July 26, 1927. 1,637,298

E. G. GARCIA

FIRE PREVENTING COVER FOR FUEL TANKS AND THE LIKE

Filed May 24, 1926

Fig. 1.

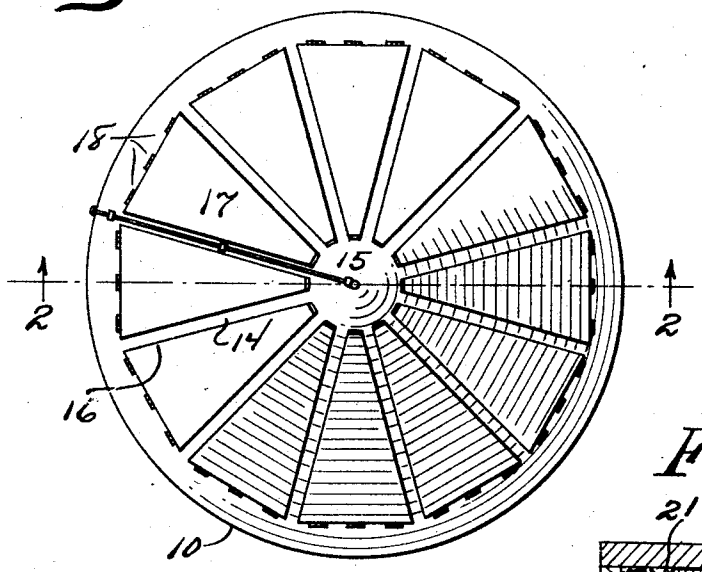


Fig. 3.

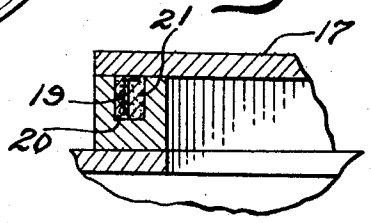


Fig. 2.

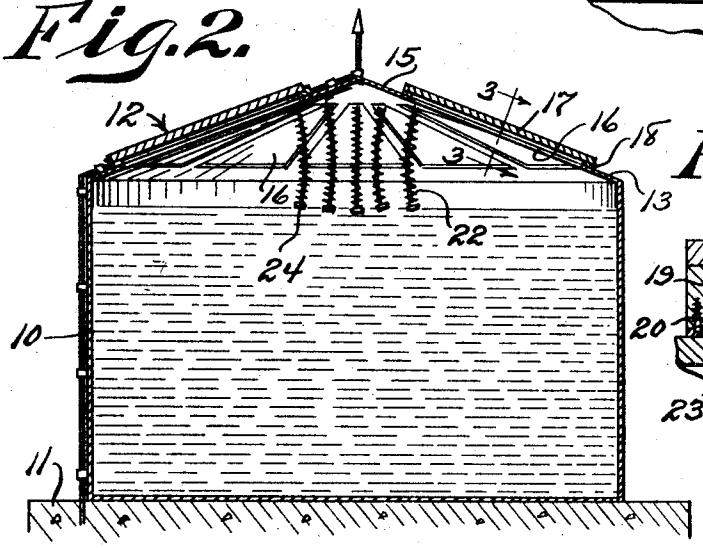
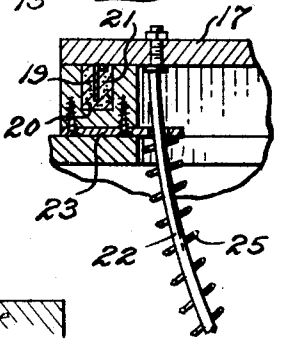


Fig. 4.



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UNITED STATES PATENT OFFICE.

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FIRE-PREVENTING COVER FOR FUEL TANKS AND THE LIKE.

Application filed May 24, 1926. Serial No. 111,461.

This invention relates to fire protective apparatus particularly for that used in connection with tanks for the storage of gasoline and other petroleum products, and has for its object the provision of a novel tank cover so constructed and arranged that in the event of an explosion the pent up gases within the tank may escape, subsequently to which the covers will reclose and thereby choke out and prevent the fire from continuing owing to the exclusion of oxygen.

An important object is the provision of a protective cover of this device which may be used to replace the ordinary types of covers provided for fuel tanks, the cover structure furthermore having a lightning rod which will act to ground and carry off any electricity which may reach the tank as the result of an electrical storm or other disturbance.

Another object, and a more specific one, is to provide a cover including a plurality of sections or hatches spring pressed into closed position and hingedly mounted so as to be capable of opening movement in case of necessity, means being provided in association with the sections or hatches for hermetically sealing them.

An additional object is to provide a device of this character which will be simple and inexpensive in manufacture, easy to install, positive in action, efficient and durable in service, and a general improvement in the art.

With the above and other objects and advantages in view, the invention consists in the details of construction, the arrangement and combination of parts to be hereinafter more fully described and claimed, and illustrated in the accompanying drawings, in which:—

Figure 1 is a plan view of the cover device.

Figure 2 is a section taken on the line 2—2 of Figure 1, the entire tank being shown.

Figure 3 is a detail in cross section taken on the line 3—3 of Figure 2 and illustrating the sealing means, and

Figure 4 is a detail view showing the spring mounting.

Referring more particularly to the drawings, the numeral 10 designates an oil or other petroleum product tank of any ordinary or preferred construction and mounted upon any suitable base or foundation 11. However, the usual cover is omitted and replaced by the cover structure indicated generally by the numeral 12, constituting the subject matter of the present invention.

In carrying out this invention, I provide a cover structure which includes an outer ring portion 13 secured to or formed integrally with the body of the tank 10, and further including a frame including radial arms 14 extending inwardly from the rim or ring 13 and merging into or secured to a central conical portion 15. This frame is of such construction as to provide a plurality of trapezoidal shaped openings 16 normally closed by hatches, doors or cover sections 17 hingedly mounted at their outer ends, as indicated at 18 and having their side edges and forward ends formed with or provided with depending flanges 19 seating within some suitable material 20 located within gutters 21 formed in the radial arms 14. This material may be a mixture of sand and oil or anything else of an equivalent more or less plastic nature so as to provide a hermetically sealed joint when the doors, sections or hatches are in closed position.

Suitably secured to the inner ends of the cover sections, doors or hatches are arcuate rods 22 which are slidable through guard and guide plates 23 mounted beneath the members 14 and which carry abutment members 24 engaging against the lower ends of coil springs 25 arranged in encircling or embracing relation to the rods and abutting against the plates 23.

In the operation of the device, it will be of course apparent that under ordinary circumstances the springs 25 pressing against the abutment members 24 will act to hold the door members, sections or hatches in closed position so that no gases rising from the liquid within the tank may escape into the atmosphere. However, should it happen that there is an explosion of the combustible gases within the tank the doors, hatches or sections will fly open violently so as to permit escape of the inflammable gases. Immediately upon the reduction of pressure within the tank the springs 25 will act to reclose the doors just as violently so that there will be no opportunity for oxygen to enter the tank. Clearly, the absence of oxygen will operate to prevent combustion inasmuch as oxygen is absolutely essential to

promote combustion. As a result of this action any fire which may have started will be smothered out or extinguished. Another feature of advantage is that leakage of inflammable or explosive gases into the atmosphere is prevented owing to the hermetic sealing of the doors inasmuch as the flanges carried thereby fit within the more or less plastic material within the gutters provided for the purpose.

It is really believed that the construction, operation and advantages will be readily apparent to one skilled in the art without further explanation.

While I have shown and described the preferred embodiment of the invention, it should be understood that I reserve the right to make such changes in the form, construction and arrangement of parts as will not depart from the spirit of the invention or the scope of the subjoined claim.

Having thus described the invention, I claim:—

A tank having a conical top provided with a plurality of trapezoidal shaped openings arranged radially and terminating short of the center, a plurality of trapezoidal shaped doors hingedly mounted adjacent the periphery of the tank for normally closing said openings in overlapping relation thereto, guide brackets mounted beneath the top and provided with openings, curved depending rods secured to said doors at the inner or free ends thereof and slidable through the openings in the brackets, and coil springs surrounding said rods and abutting against the undersides of the brackets.

In testimony whereof I affix my signature.

ENRIQUE GREGORIE GARCIA.