W. H. BROCK.

Man-Hole Covers for Petroleum-Tanks.

No. 203,816. Patented May 21, 1878.

Fig: 1.

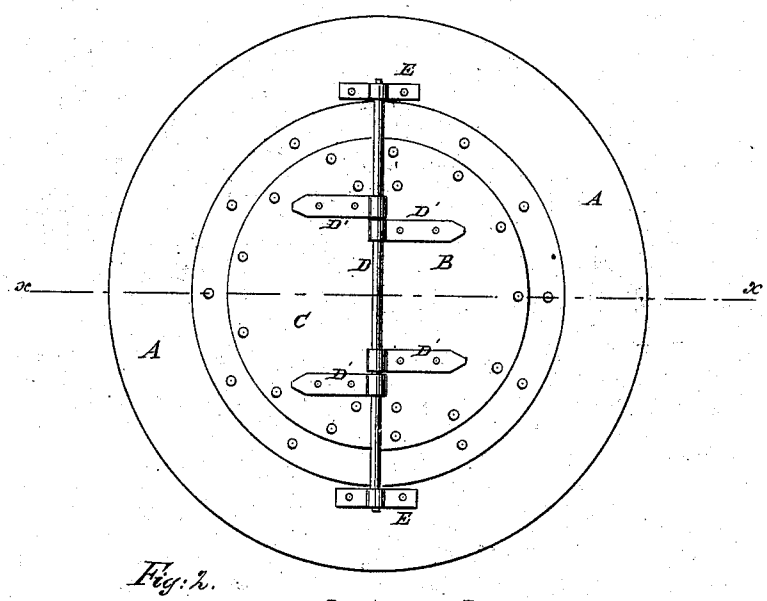


Fig: 2.

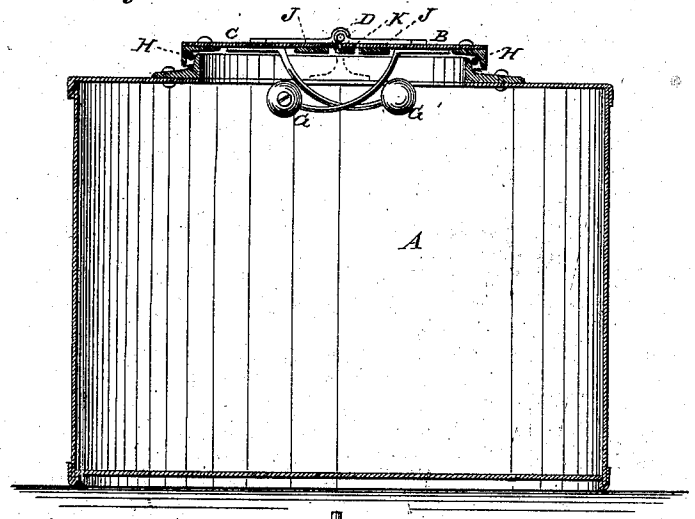
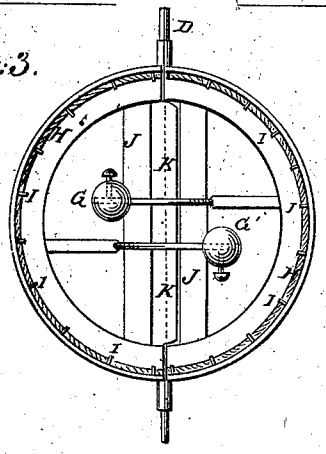


Fig: 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM H. BROCK, OF BROOKLYN, ASSIGNOR TO A. J. POUCH, OF SAME PLACE, AND J. A. BOSTWICK, OF NEW YORK, N. Y.

IMPROVEMENT IN MAN-HOLE COVERS FOR PETROLEUM-TANKS.

Specification forming part of Letters Patent No. **203,816**, dated May 21, 1878; application filed April 23, 1878.

To all whom it may concern:

Be it known that I, WILLIAM H. BROCK, of the city of Brooklyn, in the county of Kings and State of New York, have invented certain Improvements in Man-Hole Covers for Tanks Holding Petroleum, which are fully described and illustrated by the following specification and accompanying drawing.

The object of this invention is to prevent the disastrous consequences which often ensue from ignition of vapors generated within tanks when partially filled with inflammable liquids, by novel combinations, whereby, in case the vapors within a tank are ignited from any cause, the expanded gas is permitted at once to escape, and the man-hole is automatically and tightly closed against the admission of the external air, thus effectually smothering the chance flame before the dangerous combustion resulting from the intermixture of atmospheric air and the vapors within has been communicated to the liquid contents of the tank.

Figure 1 is a plan or top view with the covers down. Fig. 2 is a central vertical sectional view of the same; and Fig. 3 represents the covers inverted, showing the interior parts.

The man-hole of an oil-tank, A, in this invention, as shown by Fig. 1, is closed by two double-hinged covers, B and C, each of which is hung and revolves upon the same axis or central pivotal rod D, which is supported by the lugs E, affixed to the tank in convenient contiguity to the man-hole. Whenever the covers are suddenly thrown upward by the expanding gas, upon combustion within the tank, they are swiftly brought into forcible collision and their progress checked before either has passed so far beyond its center as not to be instantly returned to the man-hole by the action of the weight G or G′, aided by the momentum gained from its rebound from contact with the other. The covers may thus continue to vibrate between the upward pressure of the issuing gases and the downward force of the weight for a moment or so, until the force of the combustion within the tank, being constantly lessened by the repeated falling of the covers, allows them at length to resume their normal position in close contact with the man-hole, when all flame within the tank is quenched and further danger averted.

In Fig. 3 is shown the combination made by the projecting edge K of one cover, over or upon which the other closes, so as to form a tight joint; and by the same figure the combination, with the covers, of the packing-rope H, or its other proper equivalent, with its fasteners I, so as to fully occupy any intervening space, as shown in Fig. 2, between the rims of the covers and man-hole. By these devices the external air is more effectually excluded from the tank upon closure of the man-hole by its covers in case of conflagration within. Fig. 3 likewise represents the combination, with the covers, of the straps J, whereby the covers are greatly stiffened, and which are found necessary in order to resist the violent impact of the covers when thrown up together by the expansion of the gases.

It is evident this invention is equally applicable in the case of tanks containing hydrocarbon liquids other than petroleum, and whether the tank is provided with one or more man-holes.

The claim for novel combination, with man-hole covers, of the rod and ball, which is likewise used in this invention, has previously been made by me in an application fully describing the same filed March 16, 1878, and which claim has already been allowed.

What I claim as my invention is—

The combination, with double-hinged covers B and C, of a tank, A, of the central pivotal rod D with the supports E, of the packing H with its fasteners I, of the tight joint K, and of the stiffening-bars J, substantially as herein set forth, and for the purposes as above described.

WILLIAM H. BROCK.

Witnesses:

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