

Jan. 30, 1940.

J. R. HOLICER

2,188,597

BUTANE TANK

Filed May 24, 1937

2 Sheets-Sheet 1

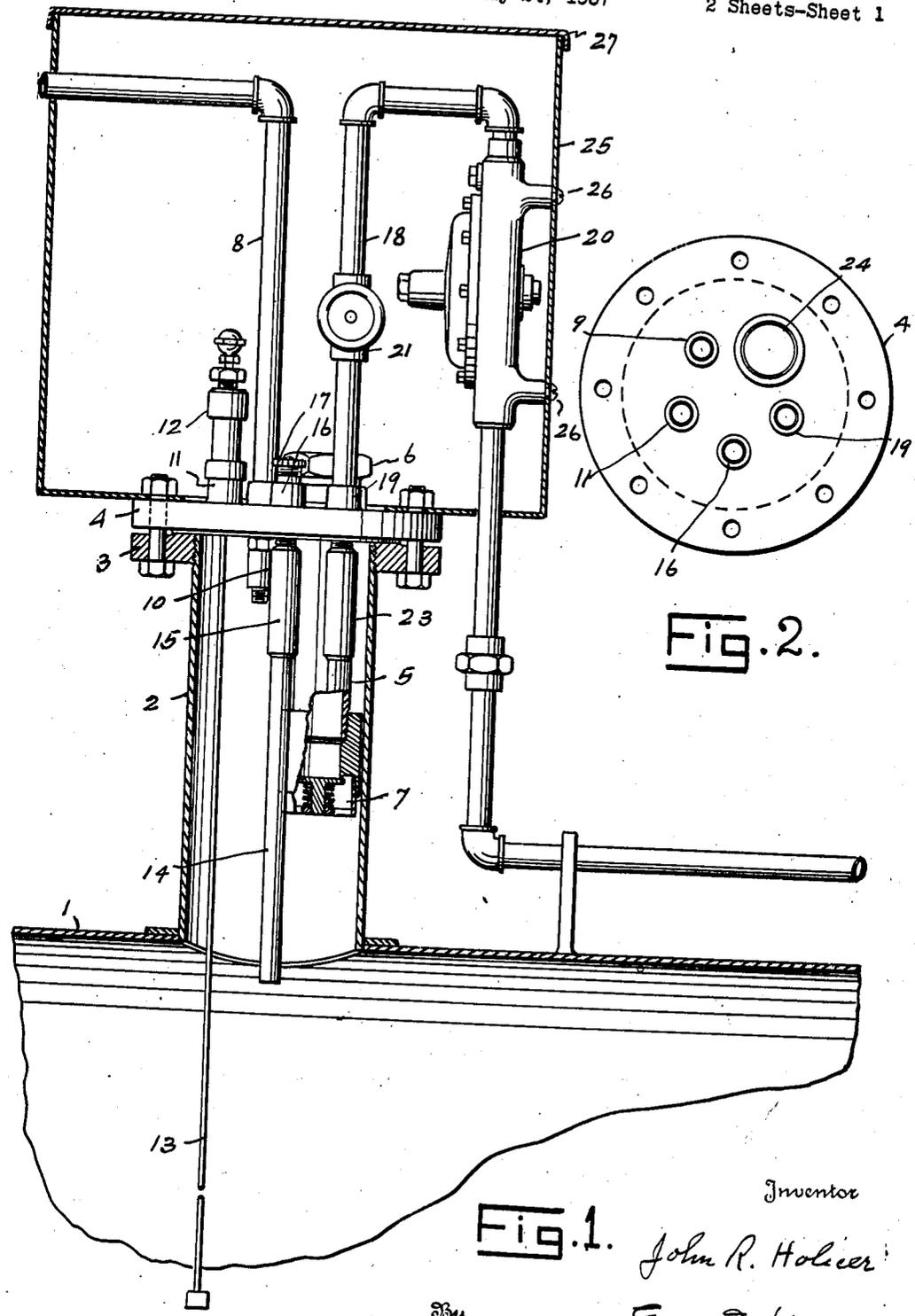


Fig. 2.

Fig. 1.

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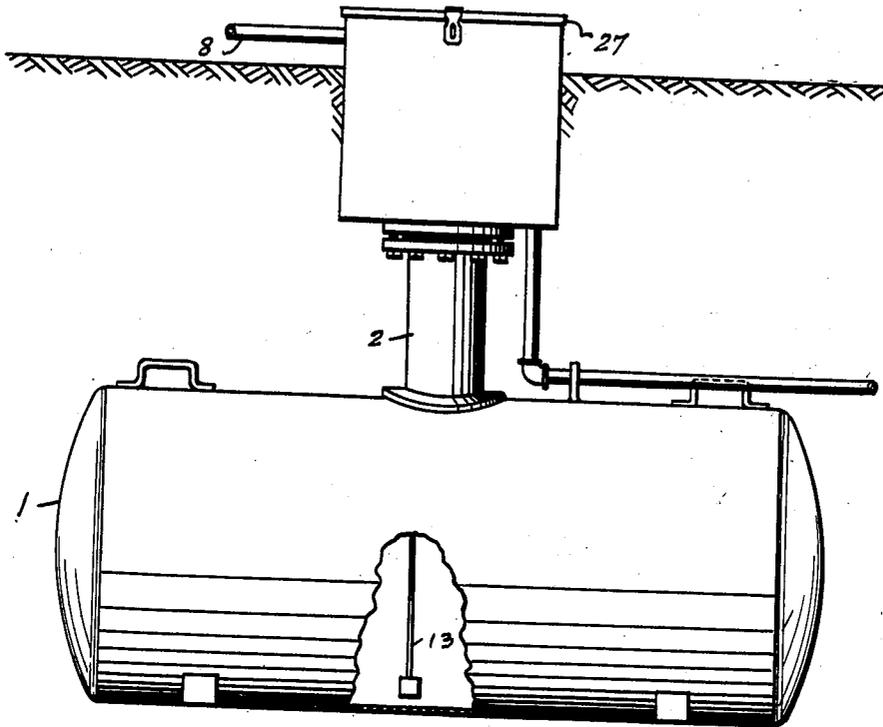


Fig. 6.

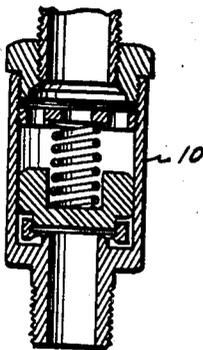


Fig. 3.

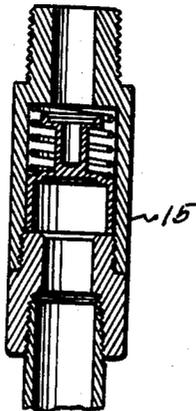


Fig. 4.

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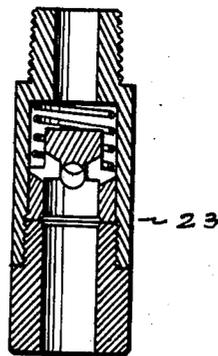


Fig. 5.

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UNITED STATES PATENT OFFICE

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BUTANE TANK

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Application May 24, 1937, Serial No. 144,455

2 Claims. (Cl. 62—1)

This invention relates to a butane tank.

It is an object of the invention to provide a tank of the character described which is designed to be buried in the ground and which is provided with an upstanding dome having a cover thereon for supporting the pipe and valve assembly and of such construction that the valves controlling the inlet of the liquid into the tank and the outflow of the liquid or gas from the tank will be completely enclosed within the dome so that said valves and connections will not be liable to become broken or injured from outside violence.

It is another object of the invention to provide a tank of the character described wherein the valves and connections referred to may be assembled as a unit with the dome cover and bodily assembled with, or removed from, the dome.

It is another object of the invention to provide an apparatus of the character described wherein the outlet controlling apparatus for the gas is so located that the outflow of the gas will be cut off in case of breakage of the outside connections to the end that the gas will not be permitted to escape and waste.

With the above and other objects in view the invention has particular relation to certain novel features of construction, arrangement of parts and use, an example of which is given in this specification and illustrated in the accompanying drawings, wherein:

Figure 1 shows a fragmentary, side elevation of the apparatus, partly in section.

Figure 2 shows a plan view of the dome cover.

Figure 3 is a sectional view of a safety valve employed.

Figure 4 is a sectional view of an excess flow check valve employed.

Figure 5 shows a sectional view of another type of excess flow check valve, and

Figure 6 shows a side elevation of the complete apparatus as assembled, partly broken away.

Referring now more particularly to the drawings wherein like numerals of references designate the same parts in each of the figures, the numeral 1 designates a tank which is preferably disposed horizontal and underneath the ground surface. This tank is formed of suitable sheet metal and upstanding from it there is the dome 2 to the upper end of which the external flange 3 is secured in any preferred manner. Bolted on to this flange there is the plate-like dome cover 4.

The numeral 5 designates the filler line which is anchored to and depends from the cover 4 and

whose upper end is normally closed by a removable plug 6. Attached to the lower end of the line 5 and enclosed within the dome is the filler valve 7. The numeral 8 designates the relief line which is anchored to the coupling 9 on the cover 4 and whose lower end is controlled by the safety valve 10 which depends from the cover 4 and is enclosed within the dome and which is shown in detail in Figure 3. Upstanding from the coupling 11 on the cover 4 there is a conventional type of slip tube gauge 12 including the gauge rod 13 whereby the level of the liquid in the tank can be readily ascertained.

The numeral 14 designates the excess flow line through which the excess flow, or overflow, delivered to the tank may be returned to the delivery truck. This line 14 is equipped with the excess flow check valve 15 which depends from the coupling 16 on the cover 4. The upper end of the line 14 is normally closed by a plug 17 but is formed for the connection of a return hose thereto. The valve 15 is shown in detail in Figure 4 and is completely enclosed within the dome 2.

The numeral 18 designates the service line leading to the house or to other points of utilization. This service line is connected to the coupling 19 on the cover 4 and has incorporated therein a conventional pressure regulator 20 and is also equipped with the shut off valve 21. On the lower end of the service line and completely enclosed within the dome 2 there is an excess flow check valve 23 shown more in detail in Figure 5.

The couplings 9, 11, 16 and 19, as well as the coupling 24, to which the filler line 5 is connected, are all heavy couplings welded or otherwise securely attached to the cover 4.

The connections on top of the cover 4 are enclosed by means of a suitable hood 25 which is box-like in form and which is preferably composed of sheet metal. It is anchored to the cover 4 by means of the bolts whereby said cover is attached to the flange 3 and the regulator is secured to one side of the hood by means of screws 26. This hood has a cover 27 thereon which completely encloses the same and may be opened for access to the interior of the hood.

It will be noted that the controlling valves whereby the inlet of the liquid is controlled and whereby the outlet of gas from the tank is regulated, are completely enclosed and protected and bodily insertable into and removable from the dome 2 as a unit with the cover 4.

The drawings and description disclose what

is now considered to be a preferred form of the invention by way of illustration only, while the broad principle of the invention will be defined by the appended claims.

5 What I claim is:

1. Apparatus of the character described comprising a tank, a vapor dome upstanding from the tank, a cover detachably secured to the dome, an outlet line and excess flow check valve depending from the cover and spaced substantially above the tank, a control valve and a pressure reducing valve connected to the outlet line on the upper side of the cover, an inlet line and a valve depending from the cover and a hood detachably secured to the dome enclosing said control and pressure reducing valves.

10 2. Apparatus of the character described comprising a tank, an upstanding vapor dome

thereon, a removable cover enclosing the upper end of said dome, equipment comprising an outlet line and excess flow check valve depending from the cover and spaced substantially above the tank, an overflow line and excess flow check valve depending from the cover and extending downwardly a desired distance into the tank, a filler line and valve depending from the cover and extending into the tank, a fluid level gauge extending through the cover, said equipment being removable through the dome with the cover, a control valve and a pressure reducing valve connected to the outlet line on the upper side of the cover, and a hood detachably secured to the dome and protecting the pressure reducing and control valve.

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