M. LEITCH.

CREAM REGULATING SCREW FOR CENTRIFUGAL SEPARATORS.

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1,284,914. Patented Nov. 12, 1918.

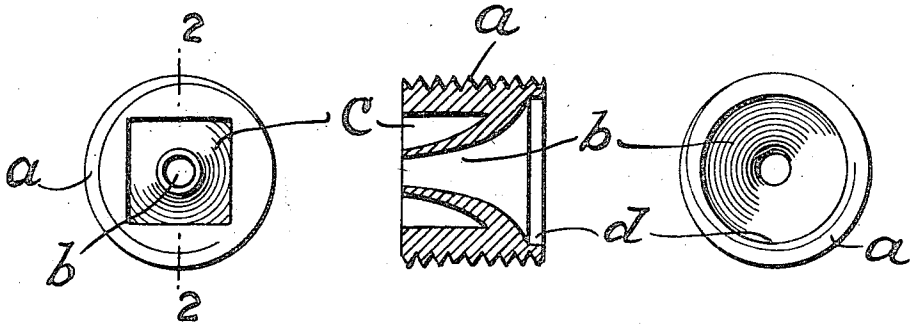


FIG. 1. FIG. 2. FIG. 3.

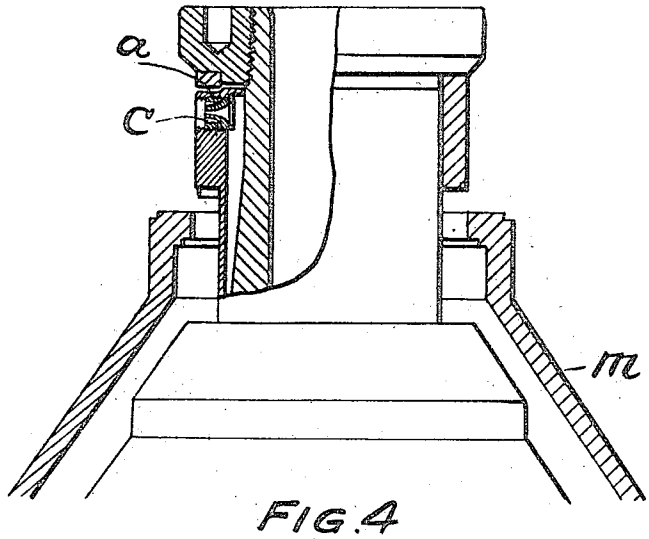


FIG. 4

WITNESS:

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UNITED STATES PATENT OFFICE.

MEREDITH LEITCH, OF POUGHKEEPSIE, NEW YORK, ASSIGNOR TO THE DE LAVAL SEPARATOR COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

CREAM-REGULATING SCREW FOR CENTRIFUGAL SEPARATORS.

1,284,914. Specification of Letters Patent. Patented Nov. 12, 1918.

Application filed August 2, 1917. Serial No. 184,124.

To all whom it may concern:

Be it known that I, MEREDITH LEITCH, a citizen of the United States, residing at Poughkeepsie, county of Dutchess, and State of New York, have invented a new and useful Improvement in Cream-Regulating Screws for Centrifugal Separators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to centrifugal separators wherein the relative volumes of the different products are regulated by the adjustment of a hollow screw through which one of these products escapes.

In a milk separator this hollow screw is ordinarily used for the cream outlet and is called the "cream screw." It will be so designated in this specification, though it may be used for products other than cream.

The ordinary cream screw has, for a cream outlet, a hole that is straight and square to receive the adjusting wrench. This hole is difficult to make smooth and frequently has small burs that cause the cream to escape in a ragged stream easily influenced by the air currents that usually tend to draw cream into the skim milk outlet from the machine.

The object of my invention is to provide a cream screw that will give a smooth solid jet of cream and yet may be easily adjustable with a simple wrench.

With the ordinary square hole cream screw it is necessary, when adjusting the screw, to set it with the sides of the hole vertical and horizontal.

Another object of my invention is to provide a screw that will work equally well in all positions.

In the accompanying drawings, which show a preferred embodiment of my inventions: Figure 1 is a view of the outer end of my improved cream screw; Fig. 2 is a section on the line 2—2 of Fig. 1; Fig. 3 is a view of the inner end of the screw and Fig. 4 a sectional view of a portion of a separator bowl having one of my improved cream screws.

The outside of the screw has the usual threads *a* adapted to fit a threaded hole in the neck of one member, ordinarily called the cream disk, of the saparator bowl *m*. The center of the screw has a smooth round nozzle *b*, preferably tapered. Around the outer end of the nozzle is a square socket *c* adapted to fit the end of a square wrench having a central cavity to clear the outside of the nozzle *b*. At the inner end of the screw is a round counterbore *d* of a diameter that is large relative to the diameter of the nozzle *b*.

In operation, the cream, after separation from the skim milk, flows upward in an annular stream inside the neck of the cream disk and thence over the edge of the cream screw, as a weir, into the counterbore *d*, which acts as a forebay for the nozzle. The stream over the weir is relatively thin and broad. In the nozzle *b* this is concentrated into a round, solid, smooth stream that is very slightly influenced by air currents.

Having now fully described my invention, what I desire to claim and protect by Letters Patent is:

1. An adjustable regulating screw for a centrifugal separator, having a nozzle which decreases in diameter toward its outlet end, and a wrench socket around the end of the nozzle of smaller diameter.

2. An adjustable regulating screw for a centrifugal separator, having a screw-threaded periphery, a round tapered smooth nozzle, and a wrench socket around the smaller end of the nozzle.

3. An adjustable regulating exteriorly threaded screw for a centrifugal separator, having a tapered nozzle extending along its axis, the nozzle at its wider and inlet end being counterbored to form a forebay for the nozzle and the body of the screw around the constricted outlet end of the nozzle being provided with a socket adapted for engagement with a wrench.

4. An adjustable regulating screw for a

centrifugal separator, having an exterior thread and an interior nozzle, the wider and inlet end of the nozzle being of cylindrical shape for a relatively short distance along the axis of the screw, the wall of the nozzle thence extending along, but curving inwardly toward said axis, forming a relatively constricted outlet, there being a polygonal wrench socket surrounding the nozzle at its outlet end.

In testimony of which invention, I have hereunto set my hand, at Poughkeepsie, N. Y., on this 21 day of July, 1917.

MEREDITH LEITCH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."