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Shield with slider assembly for a gas tank container

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**ENGLISH-ABST:**

A shield along with slider assembly for shielding/protection of a container opening comprising of a shield for closing the open window whereby the shield is sized as per the open window; two U-shaped channel panels having the width greater than the width of the shield as slider assembly.

**NO-OF-CLAIMS:** 13

**NO-DRWNG-PP:** 3

**SUMMARY:**

## BACKGROUND OF INVENTION

### [0001] 1. Field of Invention

[0002] This invention relates to a shield with slider assembly for a Gas Tank Dome and has for its objective to provide an improved construction of shield with slider, which enables the forward protection to the Gas Tank.

### [0003] 2. Description of Related Art

[0004] In the field of protection of high-pressure reservoirs/tanks like cylinders for transportation of compressed gases from gas fields to consumers, manufacture and operation of storages, containers of gas welding and cutting equipments, cylinders with air-oxygen mixture for breathing apparatuses, etc, the multi-space reservoirs/tanks are used, which has dome type, closed spherical, cylindrical, conical or combination communicating containers nested on into the other and installed with clearance for keeping gas cylinders isolated from each other. The multi space containers are used to cover the cylinders from the outer atmosphere for some specific reasons.

[0005] The invention proposes a shield to cover up the openings of the containers so that the tank is made safe and covered from outside. It has been observed that the different openings in the reservoirs are kept which are required during operation of the gas cylinders and thus are attacked by the atmospheric hazards and also the pests, animals, birds etc. Since the gas stored in the cylinders are sensitive and at high pressure, the safety parameters are required to be fulfilled to prevent the individuals from any accident. The containers can have several openings for different purposes.

[0006] Often the shields which are used to cover the openings are made of some resin or cloth which are nor durable and also the protection is lost in case of wind or snow. These kinds of shields also have less shelf life. The shield also does not withstand the attacks of snakes, pests, wasps or smaller animals and insects.

[0007] The aforesaid shields are replaced by durable metal, plastic or wooden shields which do-not satisfy the needs since the shields do not have any support or housing means which can withstand the outside atmospheric pressures like wind etc.

## SUMMARY OF THE INVENTION

[0008] The present invention relates to a shield with a slider assembly so that the aforesaid difficulties can be met. Moreover it may be easy in operation of opening and closing.

[0009] A shield along with slider assembly for shielding/protection of a container opening comprising of a shield for closing the open window whereby the shield is sized as per the open window. Two U-shaped channel panels, having the width greater than the width of the shield, as slider assembly. Wherein the U shaped channel panels are fitted with the boundary of the opening and are perpendicular/vertical to the ground.

[0010] The principle objective of the present invention is to provide a shield with a slider assembly, which shields the opening of the outer reservoir

[0011] The second objective of the present invention is to provide which is wind and pressure resistant.

[0012] The third objective of the present invention to provide a resting means to the shield so that stability to the shield can be provided and also the protection to the base of the container can be achieved.

[0013] The fourth objective of the present invention is to provide a simple reliable and low cost shield with a slider assembly.

[0014] The fifth objective of the present invention to provide a shield connected with a channel for sliding required for easy opening and closing of the shield.

[0015] The sixth objective of the present invention is to make the shield water and termite resistant.

[0016] The seventh objective of the present invention is to make a shield, which is lightweight, strong and user friendly so that it can last long.

[0017] The eighth objective of the present invention is to provide a sliding channel, which is free from all obstructions i.e. with minimum friction.

[0018] The ninth objective of the present invention is to provide a shield assembly, which is versatile and can be used in any type of reservoir.

[0019] The tenth objective of the present invention is to provide space in the shield so that, it can accommodate the nozzle, pipe fittings etc. through it.

[0020] The eleventh objective of the present invention is to provide arrangements so that no further welding/fitting or disturbance to the container is done. Rather the shield should be designed/modified so that the shield itself fulfills the needs.

[0021] The twelfth objective of the present invention is to provide locking means to the shield.

[0022] The thirteenth objective of the present invention to provide means for automatic opening and closing of the shield assembly, using combination of electric motor and pulley.

#### **DRWDESC:**

#### **BRIEF DESCRIPTION OF THE ACCOMPANYING DRAWINGS**

[0023] FIG. 1 illustrates a front view of a cylinder.

[0024] FIG. 2 illustrates a front view of a cylinder with the present invention employed.

[0025] FIG. 3 illustrates a front view the present invention.

[0026] FIG. 4 illustrates a bottom view of the present invention.

[0027] FIG. 5 illustrates a front view of an alternate embodiment.

#### **DETDESC:**

#### **DETAILED DESCRIPTION OF THE INVENTION**

[0028] The high-pressure reservoirs and cylinders for transportation/preservation/distribution of compressed gases from gas fields to consumers, are required to be protected from the atmospheric changes since body of the reservoirs if subjected to atmospheric changes, corrodes the outer layer and may cause accidents. Therefore to prevent the effect of atmosphere, the reservoirs/cylinders are kept inside containers, the containers are of many shapes as per the requirement or as per the shape of the cylinders. They can be dome shaped, spherical, cylindrical, and cubical or any other figures as

desired or needs. For different operations of the cylinders the cylinders are joined with different type of pipefittings, which comes out of the container via one or many openings in the container. These containers are so made such that they can withstand the atmospheric changes. They are therefore kept in the open.

[0029] Since the containers are having one or many openings and are also kept in the open, the containers are utilized by pests, rodents, wasps, snakes, small animals or insects etc for their home. The rain, snow, hails, moisture etc can also pass through the openings. Therefore it is seen that the sole purpose of the containers are not being fulfilled.

[0030] According to the present invention there is provided a solution to the aforesaid problem by introducing a shield to the openings/windows. The shield is acting as a closing means for the opening/window and can be opened and closed whenever needed by the operator/user.

[0031] As shown in FIG. 1 the container (10) has an opening (20) that allows unwanted pests to dwell inside.

[0032] FIG. 2 shows a shield (30) to cover opening (20) of container (10). The shape and size of the shield (30) is made respectively to the opening (20) of the container (10). The material of the shield (30) is so selected which is a non-corrosive material, which is resistant to the atmosphere. The material of the shield (30) can be, but is not limited to, fire resistant. The material can be any lighter metal like steel, aluminum, brass etc. The non-metals like plastics, polymers etc can also be used which fulfill the above-said requirements.

[0033] The shield (30) has a sliding channel (40) (as shown in FIG. 3) to allow the shield (30) to sliding in and out of opening (20). The sliding channel (40) is U-shaped and extends [Threequarters] of the way around the shield (10). The width of the sliding channel (40) is slightly greater than the width of the walls (25) of the opening (20) which is just enough for the free movement of the shield (30) in and out of opening (20).

[0034] FIG. 4 shows a view of the shield (30) from the bottom. FIG. 4 give a closer look at the sliding channel (40) and the walls (25) of the opening (20) fitting inside the U-shaped sliding channel (40). The walls (25) of the opening (20) fit in between the walls (45) of the sliding channel (40) to insure a clean fit of the shield (30) into the opening (20).

[0035] In an alternate embodiment shown in FIG. 5 the sliding channels (50) are separate from the shield (30) and can be welded to the frame of the opening (20). Care must be taken in welding so that the sliding channels (50) are perpendicular to the base and also the distance between the two channels is made such that it can accommodate the shield (30) through it. The shield (30) can move freely inside the channels.

[0036] In another embodiment of the present invention the shield (30) are so designed so that they have space for accommodating the pipe assembly (15) through them of as shown in FIG. 1. The space of accommodation can vary with respect to the area of the fittings.

[0037] In another embodiment of the present invention there is provided a conventional mechanism of locking means for security reasons. The lock can be a conventional lock wherein the lever for locking can be made attached to the body of the container (10). The conventional lock can be located on the shield (30) and a loop or hook or any conventional lock receiver can be located on the container (10) itself. The locking means can only be used if required by the operator/owner/user.

[0038] In yet another embodiment of the present invention there is provided an electric motor and a pulley arrangement for automatic opening and closing of the shield. The electric motor is attached on the top of the window connected with a pulley. The pulley is connected with a thread and further connected with the shield by means of a stud. The stud may be welded to the shield body such that it cannot be a hindrance in the movement of the said shield. The motor can be made operable by means of a switch, which may attached to a suitable position, which may be on the body of the container, base or anywhere else.

[0039] The above-described embodiments of the invention are intended to be examples of the present invention.

Numerous modifications changes and improvements within the scope of the invention will occur to the reader. Those of skill in the art may effect alterations and modifications thereto, without departing from the scope of the invention, which is defined solely by the claims appended hereto.

**ENGLISH-CLAIMS:**

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I claim:

1. A shield for protection of a container opening comprising: a main body; and at least one channel, said at least one channel circumscribes said main body.
2. A shield as claimed in claim 1, wherein said at least one channel are fitted with the boundary of the container opening.
3. A shield as claimed in claim 1, wherein said main body has space for accommodating the pipe assembly through it.
4. A shield as claimed in claim 1, wherein said main body has a means of locking.
5. A shield assembly as claimed in claim 1, wherein said main body has an electric motor and a pulley arrangement for automatic opening and closing of the shield.
6. A shield assembly as claimed in claim 1, wherein said main body is made of a material, which is non-corrosive, light weight, fire resistant and resistant to atmospheric changes.
7. A shield along with slider assembly for shielding/protection of a reservoir opening comprising: a shield for closing the open window whereby the shield is sized as per the open window. two U-shaped channel panels having the width greater than the width of the shield as slider assembly. wherein the channels are fitted along with the sides of the shield.
8. A shield as claimed in claim 7 further comprising of a rectangular bar as resting means.
9. A shield as claimed in claim 8, wherein the rectangular bar can be replaced by another U-shaped channel panel as resting means.
10. A shield as claimed in claim 7, wherein said main body has space for accommodating the pipe assembly through it.
11. A shield as claimed in claim 7, wherein said main body has a means of locking.
12. A shield assembly as claimed in claim 7, wherein said main body has an electric motor and a pulley arrangement for automatic opening and closing of the shield.
13. A shield assembly as claimed in claim 7, wherein said main body is made of a material, which is non-corrosive, light weight, fire resistant and resistant to atmospheric changes.

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