May 16, 1944. C. SIEBRING 2,349,117

CONVERTIBLE COAL AND OIL BURNER

Original Filed April 27, 1939 2 Sheets-Sheet 1

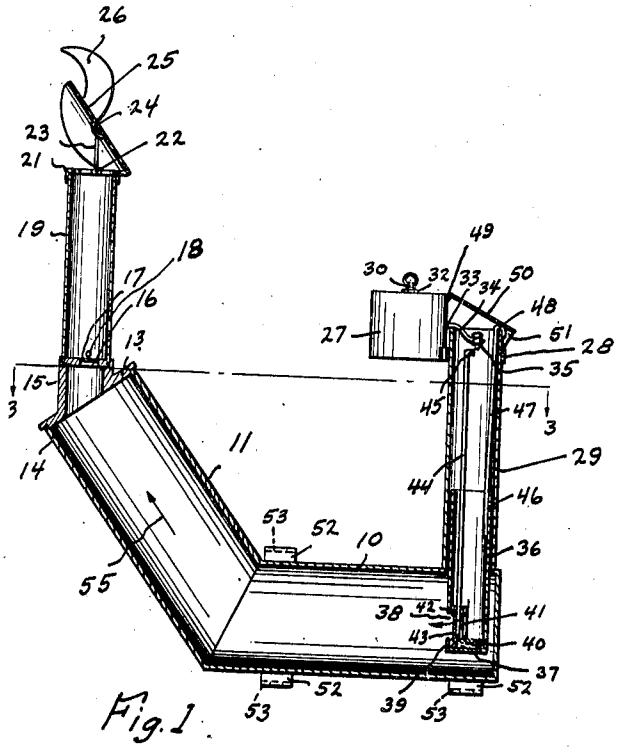



Fig. 1.

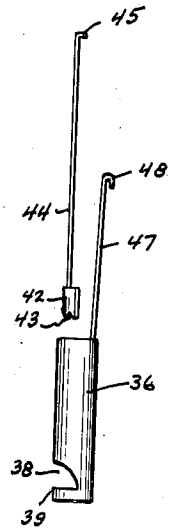



Fig. 2

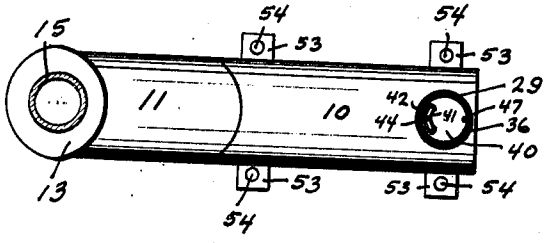



Fig. 3

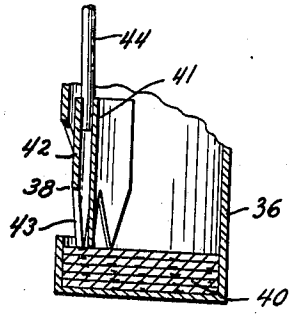



Fig. 6

BY

INVENTOR.
Claude Siebring
Sam J. Slotky
ATTORNEY.

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CONVERTIBLE COAL AND OIL BURNER

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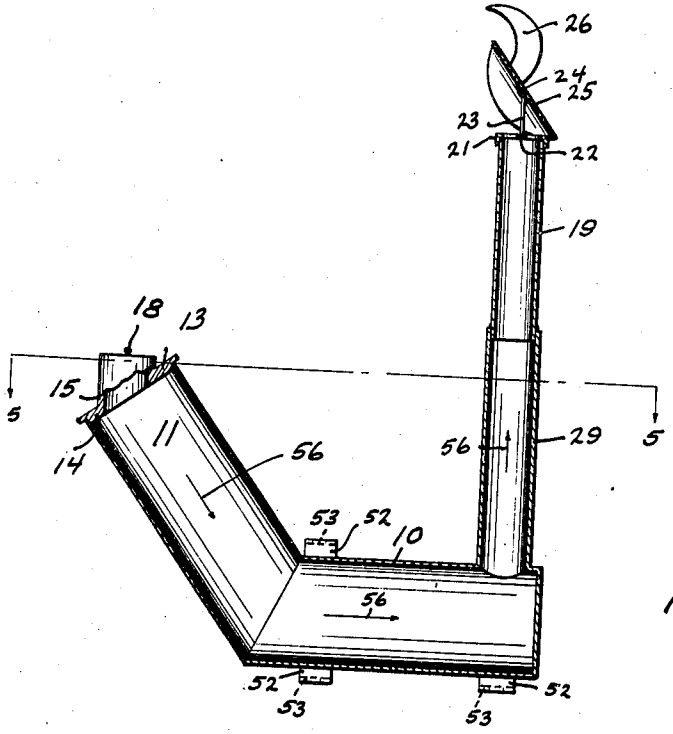



Fig. 4

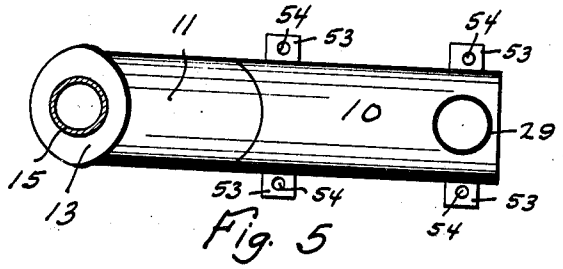



Fig. 5

INVENTOR.
Claude Siebring
BY Sam J. Slotky
ATTORNEY

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# UNITED STATES PATENT OFFICE

2,349,117

## CONVERTIBLE COAL AND OIL BURNER

Claude Siebring, George, Iowa

Substituted for abandoned application Serial No. 270,362, April 27, 1939. This application February 10, 1943, Serial No. 475,593

1 Claim. (Cl. 126—360)

My invention pertains to an oil or coal burning apparatus.

An object of my invention is to provide a unit which can be used for burning a liquid fuel such as crude oil or the like and can be also readily converted to burn coal or cobs.

A further object of my invention is to provide elements which are readily interchangeable to change the stove from one construction to the other in a convenient manner.

A further object of my invention is to provide a completely removable wick and baffle member which can be removed bodily in a complete unit.

A further object of my invention is to provide an arrangement which includes efficient combustion means.

A further object of my invention is to provide supports attached to the arrangement so that it can be supported above or below a flat surface.

A further object of my invention is to provide a construction of this character which is simple and can be cheaply constructed.

With these and other objects in view, my invention consists in the construction, arrangement and combination of the various parts of my device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claim, and illustrated in the accompanying drawings, in which:

Figure 1 is a sectional view showing a side elevation of the arrangement.

Figure 2 is a detail of the removable oil burning attachment and flame spreader.

Figure 3 is a view taken along the lines 3—3 of Figure 1.

Figure 4 is a sectional view similar to Figure 1 showing the arrangement converted to the coal or cob burning construction.

Figure 5 is a view taken along the lines 5—5 of Figure 4, and

Figure 6 is an enlarged detail.

My invention contemplates principally the provision of a fuel burning stove which can be interchanged from an oil burning type to a coal or cob burning type without the necessity of using a separate unit. Further objectives are clearly apparent from the description now given. The present application is a substitute for application Serial No. 270,362, filed April 27, 1939.

I have used the character 10 to represent the horizontal cylindrical combustion chamber which merges with the angularly inclined cylindrical member 11. The plate 13 merges into the cylindrical neck 15 to which is attached the damper member 16 with which is slidably engaged the damper control 17 which is controlled by the knob 18. A cylindrical flue pipe 19 is received within the annular channel 20 and covering the top of the pipe 19 is the cap 21 which is completely open at the top thereof with the exception of a cross member 22 to which is attached the vertical rod 23.

The rod 23 passes through a keeper 24 which is attached to the annular inclined hood member 25 to which is attached the wind vane 26. The top of the rod 23 abuts beneath the member 25 and centrally thereof so that the member 25 can pivot to any position depending upon the wind which will swing the vane 26 to a position so that the hood 25 is opposed to the wind. A fuel tank 27 is attached to a bracket 28 which bracket receives the further cylindrical vertical member 39, the bracket serving to support the fuel tank. A small plug 30 is used for filling the fuel tank, which plug is screwed into the boss 32.

Attached at 33 to the container 27 is the hollow tube 34 which passes inside of the container 27 and at the lower end of the tube 34 is the controllable drip valve 35 which is positioned substantially as shown. Suspended within the vertical cylindrical member 29 is a further cylindrical member 36 which includes the bottom 37 and the opening 38 at one side thereof. A small ledge is provided at 39 and within the bottom 37 is placed a quantity of coarse ashes or other wick material which will absorb the drops of oil coming through the valve 35. Resting upon the wick material 40 is the pair of spade members 41 and 42 which are slightly spaced apart as shown and which include a series of V-shaped notches 43 formed at the bottom thereof.

The spade members 41 and 42 are arcuate as shown more clearly in Figure 3 and attached between these members is the vertical rod 44 which extends upwardly a substantial distance near to the top of the cylindrical member 29 and is bent into the grasping portion 45. Attached at 46 to the inner cylindrical member 36 is the rod 47 which extends upwardly and terminates in the hook portion 48 which is adapted to receive the upper edge of the member 29. Hinged at 49 to the fuel tank 27 is the weather shield 50 which includes sides 51 to protect the interior of the member 29.

Attached to the horizontal chamber 10 are the four upper supporting brackets 52 which are bent into the horizontal flanges 53, and the four lower supporting brackets 52a which are bent into the horizontal flanges 53a, all of which flanges include the openings 54 for receiving attaching

means for attaching the unit. It will be noted from this structure that the unit can be supported above a flat surface by means of the lower flanges 53a or below a flat surface by means of the upper flanges 53, so that the burner can be used above or below such surface, such conditions being necessary in certain cases and for instance when used as a brooder heater or to heat a quantity of water, the upper brackets can be employed so that the arrangement will be immersed within the water.

When using as an oil burning unit, the arrangement is as shown in Figures 1 and 3. The oil drips on to the wick 40, and the flame and air flow will be in the direction of the arrow 55 and upwardly through the damper control at 17 and thence through the pipe 19 and out of the cap 21. The spade members 41 and 42 assist in maintaining practically perfect combustion since these members spread flame and momentarily retard the same so that the combustion products are more perfectly burned leaving very little residue.

When it is desired to convert the oil burning arrangement into the cob or coal burning arrangement, the fuel tank 27 is removed by slipping off the clamp 28 which operation also removes the weather shield 50. Next the hook portion 48 is drawn upwardly which carries the rod 44 and the spade members out at the same time. It will be noted from Figure 2 especially that the spade members can be lifted out of the arrangement if it is desired to bring this member out alone for cleaning or other purposes. After the entire spade structure as well as the oil burning portions are removed, the pipe 19 is placed within the member 29 and the arrangement will then be as shown in Figures 4 and 5 with the oil burning equipment completely removed.

For this use, the angularly inclined cylindrical member 11 is then filled with either coal or cobs as desired which will gravitate downwardly and fill a portion of the horizontal chamber 10. Before filling, the cap member 13 is removed and then replaced. In this form of structure, the flame and air currents will follow the path of the arrows 56 and the members 29 and 19 will then act as the flue in the same manner. The damper control at 18 can then be manipulated for the inlet and in this manner, it will be noted that the arrangement is readily convertible from one type to the other.

Another important feature of my invention is the fact that if desired the oil burner can be used in conjunction with the coal or cob burner. In this case, the flame is initially started by means of the oil burner arrangements and the user can then fill the member 11 full of a combustible material such as coal, cobs or the like. This will then provide a maximum amount of heat which will be generated for a certain period according to the desire of the user so that all of the extra combustible material can be completely burned. After this takes place, the oil burner will still continue to function thereby keeping the device heated and in this manner, the device will be especially useful when it is desired to start with an initial hot flame and allow the burner to later cool down somewhat and still maintain the stove in operative condition. In other words, the effect will be to greatly increase the heating power of the stove without interfering with the arrangements therein.

It will now be seen that I have provided a convertible coal or oil burner which allows conversion from an oil burning unit to a coal burning unit in a convenient manner, which includes weather projecting elements, which can be converted conveniently, which can be supported for any desired purposes, and which is simply constructed.

Some changes may be made in the construction and arrangement of the parts of my invention without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claim any modified forms of structure or use of mechanical equivalents, which may be reasonably included within their scope.

I claim as my invention:

A fuel burning stove comprising a horizontal combustion chamber, vertical flues connected at the ends thereof, one of said flues including a cylindrical casing suspended therein, means for supporting said cylindrical casing from said flue, said casing having a forward opening communicating with said combustion chamber, said casing including a closed bottom for receiving wick material therein, a spade member having a plurality of openings adapted to rest upon said wick material, a vertical rod attached to the spade member to allow removal thereof, the other of said flues including a lengthened stack extension, the upper ends of both flues having openings of equal diameter so that either will fit said extension.

CLAUDE SIEBRING.