

The invention relates to a cooking vessel according to the preamble of claim 1.

5 A cooking vessel is known from GB-A-394 980, said vessel having a pot-like container, which is intended to receive the food which is to be prepared, and a lid which is to be set upon the latter and closes the filling opening. Lamps which generate rays are accommodated in the interior space of the lid. The interior space of the lid is covered with a glass
10 plate. The lid housing projects over the glass plate radially outwards and is supported on an upper flattened rim of the double-wall container. The container is provided with a circumferential stand. Use of the heatable lid as a cooking plate is not
15 considered and is also not possible.

The cooking vessel according to US-A-2 538 567 has a heatable lid which - after being turned round - can also be used as a cooking plate. In this connection, the container stands directly upon a heating spiral
20 provided in the interior of the lid, this being undesirable. A bayonet locking arrangement is provided for the purpose of sealing lid and container.

The cooking vessel according to FR-A-2 120 637 likewise has a heatable lid, although it is not
25 possible to use it as a cooking plate.

In the case of the heatable lid for a cooking vessel according to CH-A-260 048, the lid housing is covered by a metallic radiating surface. The lid housing does not project out over the radiating surface
30 so that only unsatisfactory sealing of the cooking vessel can be achieved when the lid is used as such. When using the lid as a cooking plate, the container is not held laterally.

In the case of the heatable lid known from FR-A-563 645, the latter has a circumferential inner folded edge in order to receive the container when using the lid as a cooking plate. A cover plate for the heat source in the lid interior space is not, however,
35 provided. As a result, the container has no secure stand in the lid used as a cooking plate. Moreover, the rim of the lid, when used as such, overlaps the upper rim of the container on the outside so that only unsatisfactory sealing in respect of steam escape when cooking can be achieved.

45 The object of the present invention is to propose a novel, multi-purpose heating system for a cooking vessel of the generic kind, in which case when using the lid as such a good seal of the vessel interior space is guaranteed and when using the lid as a cooking
50 plate a secure position of the container in respect of lateral displacement is guaranteed.

This object is achieved according to the invention substantially with the features of the characterising part of claim 1.

The heating system is to radiate its energy substantially in the direction of the pot interior space. The food, which is received in the container of the cooking vessel, can thereby be heated from above, with lid set on the top, by means of the heat source accommodated in the latter and thereby be cooked. The lid - when turned round - can also be used as a heating plate upon which the container or any other container can be set in order to heat the food contained therein from below and to cook it thereby. Glass ceramic plates of the kind provided are known per se for cooking zones of electric ranges. If the lid according to the invention is used as such, the heat-resistant glass ceramic plate protects the electric heat source arranged behind it against the entrance of rising steam and rising vapours. If the lid is used as a cooking plate, the glass ceramic plate performs its function known per se as positioning surface for the container containing the food which is to be prepared and can accommodate high container weights on account of its stability. The circumferential lid rim, which projects over the outer surface of the plate formed as a glass ceramic plate and which fits into a circumferential rim bead of the container rim, guarantees a concentric and thus substantially tight support of the lid on the container rim. If the lid is used as a cooking plate, the then upright lid rim is used to secure the position of the container which has been set in place, which container can thus less easily be displaced laterally, unintentionally. Owing to the fact that the circumferential rim bead of the container lies radially outside the container wall, the filling opening of the container is kept completely free. As the lid rim is adapted to the diameter of the rim bead of the container, a further feature proposed with the invention can be realized in a simple manner, according to which the inside diameter of the recess, which is delimited by the lid rim running around in a circular manner, is slightly greater than the outside diameter of the container in its base area. The container thus fits exactly into the recess, surrounded by the lid rim, and onto the glass ceramic plate if the lid is used as a cooking plate.

The lid preferably has two diametrically opposed foot-like projections with planar contact surface. Despite the heating of the lid, this allows the latter to be used as a heating plate without the work surface, on which it is set up, being burnt, more particularly if the projections are formed of a material with poor thermal conduction, such as plastics material. The foot-like projections thereby each form part of a lid handle which can then, for example, be produced in one piece from material with poor thermal conduction, such as plastics material.

5 The contact surfaces formed by the projections preferably lie outside and at a distance from the surface of the lid so that the heating upper side of the lid is at a distance from the work surface on which the lid is set up as a cooking plate.

According to a further development of the object of the invention, a control device for the temperature of the heat source is arranged in one of the lid handles.

10 This control device has, for example, an adjusting wheel, the adjustment of which is indicated both upwards and downwards. This guarantees that the user can read off the adjusted cooking level in each case easily from above, irrespective of whether the lid is
15 used as such or as a cooking plate.

For simple assembly of the lid according to the invention it is provided that the heat source be clamped by means of spring between the base of a housing, accommodated in the interior space of the lid,
20 and the glass ceramic plate, which is firmly inserted into the opening lying opposite the base of the housing. This presupposes that the glass ceramic plate is fixed firmly at its outer rim with the housing adjacent the opening of the latter, for example is
25 cemented in. The intermediate space between the housing and the lid wall can serve to accommodate heat insulation material.

The fixation of the housing to the lid can preferably be effected so that the housing with its rim
30 determining the opening is beaded about the lower rim edge of the lid and thus forms the circumferential lid rim which is, as a result, additionally reinforced.

In an alternative embodiment of the invention it can also be provided that the glass ceramic plate of
35 the lid used as such, that is, with glass ceramic plate facing downwards, be drawn down at its outer rim and can be set with a planar face on a flat area of the container rim which is bent outwards from the container wall. As a result, a particularly favourable seal of
40 the interior space of the lid in respect of penetrating moisture can be achieved.

In a further development of the invention, the glass ceramic plate has a central area, forming a planar positioning surface, and an outer rim which
45 surrounds the latter, is angled away in comparison, downwards and outwards and can be received in a rim bead of the container rim. Instead of the angled-away arrangement, the glass ceramic plate can also be arched in a corresponding manner. In these developments the
50 glass ceramic plate thus arches over the container interior space somewhat. In this case, the container preferably tapers towards its base so that it fits with its base area in turn on the planar positioning surface of the glass ceramic plate and is centered exactly over

the heat source of the lid used as a cooking plate.

Further aims, features, advantages and possibilities of use of the present invention follow from the subsequent description of exemplary
5 embodiments with the aid of the drawing. In this connection, all the features described and/or represented in the Figures independently or in any suitable combination establish the subject-matter of the present invention, this also being irrespective of
10 their combination in the claims or the referral of the latter.

Figure 1 shows a cooking vessel presenting the invention, diagrammatically in vertical section in the region of the lid.

15 Figure 2 shows a view of the lid from below according to direction A of Figure 1.

Figure 3 shows, in detail and enlarged compared with Figure 1, another embodiment of the lid according to the invention in its rim area and

20 Figure 4 diagrammatically shows in a vertical section another embodiment of the cooking vessel according to the invention.

The cooking vessel consists, according to Figure 1, of a pot-, saucepan- or pan-like container 1 for
25 receiving the food which is to be prepared and a lid 2 which is to be set upon the latter and closes the filling opening of the container 1. The lid 2 has, in the case represented, two lid handles 3 made of heat-insulating material, namely plastics material.
30 Arranged in the interior space 4, over which arches the lid wall, there is an electric heat source 5 which consists, for example, of a light heating body or another heat source which by means of heat radiation radiates sufficient energy onto the foodstuffs to be
35 cooked located in the container 1. A component part of the electric heat source 5 can, for example, also be a grill bar. With the aid of the lid 2 which is set upon the container 1 according to Figure 1, the foodstuffs to be cooked located in the receptacle 1 can be heated,
40 cooked and/or grilled from above. The interior space 4 of the lid 2 is covered with a glass ceramic plate 6 or another plate which lets through the heat radiation of the heat source 5 such that the heat source 5 lies protected against entrance of moisture from the
45 receptacle 1 during the cooking process or when cleaning. In the case represented, the glass ceramic plate 6 is held in the opening 14 of a housing 13 accommodated in the interior space 4 of the lid 2. To this purpose, the housing 13 has, in the area of its
50 lower opening 14, a circumferential step 28 against which the glass ceramic plate 6 rests with its rim area. The peripheral area of the glass ceramic plate 6 is cemented in a sealing manner with the rim section of the housing 13 which is drawn down further, following

on from the step 28. The further rim area of the housing 13, drawn downwards and determining the opening 14 of the lid 2, is beaded about the rim edge 22 of the lid 2, which projects downwards over the outer surface 16 of the glass ceramic plate 6, to form the lid rim 17. The lid rim 17 has such a diameter that it fits into a rim bead 18 of the container rim 19 which is bent away radially outwards. The inside diameter of the opening 14, which is defined by the lid rim 17, is somewhat greater than the outside diameter of the container 1 in its base area so that when the lid 2 is turned round the container 1 can be set up on the outer surface 16 of the glass ceramic plate 6 without great lateral clearance so that the lid 2 functions as a cooking plate and the heating of the food received in the container 1 takes place from below.

The lid handles 3 are secured diametrically opposite each other on the outer surface of the lid wall. Apart from the actual handle portion they have foot-like projections 7, the contact surface 8 of which lies at a distance above the upper side 9 of the lid 2. If the lid 2 is set up, turned round, on a work surface, in order to be used as a cooking plate, the foot-like projections 7 maintain the necessary distance of the heating upper side 9 of the lid 2 from the work surface. There is integrated in one of the lid handles 3 a control device 10 for the temperature of the heat source 5. The control device 10 can be actuated by hand by way of an adjusting wheel 11 which projects from the upper side and the lower side of the handle 3 and there is supported a cooking level indication, that is, in such a way that the cooking level or temperature respectively adjusted can be read off not only from above - when using the lid 2 as such - but also from below - when using the lid 2 as a cooking plate.

The heat source 5 is clamped by means of a leaf spring 15 for the purpose of simple and secure assembly between the base 12 of the housing 13 and the glass ceramic plate 6 inserted into the opening 14 lying opposite the base 12 of the housing 13.

Whilst, according to Figure 1, the lid 2 sits with the lid rim 17, formed of rim edge 22 and beaded housing rim 21, in a rim bead 18 of the container rim 19 lying radially outside the container wall 20, in the case of the embodiment represented in Figure 3 the container rim 19 is bent away outwards from the container wall 20, forming a planar support area. The outer rim 23 of the glass ceramic plate 6 is, in this case, bent away downwards in a substantially perpendicular manner and forms a planar face 24 with which the lid 2 can sit on the planar area of the container rim 19. Here as well the housing 13 forms a step 28 against which rests the glass ceramic plate 6.

The lower housing rim 21 is also bent over about the lower rim edge 22 of the lid 2 for the purpose of forming the lid edge 17. The joint which is to be sealed with cement between the outer rim 23 of the glass ceramic plate 6, which is bent off downwards, and the area of the housing rim 21 facing the latter is correspondingly longer than in the case of the embodiment of Figure 1 so that more reliable sealing can be achieved.

Figure 4 shows a further embodiment of the invention which substantially differs from the embodiments discussed previously in that the glass ceramic plate 6 has a central area 26 with a planar positioning surface 25 for the use of the lid 2 as a cooking plate, which area is surrounded by an outer rim 27 which is angled away obliquely downwards and outwards. As a result, the glass ceramic plate 6 arches over the interior space of the container 1 and lies with its outer rim 27 in a correspondingly obliquely positioned rim bead 18 of the container rim 19 which is bent away outwards. In this case, the housing rim 21 and thus also the lid rim 17 run practically over the whole outer bearing surface of the oblique outer rim 27 of the glass ceramic plate 6 and can be fixed there in a sealing manner. In the same way as in the embodiment according to Figure 3, the sealing joint between glass ceramic plate 6 and housing 13 or the rim edge 22 of the lid 2 respectively during the cooking process thus lies outside the actual area of action of the vapours which rise out of the container 1. In the embodiment according to Figure 4, the container wall 20 further converges conically towards the container base 29 so that the outside diameter of the container 1 in the base area is slightly smaller than the diameter of the positioning surface 25 formed by the glass ceramic plate 6 at its outer surface 16 so that the container 1, when using the lid 2 as a cooking plate, can be set up directly upon the positioning surface 25.

- 1 Container
- 2 Lid
- 3 Lid handle
- 4 Interior space
- 5 Heat source
- 6 Glass ceramic plate
- 7 Projections
- 8 Contact surface
- 9 Upper side
- 10 Control device
- 11 Adjusting wheel
- 12 Base
- 13 Housing
- 14 Opening
- 15 Spring
- 16 Outer surface
- 17 Lid rim
- 18 Rim bead
- 19 Container rim
- 20 Container wall
- 21 Housing rim
- 22 Rim edge
- 23 Outer rim
- 24 Face
- 25 Positioning surface
- 26 Central area
- 27 Outer rim
- 28 Step
- 29 Container base



Claims

1. Cooking vessel having a pot-, saucepan- or pan-like container (1), which is intended to receive the food which is to be prepared, and a lid (2), which is to be set upon the latter, closes the filling opening and has at least one lid handle (3), in which case there is arranged in the interior space (4) of the lid (2) an electric heat source (5) which is formed, for example, as a light-directing body or grill bar, the interior space (4) of the lid (2) being covered, on the side of the interior space of the pot, with a plate (6) which lets through the radiation of the heat source (5), characterised in that the lid (2) has a circumferential lid rim (17; 22, 23; 27) which projects over the outer surface (16) of the plate (6) formed as a glass ceramic plate and fits into a circumferential rim bead (18) of the container rim (19), in that the circumferential rim bead (18) lies radially outside the container wall (20) and in that the inside diameter of the recess, which is delimited by the lid rim (17; 22, 23; 27) running around in a circular manner, is slightly greater than the outside diameter of the container (1) in its base area.

2. Cooking vessel according to claim 1, characterised in that the lid (2) has two foot-like projections (7), which are arranged diametrically opposite each other, with planar contact surface (8), each forming part of a lid handle (3).

3. Cooking vessel according to claim 2, characterised in that the contact surfaces (8), which are formed by the projections (7), lie outside and at a distance from the upper side (9) of the lid (2).

4. Cooking vessel according to one of the claims 1 to 3, characterised in that a control device (10) for the temperature of the heat source (5) is arranged in one of the lid handles (3).

5. Cooking vessel according to claim 4, characterised in that the control device (10) has an adjusting wheel (11), the adjustment of which is indicated both upwards and downwards.

6. Cooking vessel according to one of the claims 1 to 5, characterised in that the heat source (5) is clamped by means of spring (15) between the base (12) of a housing (13), which is accommodated in the interior space (4) of the lid (2), and the glass ceramic plate (6), which is firmly inserted into the opening (14) lying opposite the base (12) of the housing (13).

7. Cooking vessel according to one of the claims 1 to 6, characterised in that the housing (13) with its housing rim (21), which determines the opening (14), is beaded about the lower rim edge (22) of the lid (2) and thus forms the circumferential lid rim (17).

8. Cooking vessel according to claims 1 to 7,



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5 characterised in that the glass ceramic plate (6) is drawn down with its outer rim (23) and can be set with a planar face (24) on a flat area of the container rim (19) which is bent outwards from the container wall (20).

10 9. Cooking vessel according to one of the claims 1 to 8, characterised in that the glass ceramic plate (6) has a central area (26), forming a planar positioning surface (25), and an outer rim (27) which surrounds the latter and is angled away in comparison, downwards and outwards.