March 25, 1947. R. E. GILMORE 2,417,979

METAL-LINED PORTABLE WOODEN TANK

Filed April 26, 1943 2 Sheets-Sheet 1

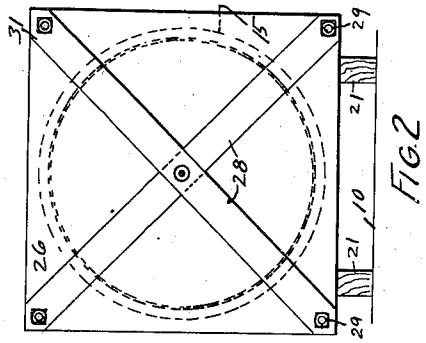


FIG. 2

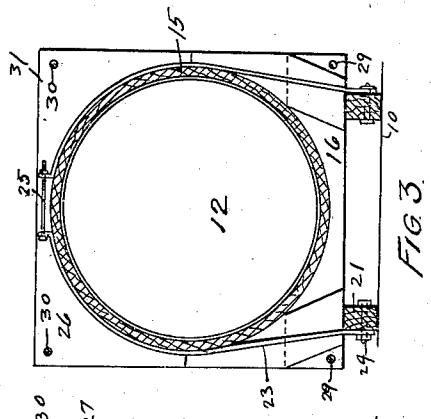


FIG. 3

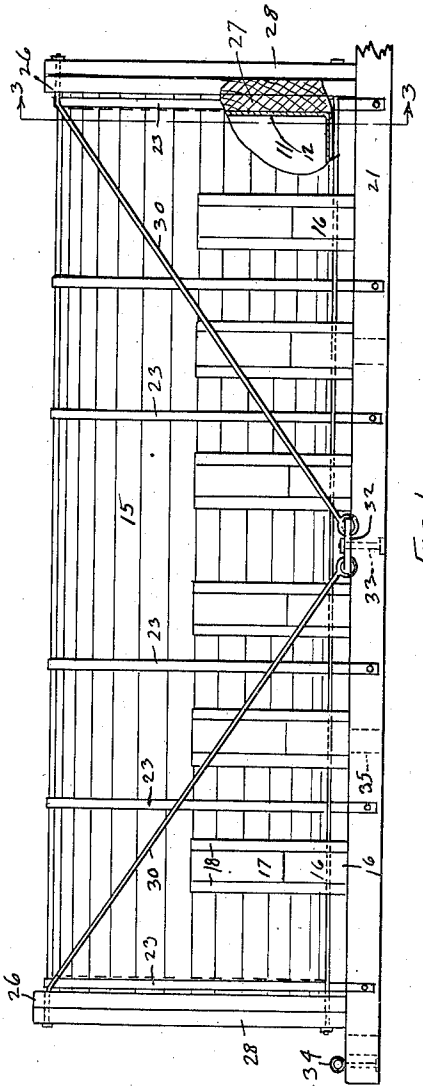


FIG. 1

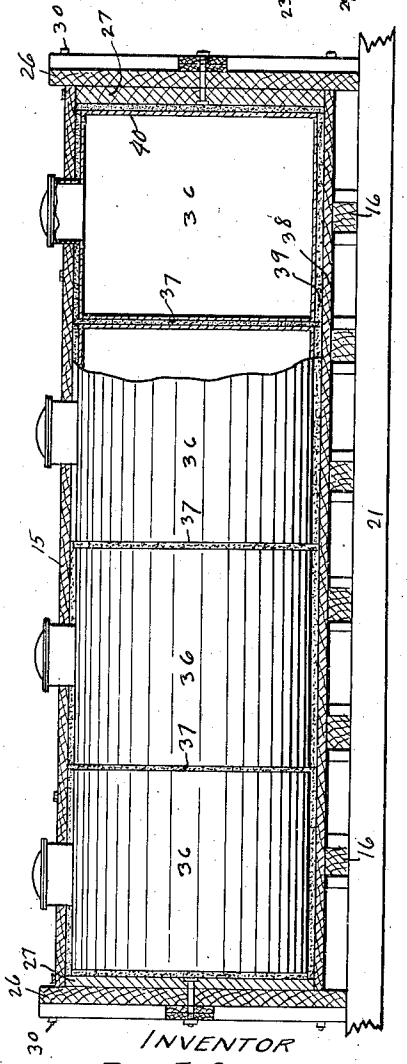


FIG. 4

INVENTOR
ROY E. GILMORE
BY E. B. Dickenbrock
ATTORNEY

March 25, 1947. R. E. GILMORE 2,417,979

METAL-LINED PORTABLE WOODEN TANK

Filed April 26, 1943 2 Sheets-Sheet 2

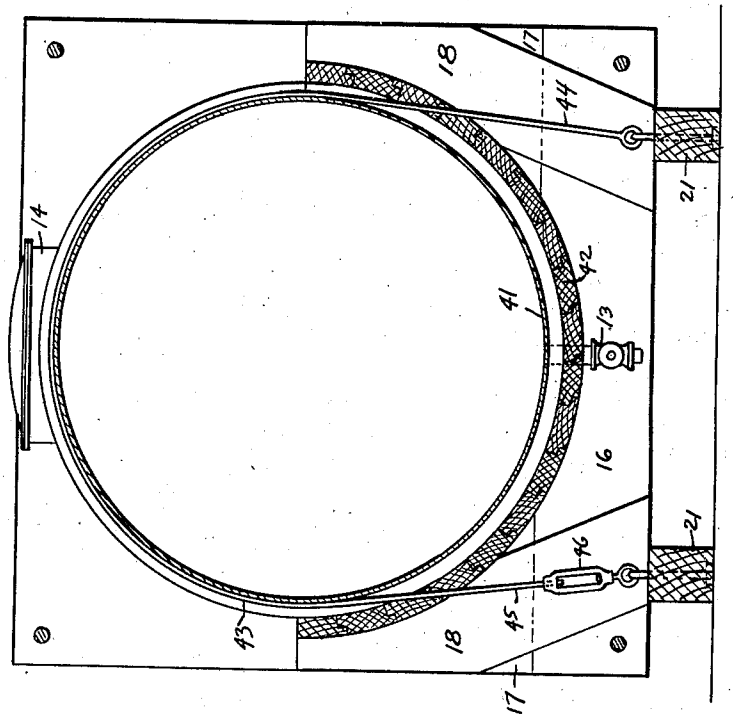


FIG. 8

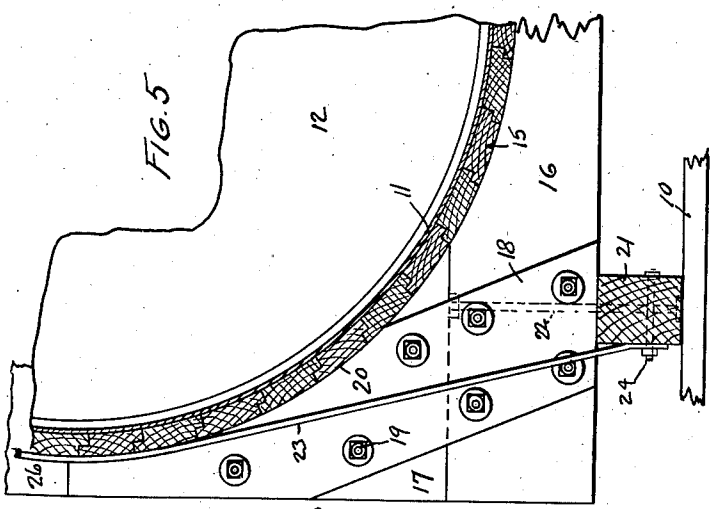


FIG. 5

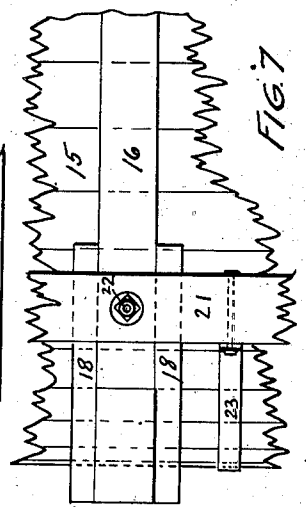


FIG. 7

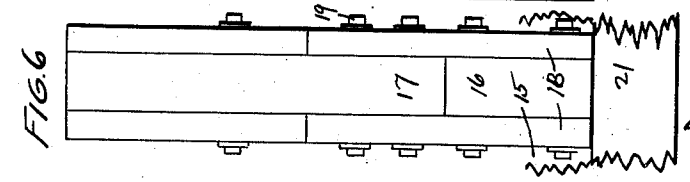


FIG. 6

INVENTOR
ROY E GILMORE
BY E. B. Richenbrand
ATTORNEY

Patented Mar. 25, 1947

2,417,979

UNITED STATES PATENT OFFICE

2,417,979

METAL-LINED PORTABLE WOODEN TANK

Roy E. Gilmore, Portland, Oreg.

Application April 26, 1943, Serial No. 484,593

2 Claims. (Cl. 220—1.5)

1

This invention relates generally to the transportation and storage of liquids, and particularly to a portable tank.

The main object of this invention is to provide a means for easily and quickly converting flat cars and gondolas into tank cars.

The second object is to construct a portable tank for water, rail or truck transportation requiring only light gage, inexpensive and relatively obtainable material in the construction thereof.

The third object is to construct a tank of the class described in which the required materials are commonly available near oil producing and shipping centers.

The fourth object is to construct a tank of light gage materials in a manner to withstand the torsional strains to which such units are commonly subjected, without impairing the strength of those materials.

The fifth object is to utilize a highly efficient form of timber construction in the formation of a cradle for supporting a relatively flexible lightweight metal container.

I accomplish these and other objects in the manner set forth in the following specification, as illustrated in the accompanying drawings, in which:

Fig. 1 is a side elevation of a representative form of the device.

Fig. 2 is an end elevation of Fig. 1.

Fig. 3 is a section taken along the line 3—3 in Fig. 1.

Fig. 4 is a longitudinal section through a modified form of the device, showing a plurality of containers in a single holder or cradle.

Fig. 5 is a fragmentary transverse section.

Fig. 6 is a fragmentary end elevation of Fig. 5.

Fig. 7 is a fragmentary bottom view of Fig. 5.

Fig. 8 is a transverse section through a modified form of the device, showing the use of a corrugated tank without the wood covering on its upper half.

Similar numerals refer to similar parts throughout the several views.

Before entering into an explanation of this invention, its purpose will be better understood when it is remembered that the railroad yards and sidings of the nation, contain large numbers of idle flat and gondola cars normally used during coal shipping seasons, but otherwise standing comparatively useless, deteriorating in the weather and occupying valuable space on trackage.

It is also a well known fact that the regretable

2

shortage of fuel oil and its derivatives is due largely to a lack of transportation and storage facilities. It is therefore my outstanding object to utilize idle rolling stock for the purpose of transporting as well as storing oil and other liquids without drawing severely upon the nation's supply of materials otherwise needed in the war effort.

Referring in detail to the drawing, there is shown in Figs. 1, 2, 3, 5, 6 and 7, the deck 10 of an ordinary flat car or of a gondola. My portable tank consists primarily of a light weight shell 11 preferably, although not necessarily of corrugated material. The shell is of cylindrical form and having the flat ends 12. The usual discharge valve 13 and man hole 14 are shown. Baffles or any other means for preventing undue movement of the liquids within the tank may be utilized without departing from the spirit of this invention.

The shell 11 is supported in a cylindrical casing 15 whose lowermost portion rests in the horizontal ties 16, having the upright members 17 secured to the ends between the side planking 18 and bolts 19.

The members 16, 17, and 18 are curved to conform to the cylindrical surface 20 of the casing 15. The ties 16 rest upon the longitudinal skids 21 and are secured thereto by means of the bolts 22. Bands 23 are placed around the top side of the casing 15 and secured at their lower ends to the skids 21 by means of the bolts 24. Clamp bolts 25 unite the upper ends of the members 23.

At each end of the casing 15 is placed a head 26 which is illustrated as being square and its underside rests upon the skids 21. Each head 26 has a circular portion 27 which extends into its end of the casing 15 thereby insuring the casing 15 against movement with relation to the head 26. Cross braces 28 are placed on the outside of each head 26. Longitudinal stay rods 29 are placed along the lower corners of the unit and the diagonal truss rods 30 connect each upper corner 31 to the transverse bar 32 which is secured to the skids 21 by means of the bolts 33. Eye bolts 34 are placed at each end of each skid 21 to facilitate the handling of the unit. Cross members 35 are placed between the skids 21 for stiffening purposes.

Referring now to the form of the device shown in Fig. 4, it will be seen to differ from the first described form of the device only in the making of the tank member in the form of sections 36 which are separated from each other by the soft

fibrous packing 37 as well as from the casing 38 by means of the packing 39.

The chief advantage of this construction lies in the elimination of torsional stresses from the shell as would otherwise be occasioned by the normal twisting and swerving of the car when negotiating curves and passing over banked tracks at high rates of speed. In this form of the device, the sections may be separately filled and discharged, or they may be flexibly connected to suit the particular requirement.

When this form of tank is employed, it is desirable to crown the heads 40 slightly to better adapt the units to the suggested misalinement.

In the form of the device shown in Fig. 8, the shell 41 is of corrugated material and only its lower half is supported by the wooden casing 42; the cradle members 16, 17 and 18 being the same as in the first described form of the device.

In this form of construction, the stay rods 43 pass around the top side of the shell 41 and the lower ends 44 and 45 are secured to the skids 21. The turn buckle 46 may be located on the side or the top as is most convenient for a given installation. It will be noted that in this form of the device, the stays 45 pass through the casing 42 in order that they may hold the shell 41 to the best advantage.

The details of construction may, of course, be varied indefinitely. It is therefore not my intention to be limited to the precise form of invention illustrated and described therein, but I do intend to cover all such forms and modifications as fall fairly within the appended claims.

I claim:

1. A tank of the class described consisting of a horizontal cylindrical shell of light gage metal, a wooden casing surrounding the cylindrical portion of said shell, cradles disposed along the length of said casing adapted to maintain the lower portion thereof in a semi-cylindrical form, a head disposed across each end of said casing extending partially into said casing and contacting the end thereof, skids for supporting said shell and heads and truss rods between said heads and intermediate portions of said skids.

2. A supporting structure for light gage fluid containers, consisting of a horizontal cylindrical casing of wooden planking, a stepped head at each end of said casing, a portion of each of said stepped heads extending into said casing and the remainder of said stepped heads bearing against the ends of the planking, cradles for supporting the lower portion of said casing between said heads, skids for supporting said cradles and heads and truss rods extending from intermediate portions of said skids to the upper portions of said heads whereby a load imposed on the middle of said skids will tend to place said casing in compression.

ROY E. GILMORE.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,166,134	Fitch	July 18, 1939
1,518,471	Weaver	Dec. 9, 1924
1,755,176	Feldmeier	Apr. 22, 1930
1,341,215	Kramer	May 25, 1920
2,089,019	Edwards	Aug. 3, 1937
1,096,497	Epstein	May 12, 1914
1,123,366	Piaggio	Jan. 5, 1915
58,746	Allison	Oct. 16, 1866

FOREIGN PATENTS

Number	Country	Date
850,828	France	Sept. 18, 1939