

[54] **VEHICLE LIQUID TANK TRANSPORT
WITH FLEXIBLE PARTITION**

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[58] **Field of Search**.....220/85 B, 22;
137/255

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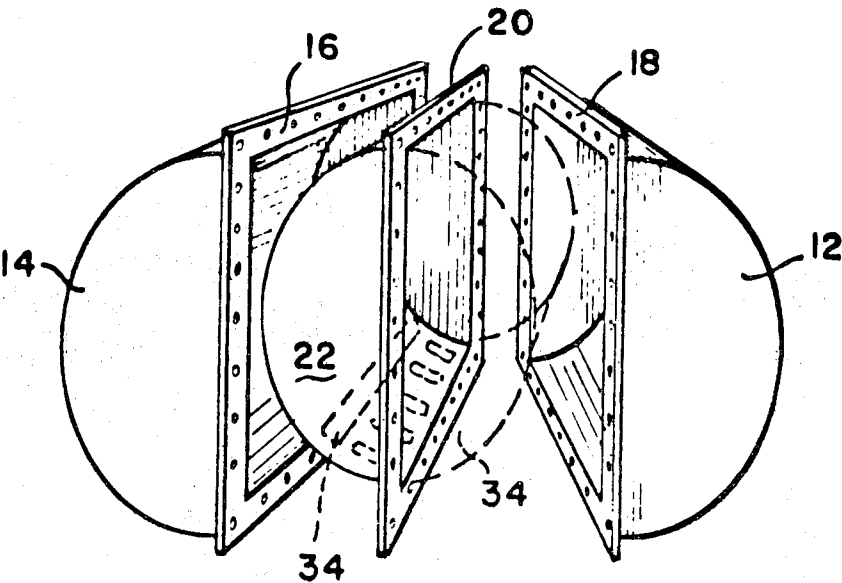
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[57] **ABSTRACT**

A liquid tank truck provided with a split tank and a central internal gasket member having a flexible partition of high strength. The split tank is provided with an inlet and outlet in each section so that separate liquid carrying compartments are formed, each of which may alternately have a liquid carrying capacity of substantially the volume of the entire tank.

5 Claims, 4 Drawing Figures



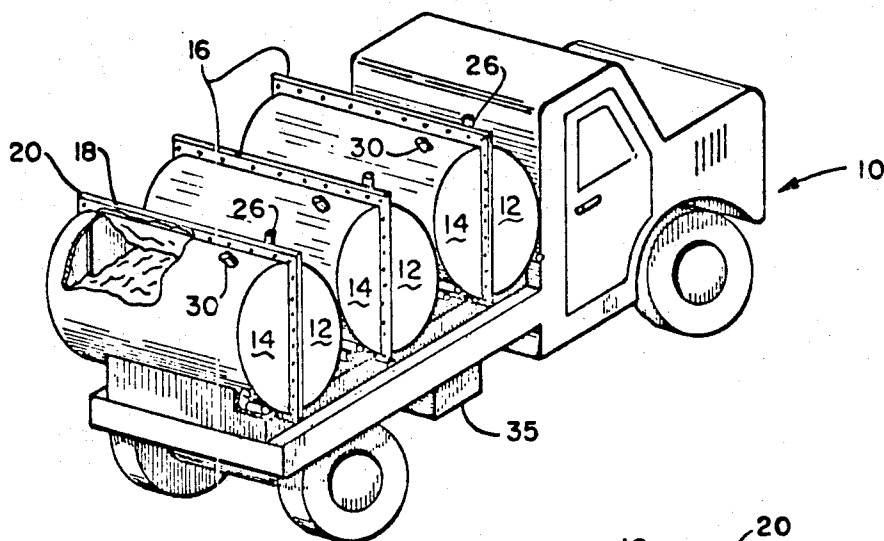


FIG. 1

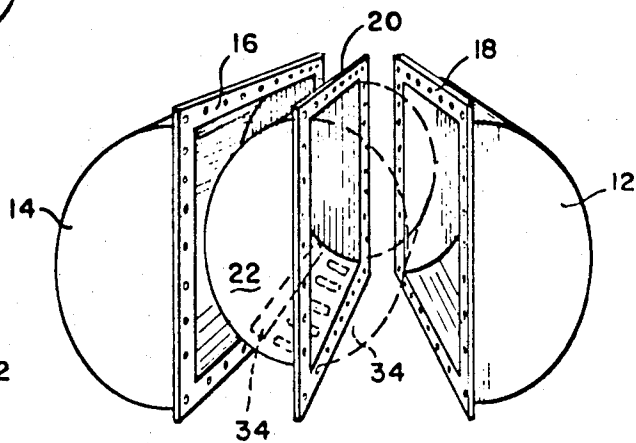


FIG. 2

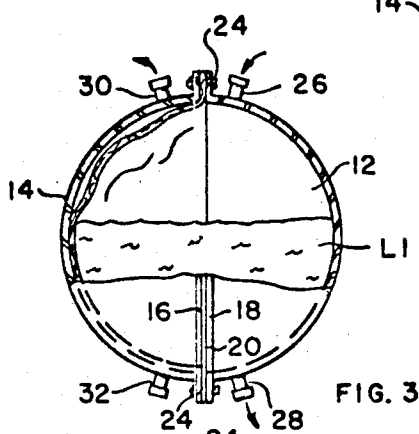


FIG. 3

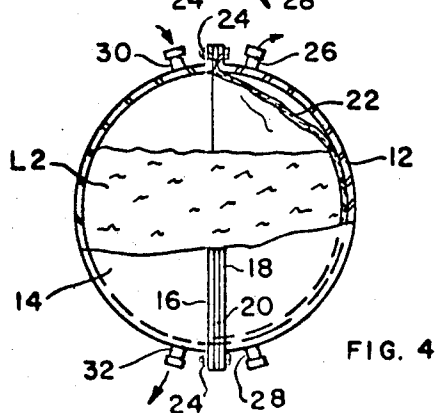


FIG. 4

VEHICLE LIQUID TANK TRANSPORT WITH FLEXIBLE PARTITION

The present invention relates to a transport vehicle for viscous liquid, such as crankcase oil, in which two types of liquid can be carried, without the need to wash down between change, in separate compartments and in which each compartment has an inlet and outlet.

It is an object of the present invention to provide a vehicle with a split tank and a gasket therebetween, the latter having a durable flexible partition that can be moved or displaced laterally adjacent to one or the other side of the tank when one or the other section of the tank is filled with liquid.

Another object of the present invention is to provide a flexible partition having a plurality of battens in order to maintain a predetermined curvilinear shape of the partition.

It should be apparent that the present invention permits the use of the tank truck to transport in one compartment for example, bulk lubricating oil to service stations and central distributing warehouses; and utilizing the same tank truck, when empty, to transport, in the other compartment, for example, drained or used vehicle crankcase oil to a processing plant for reprocessing the crankcase oil back into merchandizable lubricating oil. Because of the flexibility and strength of the partition, the volume of each of the compartments may be varied to approximately the full volume of the tank truck. Thus, approximately a full load of lubricating oil can be transported to various locations and approximately a full volume of used crankcase oil can be returned for processing without necessitating the cleaning of the interior of the tank, since the liquid in one section does not come in contact with the liquid in the other partitioned section of the tank.

It is another object of the present invention to virtually eliminate the dumping of used crankcase oil, with the ecological hazards attendant thereto, and provide for the re-use of hitherto randomly disposed used crankcase oil.

It is a further object to accomplish the desired result of reprocessing used oil or other liquids with a minimum of cost and effort.

The present invention will now be more fully described with reference to the accompanying drawings, in which:

FIG. 1 is a perspective view of a vehicle liquid tank transport constructed in accordance with the teachings of the present invention;

FIG. 2 is an exploded perspective view of the various sections of the liquid transport tank;

FIG. 3 is a sectional view of the liquid transport tank showing the flexible partition in one position in which one section of the tank is approximately filled to capacity; and

FIG. 4 is another sectional view of the liquid transport tank showing the flexible partition in another position in which the other section of the tank is approximately filled to capacity.

PREFERRED EMBODIMENT OF THE INVENTION:

The vehicle liquid tank transport truck is referred to generally by the numeral 10 and has a chassis of a known type usually associated with tank carrying vehicles and is provided with a plurality of cylindrical, preferably steel, tanks each of which is split longitudinally

into two semi-cylindrical shaped sections 12 and 14. The semi-cylindrical section 12 has a peripheral flange 16 while the semi-cylindrical section 14 is provided with a peripheral flange 18. Mounted in between the flanges 16 and 18 is an intermediate gasket flange 20 to which the flexible barrier wall 22 is secured in a fluid-tight manner. The flanges 16 and 18 and the intermediate flange 20 are adapted to be aligned, as seen in FIGS. 1, 3 and 4, and are fastened together by means of securing means 24. A pump unit 35 is shown for pumping liquid from underground storage tanks to the tanks on the transport truck.

The semi-cylindrical section 12, as seen in FIG. 3, is provided with an inlet 26 and an outlet 28, while the semi-cylindrical section 14, as seen in FIG. 4, is provided with an inlet 30 and an outlet 32.

Referring to FIG. 2 it should be noted that the flexible barrier wall 22 may be fabricated of a flexible fiberglass or a nylon reinforced vinyl. The barrier wall 22 may also be provided with battens 34, for example of fiberglass, for retaining a predetermined shape of the flexible barrier thereby ensuring the proper movement of the flexible barrier laterally to either the left or right, as seen in FIGS. 3 and 4, when either semi-cylindrical section 12 or semi-cylindrical section 14 is filled with a liquid.

It should be apparent that the present liquid tank truck, as seen in FIG. 3, illustrates the section 12 filled with a liquid L¹ such as lubricating oil, which is poured into inlet 26, while outlet 28 is closed. The flexible partition 22 moves laterally to the left as the tank fills (FIG. 3) until the partition 22 lies adjacent to the curvilinear wall of semi-cylindrical section 14. The inlet 30 remains open to permit the escape of air present in section 14 therethrough. In this manner, almost all the volume of the two semi-cylindrical tank sections is utilized. The tank transport therefore is able to transport approximately a full tank load to its destination. On the other hand, when the tank truck arrives at its destination and completes its delivery or deliveries, the other semi-cylindrical section may be filled with used crankcase oil L², or other waste products, for reprocessing, by filling this section through inlet 30 while outlet 32 remains closed. This procedure is shown in FIG. 4 where approximately a full load of returning liquid can be carried back by the tank truck without requiring the laborious and costly cleaning of the interior of the tank. It should be noted in FIG. 4 that air inlet 26 is open in order to permit the escape of air trapped in section 12 of the liquid tank.

I claim:

1. A liquid tank transport vehicle comprising two semi-cylindrical sections forming a cylindrical tank when fitted together, a gasket secured between said semi-cylindrical sections and provided with a large central opening, an unstressed flexible barrier fixed to said gasket, said barrier being free-floating in the interior of said cylindrical tank selectively in either of said sections thereof, a plurality of battens secured to the lower portion of said flexible barrier so that a predetermined curvilinear shape of said barrier is maintained while said tank is being filled with liquid, and each of said semi-cylindrical sections being provided with an inlet and an outlet for the liquid.

2. A liquid tank transport vehicle as claimed in claim 1 wherein said flexible barrier is a flexible fiberglass.

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3. A liquid tank transport vehicle as claimed in claim 1 wherein said flexible barrier is a nylon reinforced vinyl.

4. A liquid tank transport vehicle as claimed in claim 1 wherein said two semi-cylindrical sections are provided with peripheral flanges, said gasket being fixed to the periphery of said flexible barrier, and means for securing said peripheral flanges and said gasket together to form a fluid-tight cylindrical tank in which compartments are formed for receiving alternately a volume of liquid which corresponds substantially to the

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entire volume of said tank.

5. A liquid tank transport vehicle as claimed in claim 1 wherein said flexible barrier is of a sufficient dimension whereby when said barrier is moved laterally to its extreme position said barrier is adjacent to the wall of one of said semi-cylindrical sections opposite to the wall of the other semi-cylindrical section being filled with liquid, said barrier remaining substantially unstressed until it reaches said extreme position.

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