

OIL BURNER.

1,008,060.

2 SHEETS—SHEET 1.

Fig. 1.

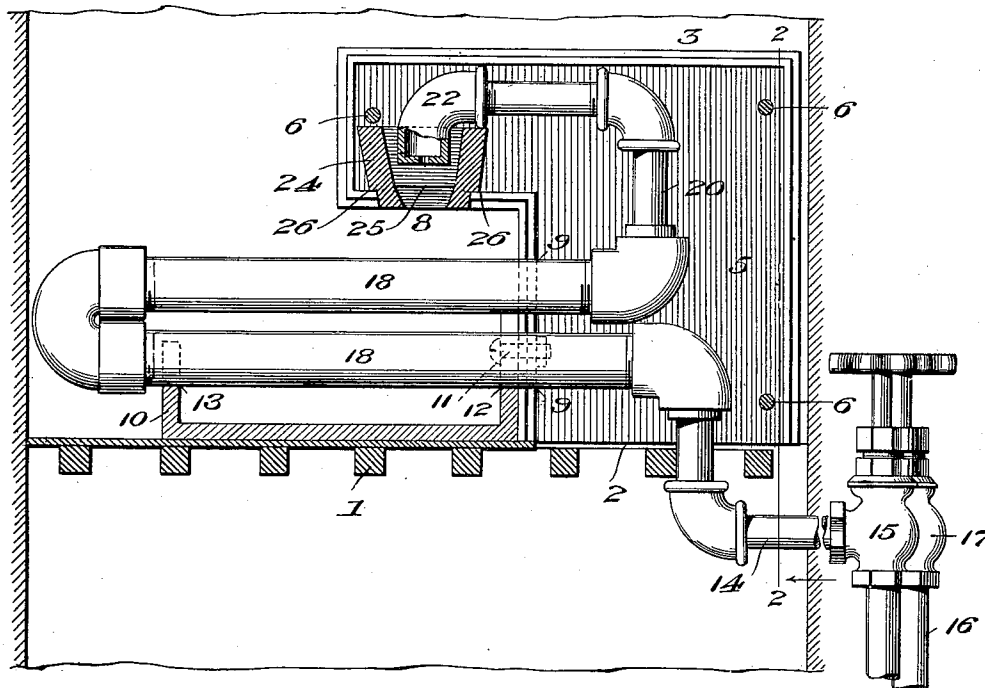
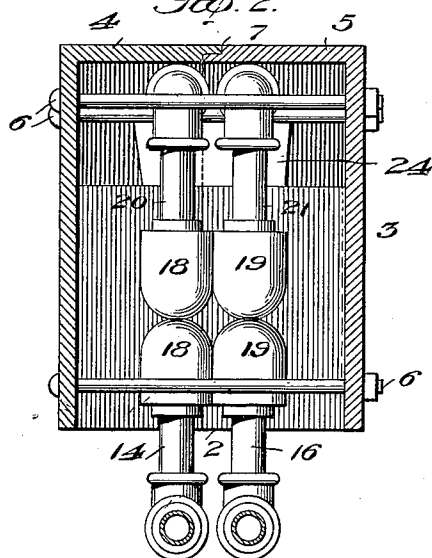


Fig. 2.



Witnesses

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1,008,060.

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OIL BURNER.
APPLICATION FILED JUNE 7, 1911.

Patented Nov. 7, 1911.
2 SHEETS—SHEET 2.

Fig. 3.

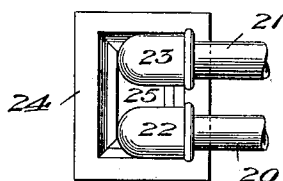
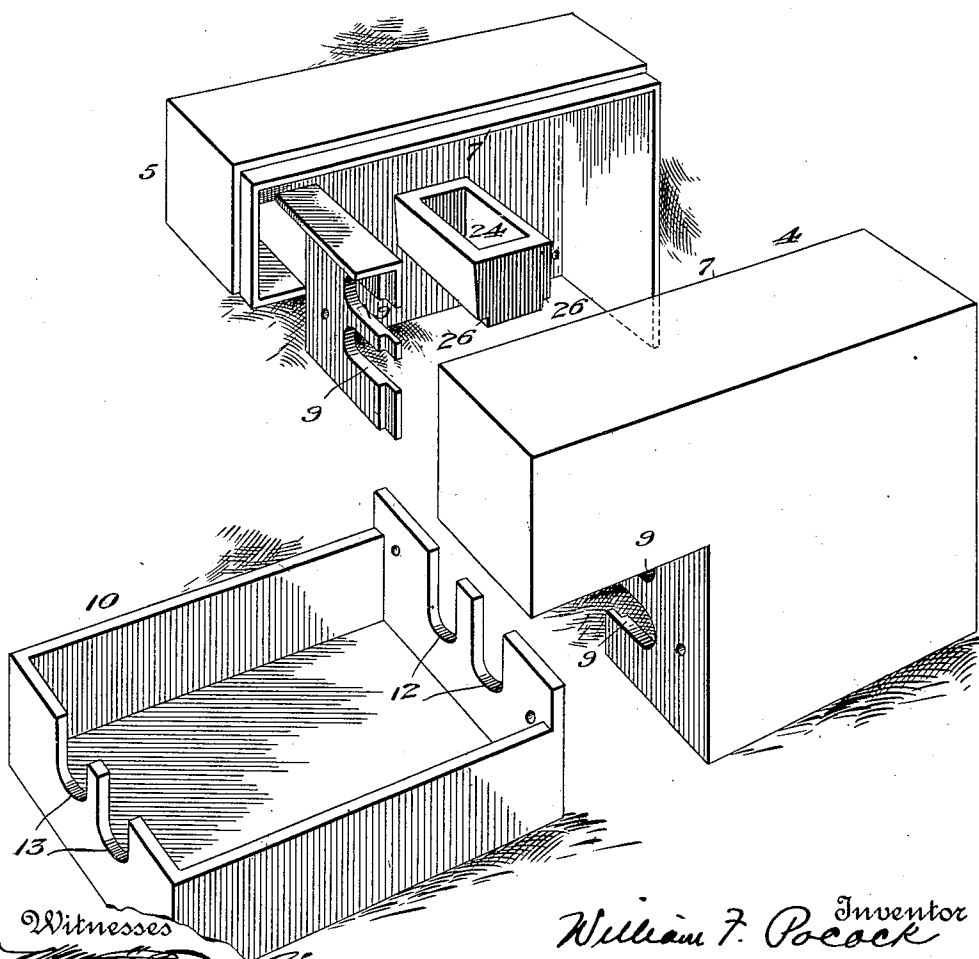


Fig. 4.



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UNITED STATES PATENT OFFICE.

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OIL-BURNER.

1,008,060.

Specification of Letters Patent.

Patented Nov. 7, 1911.

Application filed June 7, 1911. Serial No. 631,829.

To all whom it may concern:

Be it known that I, WILLIAM F. POCOCK, a citizen of the United States, residing at Waverly, county of Coffey, and State of Kansas, have invented certain new and useful Improvements in Oil-Burners, of which the following is a specification.

This invention relates to oil burners.

The present invention has for its object the provision of a burner adapted to utilize coal oil or distillate oil, and constructed in a novel manner whereby the oil is vaporized and mixed with air and steam, and the burner is so arranged that it will insure a draft of air to the point where combustion occurs.

A further object of the invention is the provision of a burner of the character set forth comprising an air draft chamber or box, a starting pan, a mixing tube, water and oil conveying pipes, and retorts for the water and oil whereby the oil is converted into vapor and the water into steam for subsequent mixing with the air at the point where combustion occurs, the device being constructed and adapted for use in stoves and heaters in such manner that a draft of air to the point of combustion is insured, whereby a most perfect combustion is obtained and the deposit of soot is minimized.

The invention is set forth fully hereinafter and the novel features are recited in the appended claims.

In the accompanying drawings:—Figure 1 is a section through the burner, a grate, and the walls of a fire box of a stove, one-half of the box or casing being removed and the burner shown in position for use; Fig. 2, a section on line 2—2, Fig. 1; Fig. 3, a detail plan showing how the nozzles direct the steam and vaporized oil into the tube; and Fig. 4, a perspective view of the box or casing, mixing tube, and starting pan detached.

Referring to Fig. 1, the burner is shown in position on the usual grate 1 of an ordinary cooking stove, the grate being covered with a piece of sheet iron except at the point 2 where the air is to have access, upwardly, into the shell or casing of the burner, and thus a proper draft and supply of air to the point where combustion occurs, is insured.

The air box or casing 3 is preferably made in separable parts 4 and 5 and connected by bolts 6 and meeting at the line 7, the box being closed on all sides except at 2, where

the air enters and at 8 where the flame discharges. Preferably, the adjacent walls of the box are provided with notches 9 for the accommodation and retention of the retort pipes.

10 designates a starting pan which is secured to the box by fastenings 11, and is provided with notched parts 12 adapted to align with the lower notched parts 9 for the accommodation of the lower parts of the retort coils or pipes, and at its outer end this pan is provided with similar notched parts 13 to hold the retort pipes. Thus, other fastenings for the retort pipes are unnecessary as the securing of the sections of the air box and the starting pan causes the retort pipes to be locked.

The water conveying pipe 14 is provided with a suitable valve 15 for the regulation of the water supply thereto. Similarly, the oil supply pipe 16 has a valve 17 for the control of the flow of oil. The water feed pipe is connected to the retort coil 18 and the oil feed pipe is secured to an oil retort coil 19, the said coils being received in the openings and notches as heretofore set forth and thereby secured in position. Leading from the respective retorts 18 and 19 are the burner pipes 20 and 21 terminating in the burners 22 and 23, both of which discharge downwardly into the mixing tube 24, said mixing tube being provided with a discharge opening 25 and being of substantially rectangular form, being provided with the overhanging parts 26 which rest upon the air box. The tube 24 is retained in position by the burners and the sections of the air box, the discharge opening 25 being arranged over the retort pipes 18 and 19 so that the flame will play downwardly upon them. The tube 24 is of considerably less length than the opening 8 so that the air entering the box 3 has free discharge around the tube 24, and thus the vaporized oil, the steam, and the air all combine to support combustion and the draft upwardly into the fire box of the stove or heater is unobstructed, insuring maximum combustion. The tube 24 serves the purpose of combining and mixing the air, gas, and steam, before they enter the fire box of the stove.

A small amount of oil having first been introduced into the starting pan 10, this oil is lighted to thereby heat the retort pipes 18 and 19 which gives an initial vaporization to the oil and converts the water into

steam, thus starting the combustion in the tube 24. The flame from the opening 25 thereafter plays down upon the retort pipes 18 and 19 and keeps them at a high degree of heat so that the vaporization of the oil and the vaporization of the water into steam is carried on continuously while the burner is in operation.

When it is desired to clean the burner or to take it apart, it is only necessary to remove the fastening bolts, whereupon the entire interior of the air box 3 can be observed, and the tube 24 can be readily removed.

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

1. In a retort oil burner, the combination with an air supplying box having an overhanging part provided with an outlet underneath, of a starting pan disposed below said outlet, oil and water retorts disposed above the pan and below the outlet aforesaid, and gas and steam discharge nozzles connected to the respective retorts and disposed adjacent the outlet aforesaid.

2. In a retort oil burner, the combination with an air supplying box having an overhanging part provided with an outlet underneath, of a starting pan disposed below said outlet, oil and water retorts disposed above the pan and below the outlet aforesaid, a mixing tube supported in the outlet, and gas and steam discharge nozzles connected to the respective retorts and adapted to deliver the steam and gas to the tube for commingling with the air fed from the box to the tube.

3. In a retort oil burner, the combination with an air supplying box having an overhanging part provided with an outlet underneath, of a starting pan disposed below said outlet, oil and water retorts disposed above the pan and below the outlet aforesaid, a mixing tube supported in the outlet, gas and steam discharge nozzles connected to the respective retorts and adapted to deliver the steam and gas to the tube for commingling with the air fed from the box to the tube, said tube being of less size than the outlet

and fitting thereinto and being provided with a discharge opening, whereby the gas, steam, and air are commingled in the tube and the flame discharged through the opening therein on to the retorts without interfering with the draft of the air through the box and from said outlet.

4. In a retort oil burner, the combination with an air box composed of separable sections connected together and provided with recesses in their abutting edges and provided with an outlet, of a starting pan detachably secured to the sections of the air box, oil and water retorts, coils received in and held by the recesses and extending over the pan, and discharge nozzles connected to the respective retorts.

5. In a retort oil burner, the combination with an air box composed of separable sections connected together and provided with recesses in their abutting edges, said air box being provided with an overhanging part having an outlet, a starting pan, oil and water retort coils received in the recesses and held thereby, said retort coils extending out over the starting pan and below the air outlet whereby the water and oil are initially vaporized, and gas and steam nozzles for the coils discharging adjacent the outlet of the box.

6. In a retort oil burner, the combination with an air box having an outlet and composed of separable sections connected together and provided with recesses in their abutting edges, of oil and water retorts, a detachable mixing tube fitted in the outlet of the box and of less size than said outlet, said tube being provided with a discharge opening, and gas and steam nozzles connected to the respective retorts and discharging into the tube, whereby the gas, steam, and air are adapted to commingle at the tube but without interfering with the draft of air through the outlet in the box.

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

WILLIAM F. POCKOCK.

Witnesses:

R. E. GLASS,
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