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2,043,365

SAFETY DEVICE

Filed March 14, 1935

2 Sheets-Sheet 1

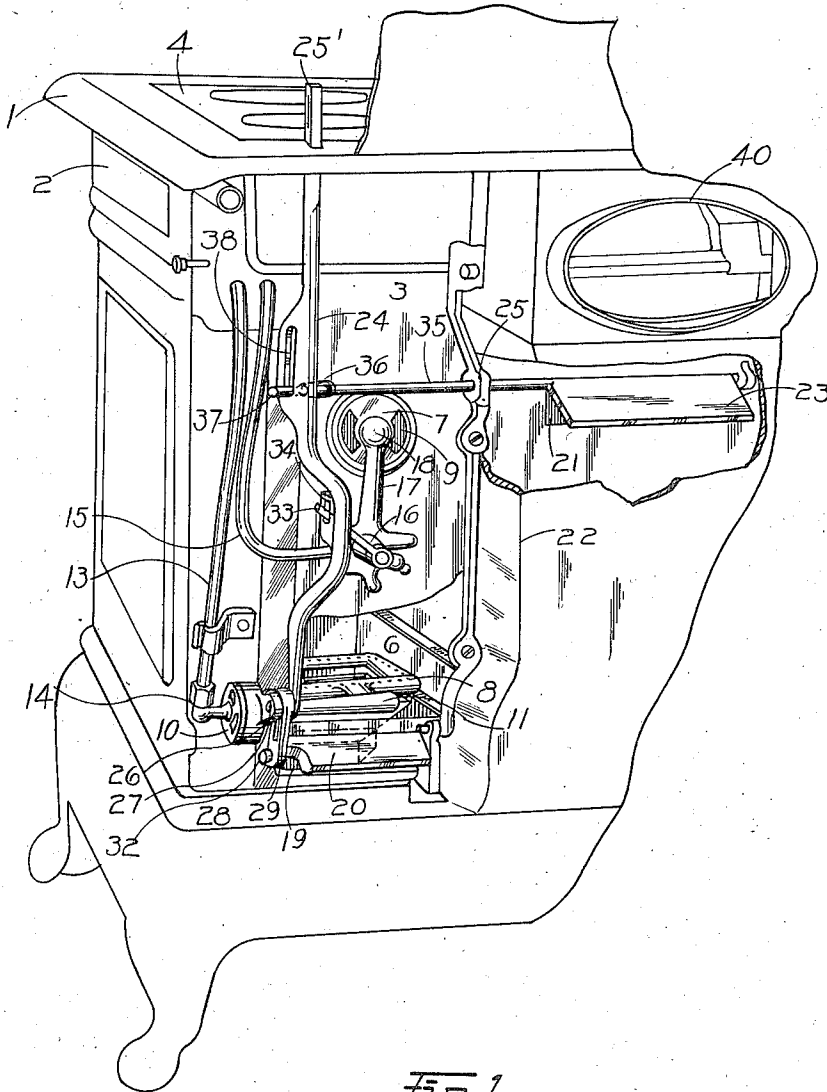


Fig-1

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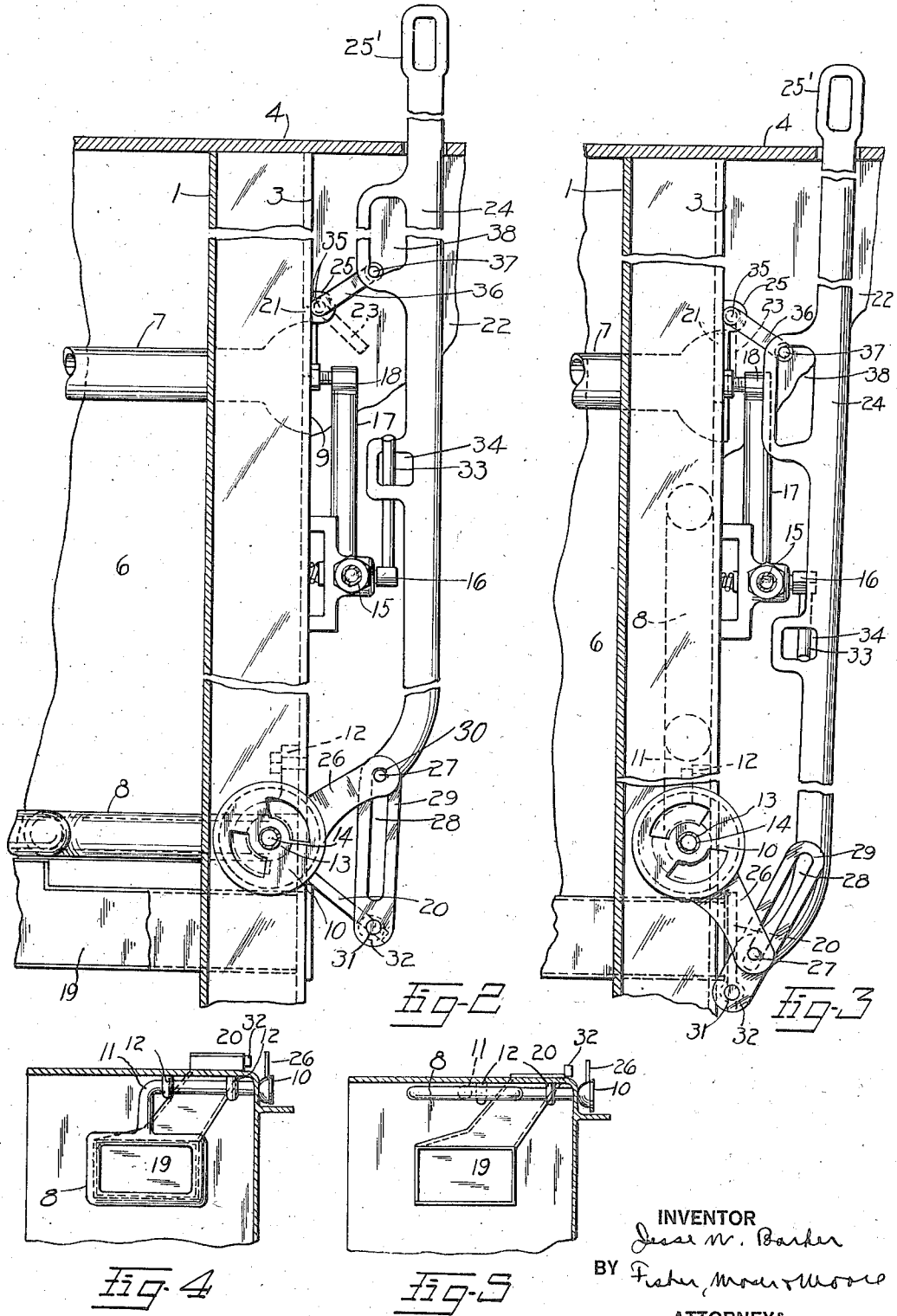
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# UNITED STATES PATENT OFFICE

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## SAFETY DEVICE

Jesse W. Barker, Geneva, N. Y.

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4 Claims. (Cl. 126-36)

This invention relates to safety attachments for combination coal and gas stoves or ranges in which a fixed broiler burner and a movable oven burner are employed.

5 The general object of the invention is to provide means for automatically shutting off the supply of gas and air to the broiler burner when the oven burner is swung upwardly and rearwardly to inoperative position against the rear wall of the stove, thus making it impossible to light the broiler burner until the oven burner is in operative position.

15 A further object of the invention is to provide means for automatically opening the damper controlling the admission of secondary air to the oven and the broiler burners, simultaneously with the lowering of the oven burner to operative position.

20 In prior ranges of the above type, if the broiler burner is lighted when the damper that admits secondary air to the broiler burner is closed, this burner is very apt to go out, or almost out, and then if air is suddenly admitted to the oven by some one opening the oven door, an explosion is very likely to occur. However, by making it impossible to feed gas to the broiler burner except when the adjustable oven burner is ready for operation and the secondary supply of air is available to both burners, the danger of explosion is overcome.

In the accompanying drawings:

Figure 1 is a rear perspective view of a combination coal and gas range showing my invention applied thereto;

35 Figure 2 is a side view of the range partly in section showing the operating rod in elevated position, as in Figure 1;

40 Figure 3 is a view similar to that shown in Figure 2, with the exception that the operating rod is in lowered position;

Figure 4 is a detailed sectional view looking down on the oven burner, the oven burner being in lowered operative position; and

45 Figure 5 is a view similar to Figure 4, but showing the oven burner in raised inoperative position.

Referring more particularly to the drawings, 1 represents a conventional coal and gas range having a side wall 2, main rear wall 3 and a top 4. Mounted within an oven 6 are two burners, an upper broiling burner 7 and a lower oven burner 8, the respective mixer boxes 9 and 10 of which project through the rear wall 3 of the range.

55 The burner 8 is formed with a tubular bent neck portion 11 terminating in the mixer box 10.

This neck portion is suitably supported in bearings 12 adjacent the bottom of the oven 3, to permit of the burner being swung upwardly and rearwardly from the operative position illustrated in Figure 2, to an inoperative position against the rear wall 3, as illustrated in Figure 3. The oven burner is swung to the latter out of the way position whenever it is desired to cook by coal exclusively.

10 The broiler burner 7 is mounted in the upper end of the oven, where it does not interfere with the free use of the oven and consequently may be permanently or otherwise supported in any suitable manner, not shown.

15 Gas is fed to the oven burner from a manifold not shown, through a supply pipe 13, which communicates at its lower end with the mixer box 10, by means of a spud 14. The burner 7 receives its supply of gas through a pipe 15, also leading from the manifold, and connecting with a gas cock 16 on the lower end of an extension 17, the upper end of which carries a spud 18 for attachment to the mixer box 9, as customary. The flow of gas from the manifold to and through pipes 13 and 15, is controlled by a manually operable two way gas cock (not shown) on the manifold, which prevents gas from flowing to the oven burner when it is turned to supply gas to the broiler burner and vice versa. In other words this two way gas cock only admits gas to one burner at a time.

20 A passage 19 communicating at its lower end with the atmosphere adjacent the lower end of the oven terminates at its upper open end at a point beneath the oven burner, when the latter is in lowered operative position. This passage which supplies secondary air to both burners is provided with a hinged damper 20 for controlling the passage of air therethrough. The oven 25 6 also has a vent opening 21, in the rear wall 3 of the oven and range communicating with the hump or smoke bag 22 and provided with a damper 23. The damper 23, which is below the stove pipe opening 40, is formed with an integral stem or arm 35, mounted for rotation in a bearing 25 on the rear wall 3.

30 The dampers 20 and 23 are controlled by means of a vertically disposed operating rod 24 which extends through the top 4 of the range at the rear of the latter and is provided with a handle or hand grip portion 25'. The mixer box 10 of the oven burner has an arm 26 cast thereon which carries a cross pin 27 extending through a slot 28 in the upper end of a link 29 and thence loosely through an aperture 30, in the

lower extremity of the rod 24. The lower end of the link 29 is apertured as at 31 to loosely receive a lug 32 on the damper 20 for the secondary air passage 19. It will thus be seen that the rod 24 is operatively connected to both the damper 20 and the oven burner 8.

A rod 33 connected to the gas cock 16 for turning the same on and off extends through a slot 34 in operating rod 24, and causes the gas cock 16 to be turned on when the operating rod 24 is pulled upwardly to Figure 2 position. At the same time the damper 20 will be opened, thus permitting a supply of both gas and secondary air to flow to the broiler burner. The oven burner 8 will also be lowered to operative position by this movement of the operating rod. The opening of the vent damper 23 is effected simultaneously with the lowering of the oven burner, the turning on of gas cock 16 and the opening of damper 20, by means of an arm 36 on the damper stem 35, which arm is formed with a lug 37 adapted to project through a slot 38 in the operating rod. The arm 36 and lug 37 in effect constitute a bell crank for rotating the stem 35 when actuated by the rod 24.

From the foregoing it will be noted that it will be impossible to light the broiler burner except when the oven burner is down and both air and vent dampers are open. Should a person attempt to light the broiler when the operating rod is in down position, he will be unable to get gas and will immediately realize that he must raise the rod thus causing the oven burner to be lowered and the dampers opened before gas will flow through safety cock 16.

Having thus described my invention, what I claim is:

1. In a gas range having an oven a broiler burner, and a movable oven burner in said oven, said oven burner being movable to and from operative and inoperative positions, separate pipes for supplying gas to said burners, a safety cock in the supply pipe for said broiler burner, a secondary air passage in said oven for supplying air to both of said burners, a damper for said passage, means connecting the movable burner with the said safety cock and damper whereby the said safety cock cannot be opened except when the damper is open and the movable burner is in operative position.

2. In a gas and coal range having an oven, a flue adjacent the oven, a fixed broiler burner and a pivotally mounted oven burner in said oven, said oven burner being movable to and from oper-

ative and inoperative positions, separate pipes for supplying gas to said burners, a safety cock in the gas pipe for said broiler burner, an air passage for supplying secondary air to said burners, a vent in the oven leading to the flue, dampers for said air passage and said vent, means for moving the oven burner from inoperative to operative position and return, said means operatively connecting said oven burner with said dampers and said safety cock whereby said safety cock will only be turned on when said oven burner is in operative position and said dampers are open.

3. In a gas and coal range having an oven, a flue adjacent the oven, a fixed broiler burner and a pivotally mounted oven burner in said oven, said oven burner being movable to and from operative and inoperative positions, pipes for supplying gas to said burners, a safety cock in the pipe supplying gas to said broiler burner, an air passage for supplying secondary air to said burners, a vent in the oven leading to the flue, separate dampers for said air passage and said vent, an operating rod projecting at its upper end through the top of the range and at its lower end pivotally connected to the oven burner and to the damper for the air passage and formed with an upper and a lower slot, a rod operatively connected to said safety cock and projecting into said lower slot, and a stem on said vent damper having an arm extending into said upper slot whereby said safety cock can only be turned on when said oven burner is in operative position and said dampers are open.

4. The combination with a gas and coal range having an oven, upper and lower gas burners in said oven, the lower burner being swingably mounted to permit of its being swung from a lower operative to an upper inoperative position adjacent the rear wall of the stove, manually operated means connected to the lower burner for swinging said burner, a separate source of gas supply for each burner and a safety cock in the source of supply for said broiler burner, a source of secondary air supply common to both burners, a damper for shutting off said air supply to said burners, said manually operated means connecting the movable burner with the damper for the secondary air supply and with the cock in the source of gas supply for the upper burner whereby gas cannot be fed to the upper burner except when the damper is open and the movable burner is swung to lowered operative position.

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