Sept. 6, 1938. W. L. HAUCK 2,129,495

CONTROL EQUIPMENT STORAGE CABINET

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Fig. 1

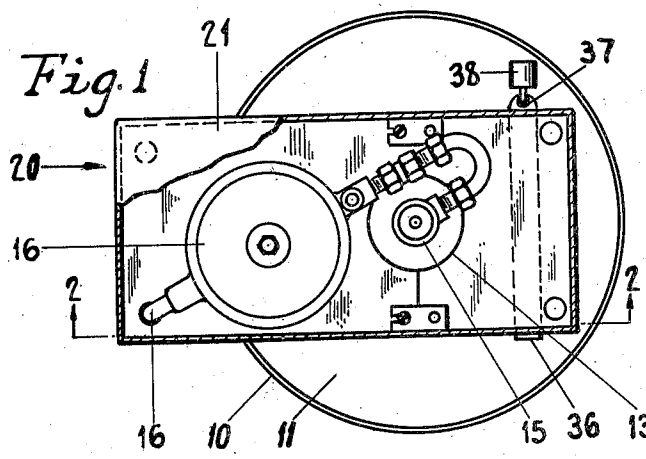
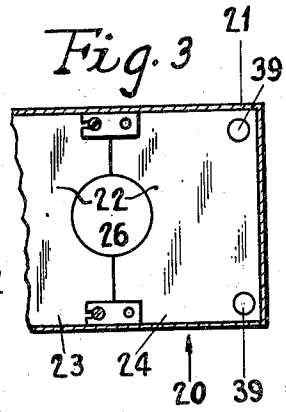


Fig. 3



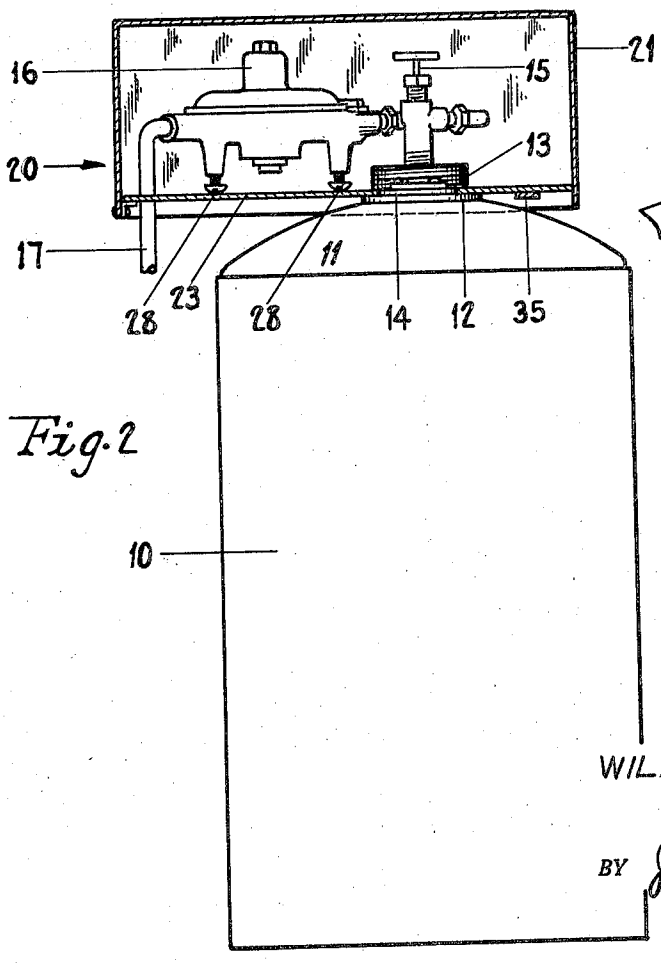


Fig. 2

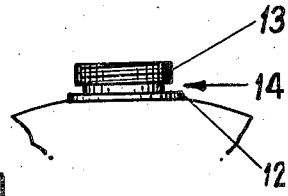


Fig. 4

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CONTROL EQUIPMENT STORAGE CABINET

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Fig. 5

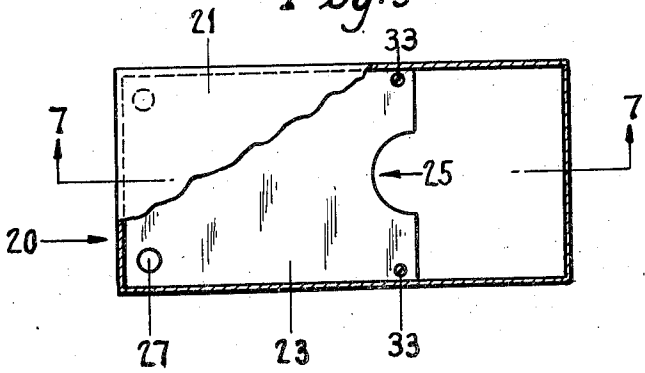
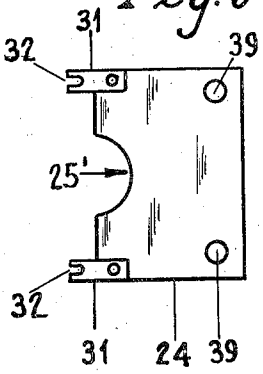


Fig. 6



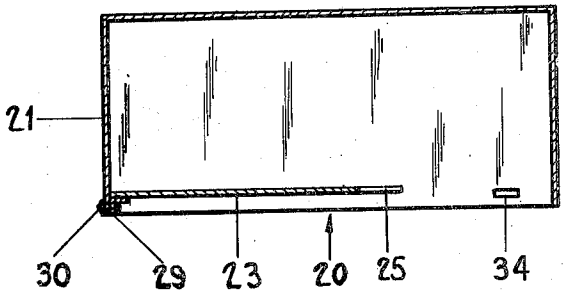


Fig. 7

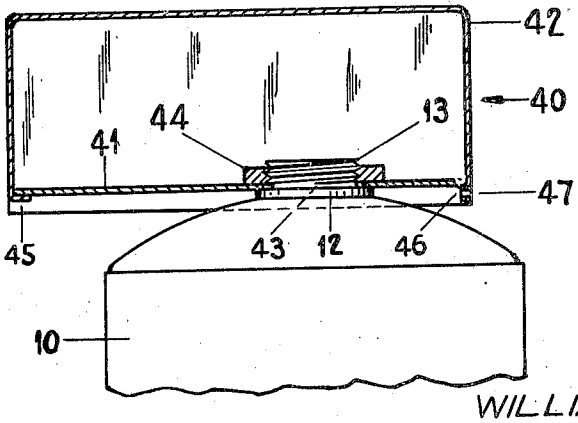


Fig. 8

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CONTROL EQUIPMENT STORAGE CABINET

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Fig. 9

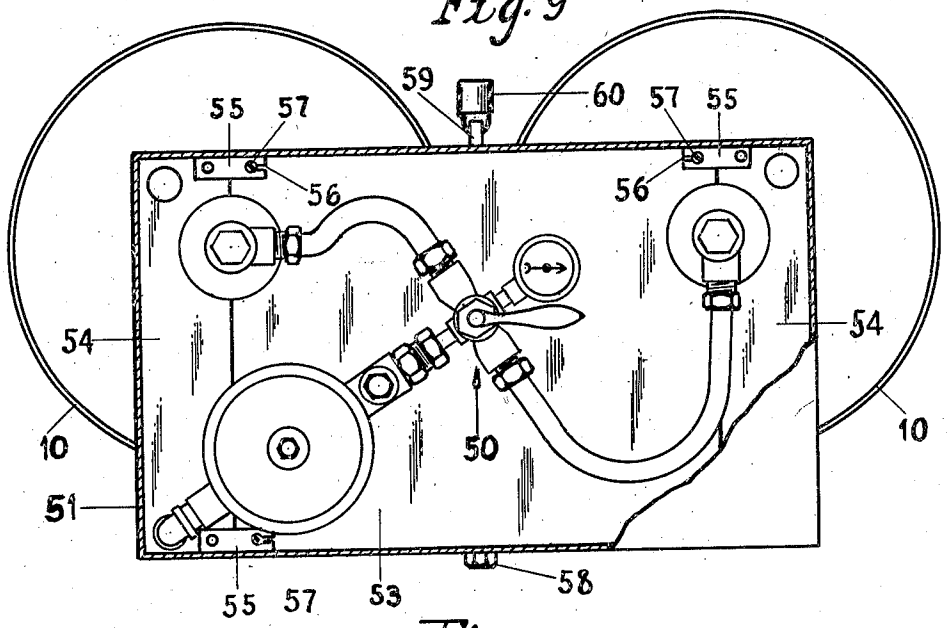
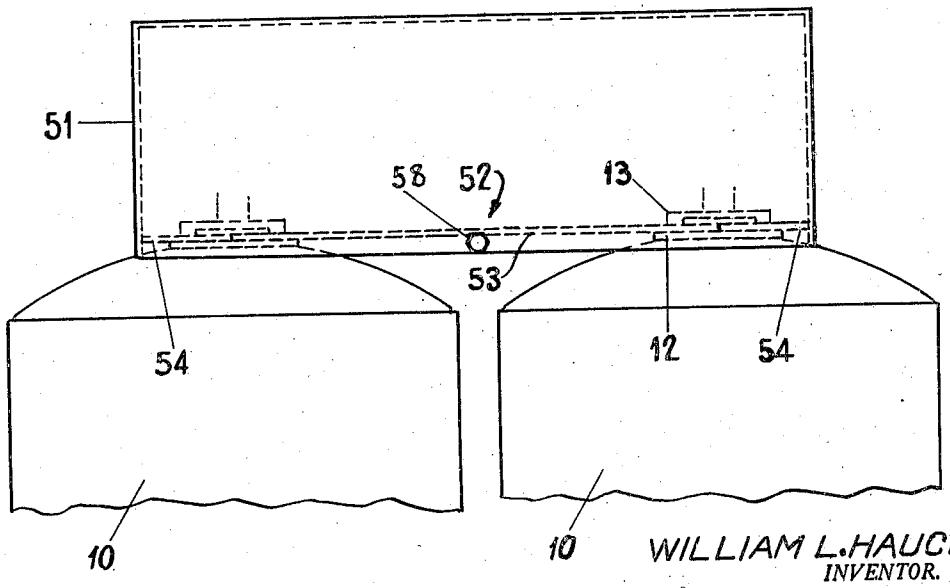


Fig. 10



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CONTROL EQUIPMENT STORAGE CABINET

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Fig. 11

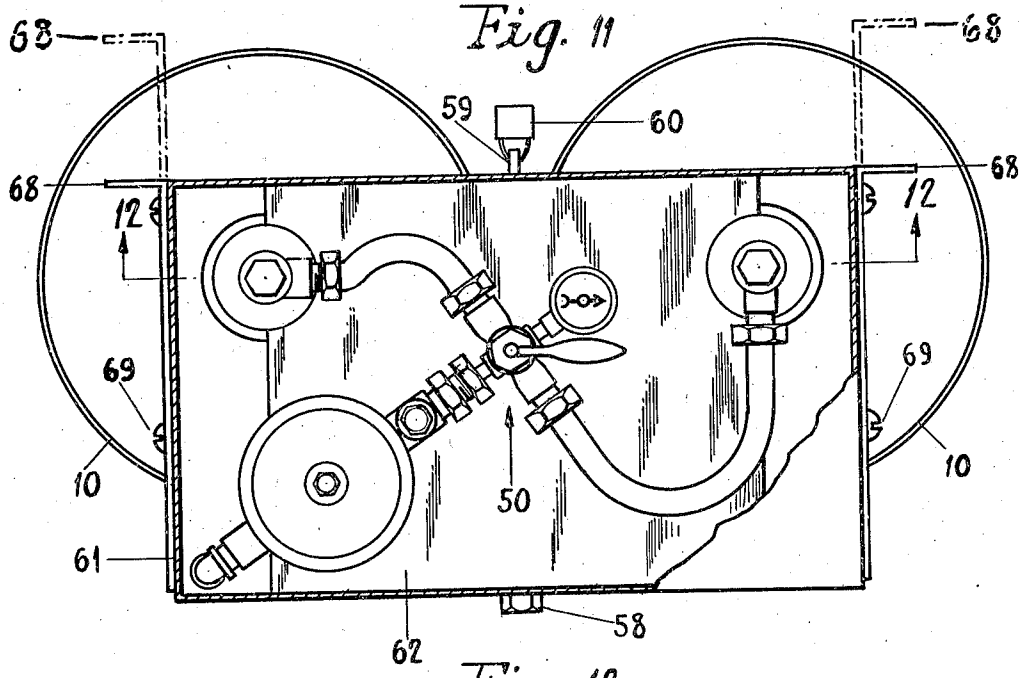


Fig. 12

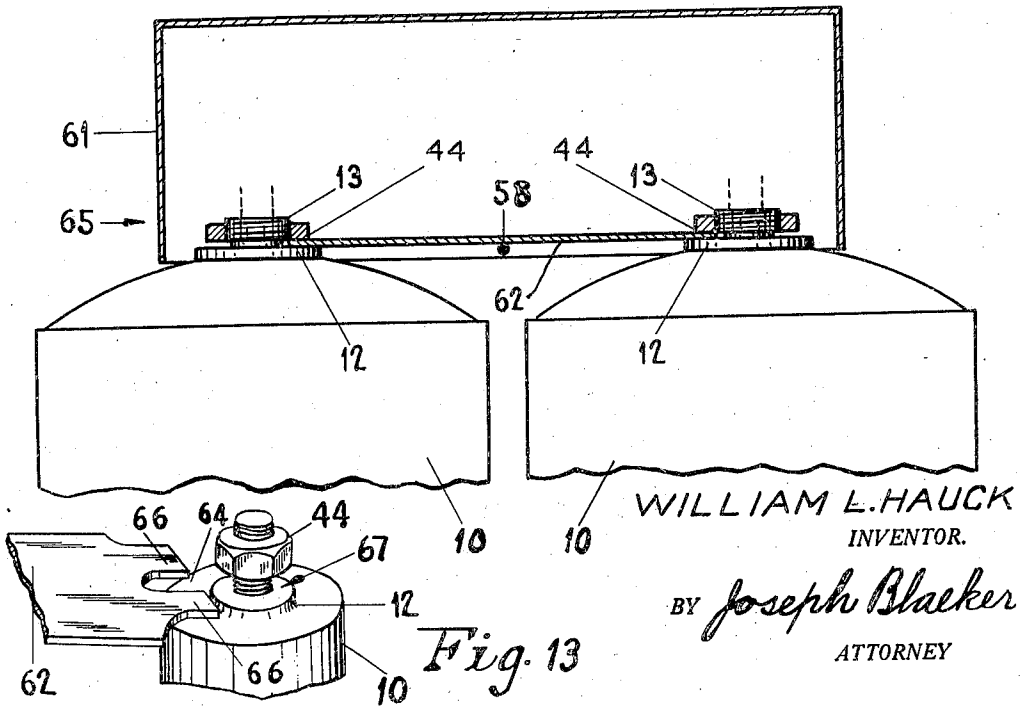


Fig. 13

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Patented Sept. 6, 1938

2,129,495

UNITED STATES PATENT OFFICE

2,129,495

CONTROL EQUIPMENT STORAGE CABINET

William L. Hauck, Breton Woods,
Osbornsville, N. J.

Application September 18, 1937, Serial No. 164,547

6 Claims. (Cl. 221—73.5)

This invention relates to improvements in cabinets used for supporting control equipment on liquefied gas tanks, and an object of this invention is to provide a cabinet which may be secured to the upper portion of an upright tank so as to support and enclose the control devices connected in superposed and overhanging relation on the tank.

Another object of this invention is to provide a cabinet for upright liquefied gas tanks having a control equipment carrying boss projecting from its upper wall and having recess means in said boss, and the said cabinet having means for interlocking engagement with said recess means.

Another object of this invention is to provide a metallic cabinet for the protection of overhanging control equipment, the said cabinet having a detachable base plate upon which the cabinet is supported and upon which the regulating valve is supported.

Another object of this invention is to provide a metallic cabinet which protects as well as supports the control devices without the necessity of fastening the cabinet to the walls of a building while in service.

Another object of this invention is to provide a cabinet for enclosing control equipment on liquefied gas tanks in protecting relation, comprising an integral top and side wall member detachable from a bottom member, the said bottom member having an aperature, and means for securing the bottom in interlocking engagement with a projecting member at the upper wall of the tank.

This application is a continuation in part of my application for patent for Control equipment storage cabinet, Serial No. 120,132, filed January 11, 1937.

With the above and other objects in view, the invention will be hereinafter more particularly described in connection with the accompanying drawings and pointed out in the claims which form part of this specification.

Reference will now be had to the drawings, wherein like numerals of reference designate corresponding parts throughout the several views, in which:

Figure 1 is a top plan view of a liquefied gas tank with the cabinet partly broken away to show the control equipment housed therein.

Figure 2 is a side elevation of a gas tank and control equipment installation, the cabinet being shown in section.

Figure 3 is a fragmentary sectional view of the cabinet showing an aperture in the base of the cabinet and the base being split centrally of said aperture.

Figure 4 is a fragmentary view of the upper portion of a liquefied gas tank showing a flange and a boss in spaced relation from the flange so as to form an annular recess therebetween.

Figure 5 is a top plan view of the cabinet, partly broken away to show only one of the base members therein.

Figure 6 is a plan view of one of the base members removed from the cabinet.

Figure 7 is a vertical cross-sectional view of the cabinet, the section being taken as on line 7—7 in Figure 6.

Figure 8 is a side elevation of a modified cabinet secured to the gas tank shown in Figure 2 in a modified manner.

Figure 9 is a plan view of a control equipment storage cabinet installed on two tanks designed for a two-tank installation.

Figure 10 is a vertical elevation of the two-tank installation shown in Figure 9, and showing only the upper portions of the tanks.

Figure 11 is a plan view of a modified control equipment supporting and storage cabinet mounted on a two-tank installation.

Figure 12 is a vertical elevation, partly in section, of the installation shown in Figure 11.

Figure 13 is a fragmentary perspective view, showing a bifurcated cabinet base-plate in position for interlocking engagement between the flange and the threaded nut on a gas tank.

In the illustrated embodiment of the invention, shown in Figures 1 to 7, inclusive, the numeral 10 indicates an upright tank for liquefied gas. At the upper wall 11 of the tank 10 is a flange 12. A threaded boss 13, preferably of circular form and having a reduced lower portion of circular form, has been secured to the tank 10 in spaced relation from the flange 12 so as to provide an annular recess 14 between the threaded portion of the boss and the flange. A valve 15 having a threaded lower end has been screwed into the boss 13 and is connected to a gas regulator 16 having an outlet pipe 17. The valve and regulator represent any type of control devices usually secured in superposed relation on tanks containing liquefied petroleum gas.

As best shown in Figures 5 to 7, inclusive, the cabinet 20 comprises an integral top and side wall member 21 which circumscribes a two-piece bottom member 22 shown in assembled relation in Figures 1 to 3, inclusive. The member 22 consists of one piece 23 which is attached to the tank 10 and another piece 24 which is removable from

assembled relation with the piece 23, as best shown in Figure 6.

Each of the bottom pieces 23 and 24 has a semi-circular opening 25, 25' which jointly form a circular aperture 26 of smaller extent than the outer circumference of the boss 13. The walls defining the aperture 26 are designed to closely circumscribe the annular recess formed between the threaded portion of the boss 13 and the flange 12 of the tank 10.

The bottom piece 23 has an aperture 27 allowing passage therethrough of the outlet pipe 17. It is to be noted that the height of the annular recess 14 corresponds to the thickness of the base pieces or metal plates 23 and 24 and that when the metal plate 23 enters into interlocking engagement with the boss 13 it is so securely held by the boss that it is fully adapted to support the gas regulator 16, and screws 28 have been provided at the lower surface of the regulator for contacting the plate 23 and transmitting the load of the regulator to said plate.

As best shown in Figure 7, the lower end of one side wall of the cabinet 20 has an angle iron 29 secured thereto such as by rivets 30 and forms an angular extension adapted to engage the lower face of one end of the plate 23. The cabinet 20 is preferably of rectangular cross-section and the side walls of the cabinet extend a distance below the plate 23. As shown in Figure 2, the side walls extend below the plate 23 a distance sufficient to cause the bottom edges of the cabinet to rest on top of the tank 10.

The plate 24 has secured thereto two arms 31 having slotted ends 32 adapted to engage screws 33 in the plate 23. The arms 31 assist in alining the plates when the plate 24 is inserted into the member 21. Slots 34 in opposite side walls of the member 21 and below the level of the base permit passage therethrough of a bar 35. The bar 35 has a head offset 36 at one end and an aperture 37 at the opposite end through which is passed the shackle of a padlock 38.

The bar 35 and the padlock 38 serve as a means for detachably securing the base section 24. This form of securing mechanism may be taken as representing any suitable means for performing the same function. A suitable number of vent holes 39 are provided to permit gas in the cabinet to escape.

Figure 8 shows a modified cabinet 40 having a one-piece base-plate member 41 and a detachable integral top and side wall member 42. The base-plate 41 has an aperture 43 sufficiently large so that it can be placed over the boss 13 and a threaded nut 44 is screwed down on the boss thread for securely fastening the base-plate to the tank 10.

The top and side wall member 42 may have the lower end of one of its walls bent to form an angular extension 45 adapted to engage the lower face of the base-plate member 41. The member 41 may be downwardly bent at the opposite end 46 and have an aperture 47 therethrough in alinement with an aperture in the member 42 for a lock (not shown).

Figure 9 shows a two-tank or two-drum installation showing a typical set of overhanging control equipment 50 which is protected and supported by a cabinet 51 having a three-piece base-plate 52 comprising a mid-portion 53 and end portions 54, 54. The side walls of the cabinet 51 extend below the base-plate. The end plates 54 have secured thereto arms 55 having slotted ends 56 adapted to engage screws 57 in the plate 53 and serve to aline the base-plate portions. A bolt 58 passing through apertures in the side walls of the cabinet 51, below the surface of the plate 53 has an aperture at the free end 59, through which is passed the shackle of a padlock 60.

In the two-tank system, when the gas in one of the tanks 10 is utilized, the customer manipulates the valves in the cabinet and brings into use the second filled tank 10. To remove the empty tank, he unlocks the padlock 60 and removes the bolt 58 and the cabinet 51 from the baseplate 52. He then detaches the end plate 54 on the empty tank and removes the empty tank without disturbing the full tank or the overhanging control devices. which remain supported by the plate 53 on the full tank.

Figure 11 shows a two-tank or two-drum installation having a set of overhanging control equipment 50 which is supported and protected by a cabinet 65 having an integral top and side wall member 61 and a detachable one-piece base-plate 62. The side walls of the top member 61 circumscribe and extend below the base-plate. A bolt 58 passing through apertures in the side walls of the top member 61, below the surface of the base-plate 62 has an aperture at the free end 59 through which is passed the shackle of a padlock 60. The base-plate 62 has an aperture 64 at each end, sufficiently large to receive the threaded portion of the boss 13 and a threaded nut 44 screwed down on the boss thread serves to fasten the base-plate 62 to the tank 10. When the base-plate is secured on both tanks 10, by the nuts 44, it becomes adapted to fully support the overhanging control equipment which, as best shown in Figure 2, has screws at its lower elevation. The screws are adjusted to contact the base-plate and cause the control equipment to rest thereon.

As shown in perspective in Figure 13, the opening 64 in the base-plate 62 may form a bifurcation and extending arms 66 which may enter into interlocking engagement in an annular recess 67 formed between the threaded nut 44 and the flange 12 of a tank 10.

As shown in Figure 11, brackets 68 having elongated slots lengthwise thereof (not shown) may be slidably fastened on screws 69 to the side walls of the top member 61. The brackets 68 may be extended outward, as shown in dot-and-dash lines and secured to a building wall so that when the tanks are empty and have to be removed, the top and side wall member 61 of the cabinet 65 will remain temporarily supported by the building wall.

As shown in the drawings, the regulator is in overhanging relation with the gas tank and is not supported directly by the tank.

It will thus be seen that I have provided a number of embodiments of a cabinet which protects the control devices from rain and snow, which prevents unauthorized persons from tampering with the said devices, and that the cabinet utilizes the tank itself as its sole support and the weight of the overhanging control devices is carried by the base of the cabinet and indirectly by the tank without any support whatever from an upright, such as a wall of a building, etc., to which the gas is supplied.

In accordance with the patent statutes I have described and illustrated a number of embodiments of my invention, but it will be understood that various changes and modifications can be made therein without departing from the spirit

of the invention as defined by the appended claims.

I claim:

1. A cabinet of the character described for supporting and enclosing gas tank control equipment in protecting relation, comprising an integral top and side wall member and a horizontally positioned detachable bottom, said bottom having an opening forming a bifurcation adapted for receiving a horizontally recessed boss of a gas tank in interlocking relation, said side walls circumscribing and extending below said bottom, the lower end of one side wall having an extension adapted to engage said bottom and means for locking said bottom to said top member of said cabinet.

2. A cabinet of the character described for supporting and enclosing gas tank control equipment in protecting relation, comprising an integral top and side wall member and a detachable bottom, said bottom having an opening forming a bifurcation adapted for receiving a recessed boss of a gas tank in interlocking relation, said side walls circumscribing and extending below said bottom, the lower end of one side wall having an extension adapted to engage the lower face of said bottom and means for locking said bottom to said top member of said cabinet.

3. A cabinet of the character described for supporting and enclosing gas tank control equipment in protecting relation, comprising an integral top and side wall member and a detachable bottom, said bottom having openings forming bifurcations adapted for receiving recessed bosses of gas tanks in interlocking relation, said side walls circumscribing and extending below said bottom, the lower end of one side wall having an extension adapted to engage the lower face of said bottom, and means for locking said bottom to said top member of said cabinet.

4. A cabinet of the character described for supporting and enclosing gas tank control equipment in protecting relation, comprising an integral top and side wall member and a horizontally positioned detachable bottom, said bottom having an opening forming a bifurcation adapted for receiving a horizontally recessed boss of a gas tank in interlocking relation, said side walls circumscribing and extending below said bottom, and means for locking said bottom to said top member of said cabinet.

5. In a mechanism of the class described, the combination with a gas tank having projecting means at one end providing an annular recess and having gas control equipment mounted in overhanging relation with said means, a cabinet for supporting and enclosing said equipment in protecting relation, said cabinet comprising an integral top and side wall member and a detachable bottom, said bottom having an opening forming a bifurcation adapted for receiving said annular recessed means in interlocking relation, and means for locking said bottom to said top member of said cabinet.

6. A cabinet of the character described for supporting and enclosing gas tank control equipment in protecting relation, comprising a hollow top member and a detachable bottom, said bottom having openings forming bifurcations adapted for receiving recessed bosses of gas tanks in interlocking relation, and means for locking said bottom to said top member of said cabinet.

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