

Sept. 10, 1968

S. S. AXELSSON

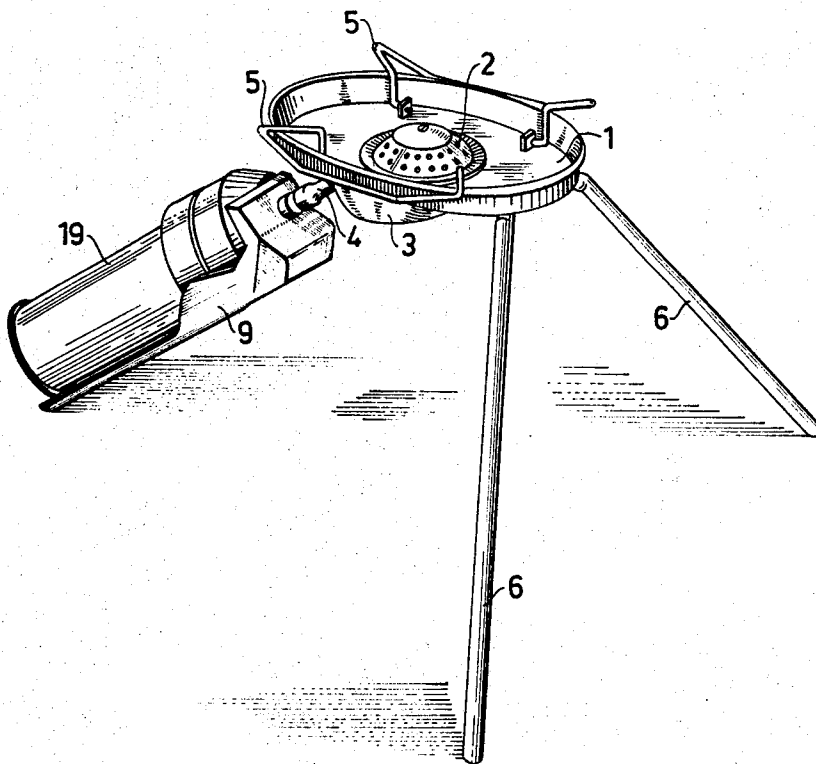
3,400,705

PORTABLE STOVE

Filed Nov. 1, 1966

2 Sheets-Sheet 1

Fig. 1



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Fig. 2

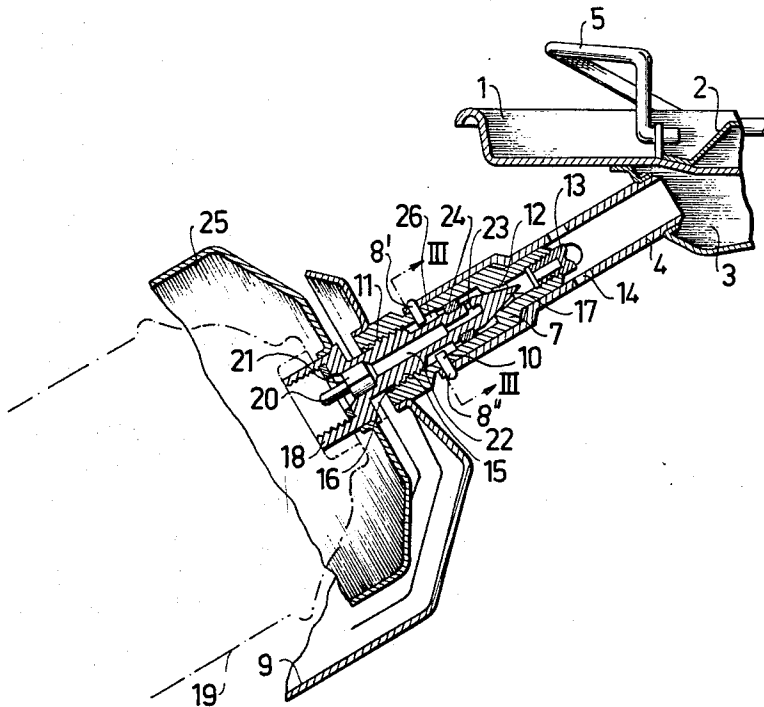
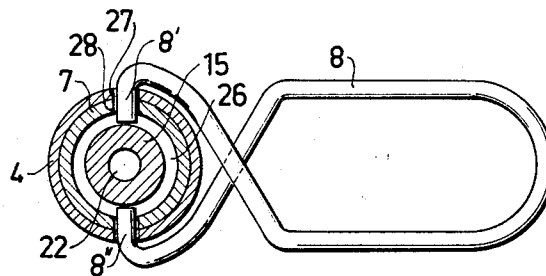


Fig. 3



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PORTABLE STOVE

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4 Claims. (Cl. 126—44)

ABSTRACT OF THE DISCLOSURE

A compact and simply constructed portable pocket stove is described. A valve housing containing a valve seat is retained within a mixer pipe connected to the burner. The valve body having a passage therethrough is secured to a gas bottle and is externally threaded to engage corresponding threads in a bore in the valve body whereby rotation of the gas bottle serves to move the head portion of the valve body towards and away from the valve seat.

The present invention relates to a portable stove of the so-called pocket stove type i.e. a stove which is distinguished by its low weight and small volume. Such stoves are intended to be used on picnic excursions, fishing trips and the like and are used together with bottles of gas which can be disposed of when empty. Since stoves of this type can only be used for short periods as compared with conventional portable stoves it is important that the price is kept low. One relatively expensive detail incorporated in conventional portable stoves is the regulating and cut-off valve since it is designed so that it has to be hot swaged and then machined in various planes. When, as has been the case hitherto, such a valve is incorporated into a pocket stove it is much too expensive in relation to the other components of the stove. The use of such valves in pocket stoves has also complicated the design in those cases when it has been desirable to prevent the valve knob from being situated too close to the burner.

According to the invention the manufacture of the valve is simplified and made less expensive in that all valve members can be machined simply and automatic by turning from rod-like blanks. This is achieved in that the valve housing and the valve body are designed as rotary symmetrical portions and the valve body is arranged axially displaceable in a channel containing the valve seating and passing axially through the valve housing, and made integral with a stub pipe intended to receive the bottle of gas, the connection of said stub pipe with the interior of the valve housing being effected by a channel passing through the valve body, said stub pipe being provided with a knob serving at the same time as a heat shield for the bottle of gas.

The valve housing is suitably connected with a mixer tube extending in the longitudinal direction of said valve housing and which passes to the burner, the valve housing also being connected with a support for the bottled gas, in such a way that these members together form a leg for the stove.

The invention will be more closely described with reference to the accompanying drawings wherein FIG. 1 shows the stove in perspective and FIG. 2 shows a cross section through the valve and associated members and FIG. 3 shows a section along line III—III in FIG. 2, in enlarged scale.

As can be seen from FIG. 1 the stove includes a stoveplate 1, in the center of which is mounted a burner head 2. The head communicates via openings (not shown) with a burner cup 3 mounted under the stoveplate 1, a mixer

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pipe 4 also being attached to the burner cup. On the upper face of the stoveplate are secured two, pivotable utensil supports 5 and on the bottom two collapsible legs 6.

Inserted in the outer, somewhat flaring end of the mixer pipe 4 is a valve housing 7, the outer, projecting portion of which carries a support 9 for the bottle of gas, which support together with the valve housing 7 and the pipe 4 forms a third leg for the stoveplate 1.

The valve housing 7 is provided with an axial passage 10 which is threaded at 11 and necked at 12 so as to form a valve seating. Further, the passage 10 is threaded at its inner end for receiving a nozzle 13 mounted level with air holes 14 in the mixer pipe.

A valve body 15 is inserted in the valve housing and is threaded at 16 to cooperate with the threads 11 so that the valve body can be rotated and thus displaced axially. The forward end 17 of the valve body is designed to cooperate with the valve seating 12 so that it closes the valve passage through the valve when the valve body is screwed forwards as far as possible. The rear end of the valve body projects out of the valve housing and is designed as a stub pipe 18 adapted to cooperate with corresponding members at the mouth of the bottle of gas 19 for securing the same. A member 21, provided with a pin 20 is inserted in the stub pipe 18. The pin 20 serves to open a valve in the bottle when said bottle is mounted. The member 21 is inserted so that passages (not shown) are formed at its sides for flow of gas to a passage 22 passing axially through the valve body 15, which passage 22, via a radial hole 23, communicates with the passage 10 of the valve housing 7 in front of the seating 12. An O-ring 24 seals this portion of the valve housing against the rear portion thereof.

The valve body 15 is provided, between the thread 16 and the O-ring 24, with a reduced portion 26. The mixer 4 and the valve housing 7 have openings 27, 28 (FIG. 3) corresponding to each other, which when the valve is closed lie approximately in the center of the said reduced portion. The valve housing 7 is retained in the mixer tube 4 by means of a wire stirrup 8, the opposing ends 8', 8'' of which are inserted through the holes 27, 28 in the reduced portion 26. The valve body can thus be screwed out only until the inner face of the reduced portion 26 strikes against the ends 8', 8'' of the wire stirrup. This is important when it is desired to change the bottle. To enable regulation of the flame in the manner described above by rotating the bottle 19 the arrangement must naturally be designed so that the threads 11, 16 run more easily than the threads which connect the bottle 19 to the stub pipe 18. When changing a bottle it is thus necessary to first unscrew the bottle and valve body until the latter is stopped by the ends of the stirrup 8. By continuing to rotate the bottle it can be unscrewed from the stub pipe 18.

The complete valve and the possibly attached bottle, can be easily removed from the stove by removing the stirrup 8. This is desirable, for instance, when changing nozzle 13 or to facilitate stowing of the stove.

Secured on the stub pipe is a plate 25 which surrounds the forward portion of the bottle and protects it from heat generated by the burner. The plate 25 can also serve as a knob for operating the valve.

As can be seen from the foregoing both the valve housing 7 and valve body 15 are rotationally symmetrical and can thus be manufactured cheaply by turning down the same from rod-like blanks.

I claim:

1. A portable pocket stove comprising a burner, a gas bottle and a valve, said valve comprising a valve housing and a valve body, said valve housing having a bore containing a valve seat and said valve body having a head

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portion, a passage therethrough terminating adjacent said head portion, and being axially movable within said bore such that said head portion may be moved towards and away from said seat to open and close the valve, said stove further comprising a stub pipe integral with said valve body and connected to said gas bottle and a combination knob-heat shield secured to said stub pipe to operate said valve.

2. A portable pocket stove as claimed in claim 1 further comprising a member secured to said valve housing serving as a combination support for said gas bottle and leg for said stove.

3. A portable stove as claimed in claim 1 further comprising a mixer pipe extending from said burner and over at least a portion of said valve housing, the bore in said valve housing being provided with an annular reduced portion with at least one hole extending from said reduced

portion through said valve housing and mixer pipe, and a removable latching member inserted through said hole into said annular reduced portion for restricting movement of said valve body away from said valve seat.

4. A portable stove as claimed in claim 3 wherein said annular reduced portion has two of said holes extending therefrom and said removable latching member comprises a wire stirrup provided with bent ends inserted through said holes.

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