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(54) Gas hob with single pipe feeding gas to the various burners

(57) A gas hob (1) comprises a surface or hob plate (2) with which there are associated a plurality of burners (4) arranged nonaligned in corresponding seats (3) provided in said hob plate (2) at a distance from various edges (5, 6) of this latter, each burner (4) operationally cooperating with a valve member (28) for feeding gas to a burner body or diffuser (10) provided with a flame spreader (11) and a cap (12), said member (28) being caused to open and/or close by a corresponding actuator or knob (9), a pipe (25) being provided for feeding the gas to the various burners (4), This pipe (25) is a single pipe for all the burners (4) and is positioned below each of these latter, the valve member (28) of each burner being associated with said pipe (25) and being positioned in correspondence with the respective burner seat (3) provided in the hob.

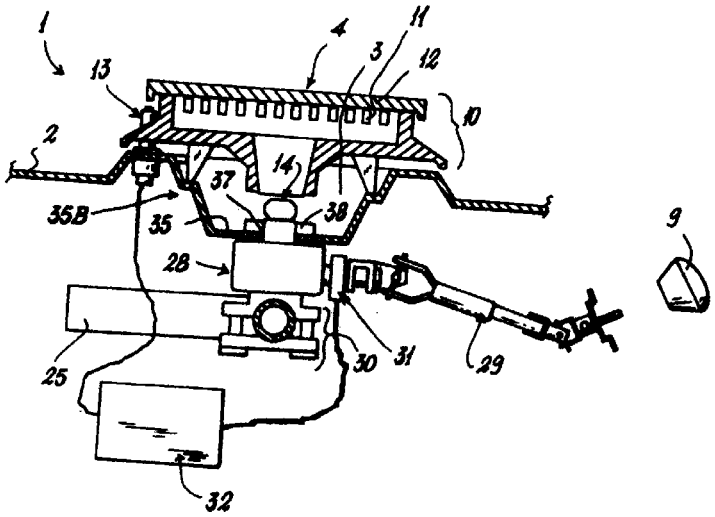

Fig. 2

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Description

[0001] This invention relates to a cooking hob with gas burners in accordance with the introduction to the main claim.

[0002] Cooking hobs of the aforesaid type generally comprise a surface or hob plate (of metal, toughened glass or glass ceramic) in which several seats are provided for burners. These latter comprise a usual burner body provided advantageously with an igniter or flame generator and having a flame diffuser or flame spreader, on which a cap is placed. Each burner receives a gas flow regulated by an actuator controlling the burner operation. This actuator (generally of knob type) cooperates with a corresponding valve member associated with a pipe through which gas is fed to the hob.

[0003] This pipe is usually positioned on one side of the hob between the aforesaid hob plate and a lower plate associated with a support structure (which can be an appropriate self-supporting structure in a kitchen, or a cabinet if the hob is to be built-in). Along this side there are provided seats for the knobs cooperating with said valve members, which are sealedly associated in known manner with the said pipe. From these members there extend tubes terminating below the burner seats where connections are provided to the overlying burner.

[0004] This known arrangement comprises a large number of parts (tubes, transmissions, seals etc.), the presence and assembly requirements of which increase the cost of the hob and its assembly time. This arrangement also results in considerable cluttering deriving from the presence of these components and their particular layout below the hob plate.

[0005] Moreover the presence of so many components associated with the main gas feed pipe means that there is a risk of gas leakage (and hence decreased safety) which although limited is always present.

[0006] An object of the invention is to provide a gas hob representing an improvement on similar currently available hobs.

[0007] A particular object of the invention is to provide a hob of the stated type in which the number of components is small (less than in the case of known hobs), and with a shorter assembly time than known hobs.

[0008] A further object is to provide a hob of considerable safety.

[0009] These and further objects which will be apparent to the expert of the art are attained by a cooking hob in accordance with the accompanying claims.

[0010] The invention will be more apparent from the accompanying drawing, which is provided by way of non-limiting example and on which:

Figure 1 is an exploded view of a cooking hob according to the invention;

Figure 2 is a cross-section through the hob of Figure 1, taken in correspondence with a burner; and

Figure 3 is a section similar to that of Figure 2, but taken through a hob of toughened glass or glass ceramic.

[0011] The said figures, and in particular Figures 1 and 2, show a cooking hob 1 comprising a surface or hob plate 2 of metal (for example bare or enamelled steel) having a plurality of seats 3 (four in Figure 1) for corresponding gas burners 4. The seats 3 are positioned non-aligned along various edges (for example the front edge 5 and rear edge 6) of the hob plate 2. Along a side 7 there is provided a control panel 8 on which a plurality of actuators or knobs 9 are present for activating the flame and regulating the flame power of each burner 4.

[0012] Each burner comprises a burner body 10 acting as a diffuser and provided with a flame spreader 11 and a cap 12, a usual igniter or spark plug 13 and an injector 14. An activator 9A for the spark plugs 13 may, if desired, be provided on the panel 8. On the hob plate 2 there are provided one (as in Figure 1) or more grids 15, a lid or closure element 16 hinged in known manner to said hob by a suitable known hinge member 18 being advantageously closable onto said hob plate.

[0013] The hob plate 2 can be superposed, via a suitable gasket 22, on a (known) hollow structure 20 coupled to a support for the hob (such as a self-supporting structure, or to a kitchen cabinet if the hob is to be built-in).

[0014] Between the hob plate 2 and the structure 20 there is positioned a pipe 25 for feeding the gas to each burner. According to a particular characteristic of the invention, said pipe 25 is a single pipe for all the burners 4 and is bent into a shape such that it lies below each seat 3 present in the hob plate 2, whatever the arrangement of the burners (and hence of the relative seats) on this latter. The pipe is closed at one end 25A.

[0015] The pipe 25 is connected to a fixed gas main via a usual connection member 26, and has a plurality of apertures 27 (of number equal to the number of burners 4), to be positioned below the seats 3. Valve members 28 connected to the injector 14 are sealedly arranged on these apertures and are controlled by respective actuators or knobs 9 via known remote operating means, such as a universal joint 29 (as shown in Figure 2), a flexible cable or the like connected to the knobs 9 in known manner. Each valve member 28, provided with the necessary seals, is coupled to the corresponding aperture 27 via a usual clamping member 30. The valve member preferably comprises, connected to a spark generator 32 connected to the spark plug 13, a usual sensor 31 for sensing gas flow to the injector. By means of this sensor, the spark plug is automatically activated on commencement of gas feed to the burner. This is an alternative to the aforestated activator 9A.

[0016] According to a further characteristic of the invention, if the hob plate 2 is of metal, each seat 3 is formed by pressing, with a shape such that it itself

defines the support 35B for the body 10 of the corresponding burner 4. In this situation (see Figure 2), the base 35 is provided with a small through hole 37 for receiving the injector 14, which is fixed on this base by a nut 38 or a similar element.

[0017] If the hob plate is of toughened glass or glass ceramic (see Figure 3, in which parts corresponding to those of Figures 1 and 2 are indicated by the same reference numerals), the body of the burner 10 is carried by a metal support 40 which has a pressed and drawn part provided with a base 42 similar to said base 35, and is coupled in a sealed manner (via an element 41) to the hob plate 2. The support 40 is coupled to the toughened glass or glass ceramic hob plate 2 via an elastic element 43 positioned below the hob plate 2.

[0018] As an alternative the support 40 can be an interacting part of the valve member 28.

[0019] The invention reduces the number of components of the hob, to provide a very safe product. This is achieved by the particular arrangement of the pipe 25, which supports the injectors directly below each seat 3 for a corresponding burner and the valve member 28 connected to each injector, and by the particular shape of the hob plate 2 which where possible acts as a support for the burner body 10.

Claims

1. A gas hob (1) comprising a surface or hob plate (2) with which there are associated a plurality of burners (4) arranged non-aligned in corresponding seats (3) provided in said hob plate (2) at a distance from various edges (5, 6) of this latter, with each burner (4) there operationally cooperating a valve member (28) for feeding gas to a burner body or diffuser (10) provided with a flame spreader (11) and a cap (12), said member (28) being caused to open and/or close by a corresponding actuator or knob (9), a pipe (25) being provided for feeding the gas to the various burners (4), characterised in that said pipe (25) is a single pipe for all the burners (4) and is positioned below each of these latter, the valve member (28) of each burner being associated with said pipe (25) and being positioned in correspondence with the respective burner seat (3) provided in the hob.

2. A gas hob as claimed in claim 1, characterised in that the valve member (28) of each burner associated with the single gas pipe cooperates with a corresponding injector positioned coaxial with the diffuser (10) of the burner (4).

3. A gas hob as claimed in claim 2, characterised in that the valve member (28) is connected via transmission means (29) to the actuator or knob (9) for controlling and regulating the burner (4).

4. A gas hob as claimed in claim 3, characterised in that the transmission means are a universal joint (29).

5. A gas hob as claimed in claim 3, characterised in that the transmission means are a flexible cable.

6. A gas hob as claimed in claim 2, characterised in that with the valve member (28) there is associated a sensor (31) for sensing gas flow to the injector (14), said sensor (31) being connected to a spark generator (32) connected to an element (13) for igniting the flame on the burner (4).

7. A gas hob as claimed in claim 1, characterised in that the seat (3) for each burner (4) defines a support for this latter.

8. A gas hob as claimed in claim 3, characterised in that the seat (3) for each burner (4) is formed by pressing and locally drawing the hob plate, said seat (3) hence defining in said hob plate (2) a support (35B) for the burner body or diffuser (10), provided with a base (35) in which there is a through hole containing the injector (14), which is fixed to said base by fixing means (38).

9. A gas hob as claimed in claim 1, characterised in that the burner comprises a pressed portion (40) defining the burner support and supporting the diffuser (10), said portion resting on the glass ceramic hob plate (2) and being sealedly coupled to this latter, said portion being associated with an elastic element positioned below the hob plate (2) to retain said portion on this latter, said portion having a base (42) with which the burner injector is associated.

10. A gas hob as claimed in claim 9, characterised in that the burner support (40) forms part of the valve member (28).

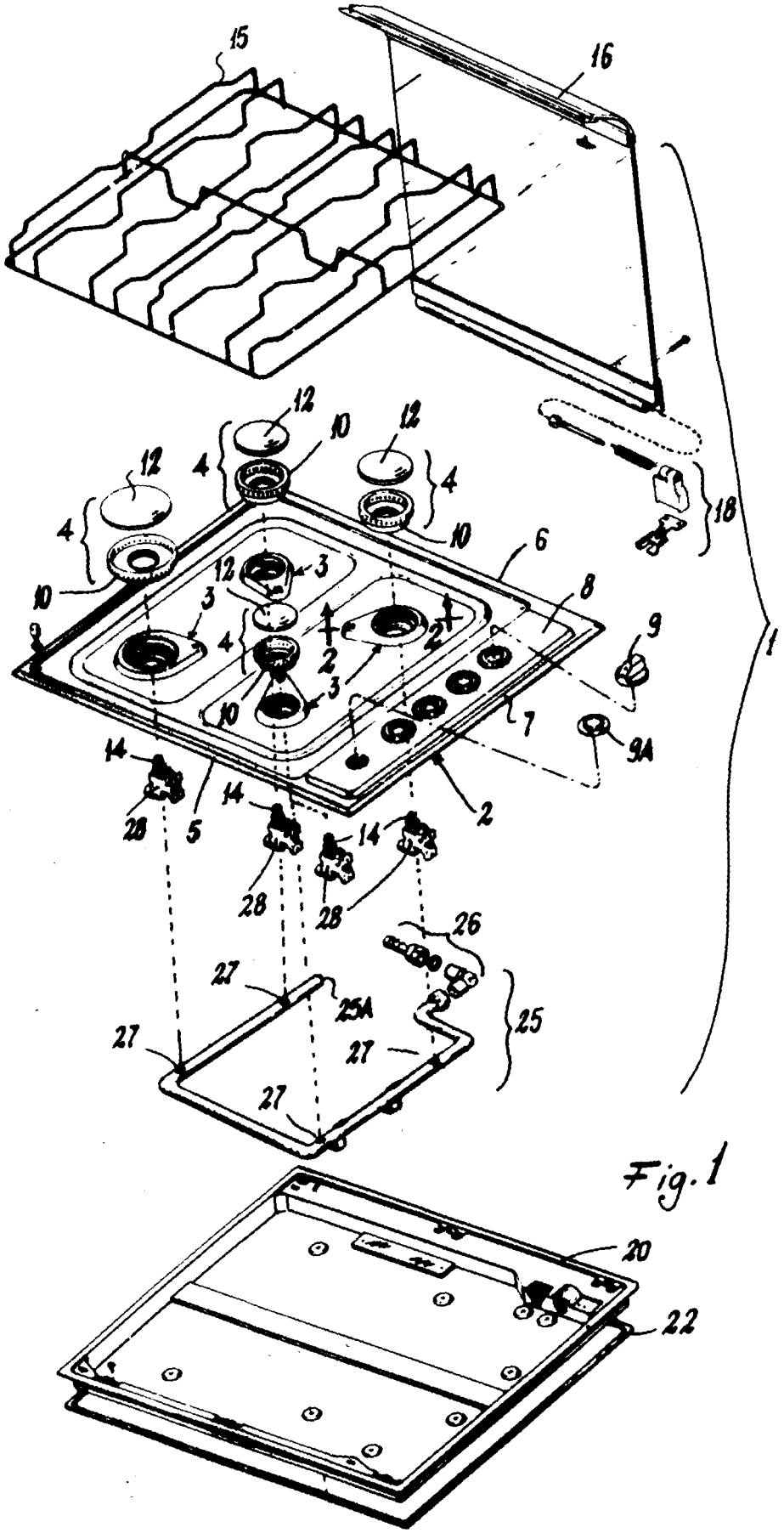

Fig. 1

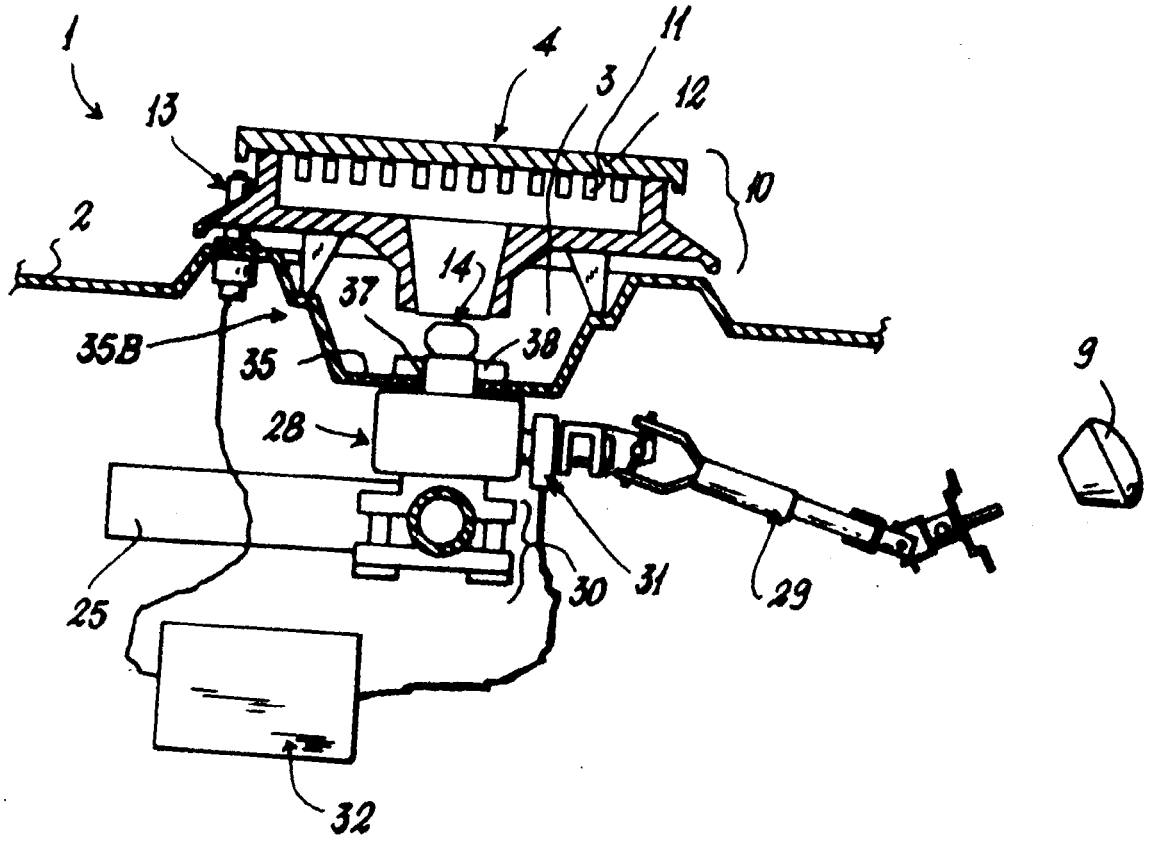

Fig. 2

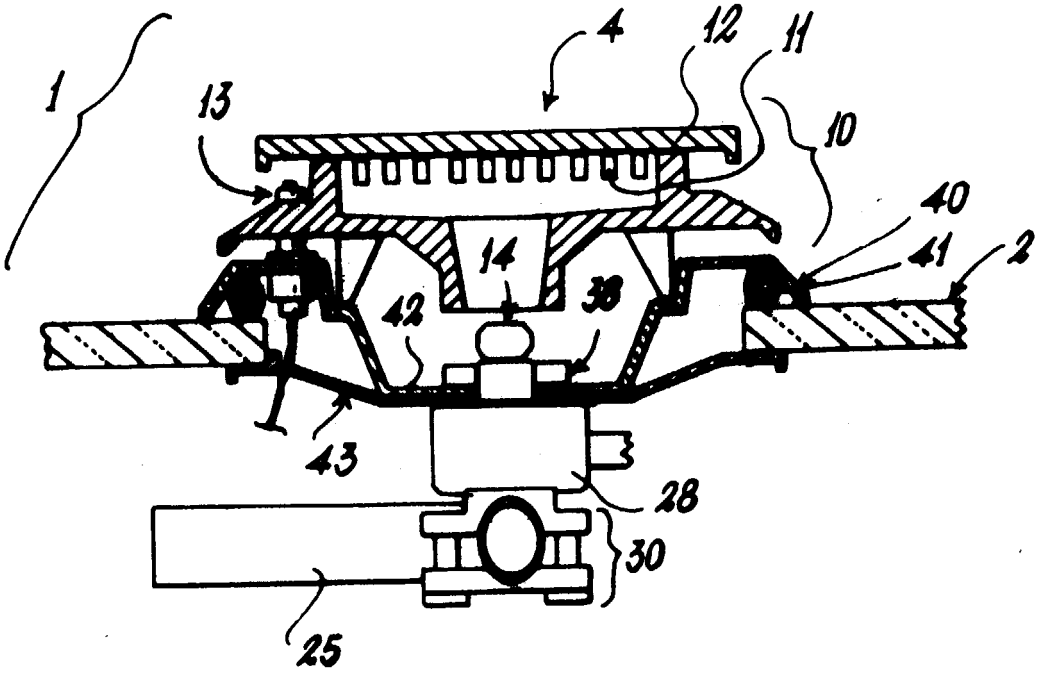

Fig. 3