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(54) **Kitchen range**

Küchenherd

Fourneau de cuisine

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Description

[0001] The present invention relates to a kitchen range as defined in the preamble of claim 1.

[0002] Traditional kitchen ranges comprise two separate fireboxes. The baking oven has its own smoke duct leading into a chimney flue or at least close to the chimney flue juncture, and below the range top there is a separate firebox with a door and an ash box for heating the range top.

[0003] This prior-art solution works well and its only drawback is that the structure is complex and consequently expensive, and that it takes up a large space. As the fireboxes and ash boxes are located side by side, prior-art kitchen ranges always have a structure of a relatively large width and are therefore not always applicable for use in small spaces.

[0004] E.g. publications DE-C-390090 and DE-B-1040216 present structures in which no wood is burned in the baking oven but the hot combustion gases from the firebox of the kitchen range can be either directed to heat the range top or passed around the oven to heat it. However, heating the baking oven properly and uniformly by this method is difficult, if not impossible, because the temperature of the combustion gases falls rapidly as they circulate around the baking oven. Moreover, the structure is not substantially smaller or lighter than traditional kitchen ranges because the only difference as compared with the traditional solution is that it has no ash box under the baking oven.

[0005] The object of the present invention is to eliminate the drawbacks described above. A specific object of the invention is to present a new type of baking oven structure that allows more economical manufacture of baking ovens and makes it possible to use them even in places where present fireplaces with corresponding properties cannot be accommodated and that is simpler in structure and therefore cheaper to manufacture.

[0006] As for the features characteristic of the invention, reference is made to the claims.

[0007] The kitchen range of the invention comprises a baking oven and a first smoke duct for conveying the combustion gases from the oven into a chimney flue, and a range top. According to the invention, the baking oven constitutes the only wood combustion chamber in the kitchen range, the first smoke duct conveying the combustion gases from the baking oven substantially directly into the chimney flue. In addition, the kitchen range comprises a second smoke duct, which conveys the combustion gases from the baking oven via the range top into the chimney flue to allow the range top to be heated by the combustion gases flowing from the baking oven.

[0008] The smoke duct leading out of the baking oven preferably forks into a first smoke duct and a second smoke duct. The forking may practically occur already in the oven, with two separate smoke ducts starting from the baking oven, or with a single smoke duct starting

from the oven but forking into to separate smoke ducts relatively soon after the baking oven space.

[0009] In an embodiment of the invention, a control element is used below the range top to guide the combustion gases. It can be adjusted to two different positions so that, in a first position, it will direct the combustion gases right up to the lower surface of the range top, causing the range top to be heated. In a second position, the control element directs the combustion gases past the range top towards the chimney flue so that the range top is not significantly heated. Thus, the control element in its different positions opens alternatively the first or the second smoke duct between the baking oven and the chimney flue juncture.

[0010] The separate smoke ducts may be implemented as separate channels in the internal structures of the kitchen range, conveying the combustion gases separately into the chimney flue, or the smoke ducts may also combine into a single exit duct that conveys the combustion gases into the chimney flue.

[0011] In an embodiment of the invention, the first smoke duct is provided with a first shutter element, such as a damper, flap or valve, by means of which the first smoke duct can be opened or closed if desired, independently of the gas flow in the second smoke duct. Similarly, the second smoke duct may be provided with a second shutter element, flap or valve, by means of which the second smoke duct can be opened or closed independently of the gas flow in the first smoke duct.

[0012] In an embodiment of the invention, the kitchen range is provided with a common control element that can be used to direct the combustion gases alternatively between the first and the second smoke ducts. Such a control element may consist of e.g. a flap valve disposed at the fork between the first and the second smoke ducts. Of course, other types of structure can also be used.

[0013] In the kitchen range of the invention, wood is only burned in the baking oven, and the kitchen range can be used according to need either in stove mode, in which case the combustion gases flow by the route below the range top, or in oven mode, in which case the baking oven is effectively heated and heat is effectively stored in the brick mass without significantly heating the range top. The location of the chimney flue juncture in the kitchen range may vary relatively freely. It is also possible to have the first smoke duct convey the combustion gases via a chimney flue juncture in the lower part of the structure into a chimney flue while the second smoke duct takes the combustion gases by the range top route via a chimney flue juncture in the upper part of the structure either into the same or a different chimney flue.

[0014] By appropriate adjustment of draught and smoke duct dimensioning, the combustion can be so controlled that, in stove mode, the main combustion only occurs just below the range top, thus rapidly heating the range top without significantly heating the oven. In oven

mode, combustion can be mainly effected in the oven area, thus allowing the heat to be effectively and rapidly stored in the structure surrounding the oven-. Moreover, the structure of the invention has the advantage of occupying only a small space as it obviates the need for a separate stove door and an ash door below it and for a stove firebox and ash box. Therefore, the structure significantly reduces the number of expensive cast-iron parts needed in the kitchen range. As the overall structure of the kitchen range thus becomes significantly narrower and lighter without impairing its operating characteristics, the kitchen range can be used in new environments where the old structures have been inapplicable due to their weight or external dimensions.

[0015] In the following, the invention will be described in detail by referring to the attached drawings, wherein

Fig. 1 presents a cross-section of a kitchen range according to the invention, seen in lateral view,

Fig. 2 presents a horizontal cross-section of the structure in Fig. 1, and

Fig. 3 presents another possible cross-section of the structure in Fig. 1.

[0016] As shown in the vertical cross-section in Fig. 1, the kitchen range comprises a baking oven 1 provided with a door 7 and, below the oven, an ash box 9 provided with an ash scuttle 8. A smoke duct for conveying the combustion gases from the baking oven starts from the back of the oven in an upward direction and immediately forks into a first smoke duct 3 and a second smoke duct 2. Depending on how the structure is to be defined, it can also be said that the first smoke duct starts from the baking oven and the second smoke duct branches off from it immediately after the baking oven.

[0017] The first smoke duct 3 leads horizontally backward towards the rear corners and, as shown in Fig. 2, downward along the rear part of the kitchen range towards a chimney flue juncture at the lower end, whereas the second smoke duct 2 rises upward under the range top 5, where it bends horizontally rearward and, as shown in Fig. 2, runs downward at the middle along the rear part of the kitchen range towards the chimney flue juncture. In this embodiment, only the second smoke duct 2 is provided with a shutter element 6, i.e. a damper, by means of which the second smoke duct can be closed or opened for gas flow. Thus, the first smoke duct 3 is always open and part of the combustion gases can flow through it into the chimney flue even when the shutter element 6 is open and the range top 5 is being heated. Of course, the first smoke duct 3 may as well be provided with a damper or equivalent to allow it to be closed and opened.

[0018] Moreover, as an alternative solution, Fig. 1 shows at the fork between the first and the second smoke ducts a control element, indicated by a broken line, consisting of a hinged damper or flap. In one limit position it closes the first smoke duct 3, and in the other

limit position it closes the second smoke duct 2. In a suitable intermediate position, it divides the gas flow between both smoke ducts.

[0019] As exemplified by the embodiment in Fig. 3, the kitchen range may also have only one smoke duct 4 in its rear part, leading downward to convey the gas flow from both the first and the second smoke ducts into the chimney flue.

[0020] Another possibility is to have one or more downward-leading smoke ducts disposed in one of the lateral parts of the kitchen range, as an alternative or in addition to the embodiments in which the smoke ducts are in the rear part.

[0021] As illustrated by Fig. 1, the kitchen range has an ash removal duct 10 leading from the front part of the baking oven 1 into the ash box 9 below it. The ash removal duct is provided with a hinged or detachable cover 11 and with a fire grate 12 under the cover. Thus, by opening the cover 11, embers still aflame in the baking oven can be drawn onto the fire grate, where an intensive air flow can be produced via the ash scuttle 8. In this way, the embers can be quickly and effectively burned out to make the oven ready for baking.

[0022] In the foregoing, the invention has been described by way of example by the aid of the attached drawings, but different embodiments of the invention are possible within the scope of the inventive idea defined by the claims.

Claims

1. Kitchen range comprising a baking oven (1), a first smoke duct (3) for conveying the combustion gases from the baking oven into a chimney flue, and a range top (5), the baking oven (1) constituting the wood combustion chamber in the kitchen range and the first smoke duct (3) conveying the combustion gases from the baking oven directly into the chimney flue and the kitchen range comprising a second smoke duct (2), which conveys the combustion gases from the baking oven via the range top (5) into the chimney flue.
2. Kitchen range as defined in claim 1, **characterised in that** a smoke duct starting from the baking oven forks into a first smoke duct (3) and a second smoke duct (2).
3. Kitchen range as defined in claim 1, **characterised in that** the first smoke duct (3) and the second smoke duct (2) start separately from the baking oven (1).
4. Kitchen range as defined in claim 1, **characterised in that** the kitchen range comprises a control element placed near the range top, by means of which the combustion gases can be directed alternatively

via a route by the range top or past it.

5. Kitchen range as defined in claim 1, **characterised in that** the first smoke duct (3) is provided with a first shutter element for closing and opening it for gas flow. 5
6. Kitchen range as defined in claim 1, **characterised in that** the second smoke duct (2) is provided with a second shutter element (6) for closing and opening it for gas flow. 10
7. Kitchen range as defined in claim 2, **characterised in that** it comprises a control element at the fork between the first and the second smoke ducts to direct the combustion gases alternatively into the first smoke duct or into the second smoke duct. 15
8. Kitchen range as defined in claim 1, **characterised in that** the first and the second smoke ducts combine into a single exit duct before the chimney flue. 20
9. Kitchen range as defined in claim 1, **characterised in that** the first and the second smoke ducts convey the combustion gases separately into the chimney flue. 25

Patentansprüche

1. Küchenbereich enthaltend einen Backofen (1), ein ersten Rauchröhre (3) für die Zufuhr der Verbrennungsgase aus dem Backofen in einen Schornsteinrauchfang und einer Bereichsspitze (5), wobei der Backofen (1) die Holzverbrennungskammer im Küchenbereich darstellt und die erste Rauchröhre (3) die Verbrennungsgase aus dem Backofen direkt in den Schornsteinrauchfang führt und der Küchenbereich eine zweite Rauchröhre (2), die die Verbrennungsgase aus dem Backofen über die Bereichsspitze (5) in den Schornsteinrauchfang führt, aufweist. 30
2. Küchenbereich nach Anspruch 1, **dadurch gekennzeichnet, daß** eine am Backofen beginnende Rauchröhre sich in die erste Rauchröhre (3) und die zweite Rauchröhre (2) gabelt. 35
3. Küchenbereich nach Anspruch 1, **dadurch gekennzeichnet, daß** die erste Rauchröhre (3) und die zweite Rauchröhre (2) voneinander getrennt vom Backofen (1) aus beginnen. 40
4. Küchenbereich nach Anspruch 1, **dadurch gekennzeichnet, daß** der Küchenbereich ein in der Nähe der Bereichsspitze angeordnetes Kontrollelement aufweist, wodurch die Verbrennungsgase alternativ über einen Weg durch oder 45

hinter der Bereichsspitze geleitet werden können.

5. Küchenbereich nach Anspruch 1, **dadurch gekennzeichnet, daß** die erste Rauchröhre (3) mit einem ersten Verschlusselement zum Schließen und Öffnen für den Gasfluss versehen ist.
6. Küchenbereich nach Anspruch 1, **dadurch gekennzeichnet, daß** die zweite Rauchröhre (2) mit einem zweiten Verschlusselement (6) zum Schließen und Öffnen für den Gasfluss versehen ist.
7. Küchenbereich nach Anspruch 2, **dadurch gekennzeichnet, daß** er ein Kontrollelement an der Gabelung zwischen der ersten und der zweiten Rauchröhre aufweist, um die Verbrennungsgase alternativ in die erste Rauchröhre oder in die zweite Rauchröhre zu leiten.
8. Küchenbereich nach Anspruch 1, **dadurch gekennzeichnet, daß** die erste und die zweite Rauchröhre sich in einen einzigen Ausgang vor dem Schornsteinrauchfang verbinden.
9. Küchenbereich nach Anspruch 1, **dadurch gekennzeichnet, daß** die erste und die zweite Rauchröhre die Verbrennungsgase voneinander getrennt in den Schornsteinrauchfang führen. 50

Revendications

1. Fourneau de cuisine comprenant un four de cuisson (1), un premier conduit de fumée (3) pour conduire les gaz de combustion du four de cuisson dans un conduit de cheminée, et un dessus de fourneau (5), le four de cuisson (1) constituant la chambre de combustion de bois dans le fourneau de cuisine et le premier conduit de fumée (3) conduisant les gaz de combustion du four de cuisson directement dans le conduit de cheminée et le fourneau de cuisine comprenant un second conduit de fumée (2) qui conduit les gaz de combustion du four de cuisson dans le conduit de cheminée via le dessus de fourneau (5).
2. Fourneau de cuisine selon la revendication 1, **caractérisé en ce qu'un** conduit de fumée partant du four de cuisson bifurque en un premier conduit de fumée (3) et un second conduit de fumée (2).
3. Fourneau de cuisine selon la revendication 1, **caractérisé en ce que** le premier conduit de fumée (3) et le second conduit de fumée (2) partent séparément du four de cuisson (1). 55

4. Fourneau de cuisine selon la revendication 1, **caractérisé en ce que** le fourneau de cuisine comprend un élément de commande placé près du dessus de fourneau, au moyen duquel les gaz de combustion peuvent être dirigés via un trajet par le dessus de fourneau ou bien à l'écart de celui-ci. 5
5. Fourneau de cuisine selon la revendication 1, **caractérisé en ce que** le premier conduit de fumée (3) est équipé d'un premier élément obturateur pour le fermer et l'ouvrir à l'écoulement de gaz. 10
6. Fourneau de cuisine selon la revendication 1, **caractérisé en ce que** le second conduit de fumée (2) est équipé d'un second élément obturateur (6) pour le fermer et l'ouvrir à l'écoulement de gaz. 15
7. Fourneau de cuisine selon la revendication 2, **caractérisé en ce qu'il** comprend un élément de commande à la bifurcation entre le premier et le second conduit de gaz pour envoyer les gaz de combustion dans le premier conduit de gaz ou bien dans le second conduit de gaz. 20
8. Fourneau de cuisine selon la revendication 1, **caractérisé en ce que** le premier et le second conduit de gaz se combinent en un unique conduit de sortie avant le conduit de cheminée. 25
9. Fourneau de cuisine selon la revendication 1, **caractérisé en ce que** le premier et le second conduit de fumée conduisent les gaz de combustions séparément dans le conduit de cheminée. 30

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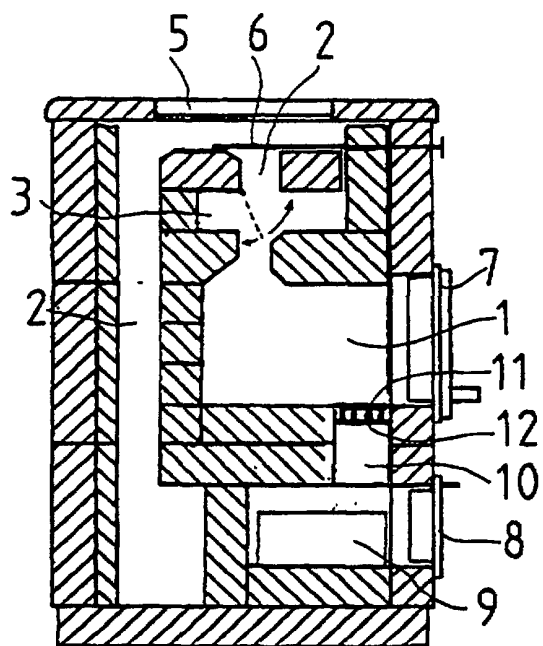


Fig 1

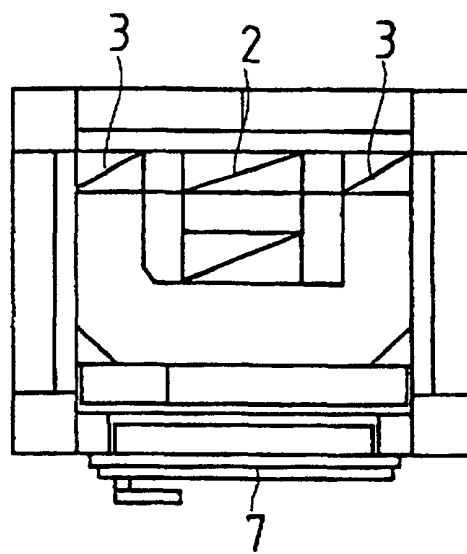


Fig 2

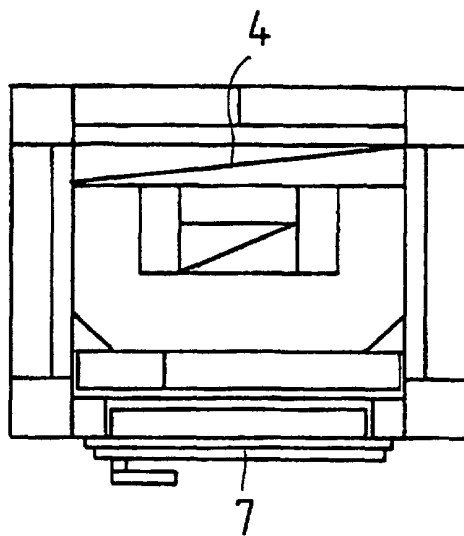


Fig 3