Jan. 8, 1924. 1,480,373

W. C. COLEMAN

STOVE

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Fig. 1.

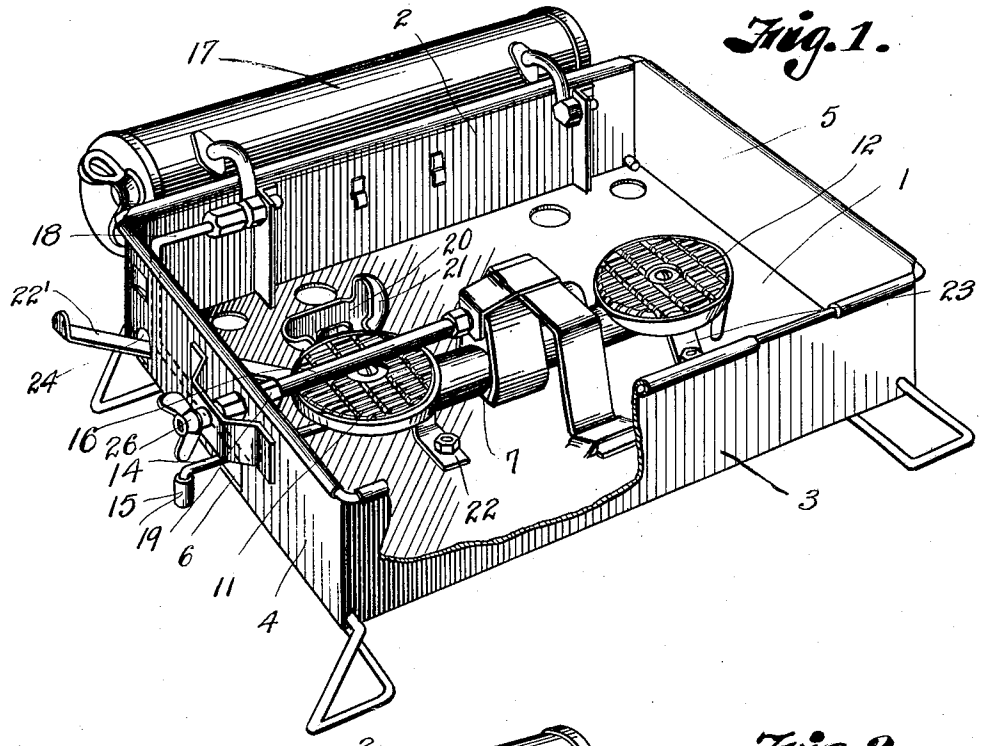
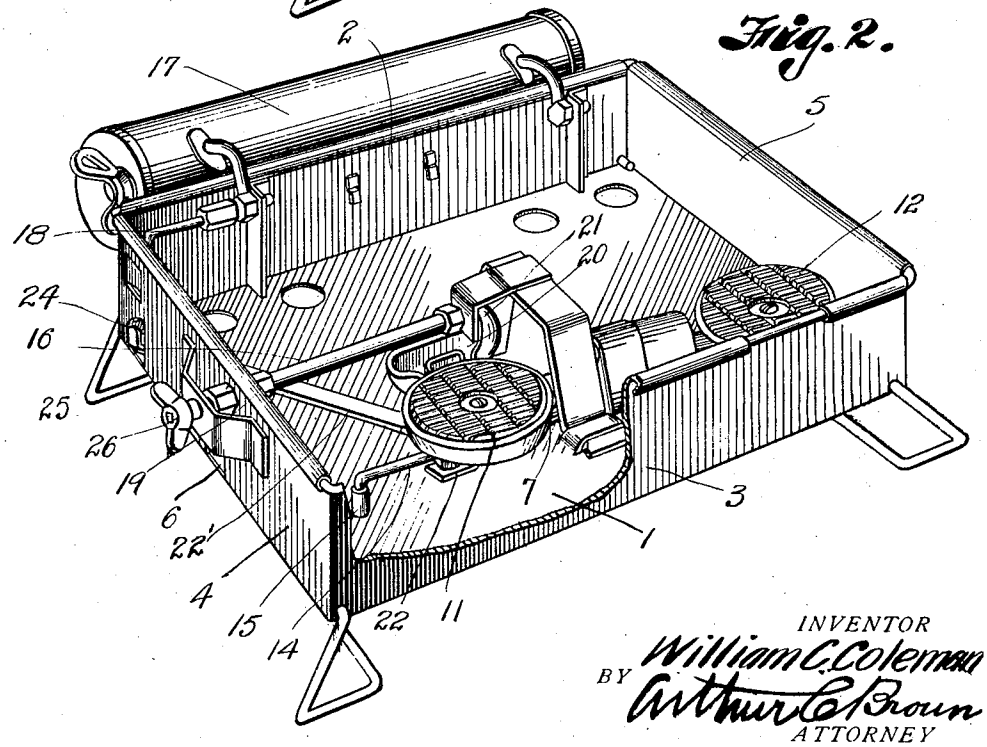


Fig. 2.



INVENTOR
William C. Coleman
BY Arthur C. Brown
ATTORNEY

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Fig. 3.

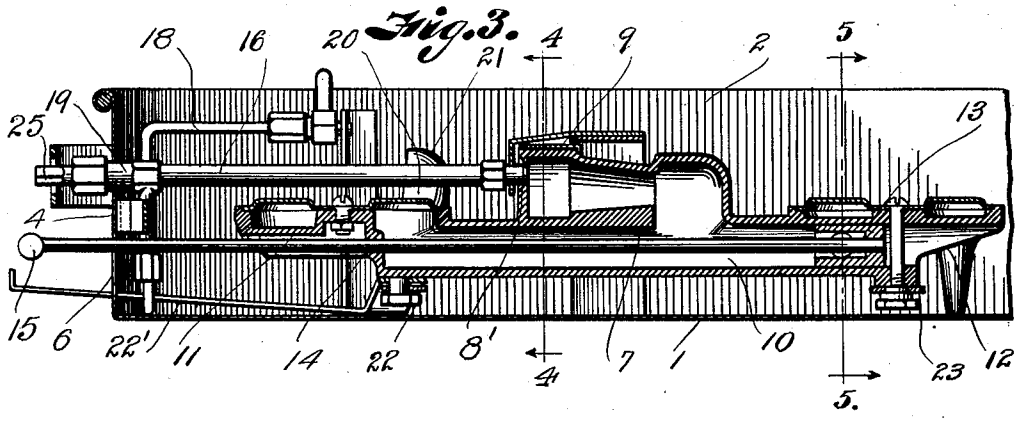


Fig. 4.

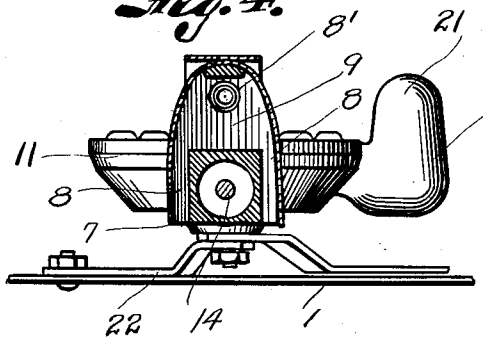


Fig. 5.

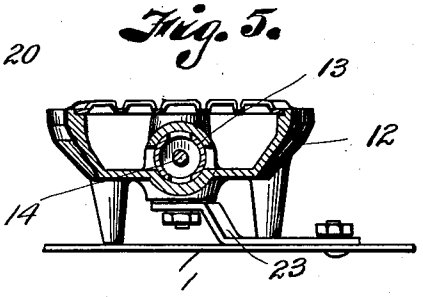
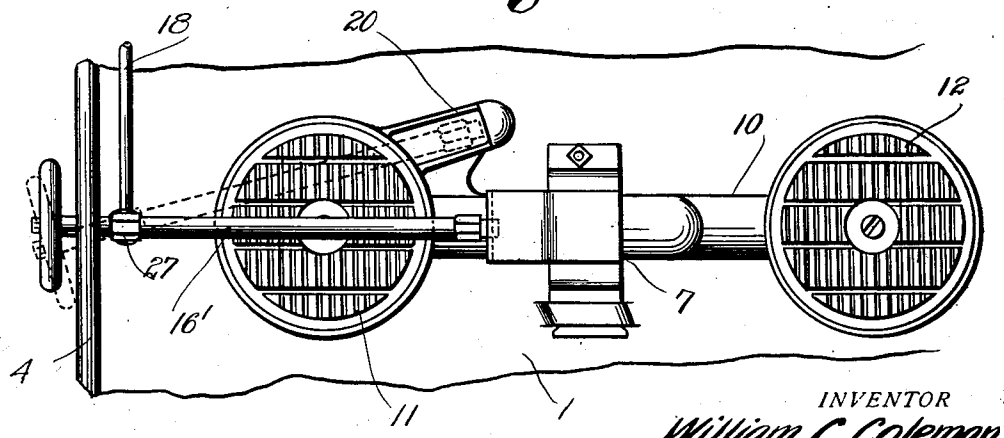


Fig. 6.



INVENTOR
William C. Coleman
BY Arthur L. Brown
ATTORNEY

Patented Jan. 8, 1924. 1,480,373

UNITED STATES PATENT OFFICE.

WILLIAM C. COLEMAN, OF WICHITA, KANSAS.

STOVE.

Application filed April 23, 1923. Serial No. 634,138.

To all whom it may concern:

Be it known that I, WILLIAM C. COLEMAN, a citizen of the United States, residing at Wichita, in the county of Sedgwick and State of Kansas, have invented certain new and useful Improvements in Stoves; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to oil stoves in which a burner is employed, receiving its supply from a fuel tank, the fuel being vaporized preparatory to being mixed with air before it is fed to the burner.

This invention particularly comprehends a novel form of preheater so associated with a burner and vaporizing chamber that the vaporizing chamber can be preheated before the fuel is fed into the burner. Ordinarily, the preheater is located adjacent to the burner outlets and the oil is initially passed cold through the preheater into the burner or priming pan and ignited so that the products of combustion will contact with the outside of the preheater and heat it hot enough to vaporize the incoming oil.

According to this method the burner frequently becomes flooded with disastrous results.

According to my invention a charge of oil is fed into the priming pan away from the heater so that the preheater is heated to the desired temperature to vaporize the incoming oil; then the burner is moved over to the preheater or vice versa, and since the incoming oil will thereafter be vaporized before it enters the burner, liability of the burner being flooded will be entirely eliminated.

The novel construction of the invention will be apparent by reference to the following description in connection with the accompanying drawings, in which—

Fig. 1 is a perspective view of an oil burning stove constructed in accordance with my invention, showing the burners in their normal positions.

Fig. 2 is a similar view showing the burners moved out of alignment with the vaporizing chamber and the preheater in line with the vaporizing chamber.

Fig. 3 is a vertical, longitudinal, sectional view through the burner construction.

Fig. 4 is a cross sectional view on the line 4—4 of Fig. 3.

Fig. 5 is a cross sectional view on the line 5—5 of Fig. 3, and

Fig. 6 is a plan view of a modified form of burner construction.

The stove is shown as comprising a case having a bottom 1, side walls 2 and 3 and end walls 4 and 5. The end wall 4 is provided with a slot 6 through which the stem of the valve for controlling the fuel to the burner may project.

The burner structure is shown as including a casting 7 having oppositely disposed air inlet ports 8 and a fuel inlet port 8′. The chamber 9 communicates with a longitudinal passageway 10, at the ends of which are burners 11 and 12, the burner 11 being in open communication with the passageway 10 and the burner 12 being adapted to be valved by a valve 13 on a stem 14, which projects through the passageway and through the slot 6, the stem having a right angular projection 15, normally outside the casing.

The vapor inlet 8′ is adapted to communicate with a fixed pipe 16 in communication with a fuel tank 17 through a pipe 18, there being a valve 19 valving the port area of the pipe 16; the pipe 16 constituting the vaporizer, by means of which the oil is converted from a liquid phase to a vapor phase.

Carried at the side of the burner 11 is a priming pan 20 which is in the form of an elongated cup with a concave end wall 21 and preferably with a flanged opening in its bottom. When it is desired to prime the burner, oil or alcohol is introduced into the priming pan 20 and the burners are shifted out of line with the vaporizer tube 16. This can be accomplished by reason of

the fact that the casting 7 is pivotally mounted on the levers 22 and 23 fastened to the bottom of the case and connected to the lever 22 is an operating lever 22′ which projects through an opening 24 in the end wall 4 of the case. By pushing on the end of the lever 22, the burners will be shifted to the position shown in Fig. 2 with the priming pan under the vaporizing tube 16. If the fuel is ignited in the priming pan 20, the products of combustion will heat the vaporizing tube 16 hot enough to vaporize the oil. The valve 19 may be slightly opened to feed oil to the cup or priming pan 20 to replenish the fuel so that the temperature of the vaporizing tube 16 will be relatively high. When the vaporizing tube 16 is hot enough, the burners can be shifted back to the position shown in Fig. 1, whereupon the fuel will be fed from the tank 17 through pipe 18 into the burner casting.

If the valve 13 is closed, the fuel will be supplied only to the burner 11 but if the valve 18 is open, fuel will be fed both to the burners 11 and 12, as will be readily understood by reference to Fig. 3.

It will be apparent that the vaporizer chamber can be readily primed by moving the burner casting over to the position shown in Fig. 2 and that just as soon as the vaporizing tube is hot enough, the burners can be shifted back to the position shown in Fig. 1.

The valve 13 is provided with an extension 15 for a definite purpose; that is, the extension must be in a vertical position in order to shift the burners and when it is in that position, the valve 13 will be closed. If the valve stem is turned so that the stem 15 is in a horizontal position, it will be impossible to shift the burners because the end of the extension 15 will hook over the edge of the slot 6 during the shifting operation. This will indicate to the operator that the valve 13 is open and that it must be closed before the burners are shifted. If this were not provided for, it would be possible to shift the burners with the valve 13 open; then when the burners were shifted back to operative position, the valve 13 would still be open and would cause the gas and possibly oil to leak out through the burners 12 with disastrous results. Therefore, the bending-over of the part 15 is a safety element in the construction of the burner.

The valve stem 25 is provided with a polygonal cross section adapted to be received in the socket of a key so that the valve 19 will not accidentally be opened. It requires a valve key 26 to operate the valve stem; consequently liability of tampering with the burner will be reduced to a minimum.

Attention is called to the fact that in Fig. 6 I have shown a slightly modified form of burner conforming generically to the form shown in Figs. 1 to 5 but instead of shifting the burner, the tube 16′ is shiftable by mounting it on a universal joint 27 and since it is connected to the pipe 18, when it is desired to shift the tube 16′, a slight longitudinal movement of the tube 16′, due to the yielding tendency of the pipe 18, will allow the tube 16′ to be withdrawn from the casting and swing over to the dotted line position shown in Fig. 4, where it will be over the priming pan 20′, constructed substantially like the priming pan shown in the preferred form.

This is merely an alternative construction, it being obvious that the result can be accomplished by either shifting the burners with respect to the vaporizing tube or vice versa.

What I claim and desire to secure by Letters Patent is:

1. In a stove, the combination with a fuel oil vaporizer, a burner adapted to receive fuel from the vaporizer but movable independently thereof, a priming pan carried by the burner, and means for effecting relative movement between the burner and the vaporizer so that the vaporizer will normally be in line with the burner but upon relative movement between the burner and the vaporizer, the priming pan will be in line with the vaporizer.

2. In an oil stove, an oil vaporizer, a burner, a priming pan, and means for effective relative movement between the vaporizer and the priming pan and the vaporizer and the burner so that the vaporizer may alternately align with the priming pan and with the burner.

3. In an oil stove, in combination, a vaporizer, a burner, a priming pan carried by the burner, and means for shifting the burner sidewise to alternately align the burner and the priming pan with the vaporizer.

4. In an oil stove, in combination, a vaporizer, a burner, a priming pan carried by the burner, and means for shifting the burner sidewise to alternately align the burner and the priming pan with the vaporizer, the shifting means comprising a link connected to the burner and projecting through an opening in the stove.

5. In an oil stove, the combination with an oil vaporizer, an oil burner, a valve for the oil burner having a stem provided with a right angular projection, and means for oscillating the burner into and out of line with the vaporizer, the stem of the valve being adapted to project through an opening in the stove case when the burner is in line with the vaporizer and to be received within the stove case when the burner is out of line with the vaporizer, the right angular projection on the valve for the burner being adapted to overlap the edge of the opening in the stove case when the valve is unseated

and to be susceptible of being moved through the opening in the stove case when the valve is seated.

6. An oil stove comprising a case having a fixed vaporizer, a burner mechanism mounted to swing in an arc within the stove case, a priming pan carried by the burner mechanism, and means for actuating the burner mechanism to alternately align the burner and the priming pan with the vaporizer.

In testimony whereof I affix my signature.

WILLIAM C. COLEMAN.