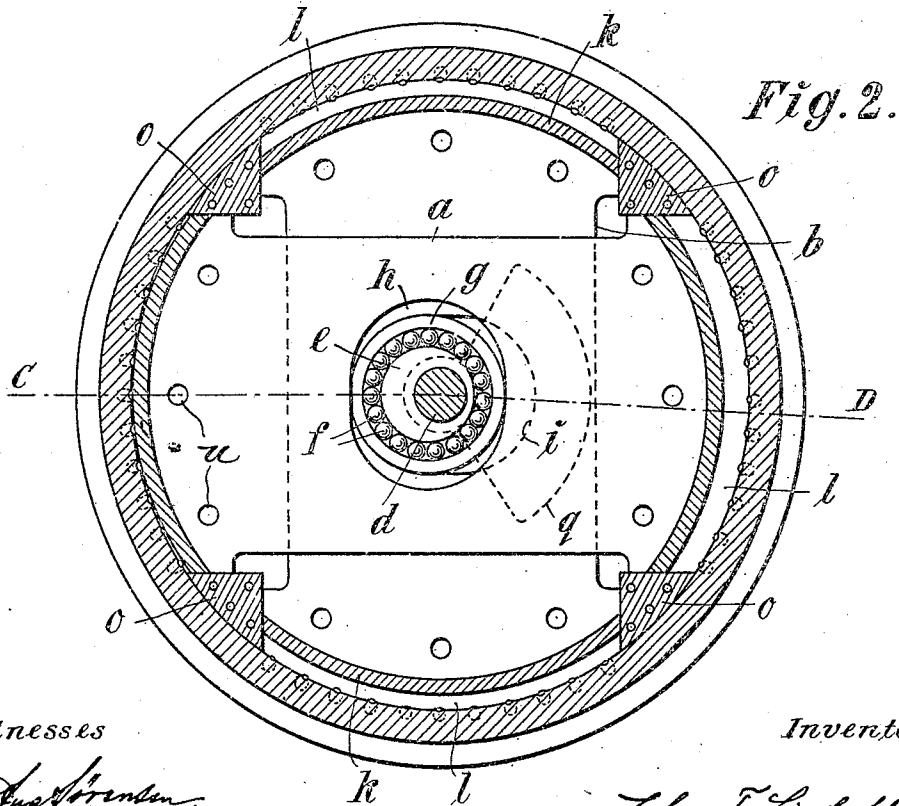
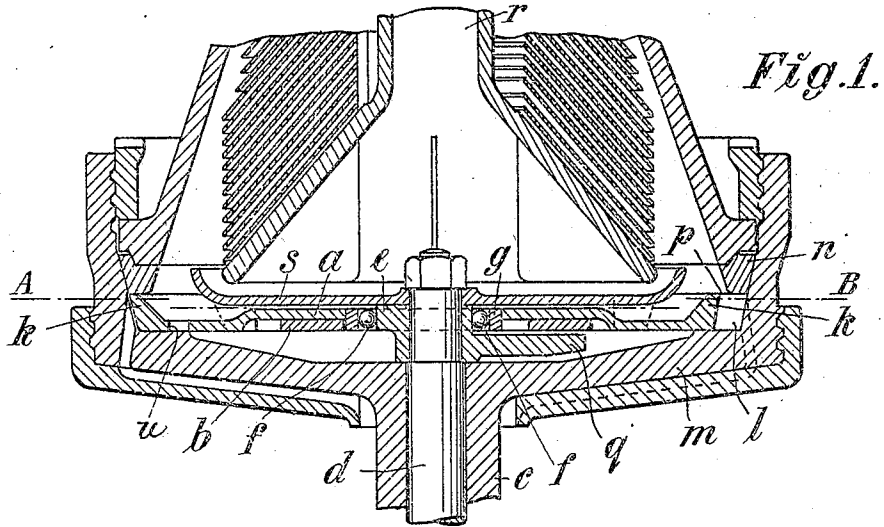


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CENTRIFUGAL SLIME SEPARATOR.
APPLICATION FILED OCT. 15, 1909.

954,528.

Patented Apr. 12, 1910.



Witnesses

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CENTRIFUGAL SLIME-SEPARATOR.

954,528.

Specification of Letters Patent.

Patented Apr. 12, 1910.

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To all whom it may concern:

Be it known that I, JOHN TEODOR LIN-
DAHL, a subject of the King of Sweden, re-
siding at Stockholm, in the Kingdom of
Sweden, have invented new and useful Im-
provements in Centrifugal Slime-Separators,
of which the following is a specification,
reference being had to the drawing
accompanying and forming a part hereof.
This invention relates to improvements
in centrifugal slime separators, such as ma-
chines for separating utricles of yeast from
the water with which they are mixed, or
kaolin (porcelain clay) from the water in
which it has been washed, or for separating
color-dust, starch or other small solid par-
ticles suspended in liquids.

For pressing out the slime from the cen-
trifugal drum of a slime separator I have
formerly used rotary disks rolling along
the row of outlet openings for the slime.
By such an arrangement the slime is not
reliably forced out since the slime some-
times has occasion to glide ahead of the disk
without entering the outlet passages.

The object of this invention is to provide
more reliable means for pressing out the
slime.

The invention consists, chiefly, in the com-
bination with the drum, of one or more
plungers revoluble with the same and
adapted to move into and out of one or
more pockets communicating with the out-
lets and adapted to receive the slime, and
means for reciprocating the said plungers
in such a manner as to allow the slime to
enter into the said pockets in front of the
plungers and to be pressed by the same into
the said slime outlets.

The invention further comprises the con-
struction and combination of parts herein-
after more particularly described.

In the drawing, Figure 1 is a vertical
section (on line C—D of Fig. 2) of the
lower part of a slime separator embodying
the invention. Fig. 2 is a horizontal section
of the same apparatus (on line A—B of
Fig. 1).

Referring to the drawing, *a* and *b* are
two reciprocating double plungers partaking
in the revolution of the drum and serving as
pressing members for pressing out the slime,
one double plunger lying across the other.
The reciprocating movement is transmitted
from an axle *d* mounted within and project-

ing above the hollow axle or spindle *c* of the
drum in such a manner as to be able to turn
therein. Attached to the axle *d* is an ec-
centric *e* mounted in level with and operat-
ing the plungers *a* and *b*. The eccentric *e*
is surrounded by balls or rollers *f* held in
position by a ring *g* movable in longitudi-
nal openings *h* and *i* of the plungers *a* and *b*,
as clearly shown in Fig. 2. It will thus be
seen that the plungers *a* and *b* are recipro-
cated when the axle *d* rotates relatively to
the spindle *c*. The outer ends of the re-
ciprocating plungers preferably form arc-
shaped pressing surfaces *k* entering into the
press chambers or cells *l*, which are suitably
formed by the bottom *m* of the centrifugal
drum, a ring *n* placed at a distance from
the said bottom, and triangular parts *o*
placed between the bottom and the ring, said
parts being eventually made integral with
the said bottom, or the ring, respectively.
As shown in Fig. 2, the triangular parts
form the side walls of the press chambers or
cells while the aforesaid bottom and ring
form the upper and the lower side thereof.
The movement of the plungers *a* and *b* is
such that the pressing parts *k* in moving in-
wardly, *i. e.* toward the axis of the drum,
move entirely out of the cells, leaving an
opening at the top thereof, as shown at the
right-hand side of Fig. 1, so that the slime
has occasion to enter into the cells in front
of the press plunger *k* which thereupon
presses the slime out of the cells, when mov-
ing back into the same. Both ends of the
plungers *a* and *b* work in the same manner.
It will be seen from Fig. 2 that the pressing
out of the slime takes place successively
around about the inner side of the drum.
For balancing the plungers *a* and *b* the
axle *d* has attached to it a counterweight *q*.
In other respects the centrifugal drum is
constructed in well known manner. The
liquid with the slime suspended therein is
supplied through the central tube *r* onto the
disk *s* and passes between the latter and the
lower edge of the widened part of the tube
into the liner. In order to prevent the
liquid from being pressed directly outward
so as to prevent the slime from entering into
the press chambers or cells *l*, the outer edge
of the disk *s* is curved upward. The plun-
gers *a* and *b* may suitably be provided with
holes *u* near the circumference thereof so as
to allow the pressure on the upper sides of

the plungers to be propagated to the lower sides thereof, by which the plungers will be balanced in the axial direction of the drum, so that the friction will be reduced to a minimum and an easy movement of the plungers be obtained.

In conclusion I wish to point out that I do not restrict myself to the precise details of construction and arrangement hereinbefore described. If desired, more than two pressing plungers may be used. In certain cases one disk may suffice. The form of the plungers or pressing members may be varied considerably and in many particulars without departure from the principle of my invention.

I claim:

1. In a centrifugal slime separator, the combination of a rotary drum having at the circumference slime pockets communicating with outlets for the slime, plungers revoluble with the drum and adapted to move into and out from the said pockets, and means for reciprocating the said plungers in such a manner as to allow the slime to enter into the said pockets in front of the plungers and to be pressed by the same into the outlets.

2. In a centrifugal slime separator, the combination of a rotary drum having at the circumference slime pockets communicating with outlets for the slime, plungers revoluble with the drum and adapted to move radially into and out from the said pockets, and means for reciprocating the said plungers in such a manner as to allow the slime to enter into the said pockets in front of the plungers and to be pressed by the same into the outlets.

3. In a centrifugal slime separator, the combination of a rotary drum having at the circumference slime pockets communicating with outlets for the slime, two double plungers partaking in the revolution of the drum and adapted to move with their ends into and out from the said pockets, one double plunger lying across the other, and means for reciprocating the said plungers in such a manner as to allow the slime to enter into the said pockets in front of the plungers

and to be pressed by the same into the outlets.

4. In a centrifugal slime separator, the combination of a rotary drum having slime outlets at its bottom, a ring placed within the said drum at a distance from the said bottom, partition walls placed in the space below the said ring, so as to form a number of pockets communicating with the slime outlets, plungers partaking in the revolution of the drum and adapted to move with their ends into and out from the said pockets, and means for reciprocating the said plungers in such a manner as to allow the slime to enter into the said pockets in front of the plungers and to be pressed by the same into the outlets.

5. In a centrifugal slime separator, the combination of a rotary drum having slime outlets at its bottom, a ring placed within the said drum at a distance from the said bottom, partition walls placed in the space below the said ring, so as to form a number of pockets communicating with the slime outlets, plungers partaking in the revolution of the drum and adapted to move with their ends into and out from the said pockets, and means for reciprocating the said plungers radially in such a manner as to allow the slime to enter into the said pockets in front of the plungers and to be pressed by the same into the outlets.

6. In a centrifugal slime separator, the combination of a rotary drum having slime outlets at its bottom, a ring placed within the said drum at a distance from the said bottom, triangular parts placed between the bottom and the ring so as to form a number of pockets communicating with the slime outlets, plungers partaking in the revolution and adapted to move with their ends into and out from the said pockets, and means for reciprocating the said plungers in such a manner as to allow the slime to enter into the said pockets in front of the plungers and to be pressed by the same into the outlets.

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Witnesses:

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