

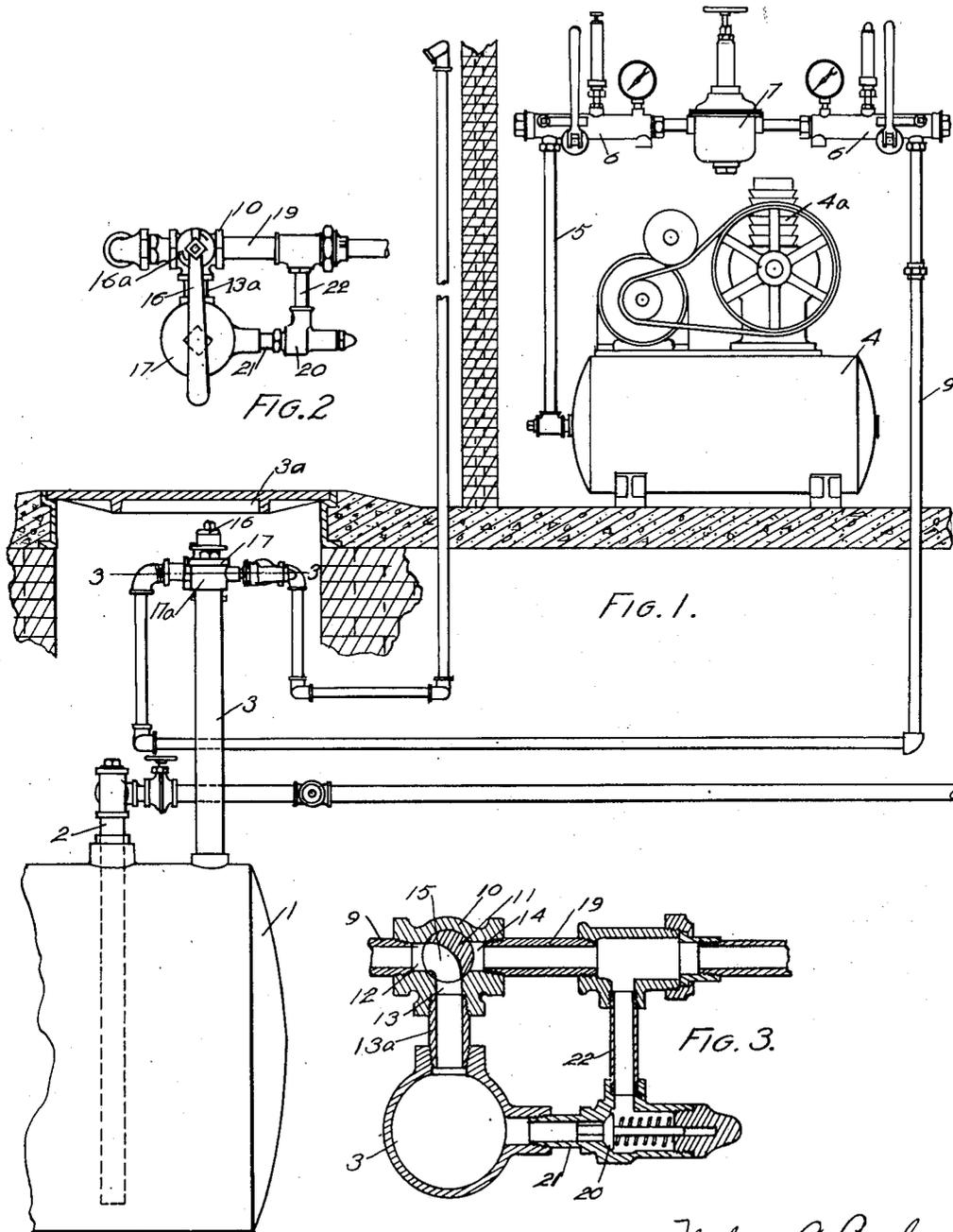
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DISPENSING TANK MECHANISM

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DISPENSING-TANK MECHANISM.

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Tanks as ordinarily used at filling stations are filled with gasoline and pressure placed upon the tank by pumping air, or gas, on the surface of the gasoline. It is desirable to close the connection leading to the air supply and to vent the tank prior to opening the tank for filling the same. The present invention is designed to accomplish this purpose. Other features and details of the invention will appear from the specification and claims.

A preferable exemplification of the invention is illustrated in the accompanying drawings as follows:—

Fig. 1 shows the tank with the connections leading to and from it.

Fig. 2 a plan view of the filling opening and the air vent controlling valve.

Fig. 3 a section on the line 3—3 in Fig. 1. 1 marks the tank. Gasoline is delivered from the tank through a pipe 2 in the usual manner and the tank is filled through a tube 3. The tank is usually buried and the filling tube is reached through the usual man-hole 3^a.

The air is stored in a receiver 4 supplied from a compressor 4^a. The air passes from the receiver through a pipe 5 through controlling valves 6 and 7 by way of a pipe 9 to the supply and vent valve 10. The valve 10 is what is ordinarily known as a three-way valve and provided with a plug 11. The valve body is provided with an inlet way 12 to which the pipe 9 leads, a discharge way 13 which is connected to the tube 3 by a pipe 13^a, and a vent way 14. The valve plug is provided with an L-shaped way 15 operating over the ways 12, 13 and 14 to connect the tank either with the air supply, or with the vent.

The tube is provided with a closure cap 17. This is screwed on to the top of the closure fitting 17^a, the cap being provided with the usual square for accomplishing this purpose. The valve plug 11 is fitted with a handle 16 which with the valve in the position shown in Fig. 3, that is to say, with the vent closed and the connection to the air supply open, the handle is over the closure cap 17, thus preventing the removal of the closure cap, and in order to remove the closure cap the handle must be swung sufficiently to close off the air supply and open the vent, a stop 16^a preventing the turning of the handle in a position other than to accomplish this result.

The vent pipe 19 is ordinarily carried to such a height that the fumes are not dangerous.

I prefer to utilize the same vent pipe in supplying a vent for the safety valve. In this structure a pipe 21 leads from the tube 3 to a safety valve 20, the discharge of the safety valve being connected with the vent pipe through a pipe 22.

What I claim as new is:—

1. In a dispensing tank mechanism, the combination of a tank; a filling tube leading to the tank; a closure for the tube; a vent pipe leading from the tank; a vent valve controlling the vent; a fluid pressure pipe supplying fluid under pressure to the tank; a valve mechanism controlling the fluid pressure pipe and the vent pipe and closing the fluid pressure pipe as the vent pipe is opened; and an actuating means for the valve mechanism compelling the closing of the pressure pipe and the opening of the vent pipe prior to the removal of the closure for the tube.

2. In a dispensing tank mechanism, the combination of a tank; a filling tube leading to the tank; a closure for the tube; a vent pipe leading from the tank; a vent valve controlling the vent; a fluid pressure pipe supplying fluid under pressure to the tank; a valve mechanism controlling the fluid pressure pipe and the vent pipe and closing the fluid pressure pipe as the vent pipe is opened; an actuating means for the valve mechanism compelling the closing of the pressure pipe and the opening of the vent pipe prior to the removal of the closure for the tube; a bypass between the tube and vent pipe; and a safety valve in the bypass.

3. In a dispensing tank mechanism, the combination of a tank; a filling tube leading to the tank; air and vent pipes connected to the tube; a valve mechanism for said pipes; a bypass between the tube and vent pipe; and a safety valve in the bypass.

4. A filling device for gasoline service tanks and the like comprising a stand pipe leading to a storage tank, a fill cap for said stand pipe, a three-way valve adjacent said stand pipe, a pipe line adapted to transmit compressed air to said three-way valve, a pipe connection between said valve and said stand pipe, a pipe line leading from said valve to a vent opening, and means connected with said valve to prevent the removal of said fill

cap except when said valve is set to open the passageway between the stand pipe and the pipe line leading to the vent opening.

5 In a device of the class described, the combination of a gasoline storage tank adapted to retain compressed air, a stand pipe for filling said tank, a fill cap upon said stand pipe, venting means comprising a valve normally closed to prevent escape of air from
10 said tank, and means to prevent removal of said fill cap until said venting means is operative to vent said tank to atmosphere.

6. In a device of the class described, the combination of a storage tank for liquids or
15 the like, said tank being adapted to sustain compressed air pressure, venting means connected to said stand pipe and comprising a valve normally closed to seal said tank from atmospheric pressure and capable of venting
20 the tank to atmosphere when the valve is opened, and a barrier secured to said valve and being adapted to prevent the removal of said fill cap until said valve is operated to vent said tank to atmosphere.

25 7. In a device of the class described, the combination of a storage tank for liquids, a

stand pipe for filling said storage tank, a fill cap closing said stand pipe, a three-way valve operatively connected with said stand pipe, a compression line and a vent opening, and a
30 barrier secured to said three-way valve and extending over said fill cap when said valve is in position with the compression line open to said tank and with said barrier removed
35 from said fill cap when said valve is in position to vent said tank to atmosphere.

8. In a device of the class described, the combination of a storage tank, a stand pipe leading into said tank; a compression pipe
40 line; a vent pipe line; a three-way valve; a safety valve; and a quadrangular pipe construction with the three-way valve at one corner of the quadrangle, the stand pipe in another corner thereof, the safety valve in a
45 third corner of the quadrangle, and a connector in the fourth corner forming a connection between the safety valve and the vent pipe line.

In testimony whereof I have hereunto set my hand.

NELSON A. CARLSON.