July 24, 1928. 1,678,539

G. L. TICEHURST

OIL RESERVOIR SAFETY APPLIANCE

Filed Aug. 17, 1926

Fig. 1.

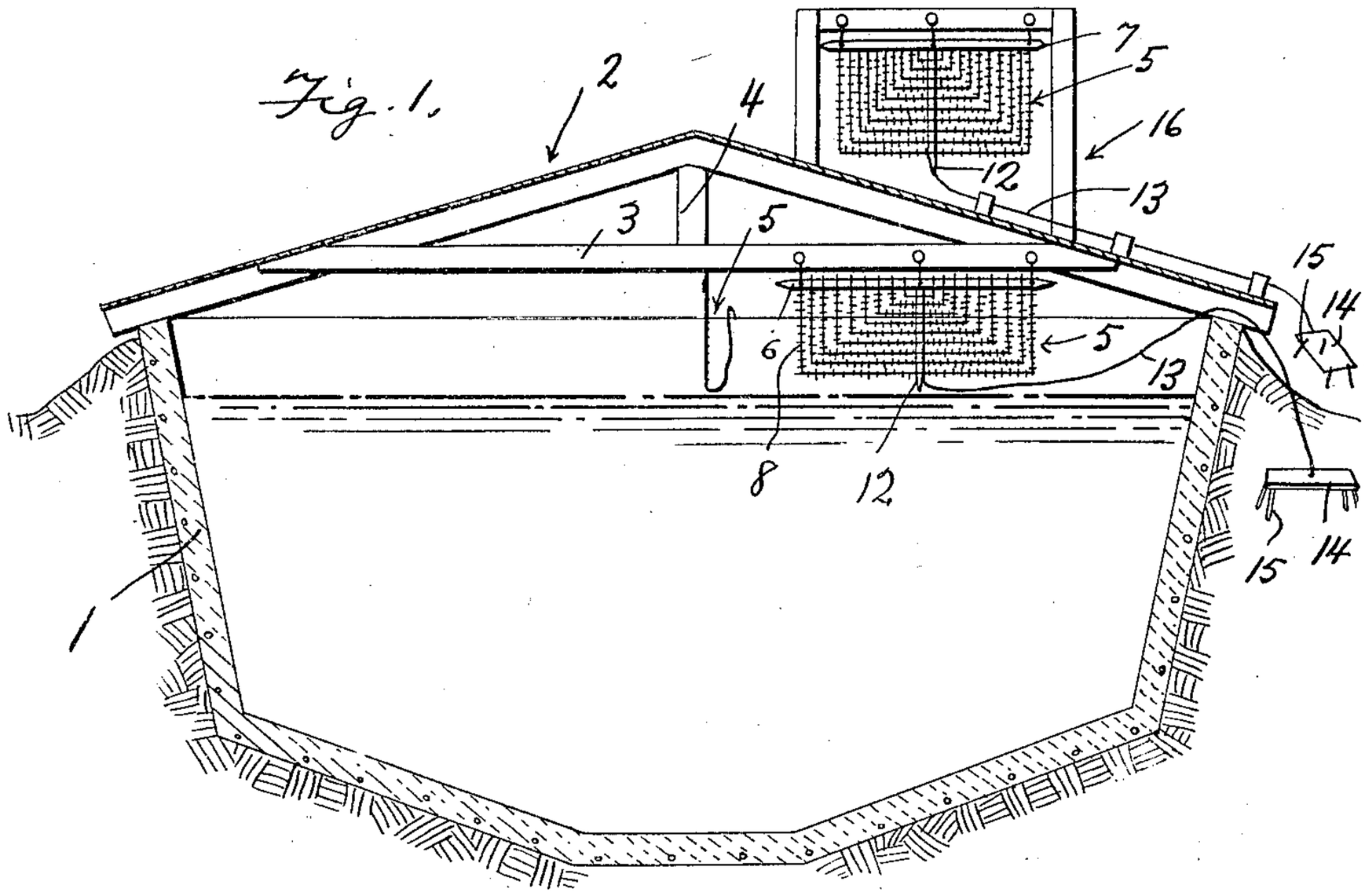
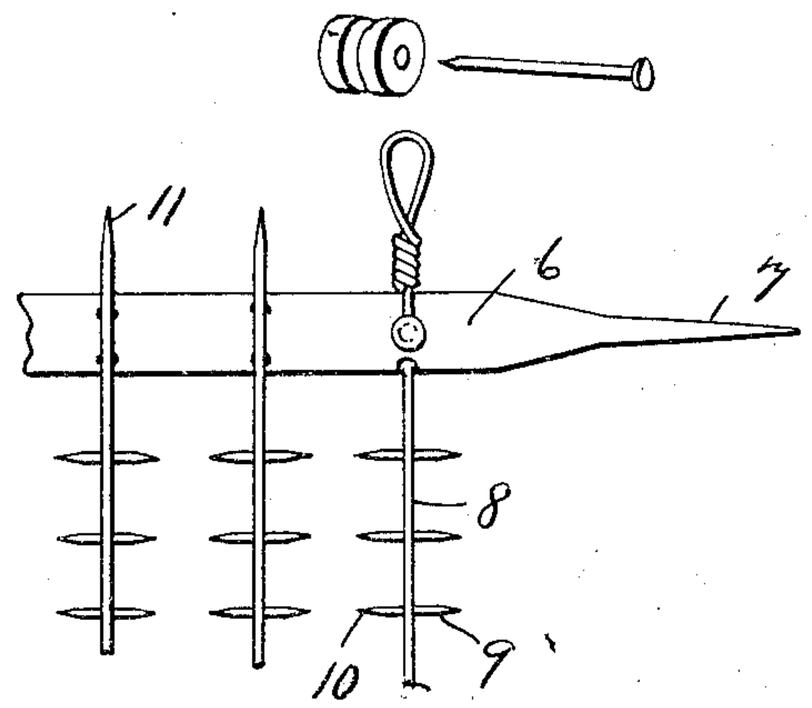



Fig. 2.




Inventor
George Leon Ticehurst
By Clarence A. O'Brien
Attorney

Patented July 24, 1928. 1,678,539

# UNITED STATES PATENT OFFICE.

GEORGE LEON TICEHURST, OF BAKERSFIELD, CALIFORNIA.

## OIL-RESERVOIR SAFETY APPLIANCE.

Application filed August 17, 1926. Serial No. 129,766.

This invention relates to an improved safety appliance particularly adapted for use in the oil industry, and it has more particular reference to a device which is especially adapted for use in association with an oil-containing reservoir of the kind commonly found on a tank farm.

More specifically speaking, the invention has reference, to a structure which includes a novel electricity grounding device for diminishing the liability of the reservoir being struck by lightning.

It will be remembered that the usual reservoir comprises a concrete container or the like which is ordinarily imbedded in the ground, this being provided with a roof including a suitable rafter construction and roofing material.

It is believed that an explosive charge accumulates in the space between the level of the oil and the underside of the roof. This charge is of an electric nature and it seems that in especially warm weather, this charge expands, and really becomes dangerous. Consequently, in case of an electrical storm, it is thought that this electricity-filled charge has a tendency to attract lightning, thus placing the reservoir in danger during the storm.

Many inventive devices and chemicals have been and are being employed for extinguishing fires in areas of this kind, and it has occurred to me that rather than attempt to extinguish the fire, the proper measure is to take precautionary steps to prevent starting of the fire in the first instance. It is thought that by relieving the dangerous gaseous condition in the reservoir, this end may be accomplished to some extent.

It follows, that what I propose to do is to provide distribution means externally and internally of the reservoir roof for aiding in diminishing the forceful explosion effect of said electricity charge.

As before stated the improved device simply comprises a means for grounding the electrical forces forming a part of the aforesaid charge.

In the drawings:

Fig. 1 is a transverse section through a reservoir showing the improved device associated therewith.

Fig. 2 is a fragmentary detail view showing parts in perspective.

Referring to the drawings in detail, it will be seen that the reference character 1 designates the concrete container of the reservoir, while the reference character 2 designates the roof. This embodies the usual roofing materials on the exterior and includes a supporting beam 3 on its under side, together with bracing struts 4. There are two devices of my invention shown, each device being represented by the reference character 5. However, each device is of the same construction and a description of one will suffice for both. To this end, it will be seen that each device 5 comprises a main metal bar 6 having pointed ends 7. Carried by this bar are main wires 8 provided with closely spaced cross pieces 9 having pointed ends 10. The wires are also provided with pointed ends as at 11. The wires are formed to provide a grid structure with the points of the cross pieces 9 disposed opposite each other. Extending at right angles from the central portion of the device is a pointed bar 12 to which a ground wire 13 is connected. The ground wire is to extend to a distant point where it is connected with a grounding plate 14 having pins 15 by means of which it is secured in the ground. The ground wire is connected to the point of the bar 12. The device in the tank between the oil surface and the under side of the roof is supported from the beam 3. The device on the outside of the roof is supported on a special supporting frame 16.

As before stated, it is believed that the air which accumulates beneath the roof and in the vicinity of the tank is considerably charged with an explosive agent resulting in what appears to be electricity. It is thought that by placing any number of these devices in the vicinity of the roof, the disastrous explosive effect of the charge will be removed. The theory is that the pointed wire members and rods both attract and repel electrical atoms, and in so doing set up a circulation which aids in the discharge of the electricity laden air. In addition, any electricity which may be conducted through the structure, will also be conducted to the long wires and ground plates.

It is believed that by considering the description and drawings a clear understanding of the structure and the theory of operation, and advantages will be had. Therefore, extra description is thought unnecesary.

I claim:—

In means for the purpose described, an overhead support, an electricity gathering

device suspended from the support and having a horizontal bar with pointed ends, a vertical spindle bar pendent from the first named bar and pointed at its lower end, and U-shaped wires in vertically nested relation connected at their ends to the first named bar and at intermediate points of their length to the pendent bar and having at intervals in their length closely arranged cross pieces with pointed ends, and a conductor connected to the pendent bar of said device for grounding electric current therefrom.

In tetimony whereof I affix my signature.

GEORGE LEON TICEHURST.