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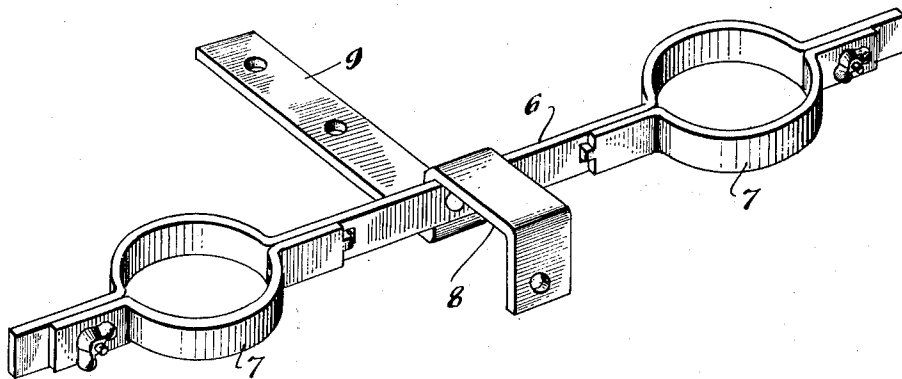
J. H. GILHOOLY  
DEVICE TO SUPPORT REGULATORS FOR DISPENSING  
LIQUEFIED PETROLEUM GASES

2,540,818

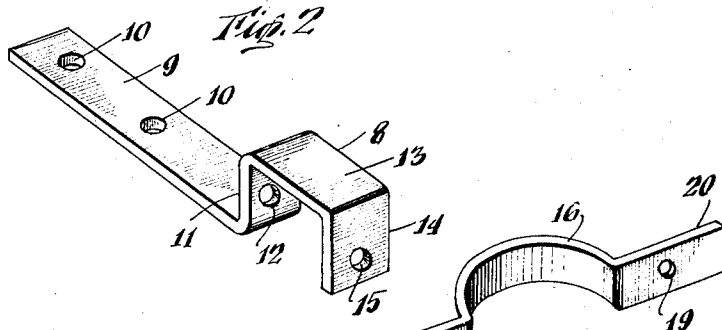
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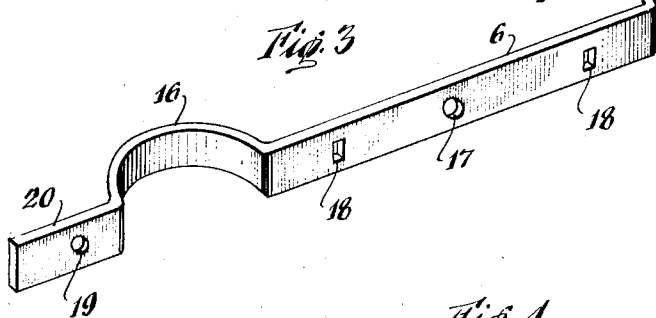
*Fig. 1*



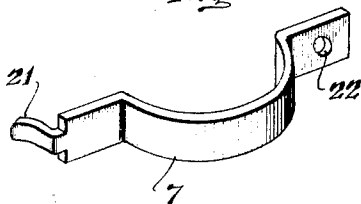
*Fig. 2*



*Fig. 3*



*Fig. 4*



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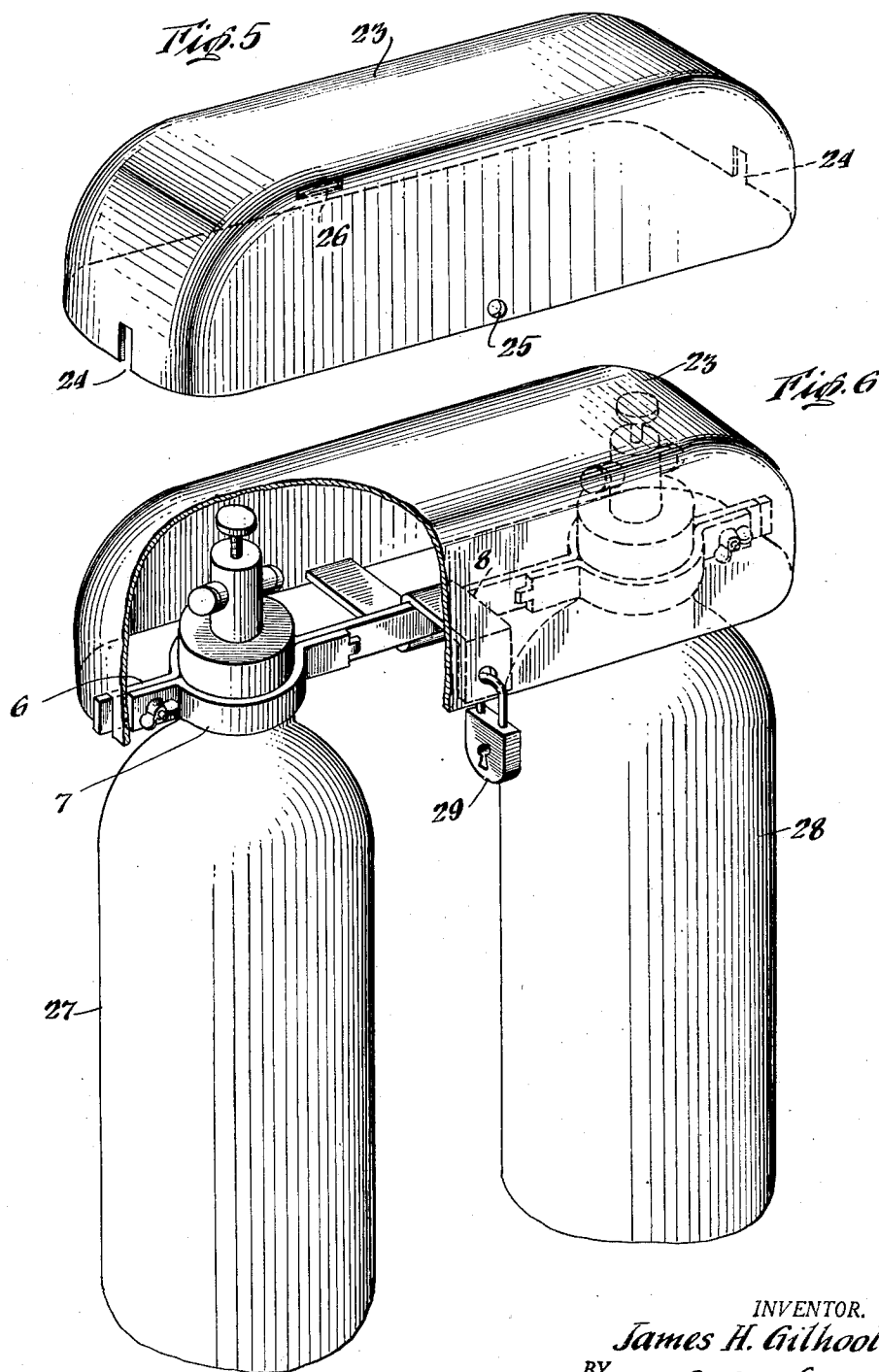
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# UNITED STATES PATENT OFFICE

2,540,818

## DEVICE TO SUPPORT REGULATORS FOR DISPENSING LIQUEFIED PETROLEUM GASES

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4 Claims. (Cl. 220-85)

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This invention is directed to equipment for handling liquefied petroleum gases and like products.

In the usual manner of handling liquefied petroleum gases for domestic and similar uses, the gas commonly termed "bottled gas" is handled in pressure containers, or "bottles" of cylindrical form usually about one foot in diameter and about three feet high, tapered down to a neck upon the upper end, said neck being about three inches or so in diameter. The normal installation consists of two bottles (although many installations will use more), with provision for removing and replacing an empty bottle while a fresh one is in service.

The hydrocarbon material in the cylinder or bottle is at high pressure, of the order of 200 pounds per square inch gauge. The service, such as a gas range, heating furnace, or the like to which the gas is supplied operates with fuel at a pressure of a few ounces per square inch. Regulating equipment must be utilized to effect this pressure reduction. Pressure reduction regulators of usual types are assembled with proper cut off valves and short, relatively flexible lengths of piping to connect to the gas cylinders and to the house supply piping. This assembly of regulating and dispensing equipment must be supported at a point near the top of the cylinders.

In the usual case the support is provided by a vertical metal post rising from a slab of concrete. The slab is sufficient in area and thickness to support the desired number of cylinders, it is bordered and reinforced by a metal frame, internally reinforced by metal, and carries either the vertical metal post, or, more usually, a stub riser, to which the post may be affixed. At an appropriate height, the post carries a transverse metal arm, on which the regulating equipment may be mounted, or in many cases, the regulator is mounted directly upon the post. Then there is provided a metal hood, supported by the post and sometimes also by the cylinders, which covers the entire top of the set-up, protecting it from weather and, more important, arranged to be locked down to protect the set-up from other than authorized access.

This assembly is composed of a number of separate parts. The metal parts of this are shop fabricated, but because of weight and similar con-

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siderations, the slab of concrete must be poured in its frame locally, before the shop-fabricated material can be finally assembled. It does not provide ready conversion to a multi-cylinder set-up. It is not readily adaptable to modification in the field.

I have discovered that these difficulties and others may be overcome by a simple form of device for supporting regulating equipment and a hood, which device obtains its entire support from the gas cylinders.

It is therefore an object of this invention to provide a simple form of support for this service, capable of being affixed to and supported by the gas cylinders, and capable of supporting the usual regulating equipment and hood independently of any base.

A further object is the provision of equipment of this nature which may be wholly shop-assembled, composed of structurally simple members capable of ready and cheap fabrication.

A further object is the provision of equipment of this nature capable of relatively permanent assembly in stable form regardless of the peculiarities of individual location set-ups.

These and other objects of my invention are accomplished by the device disclosed herein, the nature of which may be readily ascertained from the following description and from the drawings which are affixed to and made a part of this disclosure.

In the drawings:

Figure 1 is an assembly of the device, shown in perspective,

Figures 2, 3, and 4 are detail views of various parts of the device, also shown in perspective,

Figure 5 is a view of an appropriate hood, shown in perspective,

And Figure 6 is a view, partially "cut away" in form, showing the entire assembly with two gas cylinders.

These drawings are all diagrammatic in form.

In Figure 1 there is shown a main transverse member 6, comprising a length of strap iron, formed into a half-yoke at each end, carrying two half-yoke members 7 and 7 and a cross member 8. The cross member 8, shown in detail in Figure 2 is formed with a rearwardly extending portion 9, in which there are one or more holes 10, this portion being adapted to carry and support a

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conventional pressure-reducing regulator. About midway of its length, cross member 8 has a vertical portion 11, containing a hole 12, through which it may be bolted or riveted to main member 6. Extending forward from this vertical portion is another horizontal portion 13, designed to afford a flat surface for the support of valves and piping, which usually will not be permanently affixed thereto. At its forward end, cross member 8 is bent down, forming a support 14 having a hole 15, whereby the hood, shown later, may be supported and padlocked. The rearward end of cross member 8 may be extended, if desired, far enough to support this hood.

Figure 3 shows details of the main member 6, having a flat, vertical central portion between two half-yokes 16, 16. Midway it is provided with hole 17 for affixing cross member 8. Inboard from each half-yoke there is a hole 18, 18, preferably in the form of a square slot, to affix the free half-yoke member, and outwardly of each half-yoke there is another hole 19, 19, whereby the free half-yoke may be further fixed. Note that the ends of the member 20, 20, are extended beyond the yoking arrangement to provide support for a hood, later shown.

Figure 4 shows details of the free half-yoke members 7. This member is provided at one end with a tongue 21, which may be straight, but preferably is hooked, and designed to slip through slot 18 in main member 6 and to lock therein when half-yoke 7 is in assembled position. At the other end, half-yoke member 7 is provided with a hole 22 whereby it may be bolted (usually with wing nuts for ready disassembly), to main member 6. Of course, if desired, both ends of half-yoke 7 may be arranged for bolting.

Figure 5 shows a metal hood 23 stamped or drawn for light sheet metal, of sufficient size to slip over and cover the entire assembly, provided at its ends with slots 24, 24, whereby it may slip over and be supported by the extremities 20, 20, of the main member 6, and with hole 25, whereby it may be locked to and supported by the front end of cross member 8. If desired, the rear of the hood may be furnished with a slot 26, which can be fitted over the end of cross member 8, although this usually will not be found necessary.

Figure 6 shows, in partially "cutaway" form, an assembly of the whole, together with the two gas cylinders, showing the device supported by the cylinders 27 and 28 with the hood 23 placed thereover, supported by the ends of member 6 and locked down by padlock 29 to the front end of cross member 8. The space wherein regulating mechanism, pipes and valves, of customary type, may be supported upon cross member 8 and protected under hood 23 may be seen. (It is of course understood that the regulating mechanism, as such, forms no part of this invention.)

It may be seen that this device provides something which may be completely shop-fabricated and shop-assembled, and is readily adaptable to use in almost any installation. Set-ups wherein more than two cylinders are used may be accommodated by elongation of member 6 and hood 23. It is of such nature that mounting upon a single cylinder furnishes a competent support for regulator and hood, should it be necessary to use only one cylinder for a time. It is in no way dependent upon a base and consequently any firm type of base may be used to support the cylinders, for example an already existing sidewalk, a wooden platform or a simple

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slab of stone or concrete. The cylinders are tied together at the top, something not present in the usual equipment, and thus are more protected from upset. The hood is supported at its ends and locked down, and even when only one cylinder is present gives effectual protection to the regulator above which it is firmly supported.

I claim:

1. In a device of the character described, a main member adapted to extend horizontally across the necks of at least two adjacently located compressed gas cylinders, said member being formed at the point of contact with each cylinder neck to provide a partial socket for said neck, a plurality of free half-yoke members each adapted to be affixed to said main member adjacent each cylinder neck, each of said half-yoke members being formed to embrace a cylinder neck and detachably clamp the said main member thereto, and at least one cross-member mounted upon said main member at a point between cylinder necks, said cross-member extending rearward of said main member, this extension being formed to receive and support a regulator mechanism, said cross-member also extending forward from said main member, the forward extremity of said cross-member being adapted to receive locking means.

2. In a device of the character described, a main member adapted to extend horizontally across the necks of at least two adjacently located compressed gas cylinders, said member being formed at the point of contact with each cylinder neck to provide a partial socket for said neck, the extremities of said main member being extended for a short distance beyond the adjacent cylinder-neck socket, a plurality of free half-yoke members each adapted to be affixed to said main member adjacent each cylinder neck, each of said half-yoke members being formed to embrace a cylinder neck and detachably clamp the said main member thereto, at least one cross-member mounted upon said main member at a point between cylinder necks, said cross-member extending rearward of said main member, this extension being formed to receive and support a regulator mechanism, said cross-member also extending forward from said main member, the forward extremity of said cross-member being adapted to receive locking means and a hood shaped to fit over assembled cylinders, regulators, and supporting device, each end of said hood being provided with a slot whereby it may be fitted upon and supported by the extremities of said main member, the front lower margin of said hood being provided with a locking aperture placed to register with the forward extremity of the cross-member.

3. In a device of the character described, a main member adapted to extend horizontally across the necks of two adjacently located compressed gas cylinders, said member being formed, near each end, to provide a partial socket for the neck of the adjacent cylinder, two free half-yoke members, each formed to partially embrace a cylinder neck and adapted to be affixed to said main member and detachably clamp a cylinder neck thereto, and a cross-member mounted at right angles to said main member between said cylinder-neck sockets, said cross-member having a rearward extension adapted to support a regulator device and a forward extension the extremity of which is formed to receive and support a locking means.

4. In a device of the character described, a

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main member adapted to extend horizontally across the necks of two adjacently located compressed gas cylinders, said member being formed, near each end, to provide a partial socket for the neck of the adjacent cylinder, the ends of said main member extending beyond said sockets, two free half-yoke members, each formed to partially embrace a cylinder neck and adapted to be affixed to said main member and detachably clamp a cylinder neck thereto, a cross-member mounted at right angles to said main member between said cylinder-neck sockets, said cross-member having a rearward extension adapted to support a regulator device and a forward exten-

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sion the extremity of which is formed to receive and support a locking means and a hood adapted to fit over and cover the assembly of cylinders, regulator, and supporting device, said hood having a slot in either end whereby it may be fitted to and supported by the extremities of the main member, and further having lock accepting means adjacent its front lower margin located in register with the front end of said cross-member.

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No references cited.