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AUTOMATIC INTAKE AND OUTLET VALVE

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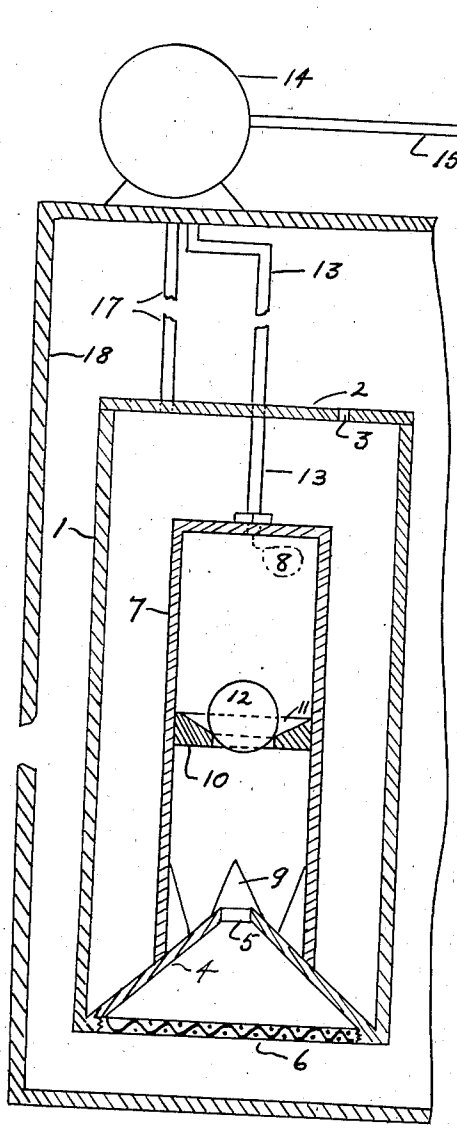



Fig. 2

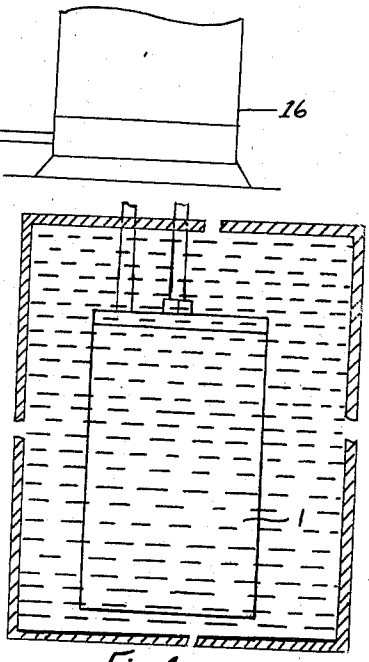



Fig. 1

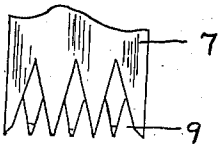



Fig. 4

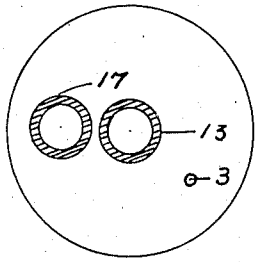



Fig. 3

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## AUTOMATIC INTAKE AND OUTLET VALVE

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4 Claims. (Cl. 210—170)

This invention relates to automatic intake and outlet valves, and more particularly to such valves used in connection with oil burners.

The usual oil burner system now has the source of oil supply housed in containers that are provided with a feed or oil supply line and a return pipe line connected in operative relation with the usual pumping device.

The foregoing system is well known to the art and as now practiced the outlet and inlet oil lines are in direct engagement with the fuel supply source. When oil is drawn from such a system and the excess returned directly into the source of oil supply, it stirs and agitates the latter thereby causing any sediment or the like to become mixed with the oil and this mixture is supplied to the oil burner; thereby frequently causing clogging and stoppage.

One of the objects of this invention is the provision of a device adapted to eliminate oil agitation of substantial moment, at the source of oil supply.

Another object of this invention is the provision of a device adapted to accommodate the intake and outlet oil pipe lines.

A further object of this invention is the provision of a device provided with a valve controlling the flow of oil in one direction and an outlet pipe returning excess oil into the device and thereby substantially eliminating agitation of the oil in and outside of said device, that is usually caused by the return of excess oil.

Other objects and features will more fully appear from the following description and accompanying drawings in which: Fig. 1 is a vertical view of the device disclosed immersed in a liquid bath; Fig. 2, a schematic sectional view; Fig. 3, a top plan view; and Fig. 4, a sectional view of the basal portion of container.

Referring to the drawing this invention consists of a housing 1, provided with a top 2, having an air-vent 3 disposed therein. A conical base 4 extends upwardly into the housing and at its terminus is disposed an orifice 5 that permits the flow of oil into said housing.

As strainer 6 is mounted in the bottom of the housing in any suitable fashion, and serves to separate undesirable sediment from the oil passing into the housing.

Upon the base 4 and over the orifice 5 is disposed a container 7 having a hole 8 in its top and a plurality of apertures 9 at its basal portion. A check-valve 10 is situated in container 7, and consists of a seat 11 upon which is seated a ball 12. It is obvious that when oil is drawn upwardly the ball is lifted from its seat permitting the passage of the former. When the flow of oil ceases the ball resumes its seat thereby preventing any downward flow.

Connected to the top of the container about the hole 8 is an oil supply pipe 13 that passes through the top of the housing 1 to a pump 14 that causes oil to be fed to a pipe 15 that connects with the usual oil burner (not shown) disposed in a furnace 16.

A return pipe 17 is connected to the usual bypass valve disposed in the pump, well known to the art (not shown) and passes through an oil supply tank 18 and through the top of housing 1.

It is obvious from the foregoing that the pump operates to cause the flow of oil to the burner. When such a flow is begun oil is supplied from the tank through strainer 6 and orifice 5. The upward oil flow will cause the ball to be elevated and thereby permit oil passage which flows to the burner as needed. However, the excess oil that is pumped but not immediately needed for combustible purposes flows through the bypass valve and is returned to the housing through pipe 17.

It is therefore obvious that both the supply of oil and return of excess oil takes place within the housing, thereby preventing the creating of oil currents sufficient enough to "stir up" sediment in the main source of oil supply.

Having described this invention, what is claimed is:

1. The combination with a fuel feed pump for feeding fuel to a furnace, a fuel supply tank, of a fuel straining device within said supply tank, said fuel straining device comprising a chambered housing having its lower end open, strainer means within said open lower end of the housing, an inverted chambered container within the housing, a fuel supply pipe connecting the upper end of the container and the pump for supplying fuel from the chamber of the container to the pump, a check valve within the chamber of the container for trapping fuel above the check valve on the suction impulses of the pump, a fuel return pipe from the pump and discharging into the chamber of the housing, the lower end of the container below the check valve being provided with means for allowing fuel to enter the chamber of the container from the chamber of the housing below the check valve, and means between the container and strainer for allowing fuel to enter the chamber of the container from the chamber of the supply

tank through the strainer below the check valve.

2. A device as set forth in claim 1, including an upwardly extending conical member surrounding the strainer and having a port at the apex thereof in communication with the chamber of the container below the check valve, said container being supported on said conical member.

3. A device as set forth in claim 1 wherein the upper portion of the housing is provided with a vent port forming means of communication between the chamber of the housing and the chamber of the oil supply tank.

4. A device as set forth in claim 1 wherein the means of communication between the chamber of the housing and the lower portion of the chamber of the container is formed by a scalloped lower end of the container.

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