Aug. 17, 1965 D. J. SWIFT 3,200,808

GAS STOVE

Filed Dec. 30, 1963 2 Sheets-Sheet 1

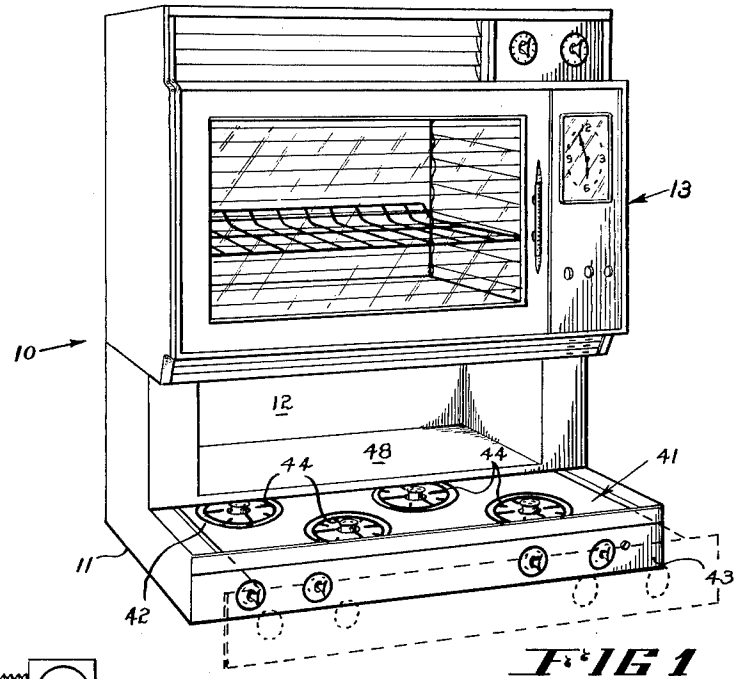


FIG 1

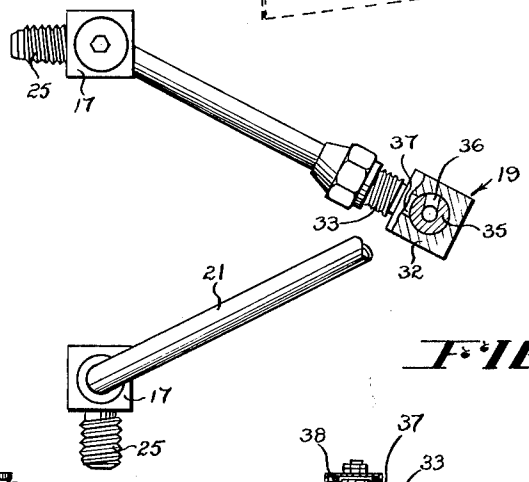


FIG 2

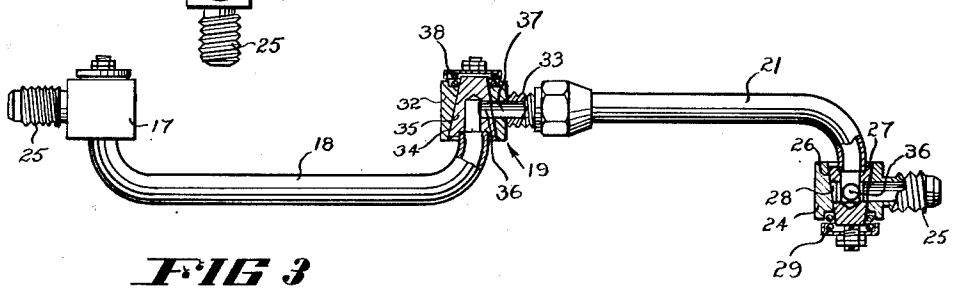


FIG 3

Aug. 17, 1965 D. J. SWIFT 3,200,808

GAS STOVE

Filed Dec. 30, 1963 2 Sheets-Sheet 2

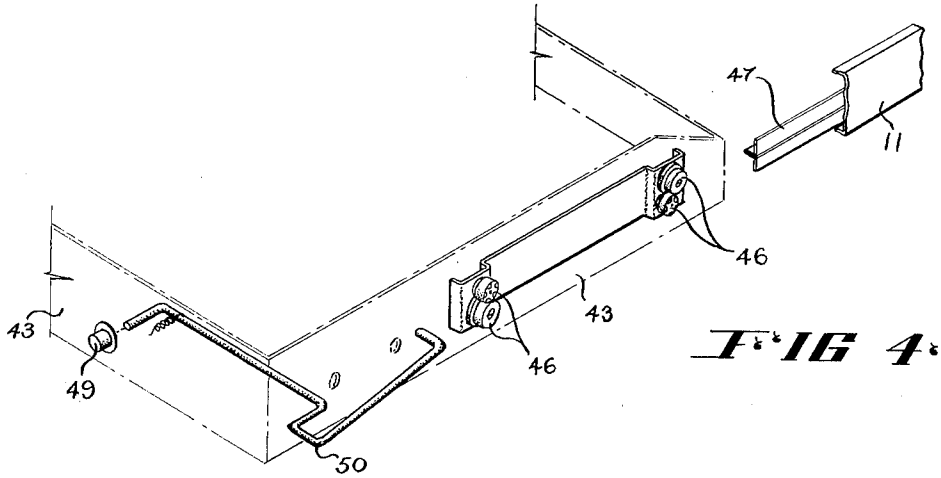


FIG 4

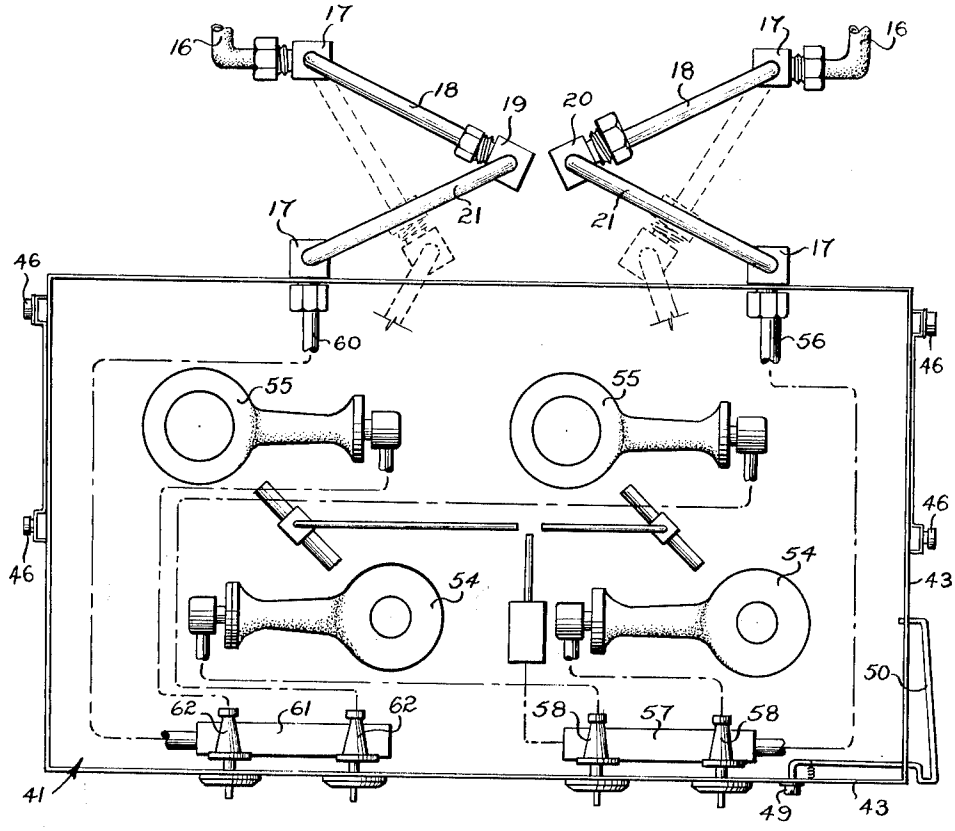


FIG 5

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GAS STOVE

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This invention relates to a gas stove of the type wherein a series of gas rings are disposed on a surface cooking unit.

It is already known for a surface cooking unit to be of the so-called "drawer" or "sliding hob" type, wherein the unit can be drawn outwardly from its base to expose further rings, or pushed back inwardly to provide more space adjacent the surface cooking unit. Thus for example it has been proposed previously to utilise a gas stove wherein an elevated oven is disposed above a base and spaced therefrom and connected thereto by means of a rear vertical member, and a surface cooking unit containing a plurality of gas rings is movable outwardly from the base to an outwardly extended position where all gas rings are exposed, or can be moved back inwardly towards the rear member to a retracted front gas ring only.

With this type of stove however some difficulty is encountered on the question of safety in that it must not be possible to turn on the gas valves leading to the rear gas rings when the surface cooking unit is in its retracted position, as the gas from these gas valves can then form pockets within the structure of the base of the stove wherein they can ignite, and in some cases, when the pockets are semi-enclosed, the ignition can be of explosive force and can therefore be dangerous.

With the object of overcoming the above disabilities, this invention in its simplest form may be said to consist of a gas stove comprising a base, a gas feed pipe fixed relative to the base, swivel means on the discharge end of the gas feed pipe and in gas flow communication therewith, a surface cooking unit movable on the base, gas burners on the surface cooking unit adapted to move from a retracted to an outwardly extended position upon outward movement of the surface cooking unit relative to the base, a gas burner supply pipe on the surface cooking unit, swivel means on the inlet end of the gas burner supply pipe and in gas flow communication therewith, a pair of elbow pipes, one end of each said elbow pipe pivotally engaging a said swivel means for gas flow therebetween, and further swivel means joining the other ends of both elbow pipes together for gas flow communication between said elbow pipes, at least one of said swivel means constituting gas valve means open when said surface cooking unit is in its operative position but closed when in its retracted position.

An embodiment of the invention is described hereunder in some detail with reference to and is illustrated in the accompanying drawings, in which:

FIG. 1 is a perspective view of a gas stove according to this invention, showing the surface cooking unit in its retracted position, the dotted lines indicating how the surface cooking unit can be moved outwardly to an operative position,

FIG. 2 is a plan view to an enlarged scale of two elbow pipes and three swivel blocks, the centre block of which constitutes gas valve means,

FIG. 3 is an elevational view, similarly to an enlarged scale, showing the elbow pipes and showing the swivel blocks in section,

FIG. 4 is a fragmentary perspective view showing the roller mechanism on which the surface cooking unit is movable, and

FIG. 5 is a plan view showing the movable surface cooking unit with its upper plate removed.

According to this embodiment a gas stove 10 includes a base 11, a rear vertical member 12 upstanding from the base 11, and an elevated oven 13 on the rear vertical member 12, the elevated oven 13 being disposed forwardly over the base but faced upwardly therefrom.

The base 11 carries on it a pair of gas feed pipes 16 each of which has a swivel block 17 secured to its discharge end. Each swivel block 17 swivelly engages one end of a rear elbow pipe 18, the other end of the rear elbow pipe 18 engages in one case (shown on the left-hand side in FIG. 5) a swivel gas valve block 19 and in the other case (shown on the right-hand side of FIG. 5) a swivel block 20, and both the swivel gas valve block 19 and the swivel block 20 swivelly engage the rear ends of the forward elbow pipes 21. The front ends of the forward elbow pipes 21 again engage the swivel blocks 17 which are similar to the swivel blocks on the ends of the gas feed pipes 16.

FIGS. 2 and 3 show the construction of the swivel blocks 17 wherein an outer body 24 has a threaded tail 25 thereon, and a tapered bore 26 which receives a complementary tapered plug 27, the tapered plug 27 having in it an annular recess 28, the base of which contains an aperture 36 which is in gas flow communication with the pipe 21 (or the pipe 18). A spring 29 retains the plug 27 in sealable engagement with its complementary bore 26 in the outer body 24. The swivel block 20 is of similar construction to the swivel block 17.

FIGS. 2 and 3 also show the construction of the swivel gas valve block 19 wherein an outer body 32 has on it a threaded tail 33 and contains a tapered bore 34 which receives a complementary tapered plug 35, the tapered plug 35 having a single aperture 36 extending through the wall thereof, and this aperture 36 aligning with the aperture 37 on the tail 33 when the pipes 18 and 21 are articulated as shown in dotted lines in FIG. 5, and as shown in FIG. 3, but the plug aperture 36 being out of registry with the tail aperture 37 when the pipes 18 and 19 are closed together as shown in FIG. 2 and as shown in full lines in FIG. 5. The tapered plug 35 is again retained into gas seal engagement with the tapered bores 34 by means of the spring 38 which is similar to the spring 29.

The surface cooking unit 41 consists of an upper plate 42 (shown removed in FIG. 5), a box-like compartment 43 on which the plate 42 is hinged, and four openings 44 in the plate 42. Two of the openings 44 are adjacent the rear edge of the plate 42 and the other two openings 44 are adjacent the front edge of the plate 42. The surface cooking unit 41 is movable on small rollers 46 which engage a flange 47 constituting a roller track projecting inwardly from the sides of the base 11, so that the cooking unit 41 is movable with respect to the base, and when the surface cooking unit 41 is pushed inwardly to its retracted position (as shown in FIG. 1) the two rear openings 44 are partly covered by a plate shelf 48 on the rear vertical member 12. A push button 49 is on the end of a spring latch member 50 which engages an aperture in the flange 47 when the surface cooking unit 41 is in its retracted position, but pressure upon the button releases the latch member 50 and allows withdrawal of the surface cooking unit 41 to its operative position.

The surface cooking unit 41 has two front gas burners 54 disposed beneath corresponding openings 44 and two rear gas burners 55 disposed beneath the rear openings 44. The front gas burners 54 are fed from the block 17 on the rear marginal wall 43 of the box-like compart-

ment of the surface cooking unit 41 through the front gas burner supply pipe 56 which feeds the gas valve manifold 57 containing two gas valves 58 for the control of gas to the burners 54. The rear gas burners 55 are fed from the rear gas burner supply pipe 60 which feeds a second gas valve manifold 61 containing the gas valves 62 for control of gas flow to the burners 55. Thus it will be seen that gas has a free flow communication from the gas feed pipe 16 shown on the right-hand side of FIG. 5, through the swivel blocks 17, 20 and 17, and the front gas burner supply pipe 56 no matter what position the surface cooking unit is in, but the rear gas burners 55 have their supply from the gas feed pipe 16 shown on the left-hand side of FIG. 5 cut off by the valve means within the swivel gas valve block 19 when the surface cooking unit is in its retracted position as shown in FIG. 5, and gas can only flow when it it drawn outwardly to its outwardly extended position. It will be seen of course that the gas valve means can be in the swivel block 17 on the gas feed pipe 16, or in the swivel block 17 connected to the inlet end of the rear gas burner supply pipe 60, but it will immediately be seen that a considerable advantage exists in incorporating the gas valve means in the swivel block 19 since the relative angular movement between the pipes 18 and 21 is greater than the relative angular movement between either of these pipes and the swivel blocks 17.

What I claim is:

1. A gas stove comprising:
a base,
a pair of gas feed pipes fixed relative to the base,
swivel blocks on the discharge ends of the gas feed pipes arranged for gas flow therethrough from said gas feed pipes,
a surface cooking unit, means supporting said surface cooking unit for outward movement relative to said base,
front gas burners on the surface cooking unit,
rear gas burners on the surface cooking unit adapted to move from a retracted to an outwardly extended position upon outward movement of the surface cooking unit relative to the base,
a front gas burner supply pipe and a rear gas burner supply pipe on the surface cooking unit feeding said front and rear burners respectively,
swivel blocks on the inlet ends of the gas burner supply pipes also arranged for gas flow therethrough to respective gas burner supply pipes,
two pairs of elbow pipes, one end of one elbow pipe of a first pair pivotally engaging a said swivel block on a gas feed pipe for gas flow therebetween, the other end of the other elbow pipe of said first pair engaging a said swivel block on a rear burner supply pipe for gas flow therebetween,
a further swivel block constituting gas valve means and joining the other ends of both elbow pipes together, with the angle between the elbow pipes increasing upon outward movement of said surface cooking unit, said further swivel block joining said elbow pipes for gas flow communication between said elbow pipes when said surface cooking unit is in its outwardly extended position but closing said gas flow communication when in its retracted position, and
a further swivel block joining the adjacent ends of the other pair of elbow pipes for gas flow communication therebetween when said surface cooking unit is in its outwardly extended position and also when said surface cooking unit is in its retracted position.

2. A gas stove comprising:
a base,
inwardly directed flanges on the side walls of the base constituting a roller track,

a surface cooking unit comprising an upper plate, marginal walls on the upper plate,
rollers on the side marginal walls of the surface cooking unit engaging said roller track, said surface cooking unit being movable on said rollers from a retracted position to an outwardly extended position relative to the base,
a pair of rear gas burners and a pair of front gas burners on the surface cooking unit,
a pair of swivel blocks on the rear of said surface cooking unit,
a rear gas burner supply pipe connected for gas flow to one of said swivel blocks,
a front gas burner supply pipe connected for gas flow to the other said swivel block,
a pair of gas feed pipes fixed relative to the base and a pair of further swivel blocks, each gas feed pipe terminating in a said further swivel block,
a pair of elbow pipes between one of the gas feed pipe swivel blocks and the swivel block on said rear gas burner supply pipe, said elbow pipes being interconnected with a swivel gas valve block constituting gas valve means between said elbow pipes, with the angle between said elbow pipes increasing upon outward movement of said surface cooking unit, said swivel gas valve block being operable to open or close gas flow communication between said elbow pipes upon variation of said angle, a second pair of elbow pipes connecting the swivel block on the other said gas feed pipe to the swivel block on the said front gas burner supply pipe interconnected with a further swivel block between the elbow pipes arranged for gas flow therethrough when said surface cooking unit is in its outwardly extended position and also when said surface cooking unit is in its retracted position,
whereby a gas flow communication exists between said front burners and a said gas feed pipe when the surface cooking unit is in either its retracted or outwardly extended position but a gas flow communication exists between the rear burners and a said gas feed pipe only when said surface cooking unit is in its outwardly extended position and not when in its retracted position.

3. A gas stove comprising:
a base,
inwardly directed flanges on the side walls of the base constituting a roller track,
a surface cooking unit comprising an upper plate, marginal walls on the upper plate, front openings in the upper plate and rear openings in the upper plate,
rollers on the side marginal walls of the surface cooking unit engaging said roller track, said surface cooking unit being movable on said rollers from a retracted position to an outwardly extended position relative to the base,
a pair of rear gas burners disposed one beneath each said rear opening on the surface cooking unit,
a pair of front gas burners disposed one beneath each front opening on the surface cooking unit,
a pair of gas valves in a rear burner gas valve manifold controlling gas flow to said rear burners,
a pair of gas valves in a front gas valve manifold controlling flow of gas to the said front gas burners,
a pair of swivel blocks on the rear marginal wall of said surface cooking unit,
a rear gas burner supply pipe connected for gas flow from said rear gas valve manifold to one of said swivel blocks,
a front gas burner supply pipe connected for gas flow between said front gas valve manifold and the other said swivel block,
a pair of gas feed pipes fixed relative to the base and

a pair of further swivel blocks, each gas feed pipe terminating in a further swivel block,

a pair of elbow pipes between one of the gas feed pipe swivel blocks and the swivel block on said rear gas burner supply pipe, said elbow pipes being interconnected with a swivel gas valve block constituting gas valve means between said elbow pipes, with the angle between said elbow pipes increasing upon outward movement of said surface cooking unit, said swivel gas valve block being operable to open or close gas flow communication between said elbow pipes upon variation of said angle, a second pair of elbow pipes connecting the swivel block on the other said gas feed pipe to the swivel block on the said front gas burner supply pipe interconnected with a further swivel block between the elbow pipes arranged for gas flow therethrough when said surface cooking unit is in its outwardly extended position and also when said surface cooking unit is in its retracted position,

whereby a gas flow communication exists between said front burner gas valve manifold and a said gas feed pipe when the surface cooking unit is in either its retracted or outwardly extended position but a gas flow communication exists between the rear burner gas valve manifold only when said surface cooking unit is in its outwardly extended position and not when in its retracted position.

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