

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO	
RAD: 15-264542- -6	FECHA: 2016-04-11 09:48:57
DEP: 2020 DIRECCION DE NUEVAS CREACIONES	EVE: 1 REGISTRO/DEPOSITO/CONCESION/DEPOSITO
TRA: 3 PATENTES DE MODELO DE UTILIDAD	FOLIOS: 8
ACT: 519 TRASLADOINFORME	

DIRECCIÓN DE NUEVAS CREACIONES

2020
Bogotá, D.C.,

Abogado(a)/Señor(a)
LOLA KANDELAFT

Asunto: Radicación: 15-264542- -6
 Trámite: 3
 Evento: 1
 Actuación: 519
 Oficio: 4110
 Folios: 8

Patente de Invención				Patente de Modelo de Utilidad	X
Vía Nacional	X				
Vía PCT (Fase Nacional)		Capítulo I		Capítulo II	
No. Solicitud Internacional					
Fecha de Presentación Internacional					

Como resultado del Examen de Fondo realizado, con fundamento en el artículo 85 y en concordancia con el artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le comunica:

1. Documentos estudiados

Descripción:	Radicado N° 15-264542-0000-0000	05/Noviembre/2015
Reivindicaciones:	Radicado N° 15-264542-0000-0000	05/Noviembre/2015
	Radicado N° 15-264542-0003-0000	21/Noviembre/2015
Dibujos:	Radicado N° 15-264542-0000-0000	05/Noviembre/2015

2. Objeto de la invención

De acuerdo con lo establecido en el numeral 1.2.2.2 del capítulo primero del Título X de la Circular Única para efectos del examen de patentabilidad, se tendrá en cuenta la tasa pagada por la solicitante al momento de comenzar el examen para las reivindicaciones adicionales; esto es que cuando la solicitud contenga más de diez (10) reivindicaciones y no se haya pagado la tasa complementaria, sólo se estudiarán las cubiertas por la tasa pagada. En el presente caso se estudiarán las reivindicaciones 1 a 16 del capítulo reivindicatorio (Radicado N° 15-264542-0003-0000 Pág. 2 a 4).

Título de la solicitud: “Marmita autogeneradora de vapor a gas natural” (Radicado N° 15-264542-00000-0000).

El problema planteado en esta solicitud consiste en mejorar el proceso de aprovechamiento de la energía en el funcionamiento de las marmitas (equipo para la cocción de alimentos), teniendo en cuenta que los diseños actuales conservan estructuras cuyas chaquetas de vapor necesitan altas cantidades de energía para producir el calor suficiente que les permite procesar o cocinar los productos de interés.

Para resolver este problema técnico la solicitud en estudio proporciona un equipo que incorpora un diseño de intercambiador de calor adaptable preferiblemente a las marmitas autogeneradoras de vapor. Este intercambiador permite la generación de vapor dentro de la marmita, aprovechando los gases producidos por un sistema de combustión de gas combustible, tal como gas natural. Por su diseño, la marmita permite un aprovechamiento eficiente del calor disponible.

El objeto de la presente solicitud se relaciona con la Clasificación Internacional de Patentes (CIP): A 47 J 27/17.

Reivindicaciones (Art 30 D 486, Art 22 PCT)

Las reivindicaciones 1 a 16 no son claras porque:

- Las expresiones: *"(...) y permiten la transferencia de calor por medio de un medio dinámico gaseoso que fluye desde la cámara de combustión, a través de los tubos, atraviesan la chaqueta de gases y salen por el ducto de escape; hacia un medio estático denominado agua de vaporización"* (reiv. 1), *"(...) para controlar el gas que va a hacia los quemadores, una válvula solenoide para controlar el gas que va hacia el piloto, y las tuberías de conducen el gas desde las válvulas a los quemadores"* (reiv. 13), hacen referencia a características funcionales, las cuales aunque explican la relación que hay entre diversas características estructurales y pueden estar incluidas en las reivindicaciones, no definen la invención; de tal manera no se tienen en cuenta para el estudio de patentabilidad.
- La expresión: *"(...) permiten medir y controlar de manera periódica los valores de presión, temperatura y nivel de agua de acuerdo a los parámetros establecidos para la marmita en operación"* (reiv. 16), hace referencia a un resultado a alcanzar puesto que la reivindicación incluiría no sólo la solución propuesta por el solicitante, sino todas las alternativas presentes o futuras que lleguen a ese resultado. Se sugiere reemplazarlo por las características esenciales, estructurales, que contribuyen a la obtención de ese efecto.
- Las expresiones "...al menos" (reiv. 1), "...parcialmente" (reiv. 2), "...por lo menos" (reiv. 3), "...o más" (reiv. 5), "...módulo de elementos electrónicos", "...y otros elementos comunes en medición de presión, temperatura y/o nivel de agua" (reiv. 16), sugieren de forma imprecisa que la protección se extiende a otras posibles variaciones o modificaciones, por lo tanto, no son claras ya que no definen la materia a proteger. Se sugiere sustituir dichas expresiones por términos concretos.

3. Determinación del Estado de la Técnica

El estado de la técnica se determinó con base en la fecha de presentación de la solicitud de patente nacional: Noviembre 05 de 2015, y se encontraron los siguientes documentos que anticipan el objeto de esta solicitud:

Ítem	Documento	Título	Fecha de Publicación
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D1	Tesis	“Diseño y construcción de una marmita autogeneradora de vapor, a gas natural como alternativa para la reconversión tecnológica de la industria del bocadillo en Vélez, Santander”	2011
D2	US5524608	“Cooking kettle”	06/Noviembre/1996

El documento D1¹ divulga el desarrollo de un prototipo de marmita autogeneradora de vapor, teniendo en cuenta consideraciones de desempeño de la norma ASTM.F1602, para marmitas de vapor directo, reglas de diseño y construcción de recipientes a presión de la sección VIII, división I del código ASME para calderas y recipientes a presión, además de normas NTC aplicables a gasodomésticos comerciales. Dicho desarrollo para su aplicación en la industria tradicional de dulces de fruta y leche en Vélez, Santander (Pág. 17, Resumen).

El documento D2² divulga una marmita con camisa de vapor para la cocción de alimentos que incluye una cámara de combustión por debajo de la camisa de vapor. La cámara de combustión está provista de un quemador de gas atmosférico para el calentamiento de agua en la camisa de vapor. Las salidas de gas de combustión se comunican con respectivos tubos de humos que se extienden a través de la camisa de vapor a un colector común de gases de combustión, por lo que el calor adicional puede ser transferido de los gases en los tubos de humos a la camisa de vapor. (Resumen).

4. Examen de Patentabilidad (Art 14 D486)

Novedad (Art 16 D486)

La reivindicación 1 consiste en: *“Una marmita auto generadora de vapor caracterizada porque comprende una serie de módulos, dentro de los que se incluye...”* (Ver página 2, Radicado N° 15-264542-0003-0000).

Comparación de las características técnicas esenciales, con las del estado de la técnica:

Características esenciales	D1	D2
Un recipiente contenedor (1)	5.1.1 <i>Recipiente (Kettle)</i> Es el lugar donde se ubican los alimentos para ser cocinados. (5.1 Diseño conceptual. Pág. 90)	Un recipiente para recibir alimentos a cocer (reiv. 1)
Una chaqueta de vapor (2)	5.1.2 <i>Chaqueta de vapor</i> Un recipiente de diámetro mayor contiene al recipiente del producto, formando una “doble pared” por donde circula vapor. (5.1 Diseño conceptual. Pág. 91)	Una camisa de vapor para calentar el recipiente (reiv. 1)
Intercambiador de calor conformado por al menos dos cámaras: una cámara de combustión (4) y una chaqueta de gases (6); unidas por una serie de tubos (5) que transfieren los gases de combustión	5.1.3 <i>Calentador (Heater)</i> El calentador es la parte de la marmita que funciona como generador de vapor, a partir de una resistencia eléctrica, o de un quemador de gas natural. (5.1 Diseño conceptual. Pág. 94); 5.2.2 Segunda alternativa Intercambiador de calor tipo tubular, con el diseño de chaqueta de gases envolvente en un circuito de dos pasos para los gases de	Una cámara de combustión por debajo de dicha pared inferior de la camisa de vapor; al menos un quemador atmosférico en la cámara de combustión para el calentamiento de la camisa de vapor a través de dicha pared de fondo, la cámara de combustión se extiende alrededor de un eje vertical y el quemador está posicionado en la cámara de combustión de desplazamiento a partir de ese eje (reiv. 1)

1<http://repositorio.uis.edu.co/jspui/bitstream/123456789/6028/2/140972.pdf>

2http://worldwide.espacenet.com/publicationDetails/originalDocument?CC=US&NR=5524608A&KC=A&FT=D&ND=3&date=19960611&DB=EPODOC&locale=en_EP

	combustión. (5.2 Diseño básico. Pág. 100)	
Un sistema de combustión (8)	El calentador está compuesto de dos partes: la cámara de combustión, y el intercambiador de calor. (5.1 Diseño conceptual. Pág. 95)	Una cámara de combustión por debajo de dicha pared inferior de la camisa de vapor; al menos un quemador atmosférico en la cámara de combustión para el calentamiento (reiv. 1)

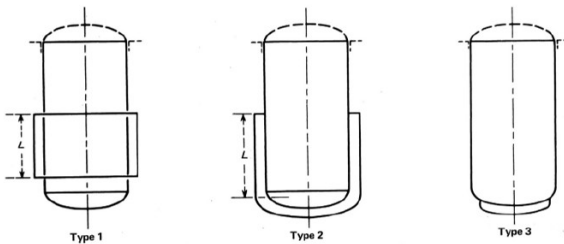
De acuerdo con la tabla anterior, las características esenciales del equipo de la reivindicación 1 habían sido divulgadas previamente en los documentos D1 y D2, por lo tanto, la materia reivindicada no es nueva.

En consecuencia, la reivindicación 1 no es nueva o carece de novedad, según lo divulgado en los documentos D1 y D2.

Asimismo, el documento D1 divulga las características de las reivindicaciones dependientes así:

- Reivindicación 2: Generalmente, puede ser de forma cilíndrica, semiesférica, o toriesferico. En la pared opuesta del recipiente es donde ocurre la condensación del vapor para calentar el alimento. (Pág. 90, Párr. 1).
- Reivindicaciones 3 y 4: Para la marmita autogeneradora, se selecciona una chaqueta del Tipo 2, modificada para contener el agua de vaporización. (Fig. 27, Pág. 92); Esta sección va paralela a la transición cónica y forma un doble conducto para los gases, dirigiéndolos hacia la chimenea (4). (Pág. 120)

Fig. 27 Tipos de Chaqueta.



- Reivindicación 12: el sistema de combustión se compone de un sistema de encendido; un sistema de supervisión de llama; al menos uno o dos quemadores de gas de pre mezcla total; un tren de gas, un quemador piloto con un electrodo sensor de llama, un electrodo generador de chispa, y un controlador de ignición. (Figs. 65, 66 y 67, Págs. 155 y 156)
- Reivindicación 13: el tren de gas está compuesto por una selección de: una válvula de bola, una válvula solenoide para controlar el gas que va a hacia los quemadores, una válvula solenoide para controlar el gas que va hacia el piloto, y las tuberías de conducen el gas desde las válvulas a los quemadores. (Figs. 65, 66 y 67, Págs. 155 y 156)
- Reivindicación 15: componentes auxiliares incluyen una instrumentación de control, un mecanismo de agitación, un panel de controles, una tapa, un grifo para llenado y un tubo de desagüe tangente al fondo del recipiente. (Figs. 65, 66 y 67, Págs. 155 y 156)
- Reivindicación 16: la instrumentación de control se compone de un módulo de elementos electrónicos que permiten medir y controlar de manera periódica los valores de presión, temperatura y nivel de agua de acuerdo a los parámetros establecidos para la marmita en operación, dicha instrumentación de control se compone al menos de un manovacuometro o un sensor de presión y su

transmisor, un termostato con sensor de temperatura y transmisor, un visor de nivel de agua, una válvula de seguridad, y otros elementos comunes en medición de presión, temperatura y/o nivel de agua. (Figs. 65, 66 y 67, Págs. 155 y 156)

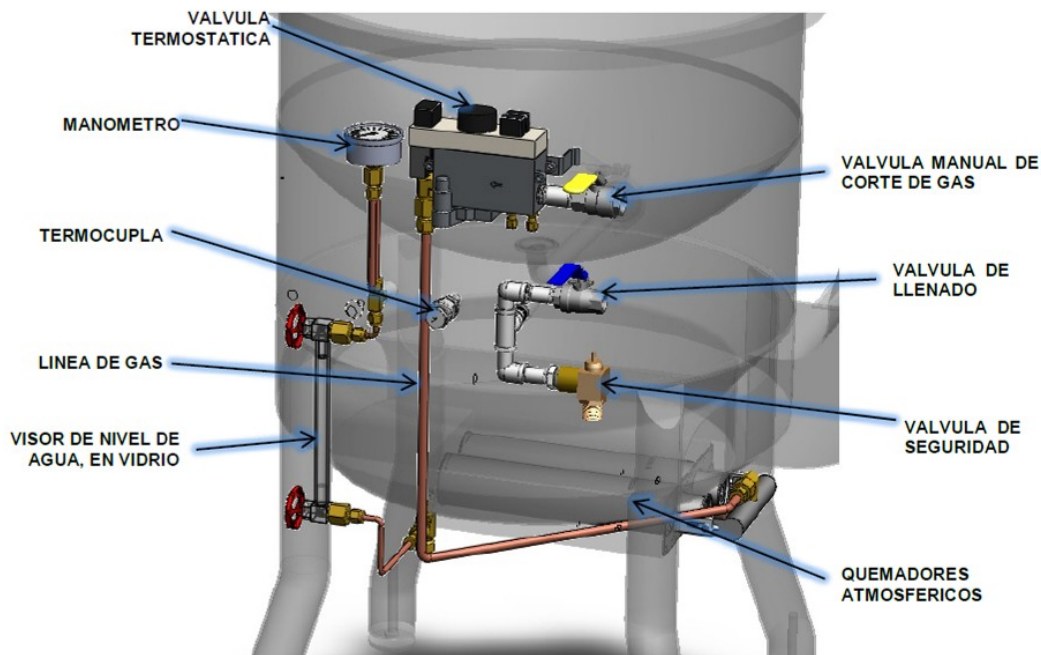


Fig. 65 Detalle del montaje de los Instrumentos de Control y Seguridad

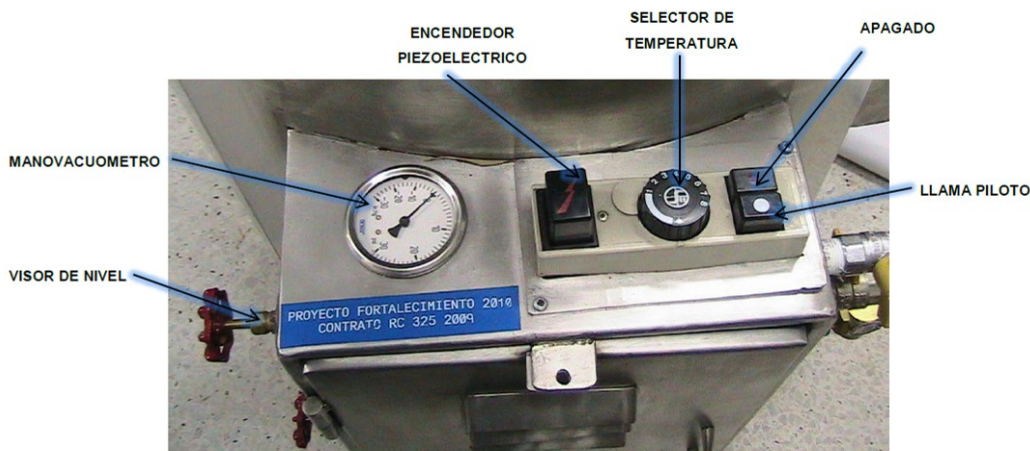


Fig. 66 Vista del Panel de Control

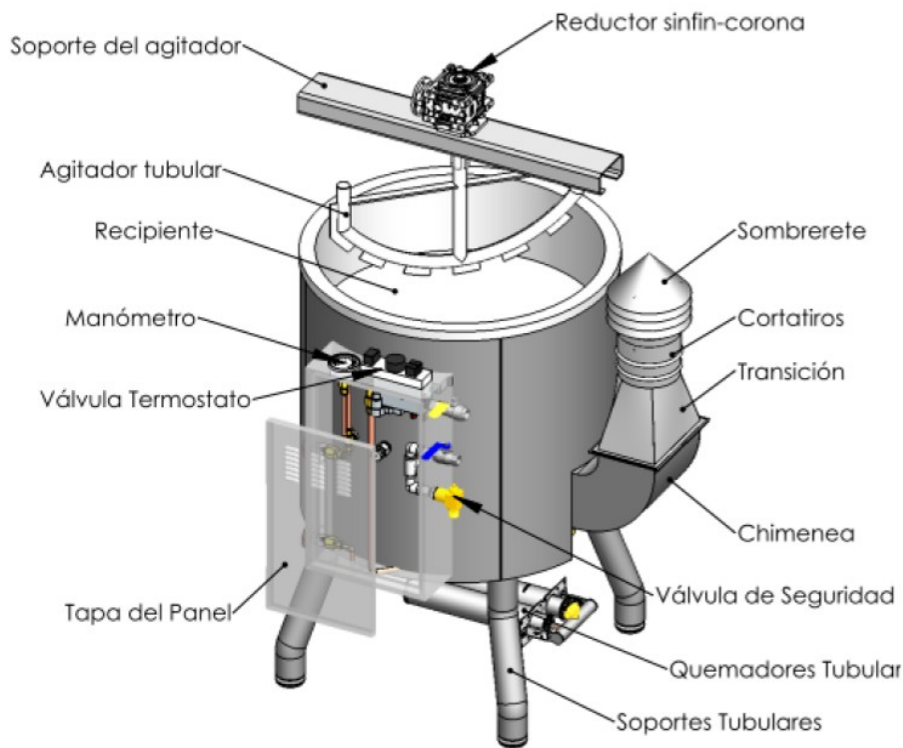


Fig. 67 Marmita Completamente ensamblada

El documento D2 divulga las características de las reivindicaciones dependientes así:

- Reivindicaciones 6 y 14: Una caldera según la reivindicación 3, en el que dichos medios de salida de gas de combustión comprende una serie de aberturas de gases de combustión en dicha pared inferior de la camisa de vapor, donde cada abertura que comunica con un dicho tubo de escape que se extiende a través de la chaqueta de vapor de escape. (reiv. 4, Figs. 1 y 4)

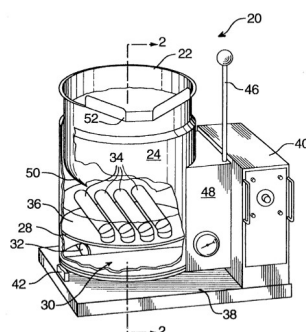


FIG.1

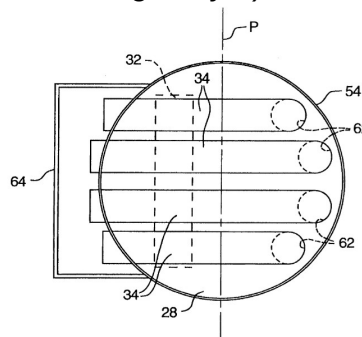


FIG.4

- Reivindicaciones 7 y 8: Una caldera según la reivindicación 3, en el que dicha carcasa camisa de vapor es de forma cilíndrica y comprende una parte superior que rodea al menos parcialmente el recipiente, y una parte inferior que define la cámara de combustión, y en el que se proporciona la carcasa internamente con una placa transversal que forma dicha pared de fondo de la camisa de vapor. (reiv. 9)
- Reivindicación 9, 10 y 11: Una caldera según la reivindicación 6, en el que dicha sección de tubería de escape, está dispuesta hacia arriba en la dirección del flujo de gases de combustión a lo largo de dicho tubo. (reiv. 7, Figs 2 y 4)

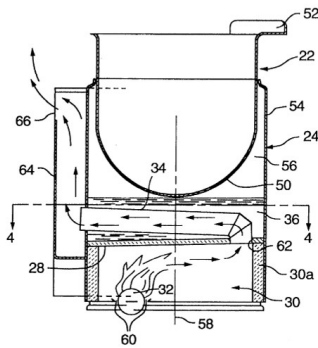


FIG.2

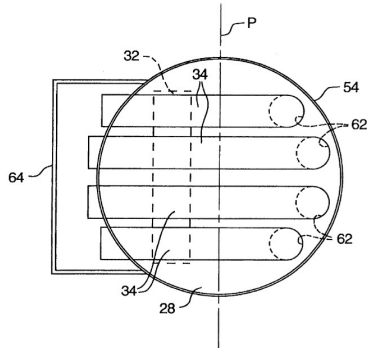


FIG.4

5. Conclusión

Los requisitos de Patentabilidad de la presente solicitud están afectados así:

Ítem	Documento	Reivindicaciones afectadas	Requisito que afecta
D1	Tesis	1 a 4, 12, 13, 15 y 16	Novedad
D2	US5524608	1, 6 a 11 y 14	Novedad

En cumplimiento del artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le indica que debe dar respuesta dentro del término de sesenta (60) días contados a partir de la fecha de notificación de la presente comunicación. En caso de no dar respuesta al presente requerimiento, o si a pesar de la respuesta subsistieran los impedimentos para la concesión, se denegará la patente.

Si como respuesta a este requerimiento el solicitante llegara a modificar: i) el capítulo reivindicatorio, ii) la descripción de la invención a proteger, iii) o presente un nuevo capítulo reivindicatorio, y desee que se realice un nuevo examen de patentabilidad a esta modificación, no deberá pagar la tasa de modificación voluntaria pero sí la correspondiente a la tasa de examen de patentabilidad. En todo caso, el número de requerimientos por no patentabilidad estará supeditado a que el término del estudio de patentabilidad no sea superior a 9 meses, contados desde la publicación de la solicitud de patente de modelo de utilidad. Adicionalmente, se le recuerda al solicitante que si como respuesta a este requerimiento llegara a modificar el capítulo reivindicatorio y éste contenga más de diez (10) reivindicaciones deberá pagar la tasa por reivindicación adicional.

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e), del capítulo quinto del título primero de la Circular Única No. 10 de 2001.



JOSÉ LUIS SALAZAR LÓPEZ
Director de Nuevas Creaciones (c)

El anterior requerimiento fue notificado por fijación en lista, de fecha 2016-04-19

Elaboró: Oscar Ivan Orduz Berdugo
Revisó: Sonia Andrea Diaz Pirazan

Search query (4): [SP]: field of the inventionthis invention relates to kettles for cooking and heating food and is concerned more particularly with a kettle of the type which is heated by a steam jacket.steam jacketed cooking kettles are generally used for cooking and heating relatively large quantities of food, for example in hotels, restaurants and the like. typically, the kettle includes a stainless steel cooking vessel which may have a capacity in the range of 40 to 100 gallons. the vessel is at least partially surrounded by a steam jacket, by which the vessel, and hence the food in the vessel are heated. the vessel may be mounted in a supporting frame, so that it can be tilted for pouring of food from the kettle.the steam jacket may be supplied with steam from a remote boiler, or the kettle may essentially incorporate its own self-contained boiler. for example, the steam jacket itself may be a sealed enclosure containing water, and provision may be made to supply heat from below to cause water in the jacket to evaporate and form steam. the steam will condense on the outer surface of the vessel containing the food, and will give up its latent heat of vaporization, thereby heating the vessel to the temperature of the boiling water at the pressure that exists within the jacket.in one type of prior art kettle, the steam jacket has a flat bottom wall which is heated directly by a series of radiant burners spaced across the wall.summary of the inventionan object of the present invention is to provide an improved steam-jacketed kettle of the type in which the steam is generated within the jacket.the kettle provided by the invention includes a vessel for receiving food to be cooked and a steam jacket which at least partially surrounds the vessel. the jacket is defined by a shell which is spaced outwardly from the vessel and which defines a bottom wall of the vessel. a combustion chamber below the bottom wall has at least one atmospheric burner located offset from a vertical axis of the combustion chamber and arranged to heat the bottom wall of the steam jacket. the combustion chamber also has air inlet means and flue gas outlet means. the flue gas outlet means extends through the bottom wall of the steam jacket at a location offset from the vertical axis of the combustion chamber opposite the burner, so that combustion gases from the burner tend to flow across the said bottom wall to the flue gas outlet means and give up heat to the vapour jacket. at least one flue pipe extends from the flue gas outlet means through the vapour jacket to exhaust for further heat transfer to the vapour jacket.it has been found in practice that, by arranging the burner essentially at one side of the combustion chamber and the flue gas outlet means at the opposite side, the hot flue gases from the burner tend to "wash" across the bottom wall of the vapour jacket for even and efficient heating of the steam jacket. the flue gases from the burner travelling through the flue pipe or pipes then give up additional heat to the vapour jacket. overall, this makes for high efficiency of energy transfer from the burner fuel (e.g. gas) to the steam jacket.while more than one burner may be provided, at least for small table-top size kettles, a single burner can be sufficient. there is no need to provide an array of individual burners to evenly heat the vapour jacket as has been the case in the prior art.typically, the burner will be a linear gas burner, for example of the type known as a "bray burner". the combustion chamber will usually be cylindrical and the burner may then be arranged essentially in a "chordal" position approximately mid-way between the vertical axis of the combustion chamber and its sidewall. the flue gas outlet means can then be arranged diametrically opposite to the burner. the flue gas outlet means may comprise a series of flue gas openings, each coupled with a flue pipe that passes through the steam jacket. for example, the flue gas openings may be arranged in an arcuate configuration corresponding to the arcuate shape of the sidewall of the combustion chamber.preferably, the bottom wall of the steam jacket slopes upwardly towards the flue gas outlet means and the or each flue pipe itself slopes upwardly in the direction of gas flow, both so as to ensure smooth gas flow. the flue pipe or pipes may be directed generally oppositely to the direction of gas flow from the burner to the flue gas outlet means (i.e. so that gas in the tubes flows back in a direction towards the burner). an upright flue collector or manifold may be provided at an appropriate location externally of the steam jacket to receive gases from the flue pipe or pipes. brief description of drawingsin order that the invention may be more clearly understood, reference will now be made to the accompanying drawings which illustrate a particular preferred embodiment of the invention by way of example, and in which:fig. 1 is a front perspective view of a tilting table-top gas kettle in accordance with a preferred embodiment of the inventionfig. 2 is a vertical sectional view generally in the plane denoted 2--2 in fig. 1fig. 3 is a side elevational view from the right in fig. 1, illustrating tilting of the kettle and,fig. 4 is a sectional plan view on line 4--4 in fig. 2, showing the arrangement of flue pipes in relation to the bottom plate of the vapour jacket of the kettle. description of preferred embodimentreferring first to fig. 1, a tilting table-top gas kettle in accordance with the invention is generally denoted by reference numeral 20. the kettle includes a vessel 22 for receiving food to be heated or cooked, and a steam jacket 24 for heating the vessel. the vessel and steam jacket will be described in more detail later, primarily with reference to fig. 2.in the meantime, it will be noted that parts of the steam jacket and vessel have been broken away in fig. 1 to show internal structure. in particular, it can be seen that the steam jacket 24 has a bottom wall 28 and that a combustion chamber 30 is provided below the steam jacket for heating the jacket via its bottom wall 28. an atmospheric burner 32 is partly visible within the combustion chamber 30. also visible are a series of flue pipes 34 which extend through the steam jacket for conveying to exhaust combustion gases produced by the burner 32. the flue pipes 34 are seen extending through a body of water 36 which is sealed within the steam jacket. when the kettle is in use, heat from the burner generates steam from the body of water 36 and the steam continuously condenses on the external surface of the vessel and returns to the body of water.as mentioned previously, the kettle of this particular embodiment is a tilting kettle in other words, the cooking vessel 22 can be tilted to pour out food after it has been cooked or heated. in fig. 3, the kettle is shown in full lines in its normal upright position and in dotted lines in a partially tilted position.reverting to fig. 1, it will be seen that the kettle includes a fixed rectangular base plate 38 provided with an upright rectangular housing 40 at one end. the cooking vessel is supported for tilting on trunnions (not shown) between the housing 40 and an upright bracket at the opposite end of the base plate 38. part of the bracket is indicated at 42 but the remainder has been omitted since the particular arrangement used to tiltably support the cooking vessel is not part of the present invention and is already found on existing tilting kettles. for present purposes, it is sufficient to note that the trunnions supporting the cooking vessel provide a tilt axis which is indicated at 44 in fig. 3. an upright handle 46 is provided for manually tilting the cooking vessel about axis 44. as best seen in fig. 1, the handle 46 extends upwardly from a sub-housing 48 secured to the side of the cooking vessel 22 nearest the fixed housing 40. within the two housings are appropriate control and monitoring equipment, as well as gas supply means for the burner 32. again, these parts of the kettle do not relate to the present invention and are found on existing kettles. for these reasons, they have not been described in detail.referring now to fig. 2, it will be seen that the cooking vessel 22 has a generally cylindrical configuration in its upper region, and a hemispherical bottom indicated at 50. a pouring lip 52 is provided at the rim of the vessel. typically, the vessel is fabricated in stainless steel.the steam jacket 24 is defined by a cylindrical shell 54 which surrounds the vessel over a substantial portion of its height and which is spaced outwardly from the vessel to define an enclosure 56 in which the steam is generated. again, the shell 54 is stainless steel and is welded to the cooking vessel 22. the bottom wall 28 of the steam jacket is provided by a mild steel plate that is also welded to the shell. accordingly, the steam enclosure 56 is sealed.in this particular embodiment, the design of the kettle is such that the shell 54 extends below plate 28 and in effect also defines the sidewall of the combustion chamber 30. in other words plate 28 forms a partition in the cylindrical shell and defines the bottom of the steam jacket and the top of the combustion chamber. shell 54 extends about an axis 58 which defines a vertical axis of the combustion chamber (and of the cooking vessel). insulation in the combustion chamber sidewall is indicated at 30a.it will be seen from fig. 2 that the atmospheric burner 32 is positioned in the combustion chamber 30 offset from axis 58. in this particular embodiment, the burner has a cylindrical overall configuration which is indicated in ghost outline in fig. 4 at 32. it will be seen from fig. 4 that the burner is located generally on a chord

Results: 10

Oscar

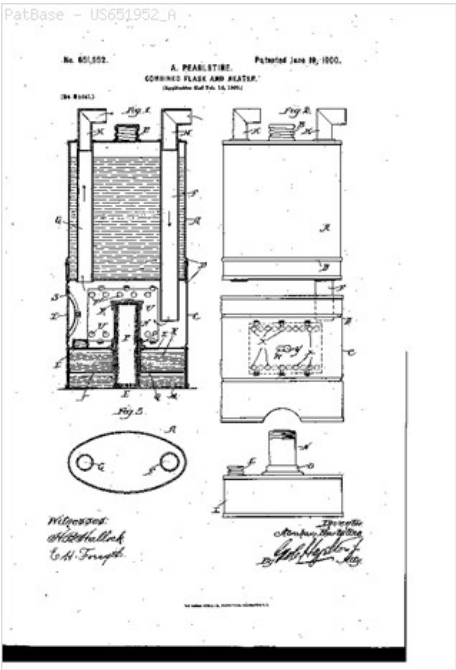
Search history

- Search 1: TAC=(steam and achamber and gas) and IC=(A47J27) (Results 1)
- Search 2: TAC=(steam and achamber and gas) and IC=(A47J27/17) (Results 1)
- Search 3: TAC=(steam and chamber and gas) and IC=(A47J27/17) (Results 10)
- Search 4: [SP]: field of the inventionthis invention relates to kettles for cooking and heating food and is concerned more particularly with a kettle of the type which is heated by a steam jacket.steam jacketed cooking kettles are generally used for cooking and heating relatively large quantities of food, for example in hotels, restaurants and the like. typically, the kettle includes a stainless steel cooking vessel which may have a capacity in the range of 40 to 100 gallons. the vessel is at least partially surrounded by a steam jacket, by which the vessel, and hence the food in the vessel are heated. the vessel may be mounted in a supporting frame, so that it can be tilted for pouring of food from the kettle.the steam jacket may be supplied with steam from a remote boiler, or the kettle may essentially incorporate its own self-contained boiler. for example, the steam jacket itself may be a sealed enclosure containing water, and provision may be made to supply heat from below to cause water in the jacket to evaporate and form steam. the steam will condense on the outer surface of the vessel containing the food, and will give up its latent heat of vaporization, thereby heating the vessel to the temperature of the boiling water at the pressure that exists within the jacket.in one type of prior art kettle, the steam jacket has a flat bottom wall which is heated directly by a series of radiant burners spaced across the wall.summary of the inventionan object of the present invention is to provide an improved steam-jacketed kettle of the type in which the steam is generated within the jacket.the kettle provided by the invention includes a vessel for receiving food to be cooked and a steam jacket which at least partially surrounds the vessel. the jacket is defined by a shell which is spaced outwardly from the vessel and which defines a bottom wall of the vessel. a combustion chamber below the bottom wall has at least one atmospheric burner located offset from a vertical axis of the combustion chamber and arranged to heat the bottom wall of the steam jacket. the combustion chamber also has air inlet means and flue gas outlet means. the flue gas outlet means extends through the bottom wall of the steam jacket at a location offset from the vertical axis of the combustion chamber opposite the burner, so that combustion gases from the burner tend to flow across the said bottom wall to the flue gas outlet means and give up heat to the vapour jacket. at least one flue pipe extends from the flue gas outlet means through the vapour jacket to exhaust for further heat transfer to the vapour jacket.it has been found in practice that, by arranging the burner essentially at one side of the combustion chamber and the flue gas outlet means at the opposite side, the hot flue gases from the burner tend to "wash" across the bottom wall of the vapour jacket for even and efficient heating of the steam jacket. the flue gases from the burner travelling through the flue pipe or pipes then give up additional heat to the vapour jacket. overall, this makes for high efficiency of energy transfer from the burner fuel (e.g. gas) to the steam jacket.while more than one burner may be provided, at least for small table-top size kettles, a single burner can be sufficient. there is no need to provide an array of individual burners to evenly heat the vapour jacket as has been the case in the prior art.typically, the burner will be a linear gas burner, for example of the type known as a "bray burner". the combustion chamber will usually be cylindrical and the burner may then be arranged essentially in a "chordal" position approximately mid-way between the vertical axis of the combustion chamber and its sidewall. the flue gas outlet means can then be arranged diametrically opposite to the burner. the flue gas outlet means may comprise a series of flue gas openings, each coupled with a flue pipe that passes through the steam jacket. for example, the flue gas openings may be arranged in an arcuate configuration corresponding to the arcuate shape of the sidewall of the combustion chamber.preferably, the bottom wall of the steam jacket slopes upwardly towards the flue gas outlet means and the or each flue pipe itself slopes upwardly in the direction of gas flow, both so as to ensure smooth gas flow. the flue pipe or pipes may be directed generally oppositely to the direction of gas flow from the burner to the flue gas outlet means (i.e. so that gas in the tubes flows back in a direction towards the burner). an upright flue collector or manifold may be provided at an appropriate location externally of the steam jacket to receive gases from the flue pipe or pipes. brief description of drawingsin order that the invention may be more clearly understood, reference will now be made to the accompanying drawings which illustrate a particular preferred embodiment of the invention by way of example, and in which:fig. 1 is a front perspective view of a tilting table-top gas kettle in accordance with a preferred embodiment of the inventionfig. 2 is a vertical sectional view generally in the plane denoted 2--2 in fig. 1fig. 3 is a side elevational view from the right in fig. 1, illustrating tilting of the kettle and,fig. 4 is a sectional plan view on line 4--4 in fig. 2, showing the arrangement of flue pipes in relation to the bottom plate of the vapour jacket of the kettle. description of preferred embodimentreferring first to fig. 1, a tilting table-top gas kettle in accordance with the invention is generally denoted by reference numeral 20. the kettle includes a vessel 22 for receiving food to be heated or cooked, and a steam jacket 24 for heating the vessel. the vessel and steam jacket will be described in more detail later, primarily with reference to fig. 2.in the meantime, it will be noted that parts of the steam jacket and vessel have been broken away in fig. 1 to show internal structure. in particular, it can be seen that the steam jacket 24 has a bottom wall 28 and that a combustion chamber 30 is provided below the steam jacket for heating the jacket via its bottom wall 28. an atmospheric burner 32
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is partly visible within the combustion chamber 30. also visible are a series of flue pipes 34 which extend through the steam jacket for conveying to exhaust combustion gases produced by the burner 32. the flue pipes 34 are seen extending through a body of water 36 which is sealed within the steam jacket. when the kettle is in use, heat from the burner generates steam from the body of water 36 and the steam continuously condenses on the external surface of the vessel and returns to the body of water. as mentioned previously, the kettle of this particular embodiment is a tilting kettle in other words, the cooking vessel 22 can be tilted to pour out food after it has been cooked or heated. in fig. 3, the kettle is shown in full lines in its normal upright position and in dotted lines in a partially tilted position. reverting to fig. 1, it will be seen that the kettle includes a fixed rectangular base plate 38 provided with an upright rectangular housing 40 at one end. the cooking vessel is supported for tilting on trunnions (not shown) between the housing 40 and an upright bracket at the opposite end of the base plate 38. part of the bracket is indicated at 42 but the remainder has been omitted since the particular arrangement used to tiltably support the cooking vessel is not part of the present invention and is already found on existing tilting kettles. for present purposes, it is sufficient to note that the trunnions supporting the cooking vessel provide a tilt axis which is indicated at 44 in fig. 3. an upright handle 46 is provided for manually tilting the cooking vessel about axis 44. as best seen in fig. 1, the handle 46 extends upwardly from a sub-housing 48 secured to the side of the cooking vessel 22 nearest the fixed housing 40. within the two housings are appropriate control and monitoring equipment, as well as gas supply means for the burner 32. again, these parts of the kettle do not relate to the present invention and are found on existing kettles. for these reasons, they have not been described in detail. referring now to fig. 2, it will be seen that the cooking vessel 22 has a generally cylindrical configuration in its upper region, and a hemispherical bottom indicated at 50. a pouring lip 52 is provided at the rim of the vessel. typically, the vessel is fabricated in stainless steel. the steam jacket 24 is defined by a cylindrical shell 54 which surrounds the vessel over a substantial portion of its height and which is spaced outwardly from the vessel to define an enclosure 56 in which the steam is generated. again, the shell 54 is stainless steel and is welded to the cooking vessel 22. the bottom wall 28 of the steam jacket is provided by a mild steel plate that is also welded to the shell. accordingly, the steam enclosure 56 is sealed. in this particular embodiment, the design of the kettle is such that the shell 54 extends below plate 28 and in effect also defines the sidewall of the combustion chamber 30. in other words plate 28 forms a partition in the cylindrical shell and defines the bottom of the steam jacket and the top of the combustion chamber. shell 54 extends about an axis 58 which defines a vertical axis of the combustion chamber (and of the cooking vessel). insulation in the combustion chamber sidewall is indicated at 30a. it will be seen from fig. 2 that the atmospheric burner 32 is positioned in the combustion chamber 30 offset from axis 58. in this particular embodiment, the burner has a cylindrical overall configuration which is indicated in ghost outline in fig. 4 at 32. it will be seen from fig. 4 that the burner is located generally on a chord (Results 10)

Title: COMBINED FLASK AND HEATER.

Classifications:
CPC: A47J36/26
US: 126/265 126/285.00A 126/285A



Family:

Publication number	Publication date	Application number	Application date
US651952 A	19000619	US19000005470	19000216

Priority:

US19000005470 19000216

Probable Assignee: PEARLSTINE ABRAHAM

Assignee(s): (std): PEARLSTINE ABRAHAM

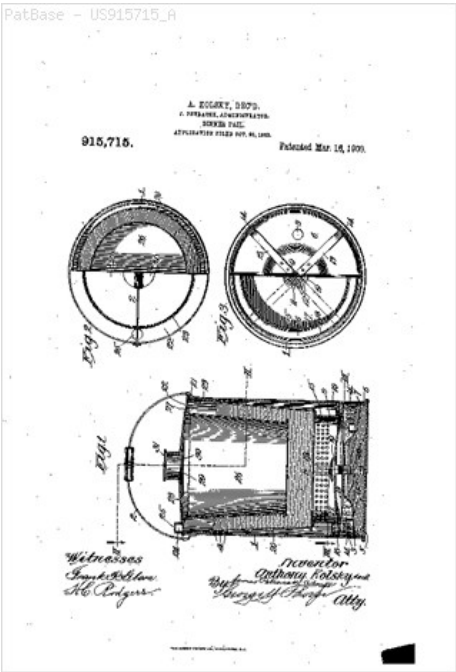
Assignee(s): ABRAHAM PEARLSTINE

Inventor(s): (std): PEARLSTINE ABRAHAM

Inventor(s): ABRAHAM PEARLSTINE

Title: DINNER-PAIL.

Classifications:
CPC: A47J36/26
US: 126/266



Family:

Publication number	Publication date	Application number	Application date
US915715 A	19090316	US19080459585	19081026

Priority:

US19080459585 19081026

Probable Assignee: PETRACEK JAMES

Assignee(s): (std): KOLSKY ANTHONY ; PETRACEK JAMES

Assignee(s): ANTHONY KOLSKY ; JAMES PETRACEK

Inventor(s): (std): KOLSKY ANTHONY ; PETRACEK JAMES

Inventor(s): ANTHONY KOLSKY ; JAMES PETRACEK

Title: Liquid heating apparatus

Abstract: Source: US5337728A In a liquid heating apparatus according to the present invention, an internal drum is arranged at a space from and in an external drum, a combustion gas descending chamber is provided therebetween, an outer water chamber having a hot water outlet port and a water supply port in the upper and lower sections thereof is provided outside the combustion gas descending chamber, an inner water chamber communicating with communicating tubes in the upper and lower sections to the outer water chamber is provided inside the combustion gas descending chamber, a combustion chamber communicating to the combustion gas descending chamber in the upper section is provided inside the internal drum, and exhaust port is provided under the combustion gas descending chamber, a smoke collecting chamber having a larger cross-sectional area than that of said exhaust port is provided under the exhaust port, and a smoke exhaust port is provided in this smoke collecting chamber.

Classifications:

International (IPC 8-9): F23J11/00 F23J13/00 F24H1/28

F24H1/30 (Advanced/Invention)

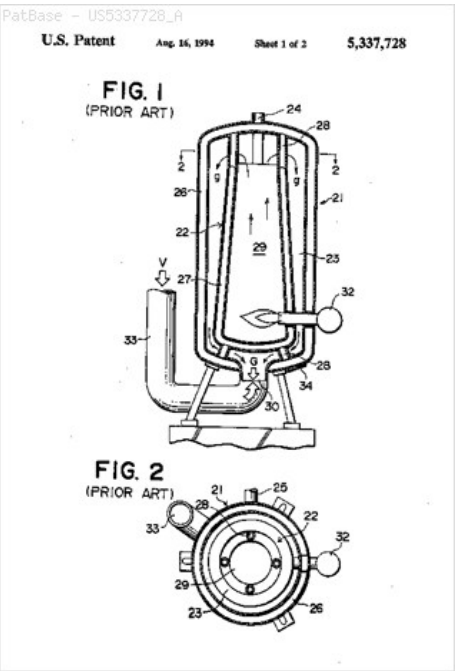
International (IPC 1-7): F22B11/00 F22B7/10 F23J11/00 F23J13/00 F24H1/00

F24H1/10 F24H1/24 F24H1/28 F24H1/30

CPC: F24H1/282

European: F24H1/28B

US: 122/18.1 122/234 126/279 126/344 126/389 126/390



Family:

Publication number	Publication date	Application number	Application date
AT150864 E	19970415	AT19930303193T	19930423
CA2092934 AA	19931028	CA19932092934	19930330
CA2092934 C	20011120	CA19932092934	19930330
CN1041458 C	19981230	CN19931004384	19930414
CN1078303 A	19931110	CN19931004384	19930414
DE69309146 D1	19970430	DE19936009146	19930423
DE69309146 T2	19970807	DE19936009146T	19930423
DK0568286 T3	19970728	DK19930303193T	19930423
EP0568286 A1	19931103	EP19930303193	19930423
EP0568286 B1	19970326	EP19930303193	19930423
JP2077703 C3	19960809	JP19920107642	19920427
JP6123420 A2	19940506	JP19920107642	19920427
JP7109299 B4	19951122	JP19920107642	19920427
KR100246731 B1	20000401	KR19930005709	19930406
NO179808 B	19960909	NO19930001332	19930407
NO179808 C	19961218	NO19930001332	19930407
NO931332 A	19931028	NO19930001332	19930407
NO931332 A0	19930407	NO19930001332	19930407
US5337728 A	19940816	US19930042612	19930402

Priority:

JP19920107642 19920427

Probable Assignee: NOBORU MARUYAMA

Assignee(s): (std): MARUYAMA NOBORU ; NOBORU MARUYAMA

Assignee(s): MARUYAMA NOBORU TOKYO JP

Inventor(s): (std): MARUYAMA NOBORU

Inventor(s): MARUYAMA NOBORU TOKYO JP ; NOBORU MARUYAMA

Designated states: AT BE CH DE DK FR GB LI NL SE

Title: Water heater

Abstract: Source: US5373836A A portable water heater for use in outdoor activities improved in thermal efficiency. The heater has a double-layered structure, i.e., is constituted of an outer housing, an inner heated vessel, and a gas burner at the bottom thereof. A thermal insulation layer is formed between the housing and the heated vessel sufficient to permit therebetween an upward flow of a combustion gas from the burner to an air outlet located at the top of the heater, thereby heating the vessel. Instead of the thermal insulation layer, a thermal insulation plate in a crimped shape may be interposed between the housing and the heated vessel, so that the thermal efficiency in heating the vessel is further enhanced. The internal heated vessel may be integrally fabricated with the outer housing, or may be arranged to be removable from the housing or the internally disposed crimped plate. The crimped insulation plate may also be shaped either trianquarly or sinusoidally.

Classifications:

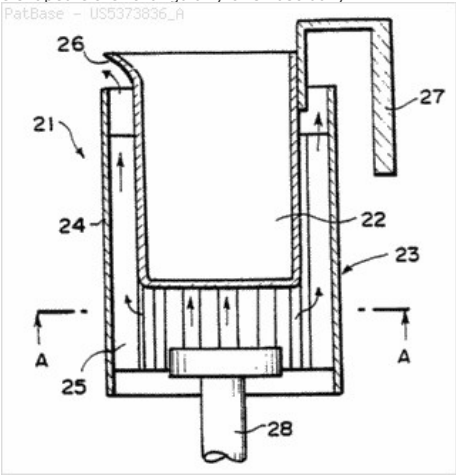
International (IPC 8-9): A47J27/21 (Advanced/Invention);
A47J27/21 (Core/Invention)

International (IPC 1-7): F24H1/00

CPC: A47J27/21041

European: A47J27/21B2

US: 126/1F 126/344 126/373 126/376.1 126/390 99/447



Family:

Publication number	Publication date	Application number	Application date
US5373836 A	19941220	US19920953524	19920929

Priority:

US19920953524 19920929

Probable Assignee: TOKAI CORP

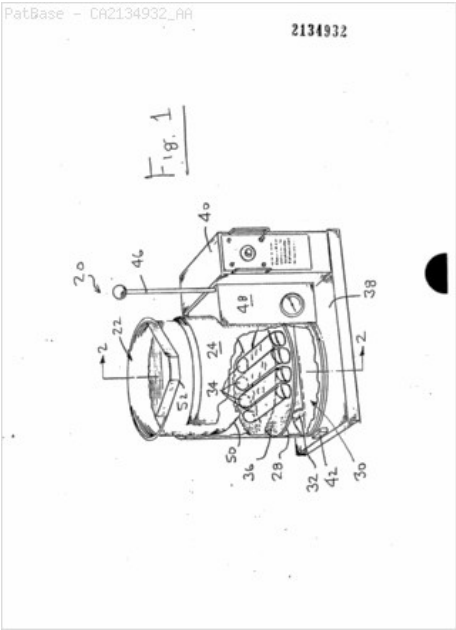
Assignee(s): (std): TOKAI CORP

Inventor(s): (std): MIFUNE HIDEO ; NORIYUKI SERIZAWA ; TSUTOMU SHIKE

Title: COOKING KETTLE

Abstract: Source: CA2134932A A steam-jacketed kettle for cooking food includes a combustion chamber below the steam jacket. The combustion chamber is provided with an atmospheric gas burner for heating water in the steam jacket. The burner is disposed in an offset location at one side of the combustion chamber and a series of flue gas outlets are provided at the opposite side of the combustion chamber so that combustion gases tend to wash across the bottom wall of the steam jacket, for even heating. The flue gas outlets communicate with respective flue pipes that extend back through the steam jacket to a common flue gas collector, so that additional heat can be transferred from the gases in the flue pipes to the steam jacket.

Classifications:
International (IPC 8-9): A47J27/026 A47J27/06 A47J27/21 A47J45/00 (Advanced/Invention); A47J27/02 A47J27/06 (Core/Invention)
International (IPC 1-7): A47J27/06 A47J27/21 A47J45/00
CPC: A47J27/026 A47J27/06
European: A47J27/026 A47J27/06 A47J27/17



Family:

Publication number	Publication date	Application number	Application date
CA2134932 AA	19960503	CA19942134932	19941102

Priority:

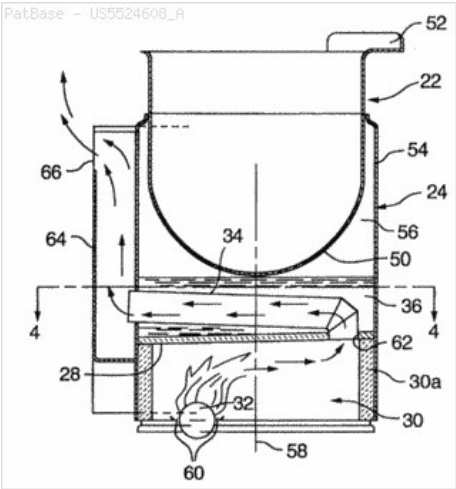
CA19942134932 19941102

Probable Assignee: CLEVELAND RANGE LTD
Assignee(s): (std): CLEVELAND RANGE LTD
Assignee(s): MABEE GORDON P ; SEEMAN GEORGE ; YEUNG WING YIU
Inventor(s): (std): MABEE GORDON ; SEEMAN GEORGE ; YEUNG WING Y
Inventor(s): YEUNG WING YIU ; MABEE GORDON P

Title: Cooking kettle

Abstract: Source: US5524608A A steam-jacketed kettle for cooking food includes a combustion chamber below the steam jacket. The combustion chamber is provided with an atmospheric gas burner for heating water in the steam jacket. The burner is disposed in an offset location at one side of the combustion chamber and a series of flue gas outlets are provided at the opposite side of the combustion chamber so that combustion gases tend to wash across the bottom wall of the steam jacket, for even heating. The flue gas outlets communicate with respective flue pipes that extend back through the steam jacket to a common flue gas collector, so that additional heat can be transferred from the gases in the flue pipes to the steam jacket.

Classifications:
International (IPC 8-9): A47J27/17 (Advanced/Invention); A47J27/16 (Core/Invention)
International (IPC 1-7): A47J27/00
CPC: A47J27/17
European: A47J27/17
US: 126/349 126/360A 126/377.1 126/390 126/391 126/392



Family:

Publication number	Publication date	Application number	Application date
US5524608 A	19960611	US19940329114	19941025

Priority:

US19940329114 19941025

Probable Assignee: CLEVELAND RANGE LTD

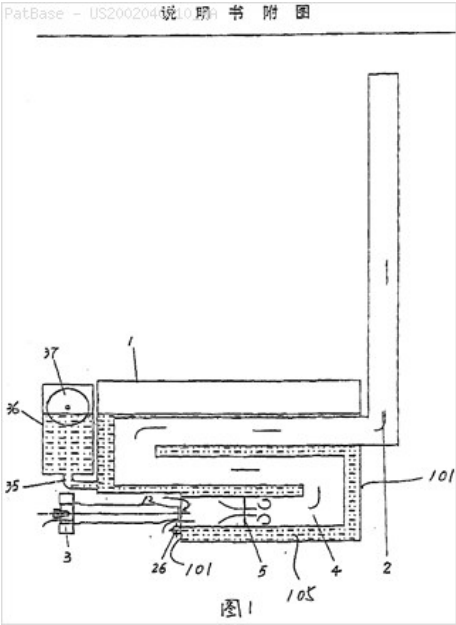
Assignee(s): (std): CLEVELAND RANGE LTD

Inventor(s): (std): MABEE GORDON P ; SEEMAN GEORGE ; YEUNG WING Y

Title: Water heater, steam generator and gas burner therefor

Abstract: Source: US2002040710A A hot water boiler and/or hot steam generator as well as a gas burner and a water vessel for the hot water boiler and hot steam generator are disclosed. The water boiler or hot steam generator includes a water vessel which includes an elongated flue pipe which is preferably convoluted and which is fully submerged in the water to be heated during normal operations so that the generated heat is distributed along the flue pipe which is also the gas combustion chamber and can be efficiently dispersed into the water surrounding the flue pipe. This invention also describes a gas burner having an elongated body whose internal aperture increases along its length to create a venturi effect to improve combustion of the fuel gas mixture.

Classifications:
International (IPC 8-9): A47J27/04 F22B7/02 F22B9/08 F23D14/04 F23D14/58 F24H1/28 (Advanced/Invention); A47J27/04 F22B9/00 F23D14/04 F23D14/48 F24H1/22 (Core/Invention)
International (IPC 1-7): A47J27/04 A47J27/26 F22B7/02 F22B9/08 F23D14/04 F23D14/58 F24B F24H1/20 F24H1/36
CPC: F23D14/04 F23D14/58 F24H1/287
European: F23D14/04 F23D14/58 F24H1/28D
US: 126/110R 126/360.1 126/391.1 126/99D



Family:

Publication number	Publication date	Application number	Application date
CA2351918 AA	20011228	CA20012351918	20010627
CA2351918 C	20110531	CA20012351918	20010627
CA2731469 AA	20011228	CA20012731469	20010627
CA2731469 C	20120925	CA20012731469	20010627
CN1140716 C	20040303	CN20001017220	20000628
CN1331397 A	20020116	CN20001017220	20000628
CN2439603 Y	20010718	CN20002028687U	20000628
HK1037472 A2	20020118	HK20000107910	20001208
US2002040710 AA	20020411	US20010891120	20010628
US6561182 BB	20030513	US20010891120	20010628

Priority:
CN20001017220 20000628 CN20002008687U 20000628 CN20002028687U 20000628
CA20012351918 20010627 CA20012731469 20010627

Probable Assignee: YU FU BAO KITCHEN EQUIPMENT SH

Assignee(s): (std): YU FU BAO KITCHEN EQUIPMENT SH ; YU FU BAO KITCHEN EQUIPMENT SHENZHEN CO LTD ; YUE ENGINEERING CO LTD ; HUANG TAILAI ; WONG TAI LOI

Assignee(s): YU FU BAO KITCHEN EQUIPMENT CO LTD ; YUE PO ENGINEERING CO LTD

Inventor(s): (std): CHENG KAM SHING ; HUANG TAILAI ; TAILAI HUANG ; WONG TAI LOI

Agent(s): FETHERSTONHAUGH AND CO

Title: BOILERLESS STEAMER APPARATUS

Abstract: Source: US2004226934A A boilerless steamer apparatus is provided having a steamer cavity formed of a steam generating space and a cooking space, wherein the steam generating space is separated from the cooking space by a removable steam lid. The present boilerless steamer apparatus can provide between 7 to 10 lbs./hour (per pan) of steam. Various methods to easily clean the boilerless steamer apparatus are provided.

Classifications:

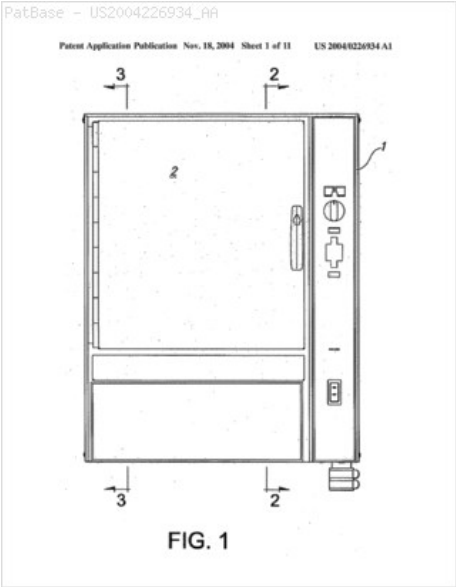
International (IPC 8-9): A01G13/06 A21B3/04 A47J27/16 A61H33/08 A61L9/03 (Advanced/Invention); A01G13/06 A21B3/00 A47J27/16 A61H33/06 A61L9/015 (Core/Invention)

International (IPC 1-7): A21B1/22

CPC: A21B3/04 A47J27/16

European: A21B3/04 A47J27/16

US: 165/236 219/401 392/379 392/386 392/397 392/398 392/399 392/405 99/330 99/417



Family:

Publication number	Publication date	Application number	Application date
US2004226934 AA	20041118	US20030439604	20030516
US2006120700 AA	20060608	US20060342138	20060127
US6996334 BA	20060207	US20040849583	20040520
US7024104 BB	20060404	US20030439604	20030516

Priority:

US20030439604 20030516 US20040849583 20040520 US20060342138 20060127

Probable Assignee: UNIFIED BRANDS INC

Assignee(s): (std): MOORE ROGER R ; MOORE ROGER R JR ; PARSONS MICHAEL G ; PARSONS MICHAEL GIBSON ; CAPITAL FORMATION INC

Assignee(s): DELAWARE CAPITAL FORMATION INC ; UNIFIED BRANDS INC

Inventor(s): (std): LOPEZ PEDRO HILARION ; MOORE JR ROGER R ; MOORE ROGER R ; MOORE ROGER R JR ; PARSONS MICHAEL G ; PARSONS MICHAEL GIBSON

Inventor(s): JR ROGER R ; MOORE ROGER RJR ; PARSONS MICHAEL ; MOORE ROGER ; MOORE

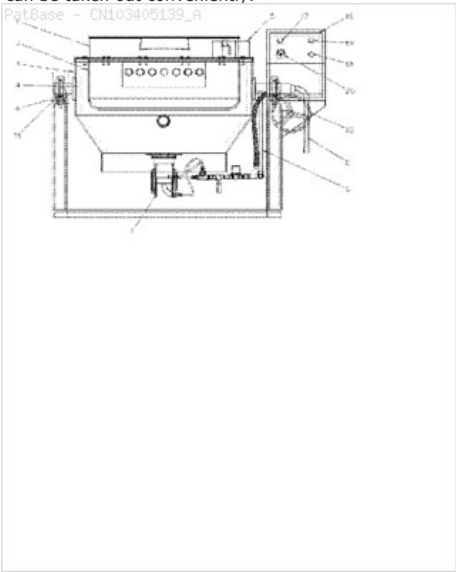
Agent(s): BUTLER SNOW O'MARA STEVENS AND CANNADA PLLC; BUTLER SNOW OMARA STEVENS AND CANNADA PLLC; BUTLER SNOW OMARA STEVENS AND CANNADA PPLC

Title: ENERGY-SAVING GAS-FIRED FULL-AUTOMATIC TILTING-TYPE JACKETED POT

Abstract: Source: CN103405139A The invention relates to the technical field of cooking utensils, in particular to an energy-saving gas-fired full-automatic tilting-type jacketed pot. A pot body is provided with a cavity, an outer pot is arranged in the cavity, an inner pot is arranged in the outer pot, an oil cavity is formed by the inner pot and the outer pot, a temperature sensor is arranged in the oil cavity, a separation layer oil cavity pot is arranged between the inner pot and the outer pot, a heat-insulation layer is arranged between the outer pot and the separation layer oil cavity pot, the bottom of the outer pot is detachably connected with a burner, the burner is connected with a pipe assembly, one end of the pipe assembly is communicated with the oil cavity, the other end of the pipe assembly is connected with a coal gas inlet pipe, bearings with vertical seats are arranged at the two ends of a machine frame, an inclined arm is arranged between each bearing with the vertical seat and the outer pot, and each inclined arm is connected with a manual wheel. In the heating process, oil is heated, flows in the oil cavity and evenly heats the heat inside the oil cavity, so that food in the inner pot is heated evenly. Due to the fact that an electric heating pipe containing chamber is arranged at the bottom of the inner pot, the heat generated by the burner is wholly absorbed by the pot body, heat utilization rate is improved, the inclination angle of the pot body is adjusted through the manual wheels, and the food can be taken out conveniently.

Classifications:

International (IPC 8-9): A47J27/00 A47J36/24 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
CN103405139 A	20131127	CN201210492834	20121127

Priority:

CN201210492834 20121127

Probable Assignee: JIAXING DONGFANG STAINLESS STEEL PRODUCTS CO LTD

Assignee(s): (std): JIAXING DONGFANG STAINLESS STEEL PRODUCTS CO LTD

Assignee(s): JIAXING DONGFANG STAINLESS STEEL PRODUCTS CO

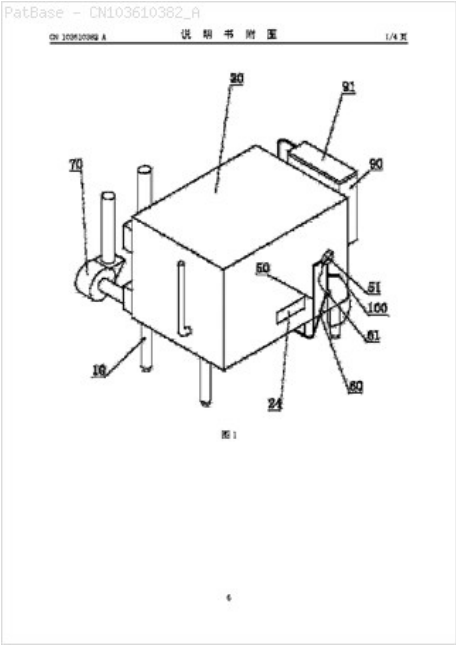
Inventor(s): (std): PAN SHUSHENG

Title: ENERGY-SAVING GAS STEAM GENERATOR USED IN CATERING INDUSTRY

Abstract: Source: CN103610382A The invention relates to the technical field of steam generators, in particular to an energy-saving gas steam generator used in the catering industry. The energy-saving gas steam generator comprises a machine frame which is provided with a water tank, a plurality of heating tubes are arranged inside the water tank, the bottom of the water tank is concave inwardly to form a combustion chamber, a burner is arranged below the combustion chamber and connected with air tubes, an electronic ignition device is arranged beside the water tank, the air tubes comprise a gas tube and a fire source tube, the gas tube is provided with a large electromagnetic valve, and the fire source tube is provided with a small electromagnetic valve; the large electromagnetic valve, the small electromagnetic valve and the electronic ignition device are electrically connected in sequence. Once a great deal of gas is fed into the energy-saving gas steam generator, the gas can serve as fuel to be combusted, the fuel is combusted timely, waste does not exist, and the energy-saving gas steam generator saves energy and is efficient and safe.

Classifications:

International (IPC 8-9): A47J27/16 A47J36/24 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
CN103610382 A	20140305	CN201310691587	20131217
CN103610382 B	20151021	CN201310691587	20131217

Priority:

CN201310691587 20131217

Probable Assignee: DONGGUAN HUIXING KITCHEN CO LTD

Assignee(s): (std): DONGGUAN HUIXING KITCHEN CO LTD

Assignee(s): DONGGUAN HUIXING KITCHEN CO

Inventor(s): (std): WU GUICHENG