

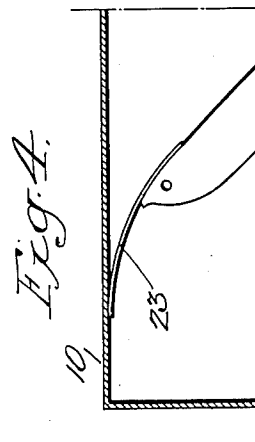
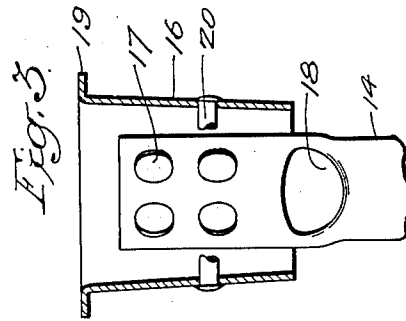
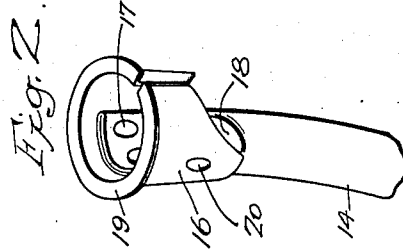
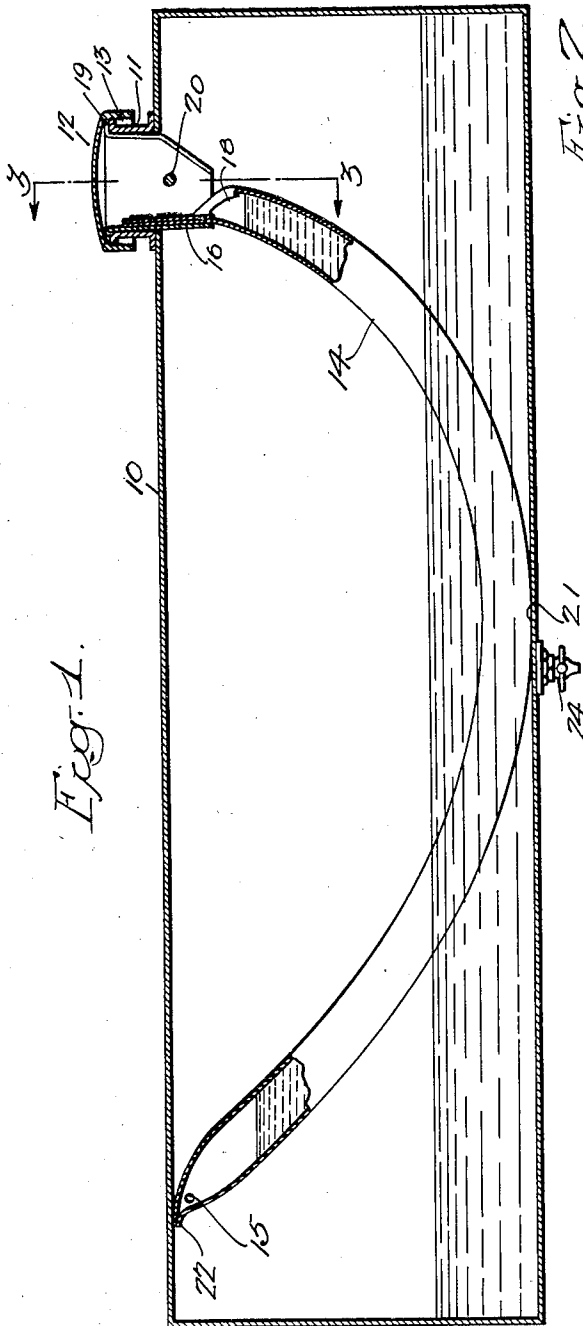
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RESERVE SUPPLY FOR GASOLINE TANKS AND THE LIKE

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RESERVE SUPPLY FOR GASOLINE TANKS
AND THE LIKE

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5 Claims. (Cl. 158—46.5)

This invention relates to reserve supply devices for the fuel tanks of automotive vehicles and has for a particular object thereof the provision of a device of this character which may be readily applied to automobile tanks without in any manner altering the present construction of the tank.

An important object of the invention is the production of a device of this character which may be readily inserted in the tank and will be retained in position by the tank cap and which is, furthermore, so constructed that it is securely held against any possible vibration in the tank which could result in damage either to the reserve supply unit or to the tank itself.

A still further object of the invention is the provision of a device of this character which is readily manipulated to make its contents available for use and in which the necessary manipulations can be carried into effect without the use of lights, thus avoiding danger of possible explosions.

A further object of the invention is the provision of a device which may be readily and cheaply produced, will be efficient and durable in service, and a general improvement in the art.

These and other objects I attain by the construction shown in the accompanying drawing wherein, for the purpose of illustration, I have shown a preferred embodiment of my invention and wherein:

Fig. 1 is a longitudinal sectional view through an automotive fuel tank provided with a reserve supply device constructed in accordance with my invention;

Fig. 2 is a perspective view of the filling end of the reserve supply device;

Fig. 3 is a section on line 3—3 of Fig. 1; and

Fig. 4 is a fragmentary view showing a modification of the discharge end of the reserve supply device.

Referring now more particularly to the drawing, the numeral 10 generally designates a fuel tank having a filling neck 11 equipped with the usual removable cap 12 at present shown as of that type which is threaded upon the filling neck. The upper end of the filling neck has the usual out-turned seating flange 13 with which the cap usually contacts when fully closed.

In accordance with my invention, I provide an arcuately bent tube 14 preferably slightly flexible in nature and having one end thereof closed with the exception of a small discharge opening 15. The opposite end of the tube has attached

thereto an adapting ring 16 which may be secured to the tube in any suitable manner as, for example, by riveting or spot welding, as indicated at 17. The tube attachment is of such character that the mouth 18 of the tube is located slightly below the adapter 16 and slightly to one side of the center thereof so that while this mouth is disposed to receive liquid fuel entering the tank 10 through the adapter, it will not interfere with the passage of this liquid fuel into the tank proper, but will only receive that amount of liquid fuel necessary to replace any lost contents as, for example, after use of its reserve supply. The adapter is preferably split so that it may have a certain resiliency enabling its adaptation to minor variations in internal diameter of the filling neck and it is preferably tapered as more clearly shown in Fig. 3, so that a close fit is obtained only when the adapter is fully forced into the filling neck. The upper end of the adapter is equipped with a flange 19 seating upon the flange 13 of the filling neck to limit the possible extent of insertion of the reserve supply device.

To prevent possible damage to the tube 14 by contact therewith by filling nozzles inserted through the adapter, a transverse stop pin 20 is preferably provided adjacent the lower end of the adapter and above the mouth 18. The mouth 18 preferably has an inturned flange serving as a dam to limit the splash of contained liquid in the tube 14 and to limit the losses in event of transverse inclination of tank 10. The tube is made of such length and curvature that the central portion thereof will bear against the bottom wall of the tank 10 as indicated at 21 while the discharge end is in contact with the upper wall of the tank as at 22, the tube at this time being under flexing strain so that any tendency of the same to move in the tank 10 in response to sloshing of liquids contained either in the tank or tube will be prevented. This same spring tension will serve to automatically center the tube in event it is slightly misplaced in insertion. This tension can be obtained either by flexing of the tube or flexing of a spring strip 23 associated with the tube. In construction of the tube 14, care should be taken to make the curvature such that the point of contact 21 will be spaced from the usual drain outlet 24 of the tank 10.

In use of the device, it will be obvious that each time that the tank is filled, fuel from the nozzle will enter the reserve supply device so that the tube 14 is always assured of a capacity content. In event of failure of the supply of tank 10, the cap 12 is removed, a hook or pair of pliers

inserted to grasp bar 20 and the adapter freed from the filling neck, after which the tube 14 may be slowly drawn through the filling opening and, as drawn through the filling opening, will discharge its contents through the opening 15, thus providing a supply in tank 10 sufficient to enable the operator of the vehicle to reach a filling station. The reserve supply device having been returned to its normal position will, during filling of tank 10, receive a new supply. It will be noted that a construction of this character embodies no valves or mechanical parts requiring servicing or special ability for operation.

Since the construction illustrated is capable of a considerable range of change and modification without in any manner departing from the spirit of my invention, I do not wish to be understood as limiting myself thereto except as hereinafter claimed.

I claim:

1. In a fuel tank, a filling neck, an adapter removably secured in said neck, a resilient tube of less diameter than the neck secured at one end to the adapter and having said end open and positioned to receive fuel inserted at the filling neck, said tube extending longitudinally of the tank and having its opposite end vented and disposed at substantially the same level as the adapter-attached end thereof, the central portion of said tube being bowed downwardly and engaging the lower wall of the tank, said opposite end having such engagement with the tank that the tube is resiliently stressed and held against movement in response to movement of the tank contents.

2. In a fuel tank, a filling neck, an adapter removably secured in said neck, a resilient tube of less diameter than the neck secured at one end to the adapter and having said end open and positioned to receive fuel inserted at the filling neck, said tube extending longitudinally of the tank and having its opposite end vented and disposed at substantially the same level as the adapter-attached end thereof, the central portion of said tube being bowed downwardly and engaging the lower wall of the tank, said opposite end having such engagement with the tank that

the tube is resiliently stressed and held against movement in response to movement of the tank contents, and a stop pin extending transversely of said adapter above the adjacent end of the tube.

3. The combination with a fuel tank having a filling opening, of a resilient reserve tube within said tank and having an open end removably secured in said tank adjacent said filling opening to receive fuel introduced through said opening, said tube being bent and having its opposite end vented and in underlying contacting relation to a portion of the tank and its central portion in overlying contacting relation to a second portion thereof, the engagement of the central and last-named end portions with the tank resiliently stressing the tube whereby the tube is held against movement in response to movement of fuel in the tank, said tube being withdrawable through the filling opening.

4. The combination with a fuel tank having a filling opening, of a resilient reserve tube within said tank and having an open end removably secured in said tank adjacent said filling opening to receive fuel introduced through said opening, said tube being bent and having its opposite end vented and in underlying contacting relation to a portion of the tank and its central portion in overlying contacting relation to a second portion thereof, the engagement of the central and last-named end portions with the tank resiliently stressing the tube whereby the tube is held against movement in response to movement of fuel in the tank, said tube being withdrawable through the filling opening, whereby upon partial withdrawal thereof through the filling opening the vented end may be disposed lowermost to permit escape of the tube contents through said small opening.

5. The structure of claim 3 wherein the securing means for the tube comprise an adapter removably secured in the filling opening, said adapter including a stop pin projecting over the mouth of the tube in spaced relation thereto whereby to prevent contact with the tube of a nozzle inserted in the filling opening to fill the tank.

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