July 21, 1936. A. J. YEAGER 2,048,207

VAPOR STOVE CONSTRUCTION

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Fig. 1.

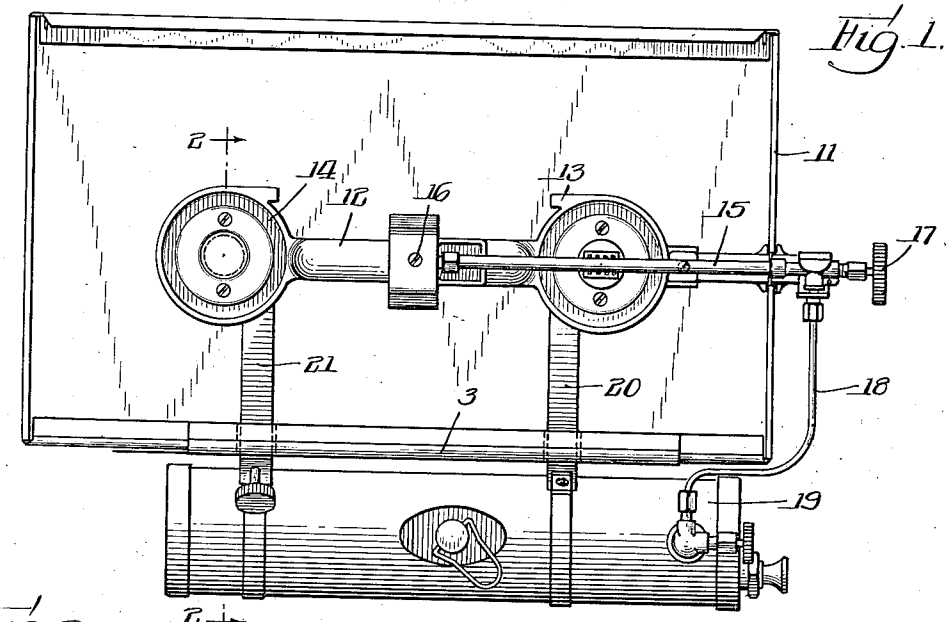


Fig. 2.

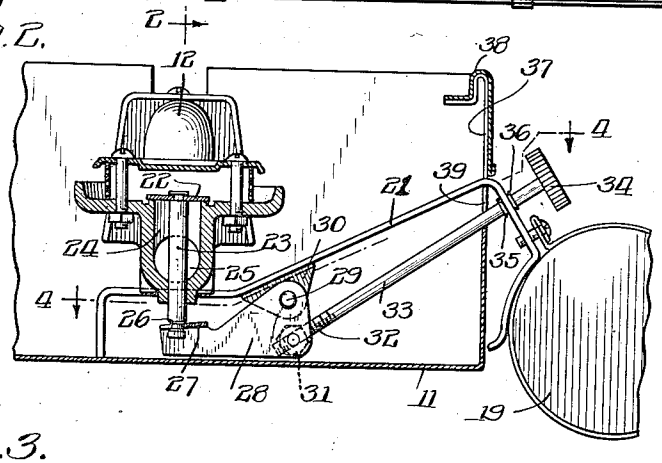


Fig. 4.

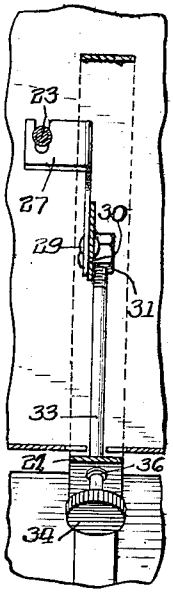
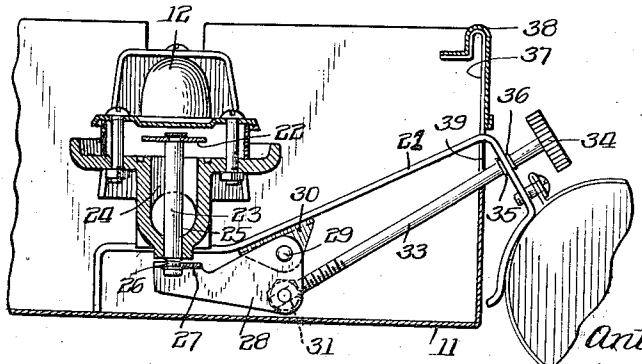


Fig. 3.



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Fig. 5.

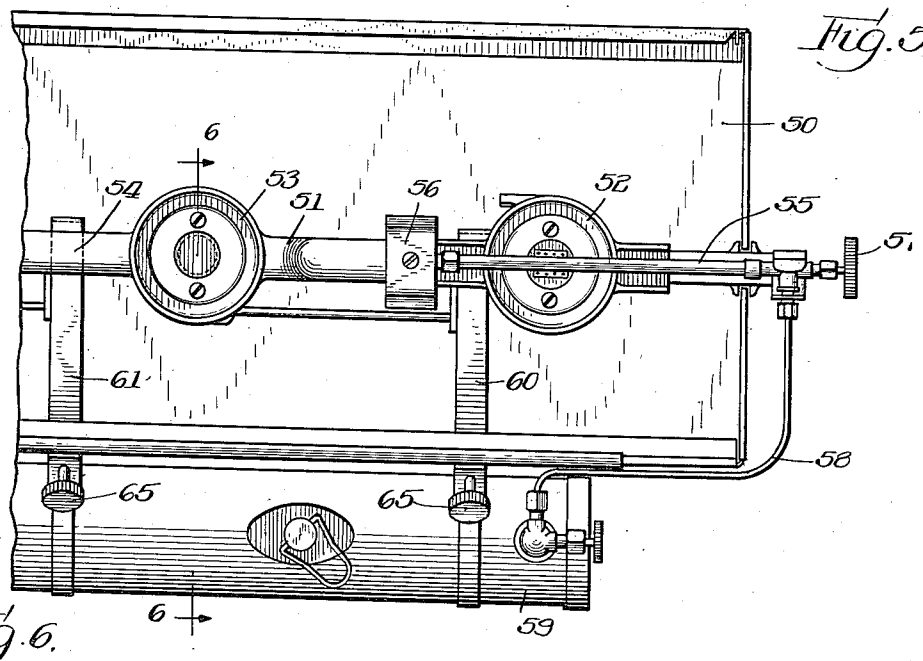


Fig. 6.

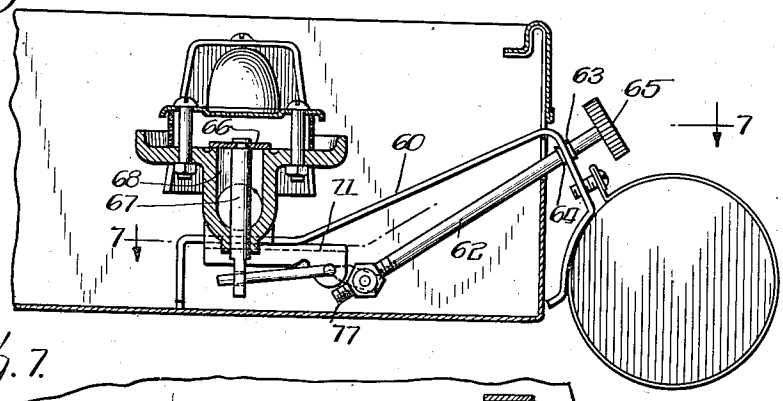
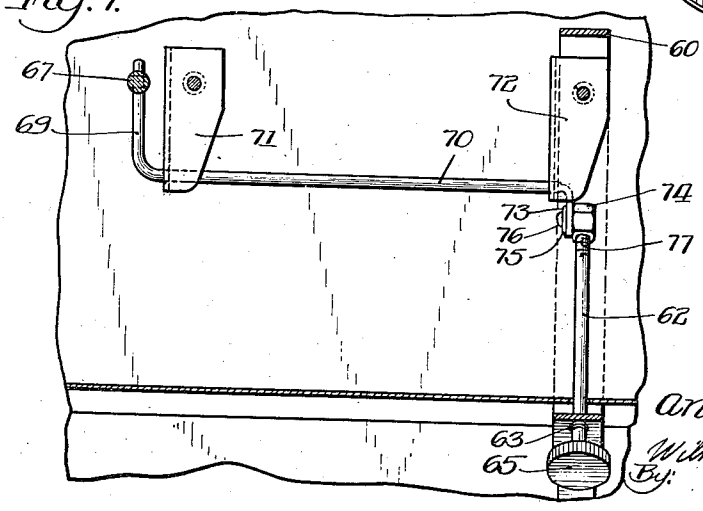


Fig. 7.



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UNITED STATES PATENT OFFICE

2,048,207

VAPOR STOVE CONSTRUCTION

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Application December 6, 1933, Serial No. 701,089

3 Claims. (Cl. 158—120)

This invention relates to a new and improved vapor stove construction, and more particularly to a valve construction for the control of secondary burners of such stoves.

Vapor stoves as now generally constructed include a primary or generating burner and one or more secondary burners. The generating tube for the liquid fuel extends adjacent the primary or generating burner so that the heat from the burner serves to vaporize the fuel. Usually no valve other than the main fuel or generating valve is provided for control of the generating burner. As the secondary burners may or may not be used, as desired, it is necessary to provide valves for closing off the secondary burners from the fuel manifold.

It is an object of the present invention to provide a new and improved control valve for secondary burners of vapor stoves or the like.

It is a further object to provide a valve control which is positive in operation and not subject to accidental displacement.

It is an additional object to provide a valve control by means of which the valve may be firmly seated and may be held in any desired position of adjustment.

It is also an object to provide a valve in which the operating member is readily accessible for manual operation.

Other and further objects will appear as the description proceeds.

I have shown certain preferred embodiments of my invention in the accompanying drawings, in which—

Figure 1 is a plan view of a two burner type of stove;

Figure 2 is a fragmentary transverse section taken on line 2—2 of Figure 1 showing the valve closed;

Figure 3 is a view similar to Figure 2 showing the valve open;

Figure 4 is a fragmentary section taken on line 4—4 of Figure 2;

Figure 5 is a fragmentary plan view of a portion of a three burner stove;

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

Figure 7 is a fragmentary section taken on line 7—7 of Figure 6.

Referring first to the form of construction shown in Figure 1, the housing 11 contains the burner and manifold casting 12 having the generating burner 13 and the secondary burner 14. The generator tube 15 passes over the burner 13 and discharges into the mixing chamber 16. The generator tube contains a generator valve controlled by a valve handle 17. The generator tube is connected by piping 18 to the fuel tank 19. The straps 20 and 21 connect the fuel tank 19 to the burner assembly 12. The generating burner 13 is always in communication with the manifold and no separate valve is provided for it.

The secondary burner 14, however, is provided with the valve disc 22, as best shown in Figures 2 and 3, this disc being carried by the valve stem 23 which extends through the fuel supply passage 24 which leads from the manifold passage 25.

The lower end of the valve stem 23 is provided with a circumferential notch 26 which fits in a slot in an arm 27 of a bell crank lever 28. This bell crank lever 28 is pivoted at 29 to a bracket 30 secured to the strap 21. The bell crank lever has secured thereto the traveler 31, the traveler being pivotally supported on the bell crank lever and having a transverse threaded opening therein adapted to receive the threaded end 32 of the valve operating rod 33. This valve operating rod is provided with a knob 34 for manual operation. The rod 33 is supported in the strap 21 so as to prevent axial movement of the rod. The rod has a reduced portion passing through the strap 21 and on either side of the strap 21 split washers 35 and 36 are fitted into the reduced portion, these washers bearing against either side of the strap 21 and being larger than the opening through the strap. The strap 21 passes through the slot 37 formed in the side wall of the housing 11, and the member 38 serves to movably close the upper end of the slot. The slot has a narrower lower portion 39 adapted to receive the valve operating rod 33.

Referring next to the form of construction shown in Figure 5, the housing 50 encloses the burner manifold casting 51 provided with the generating burner 52 and secondary burner 53 and the portion 54 which may connect to additional secondary burners not shown. The generator tube 55 extends over the burner 52 and discharges into the mixing chamber 56. This stove is also provided with a generating valve controlled by the hand wheel 57 and the generator tube is connected by pipe 58 to the fuel tank 59. The fuel tank 59 is connected by straps 60 and 61 to the burner manifold casting. Here, as before, the generator burner is not provided with a valve, but valves are provided for the secondary burners.

The valve operating rod 62 is supported in the strap 60 and is retained in place by means of split rings 63 and 64, as described in connection with the previous form of construction. This rod is provided with hand wheel 65 for manual opera-

tion. The valve disc 66 is carried on the upper end of valve stem 67, which extends through passage 68 and has its lower end extending below the manifold casting. This lower end of the valve stem has an opening therein to receive an end of the valve operating lever 69. This valve operating lever 69 has a portion 70 extending parallel to the manifold casting and is pivotally supported on a bracket 71 secured to the casting adjacent the burner 53 and also on a bracket 72 secured to the casting adjacent the strap 60. The lever 70 has an outturned and flattened end 73 on which is pivotally supported the traveler 74. The fiber washer 75 is shown between the enlarged end 76 of the pivoted support and the portion 73 of the lever so as to permit free rotation of the traveler 74. This traveler 74 has a threaded opening which receives the threaded lower end 77 of the valve operating rod 62.

The form of construction shown in Figure 1 is operated by rotating the hand wheel 34 in the clockwise direction to close the valve. This, by means of the threaded connection with the traveler 31 carried by the bell crank lever 28, causes that lever to rotate in the counterclockwise direction about its pivot 29. This draws the valve stem 23 downwardly and positively seats the valve disc 22 on the upper face of the burner casting. The valve disc 22 may be somewhat loosely fitted on the valve stem so as to adjust itself to any irregularities in the seat or angularity of the valve stem. The valve is opened by a reverse movement of the hand wheel 34, as will be readily apparent.

The valve construction shown in Figures 5 to 7 is better adapted for use with stoves having more than two burners, since the operating lever permits the operating handle to be offset to one side of the burner and thus be conveniently carried by the connecting straps in their usual and proper positions. This form of construction is operated in the same manner as the other form of construction, the lever 69 taking the place of the bell crank lever 28 of the first form of construction.

While I have shown certain preferred forms of construction it will be understood that these are illustrative only, as the design may be further modified to meet different conditions and requirements and I contemplate such changes as come within the spirit and scope of the appended claims.

I claim:

1. In a stove valve construction, a disc valve member located within a burner, a valve seat in the burner below the valve disc, a valve stem extending through the valve seat and below the burner, a bell crank valve operating lever pivotally supported on the burner assembly, one arm of the lever engaging the valve stem, and a valve operating rod rotatably supported by the burner assembly and restrained against linear movement, the rod having a threaded lower end, a traveler pivotally carried by the second arm of the bell crank lever and threaded on the end of the rod, whereby rotation of the rod raises and lowers the valve stem and valve.

2. In a stove valve construction, a disc valve member located within a burner, a valve seat in the burner below the valve disc, a valve stem extending through the valve seat and below the burner, a circular groove adjacent the lower end of the valve stem, a bell crank valve operating lever pivotally supported on the burner assembly, one arm of the lever having an elongated slot engaging the groove on the valve stem, and a valve operating rod rotatably supported by the burner assembly and restrained against linear movement, the rod having a threaded lower end, a traveler pivotally carried by the second arm of the bell crank lever and threaded on the end of the rod, whereby rotation of the rod raises and lowers the valve stem and valve.

3. In a stove valve construction, a disc valve located within a stove burner, a valve seat in the burner below the valve disc, a valve stem extending through the valve seat and below the burner, a bell crank valve operating lever pivotally supported on a strap connected to the stove burner and a fuel tank, one arm of the lever engaging the valve stem, and a valve operating rod supported by the connecting strap and restrained against linear movement, the rod having a threaded connection to the other arm of the bell crank lever whereby rotation of the rod raises and lowers the valve stem and valve.

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