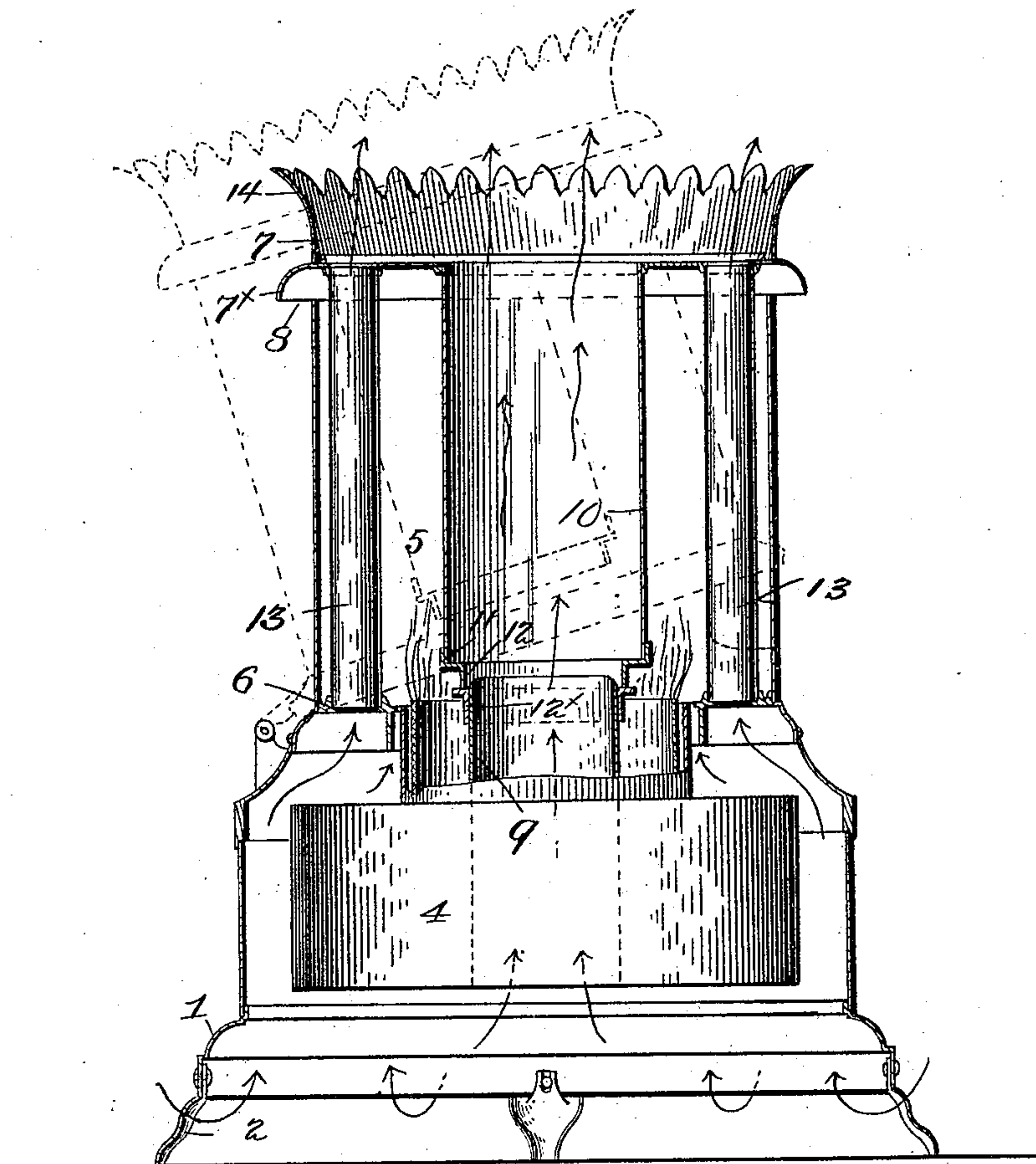


(No Model.)

W. H. WILDER.  
OIL STOVE,

No. 486,311.

Patented Nov. 15, 1892.



Attest  
Wm J Hall  
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Attys

# UNITED STATES PATENT OFFICE.

WILLIAM H. WILDER, OF NORTHAMPTON, MASSACHUSETTS.

## OIL-STOVE.

SPECIFICATION forming part of Letters Patent No. 486,311, dated November 15, 1892.

Application filed July 21, 1892. Serial No. 440,816. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. WILDER, a citizen of the United States of America, residing at Northampton, in the county of Hampshire and State of Massachusetts, have invented certain new and useful Improvements in Oil-Stoves, of which the following is a specification, reference being had therein to the accompanying drawing.

10 It is the object of my invention to provide a gas or oil stove for heating or cooking purposes, in which the gases of combustion and the pure heated air will be separated from each other, but yet will react one upon the  
15 other, so that the gases of combustion before being discharged from the stove will be relieved of much of their heat by reason of the passage of the pure air through the stove and thus be suppressed or rendered less active, the pure air on the other hand being  
20 highly heated and put into rapid and active circulation, it acting to extract the heat from the gases of combustion and increasing this action in proportion to the amount of heat  
25 extracted, and consequently tending constantly to suppress or render inert the said gases in proportion to their heat and tendency to be active and in rapid circulation.

It is my object, further, to provide an oil  
30 or gas stove which may be used within a room without chimney connections, the gases of combustion being suppressed or rendered latent and then deflected when discharged from the stove downwardly toward the floor.

35 In the accompanying drawing the figure represents a central vertical section of a stove as improved by me.

The base 1 is supported by the legs 2, and has therein the reservoir 4, from which the  
40 wick-tube and burner project upwardly, this being of the round or Argand-burner type. Above the base is the combustion-chamber 5, separated from the base or reservoir-chamber by a transverse partition 6. The combustion-  
45 chamber is surmounted by a top 7, having an outwardly and downwardly projecting flange 7<sup>x</sup>, a space 8 being left between the said flange and the top edge of the combustion-chamber wall. Within the burner and  
50 concentric therewith is the central pure-air

tube 9, communicating with the air at the bottom of the stove through the reservoir. This tube connects with the upper central tube 10 within the combustion-chamber, the connection being made by suitable flanges 11  
55 12, between the two tubes, and preferably carried by one of them and adapted to receive the other tube. The lower tube is smaller in diameter than the upper tube, but is concentric therewith and has a flange 12<sup>x</sup>. This  
60 connection separates completely the pure air from the combustion-chamber, the joint between the two tubes and adjacent to the flame serving effectively to make a perfect separation, while at the same time it is acted upon  
65 fully by the said flame to heat the pure air, and for the better heating effect. The cap or flange connection 12 is made to overhang slightly, as shown, so as to act as a spreader and at the same time be in position to be  
70 acted upon by the heat. The combustion-chamber is preferably formed separate from the base portion carrying the reservoir-chamber and the lower section of the central tube, and the flanged or capped connection 11 12  
75 is such that the parts may be readily fitted together or removed.

Through the combustion-chamber and entirely within the same is a series of pure-air tubes 13, which are carried by the said  
80 combustion-chamber to be movable therewith. They open at their lower ends into the reservoir-chamber or base and at their upper ends through the top of the stove. These tubes extend concentrically about the burner and  
85 about the upper central pure-air tube or drum, leaving an annular space above the burner into which the flame and heat passes directly to circulate about the central tube and about the series of pure-air tubes. The heat acting  
90 upon these inner and outer tubes causes a rapid circulation of the pure air. This cold pure air extracts the heat from the gases of combustion, which are cooled as they approach the discharge-opening, and thus are suppressed and rendered less active. By reason  
95 of having the series of tubes entirely within the combustion-chamber they may be acted upon on all sides and no heat is lost from them by radiation. The gases of combustion  
100



also coming in contact with all the surfaces of the pure-air tubes is cooled most effectively. I have shown the discharge for the stove opening directly to the surrounding air below the outwardly-projecting flange, and I prefer to incline this downwardly in order to deflect the latent gases of combustion downward and thus effect a better separation from the heated pure air, which rises through the top of the stove above the said flange, being unobstructed to pass upward and circulate freely. A flange 14 extends around the top above the upper openings, and this increases the separation.

It will be understood that the air-tubes may open into a drum, if desired, at the top of the stove.

The pure-air tubes, instead of passing down into the reservoir-chamber, may be bent aside, as shown at 14 in dotted lines, to open through the wall of the combustion-chamber above the flame.

I claim—

1. The combination, in an oil-stove, of the base, the burner, the combustion-chamber above the burner, the central pure-air tube extending through the burner and upward through the combustion-chamber and closed therefrom, and the series of tubes located entirely within the combustion-chamber and around the burner, forming an annular com-

bustion-space between itself and the central tube, substantially as described.

2. In combination, the base, the burner, the combustion-chamber, the central tube extending through the burner and the combustion-chamber and closed therefrom, the series of tubes around the burner and entirely within the combustion-space, all of said tubes opening through the top of the stove, the said combustion-chamber having a lateral discharge opening or openings, substantially as described.

3. In combination, in an oil-stove, the base, the burner, the combustion-chamber having a lateral opening at its top and an inclined flange for directing the discharge of the gases downward, the upwardly-extending flange, the central tube extending through the burner and combustion-chamber, and the series of tubes about the burner and entirely within the combustion-chamber, said tubes opening through the top of the stove at the base of the upwardly-projecting flange, substantially as described.

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

WILLIAM H. WILDER.

Witnesses:

BYRON E. ELDRED,  
LOUIS HENRY WARNER.