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(54) **Cooker with warm water heater**

(57) The present invention relates to heating stove / cooker comprising a cooktop (2) and a cover (9) for at least partially covering said cooktop (2), said cover (9) being adapted to be raised and lowered between a position in which it overlies the cooktop (2) and a position in which it is raised and substantially perpendicular to the cooktop (2) by being angularly displaced about hinges (11, 12) that connect it to an edge (10) of the cooktop, The heating stove / cooker is characterized in that the cover (9) defines a volume in which a conduit (13) extends between an inlet (14) and an outlet (15), the inlet being adapted to be connected to a cold water source and the outlet (15) being adapted to be connected to a hot water consumer unit.

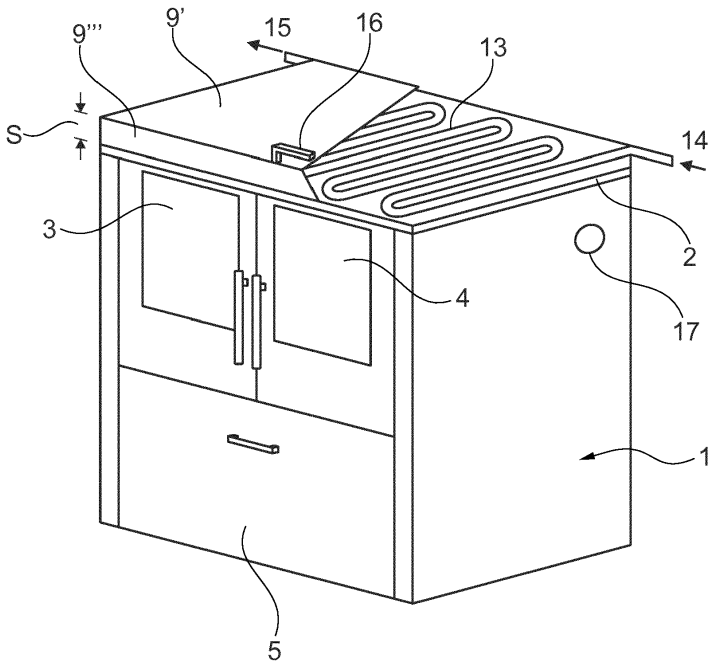

Fig. 4

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Description

Technical field

[0001] The present invention relates to an improved heating stove / cooker as defined in the preamble of claim 1.

[0002] Particularly, the present invention relates to an improved heating stove / cooker which defines a cooktop and a cover that is adapted to be raised and lowered between a position in which it overlies the cooktop and a position in which it is raised and substantially perpendicular to the cooktop by angular displacement thereof about hinges that connect it to an edge of the cooktop,

Background art

[0003] Heating stoves / cookers having a cover on the cooktop are known in the art, and the cover is known to be formed with refractory materials, not only to protect users from burns caused by casual contact with the cooktop, but also to retain the considerable heat radiating from the cooktop.

[0004] Proper operation of the heating stove / cooker, which may fueled with wood, pellets and/or fossil fuels, such as methane, LPG and/or diesel oil, is known to require the fire to be always maintained in the firebox.

[0005] This causes the drawback that the cooktop of the heating stove / cooker maintains a high temperature even when the cooktop is not used for cooking or preparing food.

[0006] Particularly, the standards for sale of a heating stove / cooker require the cooktop to remain at a temperature that will never fall below a minimum temperature, which is set to be about 350°C.

[0007] This involves a considerable heat loss even when the cooktop is protected by the lift cover, as the latter contacts the cooktop and reaches, after some time, the same temperature as the surface of the cooktop.

Problem of the prior art

[0008] Therefore, the problem encountered in the field of heating stoves / cookers is the need to reduce cooktop radiation which, in certain installations (e.g. new energy-efficient class A houses or houses having highly efficient cladding insulation) may even be incompatible with climatic comfort for users.

[0009] DE 4440028 discloses a device with a cooktop and a cover, in which a conduit can be connected to a cold-water source and a hot water consumer unit. Nevertheless, the inlet and the outlet of the conduit in the rear edge of the cover are described as being designed to be connected with hose sections, to ensure angular displacement of the cover. This arrangement causes a problem concerning reliable use of connecting hoses, because the latter may be exposed to cracking and failure, resulting in liquid leakage. Furthermore, the position of the inlet and the outlet in the rear of the cover does not afford a convenient visual check of the wear at the connections, whereby the user can only become aware of the problem once failure has occurred.

Object of the invention

[0010] The object of the present invention is to limit cooktop-related losses of calorific energy in heating stoves / cookers having a cover that can be raised and lowered, by utilizing the heat absorbed by the cover for water heating.

[0011] These and other objects, as further explained hereafter, are fulfilled by a wood heating stove / cooker with a cooktop cover as characterized by claim 1 hereinafter.

[0012] The present invention can provide a more efficient heating stove / cooker, because heat is not dissipated in the environment, and is used to heat as fluid, such as hot water to be introduced into an existing heating system, or to produce hot water proximate to the heating stove / cooker.

[0013] Also, the present invention can use non-flexible connection piping, which is less prone to failure, and always exposed to prompt visual check.

[0014] Finally, with the present invention, the connection piping may be placed in such position as to obviate user safety issues, and ensure a more reliable and durable operation of the device.

Brief description of figures

[0015] Further features and advantages of the heating stove / cooker of the present invention will result from the following description of one preferred exemplary embodiment thereof, which is given by way of illustration and without limitation with reference to the accompanying figures, in which:

- Figure 1 shows a perspective view of a heating stove / cooker with the cover of the cooktop lowered thereupon;
- Figure 2 shows a perspective view of the heating stove / cooker of Figure 1 with the cooktop cover partially raised;
- Figure 3 shows a perspective view of the heating stove / cooker of the previous figures with the cover completely raised, and substantially perpendicular to the cooktop;
- Figure 4 shows a perspective view of the heating stove / cooker with the cover of the cooktop placed thereon, a section thereof being partially taken to show the serpentine conduit contained therein.

DETAILED DESCRIPTION

[0016] While the invention is described hereinbelow with reference to a heating stove / cooker, similar results

will be attained with an ordinary stove fueled with wood, pellets and/or fossil fuels, such as methane, LPG and/or diesel oil.

[0017] Referring to the above figures, numeral 1 designates the base body of the heating stove / cooker, having an upper cooktop 2.

[0018] Doors 3 and 4 are shown in the base, which are designed to close the conventional firebox and, for instance, an oven respectively placed there behind, and to access any means configured to produce hot water to be sent to a heating system.

[0019] Numeral 5 designates a drawer, e.g. for storage of kitchen tools and numeral 6 designates a bar acting as a fender for protecting the edge of the cooktop 2.

[0020] These are conventional parts of this type of heating stoves / cookers, which are known to a skilled person and will not be further described herein.

[0021] The cooktop 2 has at least one hole 7 formed therein, which receives rings with decreasing diameters, generally referenced 8, for accommodating pots of various sizes.

[0022] The heating stove / cooker 1 comprises a chimney for venting flue gases, not shown, through which flue gases are exhausted and sent to the chimney flue as is known in the art. For example, in Figure 4 numeral 17 designates the conventional hole for connection of the flue gas exhaust duct.

[0023] In the illustrated example, the cover 9 is connected to the longitudinal edge 10 of the base body 1 of the heating stove / cooker by hinges, referenced 11 and 12, which define a longitudinal axis X-X about which the cover 9 is angularly displaced from the position in which it overlies the cooktop, as shown in Figures 1 and 4, to the position substantially perpendicular to such top, as shown in Figure 3.

[0024] In the exemplary embodiment of the figures, the cover 9 entirely covers the surface of the cooktop 2, without leaving any portion thereof exposed.

[0025] In another embodiment, the cover 9 may cover only part of the cooktop 2 or more than one cover 9 may be provided to cover the cooktop 2.

[0026] Referring now to Figure 4, in which the cover 9 is shown in a partially cross-sectional view across its thickness S and overlying and contacting the cooktop, a conduit 13 is provided.

[0027] In the exemplary embodiment of Figure 4, such conduit 13 extends from an inlet 14 to an outlet 15 with a serpentine configuration.

[0028] Still in the exemplary embodiment of Figure 4, the inlet 14 and the outlet 15 are aligned with the axis X-X of the hinges 11 and 12 and shall be intended to be equipped with connection members for connection to a cold-water source and to a hot water consumer unit respectively.

[0029] These connection members are conventional in all respects and have not be expressly shown.

[0030] It shall be noted that valves and/or hose sections can be used to hydraulically connect the conduit 13 of the cover 9 to the hot water generating means in the heating stove / cooker 1 and/or to the heating system and/or to a hot water consumer unit located in the immediate vicinity of the heating stove / cooker.

[0031] Particularly, the cover 9 defines a volume in which the aforementioned conduit 13 extends in serpentine form.

[0032] In accordance with a preferred embodiment, the cover 9 has two flat and parallel larger surfaces 9', 9", connected together by a lateral surface 9"' defining a thickness S.

[0033] In one aspect, the cover 9 also has a handle, referenced 16, allowing it to be manually raised and lowered.

[0034] Those skilled in the art will obviously appreciate that a number of changes and variants may be made to what has been described hereinbefore, without departure from the scope of the invention, as defined in the following claims.

Claims

1. A heating stove / cooker comprising a cooktop (2) and a cover (9) for at least partially covering said cooktop (2), said cover (9) being adapted to be raised and lowered between a position in which it overlies the cooktop (2) and a position in which it is raised substantially perpendicular to the cooktop (2), by being angularly displaced about hinges (11, 12) that connect it to an edge (10) of the cooktop, said cover (9) defining a volume in which a conduit (13) is placed, and extends between an inlet (14) and an outlet (15), the inlet (14) being adapted to be connected to a cold water source and the outlet (15) being adapted to be connected to a hot water consumer unit, **characterized in that** said inlet (14) and said outlet (15) of the conduit (14) are placed along the axes (X-X) of the hinges about which the cover (9) is connected to the edge (10) of the cooktop (2).

2. A heating stove / cooker as claimed in claim 1, wherein said cover (9) defines a volume in which said conduit (13) extends over its plane in serpentine form.

3. A heating stove / cooker as claimed in any of claims 1 to 2, comprising means designed to produce hot water to be delivered to a heating system, wherein said inlet (14) and said outlet (15) of said conduit (13) comprise respective connector devices for connection with said means designed to produce hot water.

4. A heating stove / cooker as claimed in any of claims 1 to 3, **characterized in that** when said cover (9) overlies the cooktop, it also contacts it.

5. A heating stove / cooker as claimed in any of claims

1 to 3, **characterized in that** said cover (9) has two flat and parallel larger surfaces (9', 9") which are connected by a lateral surface (9"') defining a predetermined thickness (S), to form said internal volume.

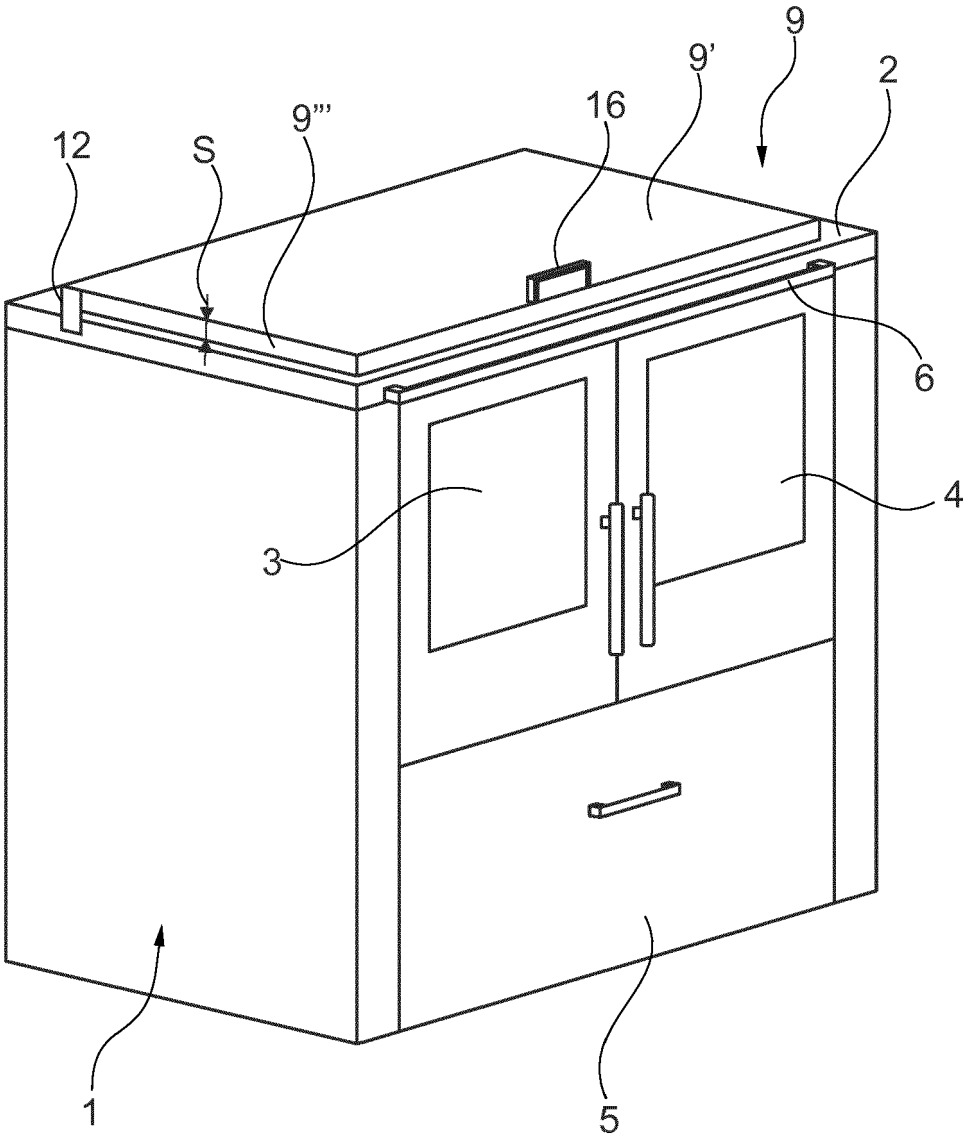

Fig. 1

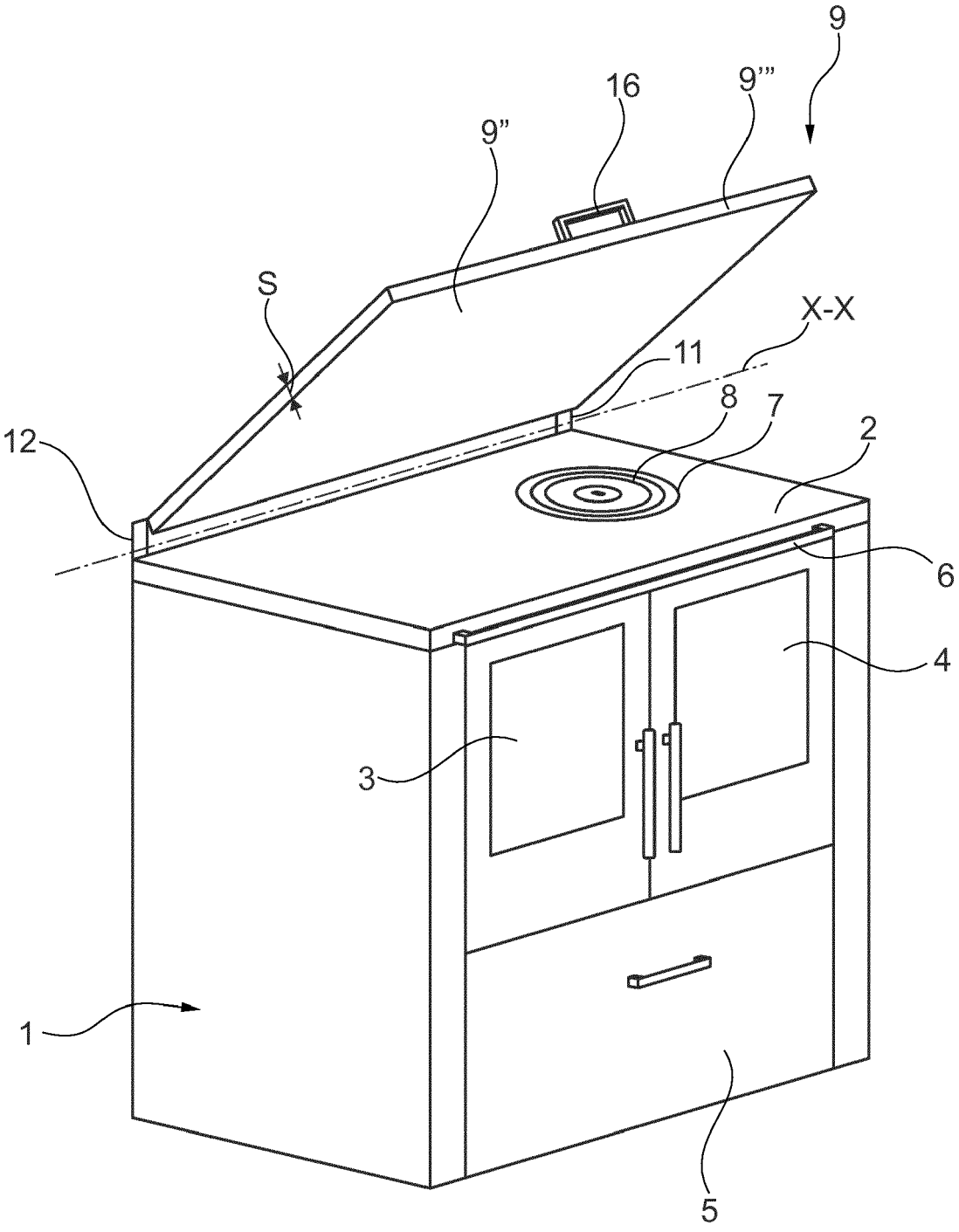

Fig. 2

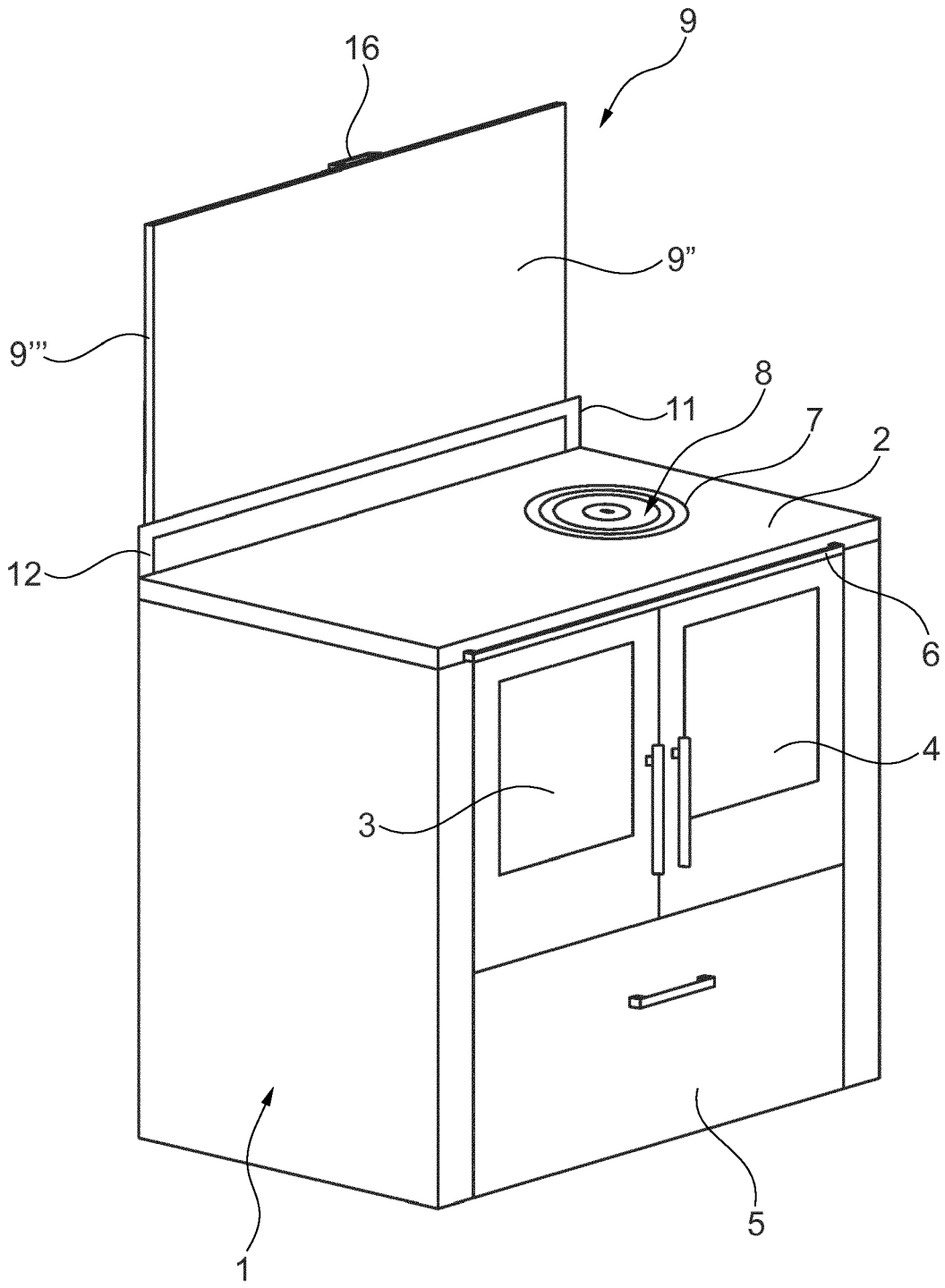

Fig. 3

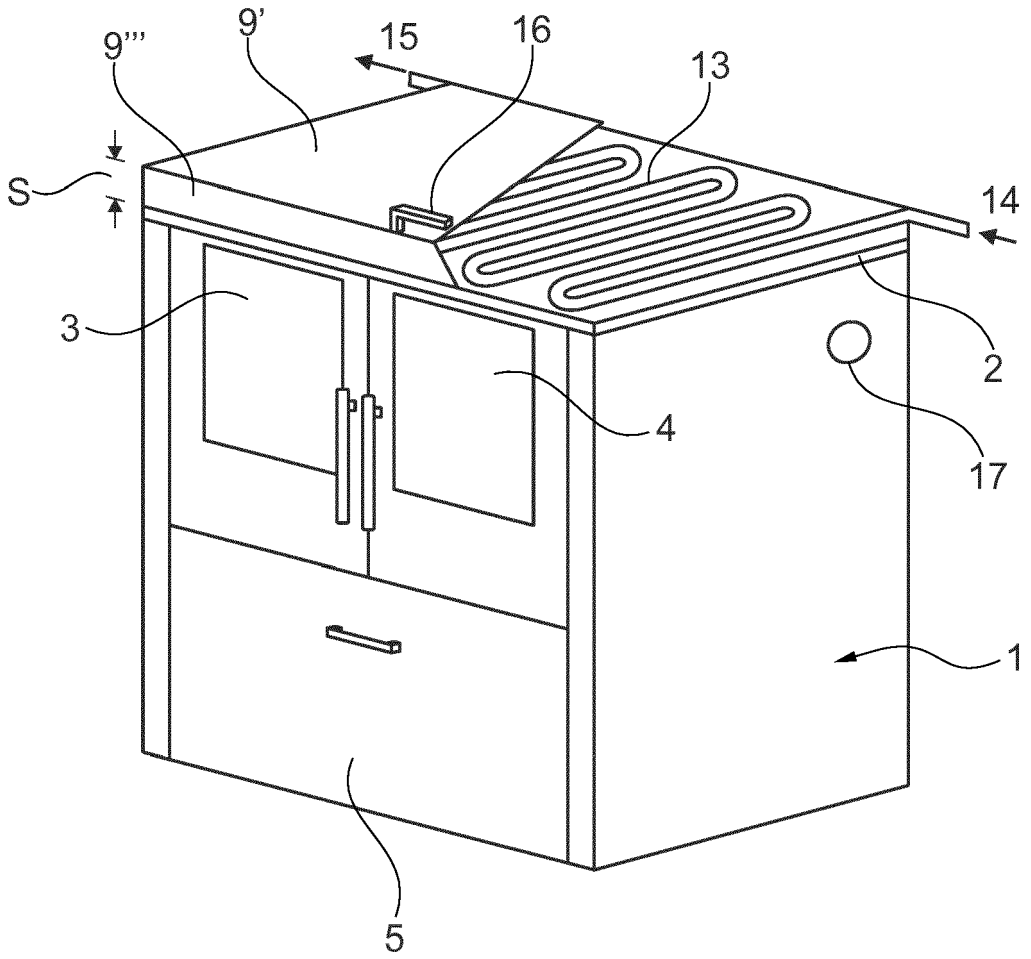

Fig. 4

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EUROPEAN SEARCH REPORT

Application Number
EP 18 15 9854

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	DE 44 40 028 A1 (BIESE GABRIELA MARIA [DE]) 18 May 1995 (1995-05-18) * column 2, line 44 - column 3, line 1; claims 1,5; figures 1,2 *	1-5	INV. F24C15/12
Y	JP 2000 240879 A (SEKISUI CHEMICAL CO LTD) 8 September 2000 (2000-09-08) * abstract *	1-5	
A	JP 3 602155 B2 (KINOSHIYOU KK) 15 December 2004 (2004-12-15) * paragraph [0025]; claim 3 *	1	
A	DE 91 09 420 U1 (GRAF JOHANN [DE]) 12 December 1991 (1991-12-12) * the whole document *	1	
			TECHNICAL FIELDS SEARCHED (IPC) F24C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	10 July 2018	Rodriguez, Alexander

CATEGORY OF CITED DOCUMENTS

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D : document cited in the application
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EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 18 15 9854

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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10-07-2018

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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