C. W. HOWE.

LIGHTNING ARRESTER.

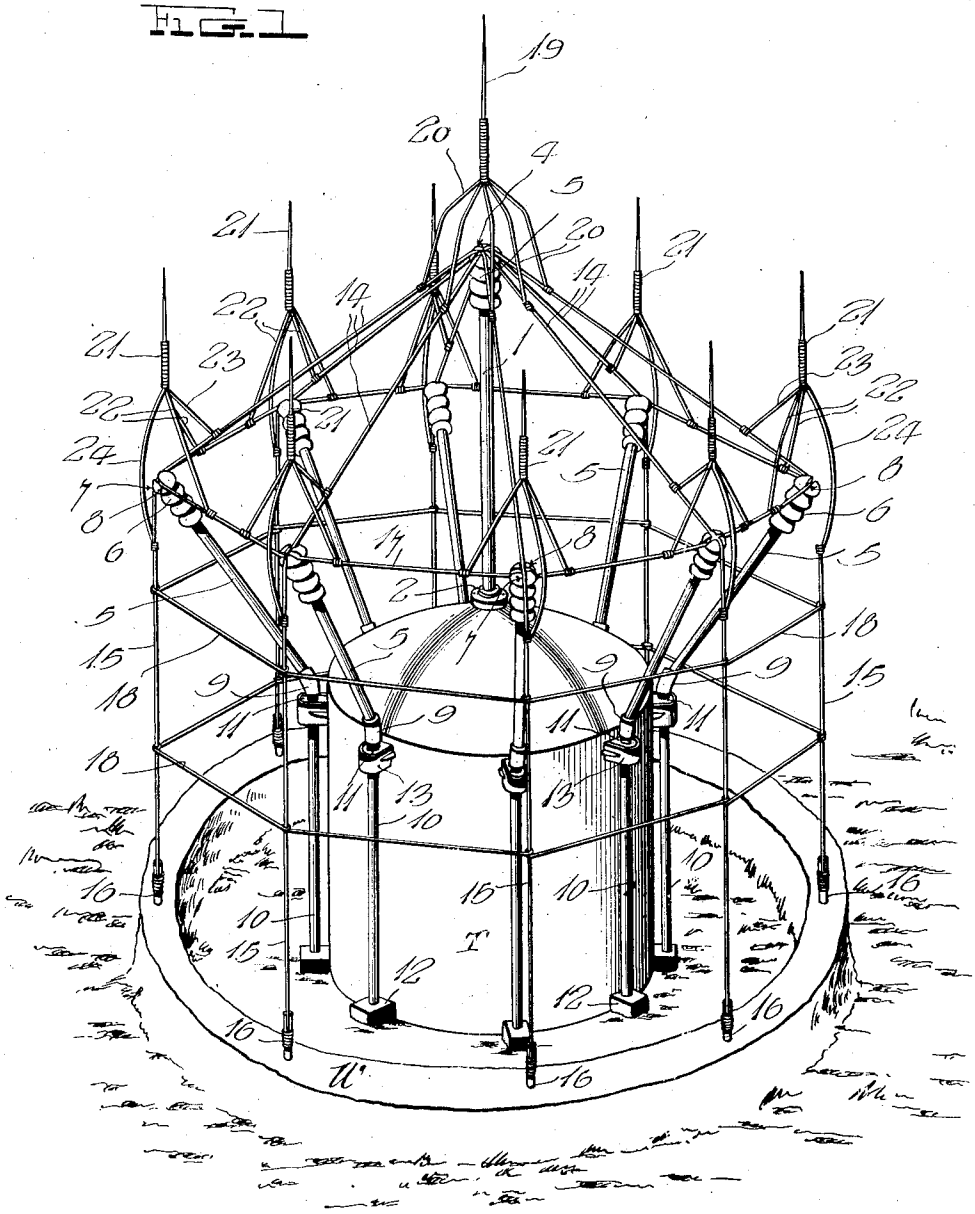
APPLICATION FILED SEPT. 19, 1918.

1,342,111.

Patented June 1, 1920.

2 SHEETS—SHEET 1.

FIG. 1



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2 SHEETS—SHEET 2.

FIG. 2

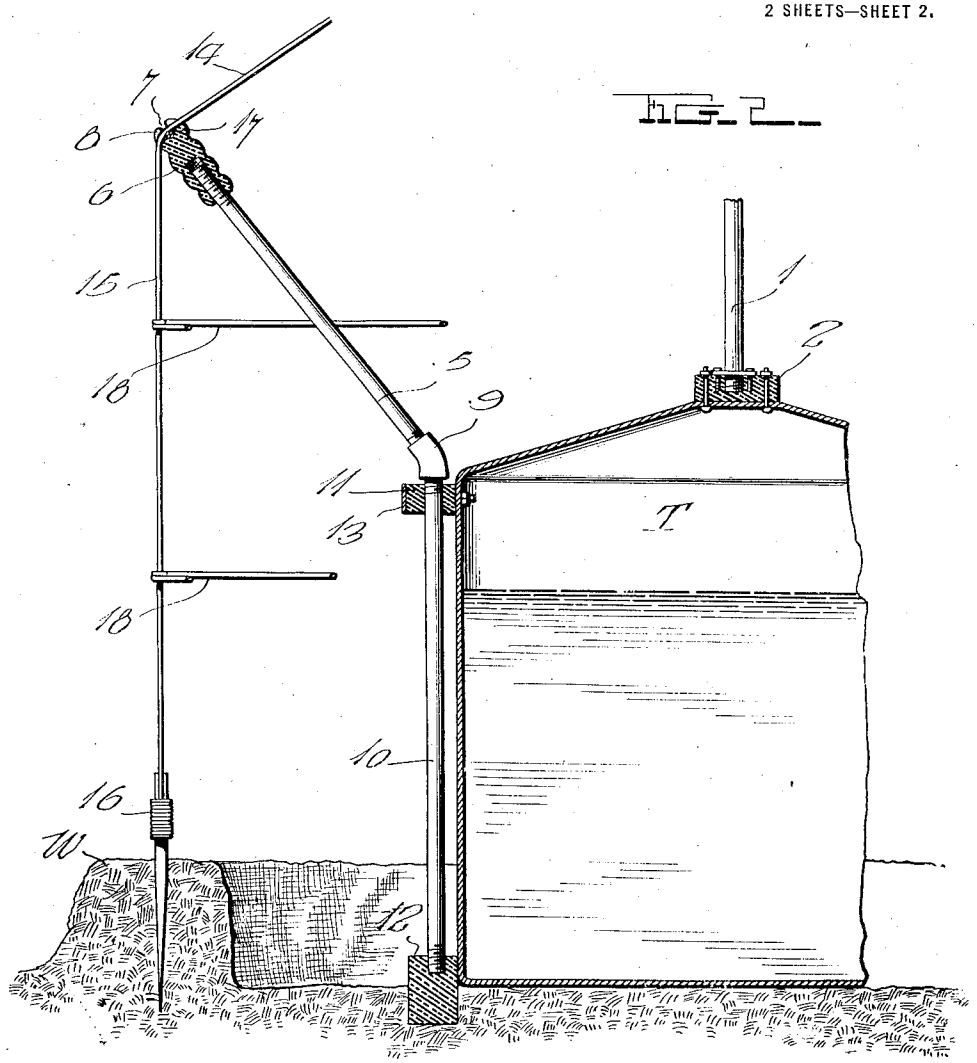


FIG. 3

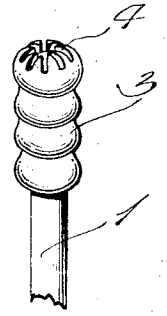
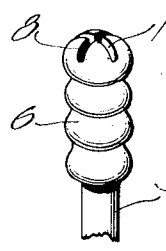


FIG. 4



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UNITED STATES PATENT OFFICE.

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LIGHTNING-ARRESTER.

1,342,111. Specification of Letters Patent. Patented June 1, 1920.

Application filed September 19, 1918. Serial No. 254,825.

To all whom it may concern:

Be it known that I, CHARLES W. HOWE, a citizen of the United States, residing at Healdton, in the county of Carter and State of Oklahoma, have invented certain new and useful Improvements in Lightning-Arresters; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide comparatively simple, yet highly efficient means for protecting oil tanks and the like against lightning, since a great amount of loss now commonly takes place from this cause, it having been found that it is practically impossible to prevent the leakage of gas from the tanks, and that such gas is prone to ignite in electrical storms, and set fire to the entire tank.

With the foregoing object in view, the invention resides in the novel arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings.

Figure 1 is a perspective view of the invention applied.

Fig. 2 is an enlarged vertical section.

Figs. 3 and 4 are perspective views of the insulators.

In the drawings above briefly described, T designates an oil tank surrounded by the usual fire wall W, the construction of the tank and wall forming no part of the present invention.

A central pole 1 rises from a socket member 2 which is secured to the top of the tank T, the upper end of said pole having an insulator 3 provided with a plurality of crossed grooves 4 in its upper end. Arms 5 preferably formed of piping, incline upwardly and outwardly from the upper end of the tank T and are provided on their outer ends with insulators 6 each having a pair of crossed grooves 7 and 8. The lower ends of the arms 5 are preferably connected by elbows 9 to vertical pipes or the like 10 which are spaced outwardly from the sides of the tank T by upper and lower insulators 11 and 12. The insulators 11 may well be secured to the tank by clips 13, while the insulators 12 will preferably project into the earth as seen most clearly in Fig. 2.

Wires 14 are received at their centers in the grooves 4 of the insulator 3, said wires inclining downwardly and radiating from said insulator to the insulators 6, passing through the grooves 7 of the latter, and depending therefrom at 15, to suitable anchors 16 driven in the fire wall W or otherwise inset in the earth. A circumferential wire 17 extends between the insulators 6 and is received in the grooves 8 thereof, while other similar wires 18 are secured to the vertical portions 15 of the wires 14.

A central lightning rod 19 is positioned above the insulator 3 and is provided with depending branches 20 secured to the inclined portions of the wires 14, while other lightning rods 21 are positioned over the insulators 6. The rods 21 are provided with depending branches 22 secured to the wire 17 on opposite sides of the insulators 6, with other depending branches 23 secured to the inclined portions of the wires 14, and with additional branches 24 depending below the wire 17 and secured to the vertical portions 15 of the wires 14.

By employing the general construction and arrangement shown and described, it will be practically impossible for the lightning to strike the tank proper or to ignite any gas escaping therefrom, all electrical currents being immediately conducted to the earth as soon as they approach the vicinity of the tank. Since probably the best results are obtained from the association of parts shown and described, such arrangement is preferably followed, but within the scope of the invention as claimed, numerous minor changes may well be made.

I claim:

In combination with a tank, a central pole rising from said tank and having an insulator on its upper end, the upper end of said insulator having crossed grooves, circumferentially spaced blocks vertically alined at the upper and lower ends of the tank wall and having vertical openings, vertical bars received in said openings and inclined upwardly and outwardly above the uppermost of said blocks, insulators on the upper ends of said bars and provided in their outer ends with crossed grooves, non-insulated wires having their centers received in the grooves of said first named insulator, said wires radiating and inclining downwardly to the other insulators, being received in certain grooves of the latter and then depending vertically, stakes anchoring and grounding said depending wire portions to

the ground, circumferential, non-insulated wires secured to said depending wire portions, an additional non-insulated wire extending circumferentially and received in the remaining grooves of the insulators of said vertical bars, lightning rods above these insulators, non-insulated branches depending and diverging from said lightning rods, said branches being secured to the inclined and vertical portions of said first named wires and to said additional circumferential wire, a central lightning rod disposed above said central pole, and additional non-insulated branches depending from said last named lightning rod and secured to the aforesaid inclined wire portions.

In testimony whereof I have hereunto set my hand.

CHARLES W. HOWE.

Witnesses:
R. F. B. LOGAN,
A. B. RIDDLE.