R. H. MOORE.

VALVE OR COVER FOR TANKS.

APPLICATION FILED OCT. 25, 1911.

1,040,730.

Patented Oct. 8, 1912.

Fig. 1.

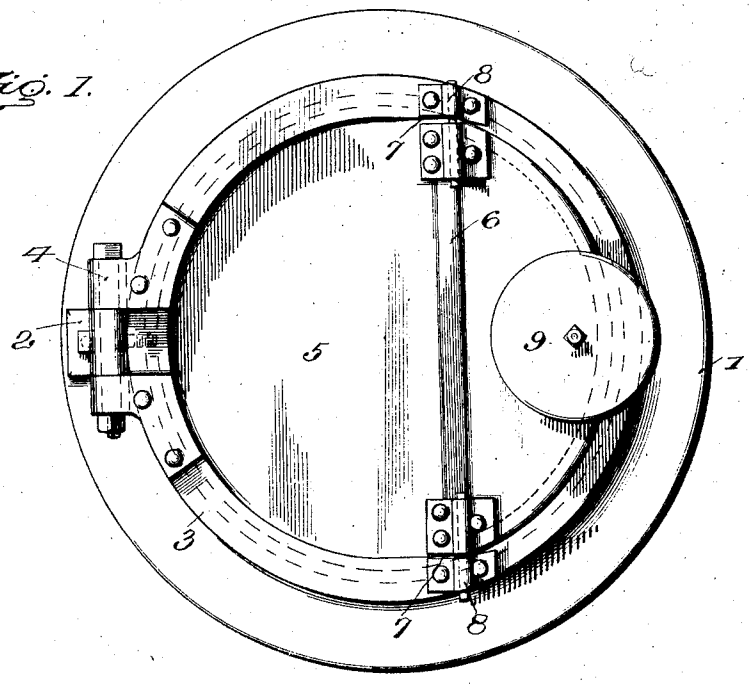
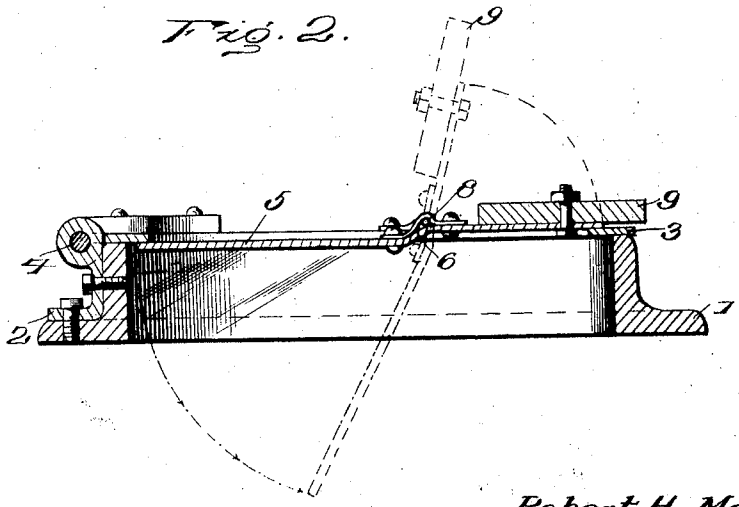


Fig. 2.



Witnesses

Richard Espey.

W. A. Williams.

Inventor

Robert H. Moore.

By J. Stetson Rice,

Attorney.

UNITED STATES PATENT OFFICE.

ROBERT H. MOORE, OF CHICAGO, ILLINOIS, ASSIGNOR TO AMERICAN CREOSOTING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF INDIANA.

VALVE OR COVER FOR TANKS.

1,040,730. Specification of Letters Patent. Patented Oct. 8, 1912.

Application filed October 25, 1911. Serial No. 656,659.

To all whom it may concern:

Be it known that I, ROBERT H. MOORE, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Valves or Covers for Tanks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The primary object of this invention is to guard against injury to oil or other storage tanks, arising from an excess of internal or external pressure, due either to an internal explosion or a partial vacuum.

My invention contemplates the provision of means simply and highly efficient which will act automatically under the conditions stated.

The invention will be hereinafter fully set forth and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view. Fig. 2 is a transverse sectional view.

Referring to the drawings, 1 designates a manhole ring or angle-iron of known construction, which in practice is secured to the top of an oil tank, such as is used in wood preservation. To a bracket 2 riveted to this angle-iron a ring 3, forming part of the top or cover, is hinged at 4. This ring 3 is designed to seat upon the upper edge of angle-iron 1, and its opening is closed by a disk 5 slightly larger than the diameter of said opening. This disk is designed to extend in part beneath and in part above ring 3 to which it forms the complementary portion of the cover. For this purpose the disk 5 is slightly deflected, as at 6, at a point to one side of the center of the disk, the upper segment of the latter being above ring 3, while the lower segment is beneath the latter, the plane of the ring being intersected by the deflection 6. The inner edge of the ring 3 is slightly cut away, as at 7, to allow the deflected portion of the disk to extend through the ring, to which latter the disk is hinged at 8, the axis of the hinges being on a line with the deflection. To the upper outer segment of the disk I attach counter-weight 9 which serves to normally hold the disk in closed position, that is to say, with the larger segment fitted upwardly against its seat, and the smaller segment downwardly on its seat.

It will be seen that under an excess of pressure within the tank, acting against the underside of the cover, the latter will open as a whole by turning on hinge 4. Pressure on the outside, in consequence of a partial vacuum within the tank, will be relieved by the turning of disk 5 on its hinge, the external pressure on the downwardly opening segment overcoming the weight of the smaller segment. The two parts constitute in themselves a closure for the tank.

Although changes may be made in the construction and arrangement of parts, it is manifest that I have provided an extremely simple and highly efficient valve for manhole covers which will act automatically to relieve any excess of pressure within or without the tank tending to injure the casing.

I claim as my invention:—

1. A manhole cover for tanks comprising a ring hinged at one side to the tank, and a disk closing the opening in said ring, said ring and disk being constructed and arranged to conjointly open outwardly under an excess of pressure from within the tank, said disk being pivoted on said ring and constructed and arranged to open inwardly in the event of a partial vacuum within the tank.

2. A manhole cover for tanks comprising a ring designed to be hinged at one side, a disk pivoted to said ring, a portion of said disk fitting against the under side of said ring, the remaining portion of said disk fitting against the upper side thereof, said ring and disk being moved as a whole under an excess of pressure within the tank, and said disk being moved independently of the ring in the event of a partial vacuum within the tank.

3. A manhole cover for tanks comprising a ring designed to be hinged at one side, and a disk comprising two parallel segments connected by a deflected portion, one of said segments being beneath said ring and the other above the ring, the deflected portion of the disk intersecting the plane of the ring, said disk being hinged to said ring in line with the deflected portion of the disk.

4. A manhole cover for tanks comprising a ring designed to be hinged at one side, a disk comprising two parallel segments connected by a deflected portion, one of said segments being beneath said ring and the other above the ring, said deflected portion being

at one side of the center of the disk and designed to intersect the plane of the ring, means pivotally connecting the disk to the ring in line with said deflected portion, the larger segment of the disk being beneath the ring and the smaller segment above the ring, and a counterweight attached to said smaller segment.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

ROBERT H. MOORE.

Witnesses:
J. H. DURHAM,
G. G. BATES.