

(No Model.)

W. BERGH.

DRUM FOR CENTRIFUGAL FLUID SEPARATING MACHINES.

No. 422,369.

Patented Mar. 4, 1890.

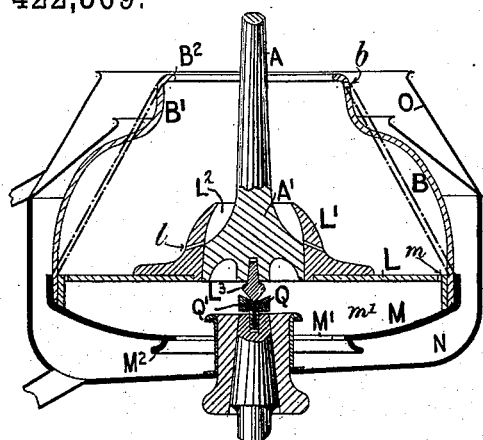


Fig. 1.

Fig. 2.

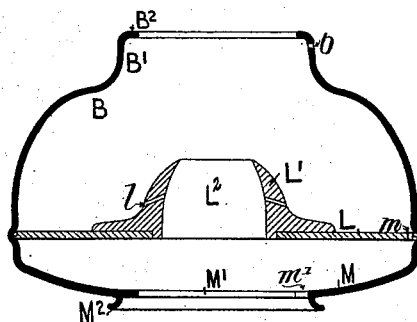


Fig. 3.

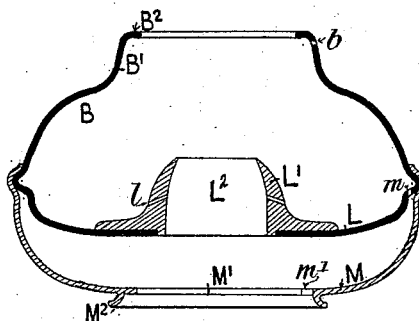
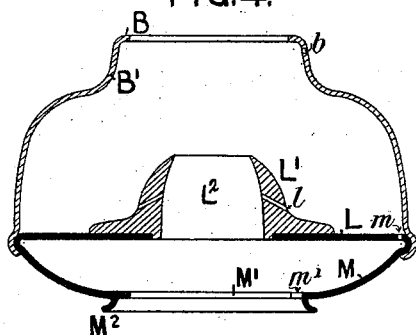


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

WALDEMAR BERGH, OF LONDON, ENGLAND, ASSIGNOR TO DAVID HUMMEL, JR., OF SAME PLACE.

DRUM FOR CENTRIFUGAL FLUID-SEPARATING MACHINES.

SPECIFICATION forming part of Letters Patent No. 422,369, dated March 4, 1890.

Application filed August 26, 1889. Serial No. 322,014. (No model.)

To all whom it may concern:

Be it known that I, WALDEMAR BERGH, merchant, a subject of the Queen of Great Britain, residing at London, England, have invented certain new and useful Improvements in Drums for Centrifugal Fluid-Separating Machines, of which the following is a specification, reference being had to the accompanying drawings.

According to this invention I make the drum in centrifugal fluid-separating machines with a partition or diaphragm which divides it into an upper or separator chamber and a lower chamber for receiving and conveying away the heavier separated fluid, and provide means for taking off the lighter fluid at the top of the drum and the heavier fluid at the bottom.

My invention also consists in a special manner of constructing such drum or uniting the parts thereof.

The invention is particularly applicable to machines for separating milk into cream and skim-milk.

Figure 1 is a vertical section through the drum with its outer receptacles for cream and skim-milk, and is, as an example, shown arranged to be driven from above—for instance, in the manner described in my application for Letters Patent filed May 16, 1889, Serial No. 310,941, and on which a patent, No. 415,698, was granted November 26, 1889. It may, however, obviously just as well be driven from below, the spindle being then continued downward. Figs. 2, 3, and 4 are similar sections of the drum, illustrating various modes of combining the parts of the drum by means of spinning.

The drum-spindle A is formed with a conical bottom enlargement A', and removably fits in a slightly-conical opening L², formed in the central ring L', which fits securely within an annular opening formed in the diaphragm, as shown, said ring L' thereby forming practically a portion of the diaphragm L, formed with a downwardly-projecting flange for conveniently screwing, soldering, or otherwise securing it to the upwardly-projecting flange of the lower compartment M, and to the flange or bottom rim of the separator-drum proper B or upper compartment. The latter is of a part spherical form with a neck B', which at

the top is formed with a small inner flange B².

Instead of the part spherical form shown in full lines, the drum proper or upper compartment B may, as shown in dotted lines, taper upward to the neck B' in a straight line, or nearly so. The outlet hole or holes *b* for the lighter liquid—such as the cream in the case of separating milk into cream and skim-milk—are just below the inner flange B², where the neck is of the smallest internal diameter. The opening or chamber L² is for receiving the milk from the feed-tube and has slanting outlet-holes *l* communicating with the drum B. The lower compartment M, which receives the skim-milk by way of the hole or holes *m*, has a central hole M', with a small notch *m'*, and a turned-back lower lip flange M² for ready escape of the skim-milk to the receiver N.

O is the receiver for the cream.

The skim-milk receiver and the cream-receiver are of usual form, and have the usual outlet-pipes to pails placed below.

The cone-pivot L³ has its bearing in the hard bearing-piece Q', which is provided with a fine central hole to enable said pivot to readily find its true center. The piece Q' is inserted in the step-piece Q, which has a large central hole for the insertion of a tool when it is desired to remove the piece Q'.

Fig. 2 shows a suitable form of drum B, spun in one with the lower compartment M over the edge of the diaphragm L. Fig. 3 shows another form in which the lower compartment M is spun over the drum B and diaphragm L. Fig. 4 shows a form in which the drum B is spun over the diaphragm L and lower compartment M. The inside of the drum B and lower compartment M are provided in all cases with the usual vertical partitions, though not shown in the drawings.

Having fully described my invention, what I desire to claim and secure by Letters Patent is—

1. In a drum for centrifugal fluid-separating machines, the combination, with the drum-casing, of a diaphragm located within said casing and dividing the interior thereof into an upper and a lower chamber, as described, said diaphragm being provided with the following openings: a central opening for receiv-

ing the supply of fluid and to afford a means
for fixing the operating-spindle thereto, open-
ings which communicate with said central
opening and with the upper chamber of the
5 drum, and a circumferential opening or open-
ings leading from the upper to the lower cham-
ber of the drum, the lower portion of the drum-
casing having a central opening for the escape
of the heavier fluid from the lower chamber,
10 and the upper portion of the drum-casing
being provided near its top with an opening
for the escape of the lighter fluid from the
upper chamber, as described.

2. The upper chamber B, having a neck B',

inner flange B², and hole *b* for cream-escape, 15
in combination with the diaphragm L, having
a central supply-chamber with passages *l* and
a hole *m* for skim-milk efflux, and the bottom
chamber M, having notch *m'*, and lip-flange
M² for skim-milk escape, substantially as set 20
forth.

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