

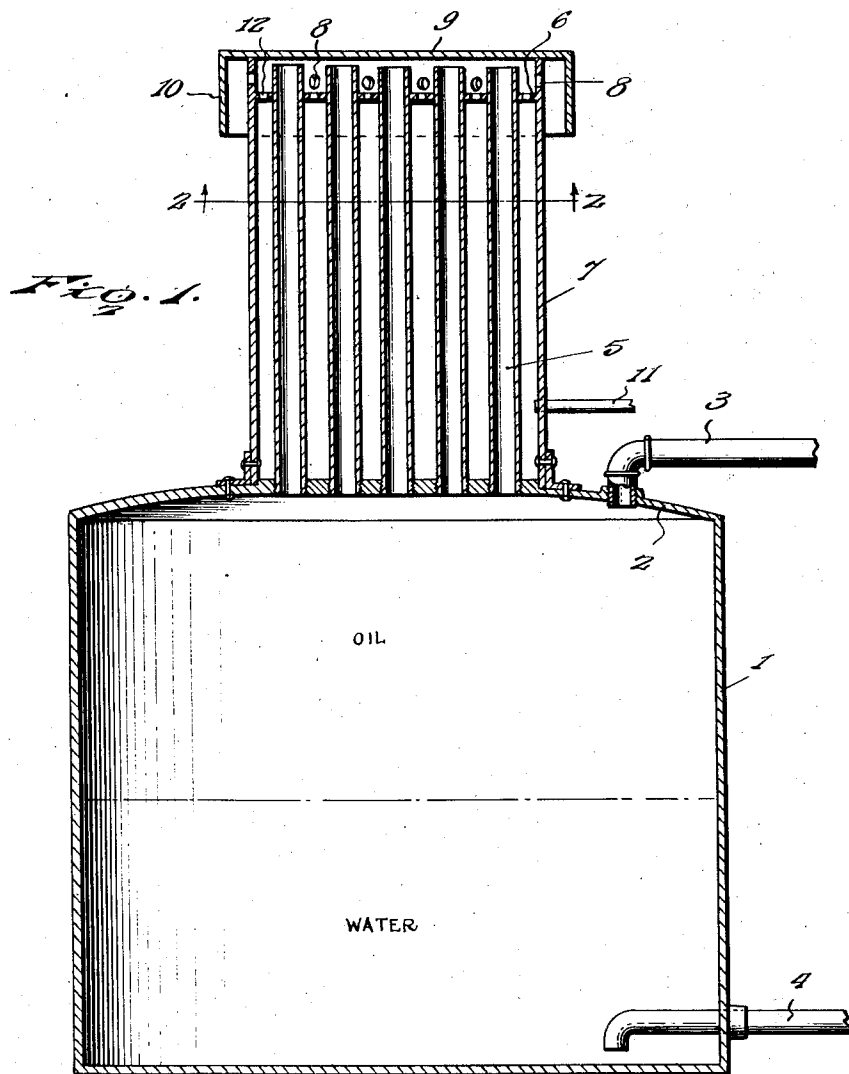
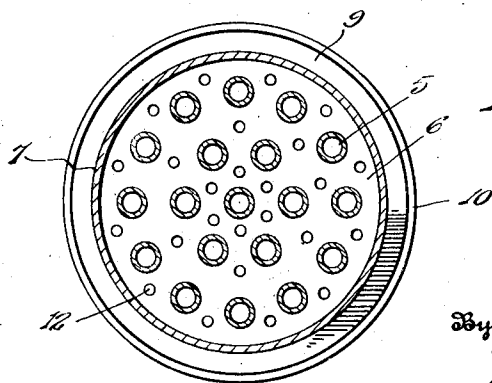
Dec. 18, 1928.

1,695,358

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OIL STORAGE TANK

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UNITED STATES PATENT OFFICE.

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OIL-STORAGE TANK.

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The object of this invention is to provide a simple and inexpensive construction whereby oil storage tanks will be guarded from the danger of fire. The invention is illustrated in the accompanying drawing and will be hereinafter fully set forth.

In the drawing:

Figure 1 is a vertical section of an oil storage tank embodying the invention, and Fig. 2 is a horizontal section on the line 2—2 of Fig. 1.

The main tank 1 may be of any approved construction and of any desired dimensions. In the top 2 of the tank is fitted the end of an oil outlet pipe 3 and at the bottom of the tank is fitted the delivery end of a water pipe 4 whereby water may be pumped into the tank as oil is withdrawn so that the tank at all times will be full of either oil or water or oil and water and an accumulation of air therein cannot occur. The top of the tank is also formed with a plurality of small openings therethrough and in each of said openings is secured the lower end of a tube 5 of small diameter which rises from the tank, as clearly shown in Fig. 1, the upper ends of the tubes being conveniently braced and maintained in spaced relation by a plate or web 6 which fits around the tubes and within a housing stack 7 which is also secured upon the top of the tank and extends around the entire group of tubes in spaced relation thereto so as to provide a water space which will protect the tubes from the effect of exceedingly high temperatures and also provide for expansion and contraction as the temperature of the atmosphere may vary. Above the web 6 small openings 8 are formed through the stack 7 as to vent the same and permit escape of any fumes which may arise from the oil due to evaporation. In order to check evaporation and the consequent formation of fumes and also protect the tubes from the weather and other elements, a lid 9 rests upon the upper edge of the stack 7 and is provided with a depending rim 10 which encircles the stack in spaced relation thereto, the escaping fumes being thereby deflected downwardly before being permitted to mingle with the surrounding atmospheric air.

Water is supplied to the stack 7 through a water pipe 11 and openings 12 are formed through the top plate or header 6 to provide for overflow. The water will flow through

the outlets 8 thence down the sides of the stack and over the main tank to the ground. Besides water-jacketing the tubes 5, evaporation is thus reduced and condensation effected.

Assuming the tank to be empty of both oil and water oil is fed thereinto in the usual manner so as to completely fill the tank and rise within the tubes 5 so that all air will be expelled. As the oil is drawn off for consumption, water is forced into the tank through the pipe 4 so that the level of the oil is maintained substantially constant, at least as high as the line 2—2 in Fig. 1, and no air is permitted to accumulate in the tank. The combination of air and oil which tends to produce an explosive vapor or fume is thus avoided. It will be noted at once that the construction of the device is exceedingly simple and any fumes which may possibly rise from the upper surface of the oil within the safety tubes 5 will pass out to the outside air through the vents 8 and under the rim 10 of the lid. Flame which may be, through accident or otherwise, brought near the tank will cause very little, if any, damage for the reason that after the oxygen in the air above the tubes 5 or within the upper ends of said tubes is consumed the fire burns out, and conflagration which may be due to lightning or to carelessness cannot occur. The lid 9 protects the oil from the direct effect of a stroke of lightning and also makes it difficult for any flame to reach the interior of the structure.

Having thus described the invention, I claim:

1. Means for storing oil comprising a tank, tubes fitted in the top of the tank and rising therefrom, and a water-jacketing housing mounted on the top of the tank around said tubes in spaced relation thereto, said housing being closed to the tank and provided with vent and overflow openings adjacent its upper end below the upper ends of the tubes.

2. Means for storing oil comprising a tank, a plurality of tubes secured in and rising from the top of the tank, a water-containing stack secured upon the top of the tank in spaced relation to the tubes and housing the same and provided adjacent its upper end below the upper ends of the tubes with vent openings, the tubes being open to the interior of the tank and the stack being closed thereto, and a lid resting on and extending over the upper end of the stack in spaced relation to the up-

per ends of the tubes and provided with a depending rim encircling the stack and spaced therefrom.

3. Means for storing oil comprising a tank, 5 a plurality of tubes secured in and rising from the top of the tank, a water-containing stack secured upon the top of the tank in spaced relation to the tubes and housing the same and provided adjacent its upper end below the 10 upper ends of the tubes with vent openings, the tubes being open to the interior of the tank and the stack being closed thereto, a plate secured in and extending across the stack be- below the upper ends of the tubes and the vent 15 openings in the stack, said plate fitting closely around the tubes and having openings there- through between the tubes, and a lid resting on and extending over the upper end of the stack in spaced relation to the upper ends of 20 the tubes and provided with a depending rim encircling the stack and spaced therefrom.

In testimony whereof I affix my signature.

BOYD K. APPLEMAN. [L. S.]