Feb. 1, 1966 C. D. BRANSON 3,232,534

BAKE AND BROIL BURNER FUEL CONTROL SYSTEM

Filed Dec. 29, 1961 2 Sheets-Sheet 1

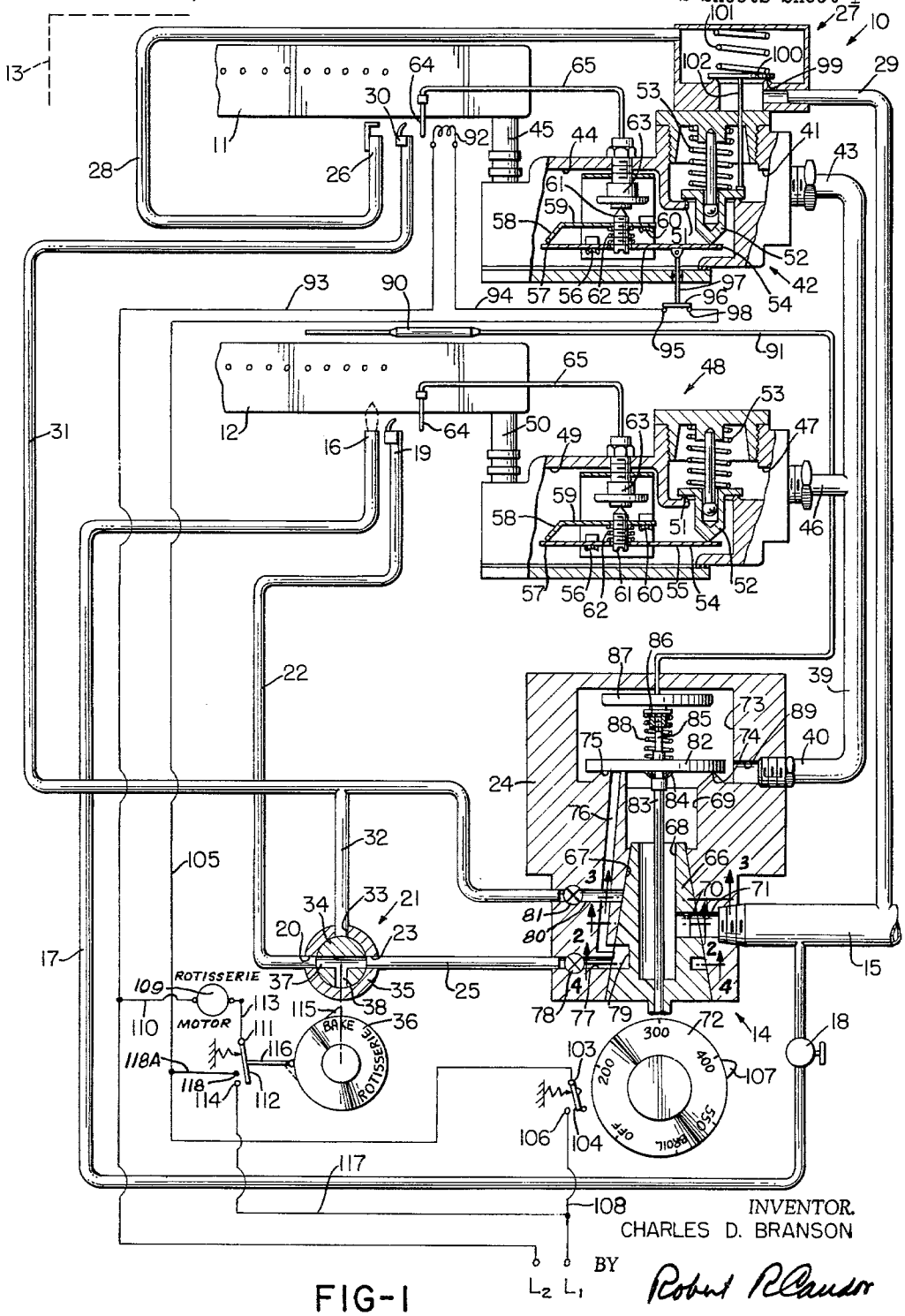


FIG-1

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BAKE AND BROIL BURNER FUEL CONTROL SYSTEM

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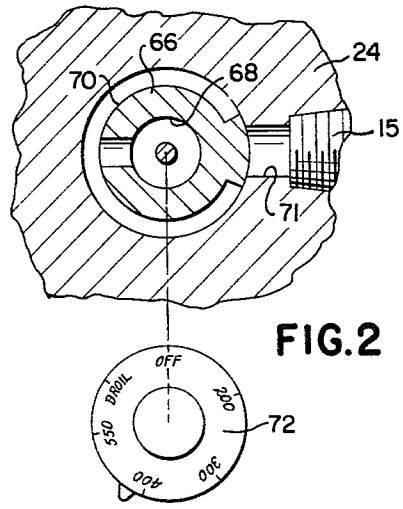


FIG.2

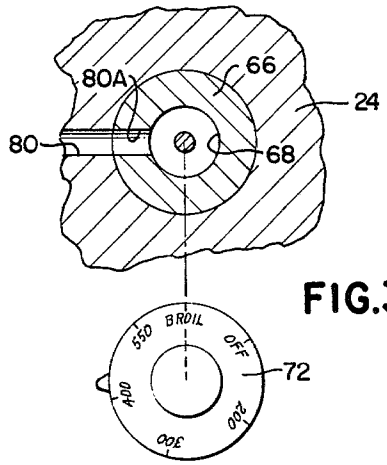


FIG.3

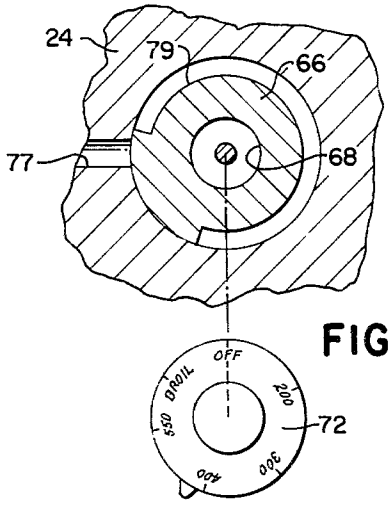


FIG.4

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3,232,534

BAKE AND BROIL BURNER FUEL CONTROL SYSTEM

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16 Claims. (Cl. 236—15)

This invention relates to an improved fuel control system for gas burners, such as gas burners for domestic ovens and the like, as well as to improve parts for such a system or the like.

One type of a conventional domestic gas oven includes a lower bake burner and an upper broil burner. The fuel control system for such an oven includes a manually operated selector valve that thermostatically controls the temperature of the oven, and a three position selector valve that has an "off" position, a "bake" position and a "broil" position.

In addition, the pilot burner means for the broil burner must have some kind of automatic ignition means because a conventional continuously burning stand-by pilot burner in the top of the oven would be snuffed out by combustion products produced by the lower bake burner.

Therefore, automatic electric ignition means are normally utilized for igniting the pilot burner for the broil burner of the double burner type oven, the pilot burner, in turn, igniting the main broil burner.

However, electric ignition means requires the use of a re-cycling safety valve that will interconnect the source of fuel fuel with the broil burner only when its pilot burner is ignited.

Such a re-cycling safety valve is also utilized with the main bake burner.

This required use of the re-cycling safety valve for the broil and bake burners further complicates the conventional double burner fuel control system because the three position selector valve must perform the additional function of diverting fuel from the bake pilot burner to the broil pilot burner when the selector valve is moved to the "broil" position.

This pilot burner valving of the selector valve must be kept separate from the main burner valving because fuel flow to both the broil burner and the bake burner is protected by the thermostatically controlled selector valve.

Accordingly, it is an object of this invention to provide an improved fuel control system for such a double burner oven.

In particular, the bake and broil burners of this invention are controlled from a single selector valve even though both the bake and broil burners have pilot burners that cause safety valves to open only when flames appear at the respective pilot burner so that fuel can only flow to one of the main burners when that particular pilot burner has a flame to ignite the main burner.

In the above fuel control system, the selector valve is adapted to maintain the temperature of the oven at any desired bake temperature.

Further, the fuel control system of this invention prevents any explosive condition of the broil burner should the selector valve be on the "broil" position thereof and subsequently and rapidly move to the "off" position thereof and then back to an "on" position before the safety valve of the broil burner has fully closed.

The fuel control system of this invention includes a second manually operated selector valve for causing the broil burner to operate when the selector valve is disposed in a "bake" position thereof so that a rotisserie can be utilized in the oven and the temperature of the oven can be maintained at any selected temperature even though the broil burner is being utilized.

Other objects, uses and advantages of this invention are apparent from a reading of this description which proceeds with reference to the accompanying drawing forming a part thereof and wherein:

FIGURE 1 is a schematic view illustrating the improved fuel control system of this invention.

FIGURE 2 is an enlarged, fragmentary, cross-sectional view taken on line 2—2 of FIGURE 1.

FIGURE 3 is a view similar to FIGURE 2 and is taken on line 3—3 of FIGURE 1.

FIGURE 4 is a view similar to FIGURE 2 and is taken on line 4—4 of FIGURE 1.

While the various features of this invention are hereinafter illustrated and described as being incorporated in a single fuel control system for a double burner oven or the like, it is to be understood that the various features of this invention can be utilized singly or in any combination thereof in other systems and the like, as desired. For example, the single selector valve of this invention can be utilized to control two burners respectively disposed in two ovens.

Therefore, this invention is not to be limited to only the embodiment thereof illustrated in the drawing, because the drawing is merely utilized to illustrate one of the wide variety of uses of this invention.

Referring now to FIGURE 1, the improved fuel control system of this invention is generally indicated by the reference numeral **10** and includes a conventional broil burner **11** and a conventional bake burner **12** mounted in an oven **13** with the broil burner **11** mounted at the top thereof and the bake burner **12** mounted at the bottom thereof.

A first manually operated selector valve **14** is adapted to selectively interconnect a source of fuel **15** to either the broil burner **11** or the bake burner **12** in a manner hereinafter described, the selector valve **14** being adapted to thermostatically control the temperature of the oven **13** in a manner hereinafter described.

A stand-by pilot burner **16** is disposed adjacent the bake burner **12** and is interconnected to the source of fuel **15** by a conduit **17**, the conduit **17** having a suitable filter and adjusting valve **18** disposed therein.

A controlled pilot burner **19** is disposed adjacent the stand-by pilot burner **16** and is interconnected to an outlet **20** of a second manually operated selector valve **21** by a conduit **22**.

The inlet **23** of the valve **21** is interconnected to the housing **24** of the first selector valve **14** by a conduit **25**.

A stand-by pilot burner is disposed adjacent the broil burner **11** and is interconnected to the outlet side of a valve **27** by a conduit **28**, the inlet side of the valve **27** being interconnected to the source of fuel **15** by a conduit **29**.

A controlled pilot burner **30** is disposed adjacent the stand-by pilot burner **26** and is interconnected to the housing **24** of the first selector valve **14** by a conduit **31**, the conduit **31** also being interconnected to a branch conduit **32** leading to another outlet **33** of the second selector valve **21** for a purpose hereinafter described.

The second selector valve **21** includes a rotatable valve member **34** rotatably disposed in a cylindrical housing **35** and selectively moved by a control knob **36**. The valve member **34** has a through passage **37** formed therein adapted to interconnect the inlet **23** thereof with the outlet **20** when the control knob **36** is disposed in the illustrated "bake" position thereof.

A branch passage **38** is also formed in the valve member **34** of the second selector valve **21** and is interconnected with the through passage **37** thereof whereby the passages **38** and **37** of the valve member **34** interconnect the inlet **23** with the outlet **33** when the control knob **36** is rotated to the "rotisserie" position thereof while simul-

taneously preventing communication between the inlet 23 and the outlet 20 for a purpose hereinafter described.

Therefore, it can be seen that the second selector valve 21 interconnects the conduit 25 with the conduit 22 leading to the controlled pilot burner 19 while preventing communication between the conduit 25 and the conduit 32 leading to the controlled pilot burner 30 when the selector knob 36 is manually moved to the "bake" position thereof. Similarly, the second selector valve 21 interconnects the conduit 25 with the controlled pilot burner 30 while preventing communication between the conduit 25 and the controlled pilot burner 190 when the selector knob 36 is manually moved to the "rotisserie" position thereof.

While one type of a manually operated selector valve 21 is illustrated for selectively controlling communication between the conduit 25 and the conduits 22 and 32, it is to be understood that any other type of manually operated valve means can be utilized.

The first selector valve 14 is adapted to interconnect the source of fuel 15 to a fuel conduit 39 interconnected to the housing 24 of the selector valve 14 at one end 40 thereof and to an inlet side 41 of a broil burner safety valve 42 at the other end 43 thereof, the outlet side 44 of the broil burner safety valve 42 being interconnected to a conduit 45 leading to the broil burner 11.

Similarly, a branch conduit 46 is interconnected to the fuel conduit 39 and to the inlet side 47 of a bake burner safety valve 48. The outlet side 49 of the bake burner safety valve 48 is interconnected to the bake burner 12 by a conduit 50.

The safety valves 42 and 48 substantially the same except that the broil burner safety valve 42 operates other mechanism in a manner hereinafter described.

Each safety valve 42 and 48 has an annular valve seat 51 separating the inlet side thereof from the outlet side thereof. A movable valve member 52 is carried by each safety valve 42 and 48 and is normally urged to close the valve seat 51 by a compression spring 53.

The movable valve member 52 of each safety valve 42 and 48 bears against an end 54 of a lever 55 fulcrumed at a point 56, the other end 57 of the lever 55 bearing against an end 58 of a lever 59 fulcrumed at a point 60.

Each lever 59 carries a threaded stud 61 which passes through a suitable aperture in the respective lever 55 and is encompassed by a compression spring 62 disposed between the respective levers 55 and 59.

A bellows construction 63 is carried by each safety valve 42 and 48 and has the movable wall thereof bearing against the respective threaded stud 61 so that expansion of the bellows construction 63 causes the levers 59 and 55 to move the valve member 52 away from the valve seat 51 in opposition to the force of the compression spring 53. Similarly, collapsing of the bellows construction 63 causes the valve member 52 to close against the valve seat 51.

Each bellows construction 63 is interconnected to a sensing bulb 64 by a conduit 65 whereby expansion and contraction of a suitable medium, such as mercury or the like, in the sensing bulb 64 causes corresponding expansion and contraction of the respective bellows construction 63.

In this manner, the bake burner safety valve 48 has the valve member 52 thereof moved to the open position only when the sensing bulb 64 senses a flame appearing at the controlled pilot burner 19 whereby the safety valve 48 only interconnects fuel to the bake burner 12 when a flame appears at the controlled pilot burner 19.

Similarly, the broil burner safety valve 42 only interconnects fuel to the broil burner 11 when a flame appears at the controlled pilot 30.

The first selector valve 14 includes a rotatable cock valve member 66 disposed in a tapering bore 67 formed in the housing 24, the valve member 66 having a longitudinally disposed bore 68 formed partially there through

and disposed in communicaiton with a chamber 69 of the housing 24.

The valve member 66 has a slot 70 formed therein and being adapted interconnect a passage 71 formed in the housing 24 with the bore 68 of the valve member 66 when a selector knob 72 of the selector valve 14 is disposed in any "on" position thereof, the passage 71 in the housing 24 being interconnected to the source of fuel 15.

The chamber 69 of the housing 24 of the selector valve 14 is separated from another chamber 73 thereof by an annular valve seat 74. Another smaller annular valve seat 75 is provided by the housing 24, with the valve seat 75 being offset from and disposed in the same plane as the outer annular valve seat 74.

The valve seat 75 is interconnected to a passage 76 formed in the housing 24 and leading to the bore 67 thereof.

A passage 77 is formed in the housing 24 of the selector valve 14 and leads from the bore 67 thereof to the conduit 25, the passage 77 having a suitable adjusting valve 78 provided therein.

The valve member 66 of the selector valve 14 has a groove 79 formed therein and adapted to interconnect the passage 76 with the passage 77 when the selector knob is disposed on in any "bake" position, the groove 79 preventing communication between the passages 76 and 77 when the control knob 72 is disposed in the "off" position thereof or in the "broil" position thereof for a purpose hereinafter described.

A slot 80A is provided in the valve member 66 of the selector valve 14 to interconnect the bore 68 thereof with a passage 80 formed in the housing 24 when the selector knob 72 is only disposed in the "broil" position thereof for a purpose hereinafter described, the passage 80 having a suitable adjusting valve 81 provided therein and leading to the conduit 31.

A thermostatically controlled valve member 82 is slidably carried on a rod or shaft 83 adapted to be rotated in unison with the cock valve member 66, and axially movable relative to the valve member 66, the valve member 82 being adapted to open and close the valve seats 74 and 75 for a purpose hereinafter described.

A bi-metal spring means 84 is carried by the rod 83 and bears against one side of the valve member 82 to tend to limit movement of the valve member 82 in one direction on the shaft 83.

The free end 85 of the rod 83 is threadedly disposed in a retainer 86 carried by the movable wall of a bellows construction 87 carried by the housing 24 and disposed in the chamber 73 thereof whereby rotation of the shaft 83 in one direction causes the valve member 82 to be moved away from the valve seats 74 and 75 while rotation of the shaft 83 in the other direction causes the valve member 82 to be moved toward the valve seats 74 and 75 under the influence of a compression spring 88 disposed between the retainer 86 and the valve member 82.

Therefore, rotation of the selector knob 72 to any "on" position thereof causes the valve member 82 to move away from the valve seats 74 and 75 to interconnect the chamber 69 to the chamber 73 whereby fuel can flow to the chamber 73 and out through a passage 89 to the fuel conduit 39. The valve member 82 remains away from the valve seats 74 and 75 as long as the oven 13 remains below the selected temperature as indicated by the setting of the control knob 72. However, when the temperature of the oven 13 reaches the selected temperature, or exceeds the same, a suitable medium disposed in a sensing bulb 90 located in the oven 13 and interconnected to the bellows construction 87 by a conduit 91 causes the bellows construction 87 to expand and move the shaft 83 and the valve member 82 to close against the valve seats 74 and 75. Similarly, when the temperature of the oven 13 falls below the selected temperature, the bellows construction 87 has collapsed to such an extent that the valve member 82 moves away from the valve seats

74 and 75 under the influence of the movement of the shaft 83 for a purpose hereinafter described.

In order to ignite fuel issuing from the controlled pilot burner 30 of the broil 11, an electrical ignition system is provided and will now be described.

A suitable ignition coil 92 is disposed adjacent the controlled pilot burner 30 and has one side thereof interconnected to a lead 93 and the other side thereof interconnected to a lead 94. The lead 93 is interconnected to a contact L_2 of a suitable electrical power source and the lead 94 is interconnected to a contact 95 of a switch arm 96.

The switch arm 96 is interconnected to the lever 55 of the safety valve 42 by a rod 97 whereby the switch arm 96 bridges the contacts 95 and 98 when the valve member 52 of the broil burner safety valve 42 is disposed in a closed position thereof. However, when the valve member 52 of the safety valve 42 is moved to an opened position thereof, the switch arm 96 is moved away from the contacts 95 and 98 rendering the ignition coil 92 inoperative for a purpose hereinafter described.

Similarly, the valve 27 includes an annular valve seat 99 separating the inlet side thereof from the outlet side thereof, the annular valve seat 99 normally being closed by a movable valve member 100 urged to the closed position by a compression spring 101. The valve member 100 is interconnected to the safety valve 42 in any suitable manner, such as by rod 102, whereby the valve member 100 is disposed in the closed postion thereof only when the valve member 52 of the broil burner safety valve 42 is disposed in the closed position. Therefore, when the valve member 52 of the safety valve 42 is moved to an opened position, the valve member 100 of the valve 27 is simultaneously moved to an opened position thereof.

The contact 98 of the switch arm 96 is interconnected to a fixed contact 103 of a normally opened switch arm 104 by a lead 105.

The switch arm 104 is adapted to be moved against a contact 106 when the selector knob 72 is moved to the "broil" position thereof to cause a cam 107 to move against the switch arm 104 and close the switch arm 104 against the contact 106, the contact 106 being interconnected to the contact L_1 of the electrical power source by a lead 108.

Therefore, it can be seen that the ignition coil 92 is rendered operable when the switch arm 96 and the switch arm 104 are disposed in their closed positions.

A rotisserie motor 109 is included in the system 10 and is adapted to operate a suitable rotisserie adapted to be disposed in the oven 13 in a conventional manner, one side of the rotisserie motor 109 being interconnected to the lead 93 by a lead 110 while the other side of the rotisserie motor 109 is interconnected to a fixed contact 111 of a normally opened switch arm 112 by a lead 113.

The switch arm 112 is moved against contacts 114, 118 only when the selector knob 36 of the second selector valve 21 is moved to the "rotisserie" position thereof. For example, the selector knob 36 can carry a cam 115 that is moved against a push rod 116 carried by the switch arm 112.

The contact 114 is interconnected to the lead 108 by a lead 117 and the contact 118 is interconnected to the lead 105 by a lead 118A.

The operation of the fuel control system 10 will now be described.

When it is desired to operate the oven 13 at a pre-selected baking temperature, such as 300°, the second selector control knob 36 is normally disposed in the "bake" position thereof as illustrated in the drawings and control knob 72 of the first selector valve 14 is rotated to the 300° F. position thereof as illustrated.

When the control knob 72 of the selector valve 14 is rotated to such a bake "on" position thereof, the slot 70 of the valve member 66 interconnects the source of fuel 15 with the bore 68 thereof while simultaneously interconnecting the passage 76 with the passage 77 by the groove 79 thereof, the passage 80 being blocked off by the valve member 66. Simultaneously, the shaft 83 is rotated in the proper direction to cause the shaft 83 to move axially and carry the valve member 82 away from the valve seats 74 and 75 whereby fuel can flow from the chamber 69 into the chamber 73. Thus, the fuel in the chamber 73 flows into the fuel conduit 39 and into the passage 76 through the opened valve seat 75.

As the fuel flows through the opened valve seat 75 and passages 76 and 77 into the conduit 25, the valve member 34 of the second selector valve 21 interconnects the conduit 25 with the conduit 22 whereby fuel can issue from the control pilot burner 19 and be ignited by the continuously burning standby pilot burner 16.

When a flame thus appears at the controlled pilot burner 19, the bake burner safety valve 48 has the valve member 52 thereof moved to the opened position because the medium in the sensing bulb 64 is expanded by the flame at the controlled pilot burner 19 whereby fuel from the fuel conduit 39 flows to the bake burner 12 and is ignited by the standby pilot burner 16 and/or by the flame from the controlled pilot burner 19.

When the temperature of the oven 13 reaches the selected temperature, or exceeds the same, the sensing bulb 90 causes the bellows construction 87 of the first selector valve 14 to expand to such a degree that the valve member 82 is moved against the valve seats 74 and 75 whereby the flow of fuel to the controlled pilot burner 19 is terminated and causes the closing of the safety valve 48 so that no more fuel can be delivered to the bake burner 12.

Should the temperature of the oven 13 fall below the selected temperature, the sensing bulb 90 has caused the bellows construction 87 to collapse to such an extent that the valve member 82 is again moved away from the valve seats 74 and 75 so that fuel can again flow to the controlled pilot burner 19 and to the fuel conduit 39 to continue operation of the bake burner 12 in the above manner.

Therefore, it can be seen that the selector valve 14 maintains the temperature of the oven 13 at any selected temperature while the control knob 72 thereof is disposed in any bake "on" position thereof.

When it is desired to utilize the broil burner 11 of the oven 13 for broiling purposes, the selector knob 72 of the first selector valve 14 is rotated to the "broil" position thereof.

When the valve member 66 of the selector valve 14 is rotated to the "broil" position thereof, the groove 70 interconnects the source of fuel 15 with the bore 68 thereof while simultaneously interconnecting a slot 80A with the passage 80 so that fuel can flow from the bore 68 of the valve member 66 through the passage 80 into the conduit 31 leading to the controlled pilot burner 30, the passage 77 now being blocked off by the valve member 66 so that fuel cannot flow to the controlled pilot burner 19 of the bake burner 12.

Simultaneously with the moving of the control knob 72 to the "broil" position thereof, the cam 107 closes the switch arm 104 against the contact 106 to place the ignition coil 92 across the contacts L1 and L2 of the electrical power source because the switch arm 96 is disposed in the closed position thereof whereby the ignition coil 92 ignites the fuel issuing from the controlled pilot burner 30.

When the control knob 72 is moved to the "broil" position thereof the valve member 82 of the selector valve 14 is moved away from the valve seats 74 and 75 a distance sufficient to prevent the bellows construction 87 from seating the valve member 82 regardless of the temperature of the oven 13 whereby the chamber 69 of the selector valve 14 is continuously interconnected to chamber 73 so that fuel can be continuously supplied to the fuel conduit 39.

After a flame appears at the controlled pilot burner 30,

the broil burner safety valve 42 opens as the sensing bulb 64 senses the flame at the controlled pilot burner 30. As the valve member 52 of the broil burner safety valve 42 opens, the switch arm 96 is pulled away from the contacts 95 and 98 whereby the ignition coil 92 is rendered inoperable.

Simultaneously with the opening of the valve member 52 of the broil burner safety valve 42, the valve member 100 of the valve 27 is moved away from the valve seat 99 to interconnect the conduit 29 with the conduit 28 so that fuel can issue from the standby pilot burner 26 and be ignited by the controlled pilot burner 30.

The fuel flowing from the fuel conduit 39 through the now opened safety valve 42 issues from the broil burner 11 and is ignited by the standby pilot burners 26 and/or the controlled pilot burner 30.

Should it be found that the operator of the fuel control system 10 has the broil burner 11 operating in the above manner and thereafter turns the selector knob 72 to the "off" position thereof so that no more fuel can flow to the broil burner 11 and to controlled pilot burner 30, the safety valve 42 begins to close. However, there is a certain time lag in the closing operation of the safety valve 42 whereby the valve member 52 thereof does not immediately close after a flame disappears at the controlled pilot burner 30. During this time lag in the closing of the valve member 52 of the safety valve 42, the operator of the fuel control system 10 may again turn the control knob 72 to any "on" position thereof whereby fuel can flow through the now opened valve member 82 into the fuel conduit 39 and through the opened safety valve 42 to the broil burner 11. Should this happen, the valve member 100 of the valve 27 is likewise remaining open as long as the valve member 52 of the safety valve 42 remains open whereby a flame continuously burns at the standby pilot burner 26 as long as the valve 27 is open. In this manner, the standby pilot burner 26 will ignite any fuel subsequently issuing from the broil burner 11 until the safety valve 42 closes whereby an explosive condition in the oven 13 is eliminated by the standby pilot burner 26 should the control system then be operated in the above manner.

When it is desired to utilize a rotisserie in the oven 13, it is normally necessary to utilize the broil burner 11 and also to maintain the oven 13 at a selected temperature lower than the temperature of the oven 13 when the control knob 72 is disposed in the "broil" position thereof. For example, it may be desired to utilize the rotisserie and maintain the oven 13 at a temperature of around 400° F.

Therefore, the operator of the fuel control system 10 turns the control knob 72 of the first selector valve 14 to the selected baking temperature, such as 400° F. whereby the bake burner 12 is operated in the above manner.

However, the operator then turns the selector knob 36 of the second selector valve 21 to the "rotisserie" position thereof whereby the valve member 34 interconnects the conduit 25 with the branch conduit 32 so that the fuel passing through the opened valve seat 75 of the selector valve 14 will now flow to the conduit 31 leading to the controlled pilot burner 30 of the broil burner 11, the valve member 34 now preventing communication between the inlet 23 and the outlet 20 thereof so that no fuel will issue from the controlled pilot burner 19 of the bake burner 12.

When the selector knob 36 of the selector valve 21 is moved to the rotisserie position thereof, the switch arm 112 is moved against the contacts 114 and 118 to not only place the rotisserie motor 109 across the contacts L_1 and L_2 of the electrical power source, but to also place the ignition coil 92 across the contacts L_1 and L_2 of the electrical power source whereby the ignition coil 92 ignites the fuel issuing from the controlled pilot burner 30 of the broil burner 11 so that the broil burner 11 can be operated in the above manner.

However, because the valve member 82 of the selector valve 14 is disposed in a "bake" position thereof, the sensing bulb 90 disposed in the oven 13 controls the flow of fuel to the broil burner 11 through the action of the valve member 82 so that the broil burner 11 is turned on and off by the valve member 82 to maintain the temperature of the oven 13 at the selected temperature while the broil burner 11 is being utilized.

Therefore, it can be seen that an improved fuel control system for double burner oven or the like has been provided by this invention wherein a single selector valve is utilized to selectively operate the bake burner and broil burner thereof. Further, the fuel control system of this invention includes a second manually operated selector valve which permits the broil burner to be utilized even though the first selector valve is disposed in a "bake" position thereof so that a rotisserie can be utilized in the oven for cooking and the like while the temperature of the oven is maintained at any selected temperature.

While the form of the invention now preferred has been disclosed as required by the statutes, other forms may be used, all coming within the scope of the claims which follow.

What is claimed is:

1. In combination, a bake burner, a broil burner, a first manually operated selector valve, said first selector valve being adapted to cause said bake burner to operate when said first selector valve is in one position thereof, said first selector valve being adapted to cause said broil burner to operate when said first selector valve is in another position thereof, and a second manually operated selector valve, said second selector valve permitting said bake burner to operate when said second selector valve is in one position thereof and said first selector valve is in said one position thereof, said second selector valve causing only said broil burner to operate when said second selector valve is in another position thereof and said first selector valve is in said one position thereof.

2. A combination as set forth in claim 1 wherein an ignition means is provided for said broil burner, and wherein said first selector valve renders said ignition means operable when said first selector valve is in said other position thereof.

3. A combination as set forth in claim 1 wherein an ignition means is provided for said broil burner, and wherein said second selector valve renders said ignition means operable when said second selector valve is in said other position thereof.

4. A combination as set forth in claim 1 wherein a rotisserie is provided, and wherein said second selector valve renders said rotisserie operable when said second selector valve is in said other position thereof.

5. In combination, an oven, a bake burner disposed in said oven, a broil burner disposed in said oven, a first manually operated selector valve, said first selector valve being adapted to cause said bake burner to operate when said first selector valve is in one range thereof, said first selector valve being adapted to cause said broil burner to operate when said first selector valve is in another range thereof, said one range of said first selector valve controlling the temperature of said oven, and a second manually operated selector valve, said second selector valve permitting said bake burner to operate when said second selector valve is in one position thereof and said first selector valve is in said one range thereof, said second selector valve causing only said broil burner to operate when said second selector valve is in another position thereof and said first selector valve is in said one range thereof.

6. A combination is set forth in claim 5 wherein an ignition means is provided for said broil burner, and wherein said first selector valve renders said ignition means operable when said first selector valve is in said other range thereof.

7. A combination as set forth in claim 5 wherein an ignition means is provided for said broil burner, and wherein said second selector valve renders said ignition means operable when said second selector valve is in said other position thereof.

8. A combination as set forth in claim 5 wherein a rotisserie is provided in said oven, and wherein said second selector valve renders said rotisserie operable when said second selector valve is in said other position thereof.

9. In combination, a source of fuel, a bake burner having a pilot burner, a broil burner having a pilot burner, a first manually operated selector valve, said first selector valve interconnecting said source of fuel to said bake pilot burner when said first selector valve is in one position thereof, said first selector valve interconnecting said source of fuel to said broil pilot burner when said first selector valve is in another position thereof, and a second manually operated selector valve downstream from said first selector valve, said second selector valve permitting said first selector valve to interconnect said source of fuel to said bake pilot burner when said second selector valve is in one position thereof and said first selector valve is in said one position thereof, said second selector valve interconnecting said source of fuel only to said broil pilot burner when said second selector valve is in another position thereof and said first selector valve is in said one position thereof.

10. A combination as set forth in claim 9 wherein an ignition means is provided for said broil pilot burner, and wherein said first selector valve renders said ignition means operable when said first selector valve is in said other position thereof.

11. A combination as set forth in claim 9 wherein an ignition means is provided for said broil pilot burner, and wherein said second selector valve renders said ignition means operable when said second selector valve is in said other position thereof.

12. A combination as set forth in claim 9 wherein a rotisserie is provided, and wherein said second selector valve renders said rotisserie operable when said second selector valve is in said other position thereof.

13. In combination, a source of fuel, a bake burner having a pilot burner, a broil burner having a pilot burner, a bake burner valve for interconnecting said source of fuel to said bake burner when a flame appears at said bake pilot burner, a broil burner valve for interconnecting said source of fuel to said broil burner when a flame appears at said broil pilot burner, a first manually operated selector valve, said first selector valve interconnecting said source of fuel to said bake pilot burner when said first selector valve is in one position thereof, said first selector valve interconnecting said source of fuel to said broil pilot burner when said first selector valve is in another position thereof, and a second manually operated selector valve downstream from said first selector valve, said second selector valve permitting said first selector valve to interconnect said source of fuel to said bake pilot burner when said second selector valve is in one position thereof and said first selector valve is in said one position thereof, said second selector valve interconnecting said source of fuel only to said broil pilot burner when said second selector valve is in another position thereof and said first selector valve is in said one position thereof.

14. A combination as set forth in claim 13 wherein an ignition means is provided for said broil pilot burner, and wherein said first selector valve renders said ignition means operable when said first selector valve is in said other position thereof.

15. A combination as set forth in claim 13 wherein an ignition means is provided for said broil pilot burner, and wherein said second selector valve renders said ignition means operable when said second selector valve is in said other position thereof.

16. A combination as set forth in claim 13 wherein a rotisserie is provided, and wherein said second selector valve renders said rotisserie operable when said second selector valve is in said other position thereof.

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