

(No Model.)

E. LANGEN.
Centrifugal Machine.

No. 235,259.

Patented Dec. 7, 1880.

Fig. 1

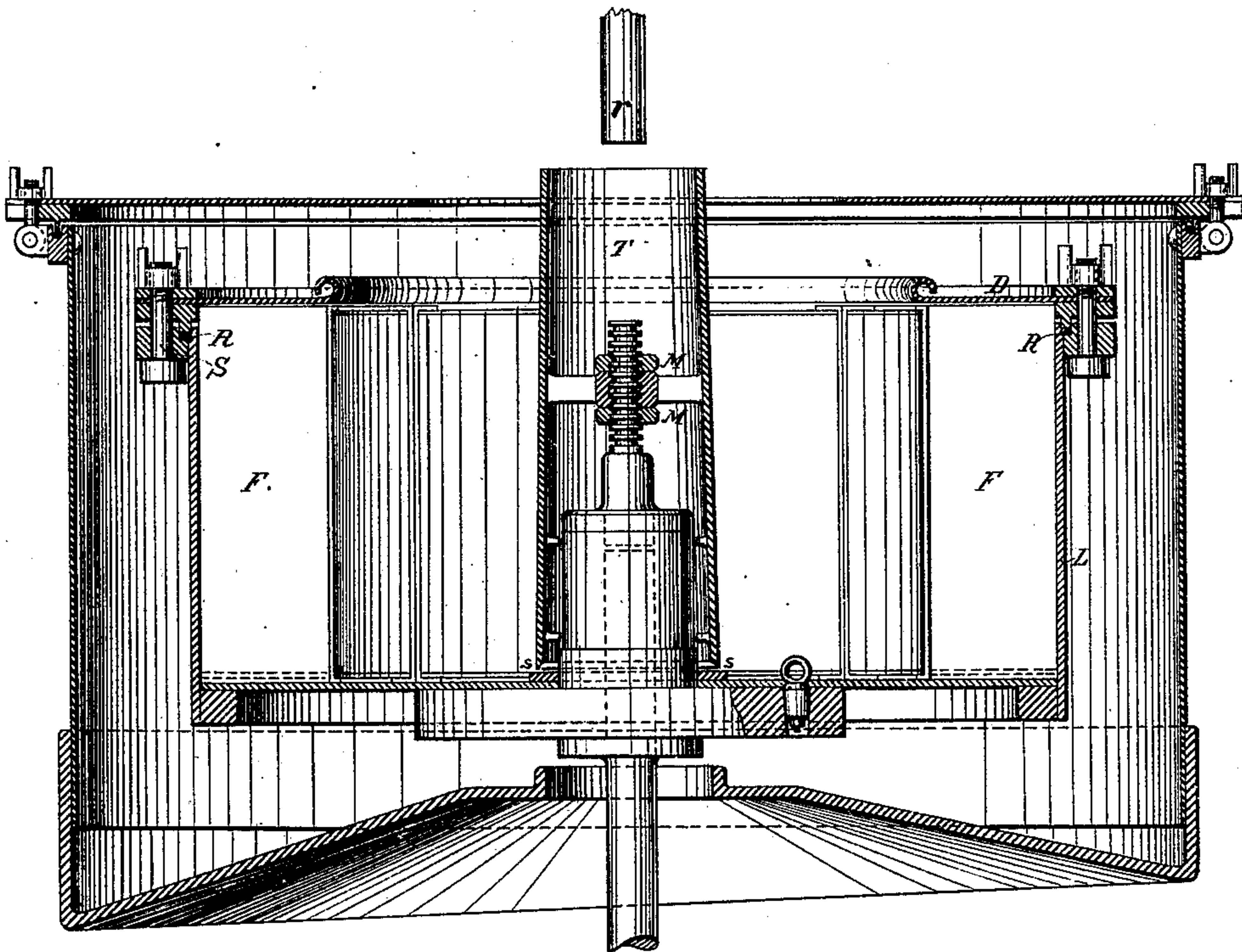
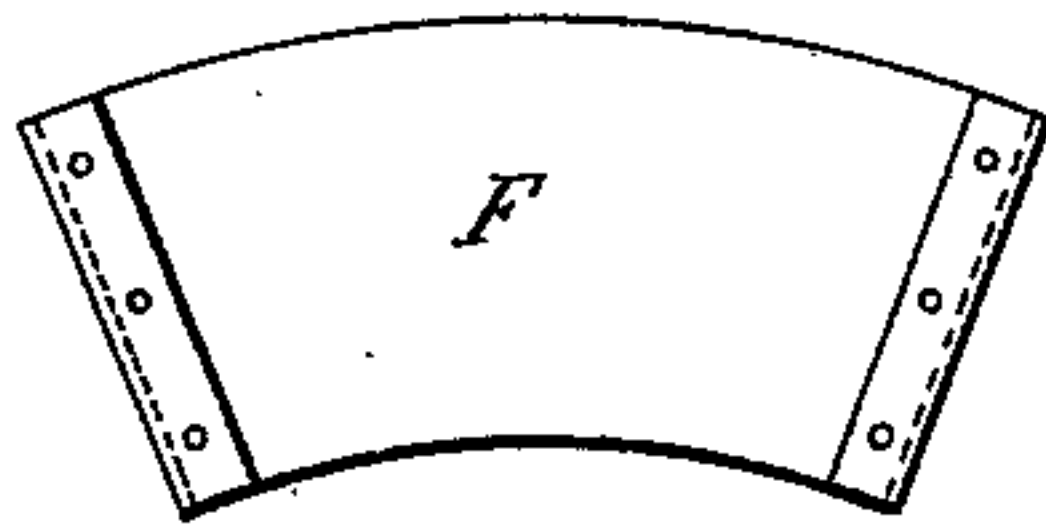


Fig. 2



Attest:

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UNITED STATES PATENT OFFICE.

EUGEN LANGEN, OF COLOGNE, PRUSSIA, GERMANY.

CENTRIFUGAL MACHINE.

SPECIFICATION forming part of Letters Patent No. 235,259, dated December 7, 1880.

Application filed October 26, 1880. (No model.) Patented in England November 18, 1878.

To all whom it may concern:

Be it known that I, EUGEN LANGEN, of Cologne, in the German Empire, have invented a new and useful Improved Centrifugal Machine for Separating Substances from Each Other, for which I have obtained Letters Patent in Great Britain, No. 4,676, bearing date the 18th day of November, 1878, of which the following is a specification.

My invention has reference to an improved construction of centrifugal machine for effecting the separation of either solid substances suspended in a liquid or of two liquids of different specific gravities.

The invention consists, mainly, in introducing continuously at the bottom of the drum the material to be operated on in quantities so adjusted to the separating power of the machine that as the material flows upward in the drum the separation of the heavier from the lighter portions thereof will be completely effected by the time the material has reached the top of the drum, so that only the lighter constituents thereof will flow away over the upper lips of the drum, the heavier constituents being retained in the periphery of the drum, whence they are removed from time to time. For this purpose there is provided in the center of the drum a tube, at the lower end of which are adjustable openings, so that as the liquid to be operated upon is made to flow into the upper end of the tube through a supply-pipe, it issues at the bottom in accurately-regulated quantity against the circumference of the drum, where it gradually flows upward while being acted upon by centrifugal force, and eventually the lighter portion of such liquid flows over the lip of an annular cover secured in a removable manner on the top of the drum.

The construction of such apparatus which I prefer to employ is shown in vertical section at Figure 1 on the accompanying drawings, the apparatus being intended for the separation of liquid from solid matter suspended in it, which is collected in compartments or molds of segmental form, such as shown in plan at Fig. 2.

The revolving drum L has a number of the receptacles F placed in it, so as to fill up an annulus next its periphery, these being covered by a removable cover, D, held down by bolts S, with the jointing of the cover to the drum made water-tight by a caoutchouc ring, R.

In the middle of the drum is the slightly-tapered feeding-tube T, which can be adjusted in height by the nuts M M, so as to leave a more or less narrow slit, s, between its lower end and the bottom of the drum. The fluid or semi-fluid material to be operated on supplied by a pipe, r, issues from the tube T by the slit s. The heavier solid particles collect in the receptacles F, while the light liquid overflows at the rounded inner lip of the cover D. When the receptacles F are filled the cover D is removed and they are taken out, the receptacles being emptied, or fresh receptacles can be replaced in the drum and the operation repeated.

By means of the nuts M M the area of the slit s can be adjusted so as to regulate the inflow of material and the outflow of separated liquid over the lip of the cover D, in accordance with the separating power of the apparatus.

Having thus described the nature of my invention and in what manner the same is to be performed, I hereby declare that I make no general claim to the use of centrifugal machines for the separation of the heavier and the lighter ingredients of fluid or semi-fluid mixtures; but

I claim—

1. A centrifugal separating-machine where- in the liquid to be operated upon is caused to enter in regulated quantities through central adjustable openings at the bottom of the drum, so that there may be no outflow at the upper lips of the drum of any but the lighter ingredients of the mixture, substantially as herein described.

2. In a centrifugal separating-machine, the central tube, T, adjustable by a screw upon the axis of the drum, so as to leave a greater or less annular orifice, s, between its lower edge and the bottom of the drum, substantially as and for the purposes set forth.

3. The combination of the drum L, frame-like boxes F, cover D, and adjustable supply-tube T, arranged and operating substantially as set forth.

In testimony whereof I, the said EUGEN LANGEN, have signed my name to this specification, in the presence of two subscribing witnesses, this 5th day of October, A. D. 1880.

Witnesses: EUGEN LANGEN.
EMIL MEISENBURG,
C. FRANZEN.