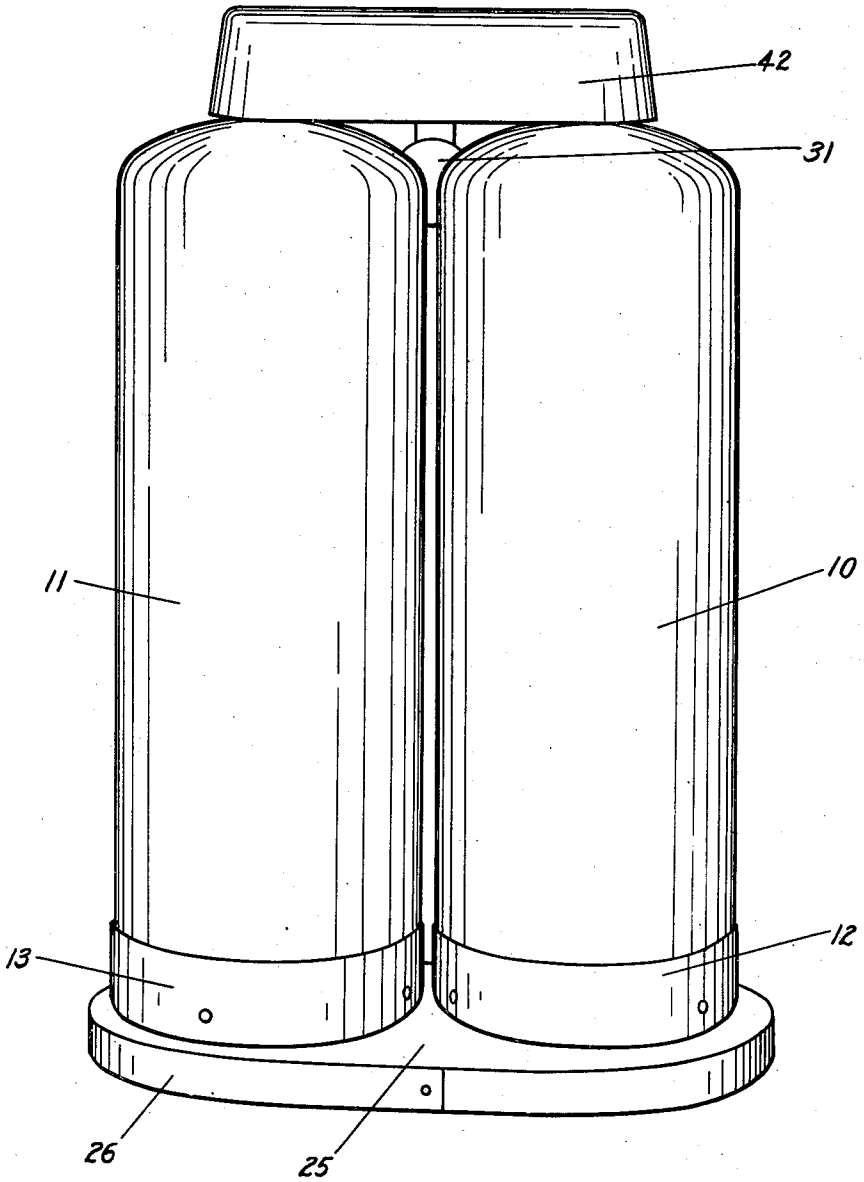
Sept. 2, 1941. I. L. TUCKER 2,254,954

HOUSING AND SUPPORT FOR GAS CYLINDERS

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Fig. 1



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Fig. 2

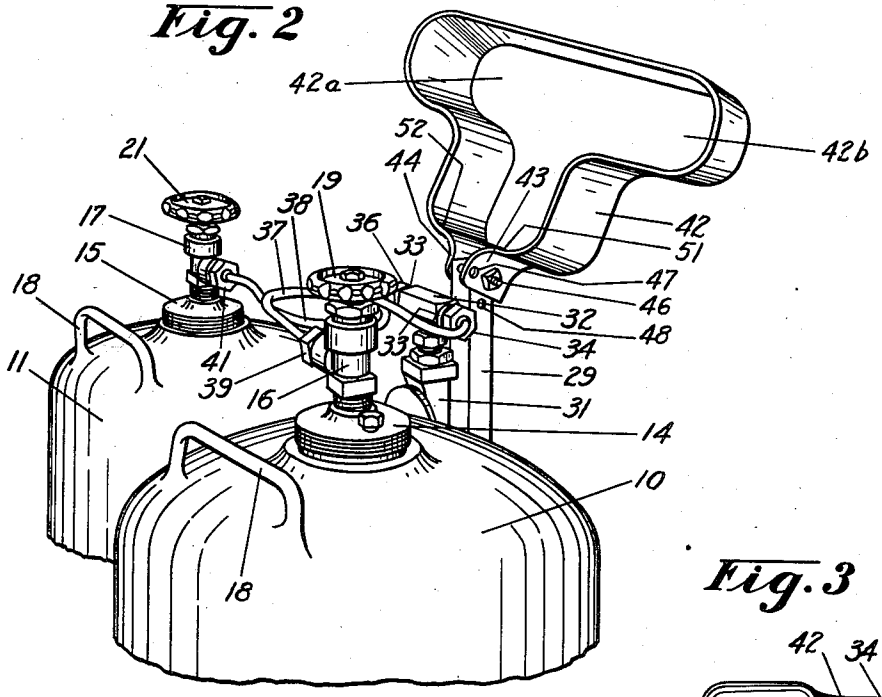


Fig. 3

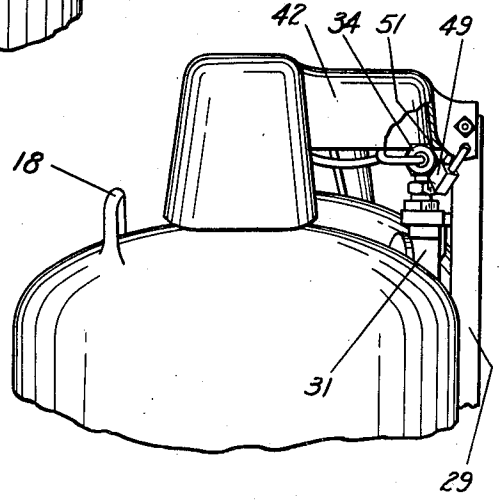
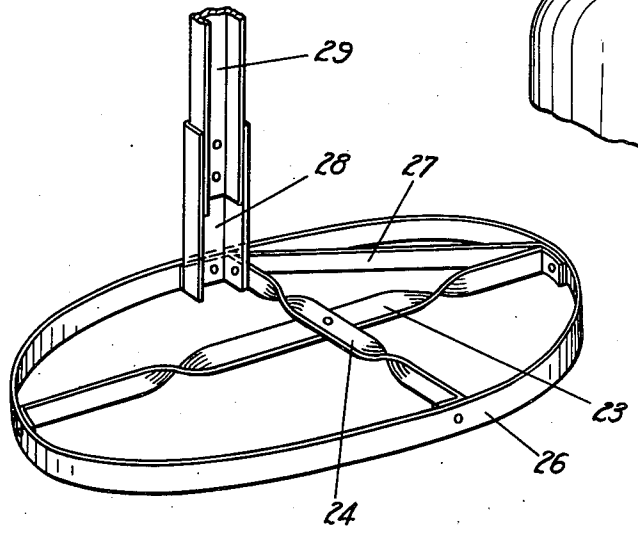


Fig. 4



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UNITED STATES PATENT OFFICE

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HOUSING AND SUPPORT FOR GAS CYLINDERS

Irvin L. Tucker, Cedar Rapids, Iowa, assignor to Rapid Gas Corporation, Cedar Rapids, Iowa, a corporation of Iowa

Application July 24, 1939, Serial No. 286,228

3 Claims. (Cl. 221—73.5)

My invention relates to bottled gas supply systems, and apparatus, and has particular relation to a housing and support for gas cylinders.

In districts where "city gas" or gas distributed from one central distribution point is not available for heating, lighting and the like, "bottled gas" may be used. This gas is a petroleum gas usually supplied in a liquefied state under pressure.

The gas is supplied in cylinders and when pressure on the gas is released, as for instance by means of a valve or the like, the mist of liquefied gas passing through the valve immediately turns to a gas which may be readily burned in stoves and the like. By liquefying the gas under pressure and supplying such liquefied gas in containers, it is possible to store a considerable volume of gas in relatively small containers. These containers are usually cylindrical, steel "bottles" and one or two of these "bottles" are set up outside the user's building. It is usually customary to employ two "bottles" or cylinders at the user's residence and to provide two tubes, one from the upper end of each "bottle" which lead to one common reducer valve and thence by means of a conduit into the house and to the stove or other device which uses the gas.

Valves are supplied at each gas cylinder so that one cylinder may be used until exhausted and then the other opened so that the used cylinder may be removed and replaced with a full cylinder.

The valve, the regulator, and tubing at the "bottles" or cylinders, which constitute the gas supply, are usually unprotected from the elements and from inadvertent or mischievous loosening of the connections of the supply line tubing of the regulator valve and of the cylinder valves by children or other unauthorized persons. Underwriters and others interested in meeting safety requirements are beginning to require that means be provided for preventing tampering or unauthorized handling of the valves and other parts of the fuel supply line.

Since the cylinders are preferably stood on end in use, a good solid foundation or base should be provided on which the cylinders may rest while in use.

It is, therefore, among the objects of my invention to provide a combination base and housing structure for supporting the cylinders and for covering the valve and other parts of the system as well as providing means for mounting the reducer valve, the conduits and the like to support them with relation to the cylinders.

Another object of my invention is to provide a means for locking the various parts to prevent unauthorized or inadvertent loosening or manipulation of the valves, fuel supply line and the like, as well as to provide a cover for protecting these parts from the elements.

Other and further features and objects of the invention will be more apparent to those skilled in the art upon a consideration of the accompanying drawings and following specification, wherein is disclosed a single exemplary embodiment of the invention, with the understanding, however, that such changes may be made therein as fall within the scope of the appended claims, without departing from the spirit of the invention.

In said drawings:

Figure 1 is a view in perspective illustrating a housing and support for gas cylinders constructed in accordance with one embodiment of my invention.

Figure 2 is a view in perspective of the tops of two cylinders, together with the valves and conduits therefor as well as a cover constructed according to one embodiment of my invention.

Figure 3 is a fragmentary view in elevation illustrating how the cover may be locked to prevent unauthorized or inadvertent releasing or manipulating of the valve conduits and connections of the fluid fuel supply line and control system. A portion of the cover has been broken away to show how certain of the nuts of the supply line are locked by the cover, and

Figure 4 is a fragmentary view in perspective showing a base for a combined housing and support for the gas cylinders constructed according to my invention as it appears before the base is filled with cement.

Referring now to the drawings:

A pair of gas cylinders or "bottles" such as are used for storing gas under pressure are indicated at 10 and 11. These cylinders are provided with cylindrical bases 12 and 13 respectively so that they may be stood on end to occupy a minimum of space. Each of these cylinders is provided with a threaded cap, such as illustrated at 14 and 15. Valves 16 and 17 are threaded into these caps. The cylinders are provided with handles 18 to facilitate handling. The valves 16 and 17 are controlled by means of valve handles 19 and 21.

In a preferred form of my housing and support I preferably provide a base reinforcing structure, such as shown in Figure 4. This structure is made up of a pair of twisted cross members 23 and 24 which serve as reinforcing for the cement which is poured into the base, and also as retain-

ers for the oval rim 26. This rim acts as a protective edge for the base as well as a form for the concrete which is poured over and around the cross members to provide a base such as shown in Figure 1.

The cross brace 27 acts as an additional stiffener for the base and as a spacer for spacing the members 23, 24 and 26 in their proper positions. The entire base form may be cheaply and inexpensively constructed and shipped in "knocked down" form to be assembled on the job.

In finishing a base it is of course always desirable to place the form on some flat surface before filling it with concrete. After the cement has set the base may be moved to any desired position. It will be found that the reinforced cement base such as shown at 25 provides an adequate and substantial support upon which the cylinders 10 and 11 may be placed so that no rocking of the cylinders may occur.

A short upright 28 also forms a part of the base form as well as a support for the cover. A long upright 29 preferably of steel channel is provided, and this upright is riveted or bolted to the short upright 28. The long upright 29 affords a support for the reducer valve 31 which is fastened to the inside of the upright and the reducer valve is protected by the sides of the channel member forming the upright. It is usually slightly inclined in accordance with general practice in order that it may operate properly.

A T-shaped fitting 32 is connected to the upper or inlet opening of the regulator 31. This T-shaped connection is provided with threaded nipple portions 33 at the opposite ends thereof to receive nuts 34 and 36. Cylinder supply lines 37 and 38 are connected by means of the lock nuts 34 and 36 to the T-shaped connection 32 in accordance with the usual practice. The other ends of the supply lines 37 and 38 are connected by nuts 39 and 41 to the respective valves 16 and 17.

A cover 42 is provided which is approximately T-shaped in form and has ears 43 and 44 which are pivotally engaged on the outside of the upper end of the upright 29 so that the cover may be pivotally rotated to the up position shown in Figure 2 or the down position shown in Figure 3. The cover is pivotally engaged on the upper end of the upright or standard 29 by means of a bolt 46 and the ear 43 is provided with an opening 47 which is adapted to register with an opening 48 in the standard 29 so that the cover may be locked in the down position as illustrated in Figure 3 by means of a lock 49, the link of which is passed through the registered openings. When the cover is locked in the down position, unauthorized tampering with the valves and conduits etc. of the fuel supply line is prevented.

The ear-like portions 42a and 42b of the cover 42 completely cover the valves 16 and 17 and prevent them from being opened or closed, as well as protecting them from the elements. The cover is so designed that the inner edges 51 and 52 of the enlarged portion of the cover strike the nuts 34 and 36 so that they cannot be rotated while the cover is down.

The cover thus not only protects the valves, the tubing, the T connection, and the regulator from the elements, but may be locked in place to prevent unauthorized or unintentional opening or closing of the valves or loosening of the connections. A base is provided upon which the support for the cover is mounted, and this base furnishes a steady, level support for the cylinders. The combination of support and housing is adapted to be inexpensively constructed and makes it unnecessary to provide a housing or enclosure for the gas supply tanks.

Although I have described a specific embodiment of my invention, it is apparent that modifications thereof may be made by those skilled in the art. Such modifications may be made without departing from the spirit and scope of my invention as set forth in the appended claims.

I claim as my invention:

1. In a combined support and housing for gas cylinders, the cylinders including valves and tubing leading from the valves, a base, a standard projecting upwardly from the base and secured thereto, a T member forming a part of the supply line for the fuel secured to the standard near the upper end thereof, nuts by which the tubing from the valves are secured to the T member, and a cover pivotally mounted on the upper end of the standard, the cover being provided with recesses for receiving the valves and tubing, the cover also being formed and positioned to provide edges thereof for striking the aforementioned nuts while the cover is in the closed position to prevent rotation of the nuts.

2. The combination with a "bottled gas" supply system including cylinders, valves for the cylinders, of a base, a standard secured to and supported by the base, a cover hingedly connected to the upper portion of the standard to cover the valves and means for locking the cover on the standard, a T fitting mounted in fixed relation on the standard and below the cover, means including conduits and sealing nuts on the T fitting for connecting the T fitting and the valves, and means on the cover for engaging the sealing nuts to prevent their being turned when the cover is positioned to cover the valves.

3. In a housing for bottled gas cylinders, a standard and a recessed cover pivotally attached to the standard with the recess disposed to cover the valves and gas conduits which are ordinarily attached to the upper ends of the gas cylinders, and the connections between the conduits from the valves and the gas supply line being so positioned that when the cover is in place the cover prevents rotation of the coupling members of the said connection, so that disconnecting of the connection between the supply line and the conduits from the cylinders is prevented by the cover.

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