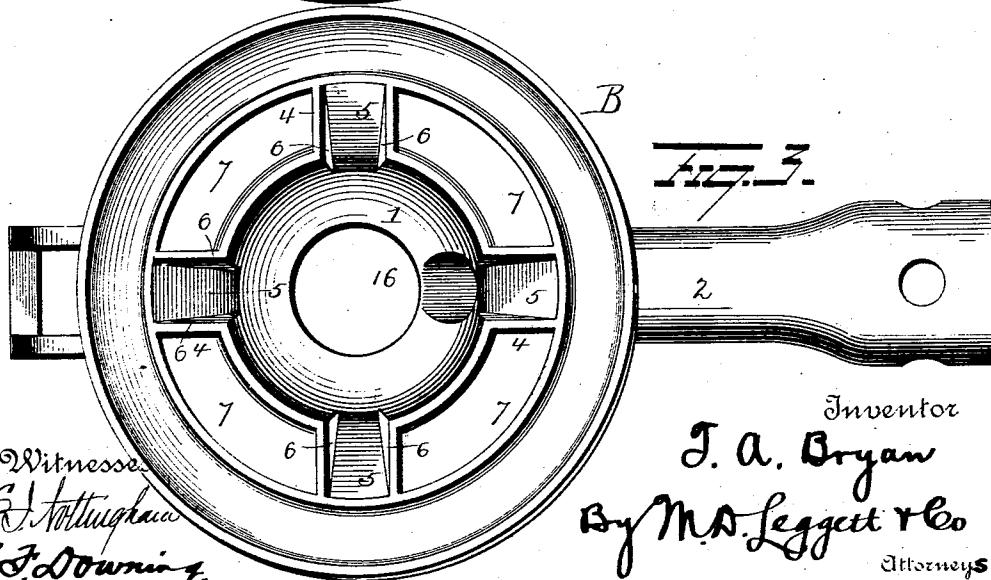
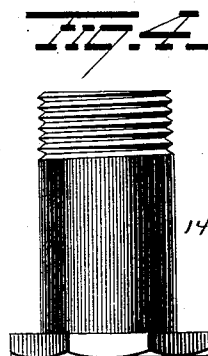
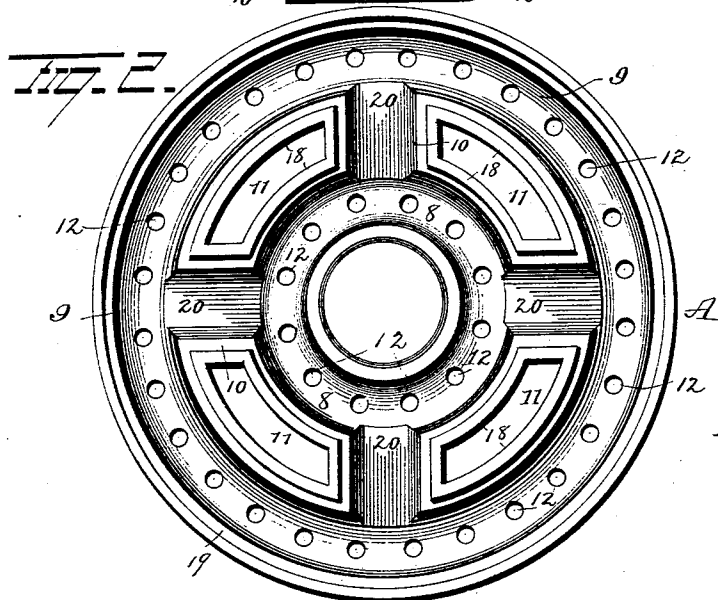
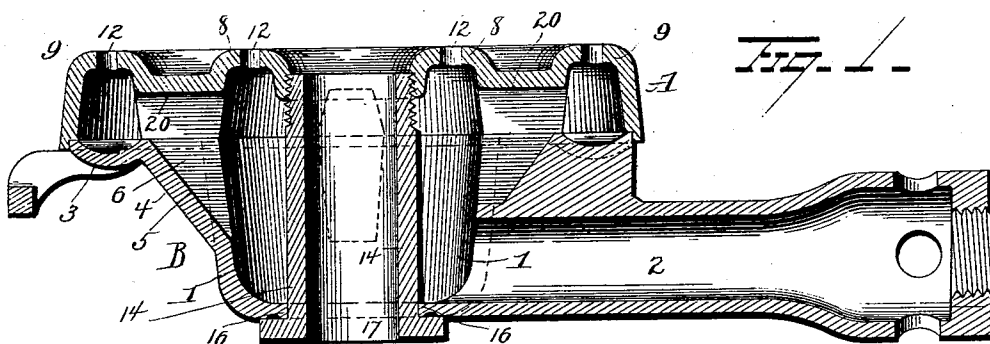


2 Sheets—Sheet 1.

No. 564,681.

Patented July 28, 1896.



Witnesses
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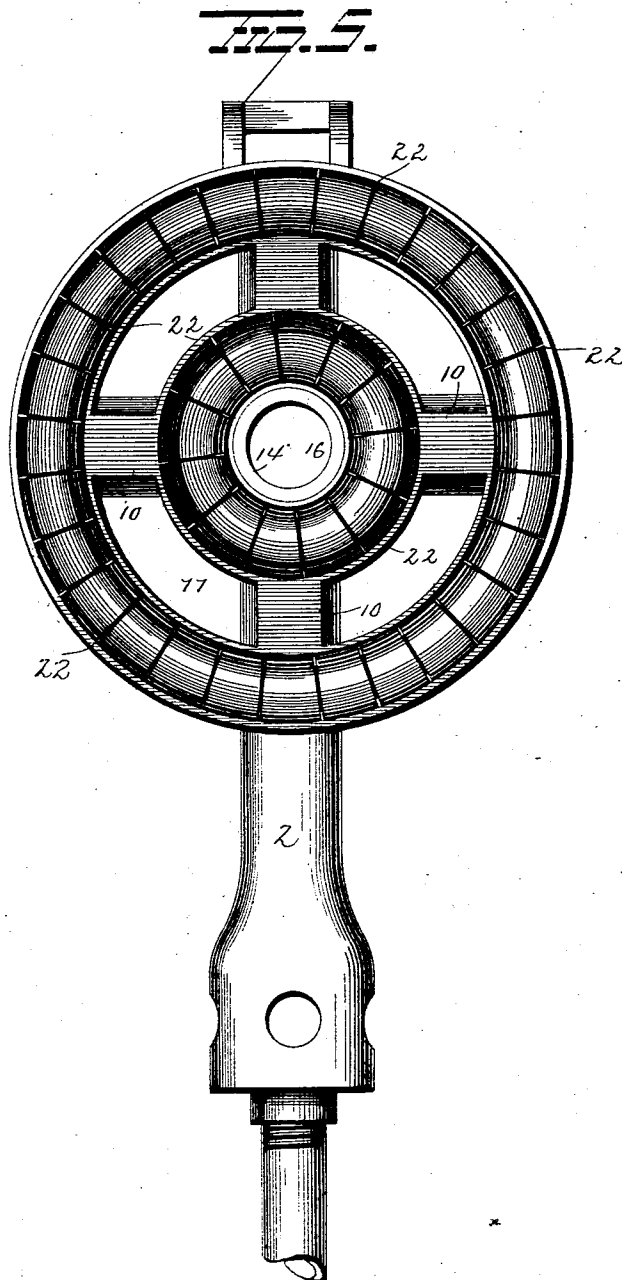
(No Model.)

2 Sheets—Sheet 2.

T. A. BRYAN.
GAS STOVE.

No. 564,681.

Patented July 28, 1896.



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UNITED STATES PATENT OFFICE.

THOMAS A. BRYAN, OF BALTIMORE, MARYLAND.

GAS-STOVE.

SPECIFICATION forming part of Letters Patent No. 564,681, dated July 28, 1896.

Application filed May 8, 1895. Serial No. 548,560. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. BRYAN, of Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Gas-Burners; 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.

My invention relates to an improvement in gas-burners, more particularly to those applicable to gas cook-stoves, the object being to provide means for effecting the equal distribution of gas to the several gas-orifices and to prevent flash back.

With these ends in view the invention consists in two or more concentric rings held some distance apart, so that air-passages are formed around them to aid combustion, and a common supply-chamber, in combination with means for distributing the gas to the rings so that an equal amount is furnished to every jet and an equal pressure is maintained at all points of the burner, to the end that a burner is provided which will not flash back and in which a supply of gas as low as five feet or as high as twenty feet per hour can be consumed without in any wise impairing the accurate working of the burner.

It still further consists in certain novel features of construction and combinations of parts, which will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical longitudinal section through my improved burner. Figs. 2 and 3 are detached views, respectively, of the upper and lower sections of my improved burner, both views showing the interior thereof. Fig. 4 is a detached view of the hollow connecting-bolt, and Fig. 5 is a view of a modification.

A and B represent the two half shells or sections of which my improved burner is composed, they being cast, preferably, and fitted and secured together to constitute a complete burner. As these half shells or sections differ from each other somewhat in detail they will now be described separately, and first, section A. This half shell or section is constructed with a centrally-located supply-chamber 1, into one side wall of which gas and air supply pipe 2 leads. A ring 3 is held off a suitable

distance from this central supply-chamber 1 by means of the spacing devices 4 4, extending radially at intervals from the walls of the chamber 1 and in communication therewith, whereby they constitute gas ducts or channels for conveying a certain quantity of gas outward to the outer ring, as will be hereinafter more fully explained. It may, however, be here mentioned in passing, as will be readily observed from the drawings, that the natural tendency of the gas to rise and expand upon being liberated is provided for in the formation of the central supply-chamber 1 and in the channels or ducts formed by the spacing devices 4 4, the chamber being preferably rounded and smallest at the bottom and the channels or ducts having sloping bottoms 5 5, beginning at their lowest point at approximately the plane of the gas-inlet, and also having sides 6 6, which gradually spread apart upwardly. Thus these channels receive gas practically throughout the height of the central chamber 1.

The top half shell or section B comprises in the main two concentric chambers 8 and 9, spaced apart by means of the hollow spacing devices 10 10, whereby the slots 11 11 are formed between them, and having the gas-orifices 12 12, formed at their highest points. These devices 10 10 grow smaller toward their upper ends and thus force the gas outward. When these sections are assembled, the inner chamber 8 is located over and forms a complement of central chamber 1. The other chamber is located over ring 3, and the two when together complete the chamber formed. The spacing devices 10 10 are located over the gas-channels formed therein, and the slots 11 11 register with the slots 7 7 in section A, producing air-passages to aid combustion at the gas-orifices. These parts are held together by means of a hollow bolt 14, which extends up through a hole in the bottom of chamber 1 and screws at its upper end into the hole 16, formed in the center of section B. Thus this hollow bolt or tube 14 forms the inner wall of chamber 1 and also an air-passage in the very center of the burner, as at 17, so that air is permitted to freely circulate all around both annular chambers 8 and 9. As a convenient expedient for fit-

ting these sections together the lower edges 18 18 of the metal forming the slots 11 11 is tapered slightly to enter the slots 7 7, and the lower edge of the rim of the upper casting is cut away slightly, as at 19, to receive and form a seat for the outer edge of ring 3; also attention may be called to the fact that the upper wall or ceiling 20 of the channels connecting the annular chambers together is slightly lower than the extreme upper portions of these chambers, thereby preventing communication between the two in the upper plane.

In the modification radial slots 22 22 are formed for gas-orifices instead of the drilled or cast orifices disclosed in the other construction.

In conclusion it may be remarked that the burner described is constructed to distribute the gas immediately upon entering the center chamber 1. Upon entering the latter it strikes the rounded outer surface of the hollow bolt or tube 14 and divides, the latter acting as a deflector, and passes around in both directions, supplying the side channels simultaneously and the end ones approximately so. By virtue also of the formation of the connecting-channels, as explained, the gas reaches the outside chamber without perceptible delay, they receiving gas before it reaches the upper portion of chamber 1, and consequently confining it to the chamber, so that it arrives there as soon as gas reaches the top of the inner chamber.

It is evident that other slight changes might be resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the precise construction herein set forth; but,

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

1. In a gas-burner, the combination with two concentric rings spaced apart for the passage of air between them, of hollow spacing

devices connecting these rings by which communication between them is effected, said spacing devices having inclining bottoms and inclining sides thereby permitting the gas to rise and expand in the direction of the outer ring of the burner, substantially as set forth.

2. In a gas-burner, the combination with a pair of rings concentrically arranged with an air-space between them and a central air-space through the inner ring, the inner ring deeper than the outer one, of hollow spacing devices connecting these rings together, these spacing devices having inclined bottoms and sides, the bottoms thereof extending approximately from the bottom of the deep ring to the bottom of the other ring, substantially as set forth.

3. In a gas-burner, the combination with a pair of shells which when together comprise a complete burner, said burner being in the form of concentric rings with an air-space between them, of a hollow bolt screw-threaded at one end, said bolt passed through the central opening in the burner and constituting the air-space therein and screwed to one of the shells whereby the two shells are held securely together, substantially as set forth.

4. In a gas-burner, the combination with the two shells of the burner rigidly connected together and in the form of two rings spaced apart to receive air between them, of hollow spacing devices having sloping bottoms, the sides thereof on the lower shell sloping outward as they extend upward and the sides formed in the upper shell sloping inward toward their extreme upper ends, and the upper shell provided with tapering edges to enter the air-spaces formed in the lower shell whereby the two are fitted together, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

THOMAS A. BRYAN.

Witnesses:

EDWARD J. GREEN,
R. LEE SLADE.