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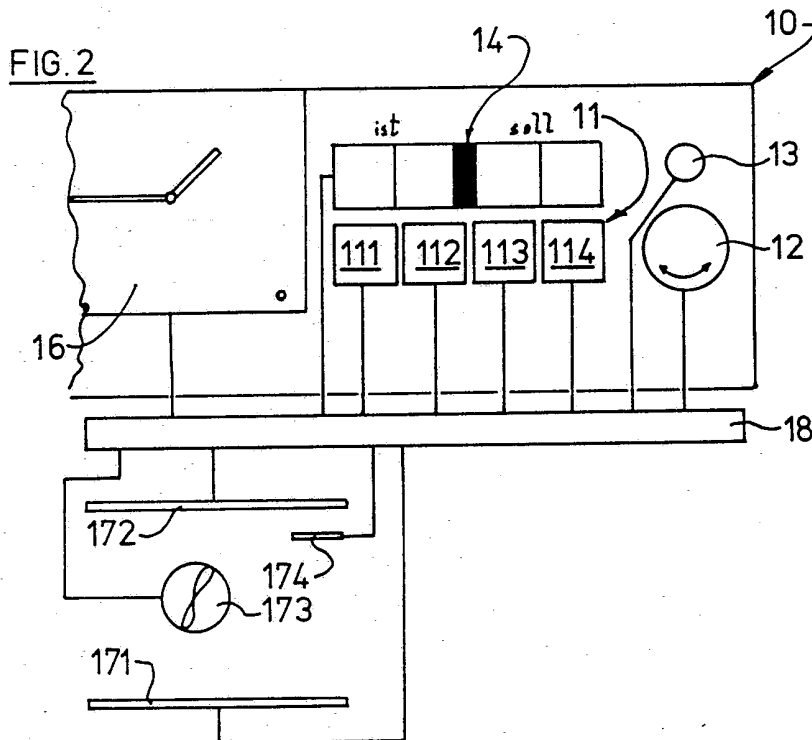
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 Selected US specifications from IPC sub-classes  
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(54) A cooker control means

(57) One of several possible cooking modes may be selected by keys (111, 112, 113, 114). Each of these modes has a fixed standard temperature associated with it (e.g. 200, 280, 180, 500 °C). If a user prefers a temperature which differs therefrom, the preferred temperature may be set instead by means of an adjustment knob (12) (possibly only after actuating a release button 13). When there is renewed selection of a mode and/or after the completion of cooking the standard temperature is automatically reset.



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FIG. 1

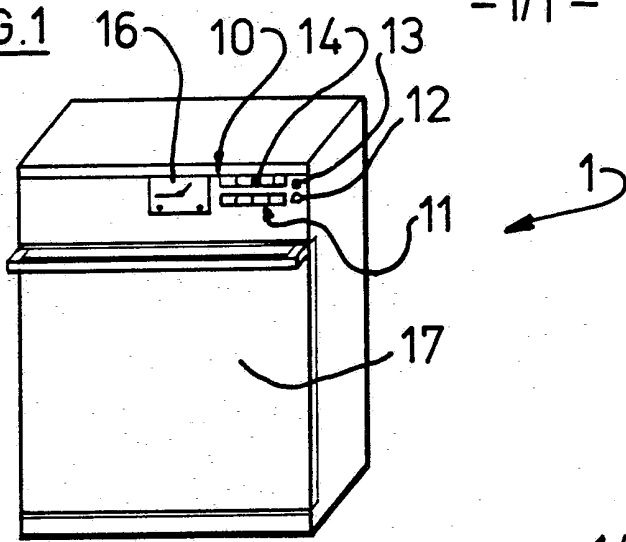
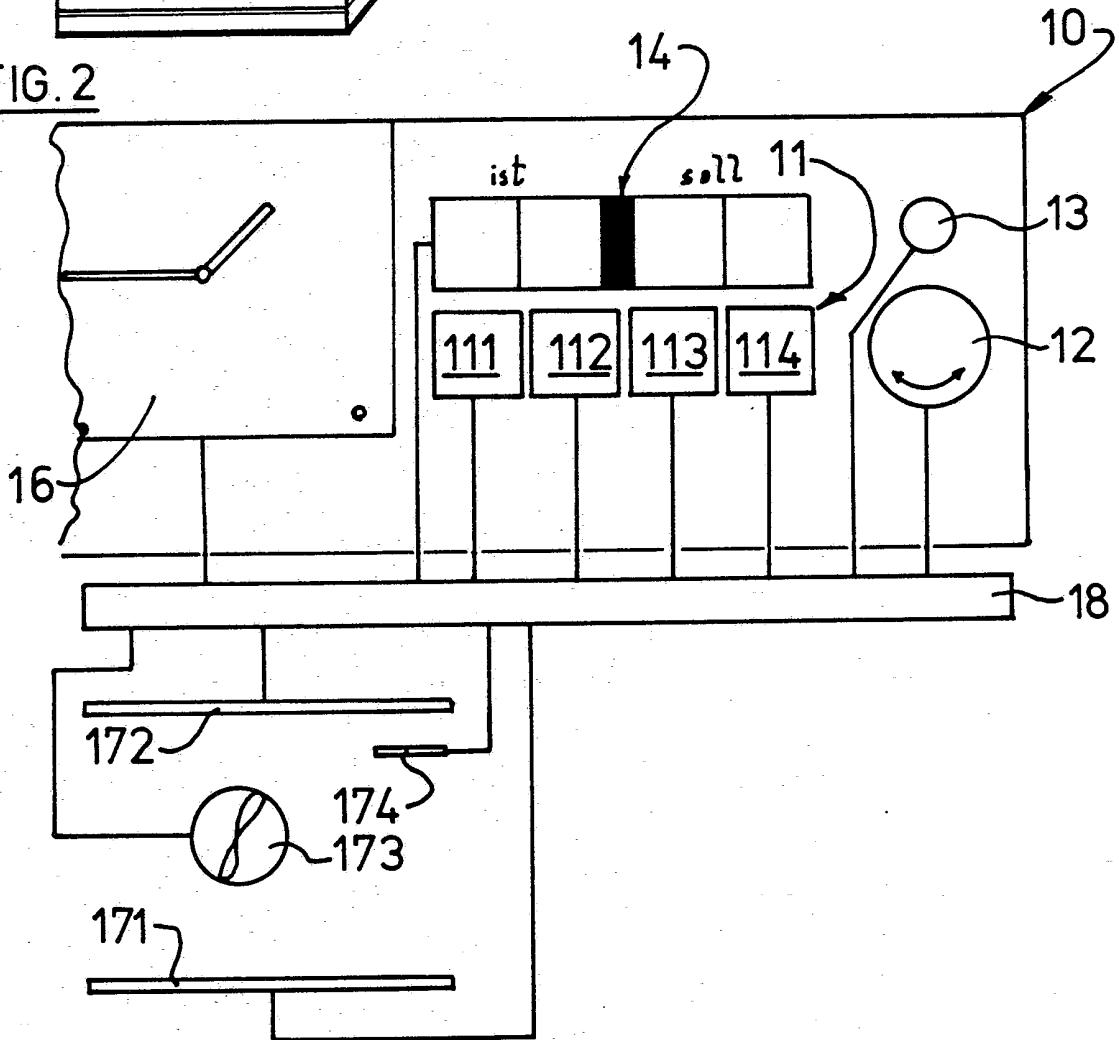


FIG. 2



A COOKER CONTROL MEANS

The invention relates to a cooker control means.

5 With old electric cookers it is generally known to set the maximum operating temperature by means of a settable thermostat regardless of whether there is heat only at the bottom, or only at the top, or both at the bottom and at the top. This has the disadvantage that one must  
10 never forget to set the correct temperature, because if one does there may be no heating at all or heating to the wrong temperature and the desired result will not be achieved.

15 From German PS 23 04 231 it is known to choose between three temperature ranges (for providing dough, for non-browning heat, and for browning heat), various degrees of fine adjustment of the regulating means being associated with these ranges. The temperature may be  
20 altered, and thus there is almost the same disadvantage as in the old cookers, i.e. that a wrong temperature set earlier will give the wrong results, even if the correct one of the three ranges is selected.

25 In order to avoid all of these irritations it has also been suggested that a certain number of modes should be provided selectable by means of a mode switch, a specific temperature being associated with each mode in fixed and unalterable manner. Once this temperature has  
30 been set up by the manufacturer it applies forever. If another temperature is desired another mode has to be selected.

This avoids errors due to a forgotten thermostat, but the number of temperatures which may be selected is limited. These cooker controls are known from US PS 4,456,820 and 4,517,452.

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The object underlying the invention is to create a cost-effective control means the use of which is foolproof yet still may be adapted to individual needs.

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Accordingly, the invention provides a cooker control means, having mode selector which may be actuated on the outside by an operator, said selector selecting one of several predetermined modes each having an associated standard temperature which is predetermined, characterised in that a temperature adjuster also externally actuatable by the operator allows the standard temperature to be temporarily altered to a preferred temperature which differs therefrom, the association of the standard temperature being reestablished automatically when there is renewed selection of a mode with the mode selector and/or after preparation of a food item has been completed at the preferred temperature.

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This has the advantage that each time a mode is selected the often very suitable standard temperature is always selected thereby. This standard temperature may be altered temporarily to a different, individual preferred temperature, so that the temperature actually in use then is best adapted to individual requirements.

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The preferred temperature which is set in this way only prevails, at the longest, until there is renewed mode selection, and/or until after the end of the relevant food preparation process.

Then the standard temperature is automatically reset, so that for each new operation the standard temperature is maintained. Thus determination of a temperature regarded as optimal is possible for each individual process; yet there is the safeguard that no individual temperature selected 10 earlier, and which could now be very wrong, will be repeated. The automatically recurring standard temperature is in a range which is at least usable.

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This makes it possible for those who would like handling to be as simple as possible, simply to select a mode and (with timer control in some case) to start the process. However, in addition to this very simple procedure it is also possible to regulate the temperature oneself, without losing the standard temperature as a result. And this is achieved automatically.

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As many modes may be provided as desired, but because the temperature may further be regulated individually for an individual operation relatively few modes are usually enough, e.g.:

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- A) Heat at the bottom and at the top, at 200°C standard temperature
- B) Heat only at top, used as grill, at 280°C standard temperature
- C) Hot air circulation, at 180°C standard temperature
- D) Pyrolysis (automatic oven cleaning), at 500°C standard temperature

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While the pyrolysis temperature (mode D) may be fixed, for the sake of safety the adjustment range of the remaining modes (A,B,C) may be set anywhere between room temperature and 300°C.

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The few modes mentioned above by way of example may also be sub-divided. Thus mode B could be subdivided into a fermentation temperature stage, a non-browning stage and a browning stage, and this may also apply in mode C. At least one mode specifically directed to roasting while measuring the core temperature of the meat may be provided, or may be within for example mode C. At least one mode with microwaves is also feasible.

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An example of the invention will be discussed below using the purely schematic drawings with reference to the details just given of the modes.

In the drawings:

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Fig. 1 shows a relatively small diagram of a cooker which is shown as freestanding but could be refined as a built-in cooker or as an under-hob cooker; and

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Fig. 2 shows a block diagram which is enlarged in comparison with Fig. 1.

The following parts have been designated:

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1	cooker
10	switch panel
11	mode selection controls (keys or push buttons)
111	mode A selector
112	mode B selector
35 113	mode C selector
114	mode D selector

- 12 adjustment button for changing the standard temperature into a preferred temperature; it may actuate a signalling means for example.
- 13 release button for activating 12.
- 5 14 temperature indication for mode-related standard temperature or for performed temperature which differs from standard temperature.
- 10 16 clock. It could be digital. It makes it possible to set the start and/or stop time of a process.
- 15 17 door to the inside of the oven (not shown) which may be provided conventionally with heating, possibly air circulation, thermostat sensor etc.
- 171 heating element for heat at the bottom.
- 172 heating element for heat at the top.
- 173 air circulation (no special heating element for hot air operation is shown here although it may be provided.
- 20 174 temperature sensor in the oven; it may be complemented by a core temperature sensor.
- 18 control devices

25 These controls may also be adapted to microwave operation, only this very simple representation is described here which makes understanding easy.

30 The above listed parts are housed in and on the casing of the oven 1 in a suitable place and in a suitable manner.

35 For preparing a food item in the chamber of the oven 1, it may be introduced through the doors straight away if desired or alternatively only after an appropriate warming up time.

One of the selectors 111, 112, 113 or 114 is pressed and mode A, B, C (described above) is selected; of course mode D is not used for preparing food.

5 If mode A has been selected, a standard temperature of 200°C (as detailed above) is associated with this mode. The start and stop times of the process can be set on the clock 16 and the process would operate automatically. The heating elements 171 and 172  
10 catering for the heat at the bottom and at the top and the heating operation are controlled by the control device 18 in accordance with the signals from the temperature sensor 17°. At the end the clock switched off the process and sounds and acoustic signal.

15 If however the temperature of 200°C does not suit the operator, he may set a preferred temperature which deviates therefrom by any desired temperature difference (within the limits set by the manufacturer), after  
20 pressing key A and before the process is set in motion.

In order to do this he must hold the release button 13 down and turn the adjustment knob accordingly. When the preferred temperature is set, then he may start the  
25 process again with the clock (set the start and stop times).

At the end not only does the clock switch off, but the control device 18 also resets the standard temperature  
30 of 200°C for mode A.

By way of variation the adjusted preferred temperature could continue until one of the keys 111, 112, 113 or 114 of the mode selector 11 is next actuated, provided this  
35 is a condition for renewed operation of the oven.



A similar process is possible for modes B and C. As already stated mode D is preferably completely unalterable, i.e. fully automatic, for safety reasons and for the sake of convenience.

PATENT CLAIMS

1. A cooker control means, having mode selector which may be actuated on the outside by an operator, said selector selecting one of several predetermined modes each having an associated standard temperature which is predetermined, characterised in that a temperature adjuster (12) also externally actuatable by the operator allows the standard temperature to be temporarily altered to a preferred temperature which differs therefrom, the association of the standard temperature being reestablished automatically when there is renewed selection of a mode with the mode selector (11) and/or after preparation of a food item has been completed at the preferred temperature.

2. A cooker control means according to claim 1, characterised in that the standard temperature may only be adjusted by the temperature adjuster (12) subject to actuation of an external release device (13) by the operator.

3. A cooker control means according to claim 1 or 2, characterised in that the temperature adjuster (12) actuates a signalling means.

4. A cooker control means substantially as herein described with reference to the accompanying drawings.