

No. 734,045.

PATENTED JULY 21, 1903.

T. W. CASTLEMAN.

OIL TANK.

APPLICATION FILED MAY 10, 1902.

NO MODEL.

FIG. 1.

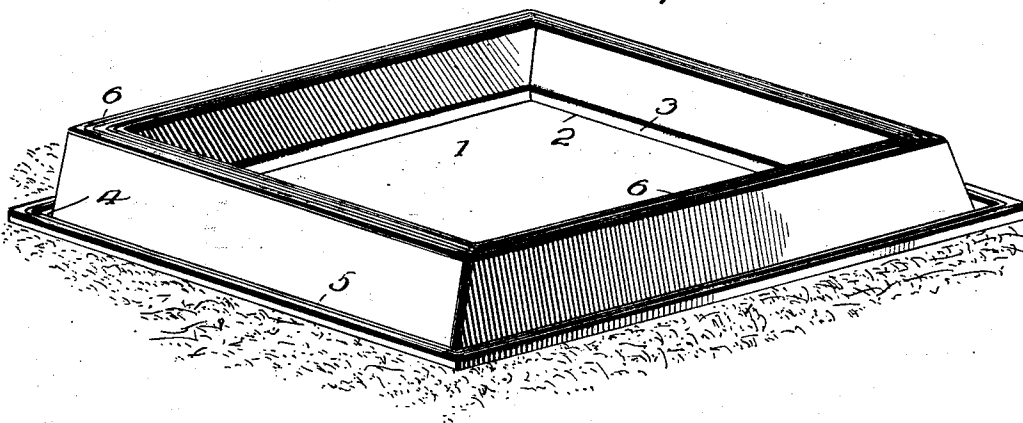


FIG. 2.

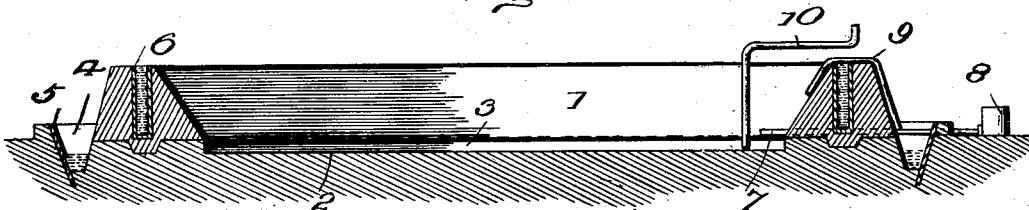
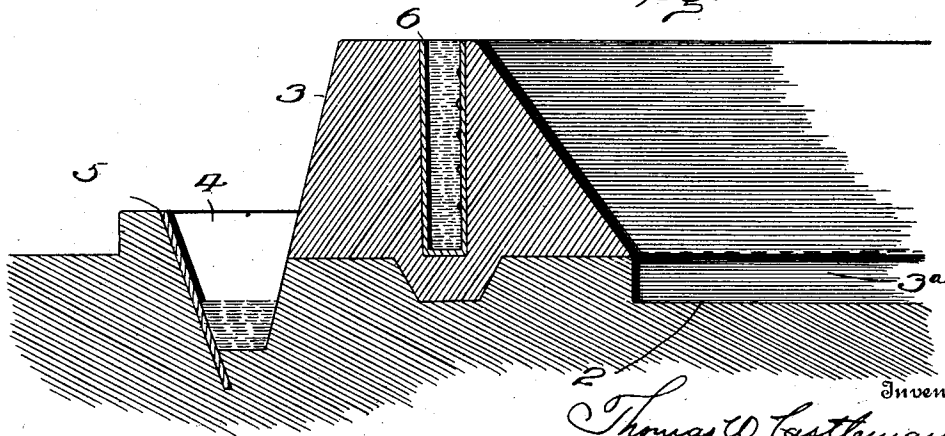


FIG. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

THOMAS W. CASTLEMAN, OF NEW ORLEANS, LOUISIANA.

OIL-TANK.

SPECIFICATION forming part of Letters Patent No. 734,045, dated July 21, 1903.

Application filed May 10, 1902. Serial No. 106,767. (No model.)

To all whom it may concern:

Be it known that I, THOMAS W. CASTLEMAN, a citizen of the United States, and a resident of New Orleans, in the parish of Orleans and State of Louisiana, have invented certain new and useful Improvements in Oil-Tanks, of which the following is a specification.

My invention consists in forming a tank by excavating the earth sufficiently below the surface to reach the water-line or damp portion of the earth in close proximity to the water-line and with the dirt from the excavation to erect a levee around the excavation for the purpose of storing oil. The bottom of the excavation will consist of water at a depth of from one to two or more feet, as desired or found necessary. On the outside of the levee, at the base, I form a ditch from two to four feet below the tank excavation, in which is placed water. A water-tank is also formed in the levee near the walls of the tank excavation and extends from the top of the levee to a point level with the surface of the earth, said tank being constructed just tight enough to permit water to leak from it.

My invention consists, further, of means for returning leaked oil and means for withdrawing the oil from the excavation from the bottom in case of fire.

In the drawings, Figure 1 is a perspective view of a tank embodying my invention. Fig. 2 is a vertical longitudinal sectional view of the same. Fig. 3 is an enlarged vertical sectional view of the levee and outside or supplemental tank.

1 represents a tank formed by excavating the earth sufficiently below the surface to reach a point about two feet below the water-line or damp portion of the earth.

3 is a levee formed around the excavation or tank, which is adapted to form the side walls of said tank. The bottom of the tank consists of water at a depth of from one to two or more feet, as may be found necessary. On the outside of the levee, at the base, I dig a ditch 4 from two to four feet deeper than the tank excavation, so that the bottom of the ditch will be from two to four feet below the bottom of the tank excavation. The outside wall of this ditch may be cased with galvanized iron 5, concrete, or any other desired material. This ditch 4 will, for the purpose

of the claims, be referred to as the "trap-ditch."

6 is a trough formed in the levee and extends from the top of the same to the surface of the earth and positioned as near as practicable to the wall of the oil-tank. This trough is adapted to hold water and is made of wood or metal just tight enough to allow the water to leak, whereby the water may leak from the trough, so as to keep the ground around it thoroughly damp or saturated with water.

7 represents a pipe extending through the levee and into the tank immediately above the water-line at the bottom of the tank or reservoir, by means of which the oil in the tank may be drawn off from the bottom in case of fire, said pipe being connected to a suitable pump and storing-tank 8.

9 is a pipe extending from the tank or reservoir over the top of the levee and down into the trap-ditch, a connection of the suitable pump, whereby all oil trapped in said ditch may be pumped back into the tank or reservoir.

10 is a pipe extending into the tank to the extreme bottom of the excavation, whereby the depth of the water on the bottom of the tank may be readily ascertained.

I may, if found desirable, construct a metallic cover or shed over the tank.

In practice I will probably dig the ditch to such a depth that it will have about two feet of water on the bottom. This water will naturally seep through the embankment under the levee and into the trap-ditch at least on a level with the water in the tank or reservoir. This will cause all the oil leaking through the embankment to follow this water-line and flow into the trap-ditch 4. When the trap-ditch becomes sufficiently full to endanger its running over, the oil is pumped back into the tank through the pipe 9.

As it has been demonstrated from practical workings that oil will not penetrate dirt that is damp, I have provided the trough 6 in the levee for the purpose of holding water. This water gradually leaking out of the trough will flow down through the levee to seek its level with the water-line in the bottom of the tank, thus practically forming a wall of water holding the oil within the embankment

or levee. Any oil that does leak through the levee or embankment will flow into the trap-ditch 4, where it will be stopped by the metal or othersuitable casing 5 on the outside bank of the ditch, which casing extends below the water-line, thus practically incasing the oil within a metallic tank.

A tank of this character can be constructed to hold, say, one-half million barrels as cheaply as, if not cheaper than, a steel tank that will hold fifty thousand barrels.

Another advantage of my improved tank is that it is practically fire and lightning proof—that is to say, it would not be materially damaged, if at all, by either of these agencies, whereas a steel tank would be completely destroyed.

While I have not shown the sides of the levee provided with a cement, iron, or other material, it is of course obvious that I may use these or other well-known materials if found necessary or desirable.

It is obvious that numerous changes may be made without departing from my invention.

What I claim, and desire to secure by Letters Patent, is—

1. An oil-tank comprising an excavation in the earth extending to the water-line, levees formed around the same, a trap-ditch around the levees extending from the earth's surface below the water-line, and a trough formed in said levees.

2. An oil-tank comprising an excavation in the earth extending to the water-line, a levee extending around the same, and a trap-ditch at the bottom of the levee on the outside extending below the water-line and a

pipe connecting the trap-ditch and excavation.

3. An oil-tank comprising an excavation in the earth extending to the water-line, a levee extending around the same, and a trap-ditch at the base of the levee on the outside extending below the water-line, in combination with a drain-pipe extending from the bottom of the tank.

4. An oil-tank comprising an excavation in the earth extending to the water-line, a levee formed around the same and a trough formed in said levee for the purposes specified.

5. An oil-tank comprising an excavation in the earth extending to the water-line, and a trap-ditch around the same extending below the water-line.

6. An oil-tank comprising an excavation in the earth extending to the water-line, a levee formed around the same, a trough in said levee, a trap-ditch around said levee extending below the water-line, in combination with a drain-pipe extending from the bottom of the tank, a return-pipe from the trap-ditch to the tank and an indicator to indicate the depth of water in the tank.

7. A structure of the character specified, comprising a reservoir having bottom and lateral liquid seals, liquid being supplied to the bottom seal from the lateral seal by percolation.

The foregoing specification signed this 10th day of May, 1902.

THOMAS W. CASTLEMAN.

In presence of—

EDWIN S. CLARKSON,
HERVEY S. KNIGHT.