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E. F. LLOYD.

CLOSURE FOR GAS TANKS.

APPLICATION FILED MAY 15, 1905.

Fig. 2.

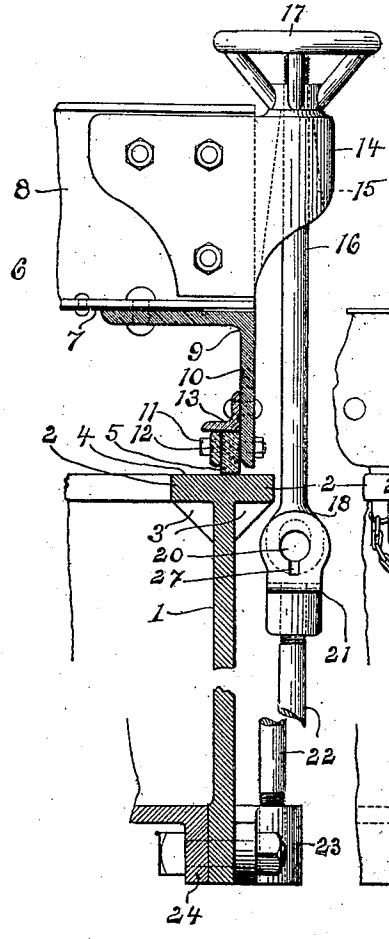
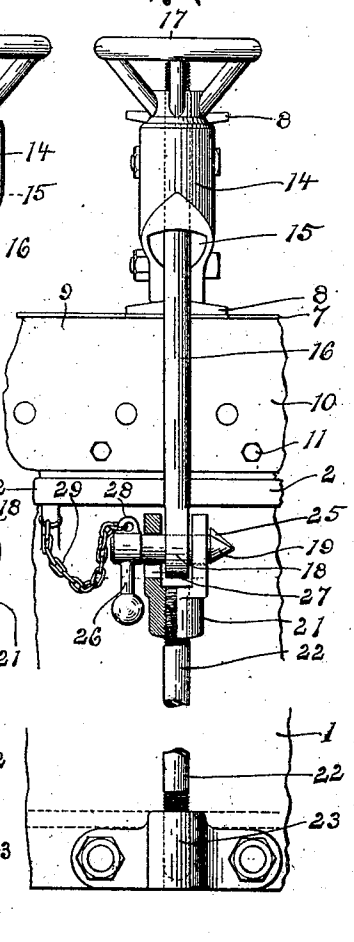


Fig. 1.



WITNESSES:

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CLOSURE FOR GAS-TANKS.

No. 849,002. Specification of Letters Patent. Patented April 2, 1907.

Application filed May 15, 1905. Serial No. 260,532.

To all whom it may concern:

Be it known that I, ERNEST F. LLOYD, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Closures for Gas-Tanks, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in the construction of closures for gas-tanks; and the object of the invention is to provide a fastening for the cover which is especially adapted for use upon a large cast tank, avoiding the liability of breakage or injury to the tank by the particular place and manner of its attachment thereto and also facilitating the manufacture and the securing of the cover to the tank by so constructing the fastening as to obviate the necessity of the exact registry with means on the tank of the part thereof carried by the cover.

It is also an object of the invention to provide a fastening which may be quickly and easily operated in securing or removing the cover and will be out of the way of the operators when the cover is removed.

A further object of the invention is to provide a cover which is so constructed as to effectually prevent the same from yielding or springing at its edge either vertically or laterally and at the same time will be so constructed as to particularly adapt the same for the securing thereto of my dry lute, shown in Letters Patent of the United States dated November 8, 1904, and numbered 774,439.

To this end the invention consists in the construction and combination of parts, all as more fully hereinafter described, and particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation of a portion of a gas-tank with one of the cover-fastenings in place thereon embodying the invention, and Fig. 2 is a vertical section through a similar portion of the tank and cover and showing the fastening in side elevation.

As shown in the drawings, 1 is the vertical side wall of a tank, which wall is cast with preferably an inwardly-extending and an outwardly-extending flange 2 at its upper edge strengthened by integrally-cast corner-brackets 3, the upper extended smooth surface of said flange forming a seat 4 for the flexible dry lute or rubber gasket 5 on the cover 6. Said cover consists of a sheet or sheets of metal 7, to the upper surface of which a series of I-beams 8 (one of which is shown in the drawings) are riveted, and riveted to the lower surface of the cover along its edge is an angle-iron bar 9, one member of which forms a vertical flange 10 at the extreme outer edge of the cover. Extending along the lower edge of the flange 10 is the dry lute 5, formed of a strip of rubber secured to the flange by bolts 11, extending through openings in said strip and openings in a clamping strip or bar 12, engaging the inner surface of the lute. Riveted to the flange is a small angle-bar 13, with its horizontal member engaging the upper edge of the lute to form a backing therefor and also to form a tension member to stiffen and strengthen said flange.

By the use of the large angle-bar 9 the cover is made very rigid and prevented from sagging vertically when lifted free from the box, and by riveting the smaller angle-bar to its vertical flange it is made still more rigid to resist vertical strains and also strengthened and stiffened against lateral bending. This smaller angle-bar also forms a backing for the lute, so that it is not necessary to use a wide strip of rubber.

Fastenings or clamps are provided at intervals along the edge of the cover to force the lute firmly down upon its seat and secure the cover in place. These clamps or fastenings, one of which is shown in the drawings, each consist of a bracket 14, secured to the cover and provided with an opening 15 to receive an eyebolt 16, the upper end of which is screw-threaded and provided with a wheel-nut 17 and at its lower end is formed with an eye 18 for a lipped pin 19, which extends through said eye and through openings 20 in a clevis 21, secured to the upper end of a rod 22. Said rod is screw-threaded at its lower end to engage a screw-threaded opening in a bracket 23, secured to the tank by bolts extending through the side wall of the tank below its bottom and through a downwardly-extending flange 24 on said bottom.

To prevent the pin 19 from becoming accidentally withdrawn from the clevis, it is provided at its conical or pointed end with a lip 25, projecting laterally in one direction, and at its opposite end with a weighted handle 26, extending in an opposite direction, and to permit the pin to be inserted and removed the openings 20 in the clevis are formed at their

lower sides with slots 27, extending therefrom for the passage of the lip, and the eye 18 is elongated vertically for the same purpose. The weighted handle extending at right angles to the pin at the side thereof opposite that from which the lip extends when the said pin is fully inserted, the tendency of the handle will be to turn downward, thus bringing the lip at the upper side of the pin and at the opposite side of the openings in the clevis from that in which the slots are formed, thus preventing the pin from being withdrawn until the handle is turned up against the action of gravity. An ear 28 is provided on the pin, to which a chain 29 is secured at one end, the opposite end of said chain being attached to an adjacent bracket on the tank to prevent the loss or misplacing of the pin when not in use.

The upper end of the opening 15 in the bracket 14 is of substantially the same diameter as the eyebolt which hangs therein and gradually enlarges toward its lower end to permit said bolt to swing so that the eye on its lower end may be readily engaged with the clevis, and by securing the lower end of the rod 22 to the extreme lower edge of the tank in the manner described the strain of the fastening is taken from the side of the tank and the same strengthened by the fastening. The necessity of placing the cover on the tank so that the bracket will be exactly in a vertical line with the part of the fastening carried by the tank is obviated by this construction, as the length of the rod will permit of its being bent or sprung slightly without doing any harm, and the eyebolt swings freely in its bracket.

The cover is quickly detached by slackening the wheel-nuts 17 until the eyebolts drop sufficiently to bring the lower end of the elongated eye in each opposite the lower end of the slots 27 in the clevis. The handle may then be turned upward to a vertical position and the pin drawn out. The weighted handle insures the turning of the pin after its insertion to throw the lip thereon out of line with the slots in the clevis and prevent the accidental withdrawal of the pin.

Having thus fully described my invention, what I claim is—

1. The combination with a receptacle for gas and a cover for said receptacle, of a downwardly-extending flange on the bottom of the receptacle to which the side wall of the receptacle is secured, a bracket provided with a screw-threaded socket, bolts extending through the flange and wall of the receptacle and through the bracket to secure said bracket to the receptacle, a rod screw-threaded at its lower end to engage said socket and extending upward to near the top of the receptacle, a vertically-adjustable bolt carried by the cover, and means for detachably securing the lower end of the bolt to the upper end of the rod.

2. The combination with a receptacle for gas and a cover for said receptacle, of a bracket secured to the cover and provided with an opening, an eyebolt adapted to swing in said opening and screw-threaded at its upper end, a wheel-nut on said end of the bolt in contact with the upper side of the bracket, a clevis attached to the receptacle to receive the eye of the eyebolt, and a pin detachably engaging said eye and openings in the clevis.

3. The combination with a receptacle for gas, and a cover for said receptacle, of an eyebolt adjustably secured to the cover and having an elongated opening or eye at its lower end, a clevis secured to the receptacle and provided with openings having laterally-extending slots at their lower sides a pin adapted to engage the eye and the openings in the clevis, a lip extending laterally from one end of the pin in one direction, and a weight-handle extending laterally from the other end of the pin in another direction.

4. The combination with a receptacle for gas and a cover for said receptacle, of a bracket secured to the cover and formed with a downwardly-enlarging opening, an eyebolt having a screw-threaded upper end and an elongated eye at its lower end supported in said opening, a wheel-nut on the threaded end of the bolt in engagement with the upper side of the bracket, a bracket secured to the receptacle at the lower edge thereof, a rod secured at its lower end to said bracket, a clevis on the upper end of said rod provided with openings having slots at their lower sides, a pin to engage said openings and the eye of the eyebolt, a lip extending laterally in one direction from one end of said pin, and a weighted handle extending laterally from the other end of the pin in an opposite direction.

In testimony whereof I affix my signature in presence of two witnesses.

ERNEST F. LLOYD.

Witnesses:

OTTO F. BARTHEL,

JOSEPH A. NOELKE.