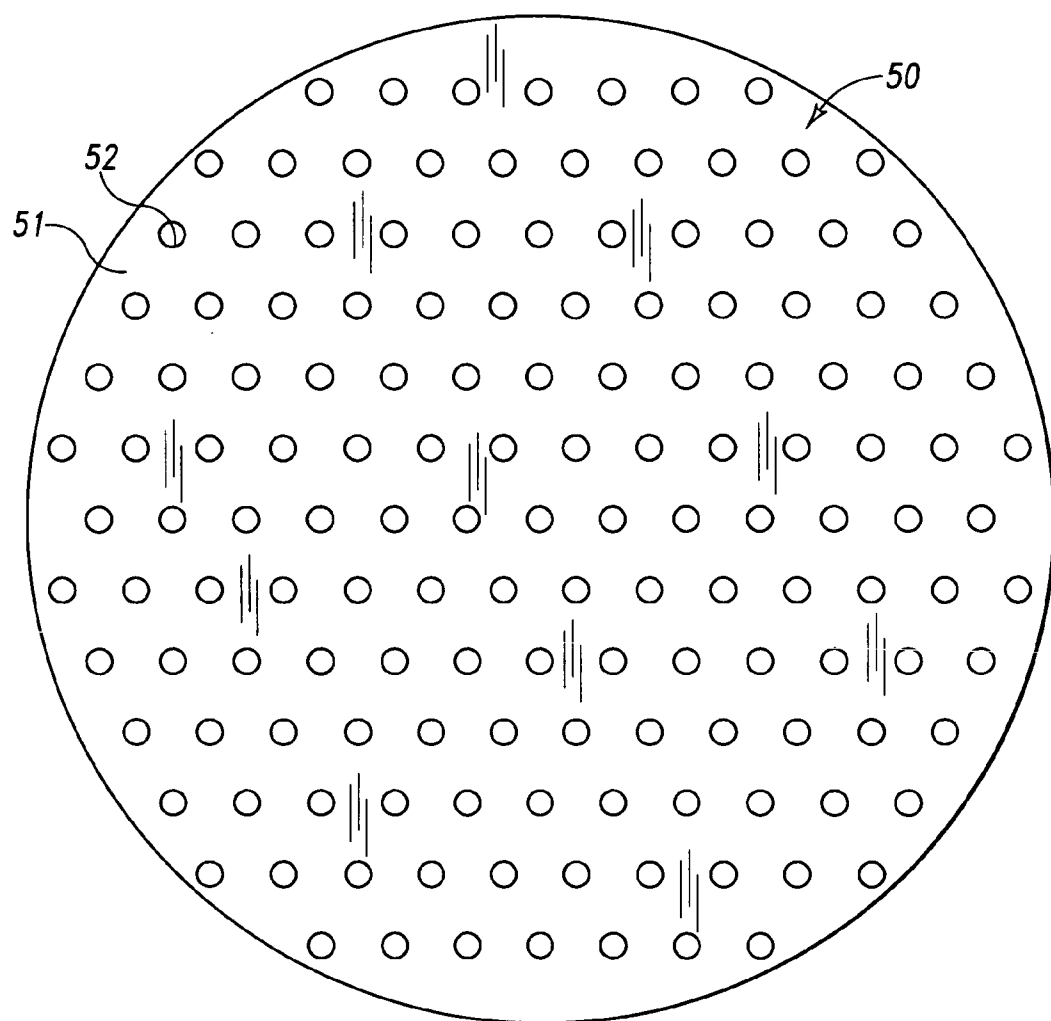


Fig. 4

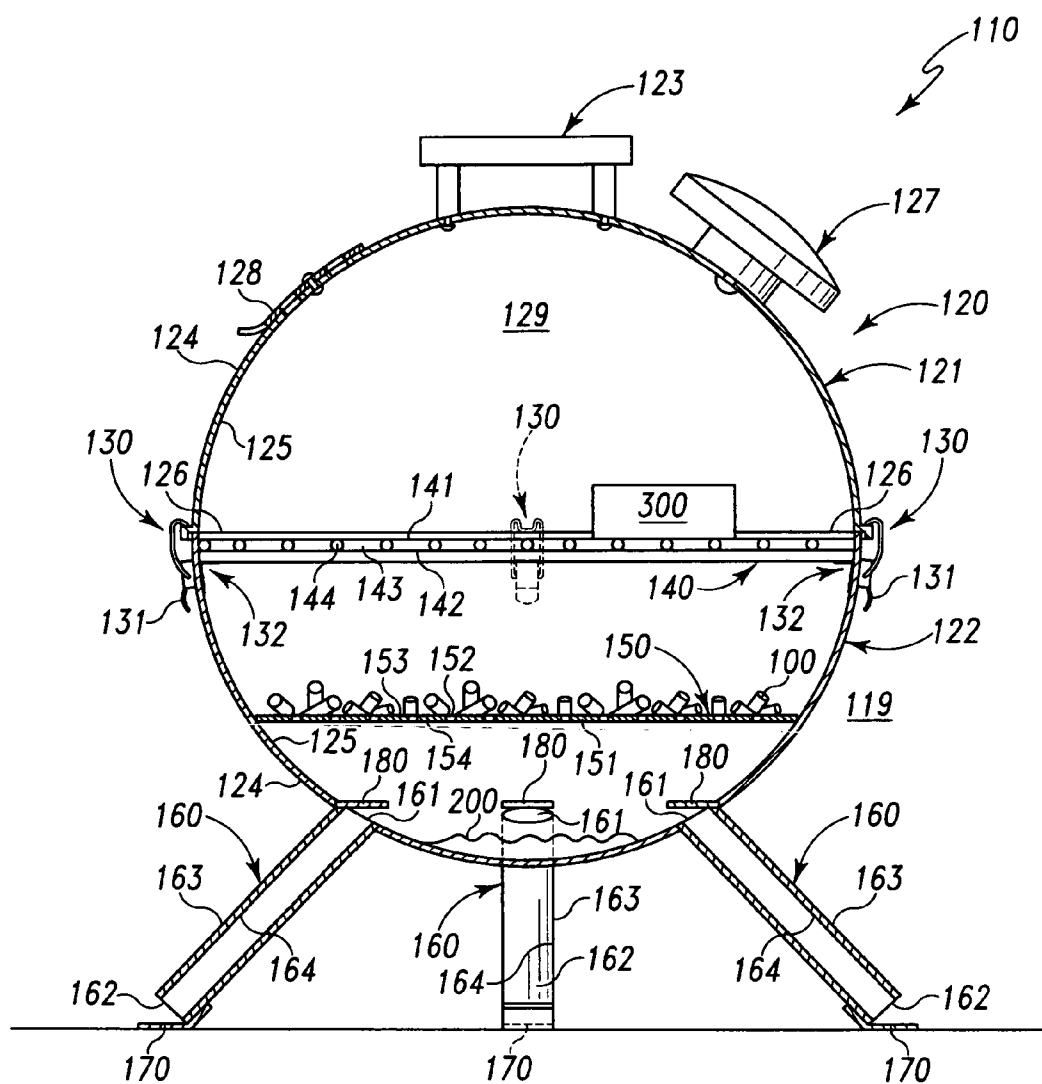


Fig. 5

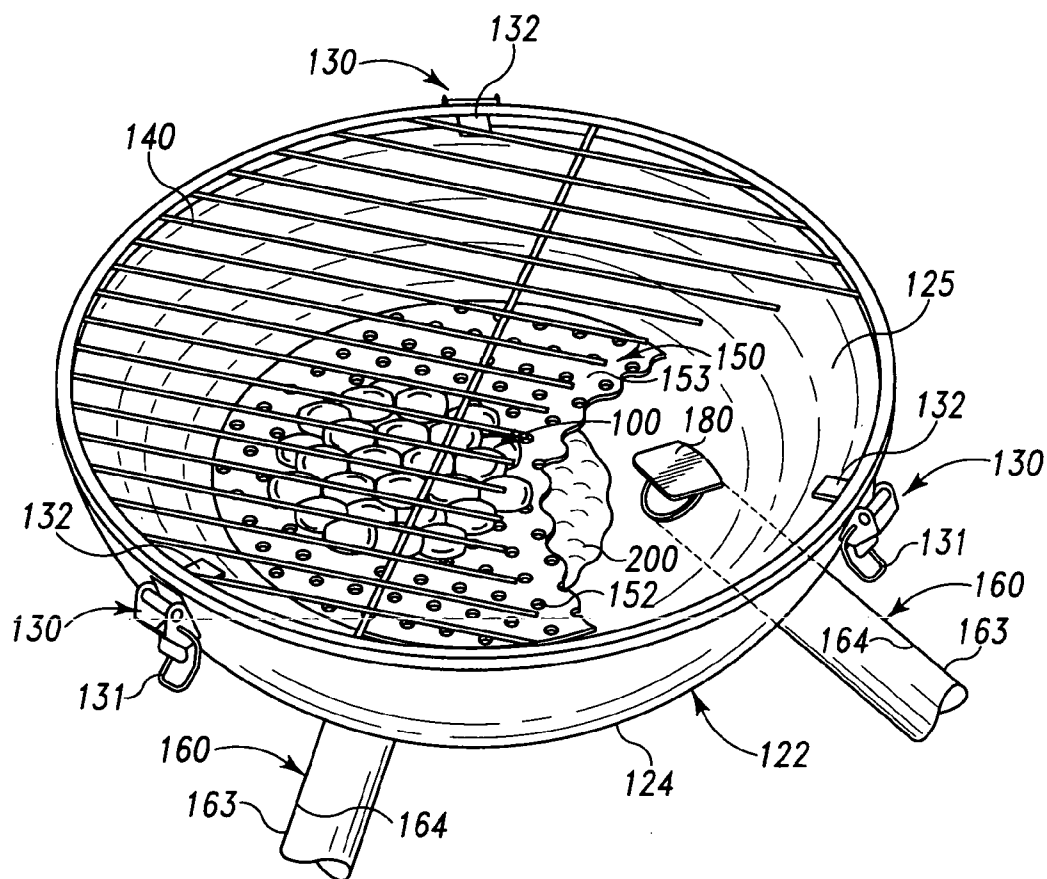


Fig. 6

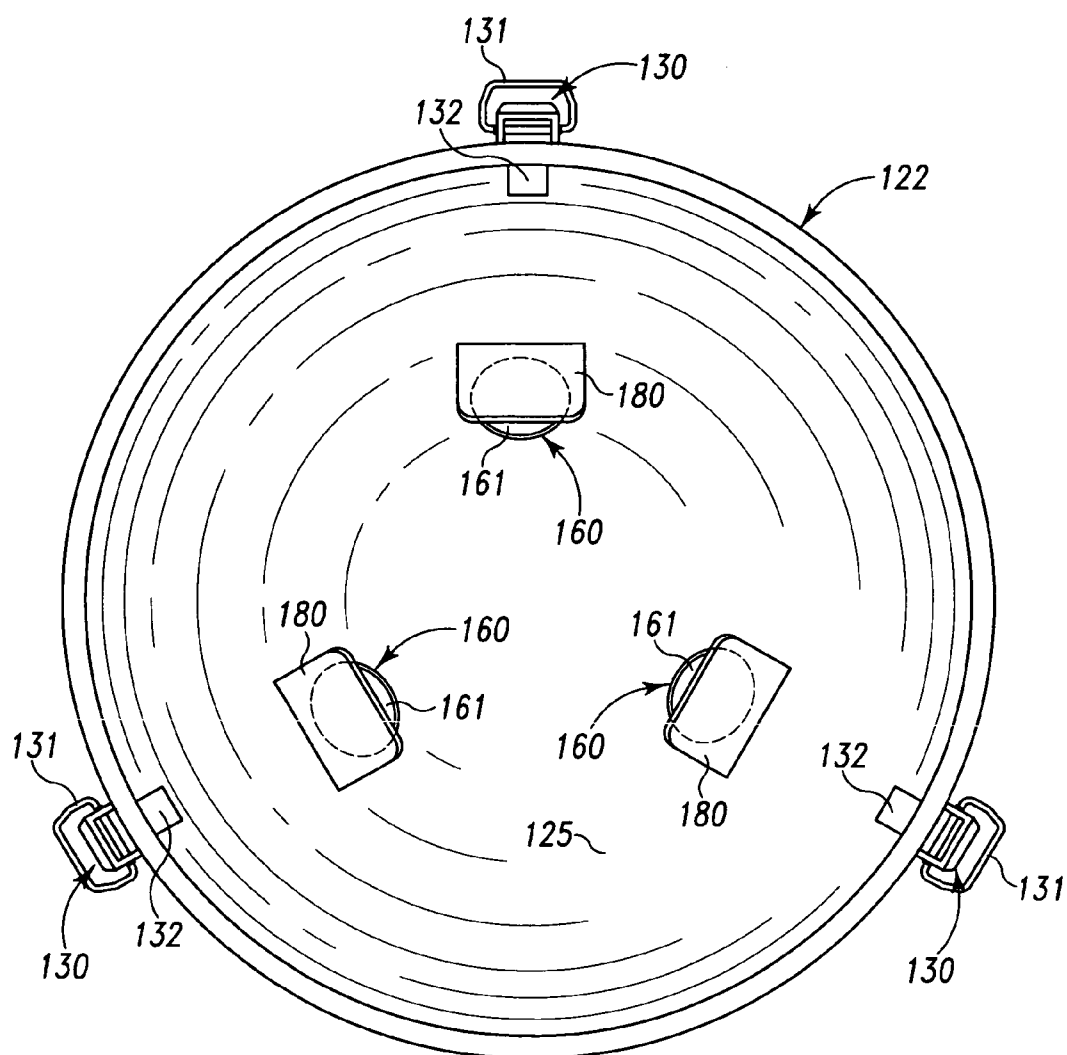


Fig. 7

PELLET-FIRED BBQ

CROSS-REFERENCES

[0001] No provisional patent application was filed for the subject matter of this disclosure.

BACKGROUND OF THE DISCLOSURE

[0002] Barbecue grills or stoves are a popular way to prepare food away from the kitchen of a home. Typically, barbecue grills or stoves include a relatively open food support over a heat source, such as a collection of charcoal briquettes. The open food support, or grill, is commonly constructed of a number of horizontally disposed, parallel elements connected to a frame. In cases where charcoal briquettes are used as the heat source, those briquettes, too, may be supported on an open grill. Alternatively, the briquettes may rest upon a bottom surface of a shell making up the body of the barbecue grill or stove.

[0003] The barbecue grill described above may be sufficient for cooking food over a collection of charcoal briquettes. However, the described barbecue grill may not be adequate for producing heat at a high level in a short period of time, or for utilizing a pellet fuel source. As another potential drawback, charcoal briquettes used in a conventional barbecue grill in the described manner may stay hot for several hours after their intended usage period, making clean-up a difficult proposition.

[0004] A barbecue grill as described in the present disclosure overcomes the flaws inherent in the prior art by providing a barbecue grill suitable for using a pellet fuel for cooking foodstuffs in an efficient manner. Such a pellet-fueled barbecue grill may provide sufficient heat for cooking in a very short period of time, and may allow the pellet fuel to cool in a much shorter time than occurs in a conventional barbecue grill.

SUMMARY OF THE DISCLOSURE

[0005] The present disclosure provides a pellet-fired barbecue for cooking food using heat produced by combustion of a pellet fuel. The pellet-fired barbecue may include a standard, narrow-gauge wire food support and a fuel support, both encompassed within the barbecue grill body. The fuel support may be a substantially solid structure, having a minimum of open space; such a configuration may provide for a controlled burn of a pellet fuel used as a heat source for cooking food in the barbecue. A variety of configurations of the fuel support may be used for a variety of different pellet fuels. Air used in the combustion of a pellet fuel in the barbecue grill may enter the grill through one or more supports of the barbecue.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] FIG. 1 is a cutaway side view of a first embodiment of a pellet-fired barbecue.

[0007] FIG. 2 is a cutaway perspective view of an interior space of the first embodiment of a pellet-fired barbecue.

[0008] FIG. 3 is a plan view of an interior space of the first embodiment of a pellet-fired barbecue, with a food support and a fuel support removed.

[0009] FIG. 4 shows an exemplary fuel support for use in a pellet-fired barbecue of the type disclosed.

[0010] FIG. 5 is a cutaway side view of a second embodiment of a pellet-fired barbecue.

[0011] FIG. 6 is a cutaway perspective view of an interior space of the second embodiment of a pellet-fired barbecue.

[0012] FIG. 7 is a plan view of an interior space of the second embodiment of a pellet-fired barbecue, with a food support and a fuel support removed.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0013] FIG. 1 depicts an exemplary embodiment of a barbecue grill 10, the barbecue being designed according to the details of the present disclosure. In an illustrated embodiment, barbecue grill 10 may typically be constructed with a grill body 20 formed from at least first and second shell portions 21, 22. In an embodiment where the shell includes more than one shell portion, the multiple shell portions may be held in fixed relation to each other through at least one latch assembly 30. The shell portions may separate an external environment 19 of the barbecue grill from an interior 29. Interior 29 of the barbecue grill may house one or more food support members 40 and one or more fuel support members 50. A barbecue grill, including the grill body 20 and structures associated with it, may be supported on grill support 60.

[0014] As shown in FIG. 1, a grill body 20 may include a first shell portion 21 and a second shell portion 22. The first and second shell portions may be constructed of any material suitable for use in containing high temperatures and combusting pellet fuel. For example, in an illustrated embodiment, the shell portions are constructed of steel. The first and second shell portions may be held in fixed relation to one another by at least one latch assembly 30. Each shell portion 21, 22 may have an exterior surface 24 and an interior surface 25. Surfaces 24, 25 may be locations to which are attached a number of accessories and/or other components of the barbecue grill. For example, a shell portion 21 may have attached to it one or more of a handle 23, and/or a thermometer 27, and/or a vent assembly 28, and/or any other appropriate barbecue grill component. Although shown as defining a roughly cylindrical and hemispherical grill body 20, first and second shell portions 21, 22 may define any appropriate space. For example, grill body 20 could be spherical, as in a second disclosed embodiment (shown in FIG. 5-7), or an ovoid shape, or cube shaped, or any other suitable design.

[0015] As noted above, a number of shell portions 21, 22 may be held in fixed relation to each other by at least one latch assembly 30. In an illustrated embodiment, there may be three latch assemblies 30 spaced equidistant about a periphery of the barbecue grill body 20. Each latch assembly 30 may include an external latch portion 31 and an internal latch portion 32. Each latch assembly 30 may be fixed at least temporarily to a shell portion through welding, or adhesion, or screwing, or any other appropriate fastening technique. In the illustrated embodiment, latch assembly 30 may be held to a shell portion 22 through a plurality of rivets that span from an exterior surface 24 to an interior surface 25 of the shell portion. In a case where the grill body 20 is

composed of an upper shell portion **21** and a lower shell portion **22**, a given latch assembly **30** may hold the upper and lower shell portions in fixed relation by removably hooking a portion of the latch assembly of the lower shell portion over a shell lip **26** included on the upper shell portion. Alternatively, or in addition, upper and lower shell portions **21**, **22** may be held fixedly through a design feature included in the shell portions, such as a tongue-and-groove arrangement.

[0016] As noted above, an interior **29** of grill body **20** may house a food support member **40**. The food support member may have an upper surface **41** and a lower surface **42**. To support food over a heat source, food support member may include a number of grill elements **44** separated by spaces **43**. In a typical embodiment, spaces **43** may be much larger than grill elements **44**, providing a substantially open structure upon which to support food items. In this way, there may be a minimal amount of heat-deflecting material between a food item **300** placed upon the food support member and a pellet fuel source **100** providing cooking heat from below. In a typical embodiment, the food support member may be made of a steel material, where the grill elements **44** are configured as narrow-gauge steel rods, or tines. Of course, any one of many possible structures may be used as a food support. Food support member **40** may rest against an interior surface of the grill body, or it may be supported by internal portions **32** of latch assemblies **30**, as shown.

[0017] Food on food support member **40** may be cooked over heat supplied by pellet fuel **100**. Pellet fuel **100** may be supported in an interior space **29** of grill body **20** by a fuel support member **50**. Fuel support member **50** may have a fuel support body **51** having openings **52** (shown most clearly in FIG. 4). Fuel support member **50** may be constructed of any material suitable for supporting the pellet fuel when the fuel is combusting at a high temperature. For example, in an illustrated embodiment, fuel support member **50** is constructed of a steel support material. Openings **52** in the fuel support body may bridge from an upper surface **53** to a lower surface **54** of the fuel support member and so may provide the fuel support member with a “perforated” appearance (seen in more detail in FIG. 4). A fuel support member having perforate construction may allow air to more easily reach fuel **100** supported thereon. Openings **52** in fuel support member body **51** may also provide a route for pellet ash **200** from fully-combusted portions of pellet fuel **100** to move or fall away from the pellet fuel during cooking. Pellet ash **200** may then collect upon a heat shield **80** for at least temporary storage before being collected and/or discarded. In an alternative embodiment, shown in FIGS. 5-7, pellet ash **200** may collect along a bottom surface of a lower shell portion **22** for at least temporary storage before being collected and/or discarded.

[0018] Fuel support **50** may be supported in an interior space **29** of the grill body **20** by resting upon an inner lip **57** of a fuel platform **56**. Fuel platform **56**, in turn, may be fastened to an interior surface **25** of one of the shell portions **21**, **22** of the grill body **20**. Fuel platform **56** may rest against an inner surface of the grill body, or it may be fastened temporarily or permanently to an inner surface of the grill body. For example, fuel platform may be welded to an inner surface of the grill body. Any appropriate fastening tech-

nique may be used which allows the combined fuel platform **56** and fuel support **50** to support the pellet fuel.

[0019] As noted, fuel support **50** may rest upon a fuel platform lip **57**, which may be a sub-region of the fuel platform. The fuel platform lip **57** may be separated from the rest of the fuel platform by a fuel holding ring **55**. Fuel holding ring **55** may function to contain a mass of pellet fuel **100** as it sits on a fuel support **50**. For example, if fuel support **50** is placed into the grill prior to the addition of the pellet fuel, fuel holding ring **55** may prevent the pellet fuel from spreading about the entirety of the fuel platform **56** when the pellet fuel is placed into the grill.

[0020] Fuel support **50** may be placed separately into a barbecue grill, or it may be included as a portion of a larger assembly. As shown in FIG. 1, fuel support member **50** may be attached permanently, semi-permanently, or temporarily to a connection rod **47**. Connection rod **47** may likewise have attached to it a heat shield **80** which may be used to catch pellet ash **200** as it falls from a pellet fuel **100**. Fuel support **50** and heat shield **80** may be held to the rod through any appropriate means when provided as a singular assembly. For example, in the illustrated embodiment, heat shield **80** and fuel support may be welded to the connection rod. Heat shield **80**, like fuel support member **50**, may be constructed of any material suitable for supporting the pellet fuel ash when the ash is derived from pellet fuel combusting at a high temperature, and for deflective hot sparks that may be thrown off the pellet fuel. For example, in an illustrated embodiment, heat shield **80** is constructed of steel deflective material. Connection rod **47** may have an included rod handle **48**, which may be used to place the connection rod, and any associated support and/or shield, into the grill.

[0021] As noted earlier, a barbecue grill body **20** may be supported by at least one grill support **60**. In an illustrated embodiment, the grill support **60** may be merely the lowest portion of the barbecue grill body **20** whose only specialized supporting structure is a flaring at the lowest portion of the grill body. The grill support **60** may be configured to have a hollow or tubular construction. With a grill support having a hollow construction, it may be the case that an interior portion **29** of grill body **20** may be in fluid communication with an outside atmosphere **19** through one or more air inlets **61** formed in the grill support. Such a hollow configuration of a grill support **60**, including one or more associated air inlets **61**, may function to provide extra air from the outside atmosphere to the interior of the grill body **20**, facilitating combustion of pellet fuel **100**.

[0022] In providing for relatively free air movement through air inlets **61**, grill support **60** may likewise allow pellet fuel ash or sparks to likewise pass through the air inlets. To retard the flow of ash or sparks through air inlets **61**, heat shield **80** may be placed in the interior of the grill body, as shown, such that it may catch any fallen ash from pellet fuel **100**. In addition, judicious placement of heat shield **80** may prevent sparks or heated air from exiting the one or more air inlets **61**. A such, heat shield **80** may also be referred to as a deflective member, in that it may deflect objects that may be on a path to exit from the interior **29** of the grill to the exterior **19** of the grill via any of the air inlets **61**.

[0023] FIG. 2 shows a view of a pellet-fired barbecue grill that lacks, or has had removed, an upper shell portion **21**,

leaving the second, lower, shell portion **22** and structures that may be associated with it. As shown in FIG. **2**, a food support member **40** may be disposed vertically above a fuel support member **50**. Both the food support member **40** and the fuel support member **50** may rest against an inner surface **25** of the second shell portion **22**. Alternatively, one or more of the food support member **40** and the fuel support member **50** may be supported by a structure attached to a shell portion of the grill. For example, as shown in FIG. **2**, food support member **40** may be supported by internal portions **32** of a plurality of latch assemblies **30** while fuel support member **50** may be supported on a fuel platform lip **57**.

[0024] Pellet fuel **100** may rest upon fuel support member **50** during combustion of the pellet fuel. Openings **52** (see FIG. **4**) in the fuel support member may provide not only for the relatively free flow of air to the pellet fuel, but also for the disposal of pellet ash **200**. For example, during the process of combustion, pellet fuel **100** may be incompletely consumed, leaving behind an ash residue **200**. Ash residue **200** may initially accumulate on upper surface of the fuel support member but may also periodically fall through openings **52**, then through fuel platform opening **75** in fuel platform **56** (see also FIG. **1**) and collect upon a provided heat shield **80**. Alternatively, pellet ash **200** may collect on an interior surface **25** of second shell portion, **22** (see FIGS. **5-7**).

[0025] As noted, pellet fuel **100** may be combusted using air that may be provided from an external environment **19** of the grill body. Where grill support **60** is configured with a substantially hollow construction, air may pass from outside to inside the barbecue through the one or more air inlets **61**. However, such a configuration of grill support **60** may carry the risk that pellet ash **200**, or a spark from pellet fuel **100**, may escape through one or more of the air inlets to the outside of the barbecue. Escape of ash from an interior to an exterior of the barbecue may result in a mess that must be cleaned up after use of the barbecue. In addition, escape of ash or sparks from the interior space of the barbecue may carry the risk of a fire, if there are any combustible materials nearby, or it may carry the risk of personal injury, if someone is present near the barbecue and is contacted by the spark or ash. To prevent the escape of at least ash and sparks from the interior of the barbecue, the grill may be configured with a heat shield **80** present in a lower portion of the grill body **20**. Although shown in FIGS. **1** and **2** as having a roughly circular shape, a heat shield **80** may take any shape suitable for preventing objects from entering the grill support **60** and potentially escaping from the grill.

[0026] FIG. **3** presents a top view of a second shell portion **22** of a barbecue, such that a possible construction of a fuel platform may be more clearly seen. A fuel platform **56** may serve to obstruct the passage of air through most of one portion of the grill body. As such, fuel platform **56** may force most air entering the grill body to pass through fuel platform opening **75** where, in the fully-assembled grill, pellet fuel may be supported by fuel support **50** (see FIGS. **1** and **2**). In the illustrated embodiment, a connection rod and its associated structures may be placed vertically into the grill body, such that a periphery of any associated fuel support may rest on an upper surface of the fuel platform at fuel platform lip **57**. As shown, the grill body, fuel platform, and other structures, may be configured with roughly circular cross-sectional shapes, but other designs are possible. For

example, the grill body and associated structures may have square cross-sections, or rectangular cross-sections, etc. In any case a heat shield **80** may take any suitable shape for passing through platform opening **75** and being suspended below fuel platform **56** to prevent the escape of ash or sparks or other materials from an interior of the barbecue to the exterior of the barbecue. In this construction, a spark guard may have similar characteristics to a food support member and a fuel support member, which may be removed from an interior of the barbecue for cleaning, or storage, or for any other reason.

[0027] FIG. **4** shows an embodiment of a fuel support member for use with the described pellet-fired barbecue. In an illustrated embodiment, fuel support member **50** may have a "perforated" appearance, with a fuel support member body **51** being of generally solid configuration but including a number of openings **52**. As seen in FIG. **1**, openings **52** may form a passage from a lower surface **54** to an upper surface **53** of the fuel support member. Openings **52** may, therefore, provide a way for intake air to pass from one or more air inlets **61** in a grill support **60** (FIGS. **1-3**) to a pellet fuel disposed on an upper surface of the fuel support member. In an illustrated embodiment, openings **52** are sized such that a minor portion of the fuel support member is configured as open space. Such a construction of fuel support member **50** may restrict an amount of intake air that may pass through the one or more air inlets and reach pellet fuel placed on the fuel support member. In a pellet-fueled barbecue, a design of a fuel support member with restricted airflow characteristics, as shown and described, may provide a pellet fuel with favorable combustion characteristics. For example, it may be that a user of the barbecue would use a pellet fuel as a heat source that can reach a desired cooking temperature rapidly, would combust at the desired cooking temperature for enough time to cook a meal, and would be finished combusting at the desired cooking temperature in a relatively short amount of time. Thus, in an illustrated embodiment, openings **52** of a fuel support member **50** may be approximately **8** percent of the total area of a fuel support member **50** to allow for the described desired burn characteristics. It may be that a number of replaceable fuel support members could be provided for a given barbecue, for use with a number of types of pellet fuel, each having different desired combustion characteristics. In that case, openings **52** may be configured as any percent of the total area of the fuel support member that provides for the described burn characteristics for a given pellet fuel. As can be seen from the figures, a design of grill body shell portions **21**, **22** may also contribute to the modulation of the burn characteristics of a given pellet fuel. For example, in the illustrated embodiment, shell portions **21**, **22** are substantially imperforate. This may allow an only source of combustion air to be from one or more air inlets in a grill support **60** and to be modulated by a percentage of open space present in a fuel support member **50**.

[0028] When used in a grill shown in the illustrated embodiments, a pellet fuel used with the disclosed fuel support member may reach optimal cooking temperature after approximately 10 minutes of combustion; it may be substantially completely combusted in approximately 60 minutes. In contrast, it may be that configuring the fuel support structure **50** with a more open, grill-like structure, as shown for one embodiment of a food support member **40**, may be problematic for using pellet fuel as a heat source for

cooking. As one possible difficulty, it may be that a substantially open fuel support member could allow the pellet fuel to combust too quickly, and at too high a temperature, for use as a cooking fuel. As another possible difficulty, it may be that a more open fuel support member could allow a partially-combusted fuel pellet to fall through the fuel support member and come to rest on a bottom interior surface of the second, lower shell portion or on an associated heat shield; each partially-combusted fuel pellet portion may thus become ruined for future use and the remaining combined pellet fuel may not provide sufficient heat for cooking any provided food.

[0029] FIGS. 5-7, and the following text, present a second embodiment of a grill according to the present disclosure. In FIGS. 5-7, and the following text, the elements of the second embodiment are numbered similarly to the previously-discussed elements of the first embodiment, with the addition of a preceding "1." For example, the grill of the first embodiment is denoted "10," while the grill of the second embodiment is denoted "110." FIG. 5 depicts a second embodiment of a barbecue grill, 110, the grill being designed according to the details of the present disclosure. In this second illustrated embodiment, grill 110 may be constructed with a grill body 120 having a generally spherical shape. As in the first embodiment, where the shell includes more than one shell portion, the multiple shell portions 121, 122 may be held in fixed relation to each other through at least one latch assembly 130. The shell portions may separate an external environment 119 of the barbecue grill from an interior 129. Interior 129 of the barbecue grill may house one or more food support members 140 and one or more fuel support members 150. A barbecue grill, including the grill body 120 and structures associated with it may be supported on one or more grill supports 160. In the illustrated second embodiment, there may be a plurality of grill supports 160 configured as legs.

[0030] As shown in FIG. 5, and in common with the first embodiment, a fuel support member having perforate construction may be present in the grill interior 129. Fuel support member 150 may rest against an interior surface 125 of a lower shell portion 122 of the grill. Alternatively, fuel support member 150 may be removably or irremovably fastened to the interior surface of the grill. Openings 152 in fuel support member 150 may allow air to easily reach fuel 100 supported thereon. Openings 152 in fuel support member body 151 may also provide a route for pellet ash 200 from fully-combusted portions of pellet fuel 100 to move or fall away from the pellet fuel during cooking. Pellet ash 200 may then collect along a bottom surface of lower shell portion 122 for at least temporary storage before being collected and/or discarded.

[0031] As noted earlier, a barbecue grill body 120 may be supported by at least one grill support 160. In the second illustrated embodiment, the barbecue grill body is supported by three legs 160 attached to an external surface 124 of lower shell portion 122. Legs 160 may be spaced such that they are attached away from the lowest point of the lower shell portion 122, and they may be spaced equidistant about the periphery of the lower shell portion at the level they are attached (seen more clearly in FIG. 7). As shown in FIGS. 5 and 6, each leg may be of tubular construction, such that an air inlet 161 of the grill at a proximal end of each leg may be operatively connected to a distal end 162 of the same leg

through an open space. As such, the shape of each leg may be defined by both an outer surface 163 and an inner surface 164 of the leg.

[0032] It may be that not every leg used to support grill body 120 is configured with a hollow or tubular construction. With a leg having a hollow construction, such that an air inlet 161 of the grill and a distal end 162 of the leg are operatively connected by open space, it may be the case that an interior portion 129 of grill body 120 may be in fluid communication with an outside atmosphere 119 through the open space of the hollow leg. Such a hollow configuration of each leg may function to provide for air movement from the outside atmosphere to the interior of the grill body 120, facilitating combustion of pellet fuel 100.

[0033] To provide for free air flow through a hollow leg grill support 160, each such leg may be provided with a leg foot 170 and/or a heat shield 180. A leg foot 170 may be located at a distal portion 162 of a leg grill support 160 relative to a grill body 120. A leg foot 170 may function to distribute the weight of the barbecue grill over a greater surface area of the ground, which may in turn prevent each leg grill support 160 from digging into the ground with a resulting possibility of obstruction of free air flow through the leg. Leg foot 170 may also work in a more general manner in preventing foreign objects from obstructing a distal end 162 of the leg. Much as a leg foot 170 may protect a distal end 162 of a leg 160, heat shield 180 may function to protect an air inlet 161 at the junction of the grill body 120 and each leg 160 from the entry of foreign objects. Each heat shield 180 may be mounted to an internal surface 125 of one portion of the grill body, such that the heat shield maintains fixed placement near an air inlet 161 from a leg 160 with which it is associated.

[0034] FIG. 6 shows a view of a pellet-fired barbecue grill that lacks, or has had removed, an upper shell portion 121, leaving the second, lower, shell portion 122 and structures that may be associated with it. As shown in FIG. 6, a food support member 140 may be disposed vertically above a fuel support member 150. Both the food support member 140 and the fuel support member 150 may rest against an inner surface 125 of the second shell portion 122. Alternatively, one or more of the food support member 140 and the fuel support member 150 may be supported by a structure attached to the second shell portion. For example, as shown in FIG. 6, food support member 140 may be supported by internal portions 132 of a plurality of latch assemblies 130.

[0035] As noted earlier, pellet fuel 100 may be combusted using air that may be provided from an external environment 119 of the grill body. In an embodiment of the grill 100 where one or more legs 160 have a tubular structure, air may pass from outside 119 to inside 129 the grill through the one or more hollow legs. However, such a configuration of legs 160 may carry the risk that pellet ash 200, or a spark from pellet fuel 100, may escape through one or more of the legs to the outside of the barbecue. Escape of ash from an interior 129 to an exterior 119 of the barbecue may result in a mess that must be cleaned up after use of the barbecue. In addition, escape of ash or sparks from the interior space of the barbecue may carry the risk of a fire, if there are any combustible materials nearby, or it may carry the risk of personal injury, if someone is present near the barbecue and is contacted by the spark or ash. To prevent the escape of at

least ash and sparks from the interior 129 of the barbecue, an interior surface 125 of a shell portion may be configured with one or more heat shields 180 present near an air inlet 161 of each tubular leg 160 where it meets shell portion 122. In the second illustrated embodiment, legs 160 may be attached along a lower surface of a second, lower, shell portion of the barbecue and a heat shield 180 may be positioned just above each air inlet 161. Although shown in FIGS. 6 and 7 as having a roughly rectangular perimeter, each heat shield 180 may take any shape suitable for preventing objects from falling, or being placed, into each of the air inlets 161.

[0036] FIG. 7 presents a top view of a second shell portion 122 of a barbecue, such that a possible relative placement of heat shields 180, air inlets 161, and legs 160 may be more clearly seen. A heat shield 180 may also be described as a deflective member, as some portion of its function may be to deflect objects that may be on a path to enter a given air inlet 161. In the second illustrated embodiment, each heat shield 180 is associated with a single leg 160, such that the heat shield obstructs access to the leg from above. As shown, each heat shield, or deflective member, may be configured with a roughly rectangular shape, but other designs are possible. For example, a heat shield 180 may be a single object of a roughly ring-like construction and may be mounted to an interior surface 125 of the shell portion at a level just above the position of attachment of legs 160. One or more heat shields 80 may take any suitable shape for preventing the escape of ash or sparks or other materials from an interior 129 of the barbecue to the exterior of the barbecue. Also, as shown in FIG. 7, each heat shield 180 may be mounted directly to the interior surface of the second shell portion. However, each heat shield 180 may be placed permanently or transiently in a protective configuration with the one or more legs. For example, heat shields 180 may be welded to an interior of the shell portion, or they may be riveted to the shell portion, or they may be screwed to the interior of the shell portion. Alternatively, if a heat shield is configured with appropriate dimensions, it may rest against an interior of the shell portion and reside there only temporarily. In this construction, a heat shield may have similar characteristics to a food support member and a fuel support member, which may be removed from an interior of the barbecue for cleaning, or storage, or for any other reason. FIG. 7 shows, for example, a second shell portion 122 of a barbecue having removable food and fuel supports, such as shown in FIGS. 1, 2, 5, and 6, with the food and fuel supports having been removed to show a lower interior surface 125 of the second shell portion 122.

[0037] Although the present invention has been shown and described with reference to the foregoing operational principles and preferred embodiments, it will be apparent to those skilled in the art that various changes in form and detail may be made without departing from the spirit and scope of the invention. The present invention is intended to embrace all such alternatives, modifications and variances that fall within the scope of the appended claims.

[0038] It is believed that the disclosure set forth above encompasses multiple distinct inventions with independent utility. While each of these inventions has been disclosed in its preferred form, the specific embodiments thereof as disclosed and illustrated herein are not to be considered in a limiting sense as numerous variations are possible. The

subject matter of the inventions includes all novel and non-obvious combinations and subcombinations of the various elements, features, functions and/or properties disclosed herein. Similarly, where the claims recite "a" or "a first" element or the equivalent thereof, such claims should be understood to include incorporation of one or more such elements, neither requiring nor excluding two or more such elements.

What is claimed is:

1. A cooking apparatus comprising:

a housing, the housing comprising:

a shell defining an interior and an exterior, wherein the shell includes an upper portion and a lower portion, and further wherein at least the lower portion has a substantially imperforate surface construction;

a food support member; and

a pellet fuel support member, wherein the food support member and the pellet fuel support member are disposed above a lower surface of the housing; and

at least one housing support, wherein the at least one housing support includes at least one air inlet to the interior of the shell.

2. The cooking apparatus of claim 1, further including a deflective member positioned relative to the air inlet to at least substantially obstruct access to the air inlet from the interior of the housing.

3. The cooking apparatus of claim 2, wherein the at least one housing support is an extension of the lower portion of the shell, and wherein each air inlet is configured as an opening in the lower portion of the shell.

4. The cooking apparatus of claim 1, wherein the at least one grill support is configured as at least one hollow leg mounted to the lower portion of the shell such that an interior space of the hollow leg is functionally continuous with the interior of the housing via the air inlet and with an outside environment via an opening in the at least one leg.

5. The cooking apparatus of claim 4, wherein the interior of the shell includes a deflective member positioned relative to the air inlet to at least substantially obstruct access to the air inlet from the interior of the housing.

6. The cooking apparatus of claim 5, wherein the opening in the at least one hollow leg is positioned at an end of the hollow leg distal from the shell.

7. The cooking apparatus of claim 6, wherein the at least one hollow leg includes a removable covering obstructing at least a portion of the opening in the hollow leg.

8. The cooking apparatus of claim 1, wherein the portions of the shell together describe a substantially semi-spherical shape.

9. The cooking apparatus of claim 8, wherein the at least one grill support is configured as at least one hollow leg, and further wherein the at least one leg is mounted to the lower portion of the shell such that an interior space of the hollow leg is functionally continuous with the interior of the housing via the air inlet and with an outside environment via an opening in the at least one leg.

10. The cooking apparatus of claim 9, wherein the interior of the shell includes a deflective member positioned relative to the air inlet to at least substantially obstruct access to the air inlet from the interior of the housing.

11. The cooking apparatus of claim 10, wherein the opening in the at least one hollow leg is positioned at an end of the hollow leg distal from the shell.

12. The cooking apparatus of claim 11, wherein the at least one hollow leg includes a removable covering obstructing at least a portion of the opening in the hollow leg.

13. A cooking apparatus comprising:

a housing, the housing comprising:

means for supporting food in an interior space of the housing; and

means for supporting pellet fuel in the interior space of the housing, wherein the means for supporting food and the means for supporting pellet fuel are displaced vertically from a lower surface of the housing; and

means for supporting the housing above a surface, wherein at least a portion of the means for supporting the housing provides an air inlet for the interior of the housing.

14. The cooking apparatus of claim 13, further including a means for deflecting wherein the means for deflecting is positioned relative to the air inlet to at least substantially obstruct access to the air inlet from the interior of the housing.

15. A cooking apparatus comprising:

a housing, the housing comprising:

a shell defining an interior and an exterior, wherein the shell includes an upper portion and a lower portion

each having a substantially imperforate construction and capable of being held in relatively fixed placement by a plurality of fastening devices;

a food support at least temporarily mounted in the interior of the shell, wherein the food support has a substantially open and planar configuration defined by a plurality of crosspieces mounted to a frame;

a fuel support at least temporarily mounted in the interior of the shell, wherein the fuel support has a substantially planar configuration defined by a substantially imperforate support material; and

a deflective member at least temporarily mounted in the interior of the shell, wherein the deflective member has a substantially planar configuration defined by an at least substantially imperforate deflective material, and further wherein the deflective member and the fuel support are mounted on a connection rod in a connection rod assembly such that the deflective member is disposed vertically below the fuel support on the connection rod; and

at least one housing support, wherein at least one housing support is configured with an air inlet sized suitably to allow fluid communication of air between the interior and the exterior of the shell to such an extent that combustion of a pellet fuel supported on the fuel support can occur.

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