

No. 626,766.

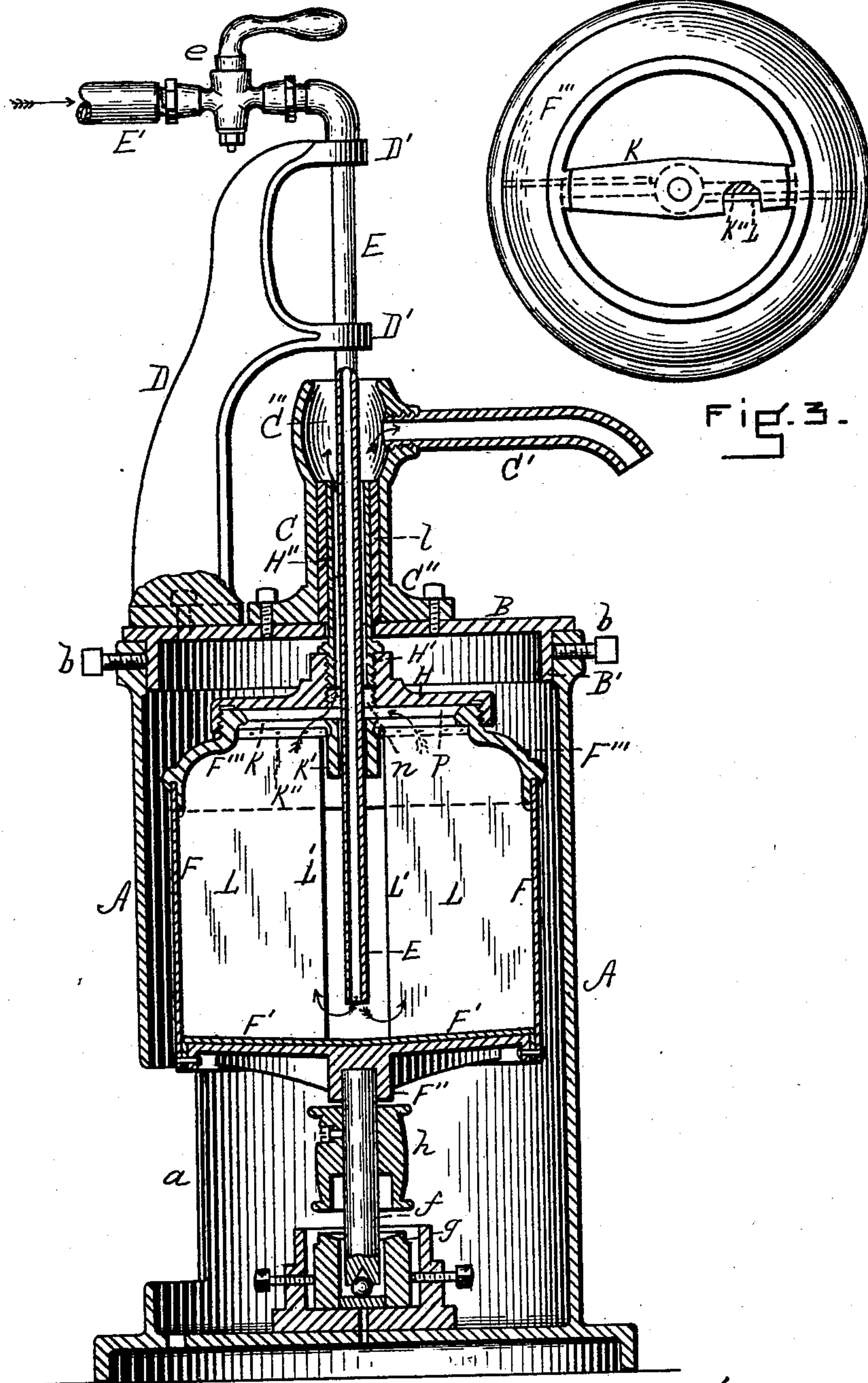
Patented June 13, 1899.

C. H. NEWTON.  
APPARATUS FOR CLARIFYING MILK.

(Application filed Feb. 21, 1899.)

2 Sheets—Sheet 2.

(No Model.)



WITNESSES

A. A. Bonney.

B. W. Williams

FIG. 2.

INVENTOR

Charles H. Newton.

By his Atty

Henry Williams

No. 626,766.

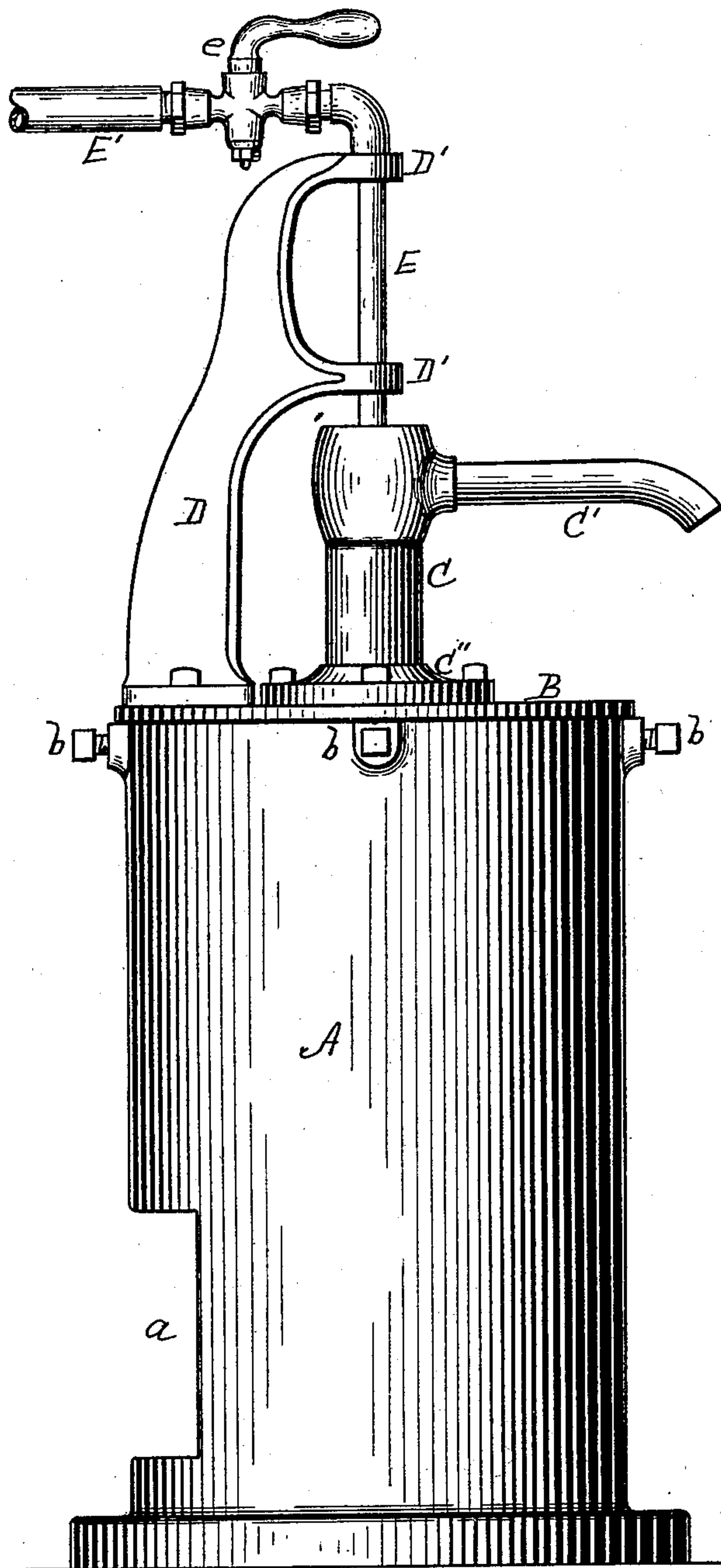
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(No Model.)

2 Sheets—Sheet 1.



WITNESSES

A. A. Conney,  
B. M. Williams

FIG. 1.

INVENTOR

Charles H. Newton,  
By his Atty.

Sherry Williams



# UNITED STATES PATENT OFFICE.

CHARLES H. NEWTON, OF SOUTHBOROUGH, MASSACHUSETTS.

## APPARATUS FOR CLARIFYING MILK.

SPECIFICATION forming part of Letters Patent No. 626,766, dated June 13, 1899.

Application filed February 21, 1899. Serial No. 706,336. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES H. NEWTON, a citizen of the United States, residing at Southborough, in the county of Worcester and State of Massachusetts, have invented a new and Improved Apparatus for Clarifying Milk, of which the following is a specification.

This is an apparatus through which a current of milk is passed, said milk being collected in a body and clarified during its progress through the machine by subjecting the body of milk to rotation, and thus removing the dirt by centrifugal force.

The invention consists in a novel construction and arrangement of parts whereby the clarifying process is rendered thorough, convenient, and practicable, such construction being fully described below, and illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of my improved apparatus. Fig. 2 is a view, partly in vertical section and partly in elevation, of the same. Fig. 3 is plan view of the inner receptacle removed.

Similar letters of reference indicate corresponding parts.

A represents a cylindrical case provided with an opening *a* on one side. This case is furnished with a cover B, which sets into it, as shown in Fig. 2, and is held in position by means of the screws or bolts *b*, which extend through the case A and set against the portion B' of said cover. Bolted to the upper side of the cover B by means of the base C'' is the hollow or tubular post C, whose upper portion is formed with the enlarged chamber C''', from which extends the spout C'.

D is a standard or frame also bolted to the upper side of the cover B and provided with the horizontal arms D', through which extends a vertical pipe E. The upper end of this pipe is connected with a supply-pipe E', provided with a suitable cock *e*. This pipe extends down centrally through the tubular post C and thence into the case, as below set forth.

F represents a cylindrical vessel set vertically and centrally within the case. The bottom F' of this vessel is provided with a hub F'', which is rigidly secured to the upper end of a vertical shaft *f*, whose lower end is stepped on a ball in an ordinary box *g*, as shown in

Fig. 2. Fast on this shaft is a pulley *h*, which may be driven by a belt connecting through the opening *a* with the power. The upper portion of this vessel F is formed into the shape shown at F''', and a cap or top H is screwed onto this portion. This cap is formed up into the hollow portion H', which is internally screw-threaded to receive the tube H'', and which extends up centrally into the tubular post C next the bushing *l*, leaving an annular space around the pipe E between said pipe and the bushing, said annular space connecting at its upper end with the chamber C''' and at its lower end with the annular space *n* inside the central portion H' of the cap or top H.

K is a cross-bar extending centrally across the inner cylinder F at the upper end of the portion F'''. A collar K' extends down centrally from this cross-bar around the pipe E. Thus it will be seen that this pipe E extends down through the chamber C''' centrally within the tubular post C, through the chamber *n* and the collar K' centrally into the cylinder F to a point not far from the bottom F' thereof. This cylinder is provided with two vertical and nearly opposite blades L. These blades are joined to the bottom F', the portion F''', and the side F, and extend inward from said side until their inner edges L' are at a short distance from the pipe E, as shown in Fig. 2. The blades are not set exactly radially, but are secured to opposite sides of the bar K'' on the under surface of the cross-bar K, as indicated in broken lines in Fig. 3, so that when the cylinder is rotated the blades L are a trifle in advance of a diametral line.

In operation, power having been applied to the pulley *h*, the milk is forced from the supply-pipe E' through the pipe E into the cylinder F, filling said cylinder. The body of milk therein is of course rotated by the blades or partitions L, and such rotation being rapid the dirt and particles of foreign substance within the milk, which are of course heavier than the milk itself, are carried by centrifugal force to the outer portion of the interior of the cylinder, and thence drop to the bottom thereof. After the body of milk has filled the cylinder the upper central por-



tion is forced in the direction of the arrows through the space P above the blades into the space n, thence through the annular space between the pipe E and the tube H' into the chamber C'', and thence through the spout C' into a suitable receptacle.

At proper intervals the case may be opened by removing the cover B, and the cylinder F entered by unscrewing the cap H, and the dirt or sediment removed from the bottom of the cylinder.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In an apparatus for clarifying milk, the case A provided with the opening a; the cylinder F mounted within said case and adapted to rotate horizontally therein; the blades or partitions L secured to the wall of said cylinder and extending non-radially inward toward points a trifle on opposite sides of the center thereof; a stationary supply-pipe extending down vertically through the cover of the case and centrally within the cylinder; and an outlet-tube extending upward from said cylinder around the supply-pipe and

leaving an annular space between said pipe and tube, substantially as described.

2. The herein-described improved apparatus for clarifying milk, comprising the case A provided with the opening a and cover B; the cylinder F F'' mounted in said case and adapted to rotate horizontally therein; the cover H, H' on said cylinder; the cross-bar K extending horizontally across the cylinder near its upper end and provided with the downwardly-extending collar K'; the supply-tube E supported by the case and extending down vertically through the covers B and H and said collar centrally into the cylinder; the upright tube H'' extending up from the cover H through the cover B and around the inlet-tube, leaving an annular space between said tubes; the tubular post C provided with the chamber C'' and spout C', and the blades or partitions L secured to the wall of the cylinder and extending inward toward the center thereof, substantially as set forth.

CHARLES H. NEWTON.

Witnesses:

HENRY W. WILLIAMS,  
A. N. BONNEY.