

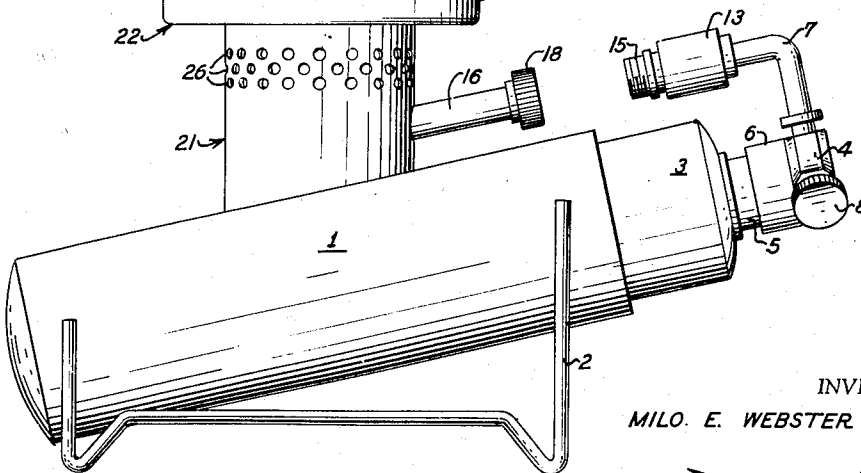
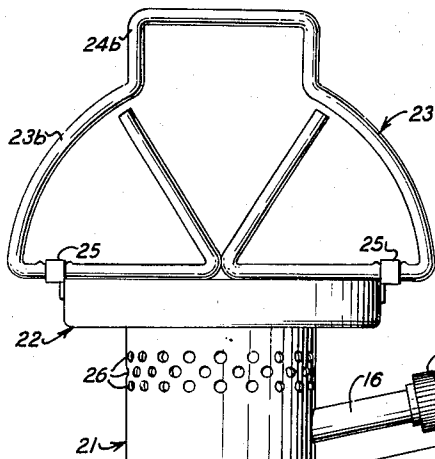
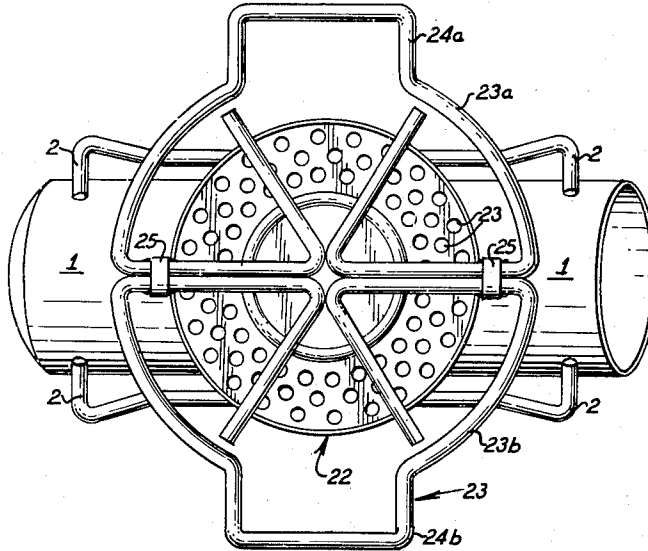
Sept. 27, 1960

M. E. WEBSTER
PORTABLE COOK STOVE

2,954,024

Filed March 23, 1955

2 Sheets-Sheet 1



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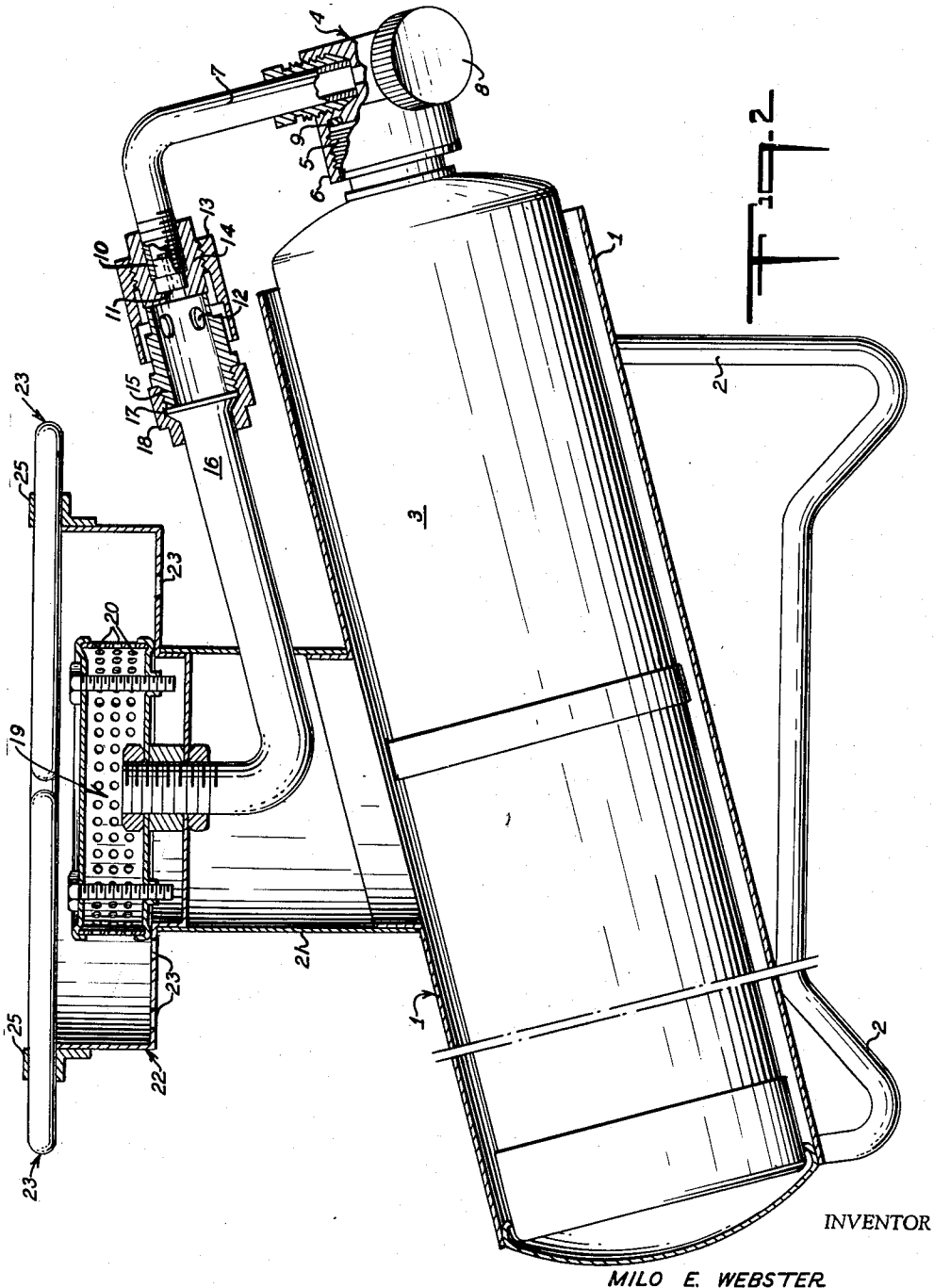
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1

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PORTABLE COOK STOVE

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1 Claim. (Cl. 126—38)

This invention relates to a portable cook stove.

One object of this invention is a portable cooking stove for outdoor cooking, camping, or the like, which overcomes the disadvantages previously associated with portable cooking stoves, as, for example, the necessity of filling, pumping and priming, the difficulties in lighting, the low heat output and the smoke and odor which occurred during operation. This and still further objects will become apparent from the following description read in conjunction with the drawing in which:

Fig. 1 is a top view of an embodiment of a portable cook stove in accordance with the invention,

Fig. 2 is a side elevation partially in section, of the stove shown in Fig. 1 and,

Fig. 3 is a side elevation showing the stove in Fig. 1 with the utensil support in carrying position and the fuel cylinder partially removed.

The portable cook stove, in accordance with the invention is intended for use in combination with a liquefied fuel gas cylinder as, for example, a disposable liquefied propane gas cylinder. The stove has an inclined receiver such as a cylindrical receiver for the fuel gas cylinder. A stove burner including a utensil support is mounted above the inclined receiver. A gas conduit connected to the stove burner extends above the receiver and terminates at a tap connection for the fuel gas cylinder. The tap connection preferably has a regulating valve for regulating the quantity of gas flowing through the gas conduit from the cylinder to the burner, and preferably terminates in axial alignment above the upper end of the receiver.

Referring to the drawings, the inclined receiver 1 is mounted on the leg supports 2. The receiver as shown consists of a hollow cylinder which is open at its upper end and closed at its lower end. The receiver 1 is dimensioned in size so that a fuel gas cylinder, as for example, a liquefied propane cylinder 3 may be slipped inside it.

The fuel gas cylinder, with which the cook stove in accordance with the invention is intended for use, is preferably a disposable liquefied propane gas cylinder as, for example, the portable disposable liquefied propane gas cylinders marketed under the name "Bernz-O-Matic" cylinders.

A tap connection 4 is provided for tapping the cylinder 3. The tap connection 4 may be any conventional tap connection adapted for tapping the particular cylinder in connection with which the stove is to be used. The cylinder, may, for example, have a threaded collar 5 provided with a bore communicating with the interior of the cylinder. This bore may be provided with a closure valve, as, for example, a conventional tire valve. The tap 4 then consists of a female screw sleeve 6 which screws over the collar 5 and has a central hollow rod which depresses the stem on the tire valve opening the same. The fuel in the interior of the cylinder is then free to flow through the hollow interior of the rod into the portion 7 of the gas conduit. The amount of gas

2

flowing through these portions may be regulated or shut off by means of the conventional needle valve arrangement 8. The longitudinal bore in the threaded collar 5 may be provided with an O ring gasket coming into gas tight engagement with the hollow rod and the collar 5 may be screwed up tight against a gasket, as, for example, a neoprene gasket 9 to insure against gas leakage.

This type of tap arrangement is, for example, described in detail in my co-pending application Serial No. 438,400 filed June 22, 1954, now Patent No. 2,793,504.

An orifice cap or plug 10 provided with the small orifice opening 11 is positioned in the conduit 7. On the other side of the orifice 11 the air mixture holes 12 extend through the conduit. A sleeve 13 which is screwed over the threaded portion 14 may be used to adjust the amount of air which may pass from the outside through the air holes 12 into the conduit. The portion 7 of the gas conduit terminates with the male threaded flange 15. The portion of the conduit 7 with all the parts connected thereto is removably connected to the remaining portion of the gas conduit 16 by means of the conventional flange joint 17 and knurled screw sleeve 18 with female thread.

The portion of the conduit 7 may be disconnected from 16 by merely unscrewing the knurled sleeve screw 18.

The portion of the gas conduit 16 terminates in the burner 19. The burner consists of a flat enclosed cylindrical box with the burner holes 20. The burner is supported with an upright cylindrical member 21 which is connected to the receiver 1. The cylindrical member 21 may have the ventilating openings 26.

A cylindrical pan 22 surrounds the burner 19 and is provided with the air admission holes 23 through its bottom portion.

A utensil support 23 is mounted above the burner for holding a cooking utensil such as a pot or pan above the burner. The utensil support as shown consists of two semi-circular frame members 23a and 23b which have the handle shaped portions 24a and 24b respectively.

The frame members 23a and 23b are hinged by means of a hinge joint 25 at their central portions so the same may be folded up vertically as shown in Fig. 3. When folded in this position the handle portions 24 may be used for holding and carrying the stove.

In operation the female threaded sleeve screw 18 which may be knurled about its exterior surface to facilitate gripping is unscrewed from the screw 15 and the portion of the gas conduit 7 with the parts connected thereto including the tap arrangement 4 is removed.

The tap arrangement 4 is then screwed on to a fuel gas cylinder such as the disposable liquefied propane fuel gas cylinder 3. This effects communication from the interior of the cylinder to the conduit 7 through the needle valve arrangement 8. With the needle valve arrangement shut, no gas can escape. The cylinder 3 is then slid into the receiver 1 as shown in Fig. 3. The female threaded screw sleeve 18 is then screwed onto the member 15 connecting the portions of the gas conduit 16 and 17 as shown in Figs. 2 and 3.

In order to light the stove, the needle valve 8 is opened allowing passage of the pressurized fuel gas from the cylinder 3 through the gas conduit 7. As the gas passes through the orifice 11, it draws air through the air holes 12 mixing the air with the gas. This mixture of fuel gas and air then passes into the hollow interior of the burner 19 and out through the burner orifices 20. The stove may be lit by merely placing a match or the like adjacent to the burner orifices 20. The pan 22 acts as a windshield. The height of the flame may be adjusted by means of the needle valve 8.

In order to obtain the optimum burning mixture of air and gas for various altitude conditions or the like,

3

the sleeve 13 may be adjusted to allow a greater or lesser quantity of air to be drawn through the air holes 12.

The stove will light instantly. It has a high heat, clean, adjustable blue flame which is smokeless and odorless.

Due to the inclined position of the cylinder as the same is held in the receiver which should preferably be at an angle of at least 15° from the horizontal, only vapor will pass out of the cylinder, and the cylinder outlet will never be in direct contact with the liquefied gas which might cause erratic operation and extinguishment of the flame.

If the cylinder were maintained in a horizontal position the liquefied fuel gas would initially come in contact with the outlet opening causing these disturbances. As the quantity of fuel was used up in the cylinder the liquid level would eventually fall below the outlet from the cylinder causing a change in the flame characteristics and requiring readjustment. Further, a shaking or jostling of the stove could easily splash liquid particles into the outlet from the cylinder and cause the extinguishment of the flame.

As contrasted to a vertical positioning of the cylinder, the arrangement, in accordance with the invention is much more stable, compact, and handy.

While the invention has been described in detail with reference to the specific embodiment shown, various modifications will become apparent to the artisan which fall in the spirit of the invention and scope of the appended claim.

I claim.

A portable cook stove including a liquefied fuel cylinder and an inclined receiver for the fuel cylinder having

4

legs attached thereto forming a stable self-supporting base unit a stove burner including a utensil support mounted above said inclined receiver, said utensil support comprising two centrally hinged frame supports defining opposed hand insertion grips at their outer portion dimensioned and positioned to mate upon folding together of said frame supports and form a vertically extending carrying handle, a tap connection positioned for attachment to a fuel cylinder positioned in said receiver, gas conduit means extending above said receiver connected at one end to said tap connection and at the other end to said stove burner and regulator valve means positioned for adjusting the quantity of gas flowing through said gas conduit means.

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