C. H. HACKETT.

CENTRIFUGAL LIQUID SEPARATOR.

APPLICATION FILED OCT. 30, 1905.

951,370.

Patented Mar. 8, 1910.

2 SHEETS—SHEET 1.

FIG. 1.

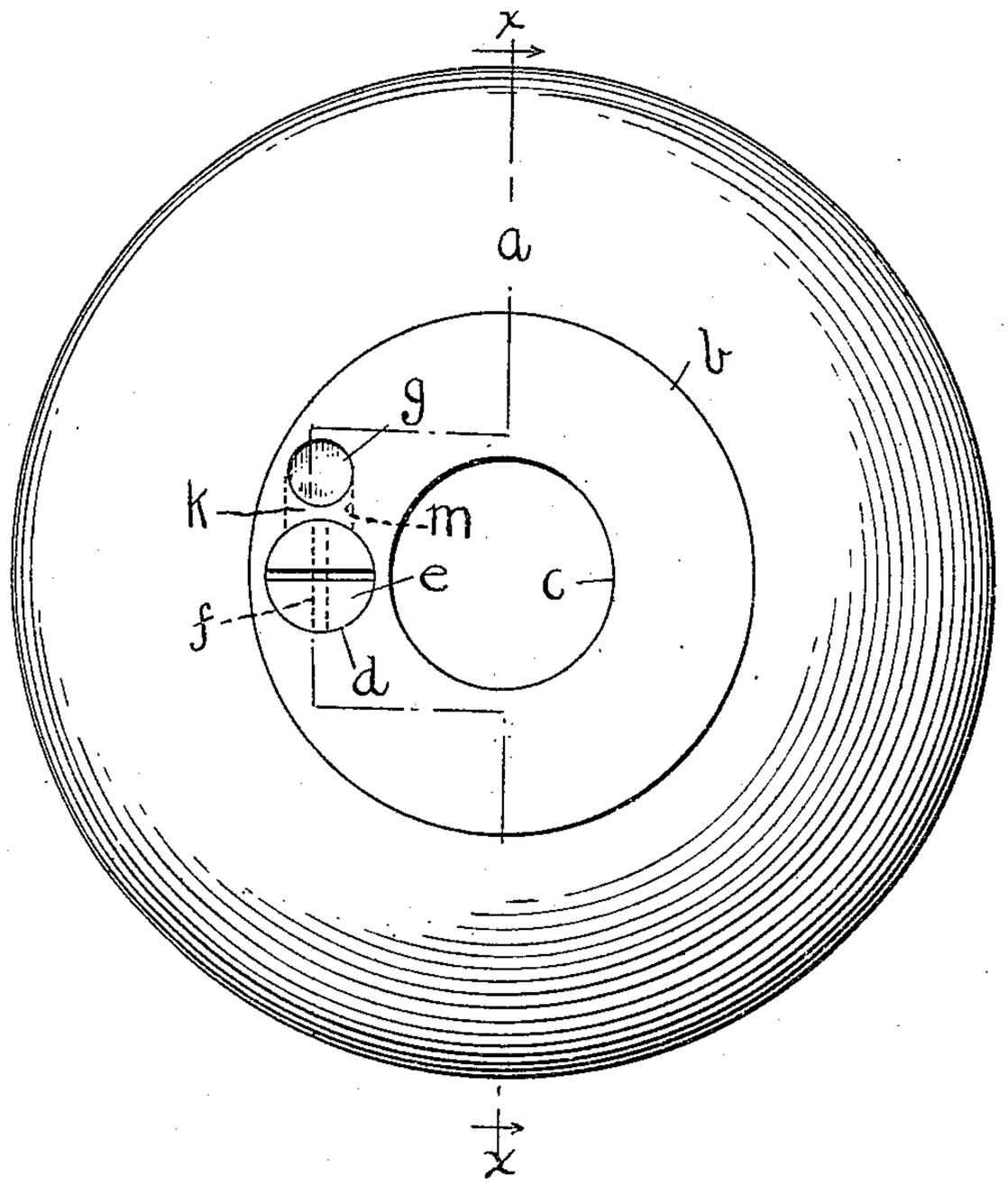


FIG. 2.

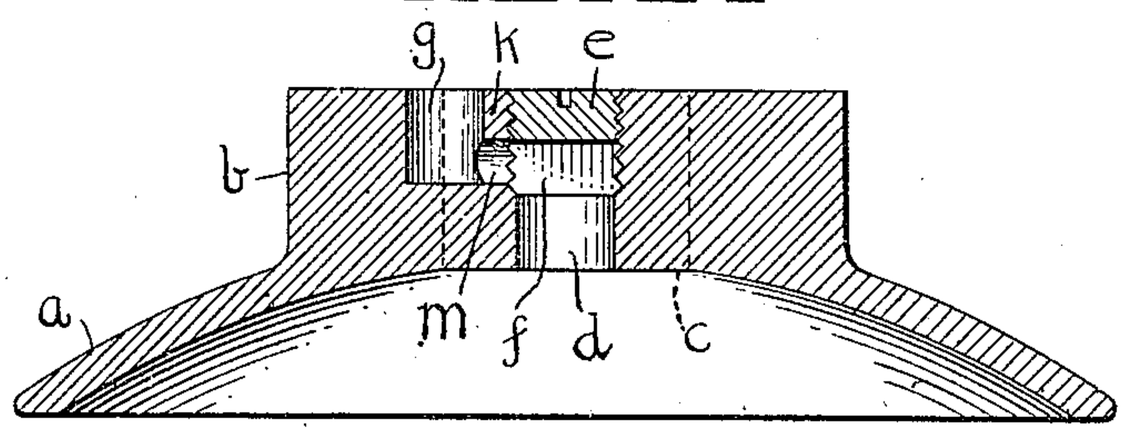
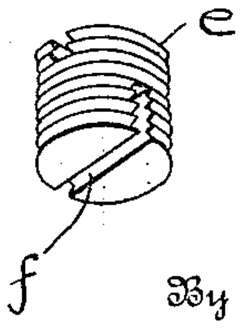


FIG. 3.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 4.

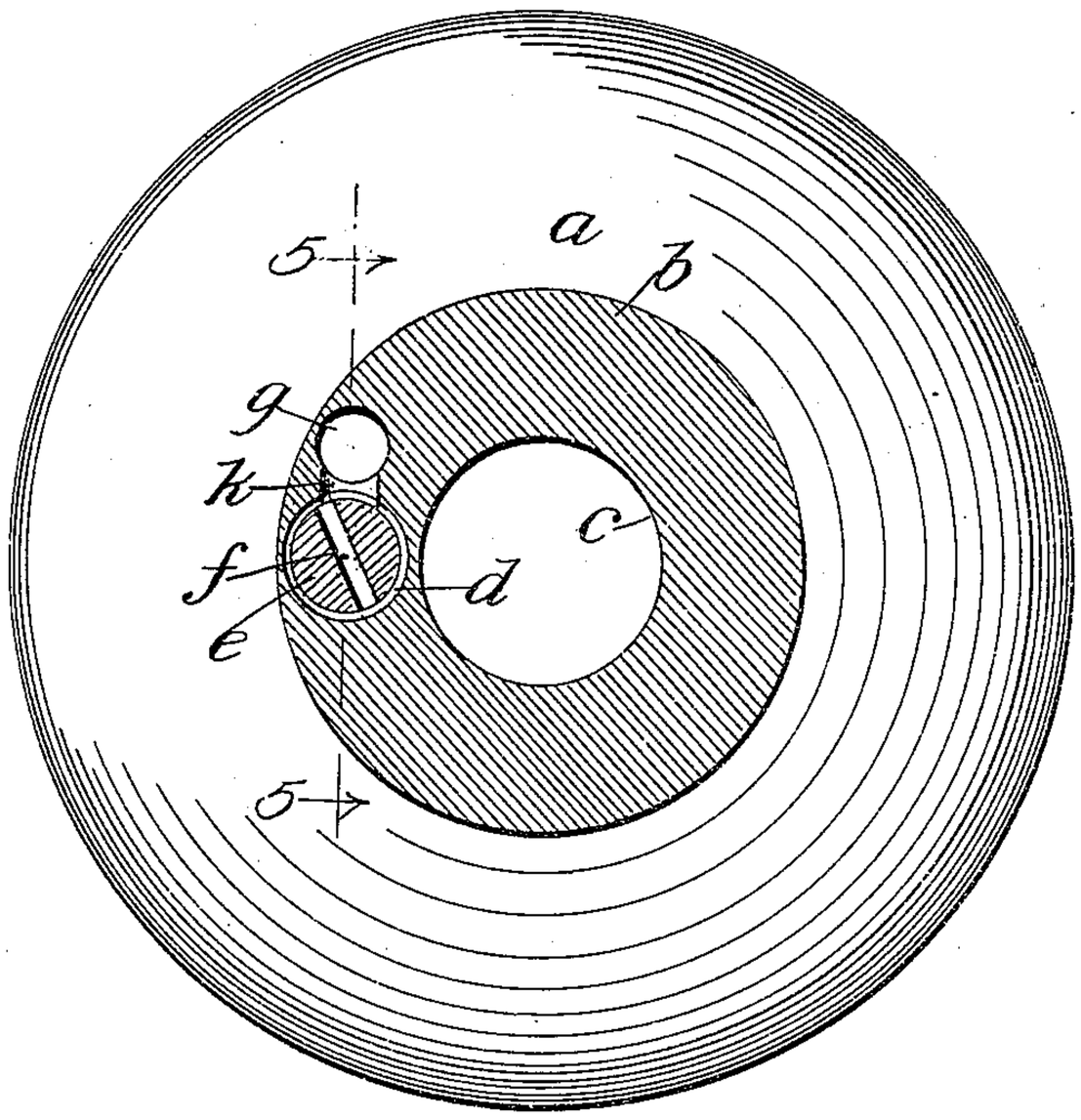
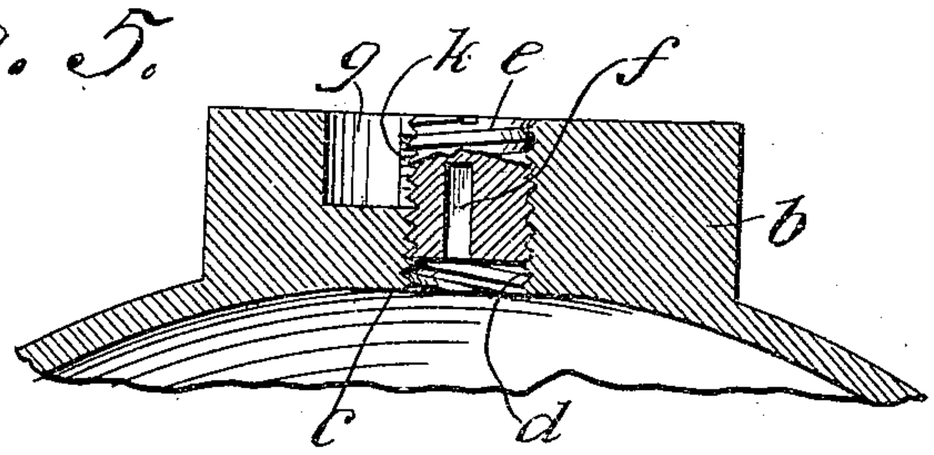


Fig. 5.



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CENTRIFUGAL LIQUID-SEPARATOR.

951,370. Specification of Letters Patent. Patented Mar. 8, 1910.

Application filed October 30, 1905. Serial No. 285,092.

To all whom it may concern:

Be it known that I, CHARLES H. HACKETT, a citizen of the United States of America, and a resident of Waterloo, Blackhawk county, Iowa, have invented certain new and useful Improvements in Centrifugal Liquid-Separators, of which the following is a specification.

My invention relates to improvements in centrifugal liquid separators, and the object of my improvement is to provide a new and improved eduction-tube for the exit of the lighter constituent of the liquid to be separated, so arranged as to be adjustable at varying distances from the axis of the separator bowl. This object I have effected by the means which are hereinafter described and claimed, and which are illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of the cover of a separator bowl showing the arrangement of my improved cream eduction-tube or exit, and Fig. 2 is a section of the same on a line *x*, *x*, taken vertically through said cover, while Fig. 3 is a detail perspective view of the plug used in the cream exit. Fig. 4 is a horizontal sectional view taken through the opening *m;* and Fig. 5 is a fragmentary sectional view taken on the line 5—5 of Fig. 4.

Similar letters refer to similar parts throughout the several views.

The separator bowl cover *a* is one of a well-known type, having a central opening *c* for the reception of the milk to be separated. The ring *b* on its upper part is concentric with the opening *c*, having the same axis, and is provided with a vertical opening *d*, which affords means of communication between the inside of the bowl at a point approximately located at the outer edge of the cream zone, and the outside of the bowl. The interior of the vertical opening *d* is threaded, and within it is fitted a threaded plug *e*, having formed in its lower end an ordinary slot which extends from side to side, and which may be used for the reception of the blade of a screw-driver. This slot, however, is cut of a considerable depth for the further purposes to be hereinafter described.

A circular well or depression *g* is drilled into the upper surface of the ring *b* to a suitable distance, and a slotted opening *m* is then cut from said well *g* horizontally to communicate with the opening *d*, as shown in Fig. 2. A portion of metal *k* is allowed to remain to bridge over the space between the said openings. The opening or pit *g* is drilled at a point whose direction is clockwise from the opening *d* for a purpose to be hereinafter described.

When the screw-plug *e* has been introduced into the opening *d* and by means of a screw-driver turned until it has arrived at a sufficient height in said opening, the upper part of the slot *f* opens into said slotted opening *m* from whatever direction in which said slot *f* may be set. For instance, if the cream to be separated should be of a high degree, the slot *f* should be so turned as to register with a part of the slot *m* which is at a point nearest the axis of the bowl. By turning the screw-plug *e* in a reverse direction, the slot-opening *f* will register with a portion of the opening *m* which is at a greater distance from the axis of the bowl, permitting milk which has a smaller degree of cream to be skimmed.

The object of the placing of the well *g* in the clockwise direction from the opening *d* is this. The screw-plug *e* having a right-handed thread, when the plug is turned to the left to bring the slot *f* to a greater distance from the axis of the bowl, the opening of the slot *f* is increased in size. This permits a flow of a greater volume of liquid therethrough, such as will occur when, on account of the change of the location of the slot *f* to its greater distance from the axis of the bowl, it forms an eduction-tube for a volume of issuing thin cream of low degree, and which, being of greater weight, under the influence of centrifugal force, will flow in greater volume in an equal period than when the slot *f* is nearer the bowl's axis.

When the separated cream is ejected through the slot *m* into the well-hole *g*, it issues thence at that part of its inner edge which is the nearest to the outer edge of the ring *b*. The use of the well-hole *g* is to at all times afford a fixed exit for the cream, without regard to the particular position of the slot *m*, whether the latter be nearer to or farther from the axis of the bowl. The furnishing of a fixed exit renders change of the cream-receiving-pan unnecessary at every change of the screw-plug *e*, and effectually prevents spattering of the ejected cream, or

accidental mixing of the latter with the skimmed milk.

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

1. In a centrifugal liquid separator, a bowl cover having a vertical well open to the exterior of said cover, and a passage at an angle to said well and affording communication between said well and the interior of the bowl, said well being located in a clockwise direction from said passage in the line of rotation of the bowl.

2. In a centrifugal liquid separator, a bowl cover having a passage therein open to the interior of the bowl, a second passage in said cover open to the exterior of the bowl, a passage at an angle to each of said other passages, and affording communication therebetween, and means for controlling said communication, said means including a screw mounted in the cover parallel to the axis of rotation and extending transversely of the inner terminus of said intermediate passage, and said screw being provided with a kerf in its under face, substantially as and for the purpose specified.

Signed at Waterloo, Iowa, this 10th day of Oct. 1905.

CHARLES H. HACKETT.

Witnesses:
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