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(54) Nozzle for a gas stove.

(57) A gas stove including a nozzle disposed between a head (96) and a member (91), the nozzle including a nut formed on a middle portion and including a bore having a throat (14) formed in a middle portion so as to separate the bore into a front chamber (16) and a rear chamber (15), two rows of orifices (17,18) radially formed in the nut and communicating with the front chamber to atmosphere, whereby, pressurized gas from the head may flow into the front chamber via the throat, air will be drawn into the front chamber via the orifices and will be mixed with the pressurized gas in the front chamber.

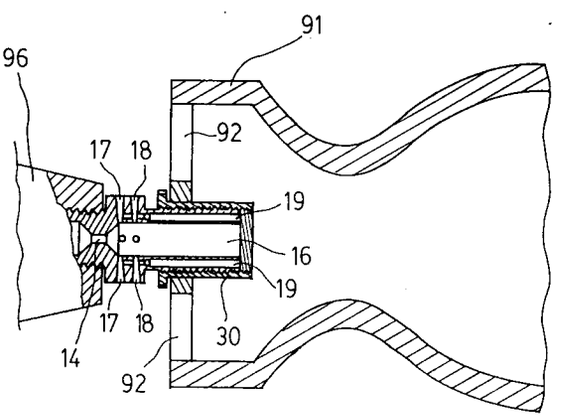

FIG. 3

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BACKGROUND OF THE INVENTION

(a) Field of the Invention

The present invention relates to a nozzle, and more particularly to a nozzle for a gas stove.

(b) Description of the Prior Art

A typical gas stove is shown in FIG. 5 and includes a nozzle 90 extended into a first end of a member 91 where a plurality of air holes 92 are formed. Air may be sucked or drawn into the member 91 when gas injects or flows into the member 91 via the nozzle 90 and may be mixed with the gas. The mixed gas and air flows out of the member 91 from the fir holes 93 formed in the second end of the member 91. A plate 94 is rotatably disposed on the nozzle 90 for controlling the opening size of the air holes 92 in order to control the mixing rate of the air and the gas. However, generally, the users do not know how to adjust the plate 94.

The present invention has arisen to mitigate and/or obviate the afore-described disadvantages of the conventional gas stoves.

SUMMARY OF THE INVENTION

The primary objective of the present invention is to provide a nozzle for a gas stove in which the opening size of the air holes need not to be adjusted.

In accordance with one aspect of the present invention, there is provided a gas stove including a head, a member having a number of air holes formed in the first end and having a number of fire holes formed in the second end, a nozzle having one end coupled to the head and having the other end extended into the member, the nozzle including a nut formed on a middle portion and including a bore having a throat formed in a middle portion so that the bore is separated into two chambers, two rows of orifices radially formed in the nut and communicating with the second chamber to atmosphere, whereby, pressurized gas from the head may flow into the first chamber and may flow through the throat, the flowing speed of the pressurized gas will be increased when flowing through the throat so that air will be drawn into the second chamber via the orifices and will be mixed with the pressurized gas in the second chamber so as to form a mixed air, and air will be drawn into the member via the air holes when the mixed air flows into the member.

Further objectives and advantages of the present invention will become apparent from a careful reading of the detailed description provided hereinbelow, with appropriate reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a nozzle in accordance with the present invention;

FIG. 2 is a cross sectional view of the nozzle taken along lines 2-2 of FIG. 1;

FIG. 3 is a partial cross sectional view of the nozzle which is disposed in the gas stove;

FIG. 4 is a cross sectional view illustrating the operation of the sleeve; and

FIG. 5 is a partial cross sectional view of a conventional gas stove.

DETAILED DESCRIPTION OF THE INVENTION

Referring to the drawings and initially to FIGS. 1, 2 and 3, a nozzle for a gas stove in accordance with the present invention comprises generally a body 10 including a first end 11 threaded to a head 96 which is connected to a gas source and an outer thread 12 formed on the outer peripheral surface of the second end thereof, and a sleeve 30 threadedly engaged on the outer thread 12 of the body 10 and longitudinally movable along the body 10 by the threaded engagement. The sleeve 30 includes a ring 32 formed on one end thereof so that the sleeve 30 can be easily rotated relative to the body 10. The sleeve 30 extends into the first end of the member 91 where a plurality of air holes 92 are formed. The member 91 includes a plurality of fire holes 93 formed in the second end thereof (FIG. 4).

The body 10 includes a nut 20 formed integral on the middle portion thereof and a bore having a throat 14 formed in the middle portion thereof so that the bore is separated into a first chamber 15 and a second chamber 16. Two rows of orifices 17, 18 are formed radially in the nut 20 and communicate the second chamber 16 with the atmosphere. Each of the orifices 17, 18 has an outer end of larger diameter and has an inner end of smaller diameter. A plurality of passages 19 are longitudinally formed in the second end of the body 10 and communicate with the orifices 17, 18.

As shown in FIG. 3, pressurized gas may flow into the first chamber 15 from the head 96, and the flowing speed of the gas will be increased when the gas flows through the throat 14 which has a reduced diameter so that the gas will flow into the second chamber 16 in a relatively faster speed. At this moment, air will be drawn into the second chamber 16 via the orifices 17, 18 due to the fast flowing gas, so that the gas and the air will be mixed in the second chamber 16. Air may also be drawn into the member 91 via the passages 19 and

via the air holes 92 when the mixed air flows into the member 91 so that the mixed air and the newly drawn air will be mixed together in the member 91. Accordingly, air may be drawn and mixed with the gas via the orifices 17, 18 and the passages 19 and the air holes 92. The opening size of the orifices 17, 18 and the passages 19 and the air holes 92 are predetermined and need not to be adjusted.

Referring next to FIG. 4, the sleeve 30 is movable longitudinally relative to the body 10 and movable inwards of the member 91 so that the distance of the body 10 extended into the member 91 can be adjusted. The drawing of the air via the air holes 92 and the passages 19 will be changed when the distance of the body 10 extended into the member 91 is changed.

Accordingly, the nozzle in accordance with the present invention has a novel configuration and the opening size of the orifices 17, 18 and passages 19 and the air holes 92 need not to be adjusted.

Although this invention has been described with a certain degree of particularity, it is to be understood that the present disclosure has been made by way of example only and that numerous changes in the detailed construction and the combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as hereinafter claimed.

Claims

1. A gas stove comprising a head, a member including a plurality of air holes formed in a first end thereof and including a plurality of fire holes formed in a second end thereof, a nozzle including a first end coupled to said head and a second end extended into said first end of said member, said nozzle including a nut formed on a middle portion thereof and including a bore having a throat formed in a middle portion thereof so as to separate said bore into a first chamber and a second chamber, said first chamber being formed in said first end of said nozzle and said second chamber being formed in said second end of said nozzle, at least one row of orifices radially formed in said nut and communicating said second chamber of said nozzle to atmosphere, whereby, pressurized gas from said head may flow into said first chamber and may flow into said second chamber via said throat, the flowing speed of said pressurized gas will be increased when flowing through said throat so that air will be drawn into said second chamber via said orifices and will be mixed with said pressurized gas in said second chamber so as to form a mixed air, and air will be drawn into said member via said air holes when said mixed air flows into said member.

2. A gas stove according to claim 1, wherein a plurality of passages are longitudinally formed in said second end of said nozzle and communicated with said orifices, air may be drawn into said member via said passages when said mixed air flows into said member.

3. A gas stove according to claim 1 further comprising a sleeve threadedly engaged on said second end of said nozzle and movable longitudinally along said nozzle by threaded engagement so that the distance of said nozzle extended into said member can be adjusted.

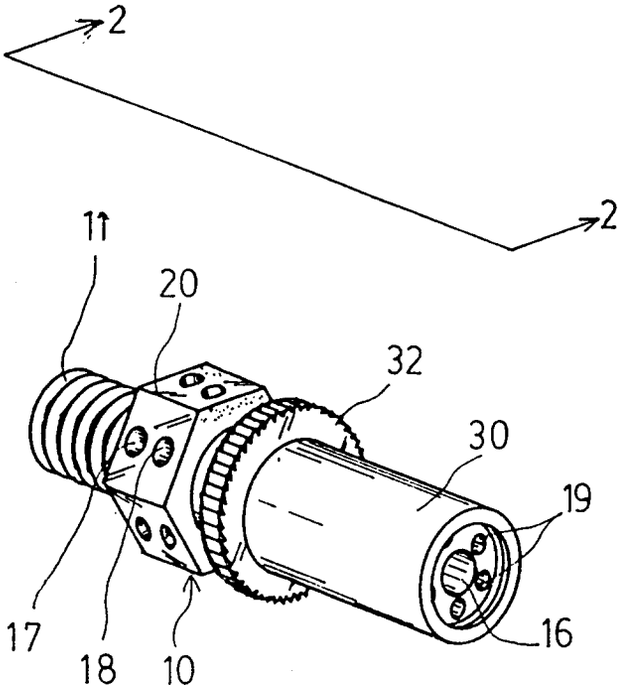

FIG. 1

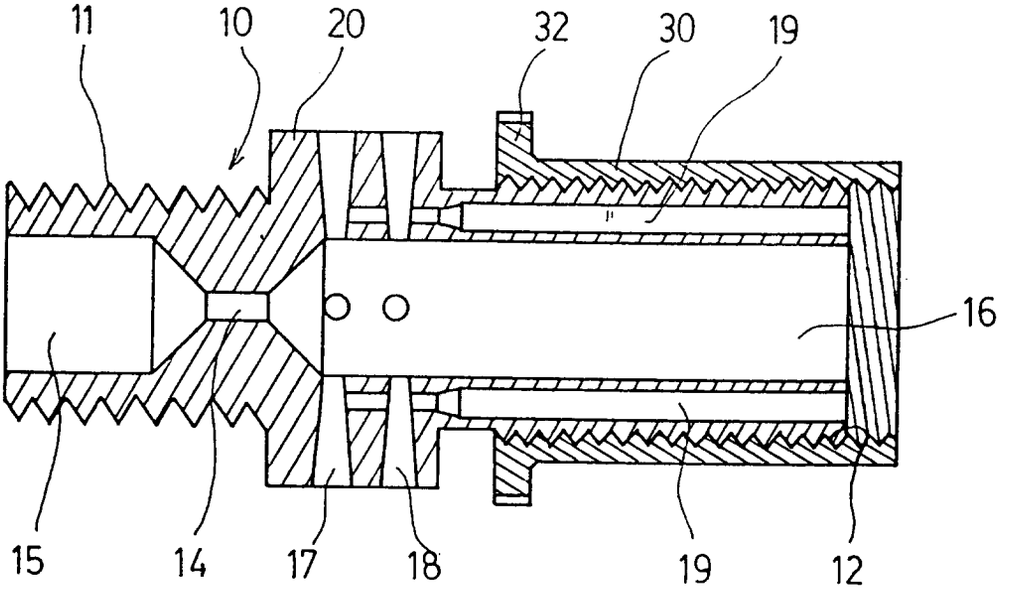

FIG. 2

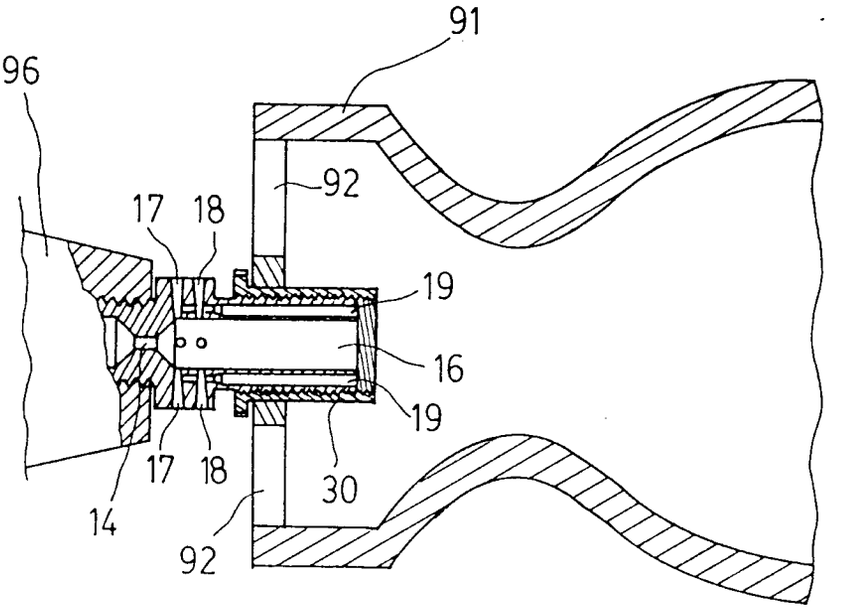

FIG. 3

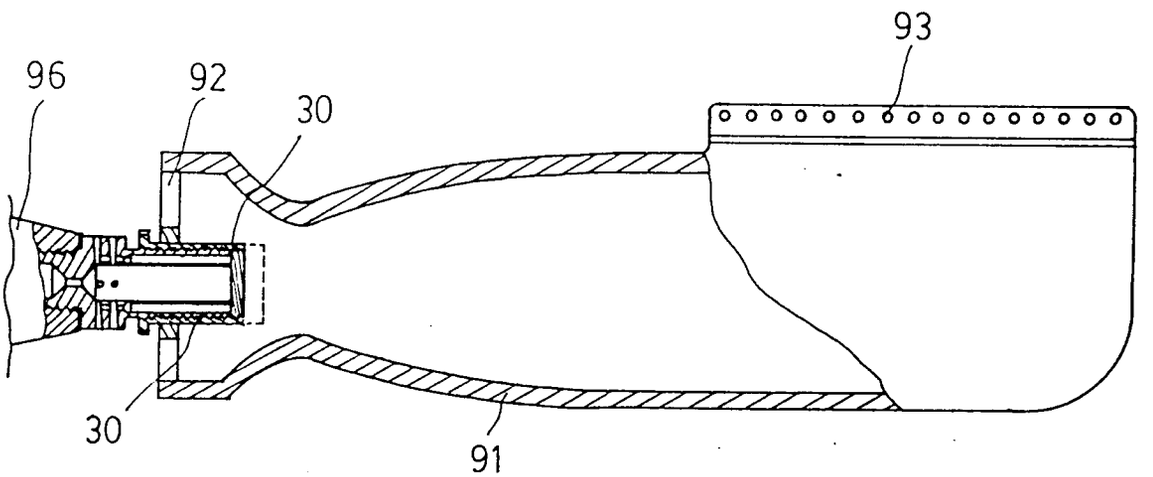

FIG. 4

European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 92 10 4609

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	FR-A-2 122 699 (SOURDILLON) * page 4, line 24 - page 5, line 30; figures 1-4 *	1	F23D14/64 F23D14/60
Y		3	
A		2	
X	FR-A-1 330 884 (BRANOVER) * page 1, right column, line 23 - line 38; figures 1,2 *	1	
X	DE-C-644 485 (VOSSWERKE) * page 2, line 55 - line 83; figure 1 *	1	
Y	PATENT ABSTRACTS OF JAPAN vol. 8, no. 69 (M-286)(1506) 31 March 1984 & JP-A-58 217 108 (KANBISHI DENKI) * abstract *	3	
A	GB-A-978 440 (STEATIT-MAGNESIA) * page 1, line 52 - line 80; figure 2 *	1	

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

F23D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	16 NOVEMBER 1992	COLI E.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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A : technological background
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E : earlier patent document, but published on, or after the filing date
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