W. A. E. VALENTINE.

GAS OVEN ATTACHMENT.

APPLICATION FILED MAR. 21, 1918.

1,290,423. Patented Jan. 7, 1919.

Fig. 8.

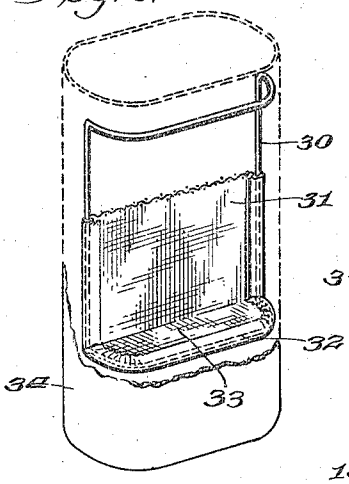


Fig. 1.

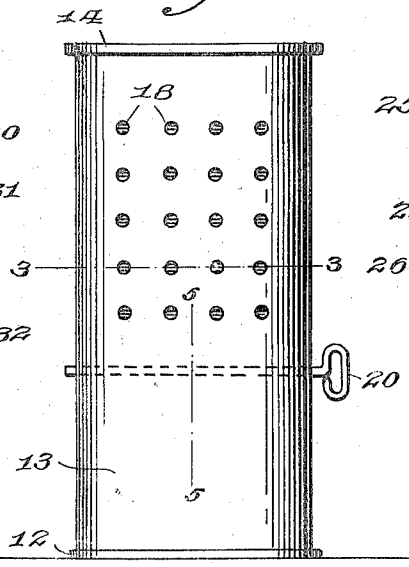
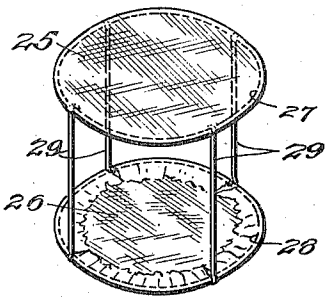


Fig. 7.



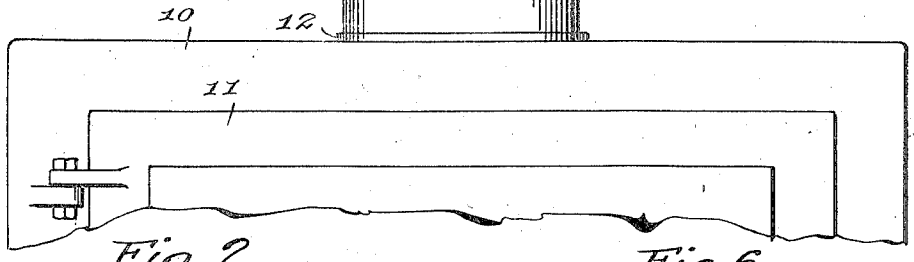


Fig. 2.

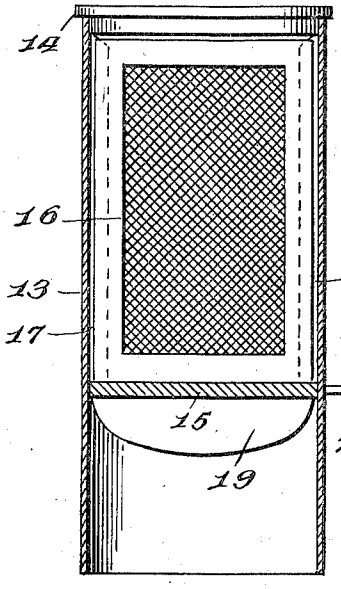


Fig. 3.

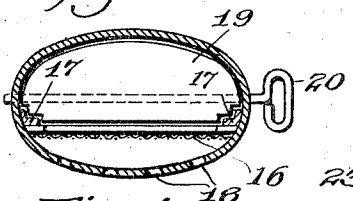


Fig. 4.

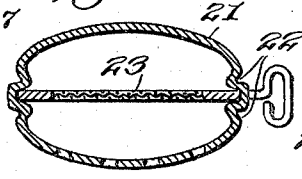


Fig. 5.

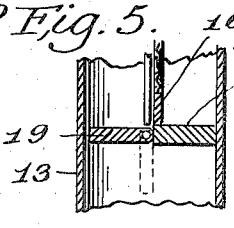
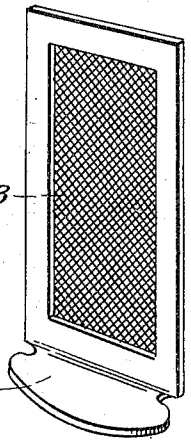


Fig. 6.



INVENTOR

William A. E. Valentine

BY

Thomas Fenwick & Lawrence

ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM A. E. VALENTINE, OF NEW YORK, N. Y.

GAS-OVEN ATTACHMENT.

1,290,423. Specification of Letters Patent. Patented Jan. 7, 1919.

Application filed March 21, 1918. Serial No. 223,767.

To all whom it may concern:

Be it known that I, WILLIAM A. E. VALENTINE, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Gas-Oven Attachments; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to gas oven attachments and it has for an object to provide a filtering unit which prevents escape of particles of dust and soot from the oven into the room.

A further object is to provide a check for the free flow of air through the oven to economize in the consumption of fuel.

Further objects will be apparent from the following specification, appended claims and drawing in which—

Figure 1 is a front elevation of the device as applied to a gas oven,

Fig. 2 is a vertical sectional view therethrough,

Fig. 3 is a horizontal sectional view as on the line 3—3 of Fig. 1,

Fig. 4 is a similar view through a slightly altered form,

Fig. 5 is a vertical sectional view as on the line 5—5 of Fig. 1,

Fig. 6 is a perspective view of a detachable frame and screen for use in the device shown in Fig. 4,

Fig. 7 is a perspective view showing a slight modification, and

Fig. 8 is a similar view of an additional form.

In the common use of a gas oven, the heated air currents which are used for baking are allowed to circulate freely through the oven and out through the outlet flue, and when a circulation is established, the velocity of these heated air currents increases to more rapidly direct cold air currents against the heating agents from whence the heated air currents rise to partially serve their purpose, and then before the full heating effect has been obtained, this heated air current is permitted to pass from the oven. This free flow of the air current through the gas oven furthermore causes the light and floating particles of grease or soot to be conveyed from the interior of the oven to the atmosphere in the room. These floating particles in time collect upon the walls or ceiling to mar the appearance thereof. In this device, provision is made to retard the free flow of air currents from the interior of the oven to thereby utilize all of the heat units, and also, to filter the air passing from the interior of the oven so that none of the floating particles are emitted, but are collected upon a washable, non-oxidizable screen.

Referring more specifically to the drawings, 10 indicates a gas oven provided with the usual door 11 and upon the top of this oven, the usual flue flange 12 is placed. This flange supports a short section of pipe 13 which is closed at its upper end as by a cap 14.

This pipe is provided with a transverse flange 15 which extends part way across the interior of the pipe to reduce the opening thereof at that portion to one half of the normal area of the pipe, and this flange also serves as a support for the lower end of a screen 16 which is slidably mounted in the upper end of this short pipe section. Flanges 17 secured in this pipe extend vertically and serve to maintain the screen 16 in fixed and contacting position to prevent the free passage of air currents about the margin thereof. This screen comprises a metallic frame to which a ply of asbestos fabric of loose weave is attached. Instead of using a metallic frame, it is possible to use only a sheet of asbestos fabric of a porous nature, because no strain is exerted upon this screen. This screen separates the upper end of the short tube section 13 into two passages, the rear one of which forms a continuation of the flue from the interior of the oven, and through this rear passage the heated air currents must pass to the rear face of the screen. Upon the approach of these heated air currents to the screen, portions thereof pass freely through the screen into the chamber between this screen and the front wall of the tube. Outlets for this volume of collected filtered air are formed by the perforations 18 in the front wall above the base or flange 15.

A damper 19 is also pivotally mounted within the tube 13 and this damper is provided with the operating handle 20 which extends outside of the tube 13.

It is apparent that as the heated air cur-

rents rise into the pipe section 13 and pass through the screen 16, the free flow is checked and also any floating particles in these heated air currents are collected by this screen. After a period of usage, the cap 14 may be removed and this screen may then be removed for washing. In the use of the oven for certain purposes, it is desired to further reduce the flow of the heated air current and at this time, the damper 19 may be swung to further retard the flow of the air current through the oven.

In Fig. 4 of the drawing, the opposite sides of the flue section 21 are crimped as at 22 to form guides for a screen 23 which may have the lower edge of the frame offset as at 24 to direct the heated air current up behind the screen. This device will be used in connection with the usual damper formation as above described, and suggests only one of numerous forms which may be used for mounting the screen.

Fig. 7 shows two heads 25 and 26 formed of porous or foraminous material which comprise plies of fireproof material attached to the frames 27 and 28 which are held in spaced relation by rods 29. This type fits into a circular or elliptical stove pipe which has its remote end open. The frames 27 and 28 are of course shaped to fit in pipe sections and may be held in place by frictional contact.

In Fig. 8, a wire frame 30 is provided with a screening fabric 31 which is secured to this frame in any desired manner. The lower offset end of the frame 32 is also covered by an extension 33 of the screening fabric to direct the heated air currents up behind the screen. A cap similar to that shown in Fig. 1 is placed on the pipe section 34 to close the upper end of the unfiltered air current flue.

It is thought that the application and use of this device is clear in view of the foregoing, and that further description thereof is unnecessary and it is also evident that with the use of this device, a great saving in fuel may be had because of the fact that the volume of air within the oven may be retained at a more constant temperature and in its slow passage through the oven, less heat is required to raise the temperature of this volume of air to the desired degree. It is also possible to obtain more uniform heat by controlling the outlet through the restricting element shown herein.

Having thus described this invention, I claim:

1. An oven ventilating flue for gas ranges comprising a pipe having a closed top and an open bottom, and an intermediate perforated portion, a filtering element disposed vertically substantially midway of the width of said pipe and having a closed base, and a damper arranged between the base and the adjacent side of the pipe.

2. An oven ventilating flue for gas ranges, comprising a pipe having a closed top and an open bottom, an intermediate perforated portion, a filtering element disposed vertically substantially midway of the width of said pipe, a base between the bottom of said element and one side of said pipe, and a damper between the base and the opposite side of said pipe.

3. An oven ventilating flue for gas ranges, comprising a pipe open at one end and closed at the other end, and having an intermediate perforated portion, and a filtering element disposed within said pipe so as to divide the same into vertical compartments, and a base for one compartment.

4. An oven ventilating flue for gas ranges, comprising a pipe open at one end and having a removable closure for the other end, and being further provided with perforations on one side, a flange extending laterally to a point substantially midway of the width of the pipe, and a slidable filtering element disposed vertically between said closure and said flange.

5. An oven ventilating flue for gas ranges, having an open bottom and vertical ways therein, and being further provided with perforations on one side, a support disposed transversely within said pipe, a slidable filtering element adapted to be sustained in said ways, and a closure for the opposite end of the pipe.

6. An oven ventilating flue for gas ranges, comprising a pipe having an open end and a closed end, and an intermediate perforated portion, a filtering partition opposite said perforated portion, a base for said partition, and means for controlling the admission of oven gases to said partition.

In testimony whereof I affix my signature.

WILLIAM A. E. VALENTINE.