

W. A. FULTON.

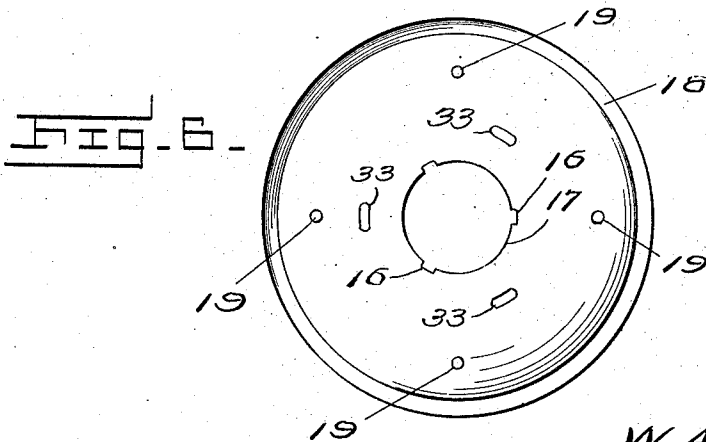
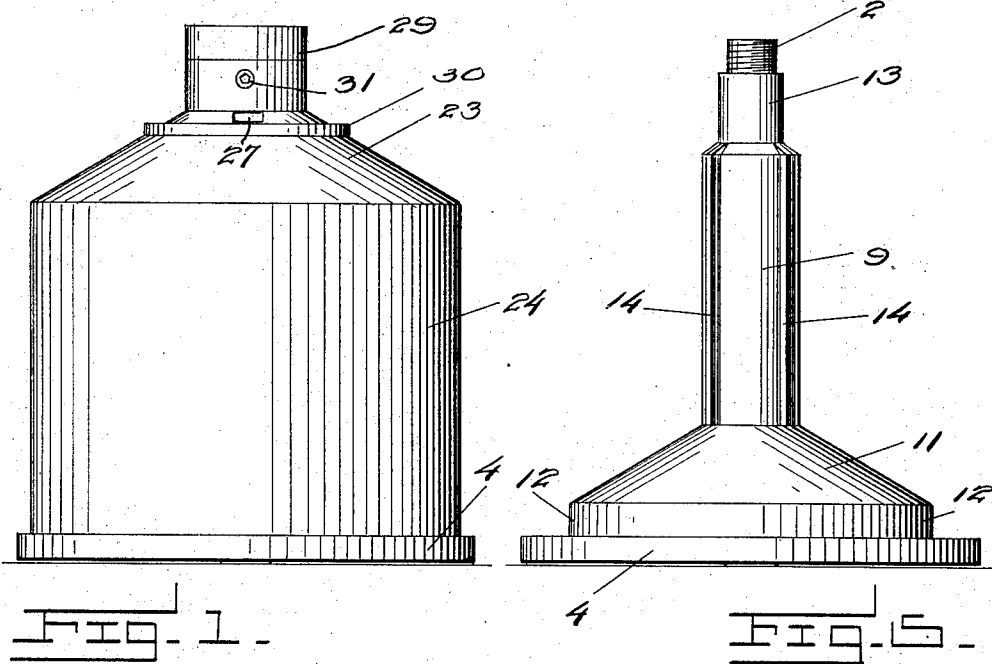
SEPARATOR.

APPLICATION FILED JULY 21, 1911.

1,025,694.

Patented May 7, 1912.

3 SHEETS-SHEET 1.



Witnesses
E. A. Armstrong
H. K. Parsons

Inventor
W. A. Fulton,

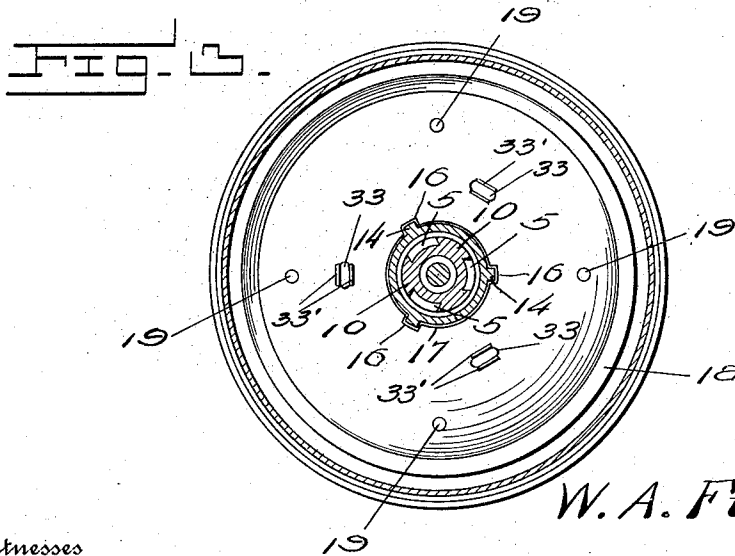
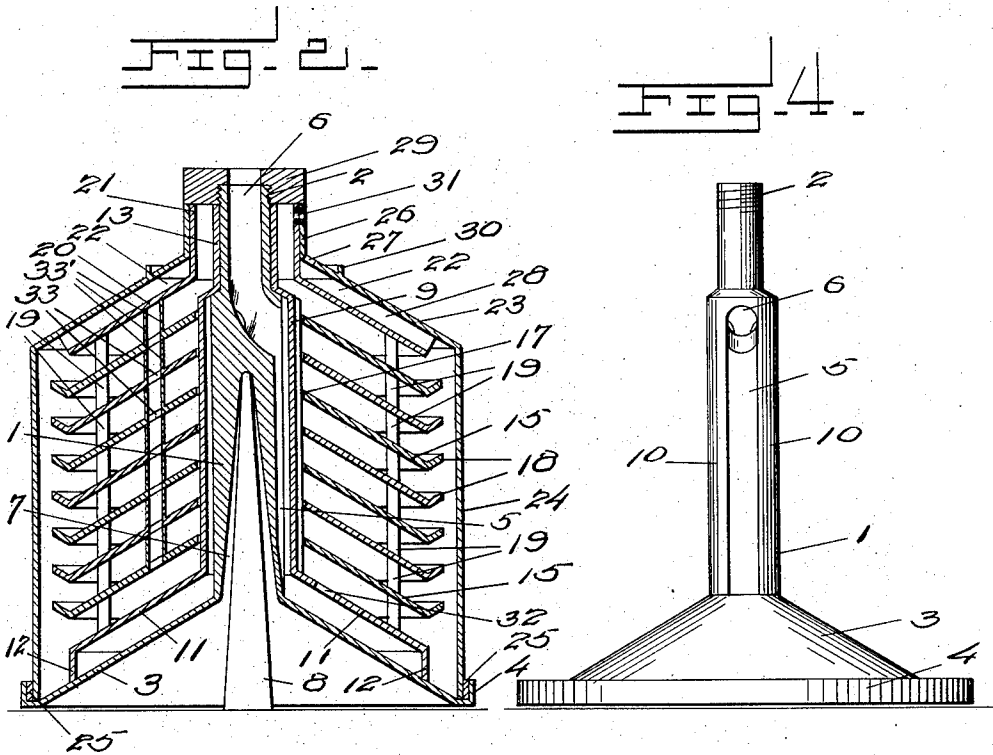
By *Harry Ellis Chandler*
Attorney

W. A. FULTON.
SEPARATOR.
APPLICATION FILED JULY 21, 1911.

1,025,694.

Patented May 7, 1912.

3 SHEETS-SHEET 2.



Witnesses
L. H. Armstrong
W. H. Parsons

Inventor
W. A. Fulton,

By *Harry Ellis Chandler*
Attorney

W. A. FULTON.
SEPARATOR.
APPLICATION FILED JULY 21, 1911.

1,025,694.

Patented May 7, 1912.
3 SHEETS-SHEET 3.

Fig-7-

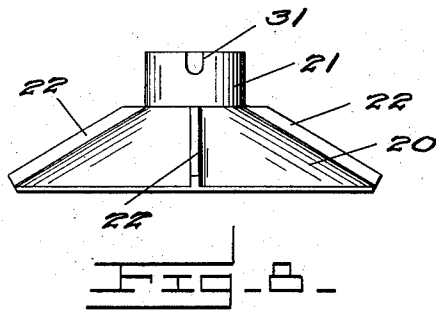
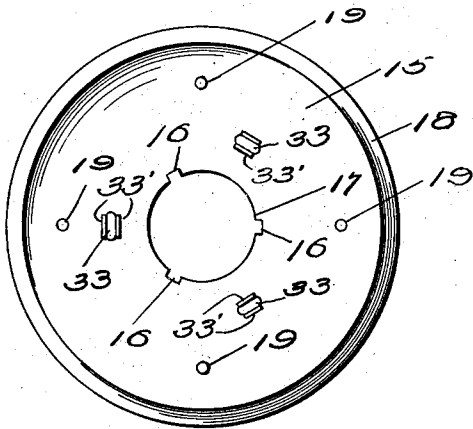


Fig-9

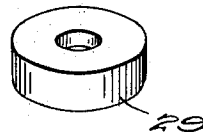
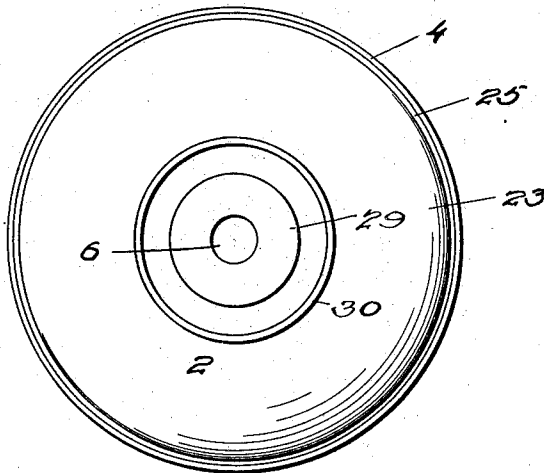


Fig-10-

Witnesses
H. R. Armstrong
H. K. Parsons

Inventor
W. A. Fulton,

By *Harry Ellis Chandler*
Attorney

UNITED STATES PATENT OFFICE.

WILLARD ALVIN FULTON, OF SPARTA, WISCONSIN.

SEPARATOR.

1,025,694.

Specification of Letters Patent.

Patented May 7, 1912.

Application filed July 21, 1911. Serial No. 639,747.

To all whom it may concern:

Be it known that I, WILLARD A. FULTON, a citizen of the United States, residing at Sparta, in the county of Monroe and State of Wisconsin, have invented certain new and useful Improvements in Separators, of which the following is a specification.

My invention relates to improvements in separators, and has for its leading object the provision of an improved machine of the centrifugal type which will readily and satisfactorily serve to separate the milk and cream from a mixture of full milk.

A further object of my invention is the provision of a machine of this character which shall be of simple construction and shall have its parts so secured together as to be readily separable to permit of thorough cleaning or replacing of the said parts.

Other objects and advantages of my improved separator will be readily apparent by reference to the following description taken in connection with the accompanying drawings, and it will be understood that I may make any modifications in the specific structure shown and described within the scope of my claims without departing from or exceeding the spirit of the invention.

Figure 1 represents a side elevation of my complete separating bowl or receptacle. Fig. 2 represents a vertical sectional view thereof. Fig. 3 represents a cross sectional view of the same. Fig. 4 represents a detailed view of the basal or supporting section. Fig. 5 represents a view of the sleeve member mounted upon said base section. Fig. 6 represents a top plan view of one of the separating disks. Fig. 7 represents a bottom plan view of the said disk. Fig. 8 represents a detailed view of the cream guiding cover. Fig. 9 represents a top plan view of my separator. Fig. 10 represents a perspective view of the bowl nut or sleeve of the separator.

In the drawings, the numeral 1 designates the cylindrical shaft of the basal member of my separator, said cylindrical member having a threaded upper end 2 and having a flaring base 3 formed with the upturned flange 4. Formed in three sides of the cylindrical portion 1 are grooves 5 in communication with the central passage 6 formed through the threaded portion 2. To rotatably support said member 1, I form in

it the central conoid shaped recess 7 in which is engaged the supporting spindle 8.

Fitting over the member 1 is the sleeve member 9 held spaced from the member 1 by the ribs 10 of the member 1, said sleeve having a flaring basal portion 11 terminating in a depending flange 12 resting on the base portion 3, the flange 12 thus holding the flaring portion 11 spaced above the portion 3 of the base section. At its upper end the sleeve 9 has a reduced neck 13 adapted to fit above grooves 5. The sleeve 9 is formed with the longitudinally extending guide ribs 14 while mounted upon said sleeve are the conoid separating disks 15 having recesses 16 formed therein to receive the ribs 14, said recesses and the central aperture 17 of the disks being larger, however, than the sleeve and ribs thereof whereby a slight space is provided between the outer face of the sleeve and the inner edge of the disks. The disks are formed with upwardly curving outer edges 18, and alternate disks are provided with a plurality of lugs or projections 19 extending from each side thereof, said projections serving to engage the adjacent disks and thus to hold the various disks slightly spaced from each other.

Fitting over the uppermost of the disks 15 is the cover section 20 held spaced from the uppermost disks by the lugs 19, said cover section fitting loosely around the neck 13 of the sleeve and having a reduced portion 21 extending upward along said neck, while formed on the outer face of the cover 20 are the ribs 22.

Fitting over the complete structure previously described is the inclosing casing for my separator comprising a flaring portion 23 which fits down on the ribs 22 of the cover section 20 and having the depending tubular portion 24 which extends downward around but is spaced from the periphery of the disks 15, said tubular portion 24 having its lower edge fitting inside of the upstanding flange 4 of the member 1, a rubber ring or gasket 25 being inserted between the flange 4 and the member 24 to insure a fluid tight joint between the casing and flange of the base.

The flaring portion 23 has a reduced neck 26 adapted to fit tightly against the neck 21 of the cover while formed at the base of

the neck 26 is an aperture or passage 27 affording communication with the space 28 inclosed between the cover 20 and flaring portion 23, said passage affording an outlet for the skimmed or separated milk. To retain the various parts in position, I screw upon the threaded portion 2 of the basal member 1 the internally threaded collar 29 bearing at its lower end against the top of the neck 26, while formed in the necks 21 and 26 just below said collar are the alined apertures 31 affording an outlet for the separated cream and fitted therein is a screw which regulates the density of the cream and through which the cream passes. In the use of my separator, I pour the full milk into the passage 6 of member 1, the milk passing downward through the passage 6 and thence into the grooves 5 to fill the space between the member 1 and the sleeve 9. Formed in the flaring portion is an aperture 32 the milk passing through said aperture from the space included between the base portion 3 and the flaring portion 11 of the sleeve. To allow the whole milk to pass upward through the various disks I form in said disks the apertures 33, partially surrounded by the lips 33'. In the use of my separator, as the same whirls on the spindle as a pivot, the heavier milk will move outward, while the cream will tend to cling to the sleeve 9 and will pass upward along said sleeve, the skimmed milk passing upward between the outer edges of the disks and the portion 24 of the casing. The cream will consequently pass upward inside the cover section 20 and neck 21 of said cover section and will be discharged through the apertures 31, while the milk will pass upward in the space 28 and out from said space through the discharge aperture 27 passing out over shoulder 30 on casing 23. This shoulder is important as otherwise the milk would follow down sides of casing 28 instead of throwing clear into receiving cover.

From the foregoing description taken in connection with the drawings, the construction and operation of my improved separator will be understood and it will be seen that I have provided a thoroughly efficient separator of simple construction which may be readily cleansed or disassembled and

which will consequently be extremely desirable from a sanitary standpoint as well as on account of its efficiency.

I claim:

1. A separator, comprising a support, a base member rotatably mounted on the support and having a threaded upper end, said member having a central passage formed through said threaded upper end and having longitudinally extending grooves formed therein in communication with the passage, an inclosing sleeve loosely mounted on the base member and closing the upper ends of said grooves, separating disks mounted on the sleeve, an inclosing casing for the device, and a sleeve secured on the threaded end of the base member.

2. In a separator, the combination with a basal member having a threaded upper end and having a passage formed through said upper end and terminating in grooves formed in the base member, of an inclosing sleeve and a casing having reduced necks fitting around the base member, said inclosing sleeve inclosing the upper ends of the grooves and a sleeve formed with internal threads for engagement on the threaded portion of the basal member, said sleeve bears against the necks of the inclosing sleeve and casing to secure said parts in position.

3. A separator, including a base section, a sleeve surrounding the base and spaced therefrom, means for introducing full milk into said space, separator disks carried by the sleeve, said sleeve and disks having apertures formed therein for the passage of the milk, apertures in disks being spanned by lips, a cover section mounted on the sleeve above the disks, and an inclosing casing, said cover section and casing having an aperture formed at the upper portion thereof for the exit of cream and the casing having apertures formed therein for the exit of milk from the space between the cover section and casing.

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

WILLARD ALVIN FULTON.

Witnesses:

A. M. FRISH,
C. E. REINEL.