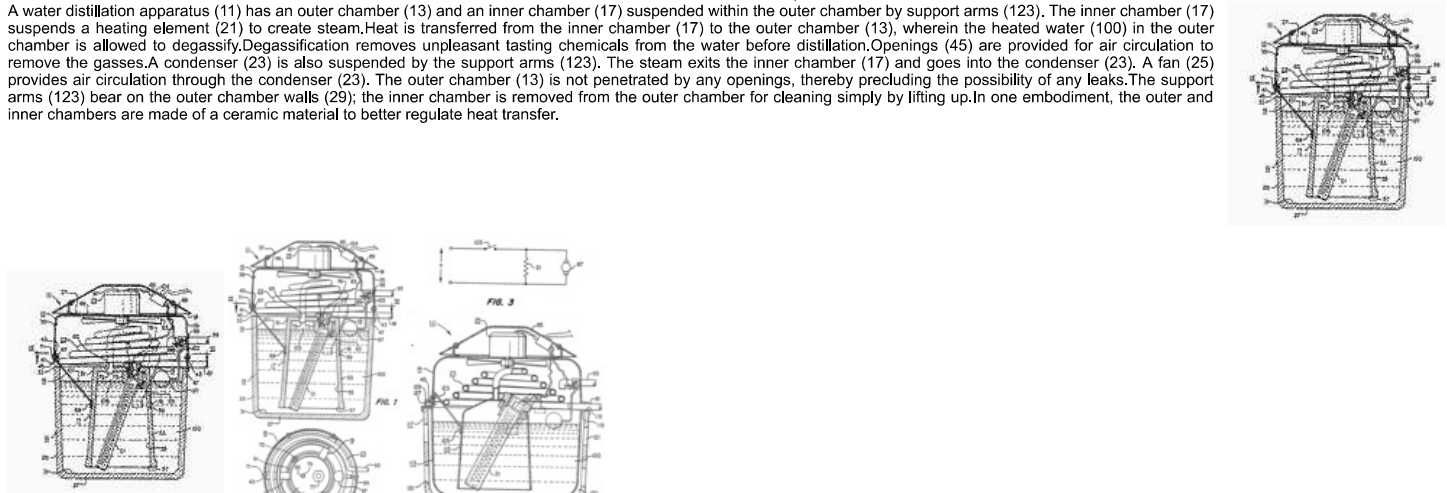
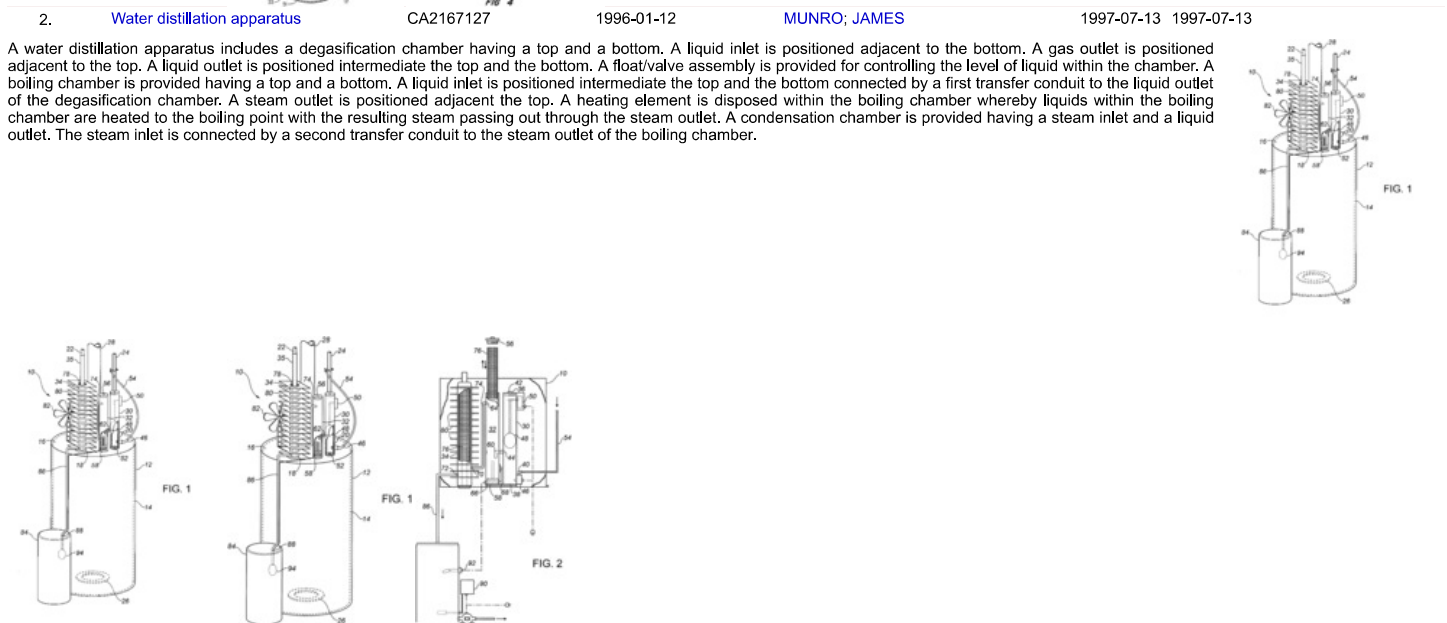
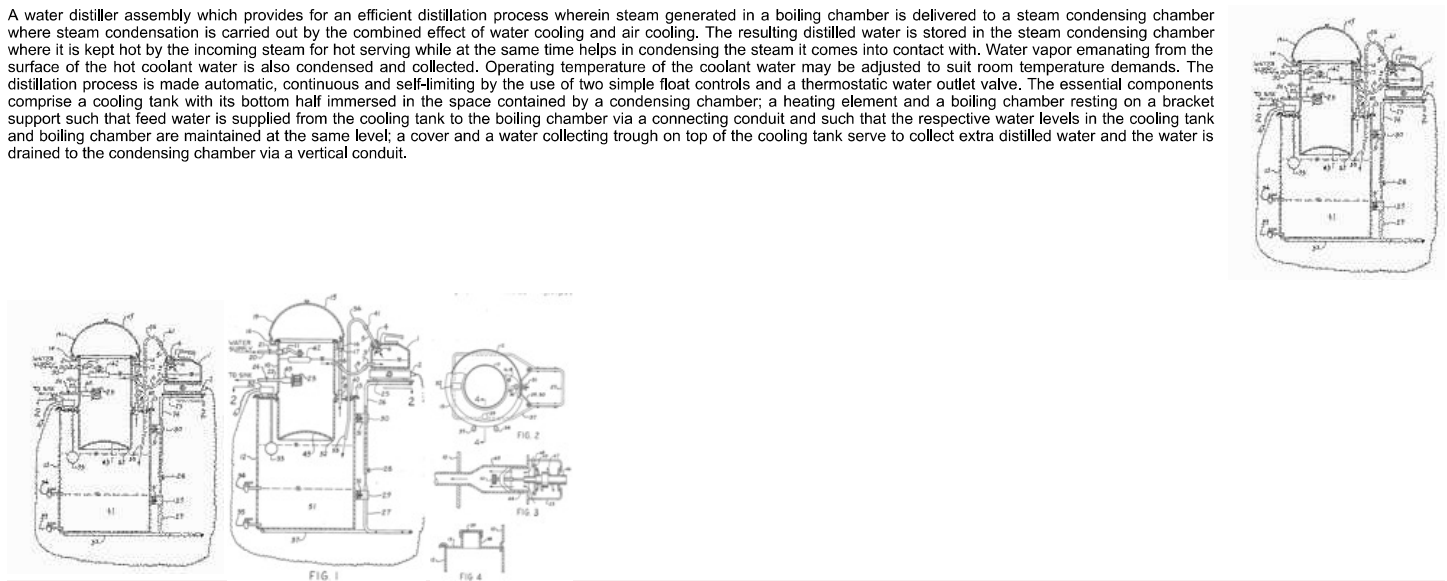


27691 results for Similar patents - Collection: FAMPAT

#	Title	Publication number	1st App. date	Applicant/Assignee	1st Publ. date	Publ. date
1.	Water distillation apparatus	US4957200	1989-12-28	DEWS JAMES K;TURNER WILLIAM F;TURNER WILLIAM FRANK	1990-09-18	1990-09-18
A water distillation apparatus (11) has an outer chamber (13) and an inner chamber (17) suspended within the outer chamber by support arms (123). The inner chamber (17) suspends a heating element (21) to create steam. Heat is transferred from the inner chamber (17) to the outer chamber (13), wherein the heated water (100) in the outer chamber is allowed to degassify. Degassification removes unpleasant tasting chemicals from the water before distillation. Openings (45) are provided for air circulation to remove the gasses. A condenser (23) is also suspended by the support arms (123). The steam exits the inner chamber (17) and goes into the condenser (23). A fan (25) provides air circulation through the condenser (23). The outer chamber (13) is not penetrated by any openings, thereby precluding the possibility of any leaks. The support arms (123) bear on the outer chamber walls (29); the inner chamber is removed from the outer chamber for cleaning simply by lifting up. In one embodiment, the outer and inner chambers are made of a ceramic material to better regulate heat transfer.						
						
2.	Water distillation apparatus	CA2167127	1996-01-12	MUNRO; JAMES	1997-07-13	1997-07-13
A water distillation apparatus includes a degasification chamber having a top and a bottom. A liquid inlet is positioned adjacent to the bottom. A gas outlet is positioned adjacent to the top. A liquid outlet is positioned intermediate the top and the bottom. A float/valve assembly is provided for controlling the level of liquid within the chamber. A boiling chamber is provided having a top and a bottom. A liquid inlet is positioned intermediate the top and the bottom connected by a first transfer conduit to the liquid outlet of the degasification chamber. A steam outlet is positioned adjacent the top. A heating element is disposed within the boiling chamber whereby liquids within the boiling chamber are heated to the boiling point with the resulting steam passing out through the steam outlet. A condensation chamber is provided having a steam inlet and a liquid outlet. The steam inlet is connected by a second transfer conduit to the steam outlet of the boiling chamber.						
						
3.	Water distiller	GB8528972	1984-12-19	WONG MAN J	1986-01-02	1986-01-02
A water distiller assembly which provides for an efficient distillation process wherein steam generated in a boiling chamber is delivered to a steam condensing chamber where steam condensation is carried out by the combined effect of water cooling and air cooling. The resulting distilled water is stored in the steam condensing chamber where it is kept hot by the incoming steam for hot serving while at the same time helps in condensing the steam it comes into contact with. Water vapor emanating from the surface of the hot coolant water is also condensed and collected. Operating temperature of the coolant water may be adjusted to suit room temperature demands. The distillation process is made automatic, continuous and self-limiting by the use of two simple float controls and a thermostatic water outlet valve. The essential components comprise a cooling tank with its bottom half immersed in the space contained by a condensing chamber; a heating element and a boiling chamber resting on a bracket support such that feed water is supplied from the cooling tank to the boiling chamber via a connecting conduit and such that the respective water levels in the cooling tank and boiling chamber are maintained at the same level; a cover and a water collecting trough on top of the cooling tank serve to collect extra distilled water and the water is drained to the condensing chamber via a vertical conduit.						
						

4.

Water distilling apparatus

US4818344

1987-12-17

GLUCKSMAN DOV Z;GLUCKSMAN, DOV Z.

1989-04-04 1989-04-04

A portable water distiller comprising a vaporization chamber (5) containing an electric coil heating element (8), a finned tube condenser coil (2), and an electric fan motor (3) for cooling the condenser coil's outer surface. In a preferred embodiment, the vaporization chamber includes an upper vertical tube having an open bottom and closed top for communication with the condenser, and a raw water receptacle (6) with its rim surrounding the tube at a distance and with its bottom near the bottom end of the tube. The receptacle of the portable water distiller is automatically kept full with water up to a predetermined level, and is readily removable from the distiller for cleaning of residue, the lower portion of the tube is similarly removable for access to the heating element. The condenser coil is designed to offer low flow resistance resulting in only a small over-pressure in the vaporization chamber thus affecting only a small depression of the water level therein.

5.

Portable water distiller

US4342623

1980-10-02

ARTHUR D LITTLE*
ECOWATER SYSTEMS*

1982-08-03 1982-08-03

A portable water distiller having an insulated container for raw water and a removable cover for the container with a low pressure seal which engages the container wall. A condenser coil is provided in the cover along with a motor-driven fan, and inlet and outlet ports are provided about the periphery of the cover to allow cooling air to be drawn into the cover over the condenser coils and motor. An inlet tube connected to the condenser coil receives steam from the container generated by a heater connected to the container bottom.

6.

Water distiller

US4135984

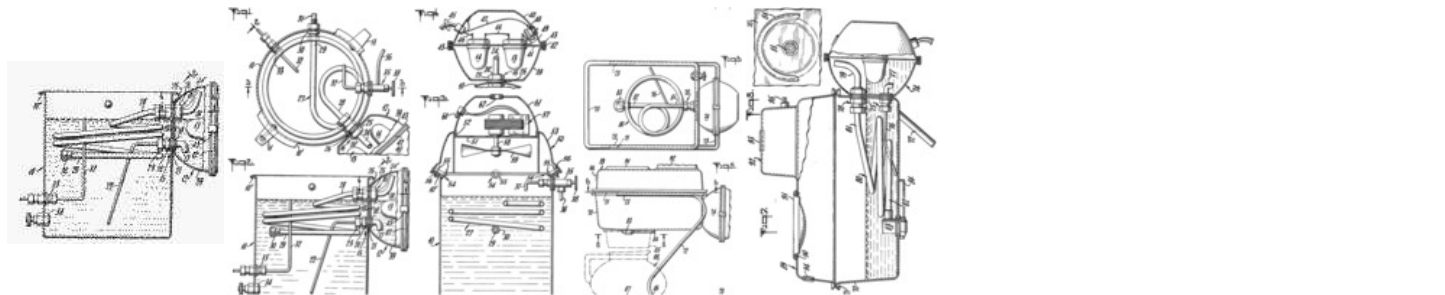
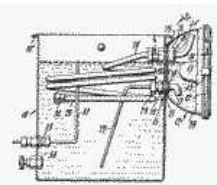
1976-11-03

KIRCHMANN JOHN D

1979-01-23 1979-01-23

A water distiller assembly comprising a bottom boiler unit and a top condensing unit incorporates heat exchange passage means for supply water and steam arranged in the condensing unit in such a way in combination with tubular flow connections between the condensing unit and boiler unit that cool, incoming supply water is preheated by steam rising from the boiler unit and flows by gravity down into the boiler unit, with the steam thereby being cooled and condensed to distilled water. Mineral laden residue water in the boiler unit is discharged therefrom continuously by means of a discharge passage providing a predetermined flow restriction against the flow pressure generated by the vapor pressure in the boiler unit. A supply water vessel forming a portion of the condensing unit is removably secured to the top of a boiler vessel by spring clips, which also serve to tightly seat lids covering the supply water vessel and the boiler vessel.

Water degasification and distillation apparatus having a container for water to be degasified and distilled, a relatively small boiler adjoining said container and having a first conduit extending into the container so that a selected water level in the container will fill said boiler to a selected height, a condenser within the container and immersed in the water contained therein, a second conduit extending from the space above the water in said boiler to the inlet of the condenser, an outlet on the condenser extending through a container wall for discharging degasified and distilled water and heating means in said boiler for heating the water therein.



8.

Water distiller

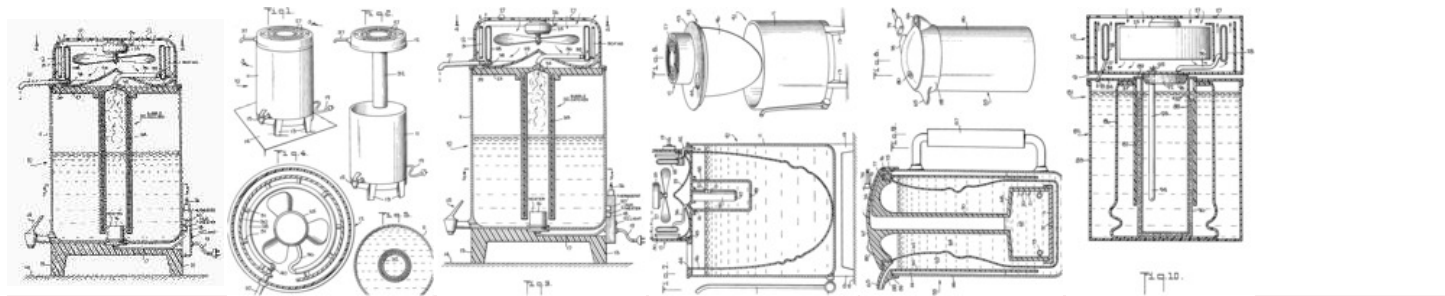
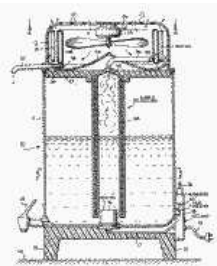
FR2320958

1975-07-07

ARTHUR D LITTLE*
ECOWATER SYSTEMS*
GENERAL TIRE & RUBBER

1977-03-11 1977-03-11

The portable water distiller is constructed to distill water placed within a housing and to dispense it directly into a separate storage vessel or to a distilled water space in the housing. In the latter case, the distillers are provided with a flexible impermeable partition which may be in the form of a bag and which divides the interior of the housing into a raw water space and a distilled water space. A boiler is disposed within the raw water space in order to vaporize the water and a compact radiator and fan assembly is mounted on top of the housing in order to condense the vapor into distilled water for delivery to the distilled water space within the housing. A heater-thermostat shut-off means is also provided for turning off the heater when the supply of water is too low.



9.

Distillation apparatus

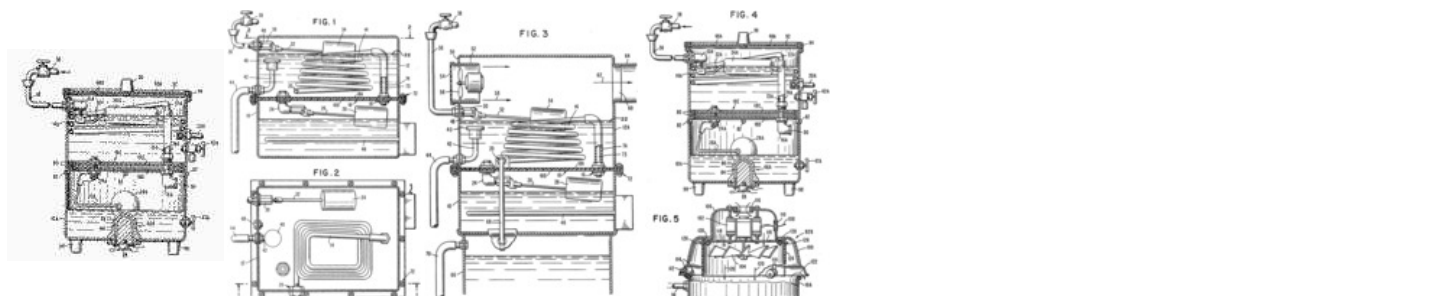
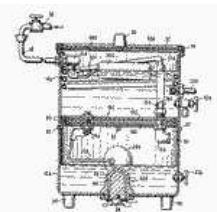
US4339307

1979-03-20

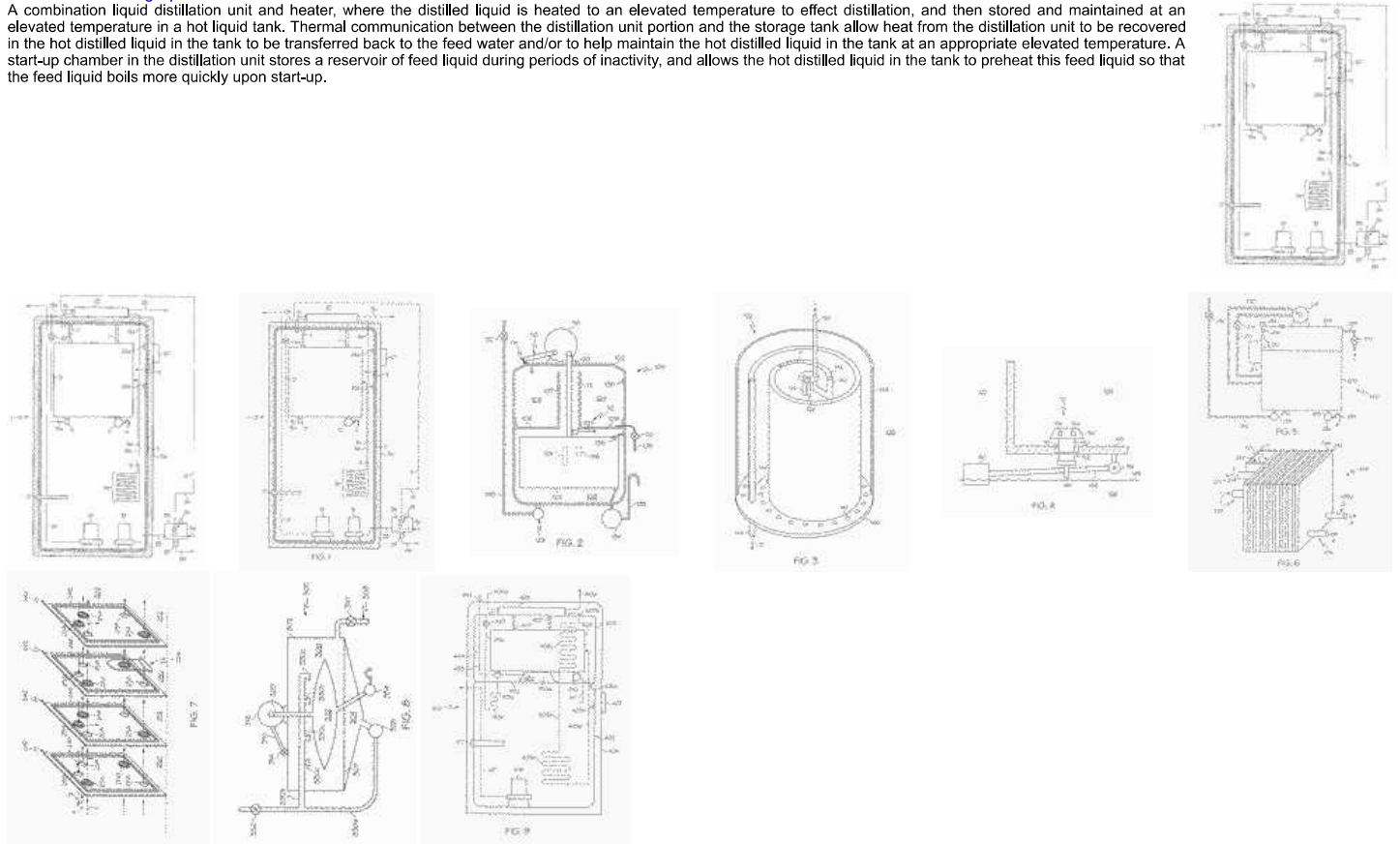
ELLIS JR JOHN C

1982-07-13 1982-07-13

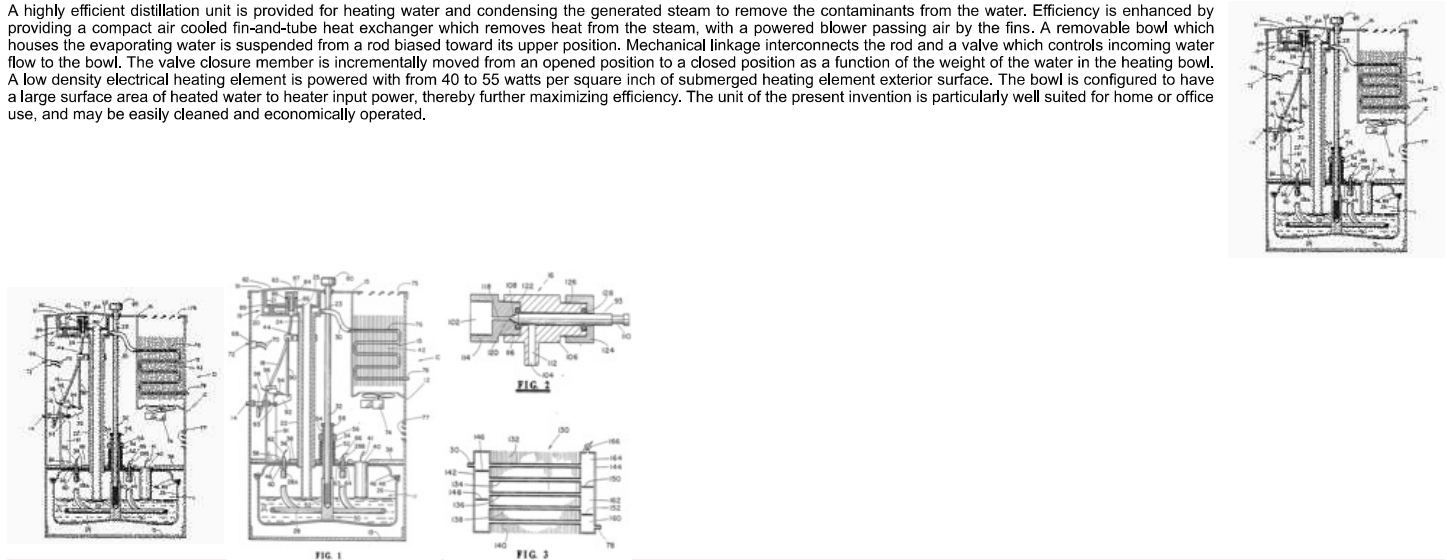
The apparatus includes a housing enclosing a boiler in the lower portion and a water-filled condenser in the upper portion with an insulated partition between them. The entry of boiler feed water is controlled by a float valve in the boiler, and steam from the boiler is conveyed through the partition and thus through a condenser coil substantially immersed in the water in the condenser.



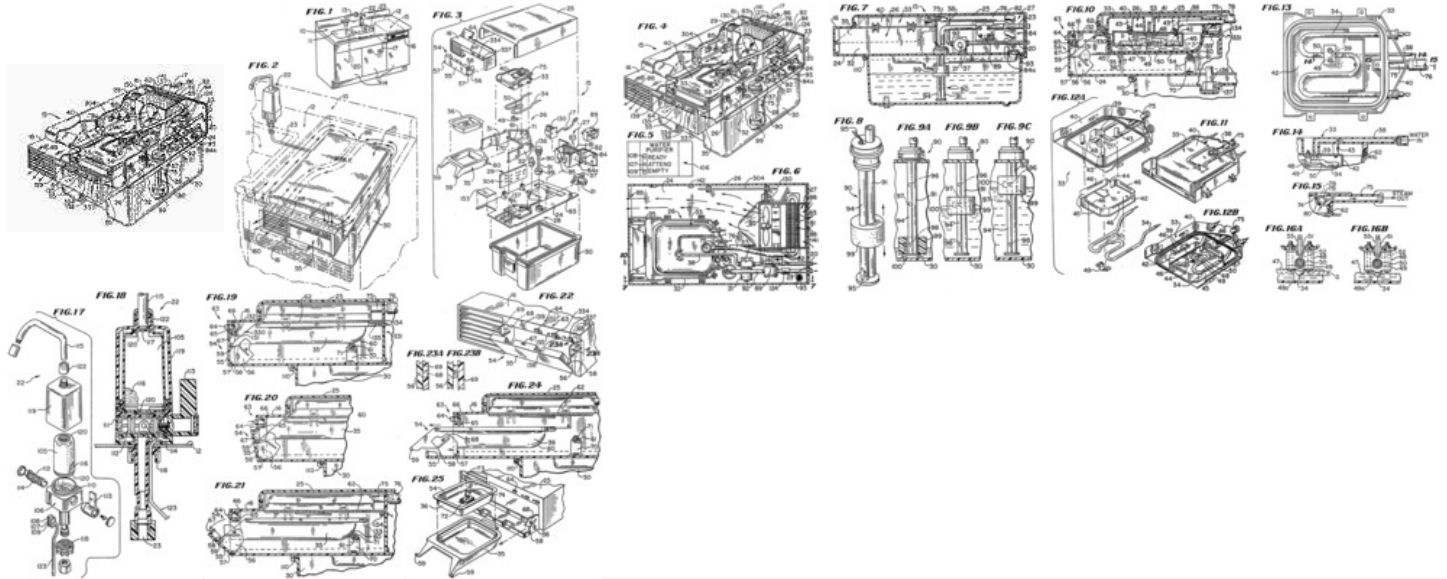
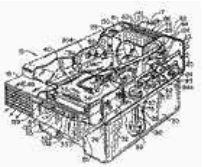
A combination liquid distillation unit and heater, where the distilled liquid is heated to an elevated temperature to effect distillation, and then stored and maintained at an elevated temperature in a hot liquid tank. Thermal communication between the distillation unit portion and the storage tank allow heat from the distillation unit to be recovered in the hot distilled liquid in the tank to be transferred back to the feed water and/or to help maintain the hot distilled liquid in the tank at an appropriate elevated temperature. A start-up chamber in the distillation unit stores a reservoir of feed liquid during periods of inactivity, and allows the hot distilled liquid in the tank to preheat this feed liquid so that the feed liquid boils more quickly upon start-up.



A highly efficient distillation unit is provided for heating water and condensing the generated steam to remove the contaminants from the water. Efficiency is enhanced by providing a compact air cooled fin-and-tube heat exchanger which removes heat from the steam, with a powered blower passing air by the fins. A removable bowl which houses the evaporating water is suspended from a rod biased toward its upper position. Mechanical linkage interconnects the rod and a valve which controls incoming water flow to the bowl. The valve closure member is incrementally moved from an opened position to a closed position as a function of the weight of the water in the heating bowl. A low density electrical heating element is powered with from 40 to 55 watts per square inch of submerged heating element exterior surface. The bowl is configured to have a large surface area of heated water to heater input power, thereby further maximizing efficiency. The unit of the present invention is particularly well suited for home or office use, and may be easily cleaned and economically operated.

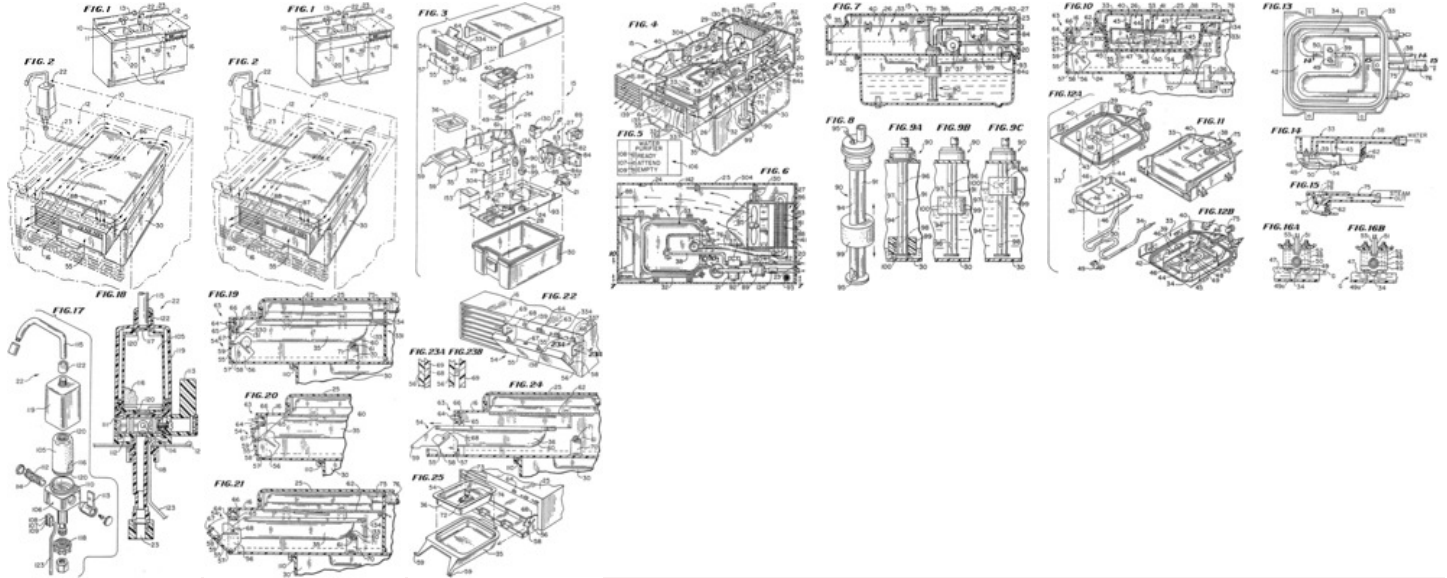
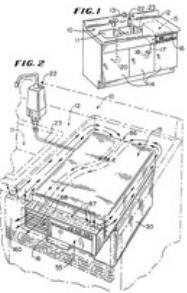


A continuous water distillation system has a steam chamber assembly and a condenser assembly for making steam and condensing the steam into purified water. An associated holding tank collects the purified water for dispensing upon user demand. The quantity of purified water is continuously sensed in the holding tank. A controller coordinates the operation of the steam chamber assembly and the purified water delivery mechanism to dispense purified water from the holding tank upon demand and automatically make and replenish the supply of purified water. In one arrangement, a first sensor continuously senses the purity of the water collected in the holding tank, while a second sensor continuously senses the purity of the water entering the steam chamber assembly. In another arrangement, the condenser assembly includes a cooling fan with a replaceable air filter, and the purified water dispenser includes an inline water filter. The controller prompts the user to replace the air and water filter according to different operational criteria.

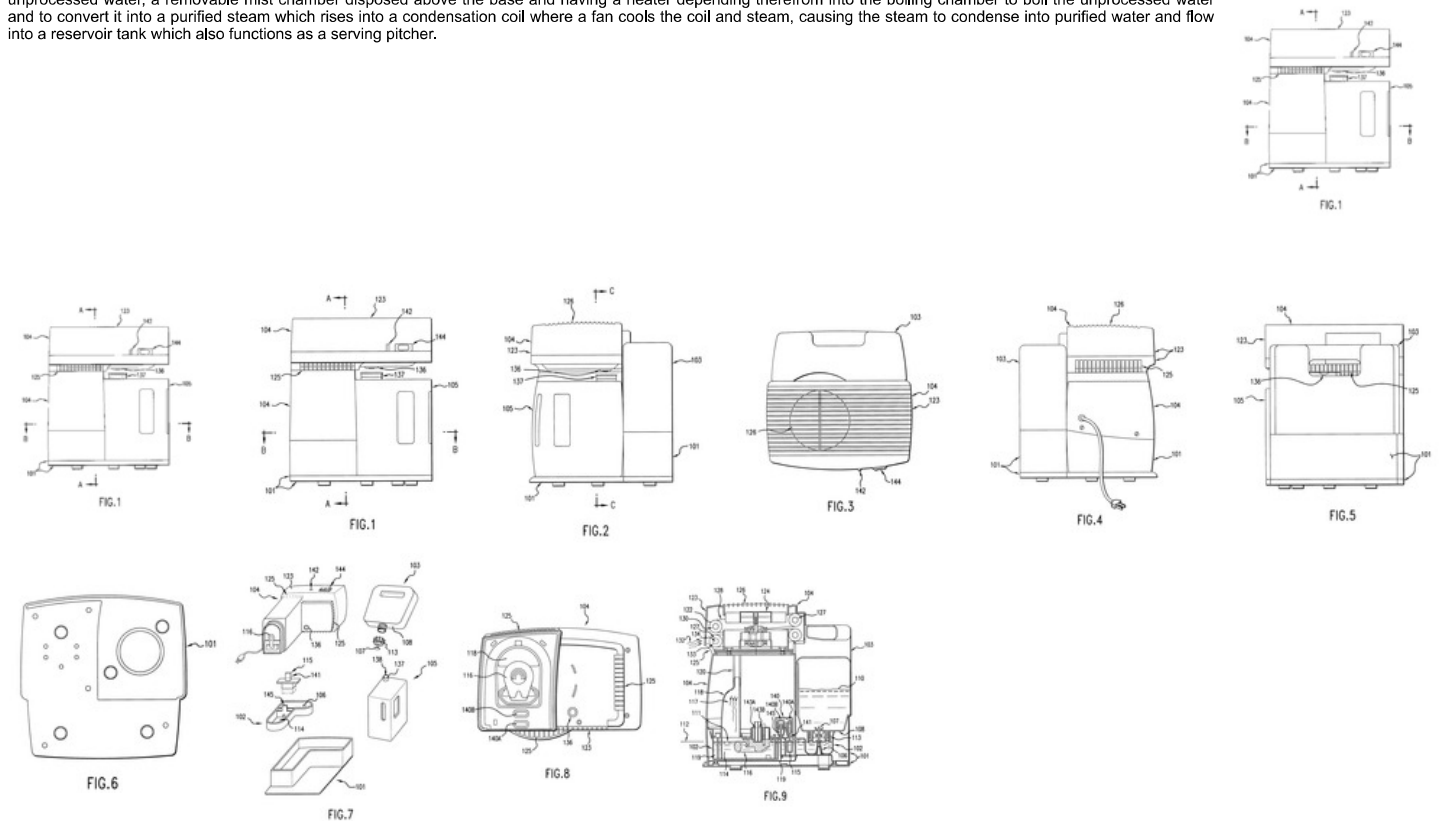


13. A low profile water distiller.US51104191991-01-18EMERSON ELECTRIC*1992-05-051992-05-05

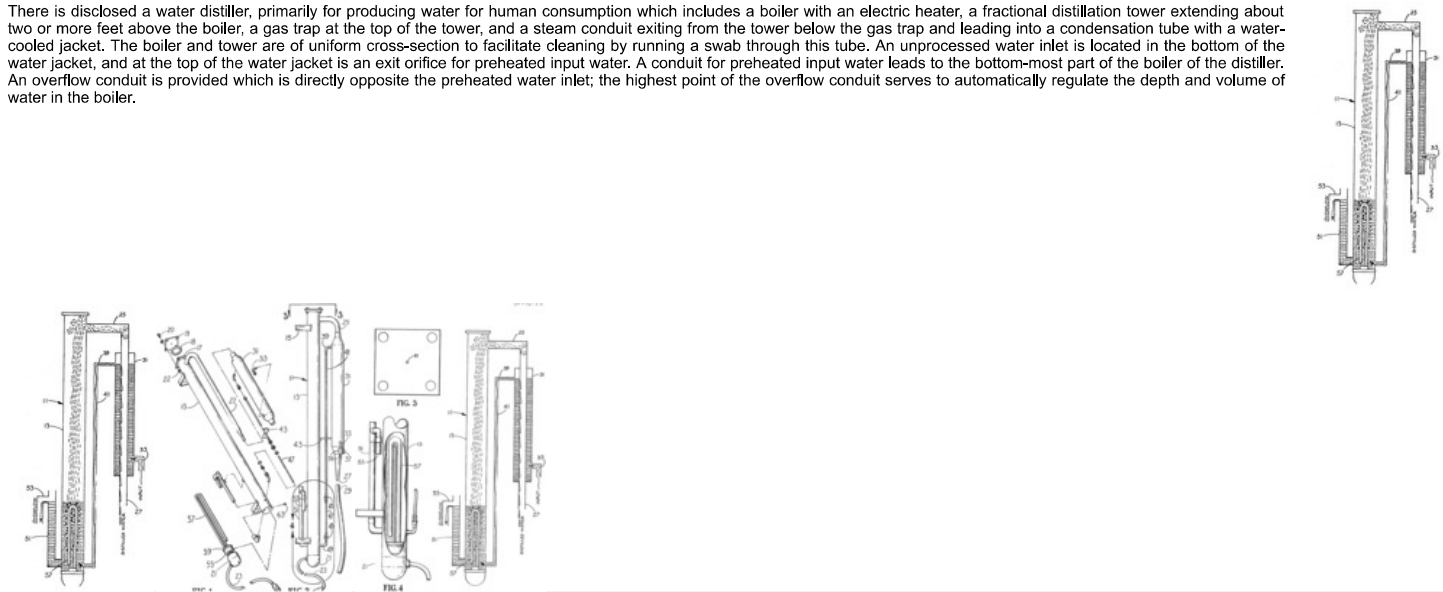
A low profile water distiller (15) has a housing having a horizontal length and width greater than its height. The housing is dimensioned to fit generally within the confines of a drawer space having a horizontal length and width greater than its height. A purification assembly is arranged entirely within the length, height and width of the housing for purifying the raw water and for dispensing the purified water through an external faucet. <IMAGE>



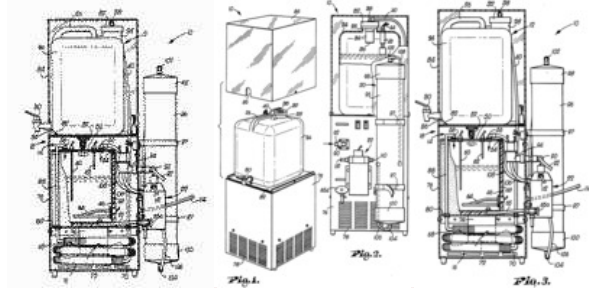
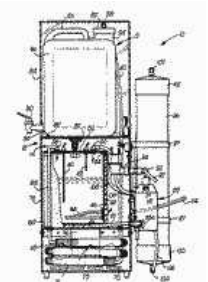
A distilling device for converting unprocessed water into pure water including a fill tank, a base having a removable water tray with a boiling chamber therein for holding the unprocessed water, a removable mist chamber disposed above the base and having a heater depending therefrom into the boiling chamber to boil the unprocessed water and to convert it into a purified steam which rises into a condensation coil where a fan cools the coil and steam, causing the steam to condense into purified water and flow into a reservoir tank which also functions as a serving pitcher.



There is disclosed a water distiller, primarily for producing water for human consumption which includes a boiler with an electric heater, a fractional distillation tower extending about two or more feet above the boiler, a gas trap at the top of the tower, and a steam conduit exiting from the tower below the gas trap and leading into a condensation tube with a water-cooled jacket. The boiler and tower are of uniform cross-section to facilitate cleaning by running a swab through this tube. An unprocessed water inlet is located in the bottom of the water jacket, and at the top of the water jacket is an exit orifice for preheated input water. A conduit for preheated input water leads to the bottom-most part of the boiler of the distiller. An overflow conduit is provided which is directly opposite the preheated water inlet; the highest point of the overflow conduit serves to automatically regulate the depth and volume of water in the boiler.

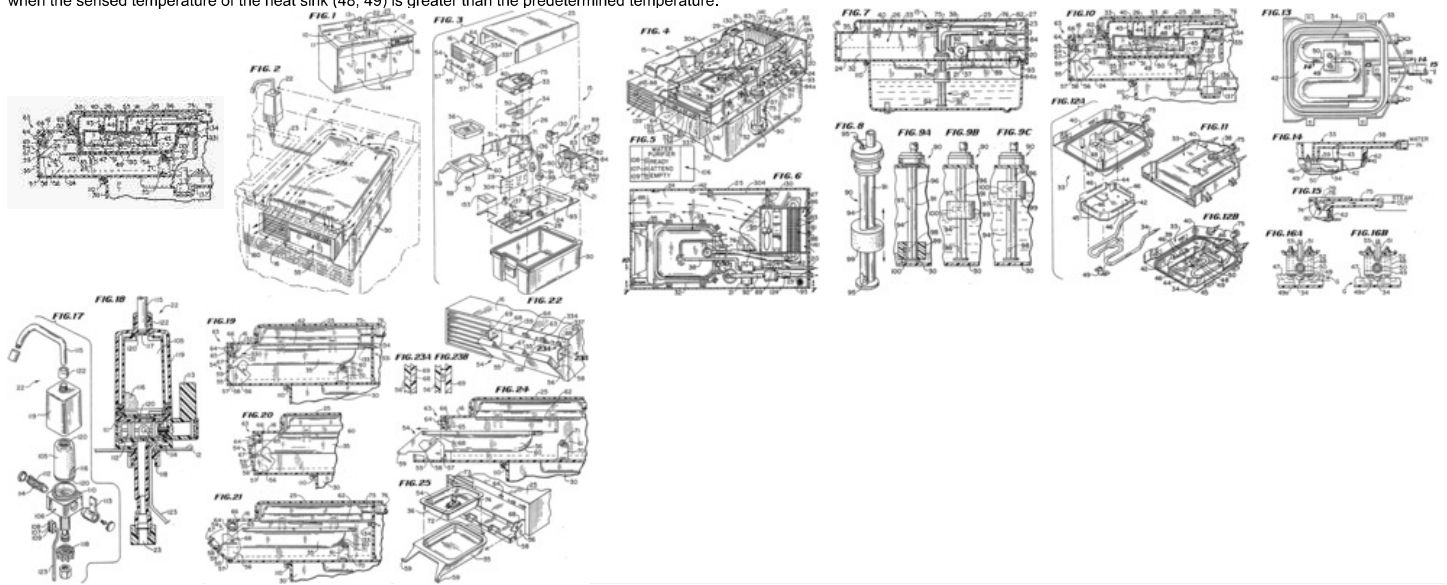
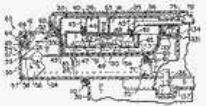


A water distilling apparatus (10) which includes vertically stacked components, i.e. an uppermost water storage tank (12), an intermediate boiling tank (14) and a lowermost condensing unit (16). Stacking of the distiller components creates a space efficient design with ready access to the respective components. The preferred apparatus (10) is also equipped with a small, dedicated water conditioning unit (20) situated between the main solenoid water valve (94) and the inlet of the boiling tank (14).



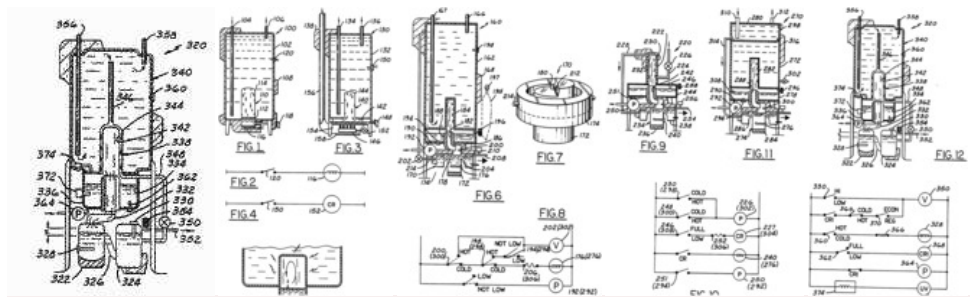
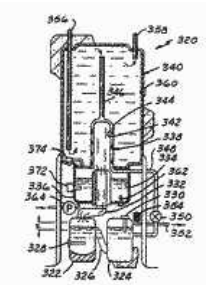
17. A water distiller having heating element with temperature sensing and control elementsUS51104181991-01-18EMERSON ELECTRIC*1992-05-051992-05-05

A water distiller (15) has a steam chamber (26) that includes a tray (36) for containing water to be distilled. Water is conveyed from a source (20) to the tray (36) for distillation. A valve (37) operates in an open position to convey water to the tray (36) and a closed position to block the passage of water to the tray (36). A heating element means (34) extends in the steam chamber (26) for submersion in the water carried by the tray (36). The heating element (34) is operable within a range of temperatures to heat the water in the tray (36). The heating element (34) includes a main body portion having an axis that extends in a plane generally parallel to the water in the tray (36) and a section (50) having an axis that is deflected above the axis of the main body portion. A heat sink (48, 49) surrounds the deflected section (50) of the heating element means (34). A heat sensor (52) detects the temperature of the heat sink (48, 49). A control (21, 29) connects the valve (37) and the heat sensor means (52). The control (21, 29) closes the valve (37) when the sensed temperature of the heat sink (48, 49) is equal to or less than a predetermined amount. The control (21, 29) opens the valve (37) when the sensed temperature of the heat sink (48, 49) is greater than the predetermined temperature.

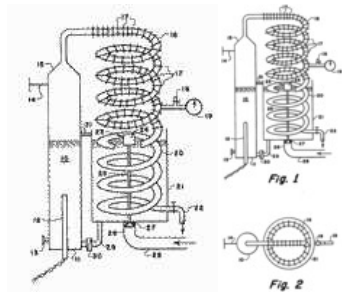
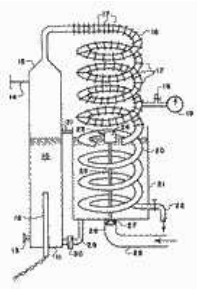


18. Water heating and distilling apparatusUS53486231992-09-30TERRILL DESIGNS*1994-09-201994-09-20

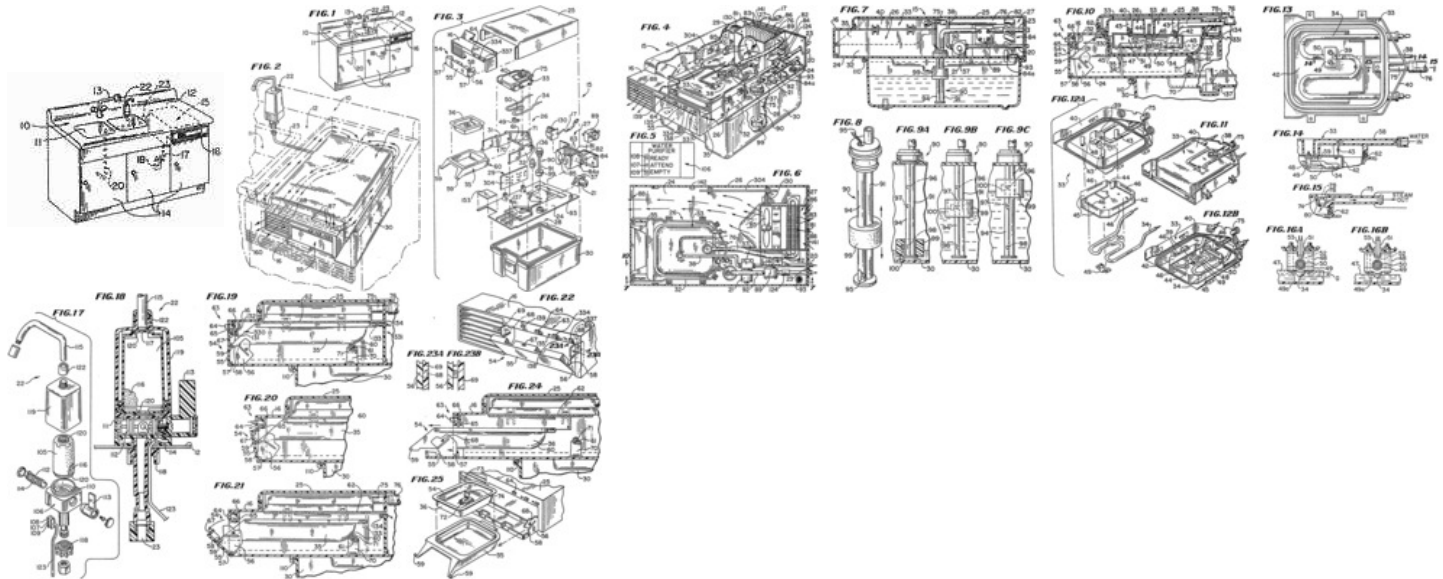
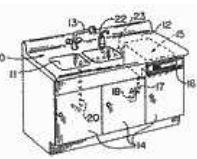
An automatic water heating and distilling apparatus is provided having a hot water reservoir, an evaporator tank, a condenser, a distilled water reservoir and a control mechanism. Water is boiled within the evaporator tank generating steam which is condensed in the condenser to form distilled water. The heat rejected during condensation is transferred into the hot water reservoir. The distilled water reservoir has an input coupled to the condenser, an output for distilled water, and an overflow so that excess distilled water is returned to the evaporator tank. The control mechanism automatically regulates the operation of a heater within the evaporator to maintain the water in the hot water reservoir within a selected operating range. Various alternative embodiments are also described including a hot water heating apparatus utilizing an enclosed heat transfer device partially filled with liquid having a boiling point above the selected temperature for the water to be heated. A heat transfer device is provided with a reservoir portion for accumulating liquid and a relatively higher condensive portion in cooperation with the hot water reservoir. A heater, a temperature sensor, and a control mechanism are likewise provided to automatically maintain the water in the hot water reservoir within a selected temperature range.



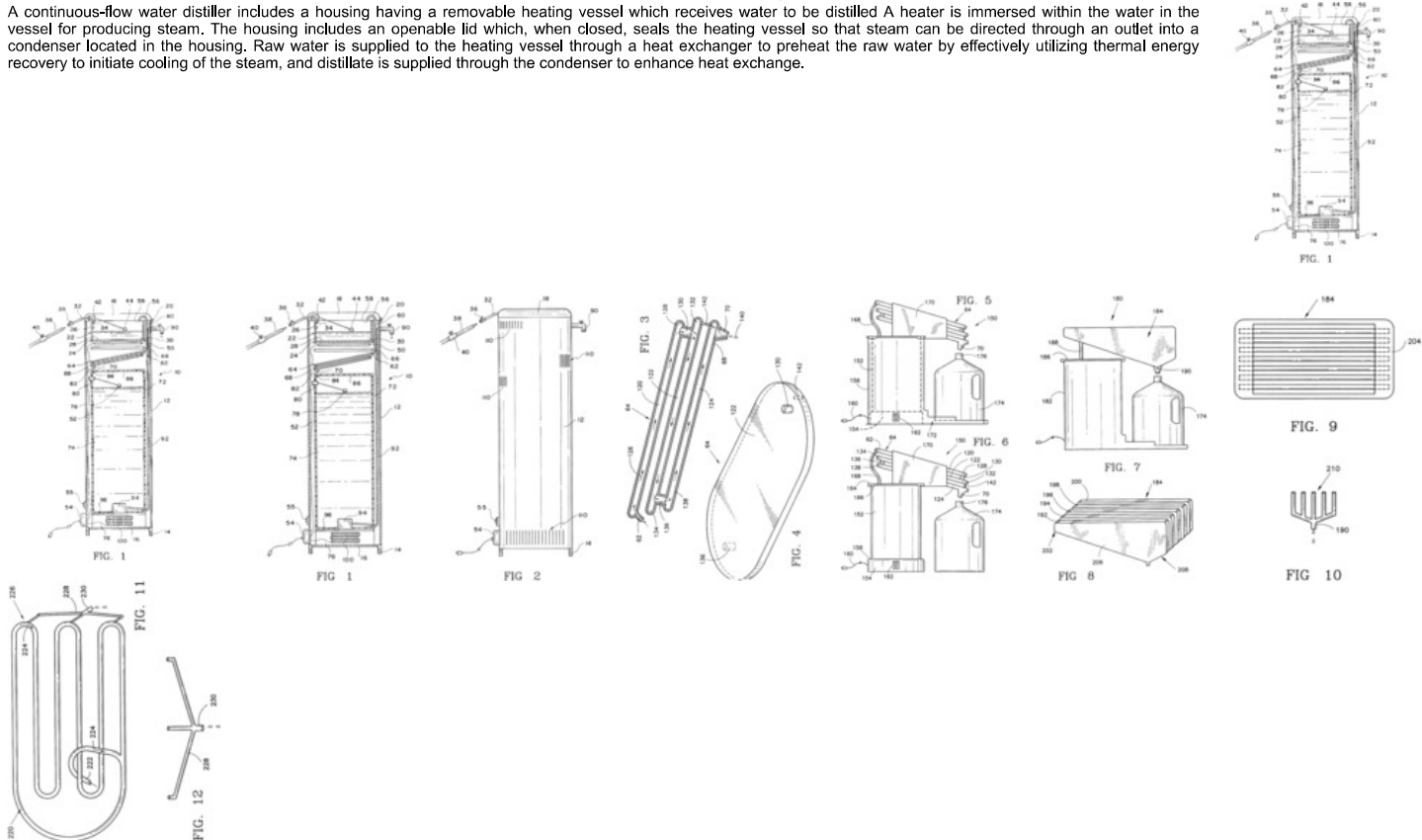
A compact integral apparatus is provided for the continuous distillation of water. The apparatus comprises an upright cylindrical boiling vessel communicating at an upper portion thereof with a vapor condensation tube which leads into a water cooling tube disposed within a reservoir vessel. Water is supplied to said reservoir vessel through a float-controlled valve adapted to maintain a substantially constant amount of water in said reservoir vessel at a height sufficient to immerse said water cooling tube and thereby receive heat therefrom. Water to be distilled flows by gravity from said reservoir vessel to said boiling vessel. The component parts are structurally interconnected to facilitate facile mounting of the apparatus on a support structure.



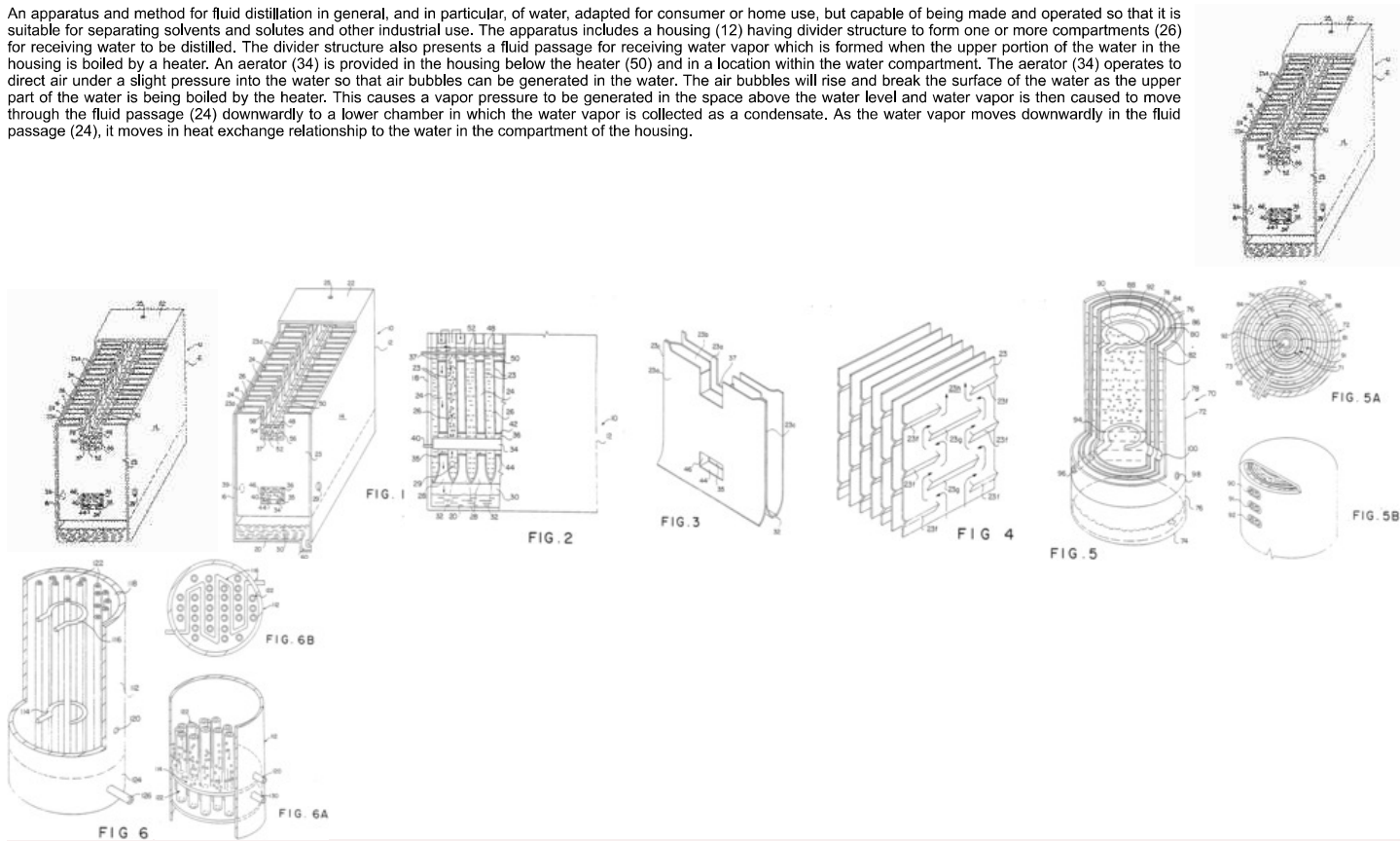
A water distiller (15) has a housing (24, 25) having an open interior area and a door (14) that can be opened and closed to permit and block access into the interior area. A steam chamber (26) is located in the interior area. The steam chamber (26) includes a movable tray (36) for holding water to be distilled. The tray (36) seats against a fixed top (33) where steam created in the chamber (26) by heating the water in the tray (36) is collected. By opening the door (14) to the distiller (15), the tray (36) can be unseated and removed for cleaning. After cleaning, the tray (36) can be returned to the distiller (15) and reseated against the top steam collecting portion (33) by closing the door (14). In a preferred arrangement, the tray (26) includes a chamber (72) for holding a water soluble disinfectant (73) for release during the distillation process.



A continuous-flow water distiller includes a housing having a removable heating vessel which receives water to be distilled. A heater is immersed within the water in the vessel for producing steam. The housing includes an openable lid which, when closed, seals the heating vessel so that steam can be directed through an outlet into a condenser located in the housing. Raw water is supplied to the heating vessel through a heat exchanger to preheat the raw water by effectively utilizing thermal energy recovery to initiate cooling of the steam, and distillate is supplied through the condenser to enhance heat exchange.



An apparatus and method for fluid distillation in general, and in particular, of water, adapted for consumer or home use, but capable of being made and operated so that it is suitable for separating solvents and solutes and other industrial use. The apparatus includes a housing (12) having divider structure to form one or more compartments (26) for receiving water to be distilled. The divider structure also presents a fluid passage for receiving water vapor which is formed when the upper portion of the water in the housing is boiled by a heater. An aerator (34) is provided in the housing below the heater (50) and in a location within the water compartment. The aerator (34) operates to direct air under a slight pressure into the water so that air bubbles can be generated in the water. The air bubbles will rise and break the surface of the water as the upper part of the water is being boiled by the heater. This causes a vapor pressure to be generated in the space above the water level and water vapor is then caused to move through the fluid passage (24) downwardly to a lower chamber in which the water vapor is collected as a condensate. As the water vapor moves downwardly in the fluid passage (24), it moves in heat exchange relationship to the water in the compartment of the housing.



23.

Circuit and method for controlling electrical heater in a distiller

GB9708462

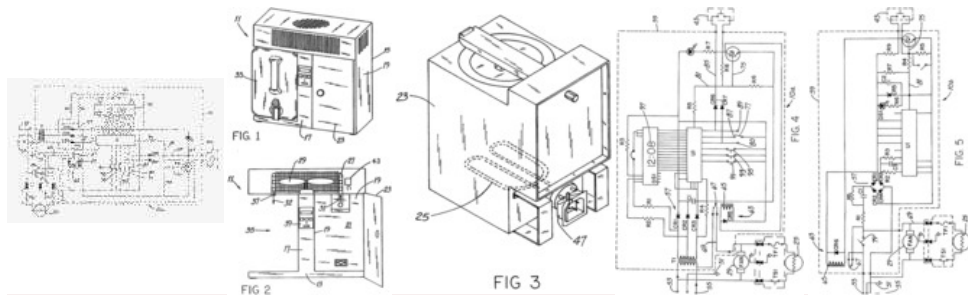
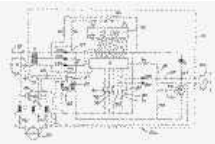
1996-05-13

REGAL WARE*
WEST BEND

1997-06-18

1997-06-18

The disclosure involves a countertop distiller for home use. Such distiller is of the type including a condensing coil and an electrically-powered water heater. A method for controlling power flow to the heater includes the steps of activating a timer circuit to energize the heater, increasing the temperature of the coil and bypassing the timer circuit when the coil temperature increases to a predetermined value. The heater is de-energized when the water in the raw water container is substantially depleted and the heater temperature increases to a predetermined value because of such depletion. A new electrical circuit for a countertop distiller is also disclosed.



24.

Water distilling method and apparatus

US4946558

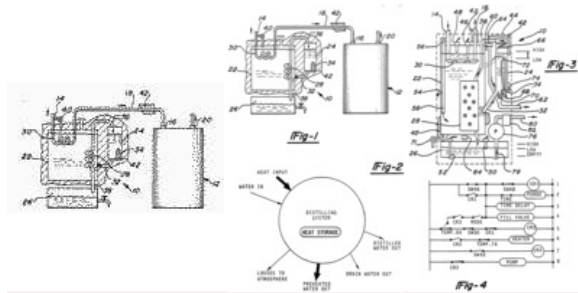
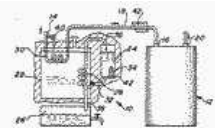
1988-12-09

TERRILL DESIGNS*

1990-08-07

1990-08-07

A water distiller (10) is provided which is used in conjunction with a hot water heater (12) where normally wasted energy is used to preheat the hot water heater inlet (16). The distiller (10) includes a heat storage tank (22), an evaporator tank (24) having a water inlet (32), a heater (34), and a steam outlet (36), a first heat exchanger (28) and a second heat exchanger (30) located within the heat storage tank (22). Steam generated in the evaporator tank passes through the first heat exchanger (28) and condenses, forming distilled water. The heat rejected during condensation is absorbed within the heat storage tank (22). The second heat exchanger (30) is used to preheat the water flowing to the hot water heater inlet (16) by passing the water through the second heat exchanger (30) on an as needed basis where it absorbs heat from the heat storage tank (22).



25.

Water distiller

US4724048

1985-09-04

HELMICH ARTHUR R

1988-02-09

1988-02-09

A water distiller apparatus for purifying and degassing domestic water supplies is provided which is constructed for easy cleaning of all parts and in which inflowing water is preheated by condensing steam within a condenser which preheating allows dissolved gases to dissipate through a vent before the inlet water reaches an evaporator portion. The rate of inflowing water is controlled by a temperature responsive valve that is in thermal communication with the condenser to maximize heat transfer and minimize heat and water loss.

