March 31, 1942. P. A. ANDERSON 2,278,232

GAS INSTALLATION HOUSING

Filed March 15, 1941

Fig. 1.

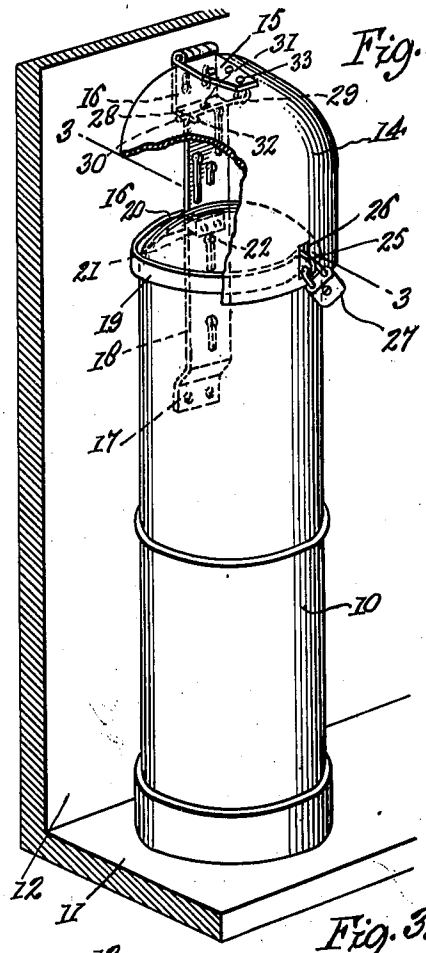


Fig. 2.

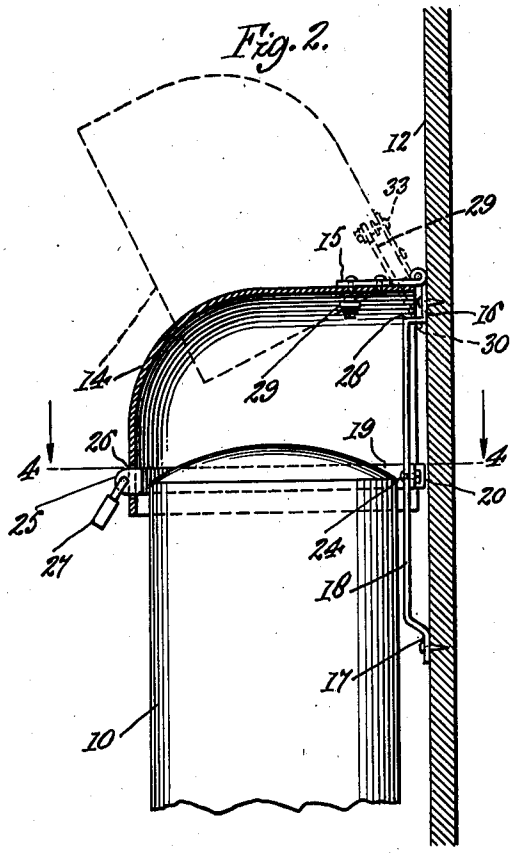


Fig. 3.

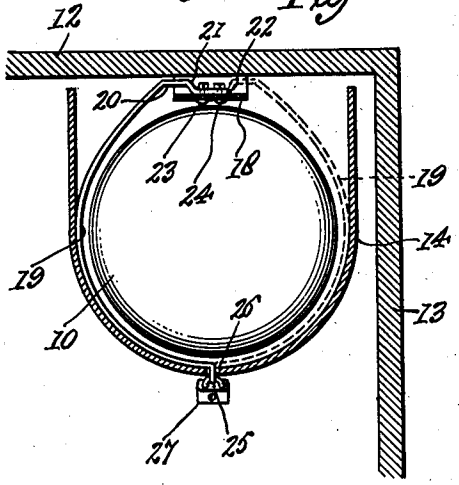
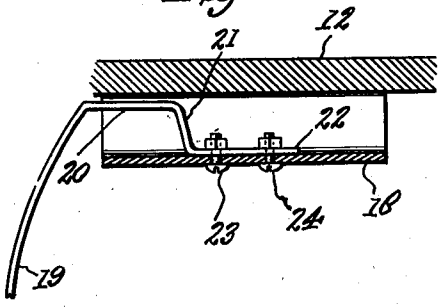


Fig. 4.



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2,278,232

UNITED STATES PATENT OFFICE

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GAS INSTALLATION HOUSING

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Application March 15, 1941, Serial No. 383,635

3 Claims. (Cl. 312—112)

The present invention relates to improvements in Gas installation housings and more particularly refers to certain improvements over my prior Patent No. 2,105,135 granted January 11, 1938.

Whereas said prior patent involved an installation in which two tanks were provided for, certain problems and difficulties are encountered with a single tank and the present invention deals with such problem.

In the one tank installation, the hood must be modified to closely fit over the upper portion of the tank to avoid the insertion of the hand of an unauthorized person who might otherwise gain access to the instruments and controls which it is one function of the hood to protect.

The one tank installation also involves a relative change in position of the single tank with reference to the hood and its backplate and this requires changes in the locking arm by which the hood, in cooperation with the padlock and backplate, is securely held in the lowered position.

Another object of the invention is to provide a locking arm which is detachable and reversible with respect to the backplate of the device so that it may extend about the tank in either selected direction with a view to avoid blocking the removal of an empty tank and the replacement by a full tank where the installation is made in the corner of a building.

With the foregoing and other objects in view, the invention will be more fully described hereinafter and more particularly pointed out in the appended claims, it being understood that only one embodiment of which the invention is susceptible is herein illustrated and described.

In the drawing, in which like or identical reference numerals indicate the same or corresponding parts throughout the several views:

Figure 1 is a perspective view, with parts broken away and parts shown in sections, of an improved gas installation housing constructed in accordance with the present invention.

Figure 2 is a vertical section taken through the same with the hood raised in dotted lines.

Figure 3 is a horizontal section taken on the line 3—3 in Figure 1, and

Figure 4 is a vertical fragmentary section taken on the line 4—4 in Figure 2.

Referring more particularly to the drawing, 10 designates a tank comprising a part of a gas installation with which is associated the usual regulating equipment as indicated in my prior patent aforesaid. The single tank 10 is shown as mounted upon the ground or a pavement 11 near adjacent vertical walls 12 and 13 with the two walls 12 and 13 forming a corner as indicated in Figure 3.

The hood is represented generally at 14. Such hood is open at its bottom to fit down in telescopic close engagement with the upper portion of the tank 10. Such hood 14 is also open at its rear portion where it fits very close to the rear wall 12.

The hood is rounded both horizontally and vertically and, as shown in Figure 3, its rear edges extend straight back close to wall 12 so as to avoid a hand or other instrument being inserted between the wall 12 and the hood 14 in the act of tampering with the valves or other instruments protected by such hood 14. Also the lower edge of the hood extends all around very close to the wall of the tank 10 and affords no space for a hand to enter.

A leaf 15 of a hinge engages and is affixed to the upper central part of the hood 14 and is carried by the upper end portion 16 of the backplate. This portion of the backplate rests directly against the vertical wall 12 to which it is affixed in any appropriate manner. A lower edge portion 17 of the backplate also lies directly against the wall 12 and is affixed thereto in any appropriate manner. In other words, the portions 16 and 17 are approximately in the same plane. Offset forwardly from this plane is the intermediate section 18 of the backplate which affords support for the regulators and other equipment customarily found in connection with gas installation equipment.

The forwardly offset section 18 of the backplate also forms a convenient means to which to attach the locking arm. This locking arm comprises an arcuate portion 19 curved generally in the form of the cylindrical wall of the tank 10 and passing about very close to this wall at the upper portion of the tank 10 and at the lower portion of the hood 14 so that the curved part 19 also serves to block the space between the tank and lower part of hood 14.

At its rear end portion the locking arm 19 is bent from the curved part 19 into a short straight shank 20 lying parallel with wall 12 but preferably spaced slightly therefrom. The shank 20 connects with a neck 21 which is generally radial with respect to the curved arm 19 and extends inwardly away from the wall 12 to an attaching end section 22 of substantial length and area and which receives the bolts or other fastenings 23 and 24 which also pass through the forwardly offset section 18 of the backplate. The end sec-

tion 22 lies within the space circumscribed between the wall 12 and forwardly offset section 18 of the backplate as does also the neck 21 and the shank 20, the shank 20 extending for a short distance outwardly beyond the side confines of such backplate. The fastenings 23 and 24 are preferably two or more in number in order to support the end section 22 and the remaining parts of the locking arm in an adequate manner.

Such locking arm finds virtually no other support except that when the hood 14 is in the down position the projecting lug end 25 of the curved arm 19 finds some support in the wall of the slot 26 of hood 14 through which it projects to receive the padlock 27. The lug 25 is turned outwardly in a radial direction and is positioned to project through the slot 26 when the hood is in the lowered position. The slot 26 will have sufficient vertical elongation with respect to the vertical height of lug 25 to enable the hood 14 to have ample freedom of hinging movement without interference from the locking arm or its lug 25. The lug 25 is perforated for receiving the hasp of the padlock 27.

It should be noted from Figures 3 and 4 that the neck 21 is diagonal to the planes of the members 20 and 22 which are substantially parallel. Also the shank 20, unlike the case of the prior patent, does not extend over to any such part as the wall 12 and, unlike the prior patent, the shank 20 is for a major portion of its length within the lateral confines of the backplate. This enables the curvilinear part 19 of the locking arm to continue its curving sweep following the contour of the tank 10 at the rear part of the device as far as practicable. Moreover, the spacing of shank 20 from wall 12 imparts a freedom from restraint from wall 12 in the act of springing or horizontally shifting movement of the arm which is desirable at times to adjust the lug 25 radially in and out to permit it to escape the bottom edge of the hood 14 and the upper and lower edges of the slot 26. As shown in Figure 2, unlike the prior patent, the outer extremity of lug 25 is rounded or curved in a vertical direction for the purpose of constituting with the lower edge of the hood a cam couple such as that on the descent of the hood, the curved surface of lug 25 may be encountered to cause the metallic arm to move back. This backward movement is permitted by spacing of shank 20 forwardly of wall 12 and also by the fact that the arm 19, unlike the prior patent, is formed in a continuous curved sweep of a substantially uniform radius and such arm is of resilient metal, thus allowing the lug 25 to be pressed in. Such inward movement of the lug causes distortion of the arm 19, without regard to any movement of shank 20. The distortion stores energy in the arm 19 which causes the lug 25 to be projected radially outward through the slot 26 with the horizontal position of the lug 25.

The above action is enhanced by the diagonal bend of the neck 21 which provides greater flexibility than right angles at the points where the neck 21 joins with the attaching end 22 and with the shank 20. By these several means and due to its own formation the curved part 19 of the locking arm is flexible in itself and flexibly and movably suspended in a number of points, all of which contribute to ease in placing the single tank 10 in place and removing the same and in raising and lowering the hood and securing the locking thereof.

In Figure 3, the device is shown as placed in a corner between the wall 12 and 13. If the arm 19 is left in the full line position, when the hood is raised and the tank is to be removed, it cannot be removed in the direction of wall 13 because of that obstruction and it cannot be removed in the opposite direction because of the presence of the arm 19. Therefore, under such conditions the arm has a reversible mounting. By removing the bolts 23 and 24, the arm may be shifted to the right hand position shown in dotted lines in Figure 3, whereupon the bolts 23 and 24 are reinserted in the arm, and the arm will function equally well in this position, the lug 25 having a continuously curved outer edge which presents the same cam surface to the hood in either relatively inverted position thereof.

Such instruments as may be necessary or desirable in connection with the installation may be mounted upon the backplate as shown in the prior patent but such constructions are no part of the present invention and are, therefore, not illustrated.

It will be noted from Figure 3 that the rear portion of the curved arm 19 is carried slightly away from the tank 10 for two purposes; first, to meet the shank 20, and secondly, to extend in the space between wall 12, rear part of hood 14 and tank 10. Figure 2 shows in dotted lines the raised position of the hood. The hood is raised to this position when the padlock 27 is removed for the purpose of gaining access to the valves, regulators and other instruments.

The backplate of the present application may be made in any suitable manner consistent with supporting the hood and the locking arm. The particular type of backplate herein illustrated is more fully disclosed and claimed in my co-pending application entitled "Backplates for gas installation housings," filed March 17, 1941, Serial No. 383,830.

As a part of that backplate a shoulder 28 is formed in close proximity to the upper portion of the hood which carries a pivoted prop 29. The lower free end 30 of such prop is designed to detachably enter a perforation 31 in said shoulder 29. An offset part 32 of the prop adjacent the lower free end 30 rests upon the shoulder 28 and serves to support the hood in the elevated position indicated in dotted lines in Figure 2. This prop 29 is pivoted as indicated at 33 upon the hood to enable it to be swung out of the way of the shoulder when the hood descends to the lower position. For further details of this construction reference is made to my co-pending application aforesaid.

It is obvious that various changes and modifications may be made in the details of construction and design of the above specifically described embodiment of this invention without departing from the spirit thereof, such changes and modifications being restricted only by the scope of the following claims.

What is claimed is:

1. An improved gas installation housing for a single tank comprising a back plate adapted to be secured at its upper and lower portions to a support and having intermediately a forwardly offset portion adapted to be spaced from the support, a hood hinged to the upper portion of the back plate and having a part adapted to extend partly over the tank, and a locking arm comprising a rear attaching end portion lying within and against the rear face of said offset portion of the back plate and attached thereto, a neck connecting with said attaching end by

an obtuse angle, a shank substantially parallel with said attaching end and offset backwardly and to one side thereof and adapted to be spaced from said support, said shank connected to said neck by an obtuse angle, and a curved section of the arm adapted to extend forwardly in a wide sweep about said tank from said shank, and means for interlocking the outer portion of the arm with the hood in the lowered position of said hood.

2. A gas installation housing for a single tank comprising a back plate having upper and lower portions adapted to lie against and be secured to a support and having an intermediate forwardly offset portion adapted to lie in spaced relation to the support, a hood hinged to the upper portion of said back plate and having an open lower portion adapted to partly overlap the tank, said hood having a vertically elongated slot in its forward lower portion, a locking arm comprising a rear attaching end secured to the rear face of the forwardly offset portion of said back plate, a shank offset rearwardly and to one side of said attaching end portion, a neck connecting the adjacent ends of said attaching portion and shank and being diagonal to the planes of both said attaching end portion and said shank, said shank lying for the major portion of its length within the lateral confines of said back plate and being spaced forwardly of said support, an elongated curved section extending forwardly from the outer end of said shank and adapted to extend substantially semi-circularly about the tank, a perforated lug extending radially outward from the free end portion of said curved section, said lug having a vertically curved substantially semi-circular outer edge to form a cam couple with the lower part of said hood, said arm being of resilient material, and a locking device for engaging with said perforated lug to hold the hood locked in lower position.

3. An improved gas installation housing comprising a back plate adapted to be secured to one wall of a corner formed by two walls, a hood hinged to the back plate and adapted to extend partly over a tank of the installation, and a locking arm carried reversibly by the back plate and adapted to extend about the tank and having a forward portion for interlocking with a part of the hood, said locking arm having an attaching end portion extending back of the back plate, a plurality of spaced fastenings for engaging said back plate and said attaching end of the locking arm, said fastenings being removable and replaceable, said attaching end of the arm being insertable and removable into the space back of the back plate from either side of said back plate whereby the arm may extend in either direction about the tank, said hood having a slot in its front lower portion to receive the end of the locking arm, said end of the locking arm being rounded to form a cam couple with the lower front portion of said hood.

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