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WASH TANK

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Fig. 3

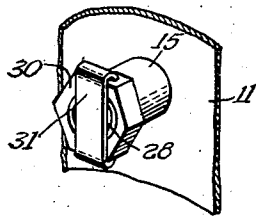


Fig. 1

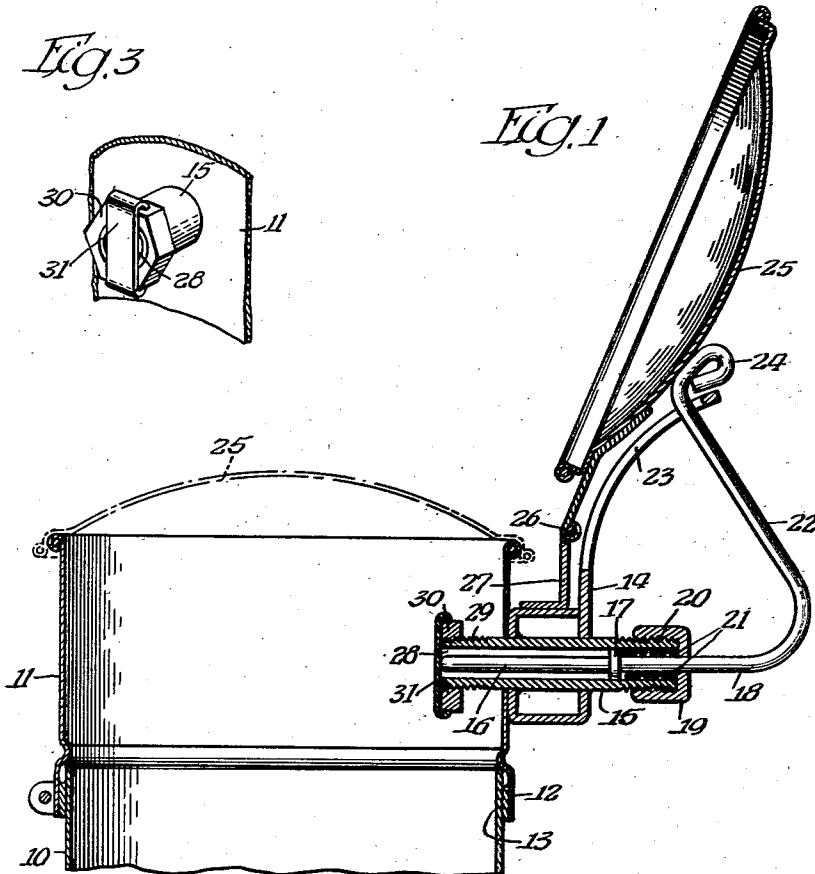
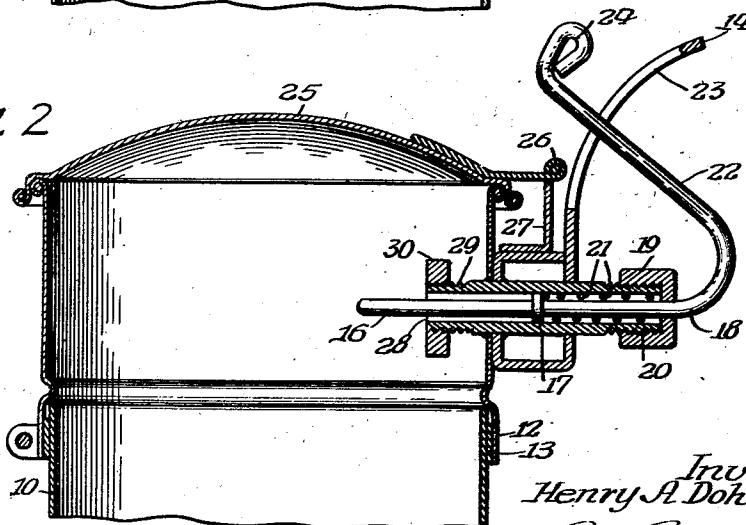


Fig. 2



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WASH TANK

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7 Claims. (Cl. 220—89)

This invention relates in general to wash tank or receptacle which contains a volatile liquid in which articles to be cleaned may be dipped or submerged.

More particularly the invention relates to a closure for the tank or receptacle.

It is well known that when articles are cleansed in a tank or receptacle containing a volatile liquid, or when scrubbing or cleaning the article above the liquid level, for one reason or another a spark is created which immediately ignites the liquid causing considerable damage.

It frequently happens that the operator in such circumstances neglects to close the tank with the closure and attempts to smother the flame by throwing articles thereover, resulting some times in upsetting the tank thereby causing additional damage.

It is one of the objects of the present invention to provide improved means for automatically shifting the lid or closure of the tank to close the same in the event of fire, and which means is normally inactive and disconnected from the cover, thereby rendering it possible for the operator to close the tank independently of the closure operating means, the closure operating means being rendered and held inactive until the flame or heat renders the holding means inactive so that the closure operating means will be free to operate upon the closure to cause it to close the tank.

A further object is to provide improved means for positively closing the closure or cover without relying upon gravity, thereby overcoming all possibility of the cover or closure sticking which would prevent its closing.

To the attainment of these ends and the accomplishment of other new and useful objects as will appear, the invention consists in the features of novelty in substantially the construction, combination and arrangement of the several parts hereinafter more fully described and claimed and shown in the accompanying drawing illustrating this invention, and in which

Figure 1 is a vertical sectional view of a closure and the operating means therefor, constructed in accordance with the principles of this invention showing the same applied to a portion of a tank or receptacle,

Figure 2 is a view similar to Figure 1 with the parts in the position which they will assume when the closure operating means actuates the cover to cause it to close the tank.

Figure 3 is a detail perspective view of the

means for holding the closure operating means in an inactive position so that the closure may be opened.

In the drawing, the present invention is disclosed as being an attachment for a tank or receptacle but it is to be understood that the same may be formed as an integral part of the tank.

Referring more particularly to the drawing, the numeral 10 designates a portion of a tank or container for holding a volatile liquid. The numeral 11 designates a collar or annular member which may be secured to the tank 10 in any suitable manner preferably by means of a portion 12 thereof telescoping with the tank 10 and being held in position in any suitable manner such as by means of a band 13 which is adapted to be contracted in any suitable manner, not shown, about the wall of the tank 10.

Secured to the collar or member 11 in any suitable manner is a bracket 14 of any desired or suitable construction and preferably supported by the bracket so as to extend into the collar or member 11 is a tubular bearing 15 of any desired size and configuration. A plunger 16 is arranged in the tubular member 15 and this plunger may be provided with a shoulder 17. The end 18 of the plunger preferably extends through a cap 19 that is threaded, as at 20, upon the outer and open end of the tubular member 15. A coil spring 21 is located within the tubular member 15 with one end contacting the shoulder 17 and the other end contacting the cap or collar 19.

The end 22 of the portion 18 of the plunger 16 is preferably shaped to form an arm or extension which passes through a slot 23 in the bracket 14 and the extremity of the extension 22 may be bent back upon itself, as at 24, so as to form a cover engaging portion.

The numeral 25 designates a cover for the tank which cooperates with the collar or tubular member 11 and this cover 25 is hingedly mounted, as at 26, preferably to a bracket 27 which in turn may be supported by the bracket 14.

The forward end of the tubular member 15 is open as at 28 so that the plunger 16 may project therebeyond and this extremity is preferably threaded, as at 29. A nut or collar 30 is adapted to be threaded upon the threads 29 and carried by the nut is a member 31 which may itself be constructed of fusible material or may be secured to the nut or collar by fusible material.

In use the plunger 16 is forced into the tubular member 15 so as to compress the spring 21

and the nut or collar 30 with the member 31 carried thereby is threaded upon the threads 29 at the inner end of the member 15 so as to hold the plunger 16, the end 18 and the extension 22 thereon in a position to permit the cover 25 to be fully opened. When the cover is opened it will rest upon the extremity 24 of the member 22 and the spring 21 will be held under tension by reason of the fact that the extremity of the plunger 16 contacts the element 31 carried by the nut or collar 30. In this position of the parts it will be manifest that the cover 25 may be opened and closed independently of the closing mechanism.

When the cover 25 is in an open position, as shown in full lines in Figure 1, and in the event of ignition of the contents of the tank or of the fumes, the heat generated thereby will fuse the member 31 or cause it to become detached from the collar 30, whereupon the energy stored in the spring 21 will cause the plunger 16 to move forwardly, and in doing so the extremity 24 of the extension 22 of the plunger, which is in contact with the closure 25, will swing the latter about the pivot 26 to a closed position.

The spring 21 will cause the plunger 16 to operate quickly and will thereby impart a quick movement to the closure to move it about its pivot.

To reset the device, the old collar 30 is removed, the plunger 16 withdrawn, by grasping the extension 22, and a new collar 30 applied to the end of the tubular member 25.

By reason of the extension 22 on the plunger passing through the slot 23 in the bracket 14 it will be manifest that the plunger as well as the extension 22 will be maintained against rotation, while at the same time the free operation of the plunger 16 and extension 22 will not be interfered with.

With this construction it will be manifest that when the parts are in the position shown in full lines in Figure 1, the closure 25 may be manually opened and closed independently of the closure operating mechanism. When, however, the closure 25 is open and fire should be caused in the tank, the closing mechanism will force the cover 25 about its pivot 26 immediately upon the release of the plunger by the displacement or the fusing of the element 31.

Obviously this mechanism may be formed as an attachment adapted to be secured to and removed from a tank or may be constructed as a part of the tank itself.

While the preferred form of the invention has been herein shown and described, it is to be understood that various changes may be made in the details of construction and in the combination and arrangement of the several parts, within the scope of the claims, without departing from the spirit of this invention.

What is claimed as new is:

1. A tank of the character described having a cover adapted to be freely opened and closed, mechanical means independent of the cover for closing the latter, said means embodying a tubular member open at one end, a plunger in said member, means connected with the plunger for engaging and operating said cover, means tending normally to move the plunger in one direction, and a fusible element attached to said tubular member to extend over the said open end thereof, to be engaged by the said plunger to hold the plunger against movement under the stress of said resilient means, the said resilient means operat-

ing, when said fusible element is fused, to move the plunger in a direction to close said cover.

2. A tank of the character described having a cover adapted to be freely opened and closed, mechanical means independent of the cover for closing the latter, said means embodying a tubular member open at one end, a plunger in said member, means connected with the plunger for engaging and operating said cover, means tending normally to move the plunger in one direction, a collar removably secured to the tubular member adjacent the open end thereof, and fusible means supported by said collar to extend over the said open end of said tubular member to be engaged by the said plunger to hold the plunger against movement under the stress of said resilient means, the said resilient means operating, when said fusible element is fused, to move the plunger in a direction to close said cover.

3. A tank of the character described having a cover adapted to be freely opened and closed, mechanical means independent of the cover for closing the latter, said means embodying a plunger, resilient means operating directly upon the plunger and tending normally to move it in a direction to close the cover, fusible means with which the plunger engages for holding the plunger against movement under the stress of the said resilient means and for maintaining said resilient means under tension and an extension on said plunger for engagement with said cover to close the latter when the plunger is moved under the stress of said resilient means, when said fusible member is fused, said extension being disposed at an angle to the axis of the plunger to constitute a handle whereby the plunger may be re-set, said cover being adapted to be opened and closed independently of and while the said closing means is maintained inactive.

4. A tank of the character described having a cover adapted to be freely opened and closed, mechanical means independent of the cover for closing the latter, said means embodying a plunger, resilient means operating upon the plunger to move it in a direction to close the cover, fusible means for holding the plunger against movement under the stress of the said resilient means, an extension on said plunger for engagement with said cover to close the latter when the plunger is moved under the stress of said resilient means, when said fusible member is fused, said extension being disposed at an angle to the axis of the plunger to constitute a handle whereby the plunger may be re-set, said cover being adapted to be opened and closed independently of and while the said closing means is maintained inactive, and means with which the angularly disposed portion co-operates for maintaining said plunger and extension against rotation.

5. A tank of the character described having a cover adapted to be freely opened and closed, mechanical means independent of the cover for closing the latter, said means embodying a plunger, resilient means operating upon the plunger to move it in a direction to close the cover, fusible means for holding the plunger against movement under the stress of the said resilient means, an extension on said plunger for engagement with said cover to close the latter when the plunger is moved under the stress of said resilient means, when said fusible member is fused, said extension being disposed at an angle to the axis of the plunger to constitute a handle whereby the plunger may be reset, said cover being adapted to be opened and closed independently of and while

the said closing means is maintained inactive, and a guide through which said extension projects and moves for maintaining the angularly disposed portion against rotation.

6. A tank of the character described having a cover adapted to be freely opened and closed, mechanical means independent of the cover for closing the latter, said means embodying a plunger, resilient means operating upon the plunger to move it in a direction to close the cover, fusible means for holding the plunger against movement under the stress of the said resilient means, an angularly disposed extension on said plunger for engagement with said cover to close the latter when the plunger is moved under the stress of said resilient means, when said fusible member is fused, said cover being adapted to be opened and closed independently of and while the said closing means is maintained inactive, a slotted bracket through which said extension projects and moves for maintaining it in a predetermined path of movement, a portion of said extension, when in an inactive po-

sition serving as a stop against which said cover rests when in an open position.

7. As an article of manufacture a closure attachment adapted to be applied as a unit to a tank or receptacle, said attachment embodying an annular member adapted to be secured to the tank to encompass the opening thereof, a cover hingedly connected to said member, cover closing means independent of the cover and carried by said annular member and embodying a plunger operating through the wall of said annular member, resilient means operating directly upon the plunger and tending normally to move the plunger in one direction to close the cover, and fusible means within said annular member and engaged by the plunger for holding said plunger inactive against the stress of the said resilient means and for maintaining said resilient means under tension, whereby upon fusing of said fusible means the said cover closing means will be rendered active.

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