

(No Model.)

C. L. BLISS.  
BURNER CAP FOR GAS OR VAPOR STOVES.

No. 537,886.

Patented Apr. 23, 1895.

Fig. 1.

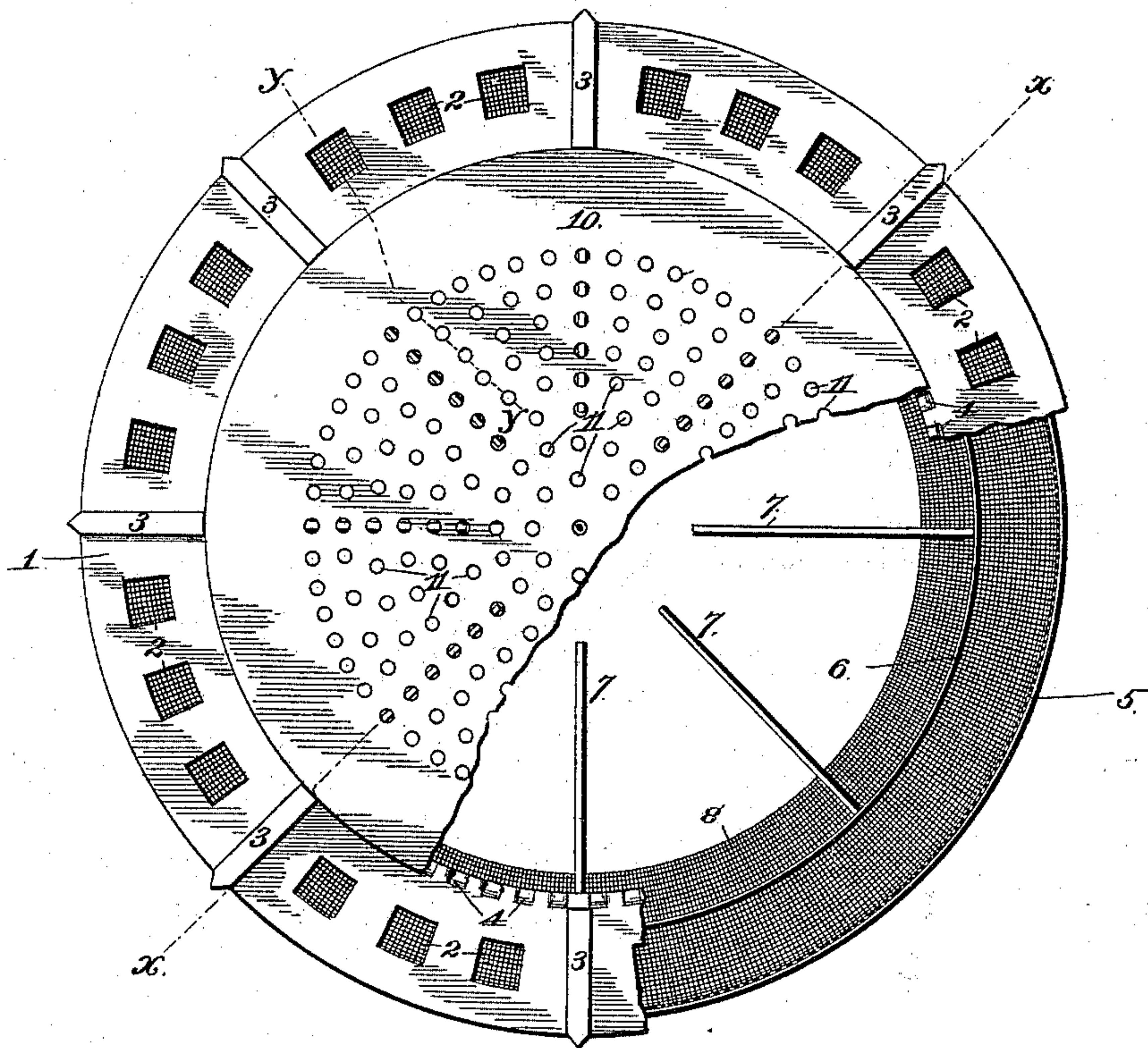


Fig. 2.

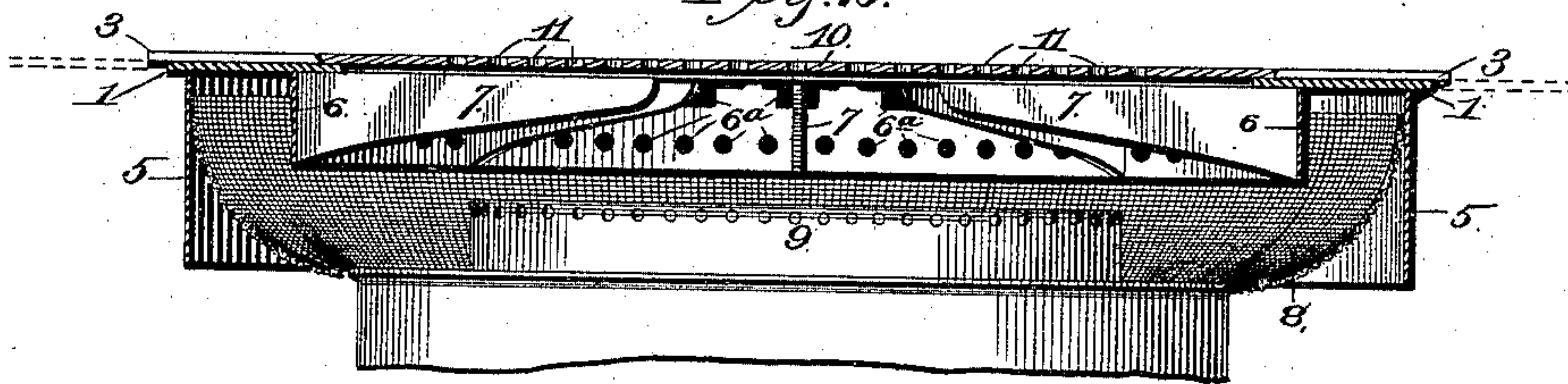


Fig. 3.

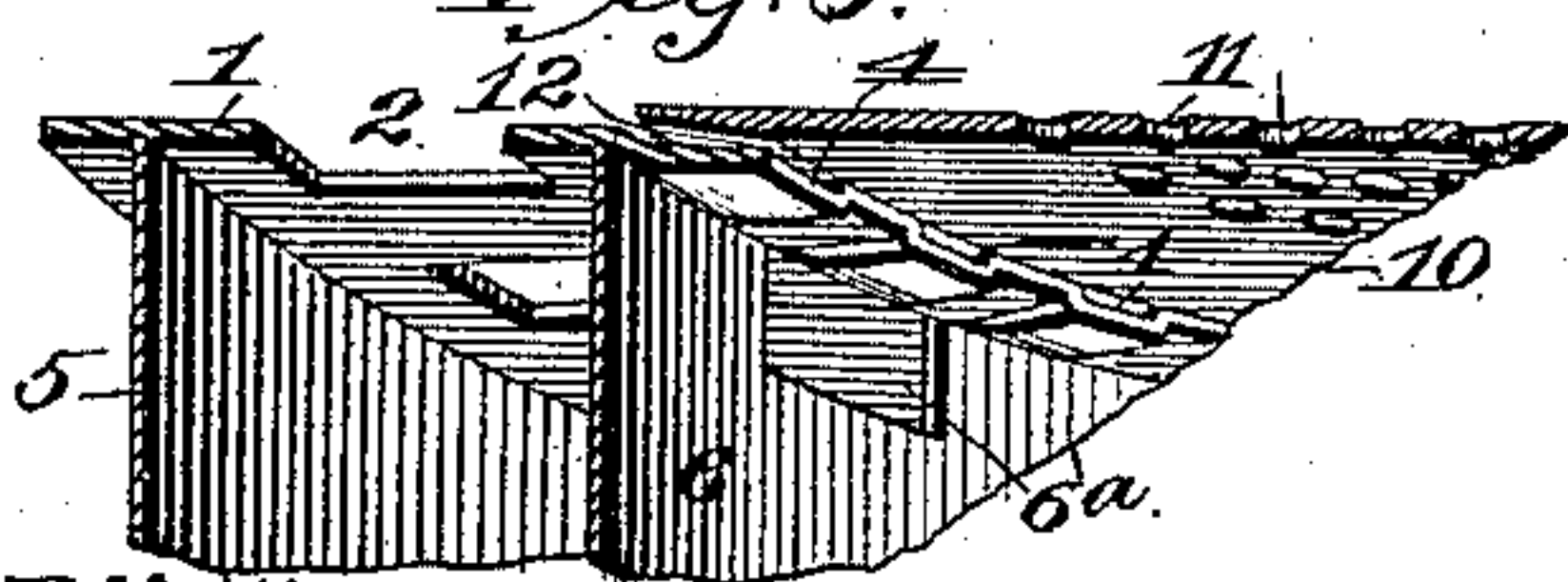


Fig. 4.

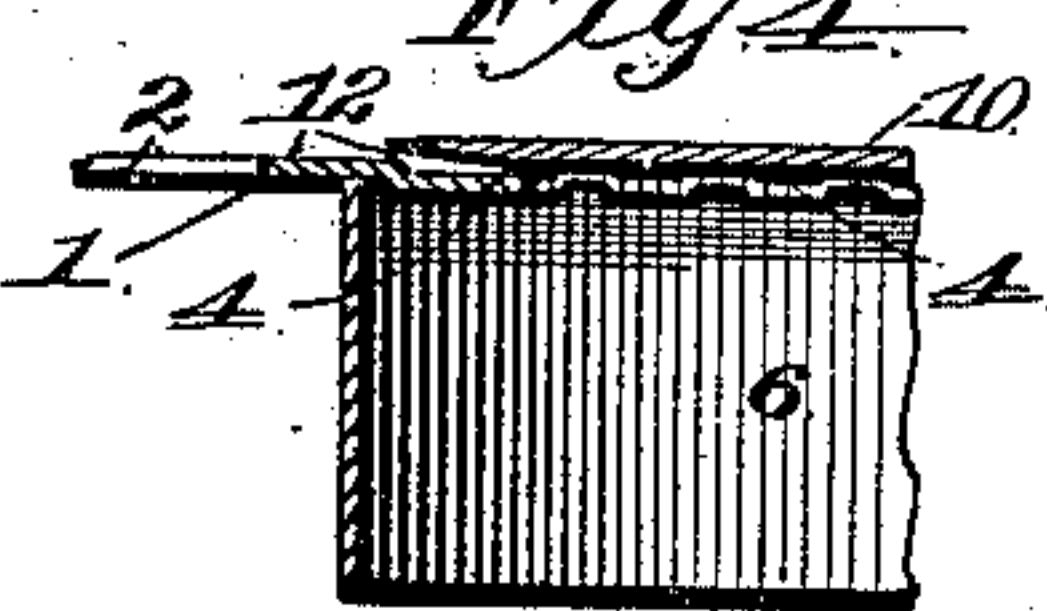


Fig. 5.



Witnesses:

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# UNITED STATES PATENT OFFICE.

CARL L. BLISS, OF KANSAS CITY, MISSOURI, ASSIGNOR OF ONE-HALF TO  
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## BURNER-CAP FOR GAS OR VAPOR STOVES.

SPECIFICATION forming part of Letters Patent No. 537,886, dated April 23, 1895.

Application filed November 12, 1894. Serial No. 528,596. (No model.)

### *To all whom it may concern:*

Be it known that I, CARL L. BLISS, of Kansas City, Jackson county, Missouri, have invented certain new and useful Improvements in Burner-Caps for Gas or Vapor Stoves, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to gas and vapor stoves, and more particularly to the burner-caps therefor.

The construction of ordinary caps for gasoline or vapor stoves is objectionable, in that the blaze at times flares up and around the cooking utensils, and makes the handles and spouts thereof too hot to handle,—sometimes melting them off. At the same time a large percentage of heat is wasted; also, every current of air from an open door or window blows the flame from under the cooking utensil, and therefore wastes the heat and endangers the attendant or cook. Sometimes the flame is extinguished by such air-currents. Another objection is that the radial fingers of the burner-cap which serve as a support for the cooking utensil, project above the plane of the upper surface of the stove, and therefore afford a flat supporting-surface for only a small part of the base of the cooking utensil to rest upon, which therefore is not a very firm and secure foundation.

The object of my invention is to obviate these various objections by the provision of a burner-cap whereby the flame will be inclosed and therefore protected from currents of air passing through the room so that a person will not be endangered by the flame from the burner, and the full power of the flame will be concentrated upon the bottom of the cooking utensil upon the stove.

A further object is to so construct the cap that a detachable lid may rest upon the cap with its upper surface in the plane of the upper surface of the arms which support the burner-cap in operative position.

With these objects in view, my invention consists in certain peculiar and novel features of construction and combinations of parts, as will be hereinafter described and claimed.

In order that the invention may be fully

understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 represents a plan view,—partly broken away,—of a burner-cap and lid embodying my invention. Fig. 2 is a vertical section taken on the line line  $x-x$  of the same. Fig. 3 is an enlarged sectional perspective view of a portion of the same as viewed toward the under side. Figs. 4 and 5 are sectional views to show clearly the relation between the cap proper and the lid at their margins.

In the said drawings, 1 designates an annulus or ring of sheet metal, which is provided with a series of apertures 2, and 3 designates a series of arms cast integral with or secured to the upper side of said annulus and projecting beyond the outer margin thereof, to rest upon the top-plate of the stove and support the burner-cap in position in the ordinary manner. These arms terminate a suitable distance from the inner margin of said annulus, which margin is corrugated to form the depressed surfaces 4, which therefore lie below the plane of the upper surface of the annulus 1. Arranged concentric to each other and to the annulus 1, are the pendent flanges or rings, 5, and 6, the former being secured at its upper end to the under side of the annulus 1, outward of the apertures 2, and the latter being secured at its upper end to the under side of the annulus 1 inward of said apertures. Said flange 6 extends downward only about half the distance the flange 5 extends, and the said flange 6, at its upper margin, is perforated as shown at 6<sup>a</sup>, and it may be found, in order to obtain better results, to provide it with other apertures a suitable distance below the apertures in its upper margin, as illustrated. All of these apertures are designated by the reference numeral 6<sup>a</sup>. Projecting radially inward from the flange or ring 6, for a suitable distance, and cast integral with or secured to the annulus 1, and having their upper surfaces in the plane of the lower surface of said annulus, are the supporting fingers 7. A foraminous deflector 8 may be secured at its upper margin to the inner margin of the flange 5, and project downwardly and inwardly



therefrom to a point a suitable distance below and inward of, preferably, the flange 6, to embrace snugly and externally the body-portion of the burner 9 at its upper margin, or at a point below the perforations in the burner.

The head of the burner projects upwardly to within a suitable distance of the lower margin of the flange or ring 6.

From the above description, it will be apparent that air to support combustion may pass freely through said foraminous annulus 8, and that the flame is deflected upwardly thereby and is confined within the space surrounded by said annulus, so that it will be impossible for air-currents passing through the room to have any effect on the flame. It is not my intention, however, to confine myself in this connection to the employment of said foraminous annulus, as equal protection from air-currents passing through the room can be had by projecting the flange 5 down a sufficient distance.

Referring again to the structural features, 10 designates a circular lid provided with apertures or perforations 11, which is of size to fit snugly between the inner ends of the arms 3, and which rests upon the corrugated margin or portion of the annulus 1. Weighty or weighted vessels placed upon said lid will cause the same to bend or yield slightly, that the arms 7 may assist in affording direct support to the said vessel. In order to provide openings or passages through which the heat may pass, the under side of said lid is provided at intervals with the grooves or channels 12, which grooves or channels are wider than that portion of the corrugated surface of the annulus lying in the plane of the upper surface thereof, so that said lid, when placed in position, need not be rotatably adjusted to cause the grooves or channels 12 therein to register with the depressions 4. When these grooves or channels and depressed surfaces register, as shown in the drawings, particularly Fig. 5, it will be apparent that the hot air has almost an unobstructed flow between the burner-cap and the said lid. When said grooves or channels and depressed surfaces do not register, it will be apparent, also, owing to the width of the grooves or channels 12, being greater than that of the portions of the annulus 1 between the depressions 4, that hot air may still escape between the burner-cap and the lid, but not so freely as before, and that no matter what position the lid occupies upon the burner between the arms 3, air-apertures will be provided.

In operation, it will be apparent, as above explained, that combustion at the burner is supported by air passing up between the burner and the flange 5, and when the annulus 8 is used, through said annulus. The flame is protected, as also above stated, from air-currents through the room, and is thus confined within its proper sphere, under the fingers of the cap. The apertures or perforations in the flange 6 and in the annulus 1, al-

low the escape of sufficient hot air to produce a draft without allowing any of the flame to escape. I provide two series of apertures 6<sup>a</sup>, because if one set only were used the flame, rising to said apertures, might prevent the escape of sufficient hot air to properly support combustion. With two series of apertures, however, the position of the flame will constantly vary, because immediately the draft seeks to escape through one series of apertures the flame will follow, and this action of the flame causes the air to pass through the other series of apertures, and so on. The perforations in the lid allow the heat to come immediately in contact with the cooking utensil, and at the same time aids in concentrating the flame, while the passages between said lid and the burner-cap form a part of the draft or outlet for the hot air, and are so situated that they cannot be closed, no matter how large the cooking utensil may be.

From the above description, it will be apparent that I have produced a burner-cap for gasoline or vapor stoves which will permit of their use upon porches and other exposed places without endangering the life of the person in charge, and without endangering the utensils upon the stove, and without wasting the heat.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A burner-cap for gasoline or vapor stoves, comprising a perforated or apertured annulus, an annular flange depending from said annulus outward of the apertures therein, and a perforated annular flange depending from said annulus inward of said apertures, substantially as set forth.

2. A burner-cap, comprising an apertured annulus supported within an opening in the stove and above the burner, a flange depending from said annulus outward of said apertures a perforated flange depending from said annulus inward of said apertures, and supporting fingers projecting radially inward from said perforated flange and having their upper surface in the plane of the lower surface of said annulus, substantially as set forth.

3. A burner-cap, comprising an apertured annulus above and surrounding the burner of the stove, a flange depending from said annulus outward of said apertures, a flange depending from said annulus inward of said apertures, and a foraminous annulus secured at its upper end to the first-mentioned flange and projecting at its lower end below the last-mentioned flange and embracing the burner, substantially as set forth.

4. A burner-cap, comprising an apertured annulus, having its inner margin corrugated, arms projecting above and outward of the same, a flange depending from said annulus outward of said apertures, a perforated flange depending from said annulus inward of said apertures, supporting fingers projecting radially inward from said flange, and a lid hav-



ing grooves at its outer margin and in its under side which register with the depressions of the corrugated portion of the said annulus, and form in conjunction therewith air-passages, substantially as set forth.

5. In a burner-cap, an annulus having its inner margin corrugated to form depressed surfaces, and a cap bridging the space inclosed or surrounded by said annulus and  
10 resting upon the said corrugated margin of

the same; said cap having marginal grooves in its under side, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in the presence of two witnesses.

CARL L. BLISS.

Witnesses:

G. Y. THORPE,

M. R. REMLEY.