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A. F. GLASS

STOVE

Filed Sept. 17, 1926

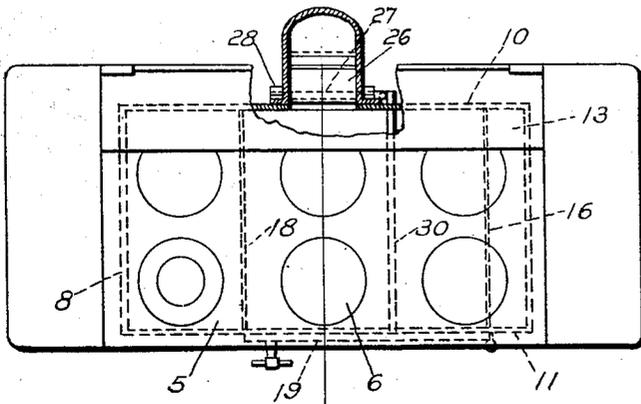


FIG. 3.

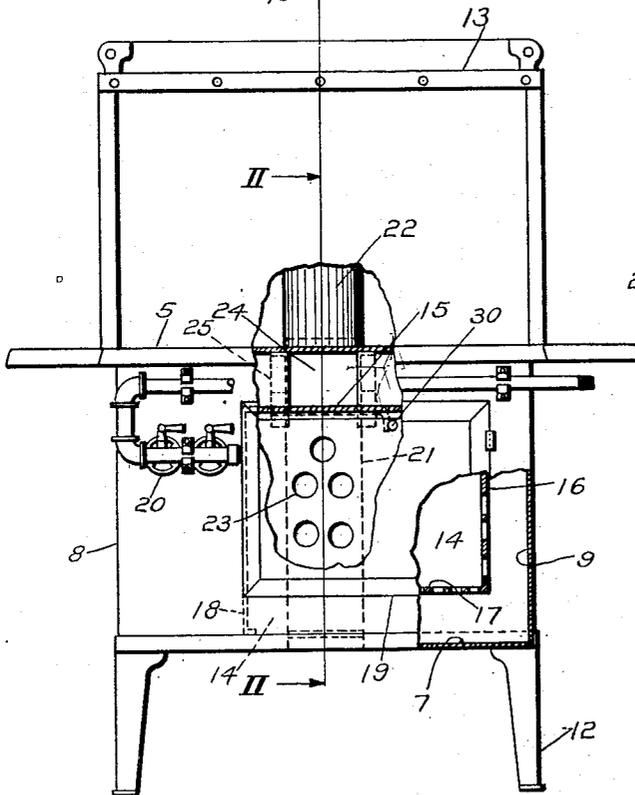


FIG. 1

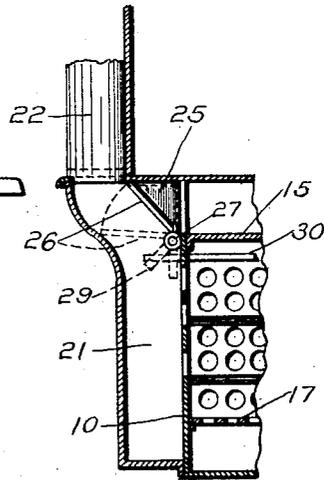


FIG. 2

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## STOVE.

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This invention has general reference to stoves and ranges which are adapted for use with gaseous or liquid fuels; but relates more particularly to means for regulating the distribution of heat, and the travel of the products of combustion, in such stoves and ranges.

A primary object of the present invention is to produce a stove or range having associated therewith an oven which is adapted to be heated by the passage therearound and therethrough of the products of combustion of gaseous or liquid fuel, improved means being provided for regulating the distribution, and the rate and direction of travel, of the heated gases.

A further object is to provide such regulating means which shall include means for by-passing a portion of the combustion products directly to the discharge outlet from the stove or range, instead of following the usual indirect course to such outlet.

And a still further object is to provide means by which the opening or closing of the oven door will automatically affect the rate and direction of travel of the products of combustion, through the medium of said by-passing means.

The means by which the foregoing and other objects are accomplished by my invention, and the manner of their accomplishment, readily will be understood from the following description on reference to the accompanying drawings, which depict a preferred embodiment of the invention, and in which—

Fig. 1 is a front elevation of a gas stove having my improvements applied thereto, parts broken away for convenience of illustration.

Fig. 2 is a section on line II—II of Fig. 1. Fig. 3 is a top plan view of the stove shown in Fig. 1, with parts broken away.

As shown in the drawings, in which similar reference numerals refer to corresponding parts throughout the several views, the stove comprises the usual cast iron top 5, having removable lids 6; a sheet metal bottom 7, end walls 8 and 9, back wall 10 and front wall 11; supporting legs 12, of any preferred form; and an elevated shelf 13. A substantially rectangular oven 14 is suitably supported within the body of the stove, in such a way that intercommunicating open spaces are left between the top 15 of the oven and the top 5 of the stove, between one

end 16 of the oven and the adjacent end 9 of the stove, and between the bottom 17 of the oven and the bottom 7 of the stove.—the end wall 18 of the oven being extended downward to form an air-tight closure with the stove bottom, a portion of the back wall 10 of the stove constituting the back of the oven, and the front of the oven, which is flush with the front wall 11 of the stove, being provided with a hinged door 19. The gas burner or burners 20, the number of which is optional, are located in a suitable position between the end wall 8 of the stove and the end wall 18 of the oven.

The end wall 16 of the oven has a series of openings therein, as has also its bottom 17, and suitable dampers (not shown) preferably are provided for regulating the effective areas of said openings, in some such manner as that shown and described in United States Letters Patent No. 1,258,210, issued to me March 5, 1918. At the back of the stove, a flue 21, closed at its lower end, extends vertically upward from at or below the level of the bottom of the oven to that of the top of the stove, and said flue communicates at its top with a suitable stack 22, in which a damper (not shown) preferably is placed. Openings 23 in the wall 10, which constitutes the back of both the stove and the oven, afford passageways for the heated gases from the oven into the flue 21, and thence into the stack. At the top of said flue, an opening 24 in the wall 10 is fitted with a damper-box 25, which surrounds said opening at all sides, and is provided with a hinged damper 26, adapted to close the passageway leading from the interior of the upper part of the stove body through said damper-box. The lower edge of said damper is rigidly secured to a pivot-rod 27, which is mounted in suitable bearings 28 formed upon or secured to the damper-box 25, one end of said pivot-rod having a lever arm 29 formed or secured thereon, and to the free end of said arm is pivotally connected a rod 30, which extends in a substantially horizontal position, at right angles to the longitudinal center line of the stove, through a suitable opening in the wall 10, and through a similar opening in the upper part of the frame for the oven door 19. Rod 30 is freely slidable in said two openings, its front end being in position to be engaged by the upper portion of the door 19, and the lengths and arrangements of said rod and the lever

arm 29 are such that when the oven door 19 is fully closed the damper 26 is also closed, whereas when said door is opened said damper is permitted to drop pivotally, by gravity, to its open position (shown in dotted lines in Fig. 2).

From the foregoing description, it will be seen that, with the oven door 19 closed, and the damper 26 thus held in its closed position, the only means of access by the products of combustion to the flue 21, and thence to the stack 22, is through the openings 23 in the back wall of the oven. Hence, the hot gases must pass from the burner or burners into the space between the top 5 of the stove and the top 15 of the oven, and be drawn downward by the stack draft into the intercommunicating spaces between the end wall 9 of the stove and the end 16 of the oven, and between the bottom 7 of the stove and the bottom 17 of the oven, said gases then passing through the openings in the walls 16 and 17 into the oven, and thence through the openings 23 into the flue leading to the stack. Upon the oven door 19 being opened, the damper 26 will drop by gravity to its open position, and the stack draft will be effective upon the hot gases to draw them through the damper-box 25 and into the upper part of the flue 21, as well as to draw some of said gases through the openings in the end wall 16 and the bottom 17 into the oven, and thence through the openings 23 into flue 21.

There are two stages in the operation of a stove or range during which the invention described herein is of especial utility. When one or more of the burners is or are first lighted, the stove body and the oven contain air at room temperature, and considerable time, and the use of a considerable quantity of fuel, ordinarily are required to establish sufficient draft to draw the hot gases downward and into and through the oven to the stack,—whereas, by opening the oven door 19, and thus permitting the damper 26

to drop to open position, a sufficient quantity of the hot gases is by-passed through the damper-box 25 to the stack to create an up-draft therein quickly, and the desired circulation around and through the oven is established in much less time, and with much less expenditure of fuel, than would be the case if provision were not made for such by-passing. Also, when the stove or range is in use, and access to the interior of the oven is desired, the automatic opening of the damper 26 when the oven door is opened, minimizes the quantity of hot gases that escape through the oven-door opening, and the quantity of cold air that is drawn into the oven therethrough, and results in the temperature of the oven being maintained substantially uniform until the oven door is again closed.

Various modifications of minor details of the improvements shown and described herein doubtless readily will suggest themselves to those skilled in this art, but such modifications fall within the scope of my inventive rights, and my invention is not to be construed as being limited to any details not specifically set out in the claim.

Having thus fully disclosed the invention, what I claim as new, and seek to secure by Letters Patent, is:—

In a stove having an oven placed below the top thereof, leaving a passageway for hot gases between said oven and said top, the combination of a gas-outlet flue, an opening into said flue from said passageway, a damper in said opening, and secured to a shaft, bearings for said shaft arranged exteriorly of the flue, a door to said oven, means operable by movement of said door to retain said damper in its closed position, and a counter-weight secured to the damper shaft exteriorly of the flue for moving said damper by gravity to open position when released by the opening of said door.

In testimony whereof I affix my signature.  
ARNOLD F. GLASS.