



(11) Publication number : **0 622 590 A2**

(12) **EUROPEAN PATENT APPLICATION**

(21) Application number : **94303048.6**

(51) Int. Cl.⁵ : **F24C 15/12, F24C 3/12**

(22) Date of filing : **27.04.94**

(30) Priority : **28.04.93 GB 9308782**

(43) Date of publication of application :
02.11.94 Bulletin 94/44

(84) Designated Contracting States :
BE DE ES FR IT NL

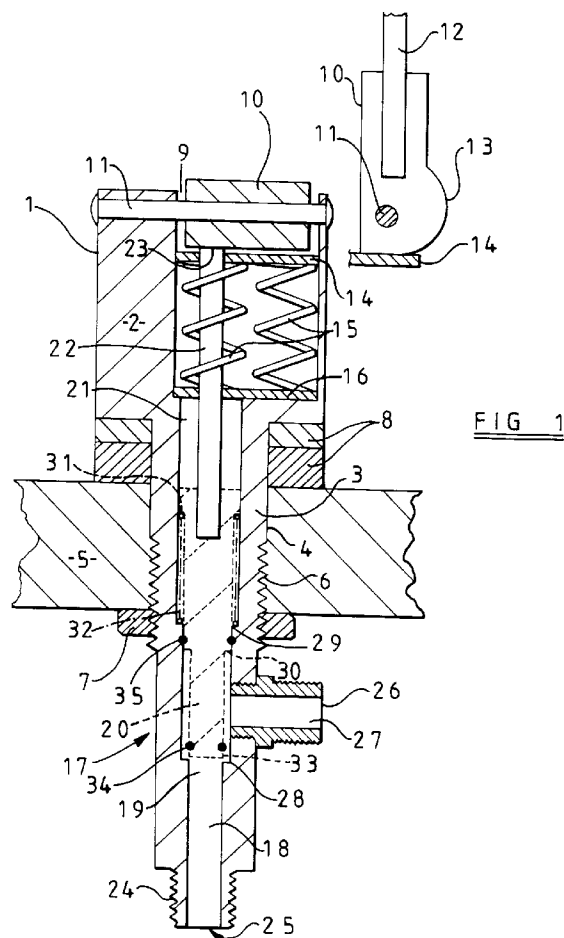
(71) Applicant : **THE GAS GROUP PLC**
Unit DE,
Boscombe Road
Dunstable, Bedfordshire LU5 4SE (GB)

(72) Inventor : **Monkcom, Stephen Roderick**
6 Carnoustie Grove
Bletchley, Milton Keynes MK 3 7RP (GB)

(74) Representative : **Lawrence, Brian Richard**
59 Shenfield Place
Shenfield Brentwood Essex CM15 9AH (GB)

(54) **Cooking hobs.**

(57) A gas cooking hob comprises one or more gas burners, a pivotally mounted lid 12 adapted to cover the gas burners, a hinge mechanism for effecting the pivotal mounting of the lid 12, and a gas cut-off valve 17 for cutting off the gas supply to the gas burners when the lid 12 is closed, the gas cut-off valve 17 being mounted on the hinge mechanism (Fig. 1).



This invention relates to cooking hobs and more particularly to gas cooking hobs which are provided with a pivoted lid or cover which covers the upper surface of the hob.

Lidded gas cookers are known which comprise a gas hob having a number of gas burners, a lid or cover which is pivotally mounted and movable between a closed position where it covers the gas burners, and a raised position which permits access to the gas burners, and one or more oven, oven/grill, or grill cavities above which the gas hob is mounted. In such gas cookers it is known to incorporate a gas cut-off valve or gas cut-off safety valve as disclosed, for example, in EP 0221655B, to cut off the gas supply to the gas burners when the lid is closed to obviate problems which could arise should one or more of the gas burners have inadvertently been left on. In such gas cookers a direct mechanical link is provided between either the lid or more typically the hinge of the lid and the operating rod or lever of the gas cut-off valve which is mounted on the gas hob or gas cooker. This is perfectly satisfactory where the lid is an integral part of the gas hob or gas cooker.

However, it is becoming popular to provide a gas hob, either with or without an integral oven cavity, with a separate lid or cover, the gas hob typically being mounted in a hole in a kitchen cabinet work surface and the lid being mounted on the work surface rather than on the gas hob. In such an arrangement the relative positions of the gas hob and lid can change and it is not practicable to provide a direct mechanical link between them in order to operate the gas cut-off valve or gas safety cut-off valve.

It is an object of the present invention to provide a gas hob having a separate lid with an improved operating mechanism which overcomes disadvantages associated with present mechanisms.

According to the present invention there is provided a cooking hob having one or more gas burners, a pivotally mounted lid adapted to cover said gas burners, a hinge mechanism for effecting the pivotal mounting of said lid, and a gas cut-off device for cutting off the gas supply to the gas burners when said lid is closed and covers said burners, said hinge mechanism comprising a first part which is fixedly secured to a support and a second part for supporting said lid which is pivotally mounted on said first part, said gas cut-off device being mounted on said first part of said hinge mechanism, said second part of said hinge mechanism having means, e.g. cam means, for operating said cut-off device.

Advantageously, said gas cut-off device is formed as an integral part of said hinge mechanism, but may comprise a body portion which is separate from said hinge mechanism but which is mounted thereon.

In a preferred arrangement said first part of said hinge mechanism is adapted to be fixed to a kitchen

worktop, and the mounting of said first part of said hinge mechanism may be adjustable whereby different thicknesses of worktop may be accommodated and whereby the height of the lid may be adjusted to cover different height pan supports.

An exemplary embodiment of the invention will now be described, reference being made to the accompanying drawings, in which:

Fig. 1 depicts a hinge mechanism for a gas cooking hob according to the present invention with the gas cut-off device thereof in the unoperated (lid raised) condition; and

Fig. 2 depicts the hinge mechanism of Fig. 1 with the gas cut-off device thereof in the operated (lid down) condition.

In the drawings there is depicted a hinge mechanism for gas cooking hob having a pivoted lid which may be raised to provide access to the gas burners (not shown) of the hob and closed to cover the gas burners. As is conventionally the case, the gas burners form part of a hob unit which may be mounted in a hole in a kitchen worktop, and the lid is separate from the hob unit and is adapted to be separately mounted on the worktop using a pair of spaced apart hinge mechanisms, one of which, as is depicted in the drawings, is adapted to incorporate a gas cut-off device which is operated by the lid and controls the flow of gas to the gas burners of the hob unit.

The hinge mechanism shown in the drawings comprises a hinge body 1 which may be machined from an aluminium or other suitable material extrusion, the body 1 having a generally square shaped upper part 2 and generally cylindrical lower part 3. The generally cylindrical lower part 3 is adapted to be received in a suitable hole 4 in a kitchen worktop 5 and is provided with a threaded portion 6 by means of which the hinge mechanism may be secured to the worktop 5, e.g. by means of the clamping nut 7. The adjustable clamping nut 7 obviously allows the hinge mechanism to be secured to worktops of different thicknesses, and, in order to cater for hob units having pan supports of different heights, packing pieces 8 of different heights may be inserted between the upper part 2 of the hinge mechanism and the worktop 5 in order to adjust the effective height of the lid above the worktop 5.

The upper part 2 of the hinge mechanism is provided with a cut-away portion 9 in which is received a lid support member 10 which is pivotally mounted to the upper part 2 by means of a pivot spindle 11. Secured to the lid support member 10 is a lid 12, typically of glass, which is adapted to cover the gas burners (not shown) of the hob unit (not shown) when the lid is in its closed (i.e. down) position.

The lid support member 10 is provided with a cam shaped portion 13 which bears against a spring loaded plate 14 contained within the cut-away portion 9 and which effectively spring loads the lid 12 into its

open and closed positions. The spring loaded plate 14 is spring loaded by means of a pair of compression springs 15 which are disposed between it and a similar lower plate 16, the springs 15 and lower plate 16 also being contained in the cut-away portion 9 of the upper part 2 of the hinge mechanism.

Contained within the generally cylindrical lower part 3 of the hinge mechanism body 1 is a gas cut-off valve indicated generally at 17 for controlling gas flow to the gas burners (not shown) of the hob unit (not shown). The generally cylindrical lower part 3 of the hinge mechanism body 1 is provided with a stepped, axial, through-bore 18, the lower part 19 of which contains an axially movable generally cylindrical, stepped valve member 20 and the upper part 21 of which contains a valve operating link 22 which is secured to the valve member 20 and which extends upwards therefrom, through holes in the plates 14 and 16 so that the end 23 thereof bears against the cam shaped portion 13 of the lid support member 10.

The lower end 24 of the lower part 3 of the hinge mechanism body 1 is threaded and affords a gas inlet 25 to the gas cut-off valve 17. The lower part 3 is also provided with a threaded gas outlet 26 which extends radially from it, and which has a central bore 27 which connects with the through-bore 18. The through-bore 18 is stepped and is provided with a first shoulder 28 where the bore 18 increases in diameter in the vicinity of the gas outlet 26, and a second shoulder 29 where the bore 18 again increases in diameter. Similarly, the valve member 20 is stepped and is provided with a first shoulder 30 where it increases in diameter and a second shoulder 31 where it again increases in diameter. A valve opening spring 32 is provided in the space between the valve member 20 and the wall of the through-bore 18, and disposed between the shoulder 29 of the bore 18 and the shoulder 31 of the valve member 20, which biases the valve member 20 upwards, as viewed in the drawing, so that the end 33 of the valve member 20, which is provided with an "O" ring seal 34, does not extend as far as the shoulder 28 in the bore 18. This corresponds to the valve open position depicted in Fig. 1 of the drawings, in which a gas flow path extends from the gas inlet 25 to the gas outlet 26. The gas outlet 26 would normally be connected to the gas inlet of the hob unit (not shown), for example using a flexible gas pipe, so that the hob unit is supplied with gas. The valve member 20 is provided with a further "O" ring seal 35 above the shoulder 30 thereof and between it and the wall of the bore 18 which provides a gas seal and prevents gas flow into the upper part 21 of the through-bore 18.

When the lid 12 of the gas cooking hob is closed, as is depicted in Fig. 2 of the drawings, the cam shaped portion 13 of the lid support member 10 bears against the valve operating link 22 and forces it downwards as viewed in the drawing, thereby causing the valve member 20 to be moved downwards, against

the action of the spring 32, to cause the end 33 of the valve member 20 to extend past the shoulder 28 in the bore 18 so that the "O" ring seal 34 thereof makes sealing contact with the reduced diameter part of the bore 18, thereby preventing gas flow from the gas inlet 25 to the gas outlet 26 and cutting off gas flow to the hob unit (not shown) of the gas cooking hob.

When the lid 12 is again opened, the valve member 20 is caused to rise, as viewed in the drawing, under the influence of the valve opening spring 32, such that the end 33 of the valve member 20 is withdrawn past the shoulder 28 in the bore 18 to again permit gas flow from the gas inlet 25 to the gas outlet 26.

By providing that the gas cut-off valve 17 is formed as part of the actual hinge mechanism, problems normally associated with cooking hobs having separate lids are overcome. Although it is advantageous to form the gas cut-off valve 17 as an integral part of the hinge mechanism, it is envisaged that it could be formed as a separate part mounted on the body of the hinge mechanism. It is also envisaged that the gas cut-off valve may take any convenient form and may take the form of a safety gas cut-off valve as disclosed in EP 0221655B. Alternatively, a pressure operated safety valve may be connected to the gas outlet 26.

Although a gas cooking hob has been described in which the lid is mounted independently of the hob unit, it is envisaged that the invention could be applicable to gas hobs or gas cookers in which the lid is mounted as an integral part thereof.

Claims

1. A cooking hob having one or more gas burners, a pivotally mounted lid adapted to cover said gas burners, a hinge mechanism for effecting the pivotal mounting of said lid, and a gas cut-off device for cutting off the gas supply to the gas burners when said lid is closed and covers said burners, said hinge mechanism comprising a first part which is fixedly secured to a support and a second part for supporting said lid which is pivotally mounted on said first part, said gas cut-off device being mounted on said first part of said hinge mechanism, said second part of said hinge mechanism having means for operating said cut-off device.
2. A cooking hob as claimed in claim 1, in which said gas cut-off device is formed as an integral part of said hinge mechanism.
3. A cooking hob as claimed in claim 1, in which said gas cut-off device comprises a body portion which is separate from said hinge mechanism but which is mounted thereon.

4. A cooking hob as claimed in any preceding claim,
in which the said second part of said hinge mechanism comprises cam means for operating said cut-off device. 5
5. A cooking hob as claimed in claim 4, in which said first part of said hinge mechanism is adapted to be fixed to a kitchen worktop.
6. A cooking hob as claimed in claim 5, in which the mounting of said first part of said hinge mechanism is adjustable. 10
7. A cooking hob as claimed in any preceding claim, in which said gas cut-off device comprises a pressure operated gas cut-off valve. 15
8. A cooking hob as claimed in any of claims 1 to 6, comprising a pressure operated safety valve connected to the gas outlet of said gas cut-off device. 20

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