

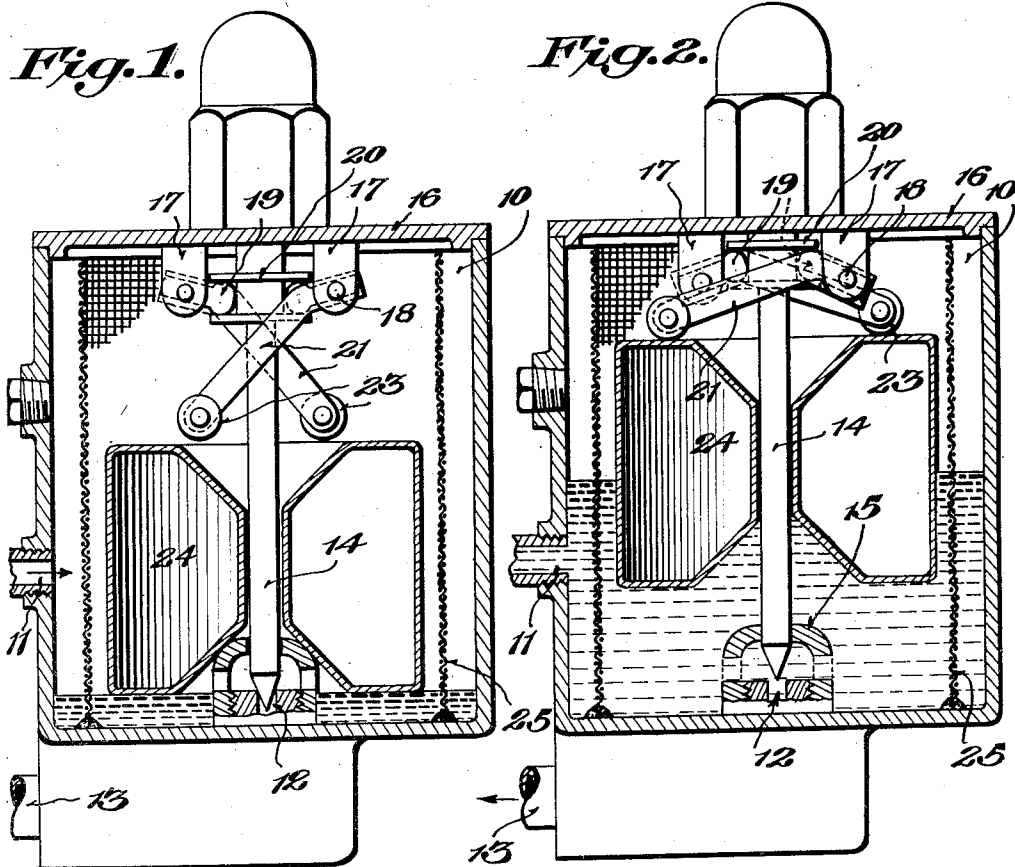
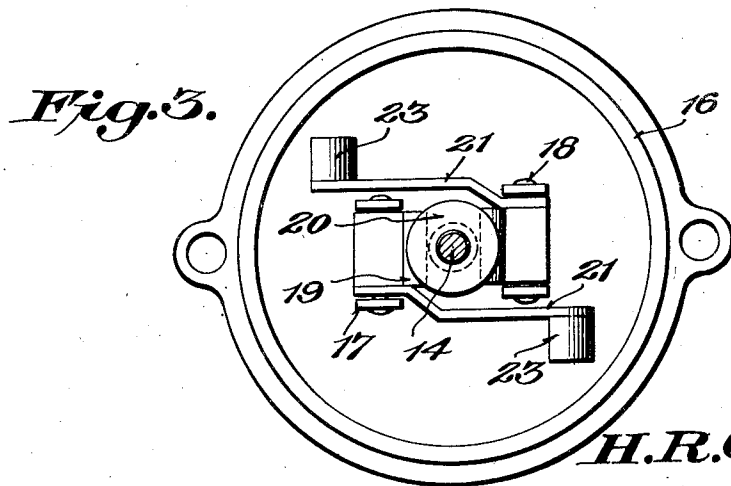
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LIQUID HEAD MAINTAINING DEVICE

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LIQUID-HEAD-MAINTAINING DEVICE.

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This invention relates to liquid head maintaining devices.

The principal object of the invention is to provide a novel device which may be attached to a fuel supply line, such as the supply line to a carbureter or other like liquid using device, and which, when so attached, will maintain the liquid at the carbureter or other device at a head constant within narrow limits, the device automatically taking care of excessive liquid supply.

Another object of the invention is the provision of means of the above character which are simple in construction and positive and reliable in use.

With the above and other objects in view, the invention further includes the following novel features and details of construction, to be hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the appended claims.

In the drawings:—

Figure 1 is a sectional view showing a liquid head maintaining device constructed in accordance with the invention, the liquid outlet being closed.

Figure 2 is a similar view with the liquid outlet open.

Figure 3 is a bottom plan view of the cover showing the weighted arms for controlling the needle valve.

Referring to the drawings in detail wherein like characters of reference denote corresponding parts, the reference character 10 indicates the chamber of the device into which the liquid passes from a suitable source of supply, such as a fuel feed pipe (not shown), through an inlet 11. This inlet is spaced a suitable distance from the bottom of the chamber 10 and is disposed above the outlet 12 which is located in the bottom of the chamber. This outlet is preferably in communication with a suitable vacuum producing device or mechanism through a pipe 13, or other suitable means.

The outlet 12 is controlled by a needle valve 14 whose tapered end is adapted to be seated upon the edge of said outlet and is guided and held in proper position by means of a guide 15.

The chamber 10 is provided with a removable top 16 which is held in place by suitable securing means and which has extending from its under face spaced pairs of apertured ears 17. Pivotally mounted between these ears upon pivot pins 18 are arms

19, the said arms being fast upon the pins 18. The inner ends of the arms 19 operate between spaced flanges 20, so that when the arms are moved pivotally the needle valve 14 will be moved vertically to open and close the outlet 12.

Heretofore, the needle valve has been utilized for controlling the entrance of liquid fuel into the liquid fuel supply chamber and the lowering of the level of liquid would raise the needle valve to admit additional liquid. In the present invention this operation is reversed, the lowering of the liquid level acting to raise the needle valve so as to open the inlet 12 and admit additional liquid fuel to return pipe 13 leading to the vacuum tank (not shown). To accomplish this there is provided oppositely disposed pivotally movable arms 21 which are fast upon the pivots 18 and located upon opposite sides of the needle valve 14. The outer ends of the arms 21 carry weights 23 which are engaged by a float 24 which is movable longitudinally of and surrounds the needle valve 14.

Liquid entering through the inlet 11 will act to raise the float 24 and operate the arms 21 to lift the needle valve 14 so as to permit the liquid to pass out through the outlet 12. As the level of liquid within the chamber 10 lowers, the float 24 will descend and as the needle valve 14 moves in the same direction, the outlet 12 will be closed and will remain closed until a sufficient quantity of liquid again enters the chamber to raise the float and needle valve. As the supply of liquid for the chamber 10 will be constant, a more or less constant level of liquid will be maintained within the chamber, the valve 14 acting to close the outlet 12 only when the liquid level lowers to an appreciable extent.

Thus, this device when properly positioned acts to maintain a constant head in the carbureter or other liquid using device to which it may be connected.

The chamber 10 is provided with a screen 25 which extends substantially from the bottom to the top of the chamber around the outlet 12 and in the path of the entering liquid so that the latter will be thoroughly strained. This arrangement of screen provides a maximum screening surface so that danger of the screen becoming clogged to an extent which will prevent the passage of liquid through the chamber, is reduced to a minimum.

The invention is susceptible of various changes in its form, proportions and minor details of construction and the right is herein reserved to make such changes as properly fall within the scope of the appended claims.

Having described the invention what is claimed is:—

1. In a liquid head maintaining device, a chamber having an inlet and an outlet, a needle valve controlling the outlet, pivotally mounted weighted arms in the top of the supply chamber, means operatively associating the arms and needle valve to control the valve by the operation of the arms and a liquid controlled float movable longitudinally of the needle valve and engaging the arms to control the discharge of liquid from the supply chamber.

2. In a liquid head maintaining device, a chamber having an inlet and an outlet, a needle valve controlling the outlet, reversely extending pivotally mounted weighted arms in the top of the supply chamber, means operatively associating the arm and needle valve to control the valve by the operation of the arms and a liquid controlled float movable

longitudinally of the needle valve and engaging the arms to control the discharge of liquid from the supply chamber.

3. In a device for maintaining a substantially uniform liquid level in a carbureter, a casing closed at its top and having a laterally disposed inlet adapted for connection to the carbureter fuel supply pipe, said casing further having an outlet in its bottom for connection to a return pipe leading to the source of fuel supply, a valve controlling said outlet, float means controlling said valve to open the same upon liquid within the casing rising to a definite height, and an operative connection between said float means and valve, said operative connection comprising a pair of shafts journaled in the upper part of the casing, rock arms each fixed to one of said shafts and carrying at its end a roller engaging the top of the float means, a pair of spaced disks fixed on the stem of the valve, and other rock arms fixed on said shafts and having heads engaging between the spaced disks.

In testimony whereof I affix my signature.

HOWARD R. CORWIN.