(No Model.)

O. K. THOMASSEN.

APPARATUS FOR PURIFYING OIL.

No. 477,281. Patented June 21, 1892.

Fig. 1.

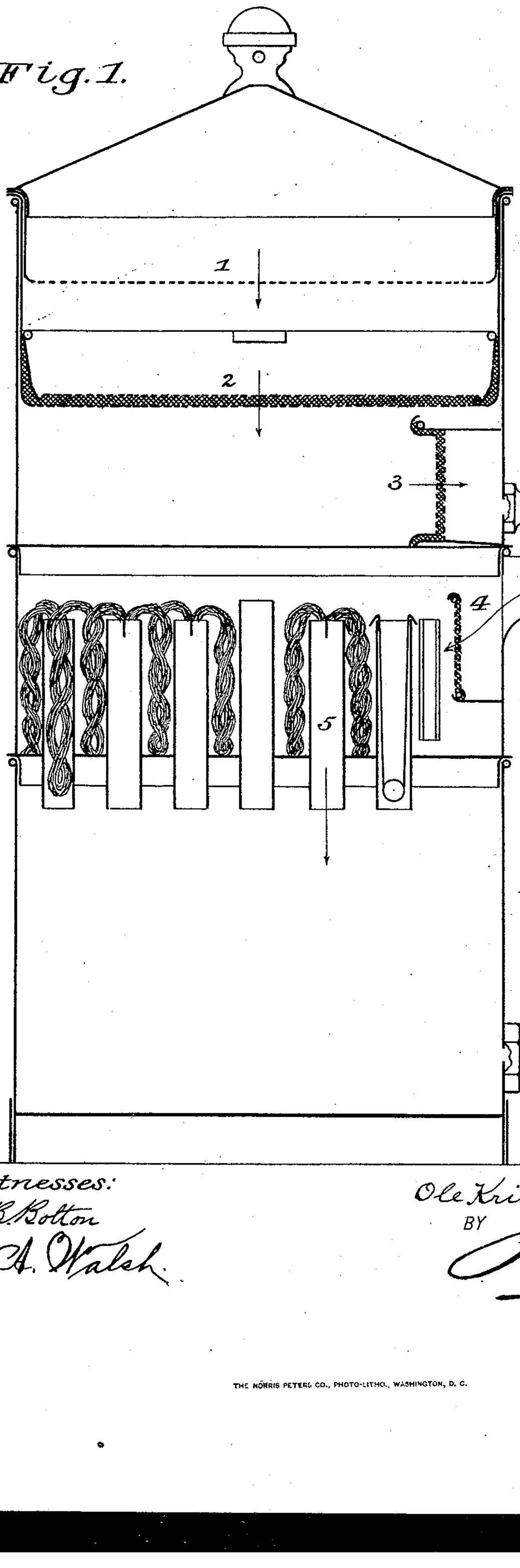

Fig. 3.

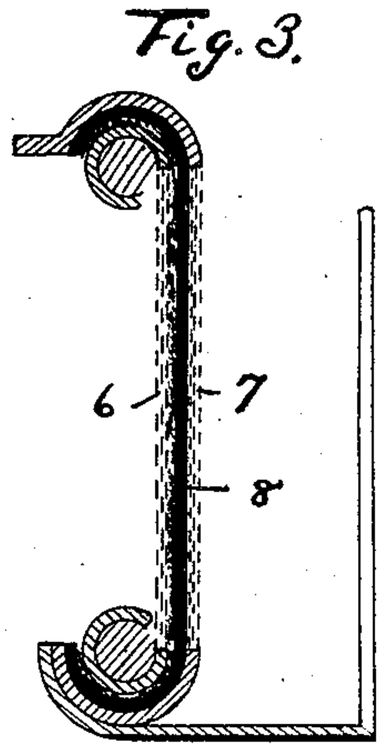

Fig. 2.

Witnesses:
E. B. Bolton
M. A. Walsh.

Ole Kristian Thomassen
BY
Richards & Co
ATTORNEYS

UNITED STATES PATENT OFFICE.

OLE KRISTIAN THOMASSEN, OF CHRISTIANIA, NORWAY.

APPARATUS FOR PURIFYING OIL.

SPECIFICATION forming part of Letters Patent No. 477,281, dated June 21, 1892.

Application filed September 5, 1891. Serial No. 404,910. (No model.) Patented in Norway May 20, 1891, No. 2,098.

To all whom it may concern:

Be it known that I, OLE KRISTIAN THOMASSEN, engineer, of Engens Gade 14, Christiania, Norway, have invented certain new and useful Improvements in Apparatus for Purifying Oil, (patented in Norway May 20, 1891, No. 2,098, application dated March 21, 1891,) of which the following is a specification.

The object of my invention is to provide an apparatus adapted to purify machine-oil that has collected in the dripping-cups under the bearings and other parts of the machinery.

In order to make my invention more clearly understood, I have shown in the accompanying drawings a means for carrying the same into practical effect.

In said drawings, Figure 1 represents a vertical section of an apparatus constructed in accordance with my invention. Fig. 2 is a sectional view of sieve 3. Fig. 3 is a sectional view of sieve 4.

A, B, and D represent three cylindrical receivers. These three receivers are loosely attached together, so as to be easily lifted off. A handle affixed to the lid of the apparatus is furnished with holes for the passage of air. The oil intended to be purified is poured into the receiver A, and, following the direction of the arrows, passes through sieve 1, made of loosely-woven iron-wire gauze stretched across the lower opening of a tin cylinder, the upper edge of which is bent over the upper edge of the cylinder A. The coarser impurities are thus removed from the oil. The oil then passes through sieve 2. This sieve consists of coarsely-woven iron-wire gauze, which is likewise stretched across the lower opening of a tin cylinder, the upper edge of which is bent out over the upper edge of the receiver A. These sieves are so placed as to be easily taken out. Above sieve 2 there are laid one or two sheets of wadding secured by a conical ring, whereby the wadding is pressed between the sides of the corresponding cylinders. The said ring, which compresses the wadding so that the oil cannot penetrate downward round the edge, is furnished with a handle, by the aid of which it may be taken out and replaced when the wadding is to be renewed or cleansed.

3 is a sieve made of flannel or other suitable material, and is placed vertically, whereby the impurities which collect at the bottom of the receiver A cannot so soon choke up or clog the sieve. The flannel in the last-mentioned sieve is secured in the same manner as the wadding-sheets in sieve 2, so that it may easily be taken out and cleansed. The oil that has passed through sieve 3 flows out through a cock x, inserted in the lower part of the receiver A and into a basin y, that leads to sieve 4. This latter sieve consists of two iron-wire gauzes 6 and 7, placed vertically, between which is placed a sheet of flannel 8, which is held in position by a frame in a socket, whereby the sheet is firmly pressed, so that the oil is unable to run about the edges of the sheet. Behind this sheet there is also room for a double sheet of wadding. After passing sieve 4, in front of which the impurities are collected at the lower part in a space arranged for this purpose, the oil runs down to the receiver B, in the bottom of which pipes are placed. Of these pipes the central one is for the passage of air. In the rest of the pipes there are suction-wicks, through which the oil is conducted into the receiver D. The water and the impurities which the oil may possibly contain after its passage through the last sieve remain behind at the bottom of the receiver B. The oil in the upper chamber receives a preliminary filtration, removing the coarser impurities. The disposition of the cock x in connection with the basin y permits the supply of semi-refined oil to the capillary filter to be visibly graduated and controlled. This arrangement enables the oil to be fed to the capillary filter proportionate with the operation of the latter, varying, as it frequently does, with the amount of foreign matter lodged on the exposed portions of the wicks. As a further advantage the cock and basin constitute a simple substitute for gages or other sight-indicators, since the condition of the oil discharged from the receiver A may be approximately determined at all times. The oil collected and purified in receiver D is drawn off by means of a cock z, inserted in said receiver for further use.

Having now practically described my said invention, what I claim is—

1. In an apparatus for refining waste oil, the combination, with the lower receiver B, a capillary filter within the same, a basin y in

the upper part and outside of said receiver, and a filter 4 between said capillary filter and basin and in close proximity to both, of an upper receiver removably mounted on said receiver B and provided with an imperforate bottom, filtering means located in said upper receiver, and a cock serving as a discharge for the latter below its filtering means and enabling the flow of semi-refined oil to be graduated and controlled, substantially as set forth.

2. In apparatus for refining waste machine-oil, the combination of the receivers A, B, and D, vertically and detachably arranged, the receiver A having an imperforate bottom and horizontally-disposed filters or sieves, a cock serving as a discharge for the receiver below said horizontal sieves, and a vertical sieve 3, the receiver B receiving oil from the cock of receiver A and containing a vertical sieve guarding its ingress-opening and consisting of filter fabric clamped by a removable frame, together with pipes passing through the bottom of said receiver B, the central tube serving as an air-passage and the remainder containing wick-tubes and acting as capillary filters, substantially as set forth.

In testimony that I claim the foregoing invention I have signed my name in presence of two subscribing witnesses.

OLE KRISTIAN THOMASSEN.

Witnesses:

H. I. WETTERGREEN.

OSCAR WINGE.