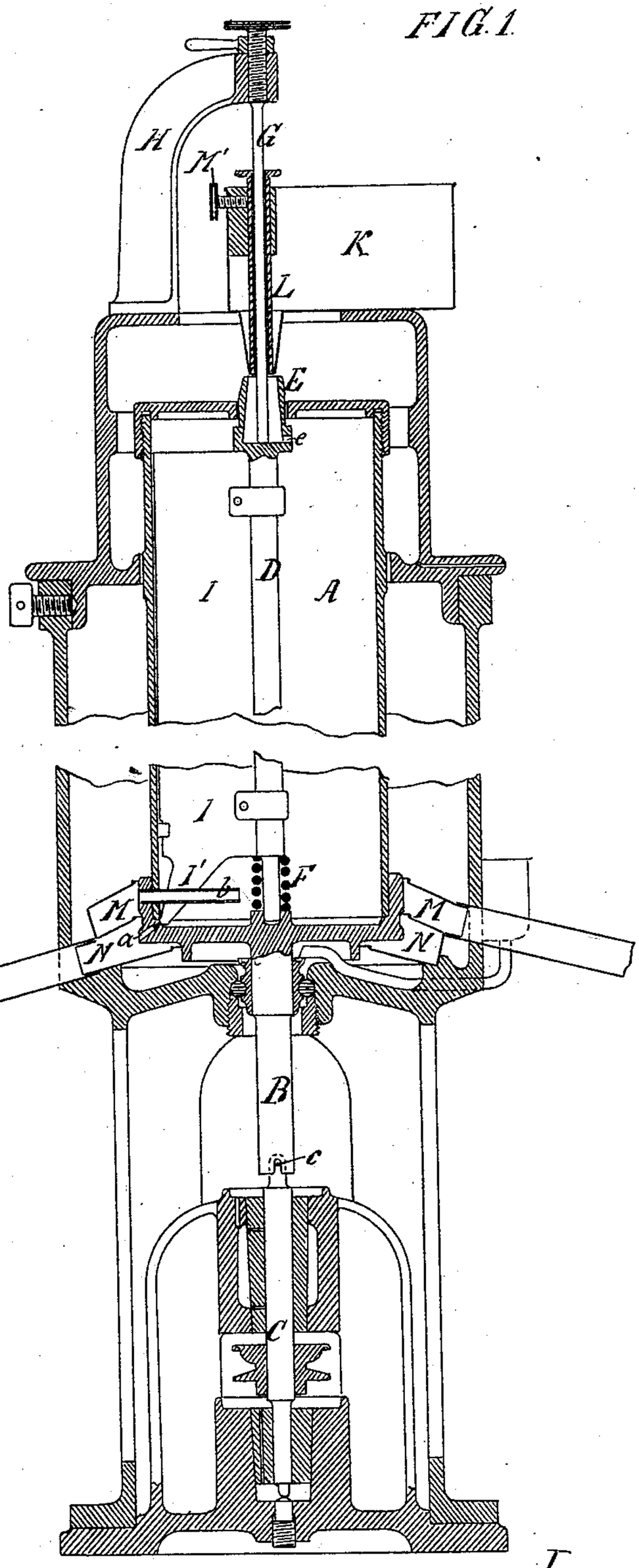
(No Model.) 3 Sheets—Sheet 1.

S. JÖNSSON.

CENTRIFUGAL CREAM SEPARATOR.

No. 411,038. Patented Sept. 17, 1889.

FIG. 1.



Witnesses:
Poul Petersen.
Alfred Jensen.

Inventor.
Iven Jönsson
per Viggo Constantin Eberth
Attorney

(No Model.) 3 Sheets—Sheet 2.

S. JÖNSSON.

CENTRIFUGAL CREAM SEPARATOR.

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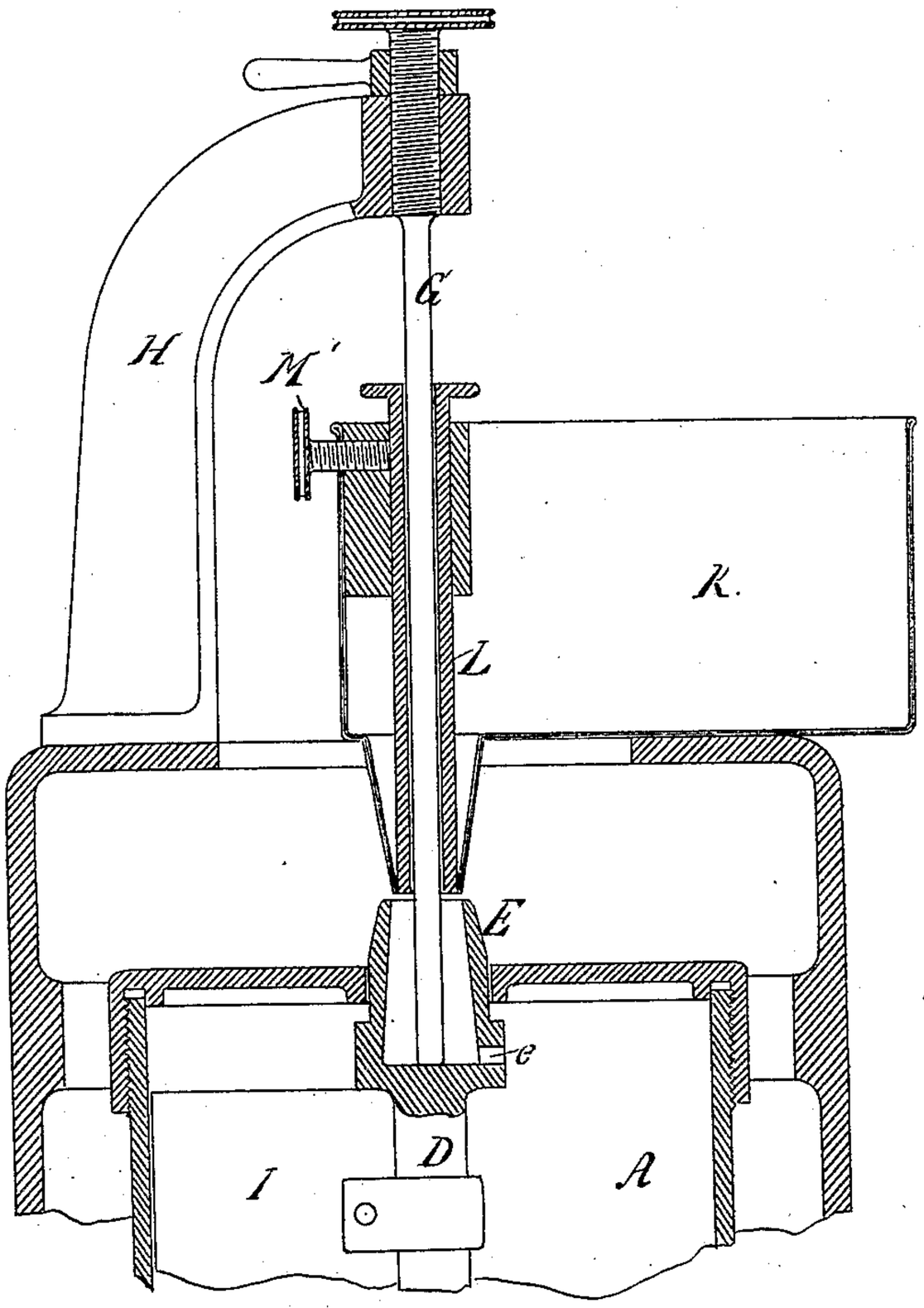
FIG. 2.



Witnesses:
Paul Petersen
Alfred Jensen

Inventor.
per Sven Jönsson
Viggo Constantin Eberlin.
Attorney.

(No Model.) 3 Sheets—Sheet 3.

S. JÖNSSON.

CENTRIFUGAL CREAM SEPARATOR.

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Fig. 3.

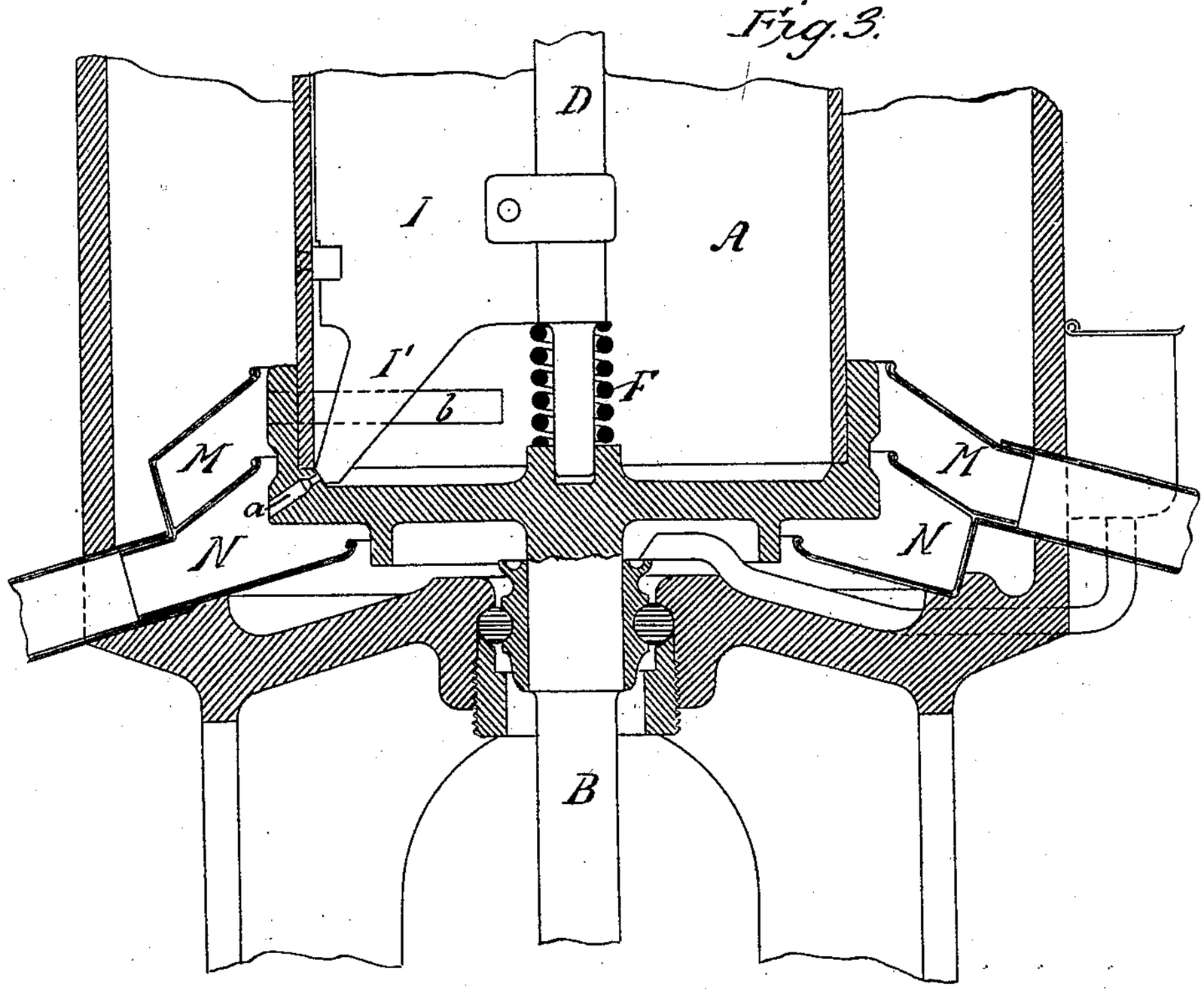
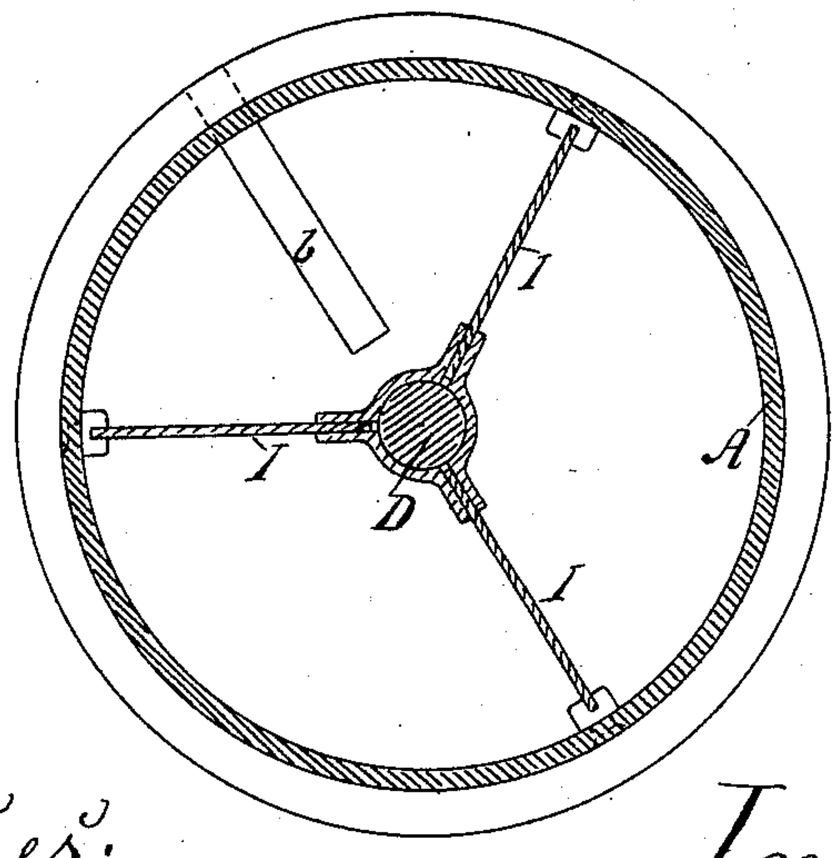


FIG. 4.



Witnesses:
Poul Petersen
Alfred Jensen.

Inventor
Sven Jönsson
per Vigo Constantin Eberth
Attorney

UNITED STATES PATENT OFFICE.

SVEN JÖNSSON, OF COPENHAGEN, DENMARK.

CENTRIFUGAL CREAM-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 411,038, dated September 17, 1889.

Application filed July 17, 1888. Serial No. 280,234. (No model.)

To all whom it may concern:

Be it known that I, SVEN JÖNSSON, a subject of the King of Denmark, residing at Copenhagen, in the Kingdom of Denmark, have invented certain new and useful Improvements in Centrifugal Cream-Separators; 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 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.

This invention relates to an improved construction of centrifugal machines in which the discharge of the milk may be regulated during the working of the machine, so that the discharge of the milk will be proportionate to the speed of rotation of the drum of the centrifugal machine.

The improved centrifugal machine is illustrated on the annexed sheet of drawings.

Figure 1 is a vertical section. Fig. 2 shows the upper part in vertical section. Fig. 3 shows the lower portion in vertical section. Fig. 4 shows the same in horizontal section.

The drum A of the centrifugal machine is caused to rotate by means of the shaft B from the shaft C, shaft C being provided at its top with a pin *c*, which engages in a socket in the lower end of shaft B. The drum A is provided near its bottom with an opening *a* for the discharge of the milk and with an inwardly-extending tube *b* for the cream.

In the drum A is axially situated a pillar or column D, which carries at its top a cup or disk E, that projects through the cover of the drum, and at its bottom a pin or journal or foot that is inserted in a bearing or foot step formed in the bottom of the drum. Around the said foot is arranged a spiral spring F, which acts against a shoulder and has a tendency to force the column upward.

Against the bottom of the cup E there presses a rod G, which is screwed into an arm H, that projects from the framing of the centrifugal machine.

On the column D are fixed one or more vanes I, which move up and down with the same, their outer edges being caused to move in guides fixed to the wall of the drum. One of the vanes, which is situated exactly before the milk-outlet, is provided with a downwardly-projecting tongue I′, which may be caused by the movement of the column D to close more or less the milk-outlet.

Above the drum A is arranged a milk-vessel K, which is provided in its bottom with a conical outlet, which opens out above the cup E. This latter has in its side wall one or more outlets *e*, through which the milk can flow into the drum of the centrifugal machine.

The rod G passes through the milk-vessel and is inclosed in a tube L, which can be fixed at the right height by means of the set-screw M′, and which also serves to regulate the opening for the flow of the milk through the conical outlet.

The milk to be centrifugally treated is poured into the vessel K, flows thence down into the cup E and through the opening *e* into the drum, when the cream and the milk become separated, the cream flowing through the pipe *b* into the receiver M (which is provided with an outlet-pipe) and the milk passing out through the opening *a* into the receiver N, (also provided with outlet-pipe.) The correct amount of outflow is regulated by causing the tongue I′ to cover the opening *a* more or less, this being capable of being effected during the operation of the machine by means of the rod G, provided with a screw.

Arranging the outlet for the milk in the wall of the drum has the advantage that the discharge of milk is proportionate to the speed of rotation, because the pressure under which the discharge takes place increases and decreases with the same, and no risk is run of having to subject the milk again to treatment in the centrifugal apparatus if by inattention the speed of rotation has been allowed to decrease, so that the skim-milk will always flow out uniformly clear.

By the arrangement of the outlets in the outer wall of the drum it is possible to clear the drum without having to open the latter—viz., by allowing warm water to flow into the centrifugal machine during rotation of the latter, the outlet being left open, and the whole of the collected dirt will be ejected at this opening, together with the water.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In a centrifugal machine, the combination of the drum A, provided with opening *a* and pipe *b*, the column D, having vanes I, one of which is formed with tongue I′, the spring F, and adjustable rod G, substantially as set forth.

2. In a centrifugal machine, the combination of the drum A, provided with the opening *a*, the vane I, having tongue I′, and means for supporting and adjusting said vane I, substantially as set forth.

3. In a centrifugal machine, the combination of the drum A, screw-threaded rod G, the column D, carrying vanes I, one of which is formed with the tongue I′, and the spring F, substantially as set forth.

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

SVEN JÖNSSON.

Witnesses:
PAUL PETERSEN,
ALFRED JENSEN.