Oct. 18, 1938. C. BECKMAN 2,133,527

VALVE FOR FUEL BURNER SYSTEMS

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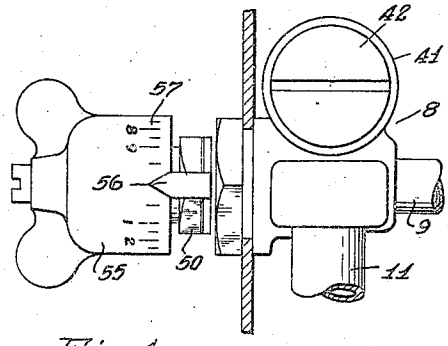


Fig. 1.

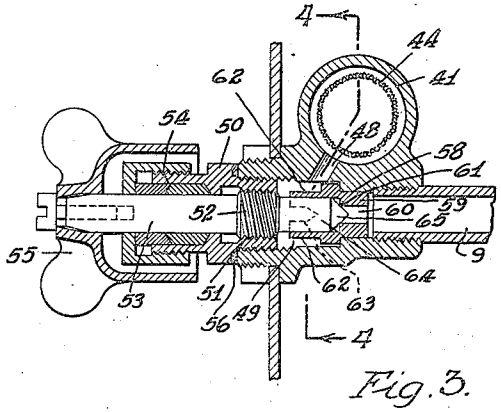


Fig. 3.

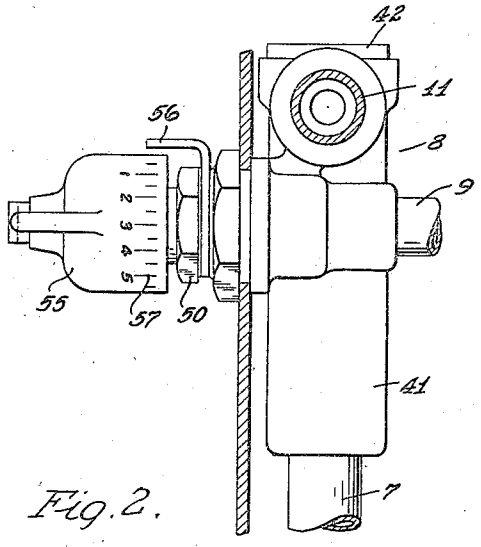


Fig. 2.

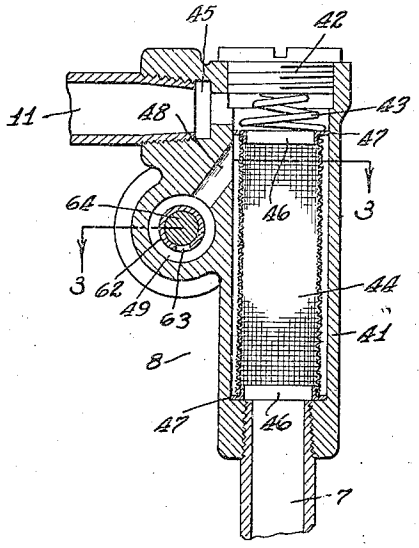


Fig. 4.

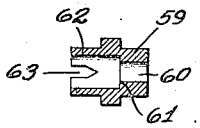


Fig. 5.

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VALVE FOR FUEL BURNER SYSTEMS

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Application April 10, 1935, Serial No. 15,659

2 Claims. (Cl. 251—34)

This invention relates to apparatus for supplying fuel in regulated amounts to oil burners.

The primary object of the present invention is to provide apparatus for supplying an oil burner with fuel from a main reservoir or storage tank located remote from the burner. The apparatus thus permits the storage tank to be placed in the basement of a dwelling or to be imbedded beneath the ground surface in order to reduce the fire hazard.

Another object of the invention is to provide a valve mechanism for regulating the rate of supply of fuel to the burner while the pumping means is operating at a constant rate. In this valve mechanism is provided an overflow means for returning all pumped fuel, in excess of that actually required by the burner, back to the supply tank. In this connection it is another object of this invention to avoid the use of float valves in order to reduce the cost of manufacture, to insure more reliable functioning, and to permit the entire mechanism to be made compact whereby it occupies a minimum amount of space.

With the above and other ends in view the invention is more fully disclosed with reference to the accompanying drawing, in which—

Fig. 1 is a plan of the metering valve;

Fig. 2 is an elevation of the metering valve;

Fig. 3 is a cross section taken on the line 3—3 of Fig. 4;

Fig. 4 is a cross section taken on the line 4—4 of Fig. 3, and

Fig. 5 is a cross section of a detail.

Like characters of reference are employed throughout to designate corresponding parts.

Referring to Figs. 1 to 5 inclusive the valve 8 is illustrated as comprising a hollow body 41 into the lower end of which the pipe line extends. The upper end of the body 41 screwthreadedly receives a plug 42, and a spring 43 is compressed between the plug 42 and a cylindrical screen 44. Communicating with the interior of the body 41 adjacent to the top thereof is a port 45 and the above described overflow pipe 11 is connected to the port 45.

In Fig. 4 the screen 44 is illustrated as having rings 46 inserted in the ends thereof. The rings 46 have flanges 47 engaging the inside wall of the body 1 to maintain the screen in spaced relation thereto. It will be noted, however, that the oil pumped into the body 41 may pass vertically through the open ends of the screen in order to reach the overflow port 45 without passing through the meshes of the screen.

Extending from the interior of the body 41 at a point spaced beneath the port 45 is a port 48, this port being also disposed so that it opens into the body 41 at a point between the flanges on rings on the upper and lower ends of the screen. Therefore, in order for oil to enter the port 48 from the body 41 it must pass between the meshes of the screen.

The port 48 leads to a valve chamber 49 into which is screwthreaded a fitting 50 having a screwthreaded bore 51 receiving a screwthreaded part 52 on a valve stem 53. Packing means 54 are provided in the fitting 50 and a handle 55 is secured on the outer end of the stem 53. Secured on the fitting 50 is a pointer 56 which co-operates with the graduations 57 on the handle 55.

Leading from the valve chamber 49 to the pipe line 9 (and thus to the burner 10) is a port 58. Received in the port 58 is a valve seat member comprising a part 59 which is pressed into the bore 58, a port 60 terminating in a valve seat 61, and a cylindrical part 62 surrounding the seat 61 and provided with a metering notch 63.

On the stem 53 is a valve head 64 having a conical end 65, the valve head being co-axial with the cylindrical part 62 of the valve seat member and normally extending into the same. In Fig. 3 the conical end 65 of the valve head is illustrated in engagement with the valve seat 61, at which time oil entering the valve chamber 49 through the port 48 cannot pass through the port 60 to the pipe line 9. By manually rotating the handle 55 the stem 53 is rotated and the screwthreaded part 52 causes the valve head to be moved from the valve seat 61. As the valve head is moved away from its seat the metering notch 63 will gradually be uncovered and oil will flow from the chamber 49 through the port 60 to the pipe line 9.

Although a specific embodiment of the invention has been illustrated and described it will be understood that various changes may be made within the scope of the appended claims without departing from the spirit of the invention, and such changes are contemplated.

What I claim is:

1. A metering valve comprising an integral body having two chambers therein, the first of said chambers having an inlet port adapted to have a liquid supply pipe connected thereto, said first chamber having an overflow port at its upper end, the second chamber being disposed in a plane below the upper end of the first chamber and having an inlet port connected to the first chamber at a point slightly below said overflow port whereby liquid flows as a result of gravity

from said first chamber to said second chamber, said second chamber having an outlet port with a metering valve seat, and a manually operable valve in said second chamber adapted to cooperate with said valve seat.

2. A metering valve comprising an integral body having two chambers therein, said chambers being disposed with the axis of one extending vertically and the axis of the other extending horizontally, the vertical chamber having an inlet port at its lower end and an overflow port at its upper end, the horizontal chamber having an inlet port connected to the vertical chamber at a point slightly below said overflow port whereby liquid flows as a result of gravity from said first chamber to said second chamber, said horizontal chamber having an outlet port provided with a metering valve seat, and a manually operable valve in said horizontal chamber adapted to cooperate with seat seat.

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