May 15, 1928.

1,669,839

A. E. PEW, JR

MINERAL OIL VACUUM STILL

Original Filed June 19, 1925

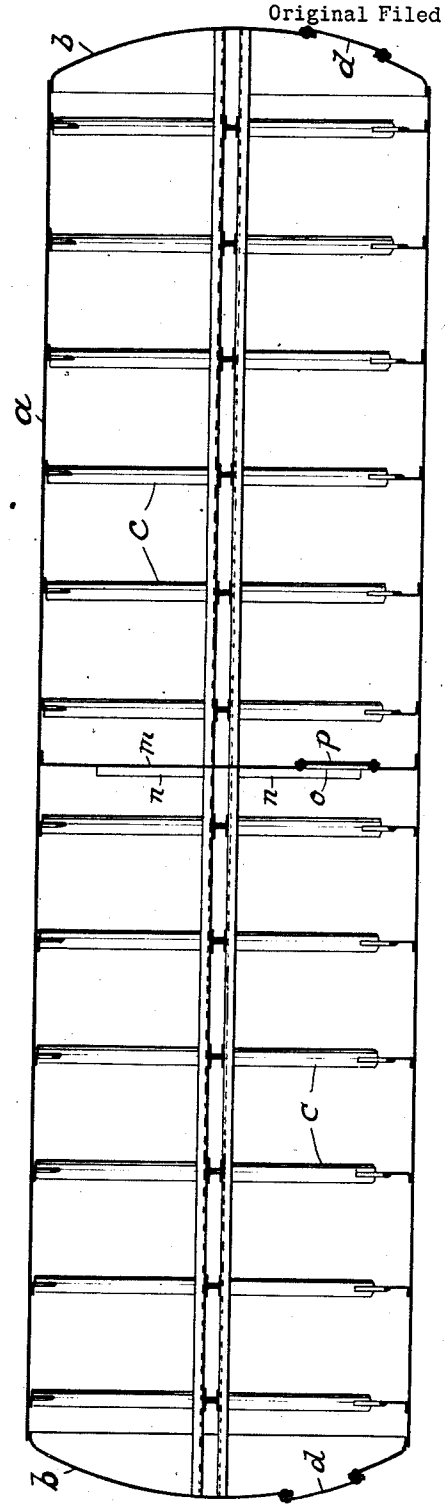


FIG. 1.

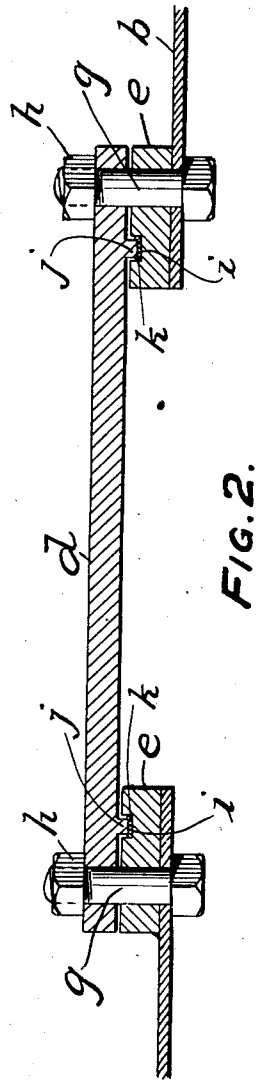


FIG. 2.

WITNESS:

INVENTOR

Arthur E. Pew, Jr.

BY

Dyer and Harding

ATTORNEYS.

Patented May 15, 1928. 1,669,839

UNITED STATES PATENT OFFICE.

ARTHUR E. PEW, JR., OF BRYN MAWR, PENNSYLVANIA, ASSIGNOR TO SUN OIL COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF NEW JERSEY.

MINERAL-OIL VACUUM STILL.

Original application filed June 19, 1925, Serial No. 38,184. Divided and this application filed February 27, 1926. Serial No. 91,046.

In an application filed by me June 19, 1925, Serial No. 38,184 of which this application is a division, I set forth an apparatus for the continuous distillation of oil under a high vacuum. Included in the apparatus is a series of stills. The oil in each of these stills is under a high vacuum. It is essential that there shall be no leakage whatever from the stills, or from any other part of the system through which the oil and the oil vapors circulate. It is, however, necessary to provide means for access to the interior of the system, and particularly to the interiors of the stills when the plant is shut down. Again, in case any of the stills is provided with a partition, it may be desirable or necessary to allow access through the partition from one end chamber of the still to the other. The provision of manholes in the end heads and in the partition is a simple and obvious matter, but to hermetically seal the manhole covers during operation is a difficult problem. The object of the present invention is to provide means whereby, when the cover is applied to the manhole, the still, still chamber or other container will be sealed against air leakage.

A preferred embodiment of the invention is shown in the accompanying drawings, in which—

Fig. 1 is a longitudinal section through a still having a central transverse partition and equipped with manholes and covers therefor.

Fig. 2 is a detail sectional view through a manhole and its cover and showing my improved sealing means.

The still comprises a cylindrical body *a* and end heads *b* and is provided with suitable internal reinforcements *c* to prevent collapse of the still under external atmospheric pressure. These reinforcements need not be herein particularly described, as they form no part of the present invention.

Each end head *b* is provided with a manhole closable by a detachable cover plate *d*. Welded to the part of the end head surrounding the manhole is a flat ring *e*, to which the marginal portion of the cover plate *d* is secured by means of a bolt *g* and nut *h*. The ring *e* is provided with an annular groove *i* into which extends an annular projection *j* on the cover plate *d*. Between the projection and the groove is confined a soft copper gasket *k*, which affords an air-tight seal.

If the tank is provided with a partition *m*, the latter should be provided with stiffening bars *n* and with a man-hole *o*, which may be closed by a cover plate p, the latter being hermetically sealed in the same manner as cover plate *d*.

What I claim is:

The combination with a vacuum still having a manhole, of a ring member secured to the still wall around the margin of the hole, a cover overlying the ring member and the hole, an annular rib on one member engaging an annular groove on the other member, said rib and groove being distant from the inner and outer edges of the ring member, a soft metal gasket confined between said rib and groove, and bolts positioned between said rib and groove and the outer peripheral edges of both members and each extending through both members and the still wall.

In testimony of which invention, I have hereunto set my hand at Philadelphia, Pennsylvania, on this 19th day of February, 1926.

ARTHUR E. PEW, JR.