TANK TAG SYSTEM AND METHOD

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ABSTRACT

The system disclosed herein relates to a tank tag system. The system comprising, a mounting member fixedly attachable to a tank spill containment, at least one rigid member being slidably engaged with the mounting member, and a plate pivotally attached to the at least one rigid member with indicia applied thereon.
TANK TAG SYSTEM AND METHOD

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority to U.S. provisional application 60/781,411, filed Mar. 10, 2006, the entire contents of which are incorporated herein by reference.

BACKGROUND OF THE INVENTION

[0002] It is common for gasoline storage tanks to be labeled with information about the tank itself such as, diameter, capacity, manufacturer and date of installation. Some municipalities have laws requiring such information be attached to the tank; for example, the New York State Department of Environmental Conservation (DEC) requires the information above be printed on a label that is permanently attached to a spill bucket or a spill containment of a tank fill port.

[0003] Labels such as those printed on adhesive medium, for example, and stuck to the tank spill containment may have difficulty remaining stuck to the spill containment of the tank after fuel spills loosen the adhesive. It can also be difficult to read labels that are flush against a wall of the tank spill containment in a location that may not have adequate lighting to read the label. A more robust attachment mechanism and a label that can be articulated to take advantage of available light may therefore be desirable in the market place.

BRIEF DESCRIPTION OF THE INVENTION

[0004] The system disclosed herein relates to a tank tag system. The system comprising, a mounting member fixedly attachable to a tank spill containment, at least one rigid member being slidably engaged with the mounting member, and a plate pivotally attached to the at least one rigid member with indicia applied thereon.

[0005] Further disclosed herein is a method of labeling a tank. The method comprising, applying indicia to a plate, pivotally attaching the plate to at least one rigid member being slidably engangeable with a tank mounting member, and fixedly mounting the tank mounting member to a tank spill containment.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] The following descriptions should not be considered limiting in any way. With reference to the accompanying drawings, like elements are numbered alike:

[0007] FIG. 1 depicts a top view of a tank tag system disclosed herein;

[0008] FIG. 2 depicts a front view of the tank tag system of FIG. 1;

[0009] FIG. 3 depicts a left side view of the tank tag system of FIG. 2;

[0010] FIG. 4 depicts a front view of the tank tag system of FIG. 1 with the plate shown in a closed position;

[0011] FIG. 5 depicts an increased magnification of the hinged portion of FIG. 2; and

[0012] FIG. 6 depicts a partial section view of an interface of the tank tag system to a tank.

DETAILED DESCRIPTION OF THE INVENTION

[0013] A detailed description of several embodiments of the disclosed apparatus and method are presented herein by way of exemplification and not limitation with reference to the Figures.

[0014] Referring to FIG. 1 a tank tag system for a tank such as a underground gasoline storage tank, for example, is shown generally at 10. The tank tag system 10 includes a plate 14 pivotally attached to a slideable member 18 that is slidably engaged to a mounting member 22 that is attached to a tank spill containment portion 30 (see FIG. 6) installed at the tank. The plate 14 has indicia 24 applied thereon that may include information about the tank such as tank diameter, tank material, tank capacity, tank manufacturer, and date of installation, for example. Such information may be helpful to a fuel delivery person that refills the tank with fuel. Additionally, laws in certain locations may require such information be permanently attached to specific tanks. A logical choice for locating such information is in a spill bucket that surrounds the fill opening of the tank and contains any spillage that may occur during filling of the tank.

[0015] In one embodiment the plate 14 is made of a non-sparking metal, such as aluminum or brass, for example, to minimize spark generation that could ignite fuel or fuel vapor in the spill bucket area. The indicia 24 may be applied by any number of means including printing with ink, scribing, and stamping, for example, while still remaining within the spirit and scope of the present invention. The indicia 24 may be applied to either a first surface 28 or a second surface 32 (see FIG. 2), that is opposite the first surface 28, although, the first surface 28 may have an advantage over the second surface 32 in terms of ease of viewing by an operator.

[0016] Referring to FIGS. 2-4, a hinge assembly 36 pivotally attaches the plate 14 to a slideable member 18 that includes a pair of rigid members depicted herein as slideable rods 42. A pair of rivets 38 attaches the plate 14 to a first portion 37 of the hinge assembly 36, although this attachment could also be achieved by other methods, such as welding or screwing them together with a nut and bolt, for example. The hinge assembly 36 allows the plate 14 to pivot between an open position 40 and a closed position 44. In the open position 40 the plate 14 is substantially perpendicular to the slide rods 42 of the slideable member 22, whereas in the closed position 44 the plate 14 is substantially parallel to the slide rods 42. Each of the slide rods 42 is attached to a second portion 48 of the hinge assembly 36 at an end thereof.

[0017] Referring to FIG. 5 a reduced diameter portion 52 or each slide rod 42 extends through a hole 56 in the second portion 48 and a head 60 is formed thereon to prevent the slide rod 42 from disassembly from the second portion 48. Alternate embodiments of attaching the slide rods 42, such as screws threadably engaging threaded holes (not shown) in the ends of the rods 42, could also be employed.

[0018] Referring to FIG. 6 the slide rods 42 slidably extend through holes 64 in the mounting member 22 and have threaded ends 68 to which nuts 72 threadably attach. It may be desirable for the nuts 72 to be of the locking type to
prevent them from loosening from the rods 42. The nuts 72 have a larger outer diameter than the holes 64 to prevent the threaded ends 68 of the rods 42 from passing back through the holes 64. Thus, the nuts allow the rods 42 to move over the full length of the rods 42 through the holes 64 of the mounting member 22 while preventing their detachment therefrom.

[0019] The mounting member 22 has another hole 76 bored therethrough receptive of a screw 80 for attachment of the mounting member 22 to the tank portion 30. The tank portion 30 has a hole 88 bored therethrough that is also receptive of the screw 80. A nut 92 threadably engaged with the screw 80 completes the attachment of the mounting member 22 to the tank portion 30. The nut 92 may also be of the locking type to resist removal that would allow the mounting member 22 to become detached from the tank portion 30.

[0020] Through the above described construction the plate 14 containing indicia 24 may be attached to a tank spill containment until intentionally removed. The plate 14 can be articulated to two preferred positions, the open position 40 and the closed position 44. The open position 40, preferred for viewing of the indicia 24 on the plate 14, is shown in FIG. 2. The plate 14 is substantially perpendicular to the rods 42 and the slidable member 18 is at the fully extended travel position of the rods 42 relative to the mounting member 22, according to arrow 100. In the open position 40 the plate 14 is as far from the tank as the tank tag system 10 will permit. The closed position 44, preferred for storage of the plate 14, is shown in FIG. 4. The plate 14 is substantially parallel to the rods 42 and the slidable member 18 is at the fully retracted travel position of the rods 42 relative to the mounting member 22, according to arrow 102. In the closed position 44 the plate 14 is as near to the tank as the tank tag system 10 will permit.

[0021] Referring again to FIG. 1, the mounting member 22 has a third hole 104 receptive of a chain 108. The other end of the chain is connected to any other component in the spill bucket area that is made of an electrically conductive material such as metal. The chain 108 electrically grounds the metal of the tank tag system 10 to the other conductive member (not shown) to prevent a differential electrical static charge from accumulating between the tank tag system 10 and any other conductor that, if allowed to develop, could result in an electrical arc and possible ignition of fuel or fuel vapor.

[0022] It should be noted that alternate materials, such as polymer resins, could also be used for the components of the tank tag system while still remaining within the spirit and scope of the invention. The use of polymer resins allow for alternate means of applying the indicia to a plate such as by melting the indicia into surfaces of the plate. Additionally, the use of polymer resins allow components of the system to be welded to one another and for a mounting member to be welded to a tank spill containment if the tank spill containment is also made of resin. Heat for such welds may be applied to the interface of the attaching surfaces by hot plates, lasers or ultrasonics, for example.

[0023] While the invention has been described with reference to an exemplary embodiment or embodiments, it will be understood by those skilled in the art that various changes may be made and equivalents may be substituted for elements thereof without departing from the scope of the invention. In addition, many modifications may be made to adapt a particular situation or material to the teachings of the invention without departing from the essential scope thereof. Therefore, it is intended that the invention not be limited to the particular embodiment disclosed as the best mode contemplated for carrying out this invention, but that the invention will include all embodiments falling within the scope of the claims.

What is claimed is:

1. A tank tag system, comprising:
   a mounting member fixedly attachable to a tank spill containment;
   at least one rigid member being slidably engaged with the
   mounting member, and
   a plate pivotally attached to the at least one rigid member
   with indicia applied thereon.

2. The tank tag system of claim 1, wherein the mounting member, the at least one rigid member and the plate are made of non-sparking materials.

3. The tank tag system of claim 2, wherein the mounting member, the at least one rigid member and the plate are made of aluminum or brass.

4. The tank tag system of claim 1, wherein at least one of the mounting member, the at least one rigid member and the plate are electrically connected to an electrically grounded tank spill containment.

5. The tank tag system of claim 1, wherein the mounting member, the at least one rigid member or the plate are made of polymer resin materials.

6. The tank tag system of claim 1, wherein the mounting member is made of a polymer resin and is attached to a polymer resin tank spill containment by welding.

7. The tank tag system of claim 1, wherein the mounting member is attachable to a tank spill containment by at least one screw and nut.

8. The tank tag system of claim 1, wherein the mounting member is attachable to a tank spill containment by at least one rivet.

9. The tank tag system of claim 1, wherein each of the at least one rigid member have an elongated portion that slidably engages through an opening in the mounting member.

10. The tank tag system of claim 1, wherein the plate is pivotally attached to the at least one rigid member with a hinge.

11. The tank tag system of claim 10, wherein the hinge is metal.

12. The tank tag system of claim 10, wherein the hinge is polymer resin.

13. The tank tag system of claim 1, wherein the plate has an open position and a closed position, and the open position places the plate in a substantially perpendicular orientation with respect to a slidable motion of the at least one rigid member and the closed position places the plate substantially parallel to the slidable motion of the at least one rigid member.

14. The tank tag system of claim 13 wherein in the open position the plate is substantially horizontal.
15. The tank tag system of claim 1, wherein the mounting member, the rigid member and the plate are engaged to one another to control the side of the plate relative to the mounting member on which the indicia is located.

16. The tank tag system of claim 1, wherein the indicia include information about a tank.

17. The tank tag system of claim 16, wherein the information includes one or more of tank diameter, tank material, tank capacity, tank manufacturer, and date of installation.

18. A method of labeling a tank, comprising:
   applying indicia to a plate;
   pivotally attaching the plate to at least one rigid member being slidably engagable with a tank mounting member; and
   fixedly mounting the tank mounting member to a spill containment of a tank.

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