

CLAIMS

1. A lightning protection apparatus for a liquid storage tank, the liquid storage tank having a shell and a floating roof, the lightning protection apparatus comprising:
5 a housing; and
a conductor spooled within the housing, the conductor being extendable from the housing and connectable to the floating roof of the tank to create a conductive path between the shell and the floating roof when the housing is mounted to the shell;
wherein the conductor comprises a solid metallic tape having an end that is
10 connectable to the floating roof.
2. The lightning protection apparatus of claim 1, wherein the solid metallic tape is under spring tension for automatic retraction into the housing when the end of the solid metallic tape is disconnected from the floating roof.
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3. The lightning protection apparatus of claim 2, comprising a rotary dampener coupled to the conductor to control retraction speed of the solid metallic tape.
4. The lightning protection apparatus of any one of claims 1 to 3, comprising a polymer-
20 coated channel through which the solid metallic tape is extendable.
5. The lightning protection apparatus of any one of claims 1 to 4, wherein the housing is constructed from a polycarbonate material.
- 25 6. The lightning protection apparatus of any one of claims 1 to 4, wherein the housing is constructed from acrylonitrile butadiene styrene.
7. The lightning protection apparatus of any one of claims 1 to 6, wherein the solid metallic tape is constructed from a heat resistant alloy.
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8. The lightning protection apparatus of claim 7, wherein the heat resistant alloy

comprises copper.

9. The lightning protection apparatus of any one of claims 1 to 8, wherein the solid metallic tape comprises a nickel coating.

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10. The lightning protection apparatus of any one of claims 1 to 9, wherein the housing comprises a carry-handle.

11. The lightning protection apparatus of any one of claims 1 to 10, comprising a mounting assembly for mounting the housing to a periphery of the tank shell.

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12. The lightning protection apparatus of claim 11, wherein the mounting assembly comprises a holder for securing the apparatus to the shell.

13. The lightning protection apparatus of claim 11 or claim 12, wherein the mounting assembly is attachable to a bracket that is configured for attachment to the shell.

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14. A lightning protection apparatus for a liquid storage tank, the liquid storage tank having a shell and a floating roof, the lightning protection apparatus comprising:

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a housing; and

a conductor spooled within the housing, the conductor being extendable from the housing and connectable to the floating roof of the tank to create a conductive path between the shell and the floating roof when the housing is mounted to the shell;

wherein the conductor is under spring tension for automatic retraction into the housing when the conductor is disconnected from the floating roof; and

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wherein the lightning protection apparatus further comprises a rotary dampener coupled to the conductor to control retraction speed of the conductor.

15. A lightning protection apparatus according to claim 14, wherein the conductor comprises a solid metallic tape, one end of which is connectable to the floating roof.

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16. The lightning protection apparatus of claim 14 or claim 15, comprising a polymer-coated channel through which the conductor is extendable.
17. The lightning protection apparatus of any one of claims 14 to 16, wherein the housing
5 is constructed from a polycarbonate material.
18. The lightning protection apparatus of any one of claims 14 to 16, wherein the housing is constructed from acrylonitrile butadiene styrene.
- 10 19. The lightning protection apparatus of any one of claims 15 to 18, wherein the solid metallic tape is constructed from a heat resistant alloy.
20. The lightning protection apparatus of claim 19, wherein the heat resistant alloy comprises copper.
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21. The lightning protection apparatus of any one of claims 15 to 20, wherein the solid metallic tape comprises a nickel coating.
22. The lightning protection apparatus of any one of claims 14 to 21, wherein the housing
20 comprises a carry-handle.
23. The lightning protection apparatus of any one of claims 14 to 22, comprising a mounting assembly for mounting the housing to a periphery of the tank shell.
- 25 24. The lightning protection apparatus of claim 23, wherein the mounting assembly comprises a holder for securing the apparatus to the shell.
25. The lightning protection apparatus of claim 23 or claim 24, wherein the mounting assembly is attachable to a bracket that is configured for attachment to the shell.
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26. A lightning protection apparatus for a liquid storage tank, the liquid storage tank

having a shell and a floating roof, the lightning protection apparatus comprising:

a housing; and

a conductor spooled within the housing, the conductor being extendable from the housing and connectable to the floating roof of the tank to create a conductive path between
5 the shell and the floating roof when the housing is mounted to the shell;
wherein the housing is constructed from a polymer material.

27. The lightning protection apparatus of claim 26, wherein the polymer material comprises acrylonitrile butadiene styrene or polycarbonate.

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28. The lightning protection apparatus of claim 26 or claim 27, wherein the housing comprises a carry-handle.

29. The lightning protection apparatus of any one of claims 25 to 28, wherein the
15 conductor comprises a solid metallic tape having an end that is connectable to the floating roof.

30. The lightning protection apparatus of claim 29, wherein the solid metallic tape is under spring tension for automatic retraction into the housing when the end of the solid
20 metallic tape is disconnected from the floating roof.

31. The lightning protection apparatus of claim 30, comprising a rotary dampener coupled to the conductor to control retraction speed of the solid metallic tape.

25 32. The lightning protection apparatus of any one of claims 29 to 31, comprising a polymer-coated channel through which the solid metallic tape is extendable.

33. The lightning protection apparatus of any one of claims 29 to 32, wherein the solid metallic tape is constructed from a heat resistant alloy.

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34. The lightning protection apparatus of claim 33, wherein the heat resistant alloy

comprises copper.

35. The lightning protection apparatus of any one of claims 29 to 34, wherein the solid metallic tape comprises a nickel coating.

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36. The lightning protection apparatus of any one of claims 26 to 35, comprising a mounting assembly for mounting the housing to a periphery of the tank shell.

37. The lightning protection apparatus of claim 36, wherein the mounting assembly
10 comprises a holder for securing the apparatus to the shell.

38. The lightning protection apparatus of claim 36 or claim 37, wherein the mounting assembly is attachable to a bracket that is configured for attachment to the shell.