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(71) Applicant: **Karmek One S.r.l.**
31015 Conegliano (Treviso) (IT)

(72) Inventor: **CARNELOS, Elio**
31015 Conegliano (Treviso) (IT)

(74) Representative: **Feltrinelli, Secondo Andrea**
APTA S.r.l.
Patent Department
Via Ca' di Cozzi, 41
37124 Verona (IT)

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(54) **A BRAZIER FOR A STOVE, A BOILER OR A HEATING APPARATUS**

(57) The present invention concerns a brazier for stoves, boilers or heating apparatuses comprising a support frame (2), that is internally fixable or associable to a stove, boiler or heating apparatus (HA) under the combustion chamber (CC) thereof, the brazier further com-

prising a bottom component (3) that defines, with the support frame (2), a housing zone (RZ) for fuel or ashes or unburned matter coming from a combustion chamber (CC).

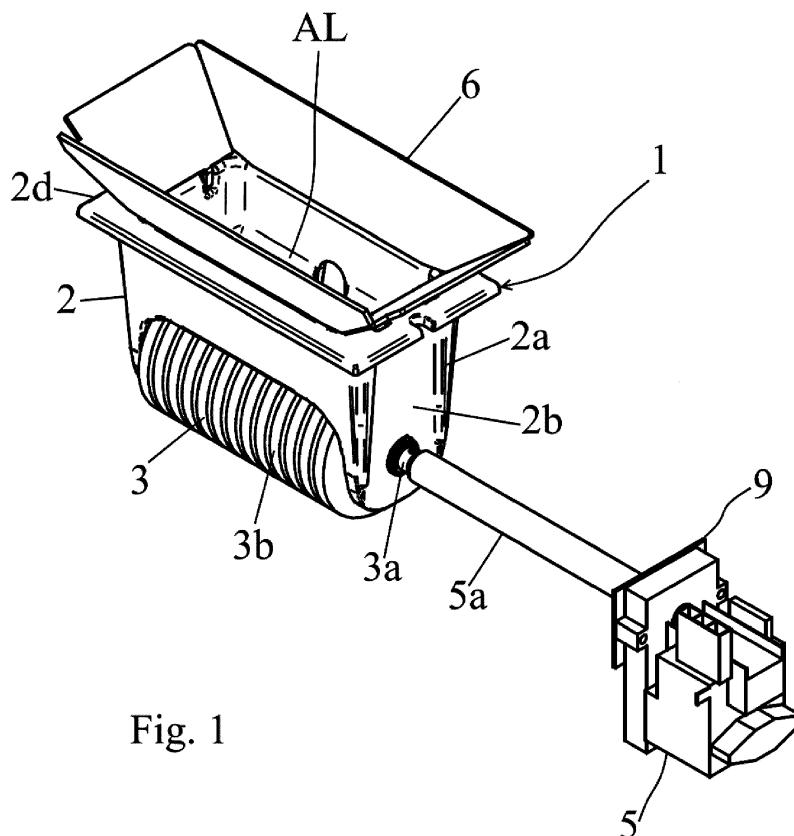


Fig. 1

Description**TECHNICAL FIELD OF THE INVENTION**

[0001] The present invention relates to a brazier for a stove, boiler or heating apparatus, as well as to a heating apparatus comprising such a brazier.

BACKGROUND OF THE INVENTION

[0002] The stoves or boilers usually comprise a combustion chamber subtended by a brazier into which unburned particles or ashes fall, particularly during combustion, which clearly dirty the brazier, which must therefore be cleaned, particularly at each new ignition of the boiler or stove.

[0003] Moreover, in the stoves or boilers so far proposed, unless complex or costly solutions are adopted, good combustion and suitable ash production are difficult to achieve.

[0004] EP1443272A1 and EP2824049A1 teach solutions according to the state of the art.

OBJECTS OF THE INVENTION

[0005] One object of the present invention is to provide a new brazier for a stove, boiler or heating apparatus.

[0006] Another object of the present invention is to provide a brazier, as stated above, which ensures that a good cleaning of the respective housing zone is simply and rapidly achieved.

[0007] A further object of the present invention is to provide a brazier capable of allowing uniform and complete combustion.

[0008] Another object of the present invention is to provide a brazier thanks to which it is possible to maintain a production of very fine and very dry ash and to obtain high efficiency and limited emissions.

[0009] Yet another object of the present invention is to provide a brazier such as to guarantee a substantially constant combustion temperature in the combustion chamber to which the brazier is associated.

[0010] Another object of the present invention is to provide a brazier capable of ensuring a greater useful life of the respective components with respect to traditional braziers.

[0011] In accordance with one aspect of the invention, a brazier according to claim 1 is provided.

[0012] In accordance with another aspect of the present invention, a heating apparatus according to claim 15 is provided.

[0013] In accordance with another aspect of the present invention, a method for managing a heating apparatus according to claim 16 is provided.

[0014] The dependent claims relate to preferred and advantageous embodiment of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] Other features and advantages of the invention will become more apparent from the description of an embodiment of a brazier and of a heating apparatus, illustrated by way of example in the accompanying drawings, in which:

- figure 1 is a perspective, slightly from above view of a brazier according to the present invention provided with angular movement means of the bottom component and with a conveying component;
- figures 2, 3 and 4 are, respectively, side, front and slightly from above perspective views of the brazier of figure 1 without angular movement means of the shaft and of the conveying component;
- figures 5 and 6 are, respectively, side and front views of the conveying component of the brazier of figure 1; and
- figures 7 and 8 are, respectively, front views of a plate element and of a spacer element of the brazier of figure 1;
- figure 9 is a side view of a shaft of the brazier of figure 1; and
- figure 10 is a perspective, slightly from above view with parts removed of a stove or heating apparatus according to the present invention.

[0016] In the accompanying drawings, the same parts or components are identified by the same reference numbers.

EXAMPLE EMBODIMENTS OF THE INVENTION

[0017] With reference to the accompanying drawings, a brazier for stoves, boilers or heating apparatuses 1 according to the present invention, is illustrated, which comprises a support frame 2, made of cast iron for example, which is fixable or associable, for example by means of screws, internally to a stove, boiler or heating apparatus HA, for example a pellet or wood stove, boiler or heating apparatus HA, under the combustion chamber CC thereof, and further comprises a bottom component 3 that defines, with the support frame 2, a housing zone RZ of the fuel or ash or unburned matter coming from a combustion chamber CC, which housing zone RZ is actually at the bottom of the combustion chamber CC. The housing zone RZ is therefore the housing zone of the brazier, which in traditional braziers is delimited by the side walls of the brazier frame and by a lower grate. A brazier according to the present invention preferably has no lower grate delimiting the respective housing zone.

[0018] In use, the bottom component 3 therefore supports the fuel to be burned in the combustion chamber CC and any ashes produced in the stove, boiler or heating apparatus of which it is part, or in which the brazier is to be installed, allowing removal of these ashes.

[0019] Essentially, the bottom component 3 defines or

is designed to define the bottom of the combustion chamber CC of a stove, boiler or heating apparatus of which it is part, or into which the brazier is to be installed.

[0020] The bottom component 3 is mounted on the support frame 2 so as to be in whole or in part angularly and/or slidably moveable with respect thereto between at least one first operating position, wherein a first portion of the bottom component 3 defines, with the support frame 2, the housing zone RZ, and at least one second operating position wherein a second portion of the bottom component 3, other than the first portion, defines, with the support frame 2, the housing zone RZ, so that it is possible to change the portion of the bottom component 3 placed to delimit the housing zone RZ.

[0021] Preferably, the operating positions are positions in which the brazier is in an operating mode, therefore it is not demounted or disengaged from the frame 2. Moreover, if desired, the respective heating apparatus HA can also be activated or remain active during movement of the bottom component 3. Even more preferably, it is also possible to move the bottom component 3 between the first and the second operating position during operation of the stove HA to which the brazier 1 is associated and/or during cooling thereof following a period of use.

[0022] According to the non-limiting example illustrated in the drawings, the bottom component 3 comprises a shaft 3a that is for example rotatably mounted on the support frame 2, and a plurality of plate or annular or disc elements 3b, suitably spaced if desired, for example substantially parallel to each other, which are mounted on the shaft 3a, for example fixed thereto or in any case fixed with respect thereto, so as to not rotate with respect to the shaft 3a. The annular elements 3b are underlying the housing zone RZ and are arranged, in use, with a substantially vertical trim. The number of plate or annular elements 3b depends on the power of the heating apparatus.

[0023] Moreover, if desired, the shaft 3a could be fixed to the support frame 2, while the plate or annular elements are rotatably mounted, preferably idle, on the shaft 3a, but the plate or annular elements 3b are, in any case, mounted for rotation with respect to the support frame 2, about a longitudinal axis x-x, that is, in particular, transverse or orthogonal to the falling axis or direction y-y of the ashes or unburned matter into the brazier 1. The axis x-x defines the pivot or articulation or rotation axis of the bottom component 3 with respect to the support frame 2. In this case, the brazier could also comprise removable fixing means of the discs to the shaft, such as pins or discs, such as to allow the plate or annular elements to be disengaged from the shaft when they should be caused to rotate, and to rigidly constrain the plate or annular elements to the shaft, after having suitably rotated them. In addition, the hole of the plate elements could be sized so as to ensure a certain friction or resistance to rotation with respect to the shaft, or the brazier could envisage some rotation-braking bushing means between the plate elements and the shaft, so that it would in any

case be possible to control the rotation and obtain a desired angle of rotation of the plate elements with respect to the shaft, from time to time.

[0024] Preferably, the bottom component 3 or rather, if envisaged, the plate or annular elements 3b, can perform full rotations, that is to say up to 360° about the axis x-x.

[0025] If envisaged, the shaft 3a can be extended along the longitudinal axis x-x, which is, in particular, an axis of symmetry of the shaft 3a and as mentioned above, is transverse or orthogonal to the falling axis or direction y-y of the ashes or unburned matter into the brazier 1; for example, in use, the axis x-x is substantially horizontal, while the axis y-y is substantially vertical.

[0026] Alternatively, the plate elements may not be annular, in which case a shaft would not be envisaged and the plate elements would be maintained in position one with respect to the other by means of suitable blocks or sleeves and with respect to the frame 2 by means of a pair of end blocks or sleeves, each rotatably fixed or mounted on a respective end plate element on one side, and rotatably mounted or fixed to the frame on the other side. In this case, the plate elements 3b would therefore be rotatably mounted with respect to the support frame 2 about a longitudinal axis x-x that is transverse or orthogonal to the falling axis or direction y-y of the ashes or unburned matter into the brazier 1.

[0027] Preferably, the bottom component 3 delimits lower windows LW, for example defined between the annular or plate elements 3b, spaced apart from each other, which lower windows LW are designed to allow the discharge of ashes from the housing zone RZ. Moreover, in this regard, the bottom component 3 may comprise spacer elements 3c, if desired mounted on the shaft 3a, each between two or more respective annular elements 3b, so as to space them and define the lower windows LW therewith.

[0028] The spacer elements 3c preferably have a diameter or width smaller than the plate or annular elements 3b, for example between about $\frac{1}{2}$ and $\frac{1}{4}$ with respect to the latter; the thickness of the spacer elements 3c is also preferably less than the thickness of the annular elements 3b, for example between about $\frac{1}{2}$ and $\frac{1}{4}$ with respect to the thickness of the latter. This expedient can also allow the correct amount of combustion air to be obtained and the homogeneity thereof on the combustion surface.

[0029] The plate or annular elements 3b may be made of steel or of a suitable material and with different diameters and thicknesses. The sizing of the diameter and the thickness of the plate or annular elements 3b, like that of any spacer elements 3c, is in any case established in such a way as to allow the best combustion (qualitatively and quantitatively), while at the same time keeping the production of ashes as contained as possible.

[0030] According to this solution, the bottom component 3 comprises a plurality of annular elements 3b alternated to the spacer elements 3c and packed with these

elements 3b, 3c, one next to the other, for example on the shaft 3a.

[0031] In accordance with the non-limiting embodiment illustrated in the drawings, the shaft 3a has at least one section 3a1 with outer profile shaped so as to be insertable to fit into or with shape coupling with a first hole 3b1 delimited by the annular elements 3b and, if envisaged, with a second hole 3c1 delimited by the spacer elements 3c, which hole 3b1, 3c1 is, preferably, substantially central to the respective annular element 3b or spacer 3c; for example, the section 3a1 has an external profile having a flat section and a circumference section, while the annular elements 3b and the spacer elements 3c delimit a respective hole 3b1, 3c1 with outer profile substantially corresponding to the profile of the section 3a1 so as to ensure a correct positioning of the annular elements 3b and of the spacer elements 3c on the shaft 3a.

[0032] According to the non-limiting example illustrated in the drawings, the bottom component 3 is mounted on the support frame 2 so as to be angularly movable or rotatable with respect thereto between at least a first operating position, in which a first portion 3b3 of the surface edge of each plate or annular element 3b of the bottom component 3 defines with the support frame 2 the housing zone RZ and at least a second operating position in which a second portion 3b4 of the surface edge of each plate or annular element 3, other than the first portion 3b3, defines with the support frame 2 the housing zone RZ. Essentially, by controlling the angular movement or rotation of the bottom component 3, the plate or annular elements 3b rotate bringing, from time to time, each own portion or rather the surface edge thereof into the housing zone RZ and outside the same, in a substantially cyclical manner. If the plate or annular elements 3b are disc-shaped, each portion 3b3, 3b4 comprises a respective angular section of the side surface of the discs. In this case, the bottom component 3 clearly has a plurality of operating positions, each corresponding to a given rotation of the plate or annular elements 3b around the axis x-x.

[0033] The bottom component could also comprise a cylindrical or substantially cylindrical or parallelepiped element (for example having five, six, eight or more faces), for example with openings or through-conduits that are transverse or orthogonal to the axis x-x, which is mounted for rotation about the longitudinal axis x-x; the bottom component does not therefore necessarily have multiple plate elements 3b.

[0034] Alternatively, the bottom component 3 can comprise a screw, endless screw or similar element slidably supported by the support frame 2 in the direction of a longitudinal axis x-x that is transverse or orthogonal to the falling axis or direction y-y of the ashes or unburned matter into the brazier 1, for example slidably supported with screw engagement in openings or holes of the frame itself, so that the relative movement of said components is obtained by controlling the screwing of the screw ele-

ment with respect to the support frame 2.

[0035] Moreover, the bottom component could comprise multiple ball, cylinder, parallelepiped (for example with five, six, eight or more faces) or similar components, mounted for rotation on a support plate or the like connected, for example fixed, to the frame and extending transversely or orthogonally to the falling axis or direction y-y of the ashes or unburned matter into the brazier 1; in this case, it would be possible to rotate, manually or by means of a suitable tool, the spherical, cylindrical or parallelepiped components with respect to the support plate.

[0036] According to another variant, the bottom component includes an element supported by and not pivoted to the support frame 2, but in any case rotatable with respect thereto, for example supported from below by L-shaped or similar brackets protruding downwards from the support frame.

[0037] The brazier 1 can be equipped with means of rotation or angular movement of the bottom component 3 with respect to the support frame 2, such as a motor 5 or the like, if desired a geared motor, designed, for example, to rotate the plate or annular elements 3b, if envisaged, with respect to the frame 2 or to the shaft 3a or the shaft 3a with plate or annular elements 3b and, if envisaged, the spacer elements 3c. The brazier 1 can then have a rod or second transmission shaft 5a of the motion from the motor 5 to the shaft or first shaft 3a, which second shaft 5a can be connected, if desired, by means of one or more screws or bolts, to the first shaft 3a; moreover, the two shafts 3a and 5a can be substantially aligned and be connected one to the other "at the head", that is to say at a respective end.

[0038] In this case, the brazier or the respective heating apparatus may be equipped with control means of the motor, such as a programmed control unit, intended to activate the latter at predetermined time intervals and for a period that is specific or that can be set by the user.

[0039] Alternatively, if the plate or annular elements 3b are envisaged, the bottom component 3, for example, could be moved manually or using a suitable tool, a crank component for example, that is engageable, if desired, with one end of shaft 3a.

[0040] More in particular, according to the embodiment illustrated in the drawings, the support frame 2 comprises a tubular body 2a, having for example a square or rectangular section delimiting an axial port AL, with the bottom component 3 positioned so as to intercept the axial port AL or rather the continuation thereof, in such a way that it intercepts the fuel that is fed through the axial port AL or the ashes or unburned matter that fall through the axial port AL from the combustion chamber CC. In this regard, the bottom component 3 and, with particular reference to the non-limiting embodiment illustrated in the drawings, the annular or plate elements 3b and, if envisaged, the spacer elements 3c, intercept the axial port AL of the support frame 2 for almost the entire transverse extension thereof, that is to say the extension in a plane transverse or rather orthogonal to the falling axis or di-

rection y-y.

[0041] The tubular body 2a can have two downward-projecting side sections or walls 2b, each delimiting a third hole 2c, the third hole 2c of a side wall 2b being aligned with the third hole 2c of the other side wall 2b. If desired, the upper end 2d of the tubular body 2a is flanged.

[0042] In this case, the shaft 3a extends, in use, through the holes 2c delimited by the two side walls 2b. The shaft 3a can be connected, for example rotatably to the frame 2, by means of suitable bushings 3a2, hollow if desired, each fitted in a respective hole 2c and designed to receive a respective end of the shaft 3a.

[0043] Sections of transverse wall 2e can extend starting from an intermediate portion of an inner face of the tubular body 2a, that is to say a face delimiting the axial port AL, which sections if desired can be inclined with respect to the longitudinal axis (actually corresponding to the falling axis or direction y-y) of the port AL delimited by the support frame 2 in which fourth holes or through-openings 2f of the combustion air supply into the housing zone RZ can be formed. Moreover, the transverse wall sections 2e have a substantially curved lower face 2e1, in use, winding around a section of upper portion, in use, of the bottom component 3 and with particular reference to the non-limiting embodiment illustrated in the drawings, of the outer surface of the annular or plate elements 3b. Preferably, the lower face 2e1 of the transverse wall sections 2e is flush to or in sliding contact with the bottom component 3 or with the annular or plate elements 3b, although it is possible to envisage lower interspaces, a few millimetres wide, for example 1-5 millimetres, between these components 2e1 and 3b.

[0044] The holes 2f can be formed in the front and/or rear part of the brazier 1 and, as indicated above, they are designed to allow the correct inlet of combustion air into the housing zone RZ, and therefore into the overlying combustion chamber CC so as to have a more homogeneous combustion even close to the edges of the brazier, while in traditional braziers the area around the edges of the brazier constitutes a hindrance to correct combustion, creating fuel (for example pellets) stagnation zones.

[0045] Advantageously, the brazier also has a hopper or funnel or conveying component 6 for the ash or of the unburned matter mounted above the support frame 2 as well as under or immediately under the combustion chamber CC, which conveying component 6, if desired, has a section of passage tapered when approaching the housing zone RZ. The conveying component 6 has attachment means to the support frame 2, for example feet or pins 6a that are, for example, insertable by fitting or snapping into respective coupler openings 2g delimited by the support frame 2 or vice versa, if desired into the upper end 2d of the tubular body 2a thereof. The coupler openings 2g can also perform the function of passageway for secondary combustion air, particular if the conveying component 6 is not mounted.

[0046] The hopper component 6 facilitates the fall of

the ashes expelled into the brazier itself and of all the unburned matter that would otherwise fall into the lower ash pan (details of which will be provided below), so as to obtain a complete combustion of all the fuel introduced.

This expedient ensures a production of very thin and very dry ash and allows high efficiency and limited emissions to be achieved.

[0047] A stove, boiler or heating apparatus HA comprising a main framework 7 defining a main combustion chamber CC, and a brazier 1 as mentioned above mounted under the combustion chamber CC so that the housing zone RZ of ashes or unburned matter is placed under the combustion chamber CC in such a way as to receive ashes or unburned matter coming from the combustion chamber CC, is also a subject matter of the present invention. More in particular, if the brazier 1 has a flanged upper end 2d, the latter is fitted in a groove delimited by the framework 7.

[0048] The heating apparatus HA also comprises a supply conduit 8 for fuel, such as pellets or wood, preferably opening into the combustion chamber CC, and can also comprise a containment pan 10 for the ashes that have fallen from the combustion chamber CC and have passed through the brazier 1, which pan 10 which is positioned under the brazier 1 or rather under the support frame 2 thereof.

[0049] In this case, the motor or the geared motor 5 can be mounted onto a wall 7a of the main framework 7 and a special gasket 9 can be envisaged between these components.

[0050] A method for managing a stove, boiler or heating apparatus HA according to the present invention therefore envisages, after the switching on or after the switching off of this apparatus HA, one or more manual or automatic control phases of the movement of the bottom component 3 between at least one first operating position and at least one second operating position, so as to mix the unburned matter remaining on the bottom of the housing zone RZ and/or discharge the residues provided in the housing zone RZ so to clean the brazier 1 without removing it with respect to the support frame 2.

[0051] To better understand the advantages that can be obtained in the combustion with a brazier according to the present invention, it is best to distinguish between two operating steps of a heating apparatus, that is to say, the burning step and the post-combustion cooling step, that is to say, when the apparatus switches off.

[0052] During the burning phase, a brazier according to the present invention has the advantage of having a high mass as a function of the respective components, and, if desired, of the usable materials, which components, when they have reached the desired temperature, contribute to keep the combustion temperature always high and constant, acting as a thermal flywheel, as well as (to maintain the temperature) less variable depending on the amount of fallen fuel (if desired pellets); in this regard, it will be noted that the amount of fuel or pellets flowing out through the supply conduit 8, if desired pro-

vided with an auger, can be extremely variable between one load and the other.

[0053] Moreover, if plate or annular elements are used, the temperature of the respective lower half, in use, is high due to the thermal conductivity of the material, which allows the combustion air entering the housing zone RZ to be preheated. This ensures an increase in the yield, thanks to recovery of the latent heat, which would otherwise be lost through thermal radiation of the external surface of the heating apparatus.

[0054] If the brazier or the respective heating apparatus is provided with the control means of the motor, then the angular rotation or movement of the annular or plate elements at predetermined intervals would allow a mixing of the unburned matter remaining on the bottom of the housing zone to be achieved, especially if the flame front is not very diffused, for example with reduced power heating apparatus, where there may be unburned matter that are distanced from the flame front itself, for example by effect of the forced ventilation. As it will be understood, as a consequence of the angular rotation or movement of the bottom component 3 or of the plate or annular elements 3b, the latter bring the unburned matter closer to the flame front and compact or group them.

[0055] The angular rotation or movement of the plate or annular elements 3b, also makes it possible to exploit as combustion area the entire circumference or outer profile thereof, i.e. rotating the plate or annular elements around the axis x-x, at regular intervals, for angles different from 360°, it will be achieved that at each rotation a different part of the outer profile of the elements 3b will face in the housing zone RZ. On this basis, it will be understood that by comparing the brazier 1 according to the present invention with one of the same size, but without a bottom component 3 (therefore a traditional fixed-flat brazier), in a brazier 1 according to the present invention, a much greater surface designed to the combustion is available, therefore the useful life of the bottom component itself is also extended, which will wear over a time much longer than traditional braziers.

[0056] During the post-combustion cooling phase, cooling of the plate elements 3b as soon as the combustion has been completed results in the further advantage of detachment of the combustion residues in a way that is in fact natural, by effect of the springback of the material of the plate elements 3b, which had thermally expanded during combustion itself. By then rotating the plate elements 3b, continuously if desired, in this step, the residues are discharged. It is therefore guaranteed to obtain a suitably clean brazier before each new ignition, without the need to remove, clean and reassemble it.

[0057] This advantage is even more apparent if the fuel is of poor quality, such as low quality pellets for example, as this fuel tends to have an amount of residues that is very high and that usually remains adherent on the traditional braziers. As regards water-based heating apparatuses in particular, the advantage is even more concrete, especially when there are systems with large

amounts of water circulating in the boiler and which cause condensation effects in the combustion chamber during heating. In this case, the ash mixed with the combustion residues in traditional braziers tends to stick due to the moisture, but it is indeed thanks to the mixing (owing to the rotation of the bottom component) of the unburned matter at regular intervals, and to the natural detachment of the natural combustion residues during cooling, in a brazier according to the present invention it is possible to have a full guarantee of the cleanliness of the brazier itself at the end of combustion.

[0058] Moreover, thanks in particular to the expedient according to which the bottom component is angularly and/or slidably moveable with respect to the support frame as mentioned above, particularly if the bottom component delimits lower windows, a brazier according to the present invention clearly ensures the maintenance of cleanliness inside the brazier, even during the first ignition phase and therefore the fall of the ashes during all the phases of use of the respective heating apparatus, although during this phase, the movement or rotation of the bottom component can be periodically, and not continuously, controlled as instead preferably occurs during the cooling phase.

[0059] As regards the prior documents mentioned above, EP1443272A1 teaches a temporary collection component that is neither part of the brazier, nor is designed to define the housing zone of the brazier. Moreover, the brazier of this prior document is a standard brazier provided with a grate.

[0060] With regard, on the other hand, to EP2824049A1, this does not teach, among other things, a brazier that is fixable or associable under the combustion chamber of a stove, or a bottom component such as that of a brazier according to the present invention.

[0061] Modifications and variations of the invention are possible within the scope of protection defined by the claims.

Claims

1. A brazier for stoves, boilers or heating apparatuses comprising a support frame (2) that can be fixed or associated internally to a stove, boiler or heating apparatus (HA) under the combustion chamber (CC) of said stove, boiler or heating apparatus (HA), said brazier further comprising a bottom component (3) defining, with said support frame (2), a housing zone (RZ) for fuel or ashes or unburned matter coming from a combustion chamber (CC), said bottom component (3) being mounted on said support frame (2) so as to be in whole or in part angularly and/or slidably movable with respect thereto (2) between at least one first operating position, wherein a first portion (3b3) of said bottom component (3) defines with said support frame (2) said housing zone (RZ), and at least one second operating position wherein a sec-

- ond portion (3b4) of said bottom component (3) other than said first portion (3b3) defines with said support frame (2) said housing zone (RZ), so that it is possible to change the portion of said bottom component (3) placed to delimit said housing zone (RZ). 5
2. A brazier according to claim 1, wherein said bottom component (3) comprises:
 - a plurality of plate or annular elements (3b) 10 mounted for rotation with respect to said support frame (2) about a longitudinal axis (x-x) transverse or orthogonal to the falling axis or direction (y-y) of the ashes or unburned matter into the brazier (1); or
 - a substantially cylindrical or parallelepiped element mounted for rotation about a longitudinal axis (x-x) transverse or orthogonal to the falling axis or direction (y-y) of the ashes or unburned matter into the brazier (1); or 15
 - a screw element slidably supported by said support frame (2) in the direction of a longitudinal axis (x-x) transverse or orthogonal to the falling axis or direction (y-y) of the ashes or unburned matter into the brazier (1); or 20
 - ball, cylinder, parallelepiped components mounted for rotation on a support plate connected to said support frame and extending transversely or orthogonally with respect to the falling axis or direction (y-y) of the ashes or unburned matter into the brazier (1). 25
 3. A brazier according to claim 2, wherein said bottom component (3) comprises a shaft (3a) mounted on said support frame (2) and a plurality of plate or annular elements (3b) mounted on said shaft (3a) or a substantially cylindrical or parallelepiped element mounted on said shaft (3a), said longitudinal axis (x-x) corresponding to the longitudinal axis of said shaft (3a). 30
 4. A brazier according to claim 2, wherein said bottom component (3) comprises a shaft (3a) mounted on said support frame (2) and a plurality of plate or annular elements (3b) mounted on said shaft (3a), wherein said longitudinal axis (x-x) corresponds to the longitudinal axis of said shaft (3a) and wherein said plate or annular elements (3b) are underlying said housing zone (RZ) and are arranged, in use, with a substantially vertical trim. 35
 5. A brazier according to claim 2 or 4, wherein said plate or annular elements (3b) are spaced apart from each other so as to define lower windows (LW) designed to allow the discharge of ashes from said housing zone (RZ). 40
 6. A brazier according to claim 5, comprising spacer elements (3c) designed to space apart said plate or annular elements (3b) so as to define with them said lower windows (LW), said spacer elements (3c) having a diameter or width smaller than said plate or annular elements (3b). 45
 7. A brazier according to any one of the preceding claims, comprising means of rotation or angular movement of said bottom component (3) with respect to said support frame (2). 50
 8. A brazier according to claim 7, wherein said bottom component (3) comprises a plurality of plate or annular elements (3b) mounted for rotation with respect to said support frame (2) about a longitudinal axis (x-x) transverse or orthogonal to the falling axis or direction (y-y) of the ashes or unburned matter into the brazier (1), said brazier comprising means of rotation or angular movement of said plate or annular elements (3b) about said longitudinal axis (x-x) with respect to said support frame (2). 55
 9. A brazier according to claim 7 or 8, comprising control means for controlling said means of rotation or angular movement, said control means being intended to activate the latter at pre-determined time intervals and for a specific or settable time period.
 10. A brazier according to any one of the preceding claims, comprising a hopper or funnel or conveying component (6) for the ashes or unburned matter mounted above said support frame (2) as well as under or immediately under a combustion chamber (CC).
 11. A brazier according to any one of the preceding claims, wherein said support frame (2) comprises a tubular body (2a) delimiting an axial port (AL), said bottom component (3) being positioned so as to intercept said axial port (AL) in such a way that it intercepts the fuel that is fed through said axial port (AL) or the ashes or unburned matter that fall through said axial port (AL).
 12. A brazier according to claim 11 and according to any one of the preceding claims when depending upon claim 3, wherein said tubular body (2a) has two side sections or walls (2b) projecting downwards and each delimiting a third hole (2c), with the third hole (2c) of one side wall (2b) being aligned with the third hole (2c) of the other side wall (2b), said shaft (3a) extending through said third holes (2c) delimited by said two side walls (2b).
 13. A brazier according to claim 11 or 12, wherein, starting from an intermediate portion of the axial port (AL) delimited by said tubular body (2a) transverse wall sections (2e) extend, fourth holes or through open-

ings (2f) being formed in said transverse wall sections (2e) for the supply of combustion air in said housing zone (RZ).

14. A brazier according to claim 13, wherein said transverse wall sections (2e) have a lower face (2e1) substantially curved, in use, winding around a section of an upper portion, in use, of said bottom component (3). 5
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15. A stove, boiler or heating apparatus (HA) comprising a main frame (7) defining a combustion chamber (CC), as well as a brazier (1) according to any of the preceding claims mounted under said combustion chamber (CC) so that said housing zone (RZ) of the ashes or unburned matter is located under said combustion chamber (CC) in such a way as to receive 15
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16. A method for managing a stove, boiler or heating apparatus (HA) according to claim 15, comprising, after said stove, boiler or heating apparatus (HA) has been switched-on or switched-off, at least one control phase of the movement of said bottom component (3) of said brazier (1) between at least one first operating position and at least one second operating position so as to mix the residual unburned matter left at the bottom of said housing zone (RZ) and/or 25
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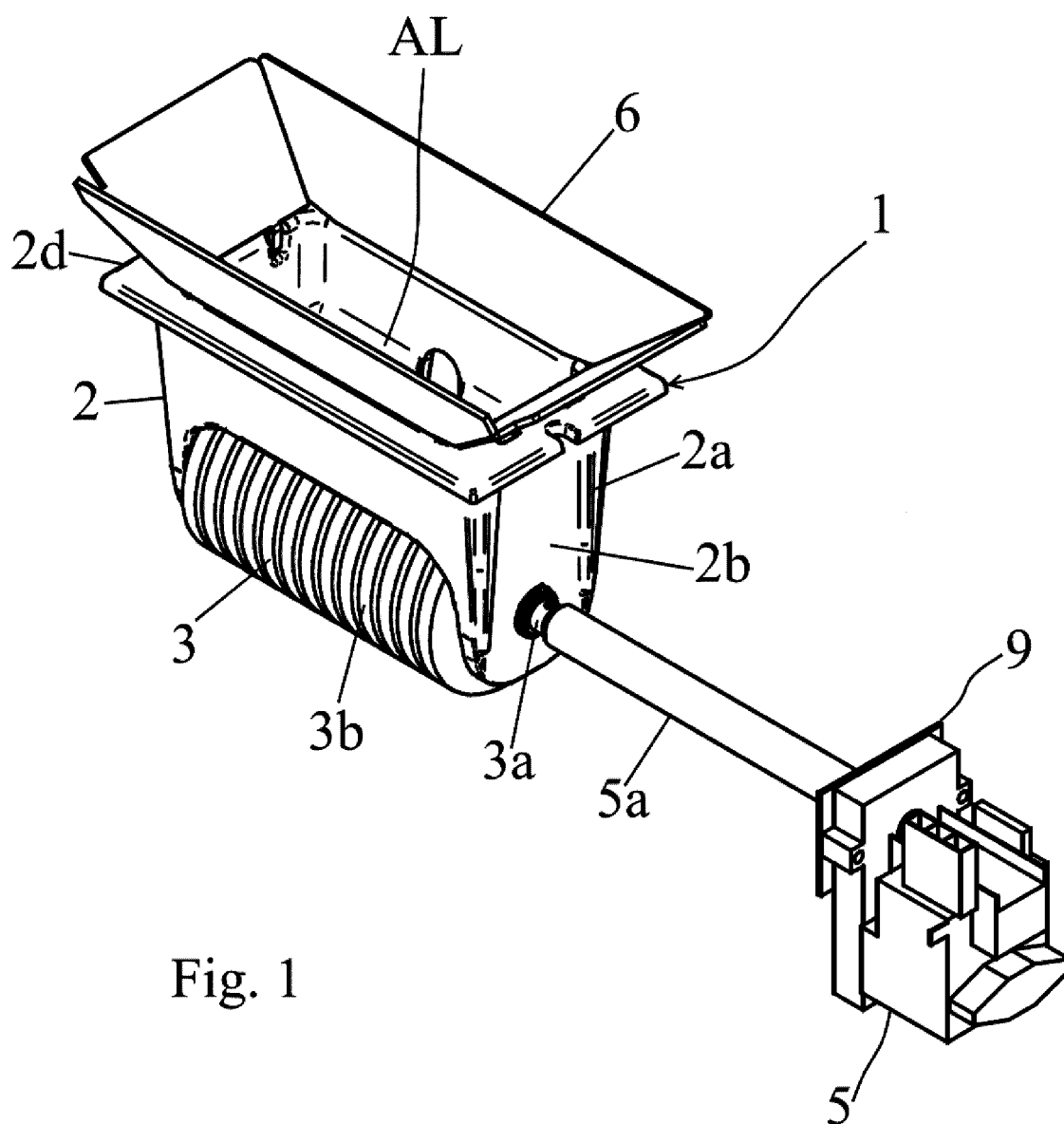


Fig. 1

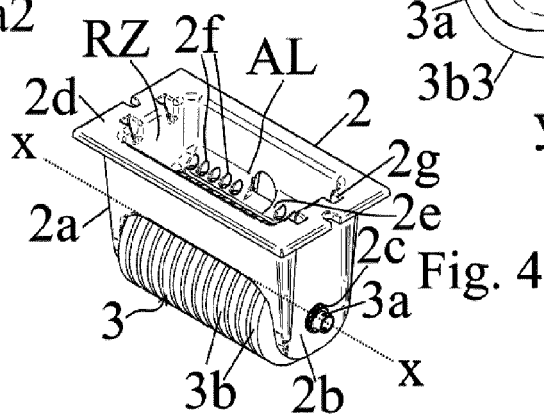
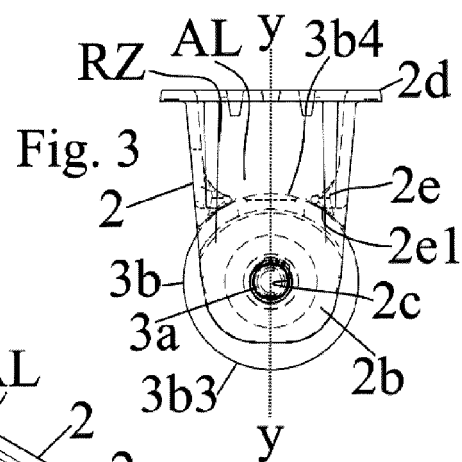
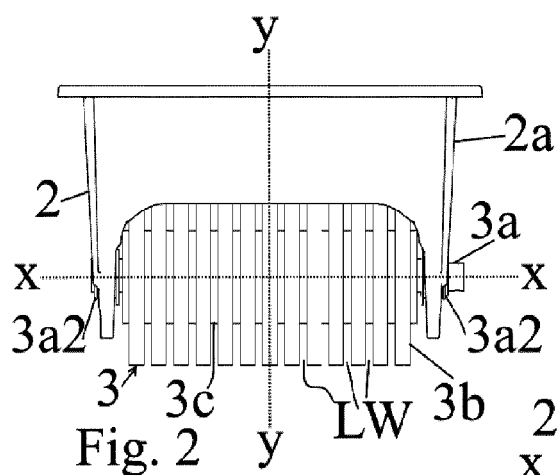


Fig. 5

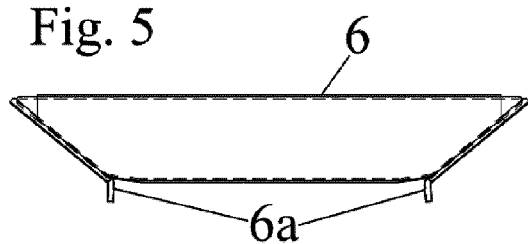
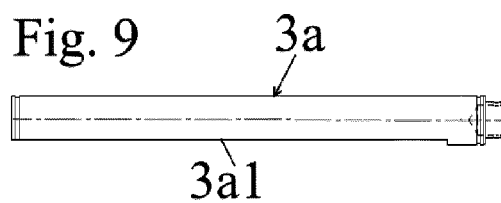
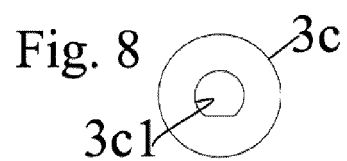
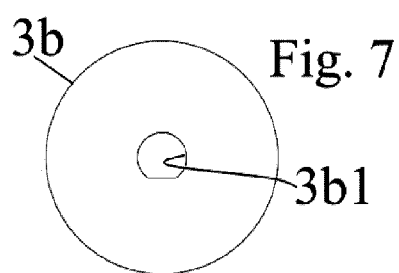
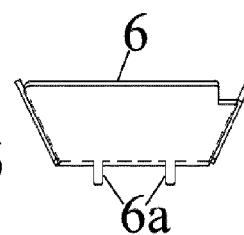
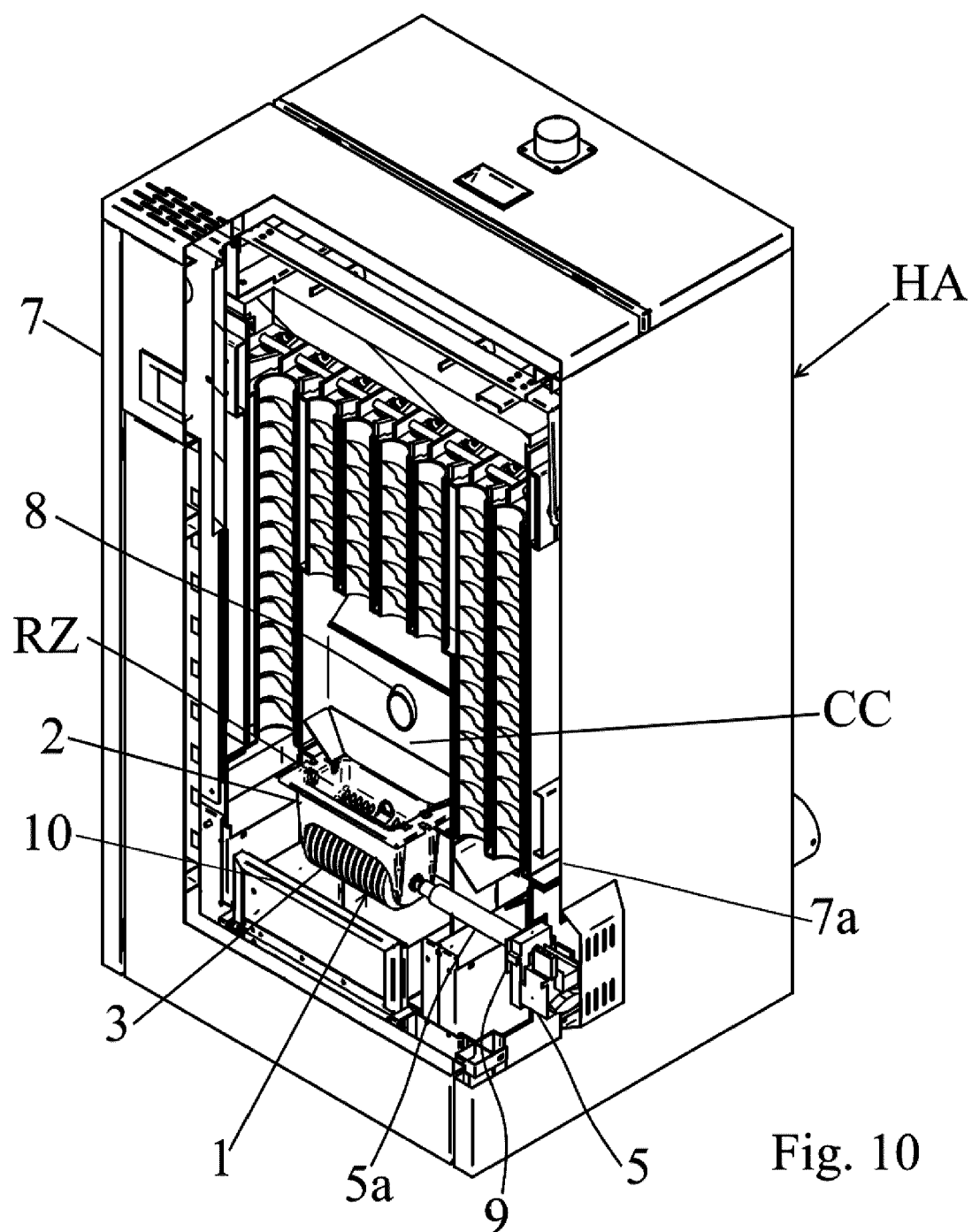


Fig. 6







EUROPEAN SEARCH REPORT

Application Number
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X	EP 1 443 272 A1 (PALAZZETTI LELIO SPA [IT]) 4 August 2004 (2004-08-04) * paragraph [0026] - paragraph [0049]; figures 1-4 *	1-3,7, 9-12,15, 16	INV. F24B1/02 F23H7/00 F23H9/02
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			TECHNICAL FIELDS SEARCHED (IPC)
			F24B F23H
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 13 December 2016	Examiner Makúch, Milan
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EP 2824049	A1	14-01-2015	NONE

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