

Nov. 17, 1925.

1,561,672

H. W. STRONG

STOVE

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2 Sheets-Sheet 1

Fig. 1.

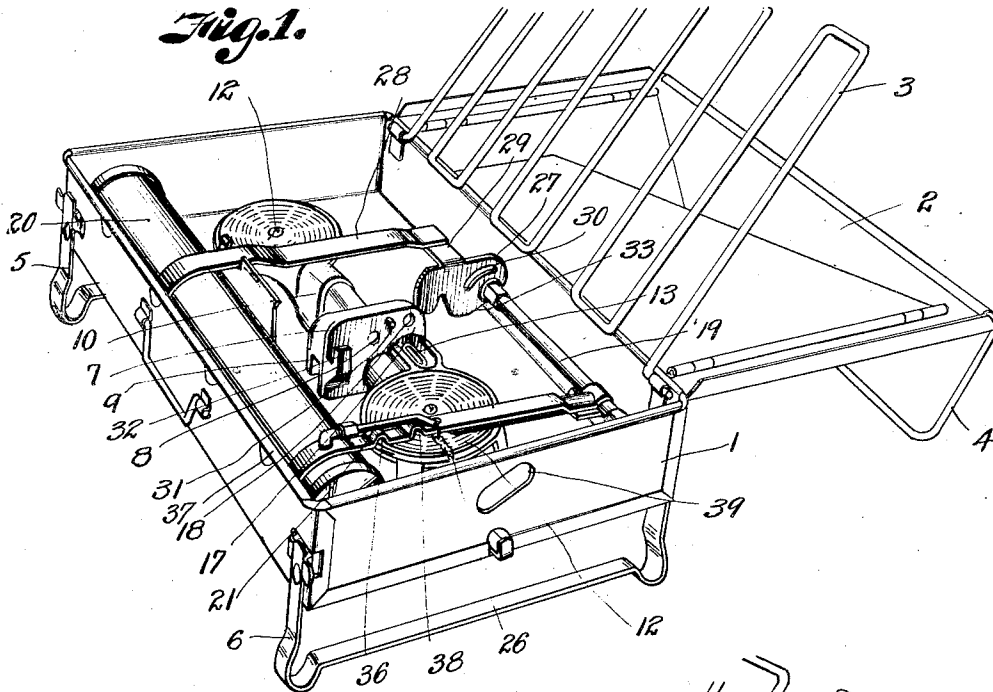
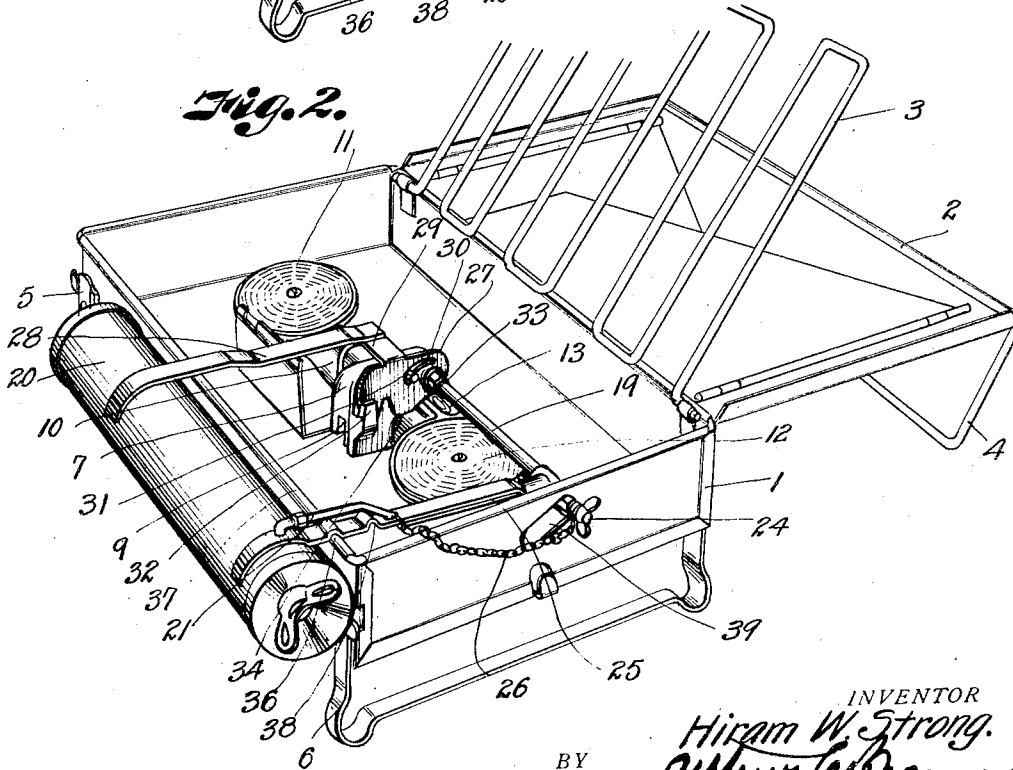


Fig. 2.



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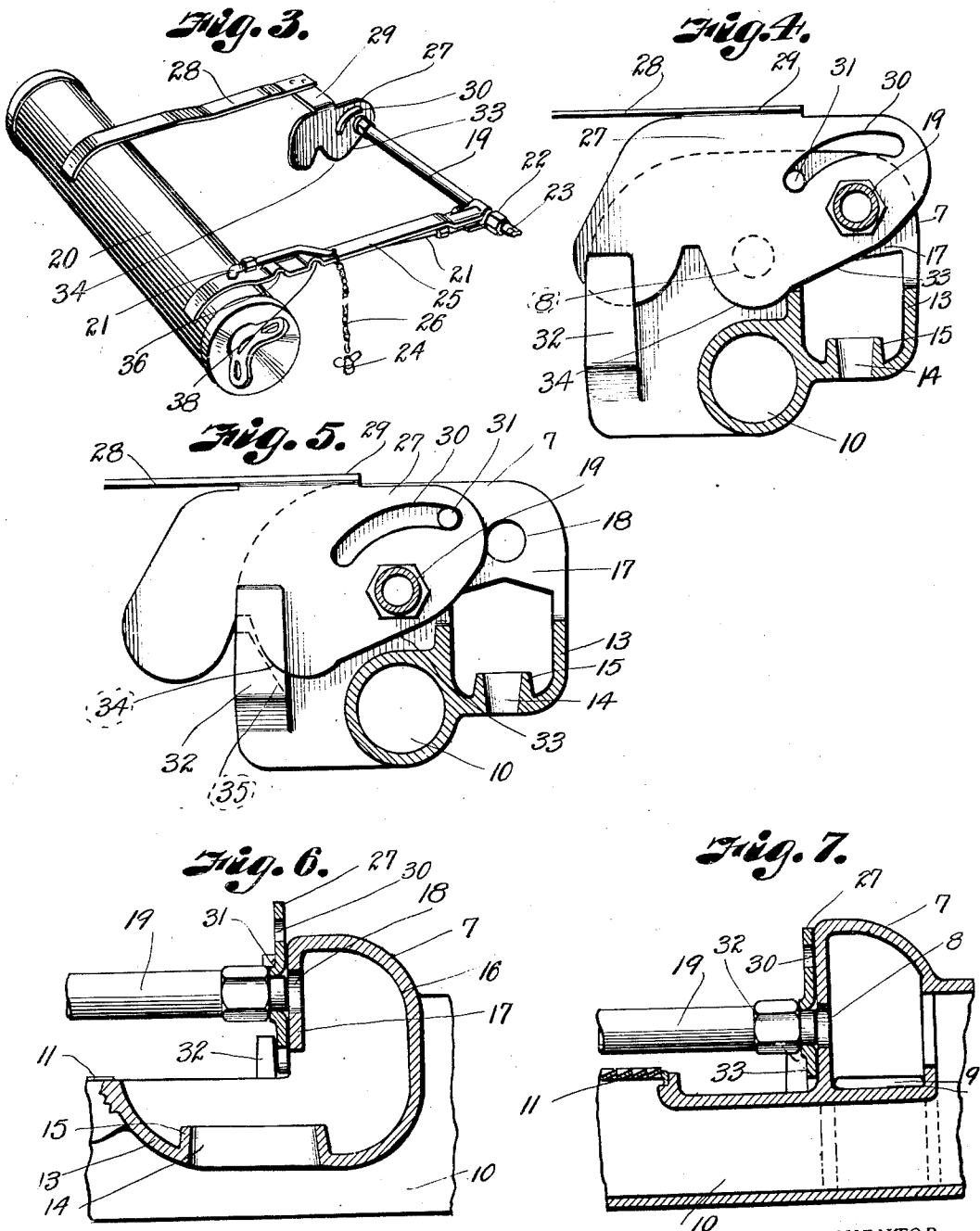
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

HIRAM W. STRONG, OF WICHITA, KANSAS, ASSIGNOR TO COLEMAN LAMP COMPANY,
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STOVE.

Application filed March 2, 1925. Serial No. 12,750.

To all whom it may concern:

Be it known that I, HIRAM W. STRONG, 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 application.

This invention relates to collapsible stoves of that general class known as camp stoves.

The primary object of the invention is to provide a camp stove in which burners are located. Such stoves require reservoirs or tanks for containing the liquid fuel content or the mixture which is combusted to provide the necessary heat. Ordinarily the liquid consists of gasoline or high grade hydro-carbon oil. For the purpose of safety the tank or reservoir is maintained outside the case of the stove during the time that the burners are operating, the tank being contained within the case when the stove is in a collapsed, portable condition.

In some constructions the tank is arranged as part of a rigid unit which includes the vaporizing tube located above one of the burners when the stove is operating. The vaporizing tube aligns with and usually projects into the mixing chamber where the vaporized oil and air are mixed to provide a combustible mixture.

The construction of the stoves now on the market is such that the opening through which the vaporizing tube projects is considerably larger than the tube and since this opening is adjacent to the burner the flame from the burner is frequently drawn into the mixing chamber so that the combustible mixture starts to burn in advance of or before it reaches the burners.

My invention contemplates the provision of a baffle interposed at all times between the burner and the vapor inlet opening of the mixing chamber so that liability of the flame entering the mixing chamber will be entirely eliminated.

There are other novel features of my invention which will become apparent as the nature of the invention is better understood

by reference to the following description in connection with the accompanying drawings, in which

Fig. 1 is a perspective view of a stove with the hinged lid of the case thrown back to illustrate the position of the tank, the vapor tube and the baffle plate with respect to the mixing chamber and the burner when the tank is inside the case.

Fig. 2 is a similar view showing the tank outside the case.

Fig. 3 is a perspective view of the tank vaporizing tube and baffle with the connections therebetween, all formed in a rigid unit.

Fig. 4 is a sectional view through the manifold for the burners and through the mixing chamber, the baffle being shown in elevation and in position to hold the vaporizing tube over the priming cup.

Fig. 5 is a like view showing the baffle in position to hold the vaporizing tube over the burners.

Fig. 6 is a longitudinal, sectional view through the priming cup, and

Fig. 7 is a similar view through the mixing chamber and the manifold.

The case 1 is shown as rectangular and is provided with a lid 2 to fit over the edge surrounding the top opening of the case so that the contents of the case may be enclosed. The case is also provided with a grid or grate 3 hinged thereto so that it may lie over the burners when the stove is operating. The lid is provided with a bail which may serve as a support for the free edge of the lid so that when the lid is swung back it may constitute a table. The bail may be swung around to the inside face of the lid when the lid is closed down.

The case carries two sets 5 and 6 of legs which are in the form of bails adapted to be swung into lid overlapping position when the stove is collapsed to hold the lid in fixed position with respect to the case. Within the case is a mixing chamber 7 having a vapor inlet opening or port 8 and an air inlet opening 9. The mixing chamber 7 communicates with a manifold 10 longitudinal of the case and having burners 11 and 12 at its respective ends.

To the side of the manifold and preferably integral therewith is a priming cup 13 preferably having an air opening 14 in its bottom surrounded by an upstanding flange

15. The priming cup has a curved rear wall 16 with a depending wall 17 integral therewith and integral with the mixing chamber since it constitutes part of the front wall of the mixing chamber. The front wall 17 is provided with a liquid receiving opening 18 so that liquid can be introduced against the rear wall 16 and flow over the bottom to be ignited when mixed with air passing over the opening 14 to make a combustible mixture to heat the vapor generating tube 19. The vapor generating tube 19 is in communication with the fuel tank 20 through the medium of a pipe 21, there being a valve 22 at the juncture of the vaporizing tube 19 with the pipe 21 controlled by a valve stem 23 which may be actuated by a suitable key 24 preferably secured to the arm 25 by a chain 26.

20 The arm 25 is fastened rigidly to the reservoir or tank 20 and to the vaporizing tube 19. The opposite end of the vaporizing tube is rigidly secured to a baffle plate 27 which in turn is supported to the reservoir 20 through the medium of the brace arm 28 fastened to the bracket 29, shown as a continuation or projection extending away from the plate 27.

The baffle plate 27 is provided with an arcuate slot 30, receiving a pin 31, on the front face of the mixing chamber 7 and there is a lug 32 projecting upwardly but spaced from the depending wall 17 of the mixing chamber to serve as a guide and resist lateral play of the baffle plate 27.

35 The opening 18 is slightly higher than and to one side of the opening 8, therefore when the baffle 27 is moved in one direction the pin 31 in the arcuate slot 30 will cause the plate to rise so that the vaporizing or generating tube 19 will be in line with the opening 8 but will not project into it, this being unnecessary since the baffle plate 27 lies flush against the mixing chamber so that when the generating tube 19 registers with either of the openings 8 or 18 vapor will be directed straight through.

Since it is desired to raise the plate 27 when the generator tube 19 is brought into alignment with the opening 18 the bottom of the plate 27 is formed in the shape of a cam as indicated at 33. The high lobe 34 of the cam resting against the curved portion 35 of the lug 32 when the baffle plate is in position to register the vaporizing tube 19 with the opening 8.

Attention is called to the fact that the tank 20, the rigid connections (that is the arms 25 and 28) carrying the vaporizing tube 19 and the baffle plate 27 are all formed into a rigid unitary structure which is removable from the case so that when the notch 36 in arm 25 engages the edge 37 of the case the vaporizing tube or generator 19 will be in line with the priming cup opening 18, then if the valve stem 23 is turned, cold

liquid will flow into the priming cup where it may be ignited to heat the tube 19. With this arrangement the priming cup is filled after the tank is positioned, thereby avoiding the danger incident to preliminary priming. When the unit is shifted so that the notch 38 receives the edge 37 of the case 1 then the vaporizing tube 19 will be in line with the opening 8 and directly over the burner 12 so that thereafter the burner 12 will maintain the tube 19 hot enough to generate the fuel into vapor. It is understood, of course, that in this type of stove the tank 20 has air pressure to force the liquid through the pipe 21 to the generator tube 19, and attention is called to the fact that the end of the generator tube, or the stem 23, operates in a slot 39 in one end of the case 1 so that the key 24 can be applied for turning it, but it is obvious that the stem need not project through the slot since the key could be inserted far enough through the opening in the end wall of the case to turn the stem.

It will be obvious from the fore-going that the device is compact, simple to set up and knock down as expediency may dictate.

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

1. A stove comprising a case, having a cover, a mixing chamber carried by the bottom of the case having an air inlet opening and a fuel vapor inlet opening, a burner in communication with the mixing chamber, and a preheater adjacent to the mixing chamber, having a vapor inlet in combination with a unit, comprising a tank, a vaporizer rigidly connected thereto and a flame baffle rigid with the vaporizer, the unit being normally within the case but removable therefrom and shiftable to two positions, one to bring the end of the vaporizer into line with the vapor inlet in the mixing chamber and the other to bring the end of the vaporizer into line with the inlet to the preheater, the baffle being in close parallelism with the mixing chamber.

2. A stove comprising a case, having a cover, a mixing chamber carried by the bottom of the case having an air inlet opening and a fuel vapor inlet opening, a burner in communication with the mixing chamber and a preheater adjacent to the mixing chamber, having a vapor inlet, in combination with a removable unit within the case, the unit comprising a tank, a vaporizer rigidly connected thereto and a flame baffle rigid with the vaporizer, the unit, when the tank is outside the case, being shiftable transversely of the case to bring the vaporizer alternately in line with the respective vapor inlets, the flame baffle alternately covering and uncovering the respective vapor inlets.

3. A stove comprising a case, having a cover, a mixing chamber carried by the case,

having an air inlet opening and a fuel vapor inlet opening, a burner in communication with the mixing chamber, a preheater adjacent to the mixing chamber having a vapor opening above and to one side of the first named vapor inlet, in combination with a fuel vaporizing tube and its source of supply, a baffle plate on the vaporizing tube parallel with and in close proximity to the mixing chamber, the vaporizer and baffle being movable transversely of the case, and means for guiding the baffle to align the vaporizer tube with either of the two vapor inlet openings.

4. A stove comprising a case, a mixing chamber carried by the case, having an air inlet opening and a vapor inlet opening, a preheater adjacent to the mixing chamber having a fuel inlet opening spaced from and out of horizontal alignment with the first inlet opening, the mixing chamber having a flat face, a burner in communication with the mixing chamber, a flat plate parallel with the flat face of the mixing chamber, a fuel supply means carried by the plate, and means for guiding the plate into position to align with either of the inlets.

5. A stove comprising a case, a mixing chamber carried by the case, having an air inlet opening and a vapor inlet opening, a preheater adjacent to the mixing chamber having a fuel inlet opening spaced from and out of horizontal alignment with the first inlet opening, the mixing chamber having a flat face, a burner in communication with the mixing chamber, a flat plate parallel with the flat face of the mixing chamber, a fuel supply means carried by the plate, and means for guiding the plate into position to align with either of the inlets, said means comprising a pin on the mixing chamber passing through a slot in the plate.

6. In a stove, a mixing chamber having an air inlet and a vapor inlet, a preheater having a fuel inlet in spaced relation to the vapor inlet, a burner in communication with the mixing chamber, a lug parallel with but spaced from the mixing chamber, a baffle plate between the burner and the inlets to the mixing chamber and the preheater, slidable in the space between the guide lug and the mixer, and a hydro-carbon fuel tube

discharging through the plate, the plate having movement to register the tube with either inlet opening.

7. A stove comprising a mixing chamber, having a hydro-carbon fuel inlet port and an air port, a burner communicating with the mixing chamber, a flat baffle plate between the burner and the mixing chamber, and a vaporizing tube carried by the plate, having its discharge end movable into and out of line with the inlet.

8. A stove comprising a mixing chamber, having a hydro-carbon fuel inlet port and an air port, a burner communicating with the mixing chamber, a flat baffle plate between the burner and the mixing chamber, a vaporizing tube carried by the plate, having its discharge end movable into and out of line with the inlet, and a pin on the mixing chamber passing through a slot in the plate.

9. A stove comprising a mixing chamber having a hydro-carbon inlet opening, a burner communicating with the inlet opening, a baffle plate having an opening movable into and out of line with the inlet opening, and a hydro-carbon supply tube secured to the plate and registering with the opening therein when the plate is in one position, the tube being out of register with the opening when the plate is in another position.

10. A stove comprising a casing, a mixing chamber in the casing, a burner communicating with the mixing chamber, the mixing chamber having a wall provided with a hydro-carbon inlet port, a removable unit within the casing, comprising a liquid tank, a vaporizer tube, a baffle plate fastened to the tube and two rigid connections, one between the vaporizer and the tank and the other between the baffle plate and the tank, the unit being movable into functional position so that the rigid connections rest upon the edge of the casing, said unit being shiftable into one position to bring the vaporizer in line with the inlet to the mixing chamber and shiftable into another position to bring the vaporizer out of line with the inlet to the mixing chamber.

In testimony whereof I affix my signature.

HIRAM W. STRONG.