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A. C. SMITH

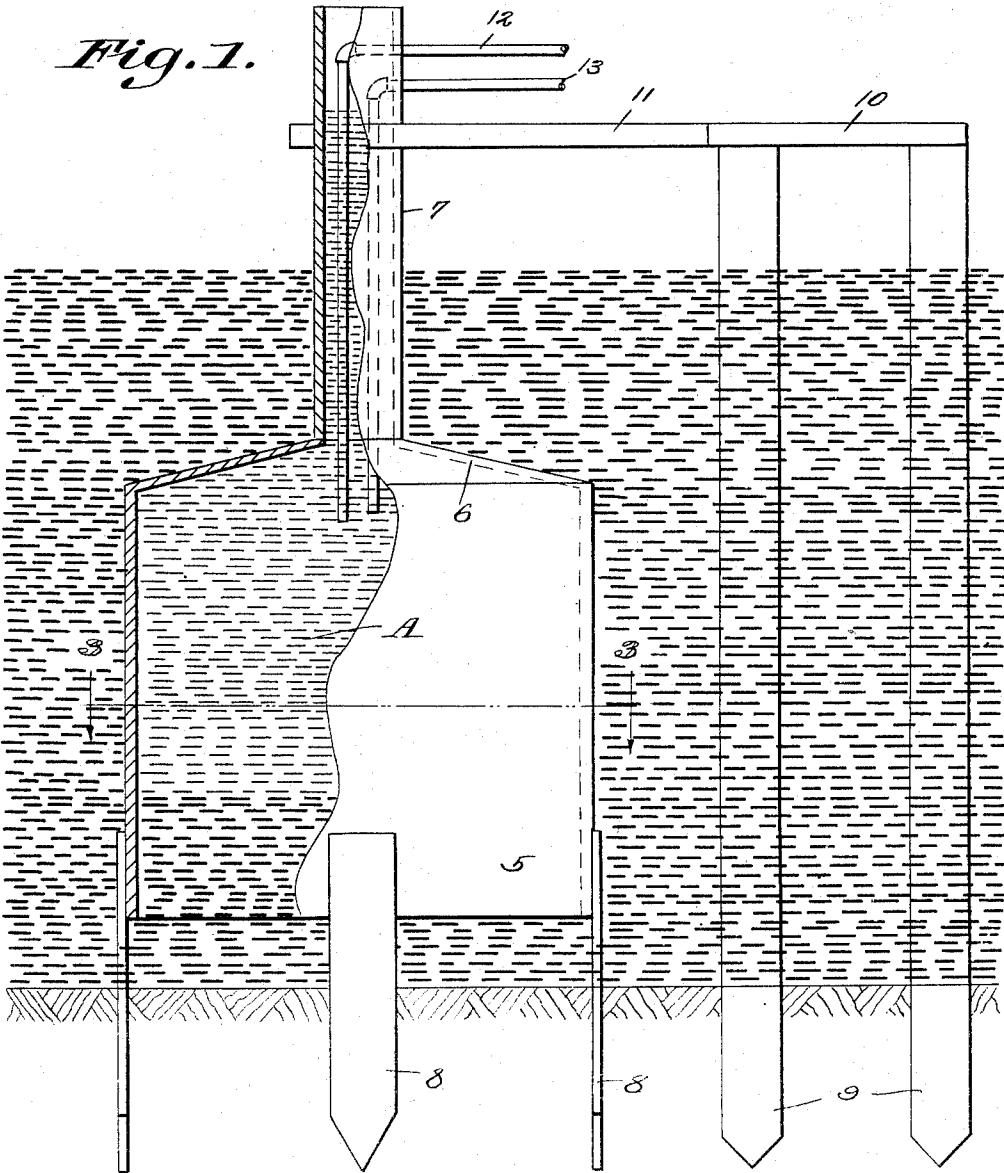
2,536,320

SUBMERGED OIL STORAGE TANK

Filed Aug. 26, 1946

2 Sheets-Sheet 1

Fig. 1.



Inventor

A.C. Smith

By

W. Knowles

Attorney

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A. C. SMITH

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Fig. 2.

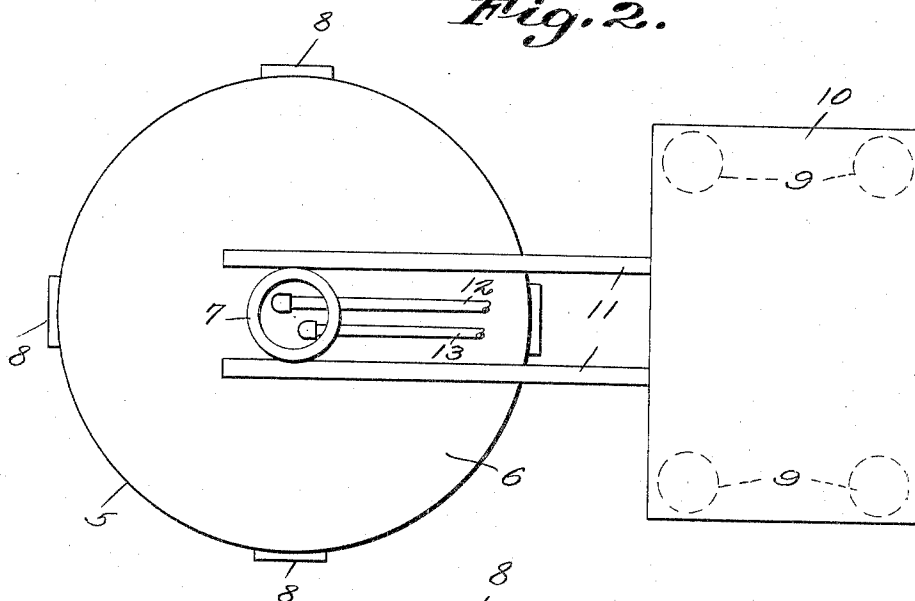
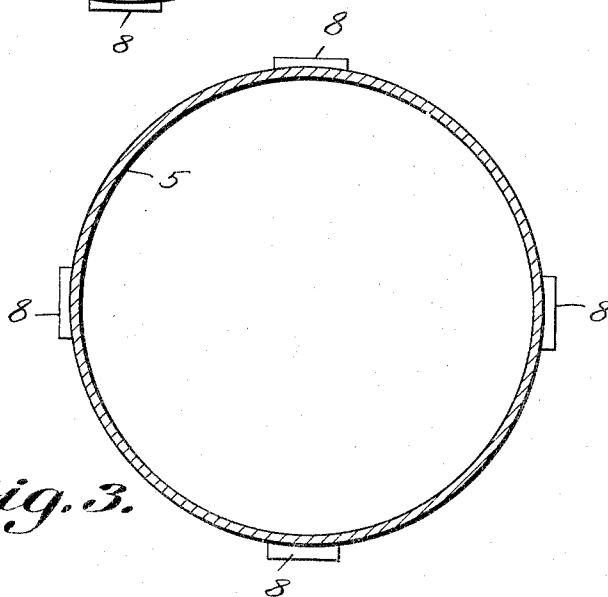


Fig. 3.



Inventor

A.C. Smith

By *Ed Snow & Co.*

Attorneys.

UNITED STATES PATENT OFFICE

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SUBMERGED OIL STORAGE TANK

Arthur C. Smith, St. Petersburg, Fla.

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1 Claim. (Cl. 220—85)

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This invention relates to storage tanks designed primarily for storing crude oil or petroleum products under water in lakes, rivers or in the ocean.

The primary object of the invention is to provide a tank for the purpose of storing oil, which will have no tendency to float, the tank being open at both ends, so that any possibility of air being trapped within the tank to float the tank will be eliminated.

Another object of the invention is to provide a storage tank for crude oil or petroleum, which will act to confine the crude oil or petroleum, the weight of the oil or petroleum being supported by the water in which the tank is submerged, thereby eliminating the necessity of providing expensive tank supporting structure to support the excessive weight of the oil loaded tank.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts, hereinafter more fully described and pointed out in the claims, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

Referring to the drawings:

Figure 1 is an elevational view partly in section, illustrating a tank constructed in accordance with the invention as submerged in a body of water, a portion of the tank being broken away.

Figure 2 is a plan view of the tank.

Figure 3 is a sectional view taken on line 3—3 of Figure 1.

Referring to the drawings in detail, the tank is indicated by the reference character 5, and as shown, has its bottom open to permit water in which the tank is submerged, to pass into the tank from the bottom.

Extending from the top 6 of the tank, is the tubular extension 7 that establishes communication between the body of the tank and the atmosphere, the tubular extension being substantially small in diameter, but of a length to extend an appreciable distance above the water level of the body of water in which the tank is submerged. It will, of course, be understood that the height of the tubular extension 7 will be such that water from waves will not pass into the tank, through the extension.

Extending downwardly from the side of the tank, are mud anchors 8 that are pointed so that they may be readily driven into the bed of the body of water in which the tank is positioned, to insure the tank being held in an upright position at all times.

The reference character 9 indicates piling on which the platform 10 is mounted, there being provided spaced arms 11 extending from the

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platform and contacting the extension 7, as clearly shown by Figure 2 of the drawings. These arms may be secured to the extension 7 by welding, although the manner of securing the arms to the extension 7 plays no part in the invention.

The reference character 12 indicates the suction pipe, and the reference character 13 indicates the fill pipe through which oil is delivered to the tank.

From the foregoing it will be seen that the oil which is indicated by the reference character A in Figure 1 of the drawings, will float on the water which enters the tank at the base thereof, the oil being forced upwardly within the extension 7.

Because the tank has both its upper and lower ends open, it will be obvious that all tendency for the tank to float will be eliminated. It will also be seen that because of the construction shown by applicant, the weight of the crude oil or petroleum products contained in the tank, will be supported by the water which enters the tank through the bottom, eliminating the necessity of providing extensive bracing and supporting means for the tank.

It is believed that in view of the foregoing detailed disclosure, a further description as to the use of the tank is unnecessary.

Having thus described the invention, what is claimed is:

In a submerged tank construction for fluid storage in a natural body of water a tank body, an extension rigid with and upstanding from the center of the top portion of the tank, said extension being of substantial diameter, a plurality of stakes rigidly secured to the lower portion of the tank and spaced circumferentially of the tank body and adapted to be embedded in the bottom of a natural body of water, pilings adapted at their lower ends to be embedded in the bottom of said natural body of water, said pilings being of a length greater than the combined length of the stakes and tank body whereby the upper ends of said pilings will be co-planar with said extension, a platform mounted on the upper ends of said pilings, and spaced arms extending from said platform and embracing between them the upper portion of said extension.

ARTHUR C. SMITH.

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