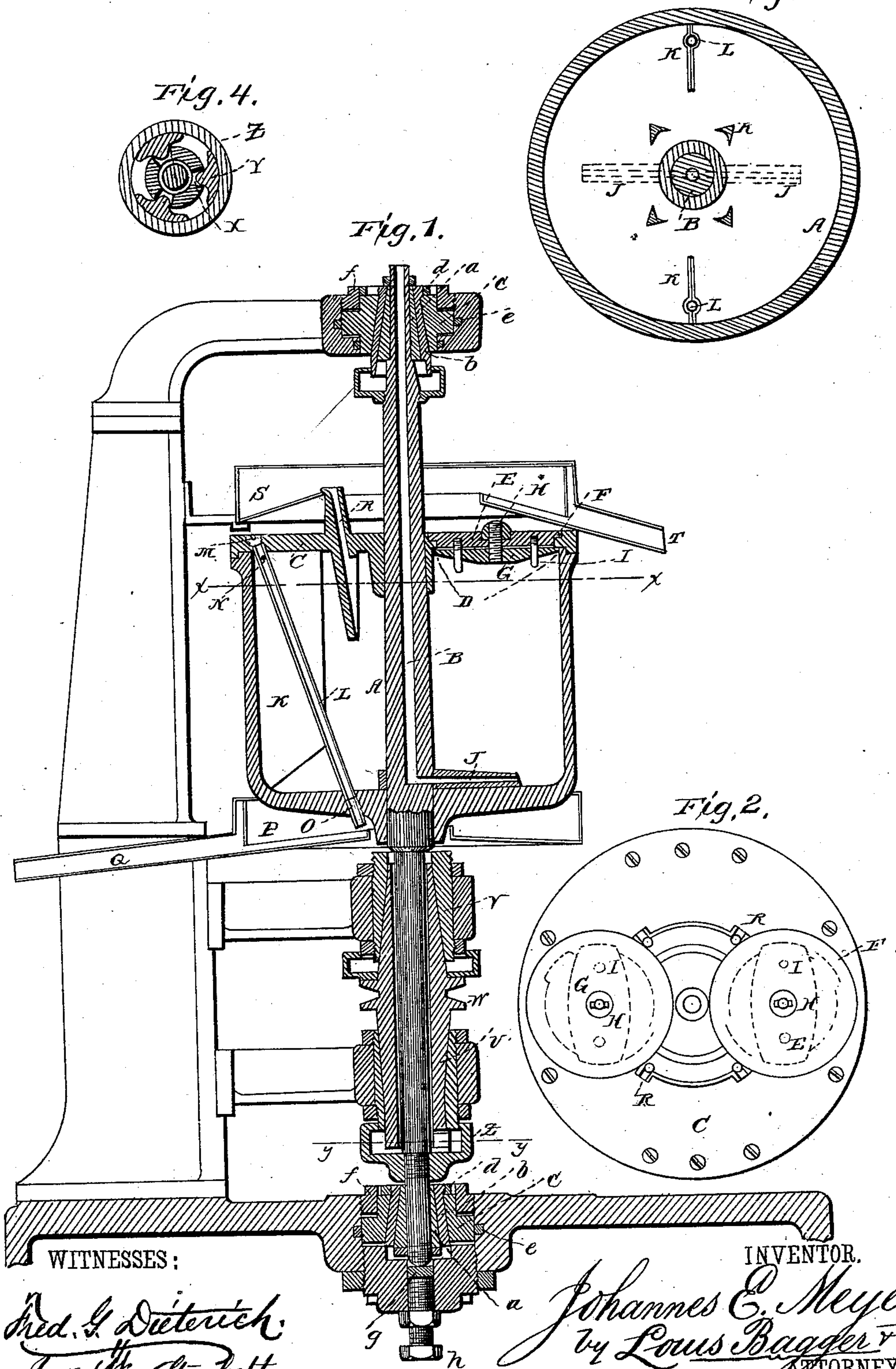


(No Model.)

J. E. MEYER.
CENTRIFUGAL MACHINE.

No. 273,578.

Patented Mar. 6, 1883.



UNITED STATES PATENT OFFICE.

JOHANNES ERNST MEYER, OF COPENHAGEN, DENMARK.

CENTRIFUGAL MACHINE.

SPECIFICATION forming part of Letters Patent No. 273,578, dated March 6, 1883.

Application filed November 13, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHANNES ERNST MEYER, a citizen of Denmark, residing at Copenhagen, in the Kingdom of Denmark, have
5 invented certain new and useful Improvements in Centrifugal Machines; and I do 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
10 make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification, and in which—

15 Figure 1 is a vertical sectional view of my improved centrifugal machine. Fig. 2 is a top view of the cylinder. Fig. 3 is a horizontal section of the same on line *xx*, Fig. 1; and Fig. 4 is a horizontal section in line *yy* in Fig. 1.

20 Similar letters of reference indicate corresponding parts in all the figures.

My invention has relation to centrifugal machines for separating the lighter parts of a fluid from the heavier, and more especially intended for separating the cream from milk; and it consists in the improved construction and combination of parts of the same, as hereinafter more fully described and claimed.

30 In the accompanying drawings, the letter A represents a cylinder mounted upon a vertical shaft, B, and closed at top and bottom.

In the top cover, C, are two openings, D D, covered each by a flanged lid, E, which may be removed when it is desired to clean the cylinder. The rim of each of the holes D has a flange, F, upon which the flange of the lid E rests, said flange F having two diagonally-opposite notches for the introduction of the ends of a cross-piece, G, which is turned under the flange F, and is held fast and drawn up toward the lid by a screw, H, holding the lid close against the flange, while two pins, I, passing from the under side of the lid through the cross-piece, prevent it from turning with the
45 screw.

The fluid to be treated passes from a suitable receptacle through the upper hollow part of the shaft B and comes out at the bottom of the cylinder through two pipes, J J. These
50 pipes open midway between two partitions, K, which extend from top to bottom and from the

sides of the cylinder about half-way in toward the shaft.

Two pipes, L L, run from the cover C, near its rim, to the bottom of the cylinder, near the shaft, and are incased in the partitions K. The upper ends of these pipes are closed by screw-threaded plugs M, passing through the cover, which may be removed for the purpose of removing and cleaning the pipes, and the heavier parts of the fluid in the cylinder may enter the pipes, when the cylinder is rotated, through openings N in the sides of the pipes, near the cover. The lower ends of the pipes pass partly through the bottom and are continued by screw-threaded nozzles O, which emit the liquid into an annular pan, P, below the cylinder, provided with a discharge-spout, Q.

Near the shaft and passing up through the cover are four or more pipes, R, the lower part of which, below the cover, is open on the side facing the shaft and V-shaped, while the upper part of them, above the cover, has a lip turning outward to admit of the liquid running out into an annular pan, S, fastened above the cylinder and provided with a discharge-spout, T.

As the cylinder is revolved with great velocity, the heavier parts of the liquid are forced by the centrifugal power out toward and upward along the sides of the cylinder and pass into the pipes L and out of the cylinder into the pan P, while the lighter parts are forced up through the pipes R and discharged into the pan S, and the partitions K serve to force the liquid to rotate with the cylinder.

To insure the even starting and stopping of the machine, I prefer to use the connection with the drive-pulley and the shaft, as shown in the drawings, and consisting of an upward and downward tapering sleeve, U, turning in correspondingly-shaped bearings, V, and turning upon the lower end of shaft B. The drive-pulley W is upon the middle of this sleeve, and the lower end of the sleeve is slotted at X for the reception of the shanks of metallic friction-blocks Y, which are pressed by the centrifugal power against the inside of a box, Z, fastened upon the shaft.

The bearings for the ends of the shaft are preferably constructed as shown in the drawings, consisting of conical sleeves and boxes

a, *b*, and *c*, held adjustably in place by means of nuts *d* and *f*, and allowed a limited play by an annular rubber-packing, *e*, and a bearing-plate, *g*, having an adjusting-screw, *h*, upon which plate the lower rounded end of the shaft rests.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a centrifugal machine for separating liquids, the cylinder A, closed at top and bottom and mounted upon the hollow shaft B, having inlet-tubes J, having openings D, closed by flanged lids E, having cross-pieces G, pins I, and screw H, and provided with the oblique tubes L, incased in the partitions K, and tubes R, substantially as and for the purpose shown and set forth.

2. In the cylinder of a centrifugal machine for separating liquids, the tubes R, passing through the cover of the cylinder, arranged around and near the shaft, and having their lower portion below the cover cut open and V-shaped, and their upper part provided with a lip adapted to discharge the lighter parts of the fluid, as shown and set forth.

3. In the cylinder of a centrifugal machine, the oblique tubes L, having lateral openings N, closed at the upper end by a screw-threaded plug, M, and passing out through the bottom of the cylinder by their screw-threaded nozzles

O, substantially as and for the purpose shown and set forth.

4. In the cylinder for a centrifugal machine for separating liquids, the partitions K, fastened to the sides of the cylinder, adapted to carry the fluid around with the rotating cylinder, and incasing the oblique pipes L, holding and bracing them, substantially as shown and set forth.

5. In a centrifugal machine, the combination of the cylinder A, having oblique tubes L, provided with openings N at their upper ends and outlet-nozzles O at their lower ends, and tubes R, having V-shaped lower ends, with the annular pans P and S below and above the cylinder, substantially as and for the purpose shown and set forth.

6. The centrifugal machine consisting of the cylinder A, having removable covers, E, shaft B, hollow at its upper end and having inlet-tube J, tubes R, oblique tubes L, partitions K, annular pans P and S, and means for communicating rotary motion to shaft B, all constructed and combined to operate as and for the purpose shown and set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHANNES ERNST MEYER.

Witnesses:

ORL. YAHN,

FR. ESZLINGER SKINDERG.