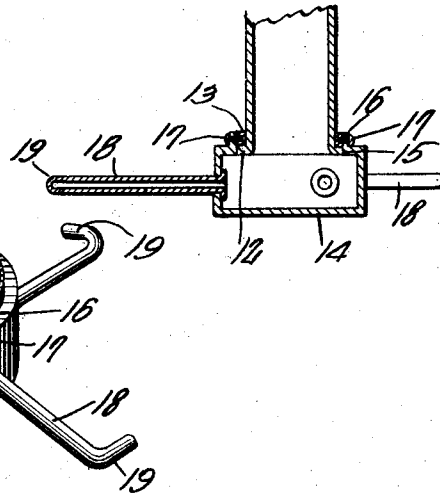
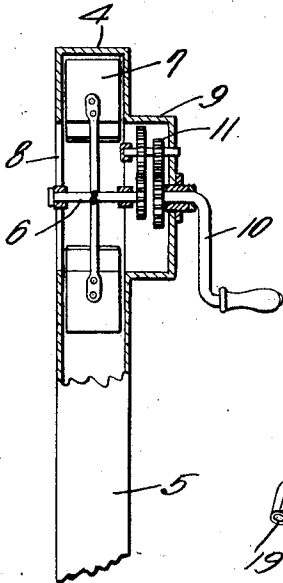
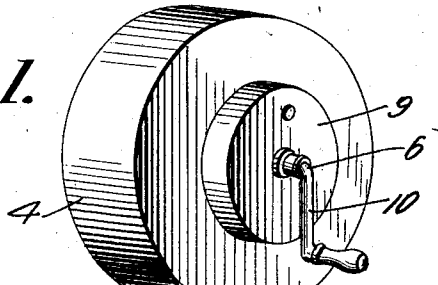


1,054,807.

Fig. 1.



J. P. Gould
L. H. Wilson.

by

Cashmore.
Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM S. H. WAILES, OF PECOS, TEXAS.

AERATING-CHURN.

1,054,807.

Specification of Letters Patent.

Patented Mar. 4, 1913.

Application filed October 2, 1912. Serial No. 723,597.

To all whom it may concern:

Be it known that I, WILLIAM S. H. WAILES, a citizen of the United States, residing at Pecos, in the county of Reeves and State of Texas, have invented a new and useful Aerating-Churn, of which the following is a specification.

The present invention appertains to churns, and aims to provide an aerating and agitating device for churns. This object is carried out by the provision of a fan or blower casing having a depending pipe adapted to be inserted into the churn body, a fan being arranged in the casing for forcing air down the pipe, and a Barker's mill being swiveled on the end of the pipe, in order that when air is forced down the pipe, the Barker's mill will be actuated to agitate and aerate the cream.

This invention also resides in other details of construction, as will hereinafter appear, it being understood that this device is susceptible of alterations and deviations in its details within the scope of what is claimed without departing from the spirit of the invention.

The preferred embodiment of the invention has been illustrated in the accompanying drawings, wherein like references have been employed to denote corresponding parts, and wherein:—

Figure 1 is a perspective view of the device. Fig. 2 is a sectional detail thereof through the Barker's mill and the end of the air pipe. Fig. 3 is an elevation of the device, parts being broken away and parts being shown in section.

Referring in detail to the drawings, the numeral 4 designates a fan or blower casing having its axis arranged horizontally and provided with a relatively long depending pipe or tubular extension 5. A vertically revolving fan is mounted within the casing 4, said fan including a horizontal shaft 6 journaled in the said casing and the blades or vanes 7 carried by the shaft. The casing 4 is provided at one side with an opening 8 for admitting air centrally of the fan, and at its other side, the casing is provided with an extension 9 on which is journaled a suitable crank 10. A train of gears 11 or any other suitable mechanism connects the adjoining ends of the shaft 6 and the crank 10 in order that the shaft 6 will rotate at a greater velocity than the crank 10, this being of advantage for the reason that when the

crank 10 is manually actuated the fan or blower may be given a higher velocity for creating a sufficient draft. As the fan is revolved air is forced down the pipe 5 by centrifugal force, the fan or blower preferably being of the centrifugal type.

The Barker's or reaction mill is mounted on the lower end of the pipe 5. This preferably being accomplished by providing an external flange 12 on the lower end of the pipe 5, a ring or annulus 13 being swiveled on the pipe adjacent or upon the flange 12, and the Barker's mill including a casing 14 having the opening 15 in its top receiving the lower end of the pipe 5, the edge 16 of the casing 14 being secured to the annulus 13 by means of screws 17 or other securing means. The casing 14 is provided with a plurality of radially projecting discharge arms 18 having their free ends bent angularly as designated by the numeral 19, in order to provide reaction for rotating the Barker's mill. Thus, it will appear that the casing 14 is free to revolve on the lower end of the pipe 5 and the said casing is also conveniently swiveled to the pipe so as to be capable of separation therefrom for any purpose whatever.

In use, the pipe 5 is adapted to be inserted or lowered into a suitable receptacle or churn body, so that the Barker's mill is submerged in the cream, and when the fan is brought into operation, air will be forced down the pipe 5 and into the Barker's mill, the air escaping from the arms 18 and the escaping air causing a reaction which will rotate the Barker's mill in a direction opposite to the escape of air. The Barker's mill may thus be rapidly revolved in order to agitate the cream, the arms 18 serving in the capacities of dashers, and the air being forced through the cream in large quantities will aerate the same and greatly assist in bringing the cream to butter.

It has also been found in practice, that the present device is useful for purifying and sweetening cream that has been kept too long or which has commenced to deteriorate, and further, it has been found that this device is useful for cooling cream particularly when ice or other cooling agents are not at hand, the cream being cooled from 5 to 8 degrees by the action of the air discharged from the Barker's mill.

This device is not only useful for churning purposes, but may be employed for

divers purposes, such as purifying liquids by the discharge or passage of air thereinto or therethrough. The various parts may also be constructed in various sizes and designs to conform to the dictates of convenience or efficiency, as will be apparent to those skilled in the art.

From the foregoing, taken in connection with the drawings, the advantages and capabilities of the present device will be manifest, and it will be apparent that the objects aimed at have been carried out in a satisfactory and efficient manner, the present device providing a simple, inexpensive and convenient one for the purposes for which it is designed.

Having thus described the invention, what is claimed as new is:

1. A churn embodying a casing having a depending outlet pipe, a fan mounted in the casing for forcing air down the pipe, means for actuating the fan, and a Barker's mill swiveled on the lower end of the pipe and adapted to be submerged together with the lower end of the pipe in various churn bodies.

2. A churn embodying a cylindrical casing with its axis arranged horizontally and having a depending outlet pipe, a vertically revolving fan journaled in the casing for forcing air down the pipe, a crank handle journaled to one side of the casing and operatively connected to the fan for rotating the same, and a Barker's mill swiveled on the lower end of the pipe and arranged to be submerged together with the lower end of the pipe in various churn bodies.

3. A churn embodying an air pipe having an external flange at its end, an annulus swiveled on the end of the pipe and seating against the flange, a Barker's mill including a casing having an opening receiving the end of the pipe, and removable securing members fastening the edge of the casing to the annulus.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM S. H. WAILES.

Witnesses:

T. Y. CASEY,
A. G. TAGGART.

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