

(No Model.)

W. H. BIRGE.
Storage Tank for Petroleum.

No. 239,431.

Patented March 29, 1881.

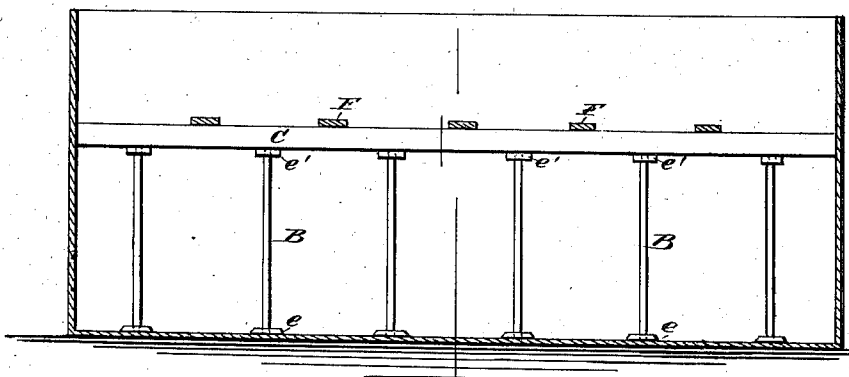
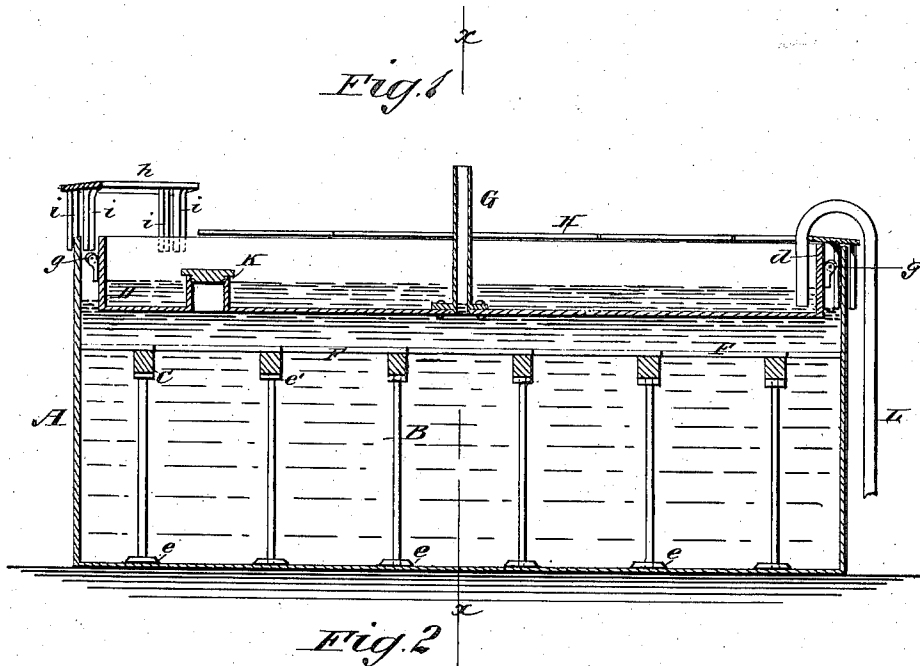


Fig. 3.

WITNESSES:

Francis McCordle.
C. Seagwick

INVENTOR:

INVENTOR:
W. H. Birge
BY Mum & Co
ATTORNEYS.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM H. BIRGE, OF FRANKLIN, PENNSYLVANIA.

STORAGE-TANK FOR PETROLEUM.

SPECIFICATION forming part of Letters Patent No. 239,431, dated March 29, 1881.

Application filed January 7, 1881. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. BIRGE, of Franklin, in the county of Venango and State of Pennsylvania, have invented a new and useful Improvement in Storage-Tanks for Petroleum, of which the following is a full, clear, and exact description.

Figure 1 is a diametrical section of the tank and floating cover, taken at right angles with the joist of the staging. Fig. 2 is a like section of the tank parallel with the joist of the staging. Fig. 3 is a top view of one of the sections of the partial roof.

Similar letters of reference indicate corresponding parts.

Large storage-tanks for petroleum are usually built under roofs and other inclosures to protect them from the weather, and especially from wind-storms, as they are liable to be blown down when they are empty. After a storage-tank has been used for some time a thick sediment will collect in the bottom, and in order to remove this sediment and clean out the tank it has been the practice to remove one of the lower sheets of the tank, so that a man can go in and carry out the sediment, the sediment being always so thick that it would not run out of the bottom of the tank even if a hole were made for that purpose.

In storage-tanks which have floating covers it is obvious that when the oil is all drawn off, the covers will be found on the bottom of the tank, and such covers always being of great weight tanks of this character cannot be cleaned of the sediment without the labor and difficulty of raising the cover. Another difficulty with this kind of tank, as they are now constructed, is that should the floating covers spring a leak it might, before being discovered, sink to the bottom of the tank, in which case the whole body of oil would have to be pumped out at great expense and labor in order to repair the cover and set it afloat again.

The object of my invention is a storage-tank so constructed that the floating cover can never sink to the bottom of the tank, and so braced that it will stand all weather and wind-storms without the necessity of an external roof or other inclosure; also, a floating cover so constructed that it will serve the purpose of a

roof and afford ready access to the interior of the tank, and also a partial roofing made in sections whereby the body of oil is protected from rain and from fire, and in the details of construction, as hereinafter described.

The tank A is circular in form and provided on the inside with the strong staging or platform, formed preferably of the posts B, and the stringers or joists C placed upon them for the floating cover D to rest upon when the oil is drawn from the tank.

In building the staging, I prefer to use gas-pipes for the posts B of a length equal to about two-thirds the height of the tank, screwed or otherwise secured to the flanges e, which are riveted to the bottom of the tank. The upper ends of the posts B should also have the flanges e' screwed or otherwise secured to them for the stringers C to rest upon. The stringers or joist C, preferably of wood, should be placed upon the posts B, and have the strips F nailed across them to secure them all firmly together, and the ends of the stringers or joist C and the ends of the cross-pieces F should come firmly against the sides of the tank, thus bracing the tank from the inside, making it firm and secure against any wind-storm.

The floating cover D is of smaller diameter than the tank, and is formed with the flange d, to the outside of which is secured the stops or guides g, which come against the inside of the tank and make the annular space between the outside of the cover and the tank of equal width all around the cover. To protect this space from rain and fire, I provide a sort of portable cover, H, which is made up of the sections h, each section being of such size and weight that one or two persons can handle them, and made by taking a piece of sheet metal, say, six feet in length and one foot in width, and cutting it to about the same circle as the tank, and fasten four legs, i, to it, two at each end, and far enough apart to just fit over the edge of the tank. These sections when in place on the tank form the continuous cover H over the space which protects the oil from rain, and in case the gas which may collect in the space under this cover should take fire the explosion which would follow would lift up the sections, but they would sud-

denly fall back to place, being guided by the legs, and thus smother the flames, and save the oil from burning.

In case any gas collects under or about the center of the floating cover, I provide the cover at that point with the escape-pipe G for conveying it off. I also provide the floating cover with the man-hole K, which affords ready access to the interior of the tank for any purpose. The cover-seat of the man-hole should be elevated, as shown, so as to prevent any water which may fall on the cover from flowing into the tank, and I also provide the cover with the siphon-pipe J, for drawing off the water which falls on the cover.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a storage-tank for petroleum, the in-

side staging formed of posts B and connected 20 stringers F C, the posts being provided with top flanges, *e'*, and secured to flanges *e* on the bottom of tank, as and for the purpose specified.

2. The storage-tank provided with the roof 25 H, constructed of the sections *h*, each section having the legs or guides *i* to fit the edge of the tank, substantially as specified.

3. The tank having the staging on the inside and the partial roof H, in combination 30 with the floating cover of less diameter than the tank, the cover being provided with the stops or guides *g*, the man-hole K, and escape-pipe G, substantially as described.

WILLIAM H. BIRGE.

Witnesses:

E. D. ALLEN,

GEORGE ALLEN.