other, sparks may be caused between these by static electricity or the like. In this situation, installation of a grounding device for a floating roof tank on the floating roof tank is considered to enable prevention of generation of sparks, by electrically connecting the floating roof and the side wall of the tank.

[0005]

However, such a grounding device for a floating roof tank is to be installed on a floating roof tank installed outdoors, and accordingly tends to be exposed to rain water and foreign matters and thus deteriorate with corrosion and the like.

In this situation, embodiments of the present invention seek to provide a grounding device, for a floating roof tank, that can be used for a long time, being protected from deterioration with corrosion and the like.

[0006]

According to an aspect of the present invention, a grounding device for a floating roof tank includes an elongated conductor; a housing; a drum that is covered by a housing and supported rotatably along a circumferential direction in the housing, the conductor being wound around the drum; an urging member provided inside the inner circumferential portion of the drum to urge the drum along a direction in which the conductor is wound back; connecting members that are formed such as to sandwich the conductor at a tip end portion, on a side drawn-out from the entrance-exit portion, of the conductor and connect the conductor to the floating roof, wherein the connecting members are curved such as to warp outward of the conductor, at an end portion with respect to a longitudinal direction of the conductor; and an entrance-exit portion formed, at the housing, for the conductor to enter and exit the housing, wherein the grounding device for a floating roof tank electrically connects a container main body and a floating roof of a floating roof tank through the conductor.

[0007]

According to embodiments of the present invention, it is possible to provide a grounding device, for a floating roof tank, that can be used for a long time, being protected from deterioration with corrosion and the like.

Objects, arrangements, and advantages other than the above will be made clear by the below-described embodiments.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008]

What is claimed is:

1. A grounding device for a floating roof tank, comprising;

an elongated conductor;

a housing;

a drum that is covered by the housing and supported rotatably along a circumferential direction in the housing, the conductor being wound around the drum;

an urging member provided inside an inner circumferential portion of the drum to urge the drum along a direction in which the conductor is wound back;

connecting members that are formed such as to sandwich the conductor at a tip end portion, on a side drawn-out from the entrance-exit portion, of the conductor and connect the conductor to the floating roof,

wherein the connecting members are curved such as to warp outward of the conductor, at an end portion with respect to a longitudinal direction of the conductor; and

an entrance-exit portion formed, at the housing, for the conductor to enter and exit the housing,

wherein the grounding device for a floating roof tank electrically connects a container main body and a floating roof of a floating roof tank through the conductor.

2. The grounding device for a floating roof tank according to claim 1,

wherein the entrance-exit portion is provided with a foreign matter removing member for removing foreign matters on a surface of the conductor wound back by the drum, in a state that the foreign matter removing member hits against the surface of the conductor.

3. The grounding device for a floating roof tank according to claim 2, wherein the foreign matter removing member comprises a rotatable roller.

4. The grounding device for a floating roof tank according to any of the preceding claims, wherein the conductor is movable at a tip end portion thereof on a side drawn out from the entrance-exit portion, at least in two directions perpendicular to a longitudinal direction of the conductor.

~~5. The grounding device for a floating roof tank according to any of the preceding claims, further comprising:~~

~~connecting members that are formed such as to sandwich the conductor at a tip end portion, on a side drawn-out from the entrance-exit portion, of the conductor and connect the conductor to the floating roof,~~

~~wherein the connecting members are curved such as to warp outward of the conductor, at an end portion with respect to a longitudinal direction of the conductor.~~

~~6~~5. The grounding device for a floating roof tank according to any of the preceding claims, wherein the conductor is in a band and thin plate shape.

~~7~~6. The grounding device for a floating roof tank according to claim ~~6~~5, wherein the conductor includes a curved shape that is a convex shape or a concave shape with respect to a thickness direction.

~~8~~7. The grounding device for a floating roof tank according to any of the preceding claims, wherein the conductor is formed from phosphor bronze or brass and/or provided with nickel plating or tin plating on a surface thereof.

~~9~~8. The grounding device for a floating roof tank according to any of the preceding claims, wherein the conductor has a higher anticorrosion performance at a tip end portion thereof on a side drawn out from the entrance-exit portion, than anticorrosion performance of the other portions thereof.

~~10~~9. The grounding device for a floating roof tank according to claim ~~9~~8, wherein the conductor is formed from phosphor bronze or brass and/or provided with nickel plating or tin plating on a surface, only at the tip end portion thereof.