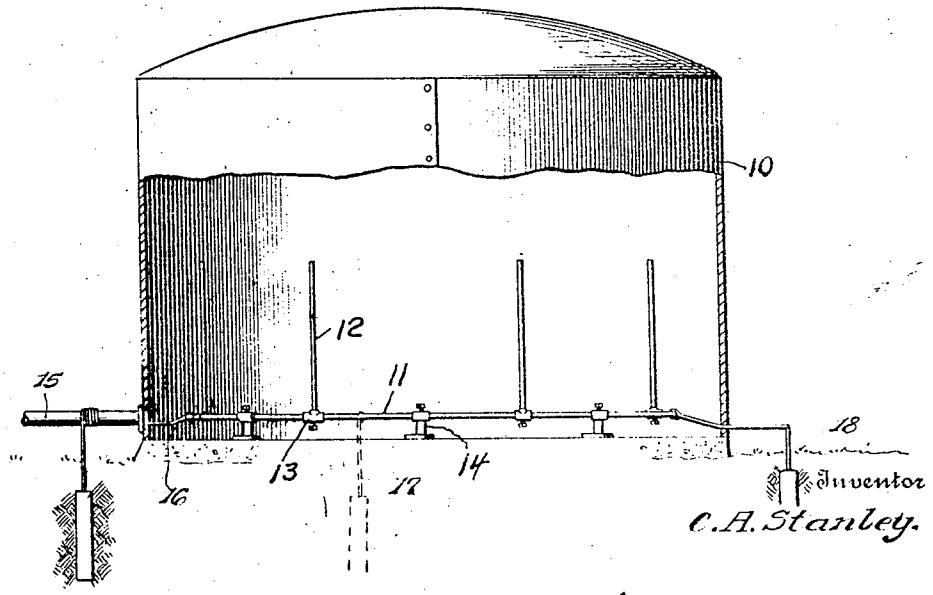
July 29, 1924. 1,502,924

C. A. STANLEY

INDUCTIVE STATIC DRAIN FOR OIL STORAGE TANKS

Filed Nov. 21, 1921 2 Sheets-Sheet 1

Fig. 1.



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Fig. 2.

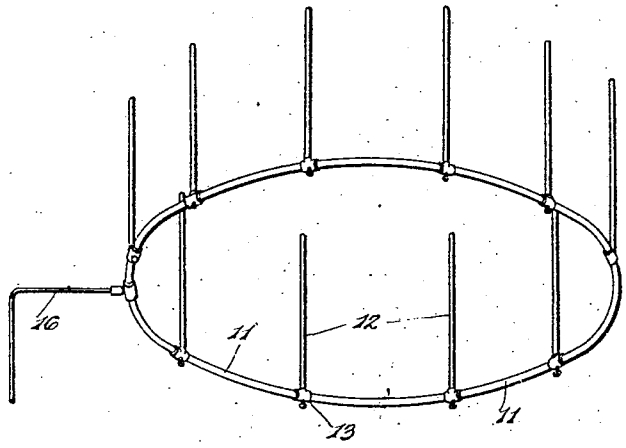
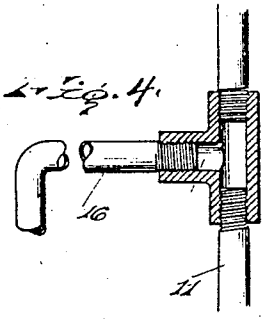


Fig. 4.



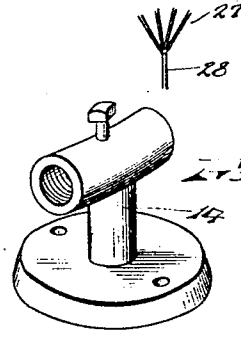


Fig. 3.

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UNITED STATES PATENT OFFICE.

CHARLES A. STANLEY, OF WICHITA, KANSAS.

INDUCTIVE STATIC DRAIN FOR OIL-STORAGE TANKS.

Application filed November 21, 1921. Serial No. 516,839.

To all whom it may concern:

Be it known that I, CHARLES A. STANLEY, a citizen of the United States, residing at Wichita, in the county of Sedgwick and State of Kansas, have invented certain new and useful Improvements in Inductive Static Drains for Oil-Storage Tanks, of which the following is a specification.

The present invention refers to a device to protect oil storage tanks from fire caused by induced electricity that might collect in storage tanks or in contents of the tank proper.

My device covers the process of draining a container and its contents of inductive electric charges, which consists in collecting from conducting particles suspended within contents of said container, induced charges contained in said particles and conducting said charges to a suitable point of discharge.

My device may be arranged to conduct to the ground electricity from induced electricity within the tank or its contents by means of an internal system of conductors.

As the storage tank, piping, and necessary parts are all connected metallically and grounded, the same potential will exist in all these units so that no sparks will occur or in other words, they have all the same capacity. The internal drain system will prevent the storage of induced static electricity within the oil body itself. The internal drain system will protect against lightning without any detrimental effects on the oil, tank or attachments. Any metals suitable as electrical conductors may be used in the construction of the internal systems.

In the accompanying drawings the present invention is illustrated showing one embodiment thereof, and

Figure 1 is a view of a tank and the internal drain system, part of the tank being broken away and it also shows how one or more grounds may be used, depending upon conditions of installation;

Figure 2 is a diagrammatic and perspective view of the internal drain system showing the construction of the wire type formation;

Figure 3 is a supporting base for the internal drain system; and

Figure 4 is a detail of a grounding conductor.

The storage tank is denoted by the numeral 10 and shows, through the broken away part, the internal drain system which consists of a ring or circular base 11 with upright collecting fins 12 of any desired number and length secured on the ring or base 11 by means of clamps 13, which may be ordinary pipe unions in case the base and fins are made of piping or metallic rods.

The ring or base 11 may be supported by means of standards or feet 14, placed on the bottom of the tank, see Figure 3 or the supports may be entirely omitted. The ring or base 11 is connected to the ground by means of conductors 16 of high conductivity. These ground connections having the same capacity as the rest of the drain system may be run into the oil drain pipe 15 and from there to the ground, or may be directly connected to the ground through the bottom of a tank or through its side, as shown at 17 and 18, respectively.

It should be noted that the internal drain system may be constructed in almost any form and made of wire, tube, rod or metallic screen or sheet metal. The internal drain system may not necessarily rest on the bottom of the storage tank but may just as well be supported from the side or suspended from the top thereof, depending on local conditions. In the case that pipes or rods are used, the grounding may be constructed, as shown in Figure 4, where the ring or base 11 is made up of short lengths of pipe or rods and screwed into a pipe T and the ground pipe or bar 16 is tapped into the transverse shank of the T. Similarly the fins 12 may be secured to the base or ring 11 by such a T as has just been described.

The internal drain system may be grounded in one or more places and either to the ground, or to the tank, separately or collectively, depending on local conditions, to insure most perfect results.

It will be evident that the invention may be used not only for protection of oil tanks but also for tanks containing any other liquid or gaseous substance intended for fuel or lighting.

Having thus described the invention, what is claimed as new is:

1. A device for continuously draining induced electric charges from conducting particles suspended within the contents of a tank and for conducting said charges to the ground, said device comprising a horizontally positioned base member, a plurality of upright collecting members, and a ground connecting element for said base member,

said members being made from short metallic rods, T's joining said rods to form the base and collecting members, and feet attached to said base member, said ground connecting element including a bent rod attached to one of said T's, the lengths of said rods for said members being such that the device may be completely enclosed by the tank.

2. A device for continuously draining induced electric charges from conducting particles suspended within the contents of a tank and for conducting said charges to the ground, said device comprising a base member, collecting members and a ground-connecting element for said base members, said members being made from rods, T's joining said rods, and feet attached to said base member, said ground-connecting element including a bent rod attached to one of said T's, the entire device being enclosed by the tank.

3. A device for continuously draining induced electric charges from conducting particles suspended within the contents of a tank and for conducting said charges to the ground, said device comprising a base member, collecting members and a ground-connecting element for said base members, the entire device being enclosed by the tank.

In testimony whereof I affix my signature.

CHARLES A. STANLEY. [L. S.]