

May 4, 1926.

1,583,373

H. W. STRONG ET AL

PORTABLE CAMP STOVE

Filed June 11, 1925

3 Sheets-Sheet 1

Fig 1

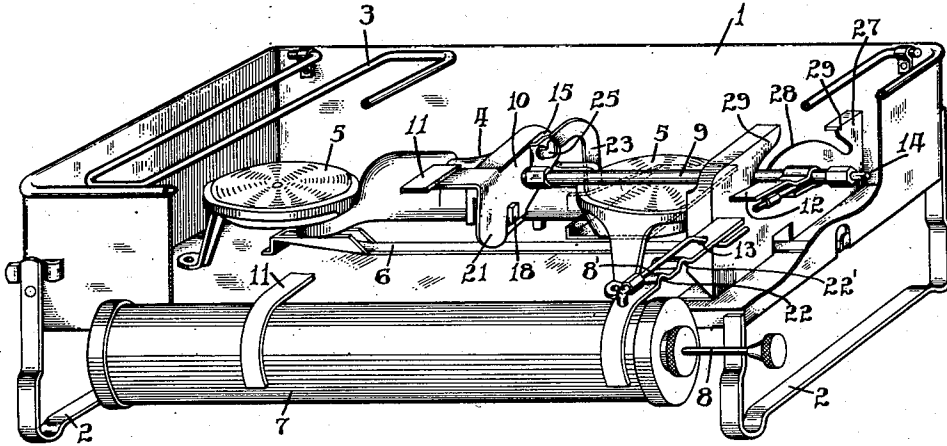
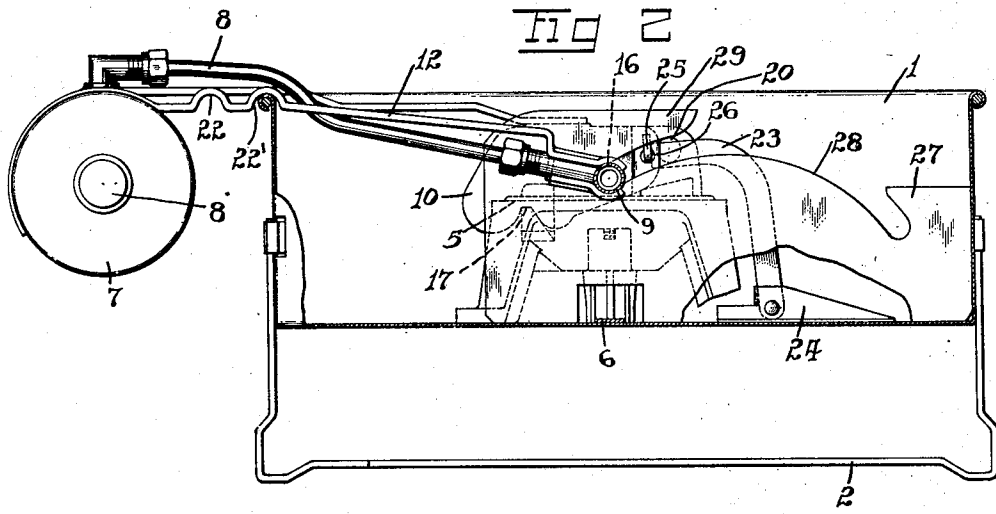


Fig 2



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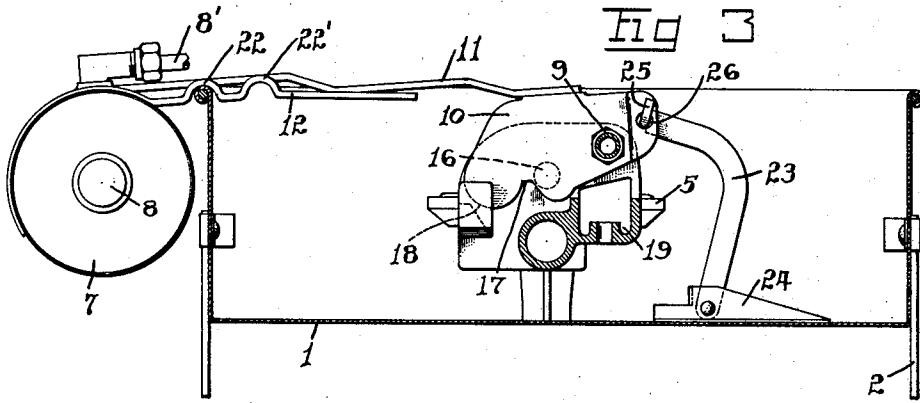


Fig 4

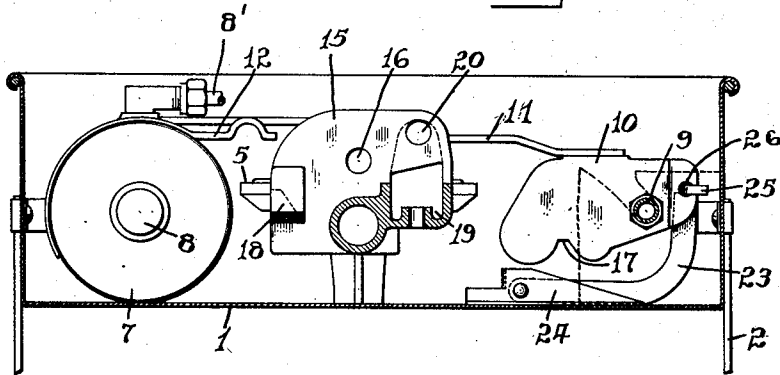
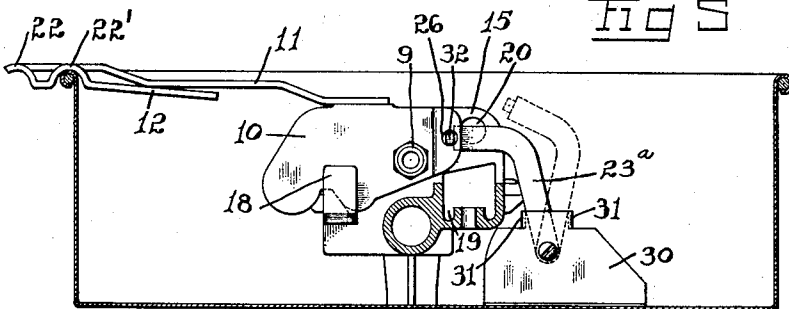


Fig 5



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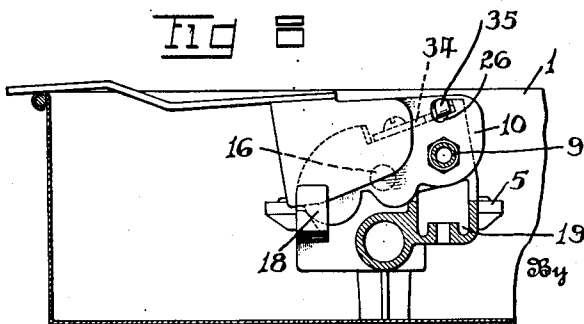
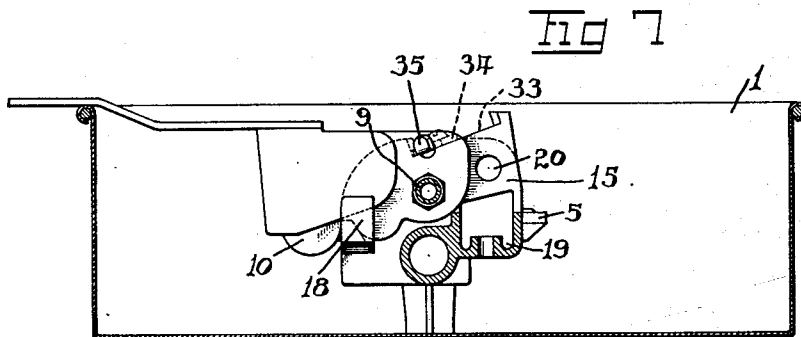
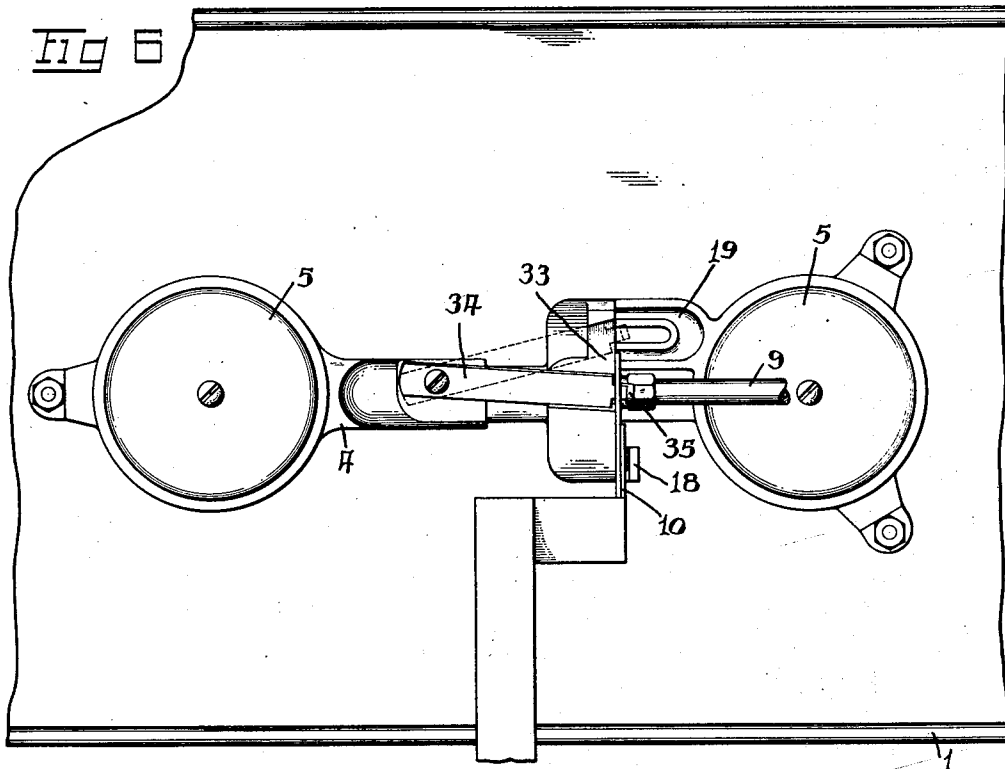
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3 Sheets-Sheet 3



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1,583,373

UNITED STATES PATENT OFFICE.

HIRAM W. STRONG AND CHARLES E. DAVIDSON, OF WICHITA, KANSAS, ASSIGNORS TO
THE COLEMAN LAMP COMPANY, OF WICHITA, KANSAS, A CORPORATION OF KAN-
SAS.

PORTABLE CAMP STOVE.

Application filed June 11, 1925. Serial No. 36,320.

To all whom it may concern:

Be it known that we, HIRAM W. STRONG and CHARLES E. DAVIDSON, citizens of the United States, and residents of Wichita, in the county of Sedgwick and State of Kansas, have invented a new and useful Portable Camp Stove, which invention is fully set forth in the following specification.

This invention relates to hydrocarbon stoves, but more particularly to a portable camp kit employing a hydrocarbon stove.

Objects of this invention are to provide a new and improved camp stove in which the fuel tank and associated feeding parts are positively connected to other parts of the structure without sacrificing features of adjustability and compactness; to provide a connection between the fuel tank assembly and the remaining structure, having the unique features of construction, operation and arrangement hereinafter described; and to provide a portable camp stove having the new and improved features hereinafter described.

Several species of which this invention is a genus are shown in the accompanying drawings, in which,—

Figure 1 is a perspective view of the portable camp stove showing the parts in position of use; Fig. 2 is a sectional view taken transversely of the casing; Fig. 3 is a view similar to Fig. 2 showing the parts arranged in preheating position; Fig. 4 is a transverse section showing the parts in nested position; Fig. 5 is a transverse section of a modified form of connection in which the fuel tank assembly is detached from the link when packed in the casing; Fig. 6 is a fragmentary plan view of another modified form in which the link is pivoted to the upper part of the stove structure; Fig. 7 is a sectional view of the structure shown in Fig. 6 with the parts in operative heating position; and Fig. 8 is a view similar to Fig. 7 with the parts in preheating position.

The illustrated embodiment of the invention comprises a sheet metal casing 1 having bottom and side walls, and pivotally connected to one of the side walls may be a cover plate (not shown) so that the parts within the casing may be completely enclosed. Connected to the opposite end portions of the casing 1 are bale-like legs 2, which may be swung downwardly and

locked in the position indicated in the drawings for supporting the casing, and for purposes of transportation these legs may be swung upwardly and snapped into position over the cover for preventing accidental displacement of and injury to the parts. Pivotally connected to the inside of one of the side walls of the casing 1 is a wire grate 3, which may be supported in a horizontal position above the stove for cooking purposes.

Suitably mounted within and fixed to the casing 1 is a stove 4 which is constructed to use a hydrocarbon fuel for combustion. The stove 4, in this instance, is provided with a pair of burners 5, and in order that one of the burners may be used individually, an actuator 6 rests upon the bottom of the casing 1 and is connected to operate a valve for controlling the fluid passage leading to the left-hand burner, the free end of the actuator 6 projecting through an opening in a side wall of the casing, thus enabling the valve to be readily controlled.

For supplying fuel to the stove 4, a fuel tank 7 is provided with a pressure pump 8 for creating pressure within the tank for forcing fuel from the tank through a feed tube 8', which projects at substantially right angles from the tank 7, and from there through a vaporizer tube 9 extending approximately parallel to the tank 7. Connected to one end of the tube 9 is a baffle plate 10, which is adapted to be arranged in close juxtaposition to a flat, vertical surface 15 of the stove 4 between the burners 5, and connected to the baffle plate 10 is a bracing strip 11, which is suitably fixed at its opposed end to the tank 7. A bracing strip 12 is connected to the tube 9 and tank 7 and is formed with an opening 13 through which the feed tube 8' extends, thereby providing a guard therefor.

For controlling the passage of fuel through the vaporizer tube 9, a valve is provided, having a squared projecting end 14, which may be engaged by a socket key or other suitable tool for decreasing or increasing the fluid flow therethrough. From the above it will be apparent that the fuel supply tank 7, feed tube 13, and vaporizer tube 9 provide a unitary construction which may be bodily removed from the casing for replenishing the fuel supply or for other purposes.

When the parts are arranged in operative position for supplying hydrocarbon vapor to the burners 5, the end of the tube 9 is brought into alinement with the inlet opening 16 of the stove and the tube extends diametrically across a burner 5. In this position a notch 17 in the baffle plate 10 will engage the U-shaped lug 18, which projects laterally from the stove. Before the parts are arranged, however, in this position, it is necessary to preheat the end portion of the vaporizer tube, so that the gasoline or other liquid fuel flowing therethrough will readily be vaporized. For this purpose a trough 19 is formed in the stove 4 at one side of and below the inlet opening 16, and an opening 20 in the stove structure 4 is arranged above and at one side of the opening 16 and communicates with the trough 19.

In starting, the end of the vaporizer tube 9 is brought into alinement with the inlet opening 20 so that the liquid fuel may pass into the trough 19, where it may be ignited by means of a match, and after the vaporizer tube 9 has been heated sufficiently the parts are shifted to the operative position above described. For holding the parts in preheating position, the lower end portion 21 of the baffle plate 10 engages the inside of the U-shaped lug 18, and for further insuring against accidental movement of the parts the bracing strip 12 is formed with a transverse groove 22 which is adapted to fit over an edge of the casing side wall, so that in order to move the parts from this position it is necessary to lift the tank 7 and thereafter move the tank outwardly from the casing. A groove 22', spaced from the groove 22, assists in holding the assembly in operative heating position.

The above arrangement and general description are given by way of illustration and to enable the invention more clearly to be understood, but more particularly, in accordance with the present invention, the fuel feeding means may be positively connected to either the stove 4 or the casing 1 in such a manner that liability of the parts being accidentally displaced from operative position is prevented, thereby militating against explosion from escaping combustible vapors and insuring proper alignment of openings. As indicated in Figs. 1 to 4, a substantially L-shaped lever 23 is pivoted at one end to a bracket 24 fixedly connected to the bottom of the casing 1, and formed on the opposite end of the link or lever 23 is an outwardly projecting hook-shaped lug 25. Formed in the inner end of the baffle plate 10 is an opening 26, which is adapted to be hooked over the lug 25, and it will thus be seen that by grasping the fuel tank 7 the tank may be moved to a position wholly outside the casing 1, and when not in use may be swung on the link 23 to a position

wholly within the casing, as shown in Fig. 4, without at any time disconnecting the tank from the casing and without liability of the parts becoming accidentally displaced.

In order to guide the movement of the unitary tank and feeding means assembly when moved into and out of operative position, an upright guide plate 27 is fixed to the bottom of the casing 1, and formed in this plate is an arcuate guide slot 28 in which the supply tube 9 is adapted to ride. The opposite end portions of the arcuate slot 28 are closed by overhanging portions 29, which prevent accidental removal of the vaporizer tube 9 and assist in guiding the movements thereof. As the central portion of the arcuate slot 28 is open above, it will be apparent that the vaporizer tube 9 may be lifted therefrom when it is desired to detach the assembly. Under ordinary conditions, however, it will be unnecessary to remove the supply tank and fuel feeding assembly from the guide plate 27. The guide plate 27 also serves as a baffle to prevent access of heat from the burners 5 to the valve 14 and associated parts, as well as to the feed tube 8' and this is particularly advantageous as it enables the stove to burn more steadily and without over-heating the parts.

In the modification shown in Fig. 5, an upright bracket 30 is fixed to the bottom of the casing 1 and pivoted thereto is a link 23^a, the movement of which is limited by stops 31 on the brackets 30. An outwardly projecting lug 32 on the outer end of link 23^a is adapted to extend through the opening 26 in the baffle plate 10. In this construction the baffle plate is connected to the link 23^a and first moved to the position indicated by the dotted lines for placing the vaporizer tube 9 in preheating position, and thereafter the baffle plate is moved laterally into operative heating position, and the movement in both directions is limited by the stops 31. When it is desired to pack the supply tank 7, the baffle plate 10 is detached from the lug 32 and thereafter the tank may be disposed within the casing and arranged similarly to the manner shown in Fig. 4.

Another modification is shown in Figs. 6 to 8 in which the stove 4 is provided on the top with a cam surface 33, the portion thereof in the region of the preheater inlet opening 20 being inclined upwardly. Pivotaly connected to the inner portion of the cam surface 33 is a link 34 having a hook-shaped lug 35 at the outer end thereof. The opening 26 is adapted to be hooked over the lug 35, thereby detachably to connect the fuel feeding assembly to the stove structure. It will be apparent that when the baffle plate is moved in the direction of the priming cup or trough 19 the link 34

riding over the cam surface 33 will elevate the baffle plate 10 sufficiently for the vaporizer tube 9 to register with the preheater inlet opening 20, thereby to position the parts for preheating. Movement of the baffle plate 10 away from the trough 19 operates to lower the vaporizer tube 9 into registration with the inlet opening 16 in operative heating position. It will be clear that proper registration of the vaporizer tube 9 with the openings in the stove is insured, owing to the positive connection between the baffle plate and the stove structure. In this form the guide plate 27 heretofore described may be dispensed with and the cam surface 33 may provide adequate support in the movement of the parts.

It is to be observed in the several modifications hereinbefore described that the fuel tank and vaporizer tube assembly may be detached from the swingable connection and bodily disconnected from the stove so that the tank may be replenished with fuel, for repair or for any other purpose. However, in a normal use of the stove, the fuel tank and vaporizing tube assembly does not have to be disconnected from the stove or casing structure, as the case may be, because when not in use the assembly may be swung into the inside of the stove, for example, as shown in Fig. 4, and when the parts are in position of use, the fuel tank is moved to a position entirely outside the casing. It will be seen that under normal operating conditions, there is no necessity of detaching the assembly from the associated parts because, as shown, in each instance a link movably connects the assembly to the associated structure.

While we have shown and described several specific embodiments of our invention, in accordance with the statute, it is to be understood that this is merely by way of illustration and numerous changes in details of construction, arrangement and operation may be effected without departing from the spirit of the invention, especially as defined in the appended claims.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

1. In a camp stove, a casing, a burner in the casing, a fuel tank having a vaporizer tube rigidly connected thereto, and a detachable, swingable connection between said tube and one of said parts whereby the tank may be entirely disconnected from the device for the purpose of replenishing the fuel supply or repair, but may be wholly disposed on the outside of said casing when in use and moved to a position inside the casing when not in use without detaching such connection.

2. In a camp stove, a casing member, a burner member, a fuel tank having a rigid

fuel feeding means, and a link pivoted at one end to one of said members and engageable at its opposite end with said feeding means, said parts being constructed and arranged in such a manner that in operation the fuel tank may be disposed outside of the casing, and when not in operation may be swung to lie wholly within the casing.

3. In a camp stove, a casing member, a burner member, a fuel tank having a rigid supply tube, baffle means on said tube for abutment against said burner member, and means for movably connecting said baffle means to one of said members, whereby when not in use said tank may be swung to lie wholly within the casing without disconnecting the baffle means from said connecting means.

4. In a camp stove, a casing member, a burner member, a fuel tank having a rigid vaporizer tube, a baffle plate on the outer end of said vaporizer tube adapted to abut against said burner member for supplying fuel thereto, and a link connecting said baffle plate with one of said members.

5. In a camp stove, a casing member, a burner member, a fuel tank having a vaporizer tube, and an element connected to the outer end of said vaporizer tube and pivoted to one of said members to enable said tank in one position to be disposed outside the casing and in another position to be wholly within the casing.

6. In a camp stove, a casing member, a burner member, a fuel tank having a vaporizer tube, an element connected to the outer end of said vaporizer tube and pivoted to one of said members to enable said tank to be swung to positions wholly within or outside of said casing, and a member in said casing for guiding the movements of said tube.

7. In a camp stove, a casing member, a burner member, a fuel tank having a vaporizer tube, an element connected to one end of said tube and pivoted to one of said members; thereby to enable the tank to be moved to positions of use and out of use without separating the tank from the other parts, and an upright guiding support in said casing for the vaporizer tube.

8. In a camp stove, a casing member, a burner member, a fuel tank having a vaporizer tube, a link detachably connected to one end of said vaporizer tube and pivoted to one of said members, and an upright guiding support in said casing to receive said vaporizer tube, said support having an arcuate slot and an opening whereby the tube may be moved to said opening and when disassociated from said link may be bodily removed from the casing.

9. In a camp stove, a casing member, a burner member, a fuel tank having a vaporizer tube, a link detachably connected to one

end of said tube and pivoted to one of said members, an upright guiding support in said casing having an arcuate slot to receive said tube, and a bracing strip connected to said tube and tank, said strip having means to engage the side wall of the casing when the tank is disposed outside thereof for preventing accidental movement of the tank relatively to the casing.

10 10. In a camp stove, a casing member, a burner member, a fuel tank having a vaporizer tube, a link detachably connected to one end of said tube and movably connected to one of said members, an upright guiding support in said casing having an arcuate guideway for said tube, and a bracing strip connected to said tube and tank and having a groove for engaging an edge of the side wall of the casing when the tank is disposed outside thereof for preventing movement thereof transversely of said edge.

11. In a camp stove, a casing member, a burner member, a fuel tank having a vaporizer tube, a baffle plate connected to the outer end of said tube, a link for movably connecting said baffle plate with one of said members, said baffle plate being removably connected to said link, an upright guiding support in said casing having an arcuate guideway to receive said tube, a bracing strip connected to said tube and tank, said strip having a groove to engage an edge of the side wall of the casing when the tank is disposed outside thereof, and a bracing strip connecting said tank and baffle plate.

12. In a camp stove, a casing, a burner in said casing, a fuel tank having a vaporizer tube, link means removably connected to the

end portion of said tube and pivoted to said casing, thereby to provide a positive connection between said tank and casing whereby the tank may be swung outwardly from the casing or be disposed wholly within the casing by swinging movements on said link means, and an upright plate in said casing having a curved surface over which said tube rides.

13. In a camp stove, a casing, a burner in said casing, a fuel tank, means for supplying fuel from the tank to said burner, comprising a vaporizer tube extending above and parallel with said burner, and a feed tube extending at substantially right angles from said vaporizer tube and communicating with said reservoir, valve means at one end of said vaporizer tube, and a plate connected to said casing in upright position, said plate serving to shield said valve and feed tube from the heat of the burner.

14. In a camp stove, a casing, a burner, a fuel tank, feeding means connected to said tank for supplying fuel to said burner, said tank and feeding means providing a unitary construction, and a movable element serving as a positive connection between said feeding means and one of said parts, whereby said tank may be moved to a position outside of the casing when in use and disposed wholly within the casing when not in use, said connection enabling said tank and feeding means to be readily detached and bodily removed from the casing.

In testimony whereof we have hereunto signed our names to this specification.

HIRAM W. STRONG.
CHARLES E. DAVIDSON.