Aug. 29, 1933. A. J. YEAGER 1,924,824

VAPOR STOVE

Filed Sept. 23, 1931 2 Sheets-Sheet 1

Fig. 1.

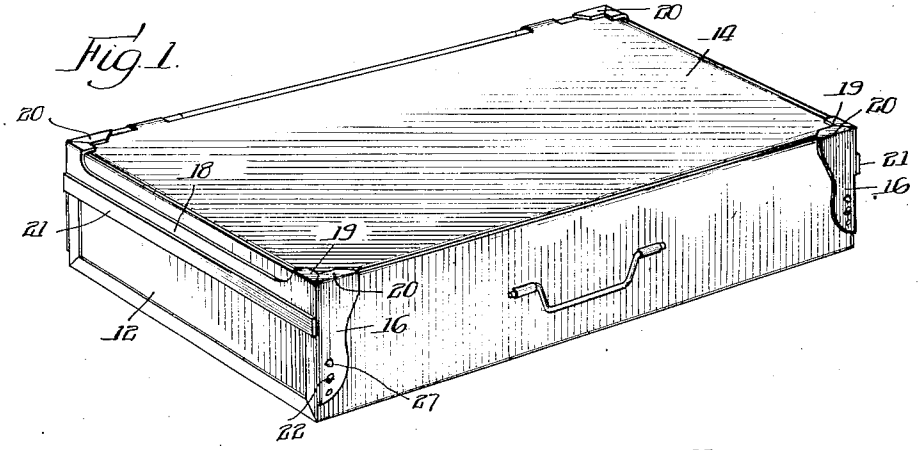


Fig. 2.

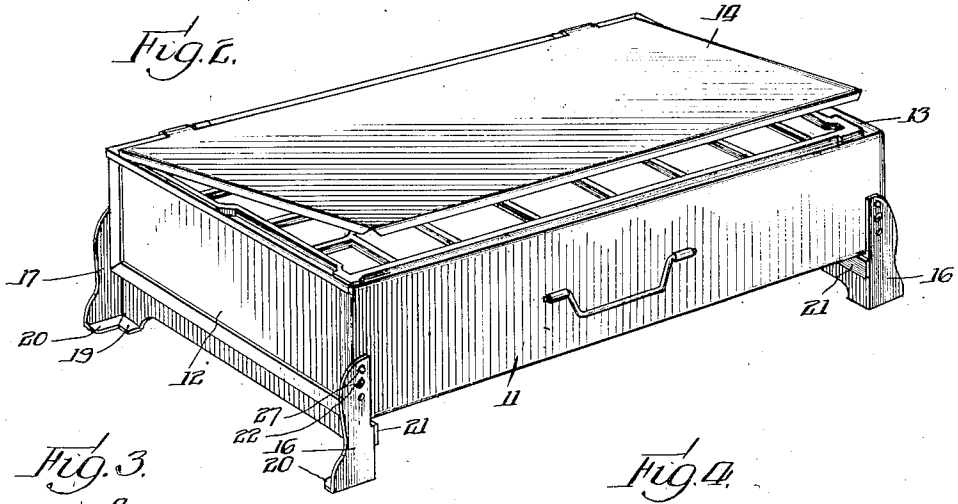


Fig. 3.

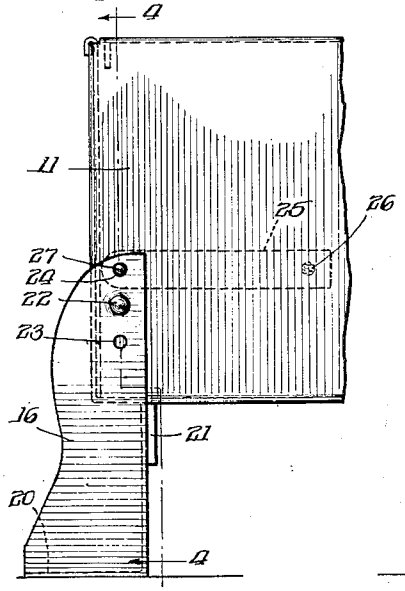
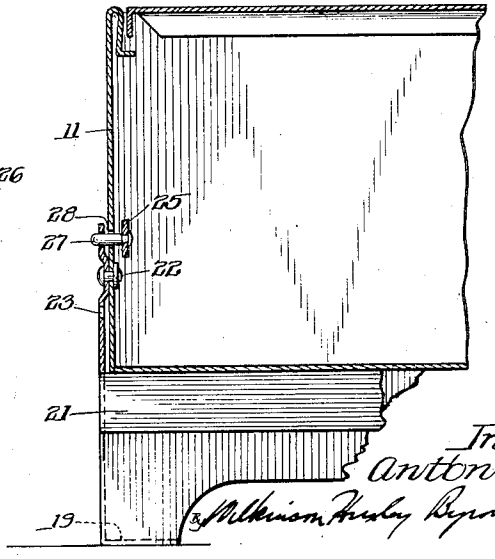


Fig. 4.



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Aug. 29, 1933. A. J. YEAGER 1,924,824

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Filed Sept. 23, 1931 2 Sheets-Sheet 2

Fig. 5.

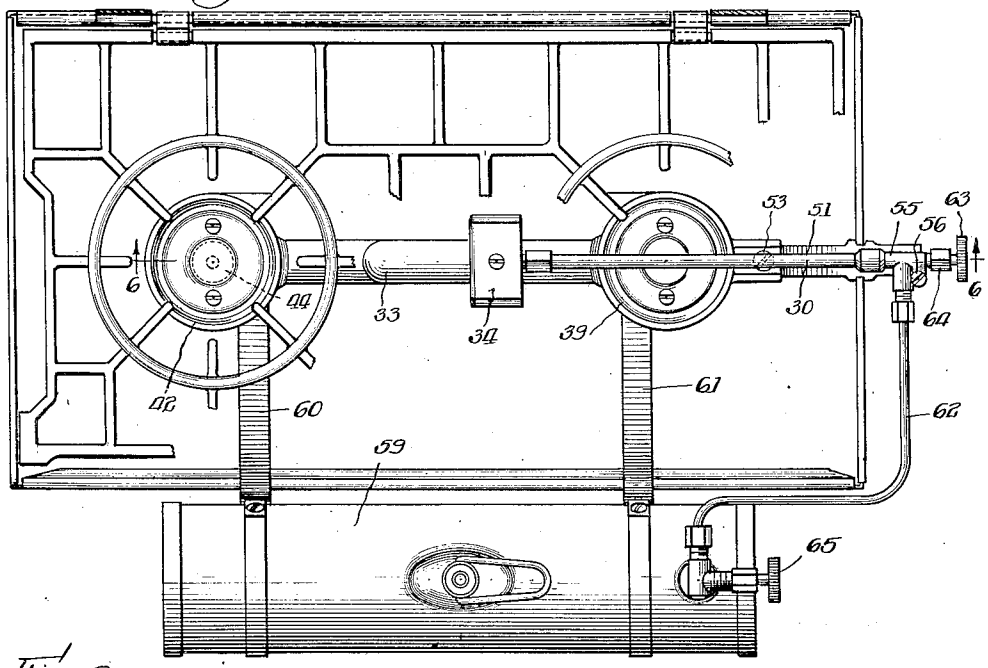


Fig. 6.

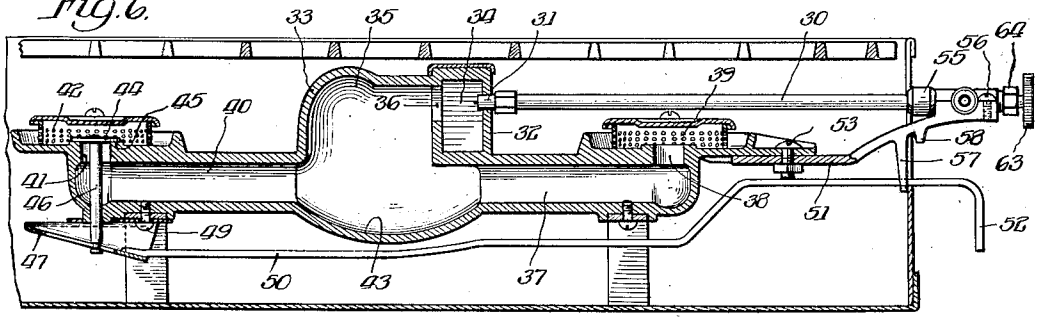


Fig. 7.

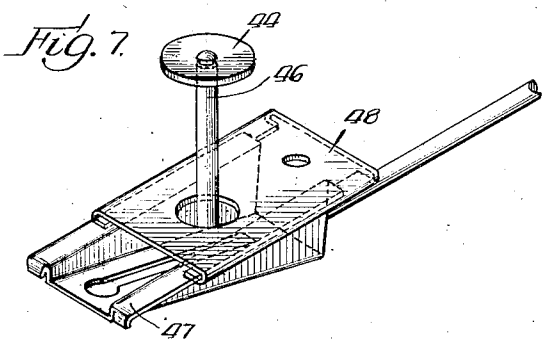
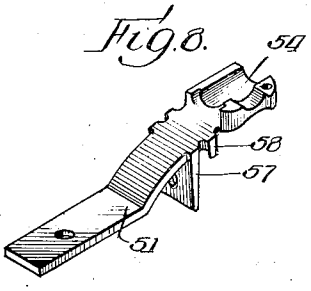


Fig. 8.



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VAPOR STOVE

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Application September 23, 1931
Serial No. 564,509

2 Claims. (Cl. 126—306)

This invention relates to a new and improved vapor stove or the like, and more particularly to portable stoves of this character in which the stove assembly is movably carried in a housing.

Stoves of this character comprise, in general, a housing and a stove assembly comprising a fuel tank, a generator valve and a manifold assembly, which includes a plurality of burners. One burner is normally connected to the generator valve through the manifold, while valve means are provided for selectively connecting the multiple burners to the manifold. The stove assembly is enclosed in the housing for transportation and is moved to bring the fuel tank and valve controls outside of the housing for use. Folding legs are provided to support the housing and stove when in use.

When stoves of this type are first started into operation, there has been found to be particles of liquid fuel carried to the burners even with well designed instant starting apparatus, and this liquid fuel has a tendency to cause objectionable yellow flames containing unburned carbon which will deposit soot on vessels coming in contact therewith. The generator and valve assemblies of such stoves are usually long tubes of brass or the like, having a valve stem extending lengthwise of the tube with a gland and valve handle at the outer end. The outer portion and end are usually unsupported by the burner and manifold assembly and are subject to damage by being bent or injured in use or when adjusting the valve or gland.

It is an object of the present invention to provide a new and improved vapor stove construction.

It is an additional object to provide a new and improved manifold construction whereby liquid fuel is trapped before reaching the burners.

It is also an object to provide a construction in which the generator valve is rigidly supported adjacent its outer end.

It is a further object to provide a construction having a valve for controlling a multiple burner, which valve is operable adjacent the generator.

It is also an additional object to provide such a stove and housing having supporting legs positively maintained in supporting or closed position, and when in closed position assisting in maintaining the housing closed and protecting ends and corners of the housing.

Other and further objects will appear as the description proceeds.

I have shown a preferred embodiment of my invention in the accompanying drawings, in which—

Figure 1 is a perspective showing the stove housing in its closed position;

Figure 2 is a perspective showing the housing with the legs in the supporting position;

Figure 3 is a fragmentary elevation on an enlarged scale showing one of the legs;

Figure 4 is a section taken on line 4—4 of Figure 3;

Figure 5 is a plan view of the stove in operating position, parts being broken away for the sake of clearness;

Figure 6 is a longitudinal section taken on line 6—6 of Figure 5;

Figure 7 is an enlarged perspective view of the valve and operating cam; and

Figure 8 is an enlarged perspective showing the member for supporting the generator assembly.

Referring first to Figures 1 to 4 of the drawings, the housing comprises a rectangular box having the front 11, ends 12 and 13, and hinged cover 14. Each leg 15 consists of a piece of sheet metal having portions 16 and 17 located adjacent and parallel to the front and rear of the box respectively. An integral portion 18 of the sheet metal member extends parallel in contact with the box end 12 when the leg is in closed position, as clearly shown in Figure 1. Portions 19 and 20 are bent over adjacent each corner of the housing, these portions serving to engage the hinged lid 14 when the parts are in closed position, as shown in Figure 1, and serving as flat supporting elements when the leg is swung to the supporting position, as shown in Figure 2.

A strip of metal 21 is secured to the end portion 18 of the leg for reinforcing the leg at that point. This strip 21 also serves to engage the under side of the housing, as shown in Figures 2 and 3, when the leg is in supporting position.

As best shown in Figures 3 and 4, the leg is pivoted to the front 11 of the housing by means of the rivet 22. The leg portion 16 is provided with the spaced perforations 23 and 24 located on either side of the rivet 22. A spring strip 25 is spot welded at 26 to the inner side of the front 11 of the housing, this strip carrying a stud 27 extending through the opening 28 in the housing and adapted to extend through either of the perforations 23 and 24 in the leg 16. This stud 27 may be pressed inwardly to release the legs

for movement from closed to supporting position, or vice versa.

Referring now to Figures 5 and 6, the stove assembly comprises the generator 30, having the reduced end portion 31 fitted through an opening in the wall 32 of the manifold 33 and discharging into the chamber 34. This chamber has its lateral and lower portions in communication with the air and communicates with the manifold chamber 35 through the passage 36. The chamber 35 of the manifold communicates through passage 37 and passage 38 with the main burner 39. The chamber 35 also communicates through passage 40 and passage 41 with the second or multiple burner 42. The lower part of the chamber 35 is formed with the liquid fuel receiving pocket 43. The disc valve 44 is seated on a valve seat 45 in the secondary burner 42. This disc valve 44 is provided with the valve stem 46 which extends through the manifold casting and into engagement with a cam slide 47.

As best shown in Figure 7, this cam slide operates in a guideway 48, which guideway is secured to the under side of the manifold casting by means of the screw 49. The cam slide 47 is provided with the operating handle 50 which extends under the manifold casting and through the generator supporting casting 51, having a downwardly extending operating handle 52. It will be apparent that the engagement between the cam slide 47 and the valve stem 46 causes that valve to be lifted as the rod 50 is pulled to the right by means of the handle 52. The generator supporting casting 51 is secured to the manifold casting by means of bolt 53 and is provided with the seat 54 to receive the outer end 55 of the generator. This end of the generator is secured to the casting by means of the screw 56. The casting 51 is provided with the downwardly extending portion 57 which supports the valve rod 50, and adjacent thereto, with the downwardly extending portion 58. These portions 57 and 58 are adapted to fit upon opposite sides of the end of the housing when the stove is in operating position, as clearly shown in Figures 5 and 6.

The fuel tank 59 is connected to the manifold assembly by means of straps 60 and 61. This tank is connected to the generator by means of the tubes 62. The generator valve is operated by valve handle 63. The packing around the generator valve stem is held in place by an adjustable gland 64. A valve handle 65 is provided at the fuel tank for permitting the passage from the tank through pipe 62 of a mixture of fuel and air for starting the stove. The valve 65 does not control flow through pipe 62 which is at all times connected to the fluid in the tank 59 but merely admits to pipe 62 a mixture of the air under pressure in the tank together with liquid fuel from the tank. The details of this construction form no part of the present invention.

In operation of the stove, with the generator valve handle 63 turned to close this valve tightly, the valve handle 65 is turned to permit the flow of the mixed fuel and air, and the generator valve handle 63 is then turned to permit the flow of this mixture through the generator into chamber 34 where it is mixed with air. This mixture passes into the manifold chamber 35 and flows around through passages 37 and 38 into the main burner 39. Any liquid fuel carried with this flow will drop down and be retained in the pocket 43. The wall of the chamber 35 opposite the passage 36 will catch such liquid which will drop down to the cavity 43. The burner 39 may be immediately lighted and since the liquid fuel is deflected and held before reaching the burner, it will burn with a blue flame. This flame will cause the generator 30 to be heated and after it has reached a generating temperature the valve handle 65 may be turned to close the valve, cutting off the mixture of gas and air. Liquid fuel will continue to flow through passage 62 to the generator valve and will be gasified by the heated generator. When it is desired to use the burner 42 the gasified fuel may be permitted to pass through that burner by moving the handle 52 outwardly, thus lifting the valve 44. The rigid support member 51 for the outer end of the generator 30 supports that member against being bent or twisted, which would cause malfunctioning of the generator valve, and serves as a rigid support for the adjustment of the gland 64 or the opening and closing of the valve by means of the handle 63. This member 51 also serves to positively hold the parts in position with the valve handle extending outwardly of the housing.

The specific form of construction shown is understood to be illustrative only, as I contemplate such changes and modifications as come within the spirit and scope of the appended claims.

I claim:

1. In a vapor stove or the like, a housing, a hinged cover for the housing, sheet metal legs pivoted to the housing, and having flat portions extending parallel with and adjacent the ends, sides and top of the housing in the closed position, the portions which extend adjacent the ends in the closed position extending across underneath and in contact with the bottom of the housing when in the supporting position.

2. In a vapor stove or the like, a housing, a hinged cover for the housing, sheet metal legs pivoted to the housing and having portions extending parallel with the ends, sides and top of the housing and enclosing the upper corners of the housing in the closed position, the portions which extend adjacent the ends in the closed position having reinforcing members secured thereto and extending across underneath and in contact with the bottom of the housing when in the supporting position.

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