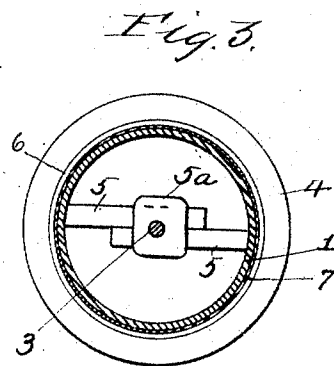
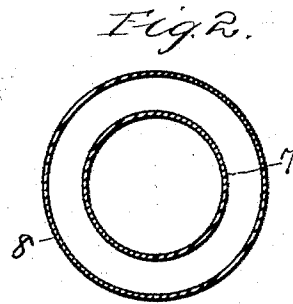
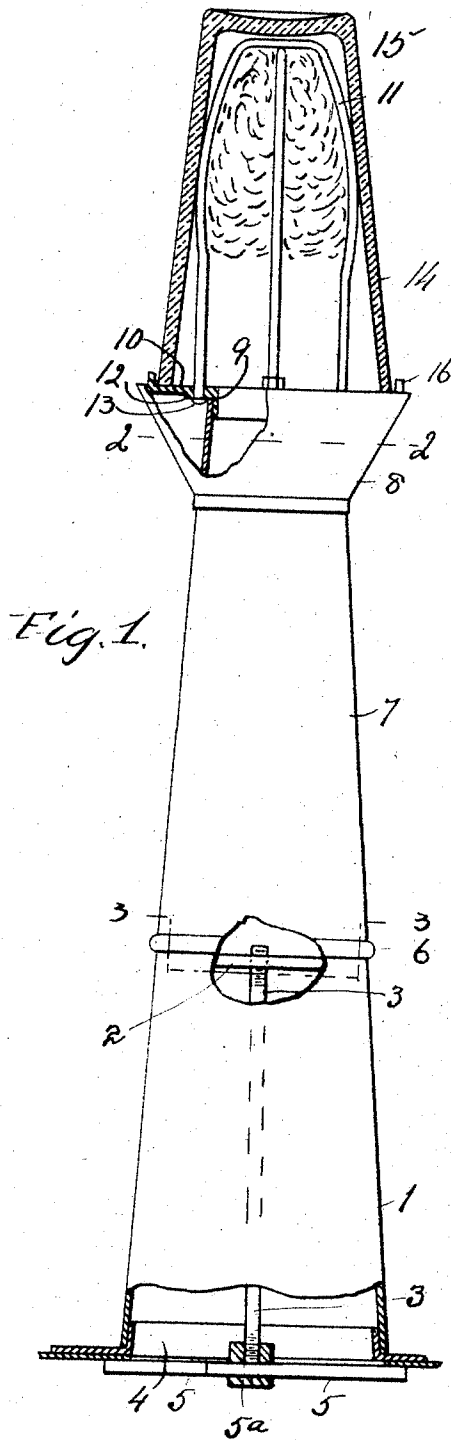


G. H. BACKMIRE.  
 SMOKE AND FUME ARRESTER FOR GAS RANGES.  
 APPLICATION FILED DEC. 11, 1919.

1,360,073.

Patented Nov. 23, 1920.  
 2 SHEETS—SHEET 1.



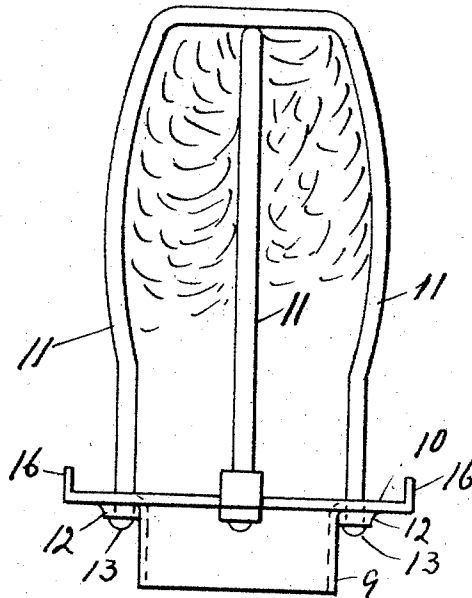
Inventor  
 George H. Backmire  
 By *H. W. Williamson*  
 ATTORNEY

G. H. BACKMIRE,  
SMOKE AND FUME ARRESTER FOR GAS RANGES.  
APPLICATION FILED DEC. 11, 1919.

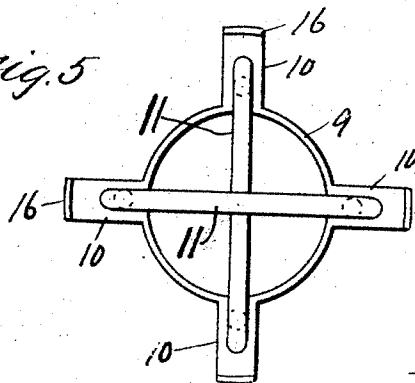
1,360,073.

Patented Nov. 23, 1920.  
2 SHEETS—SHEET 2.

*Fig. 4.*



*Fig. 5*



Inventor  
George H. Backmire  
By *W. W. Williamson*  
T.H.H.

# UNITED STATES PATENT OFFICE.

GEORGE H. BACKMIRE, OF COLLEGEVILLE, PENNSYLVANIA.

SMOKE AND FUME ARRESTER FOR GAS-RANGES.

1,360,073.

Specification of Letters Patent. Patented Nov. 23, 1920.

Application filed December 11, 1919. Serial No. 344,195.

*To all whom it may concern:*

Be it known that I, GEORGE H. BACKMIRE, a citizen of the United States, residing at Collegeville, in the county of Montgomery and State of Pennsylvania, have invented new and useful Improvements in Smoke and Fume Arresters for Gas-Ranges, of which the following is a specification.

My invention relates to a new and useful improvement in smoke and fume arresters for gas ranges, and has for its object to so construct such a device as to bring about the condensation of moisture and foreign substances such as grease vapor issuing from the bake oven and broiler of a gas range.

A further object of my invention is to modify the draft from the oven of a gas range, thereby utilizing the maximum amount of heat generated in said oven for cooking purposes.

With these ends in view, this invention consists in the details of construction and combination of elements hereinafter set forth, and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains, may understand how to make and use the same I will describe its construction in detail, referring by numerals to the accompanying drawing forming a part of this specification, in which:—

Figure 1, is a side elevation of my improvement, partly broken away to show the manner of attaching the base to the gas oven.

Fig. 2, is a section on the line 2—2 of Fig. 1.

Fig. 3, is a section on the line 3—3 of Fig. 1.

Fig. 4, is an enlarged detail view of the retaining wires and collar carrying the same.

Fig. 5, is a plan view of Fig. 4.

In carrying out my invention as here embodied, 1 represents the base section, which is in the form of a tapered pipe, the lower end being adapted to fit over the stationary collar formed upon the outlet of the gas oven, and across the top of the base member is a bar or bridge 2, through which is formed a central hole for the passage of the rod 3. This rod 3 has threads thereon for attachment to the bridge, and passes down through the center of the base member, and is clamped beneath the edges of the collar 4

by the prongs 5, and when thus secured this base member becomes a permanent fixture with the gas oven.

The prongs 5 are made adjustable by passing loosely through the clamp 5\* into which the lower end of the rod 3 is threaded, said rod serving to hold the prongs in any adjustment by being screwed down thereon. This permits the contraction and extension of the prongs to facilitate their insertion through the collar 4 and also provides for fitting the device to ranges having various size collars.

Around the upper portion of the base member is formed a bead 6 for limiting the downward movement of the flue pipe 7, the lower end of which is adapted to fit over the upper end of the base member, as clearly shown.

The flue pipe 7 extends upward on substantially the same taper as the base member, and has secured upon its upper portion a funnel 8, in such a manner as to produce an annular recess or pocket between the inner walls of the funnel and the outer walls of the upper end of the flue pipe.

9 represents a collar adapted to fit within the upper end of the flue pipe, and has formed therewith the arms 10 to which are secured the lower ends of the retaining wires 11. These wires are preferably passed through suitable holes in the arms and the lugs 12 formed with said arms and headed upon the under sides of said lugs as indicated at 13.

The wires 11 after extending upward on straight lines for a certain distance are bowed as clearly shown, one of said wire bows being shorter than the other, so as to lie immediately under the same at their crossing point. This bowing of the retaining wires permits the condensing glass 14 to readily slip thereon, and be held by a certain amount of spring pressure, thus steadying the condensing glass and holding it in place. The crossing of these wire bows permits the placing of the absorbent cotton 15 between the wires, and there securing it in place.

The arms 10 have their outer ends pointing upward to form prongs 16 for the retention of the lower edge of the condensing glass in position.

In practice, when the device is being used

in baking or broiling the fumes emanating from this process will pass upward through the base member 1 and the flue pipe 7 and into the condensing glass, and when coming in contact with the absorbent cotton will give up a certain percentage of the moisture therein, and the coarser particles of fat and other foreign substances, and as these fumes are compelled to flow downward, to escape around the lower edges of the glass they will be exposed to the condensing action of the surfaces of the glass and all or a major portion of the moisture and foreign substances held in suspension in the escaping hot air will be condensed on the inside surfaces of the glass, and trickling down will flow into the recess formed between the upper end of the flue pipe and the funnel. For convenience and cleanliness this recess may be partly filled with sand, ashes or absorbent material, so that the grease and other foreign matter which flow thereto will be retained until this sand or ashes is removed and renewed.

The main object of securing the base section 1 permanently to the gas range is that when it is desired to empty the recess of the sand or ashes, which has become fouled by the absorption of grease and the like the flue pipe may be lifted off the base section for this purpose, and readily replaced.

I have found in practice that the condensing glass when in proper proportion to the outlet from the gas oven will retard the draft from the oven, thus preventing the flaring of the gas flames in said oven thereby producing better combustion, and also holding back the outflow of the heated air which will decrease the consumption of gas for producing a given degree of heat in the oven, and in many cases this amounts to 25% in gas saving.

By the use of my improvement the grease and other foreign substances which would pass out in vapor or suspended particles are arrested and not permitted to reach the air in the room, and therefore the walls and furniture are not contaminated by the cooking process, and the disagreeable odors from such cooking do not foul the air of the room.

Of course I do not wish to be limited to the exact details of construction as herein shown as these may be varied within the

limits of the appended claims without departing from the spirit of my invention. 55

Having thus fully described my invention, what I claim as new and useful is:—

1. In a device of the character described, a flue pipe, a funnel surrounding the upper end thereof to produce a recess, a collar detachably fitted into the upper end of the flue pipe, arms on said collar, retaining wires mounted upon said arms, and a condensing glass removably fitted over said retaining wires. 60

2. In a device of the character described, a flue pipe, a funnel carried by the upper portion thereof in such manner as to form a recess, a collar fitted within the upper end of the flue pipe, arms projecting from said collar, prongs projecting upward from the outer ends of the arms, bowed retaining wires mounted upon the arms, and a condensing glass removably fitted around said retaining wires. 65

3. In combination with the flue pipe, a collar fitted in the upper end thereof, arms projecting from the collar, retaining wires mounted upon the arms, said wires being bowed to give a spring action, and a condensing member fitted upon said wires so as to be removable therefrom. 70

4. In combination with the flue pipe, a collar fitted in the upper end thereof, arms projecting from the collar, retaining wires mounted upon the arms, said wires being bowed to give a spring action, a condensing member fitted upon said wires so as to be removable therefrom, and prongs formed with the ends of the arms for embracing the lower edge of the condensing member. 75

5. In a device of the character stated, a flue pipe, a funnel carried thereby to form a recess for holding sand, a collar supported by said flue pipe, arms carried by said collar and projecting over the recess, prongs at the outer ends of said arms, a condensing glass supported by said arms and means attached to said arms and projecting into the condensing glass for holding an absorbent material and retaining the condensing glass against accidental displacement. 80

In testimony whereof, I have hereunto affixed my signature. 100

GEORGE H. BACKMIRE.