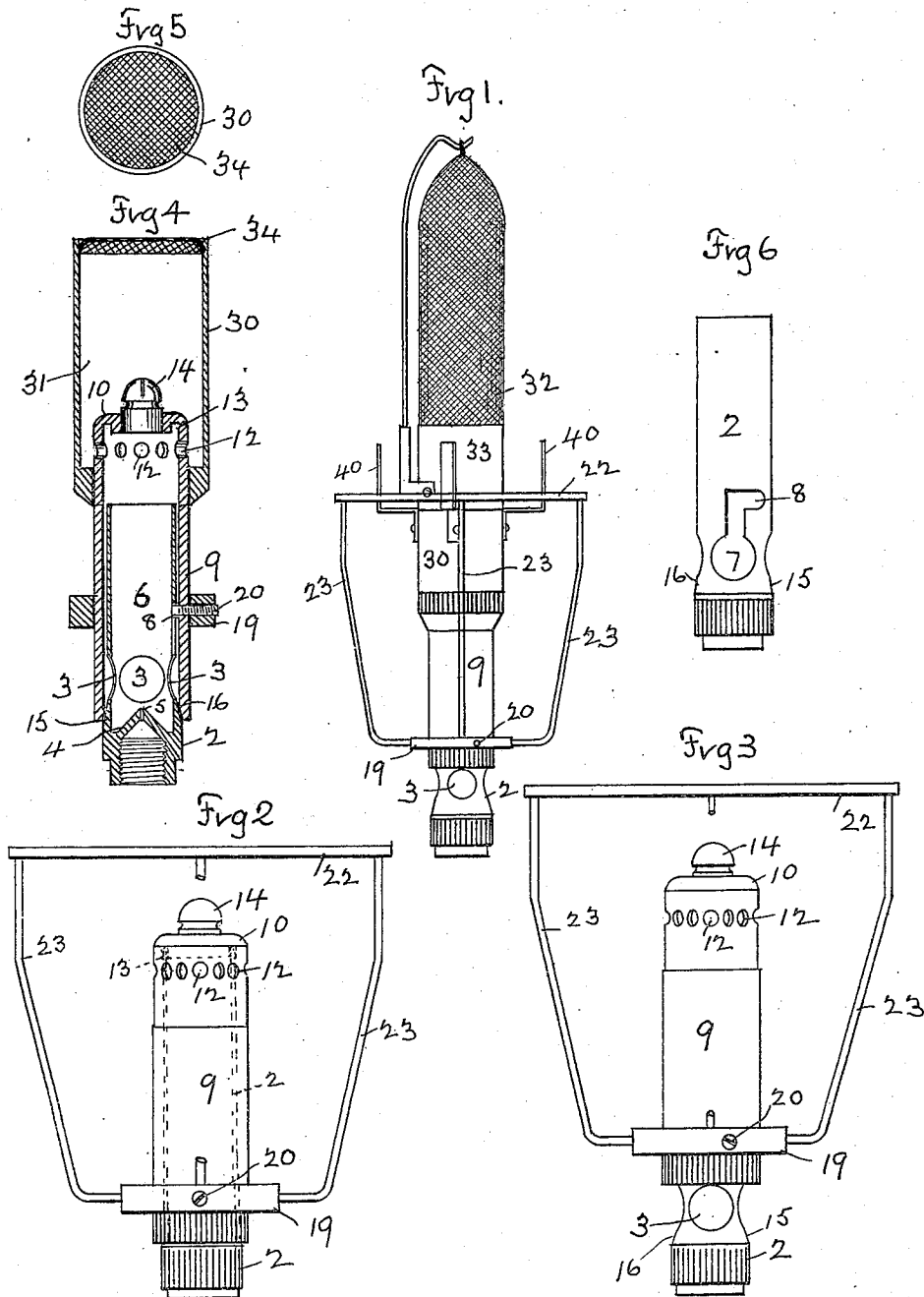


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COMBINATION GAS BURNER.
APPLICATION FILED JAN. 4, 1909.

934,120.

Patented Sept. 14, 1909.



Witnesses:
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COMBINATION GAS-BURNER.

934,120.

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To all whom it may concern:

Be it known that I, HARRY WILLIAMS, a citizen of the United States, and resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Combination Gas-Burners, of which the following is a specification.

My invention relates to gas burners; and it has for its object to provide burners with an attachment which will permit the said burner to be readily changed from an illuminating burner to a heater, or a burner for heating purposes, without necessitating the exchanging of the burners.

Referring to the drawing: Figure 1 is side elevation of my improved combination burner with the mantle attachment. Fig. 2 is a side elevation (enlarged) of my combination burner, showing it as an illuminating burner. Fig. 3 is a side elevation (enlarged) of my combination burner showing it as a heater or blue flame burner. Fig. 4 is a sectional elevation of the burner with mantle removed. Fig. 5 is a top view of Fig. 4, showing the screen across the upper tube. Fig. 6 is a detached side view of the lower tube showing the right angled slot.

2 is the lower tube with central hole 6. Within this central hole, at or near the bottom is placed the cone 4, formed integral with tube and having opening 5 (see Fig. 4). The lower end of the tube 2, below the cone 4 is provided with internal threads as shown which permits of the tube being screwed upon any ordinary gas bracket (not shown). The tube 2, at or near its lower end, is pierced with openings 3 cut around the circumference of the same, see Figs. 1, 3, 4, 6. One of these openings 7, (see Fig. 6) is extended upward and the upper end provided with a right angled slot 8; the purpose of which will be described hereafter. Over the tube 2 is placed the outer tube 9, which is made to freely slide on same. This outer tube is closed at the top 10; and the outer surface below the top edge (a certain distance) is pierced with a series of openings 12. The interior of the top 10 of tube 9 is provided with an annular groove 13. It is also provided with a hole to receive the tip 14. The object of the outer tube 9 is to open and close the orifices 3 in the lower tube 2, for the purpose hereinafter described. But to insure a tight fit of the outer tube 9

upon the tube 2, I enlarge the circumference of the lower edge 15 of the tube 2, which will form a wedge-like surface 16, effecting as the outer tube 9 presses over an air or gas-tight connection. Then again as the tube 9 closes orifices 3 of tube 2, the said tube 2, also closes openings 12 of tube 9. Now, as the tube 2 passes into annular groove 13, it will fit closely therein and produce a tight fit which will prevent the gas passing same and escaping through holes 12. The interior of the annular groove may be supplied with packing to insure a more perfect fit.

The collar 19 is placed over outer tube 9, and is held thereto by screw pin 20; the threaded portion entering tube; and the unthreaded inner end passing into the slot 8, (see Fig. 6). The collar 19 supports the ring 22, by arms 23. Said ring is intended to support utensils for heating purposes. When the burner is to be used for illuminating purposes, the outer tube 9 is positioned as shown in Fig. 2. The gas in that case passes up through tube 2 to the tip 14 and is burned therefrom. The orifices 3 in tube 2 and openings 12 in tube 9, being closed, the gas has to pass up to tip, and burn therefrom, in the usual manner. By raising the tube 9, (see Figs. 1, 3, 4), the orifices 3 and openings 12 will be opened. The outer tube 9 is held up in place by the screw pin 20, resting on edge of slot 8 (see Fig. 4-6). When the orifice 3 is opened, the air rushes in and mixes with the gas in tubes, 2-9, thus producing a gas for heating purposes; said gas passing out of opening 12, where it is ignited. Thus, by simply raising or lowering the tube 9 on tube 2, the burner may be readily converted from an illuminating burner into a heater, without discarding any of the parts. The principle of this combined burner is not changed, when the commonly used Welsbach or mantle burner is attached. In that case, the mantle or upper cylinder 30, is placed upon the top of tube 9, see Fig. 4. In order not to interfere with the flow of the gas, out of orifice 12, I, at that point, enlarge the bore 31 of cylinder 30 so as to allow the gas to freely pass up the same to the mantle 32, which is supported by a collar 33, said collar passing over cylinder 30. The interior of the mantle cylinder 30, is provided with a screen disk 34. Suitable shoulders are formed on tube 9 to support the mantle cylinder 30—40

are brackets for supporting a shade (not shown); said brackets attached to the upper cylinder.

The change from an illuminating burner to a heater is instantaneous. The gas coming out of orifice 12 is instantly ignited when the outer tube 9 is raised by the flame of the tip 14, which flame is extinguished when the gas coming out of orifices is ignited.

I am aware that the cone 4 can be made of a separate piece of metal inserted in the central opening 6 of the tube 2, and provided with internal threads.

What I claim is:

1. In a combination gas burner, a lower tube with orifices, bevel rest and centrally perforated nipple, an outer tube placed over lower tube and acting against bevel rest of said lower tube when said outer tube is down to form an air-tight joint; said outer tube closed at the top and having orifices at or near the top, means for retaining the outer tube in raised position, consisting of a screw pin passing through the casing and resting on a right angled slot cut in lower tube.

2. In a combination gas burner, a lower tube with a portion enlarged for a rest, orifices formed in the lower end thereof, and a conical plug with a central opening, an outer tube closed at one end, said closed end provided in the interior with an annular groove for the insertion of the upper end of the lower tube when outer tube is lowered, for the purpose of insuring a perfect airtight fit; said outer tube provided with a series of openings at or near the top.

3. In a combination gas burner, a lower tube having a centrally perforated conical plug, orifices, formed in lower end of said tube, and an enlarged beveled portion for a rest, an outer tube with open lower end, and upper openings, said outer tube placed over the lower tube, a collar placed around the outer tube, means for holding the collar to the said tube, consisting of a screw-pin, and means for locking the outer tube in a raised position consisting of the said screw-pin threaded in the outer tube and having its inner end projecting into a right-angled slot cut in the lower tube, and an upper or mantle cylinder provided with an enlarged bore, said cylinder placed over the upper end of the outer tube.

4. In a combination gas burner, a lower tube with a bevel rest and orifices, an outer tube placed over the lower tube, and resting upon said bevel rest to insure a tight fit, said outer tube provided with a closed end, having an annular groove for the lower tube to pass into to insure a tight fit, said outer tube also provided with side openings, an upper cylinder with enlarged bore, said cylinder placed over the outer tube, and a screen disk placed within the bore of the upper cylinder.

Signed at New York in the county of New York and State of New York this 6th day of November, A. D. 1908.

HARRY WILLIAMS.

Witnesses:

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