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STORAGE ISLAND MOTOR FUELER

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3 Sheets-Sheet 2

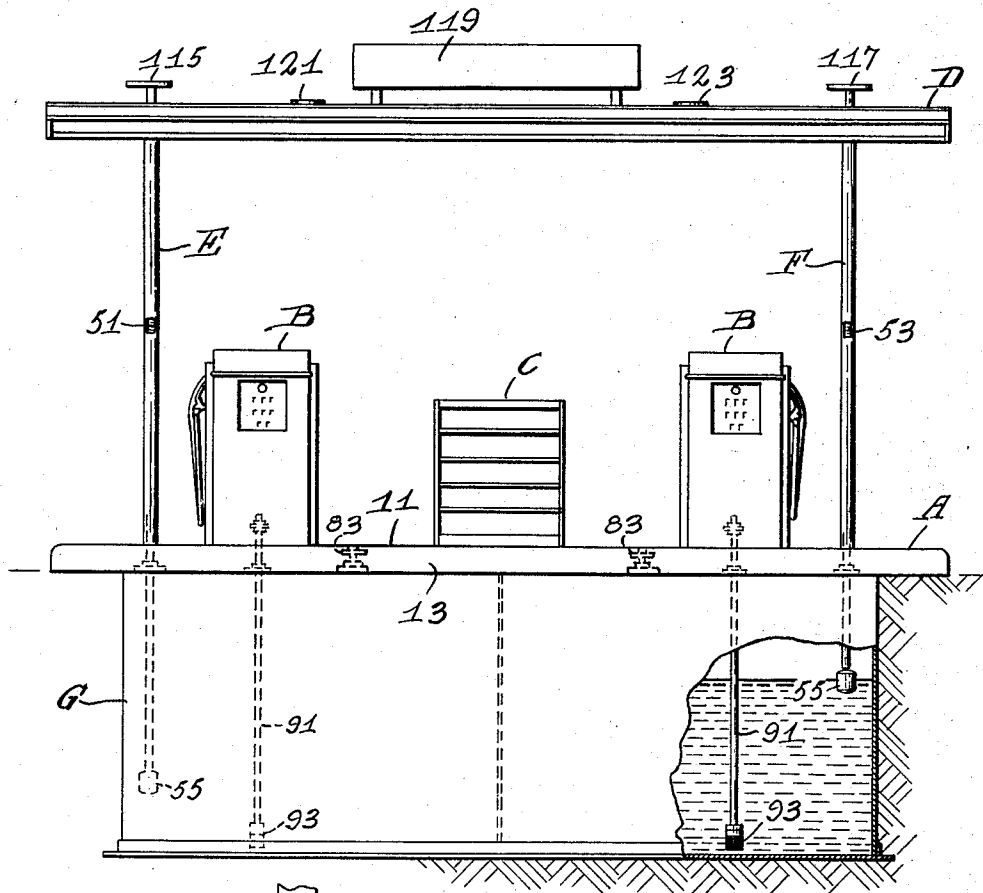


Fig. 4

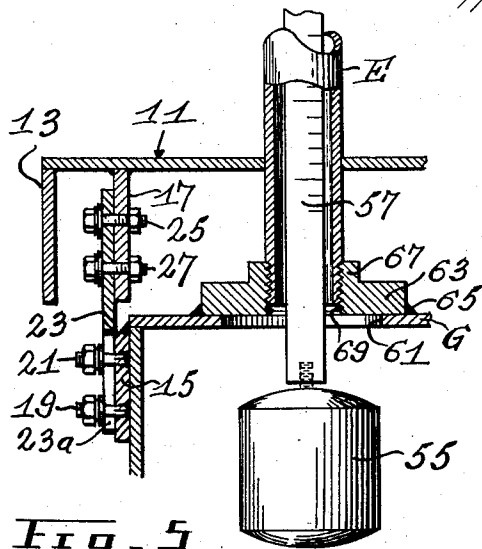


Fig. 5

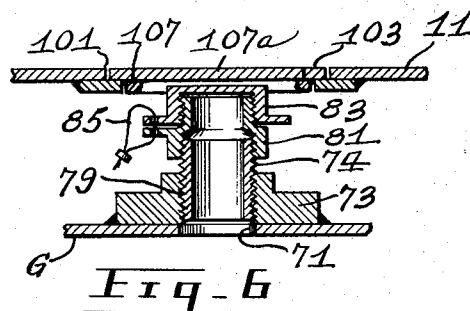


Fig. 6

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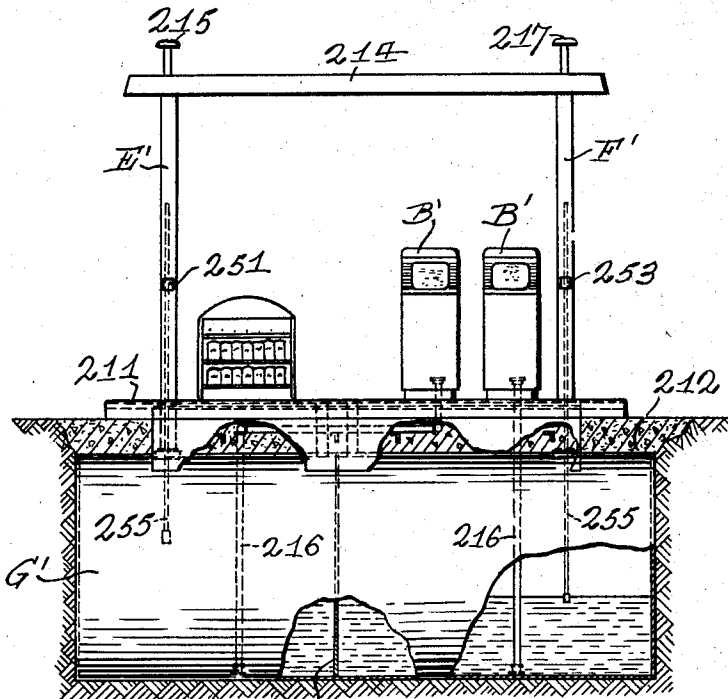
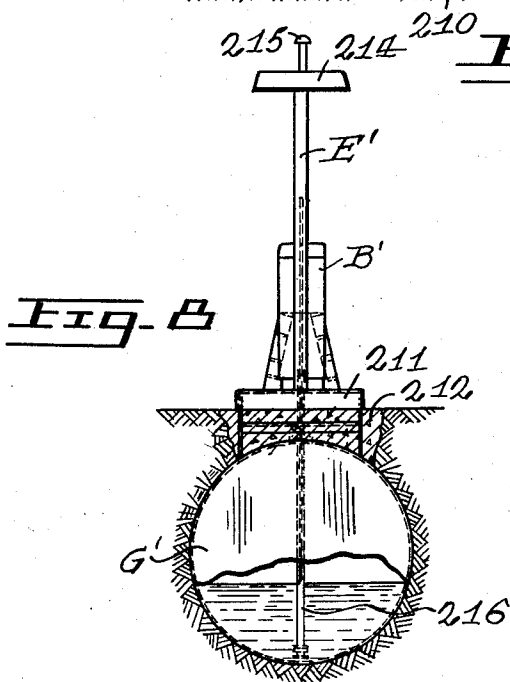
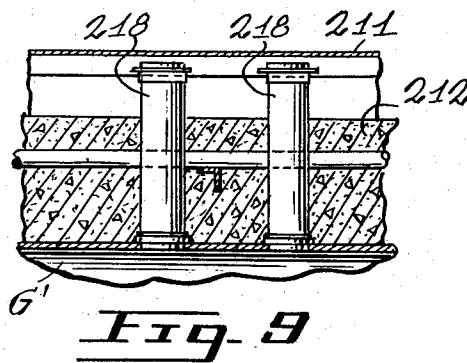
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3 Sheets-Sheet 3



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STORAGE ISLAND MOTOR FUELER

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2 Claims. (Cl. 20—8)

The invention relates to a gas station and more particularly to an arrangement in which the tanks and pumps can be located within the same area.

Today, it is usual to have the gasoline pumps mounted on an island and connected to gasoline tanks arranged at a distance. This is inconvenient and requires elaborate piping arrangements and has other disadvantages.

Applicants' development

The applicants have now developed a gasoline station in which the pumps are arranged on an island and the gasoline tanks are conveniently arranged immediately beneath the island in such a manner that the necessary safety factors are embodied and at the same time the convenience achieved of having the apparatus housed within the same area.

Briefly, therefore, the applicants' invention is embodied in a gasoline dispensing apparatus having the following features. A metal gasoline tank, preferably divided into a plurality of compartments is imbedded in the ground on the gas station lot. In a preferred construction, a shielding layer of cement is poured on top of the tank. A sheet metal platform providing the island is mounted for vertical adjustment over the gasoline tank. The gasoline pumping means, preferably a plurality of pumps one for each tank, is mounted on the platform. The platform is arranged so there is an adjustable space between the top of the tank or the cement layer covering the tank and the deck of the platform. This space accommodates filling means. Preferably, the tank includes several separated compartments.

Each pump is connected to a filling pipe which extends into the tank arranged immediately beneath.

Preferably, the island is provided with elongated central opening closed with a main sheet metal cover removable for access to equipment between the platform and the tank. Preferably auxiliary manholes are provided in the main cover having their own manhole covers. These provide access to filling heads without the necessity of removing the main cover.

There are filling and other openings in the top or roof of the tank. These openings are preferably each surrounded by a connecting member having an annular shoulder juxtaposed to the tank roof and welded to it and an upwardly extending collar portion. A cylindrical tapped box runs through the collar and shoulder.

At least one of these members is each connected to the bottom end of a tube which extends upwardly from the top of the tank. The tube is open at the top to provide for venting the tank and carrying away vapour. The tube extends upwardly through an opening in the deck or platform which registers with an opening in the tank. The bottom end of the tube is threaded to engage the bore of the connecting member. Two such tubes preferably extend upwardly well above the platform and preferably support a canopy. Preferably a measuring arrangement is provided in which a measuring stick

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extends upwardly in the tube from a level gauge floating in the tank. A sighting window is provided in the tube for taking readings off the gauge.

Other of the connecting members are provided for a filling arrangement connection. In this arrangement, a short pipe threadably engages the connecting member beneath one of the manholes in the platform cover. And a gasoline filling head is mounted on the top of the pipe.

Having thus generally described the invention, it will now be referred to in more detail by reference to the accompanying drawings, which show preferred constructions and in which:

Figure 1 is a perspective view of a gas station arrangement according to one preferred form of the invention.

Figure 2 is a top plan view of the island of the station shown in Figure 1 with the dispensing pumps and oil-can stand removed.

Figure 3 is a vertical cross-section of the line 3—3 of Figure 2.

Figure 4 is a side elevation partly in section of the gas station shown in Figure 1.

Figure 5 is an enlarged fragmentary vertical cross-section along the line 5—5 of Figure 2 partly in elevation showing the gas level measuring device.

Figure 6 is an enlarged fragmentary vertical cross-section along the line 6—6 of Figure 2.

Figure 7 is a perspective view of a gas station arrangement according to a further preferred form of the invention.

Figure 8 is a side elevation partially in section of the gas station shown in Figure 7.

Figure 9 is an enlarged fragmentary cross sectional view showing the gas filling pipe arrangement passing through the concrete layer.

General arrangement

Referring more particularly to Figures 1 and 2 of the drawings, A is the gasoline island on which is mounted a pair of gasoline pumps B and an oil-can rack C.

A canopy D is supported over the island by standards E and F.

G is a rectangular gas tank divided by wall into separate compartments.

The island A is preferably made up of a steel platform 11 having downwardly extending side flange or skirt 13, which extends the whole way round the platform. This platform is supported on top of the tank G in a special way, as will be described.

Welded to the side wall of the tank G are plates 15. Extending outwardly from the bottom of the platform 11 are flanges 17. The plates 15 are provided with outwardly extending bolts 19 and 21. Plates 23 are bolted to the flange members 17 by bolts 25 and 27. The ends of the plates 23 are provided with vertically extending slots 23A which accommodate the bolts 19 and 21 in such a manner that the plate 23 can be slid up and down adjacent to the plate 15 when the bolts 19 and 21 are loose. By tightening the bolts 25 and 27, 19 and 21, the plate 23 is secured to the flange 17 and the plate 15 respectively so holding the deck 11 on top of the tank G.

Canopy

The supports E and F are preferably metal tubes adapted to enclose level gauges for gasoline in the respective parts of the tank. The tube E is provided with a sighting window 51 and the tube F with a sighting window 53. A level gauge having a float 55 and a measuring stick 57 connected to it is provided for the left hand tank. The level stick extends upwardly from the left hand compartment of the tank in the tube E

with the float 55 in the gasoline the level stick is visible through the window 51 and the level of the gasoline can readily be ascertained. A similar arrangement is provided for the right hand tank.

The manner of mounting of the tube E on top of the tank is as follows. The top of the tank is provided with an opening 61. Welded to the top of the tank about the opening is a "nut" member 63 which has a shoulder portion engaging the top of the tank and welded thereto at 65 and an upwardly extending collar portion 67. The member 63 is provided with a central opening 69 which registers with the opening 61. The opening 69 is tapped. The end of the tube is screw threaded, and threadably engages the tapped opening 69.

The tube F is mounted on the right hand side of the tank in a similar manner.

The top of the tank carries service equipment essential to dispensing gasoline. This includes a gasoline filling arrangement. The top of the tank is provided with an opening 71 about which there is mounted a "nut" member 73 similar to the member 63. The threaded tube 74 engages the internally threaded opening 79 in the member 73. A crown member 81 threadably engages the top of the threaded tube 74. A cap member 83 threadably engages the crown member. The crown 83 is sealed to the cap member 81 by a sealing wire 85 which passes through registering openings in these members.

Each side of the tank has a filling tube 91 which extends outwards from the adjacent pump to near the bottom of the tank where it ends in a strainer 93. The pumping arrangement is conventional, each pump having a pumping connection with the member 91 so that gasoline may be pumped from the tank into the pump.

Deck

The deck or platform 11 is provided with an elongated opening 101 which runs the major part of the length of the platform 11. This opening is provided with a cover 103 which rests on supporting strips 105 welded to the under side of the platform 11 and extending inward at the edges of the opening 101.

Manholes 107 and 109 having covers 107A and 109A are provided for access to the filling heads.

Pumps B are arranged on the platform overlying the cover 103. An oil-can stand is shown arranged centrally on the platform 11 and partly overlying cover 103.

Preferably, the tubes E and F are open at the top to provide vents from their respective halves of the tank. The open ends of the tubes E and F are covered by caps 115 and 117 respectively. Preferably, a sign 119 is mounted on the canopy.

Spotlights may be arranged as at 121 and 123.

The arrangement shown in Figures 7 through 9 is generally similar to that previously described with the exception that the tank G' is cylindrical in formation and is placed lower in the ground relative to the deck 211. A substantial filling or layer of concrete 212 is poured over the top of the tank G'.

The general arrangement of the deck 211 and the canopy 214 is similar to that previously described. The tank G' is separated by a wall 210 into two separate compartments and filling tubes 216 extend from each of the compartments to pumps B' as previously described. The provision of strainers and pumping equipment is similar to that described in connection with the construction shown in Figures 1 through 6.

The deck includes man-holes for access to the tank filling assemblies 218 which in this construction extends from the upper portions of the tank through the concrete layer 212 to a position below the deck 211. The tubes E', F' are of a similar construction as those described in the first arrangement with the open ends covered by caps 215 and 217 respectively.

The tubes E', F' also enclose level gauges for gasoline in the respective compartments of the tank G'. The tube E' is provided with a sighting window 251 and the tube F' is provided with a sighting window 253. Float and stick arrangements 255 are also provided as previously described to provide a visual indication as to the level of the gasoline contained in the respective compartments of the tank G'.

We claim:

1. In a device of the type described a gasoline tank imbedded in the ground and having a roof substantially at ground level, a platform forming an island and having a deck overlying the roof of the tank and spaced therefrom, and a skirt extending downwardly therefrom, means mounting said platform for vertical adjustment relative to the roof of the tank the roof having a pair of openings, tubular supporting members mounted on the roof and having a connection with said openings, said tubular supporting members extending upwardly to points remote from the deck, a canopy mounted on the tubular supporting members as a roof to the deck, and a gasoline pump mounted on the deck.

2. A device as defined in claim 1 in which said connection includes an annular support member having a shoulder connected to said roof surrounding said opening and a collar extending from the shoulder, the support member having a central tapped opening adapted to receive the threaded end of one of the tubular supporting members.

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