

(No Model.)

S. H. COCHRAN.

CHURN AND LIKE APPARATUS FOR USE IN THE MANUFACTURE OF
ARTIFICIAL BUTTER, &c.

No. 285,973.

Patented Oct. 2, 1883.

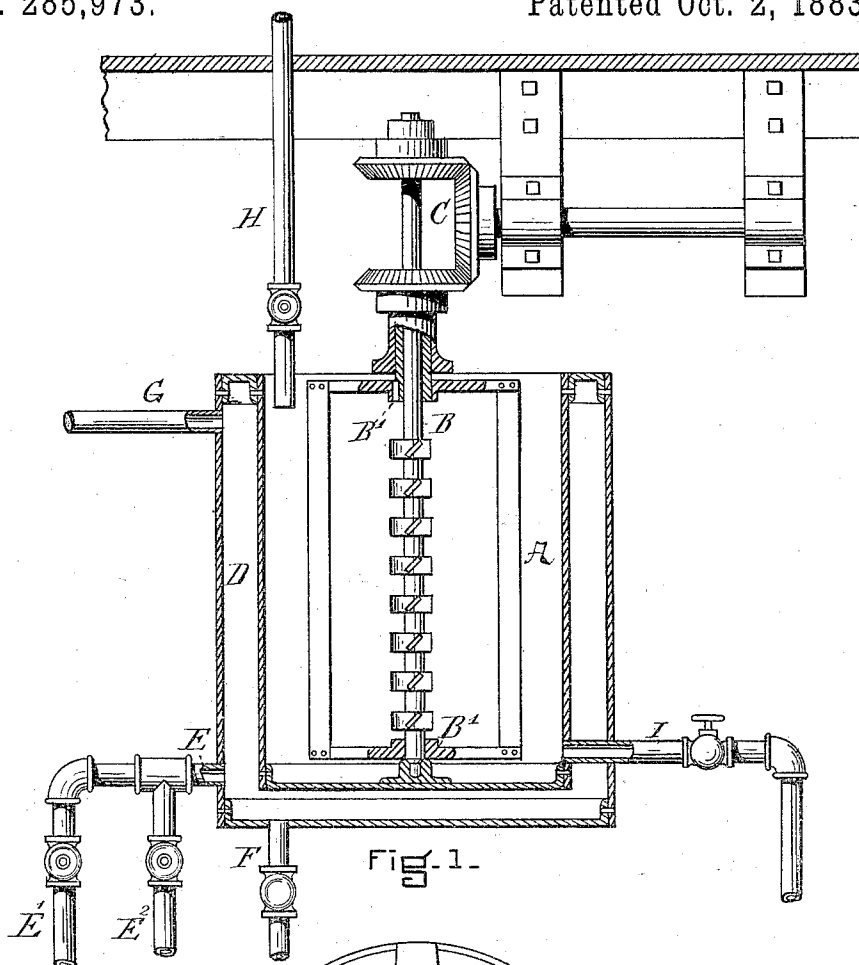


FIG-1-

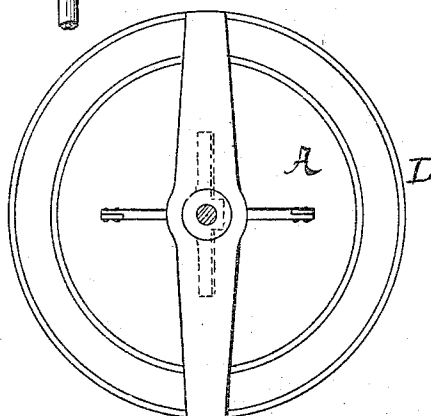


FIG-2-

WITNESSES

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UNITED STATES PATENT OFFICE.

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CHURN AND LIKE APPARATUS FOR USE IN THE MANUFACTURE OF ARTIFICIAL BUTTER, &c.

SPECIFICATION forming part of Letters Patent No. 285,973, dated October 2, 1882.

Application filed June 15, 1883. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL H. COCHRAN, of Everett, in the county of Middlesex and State of Massachusetts, a citizen of the United States, have invented a new and useful Improvement in Churns and Like Apparatus for Use in the Manufacture of Artificial Butter, &c., of which the following is a specification.

My improvement relates, particularly, to churns and the like apparatus for use in the manufacture of artificial butter and like purposes; and it consists in providing the churn with means whereby the temperature of its contents may be regulated, as below described.

Churns and like apparatus have heretofore been jacketed—that is, set into a chamber capable of containing a fluid which can impart its temperature, in a greater or less degree, to the substance in the churn; but no such churns, so far as I now know, are provided with means for regulating this temperature—that is, means of filling this chamber with either a hot or cold fluid from a constant source of supply, or for combining in the chamber two fluids of different temperatures in such a proportion that a required temperature may be had, or for keeping up a constant circulation of the temperature-controlling medium about the churn, so that the temperature, once attained, may be kept constantly at the same degree.

In the drawings is shown the best form of churn now known to me embodying my invention, Figure 1 being a vertical section, and Fig. 2 a top view, of the churn alone.

A is the churn, provided with two sets of floats, one attached directly to the shaft B and the other to the sleeve B', the shaft and the sleeve being adapted to be rotated in opposite directions by the gearing C, as shown. The churn is surrounded by a jacket, D, closed at the top, and provided with one inlet-pipe, E, and two outlet-pipes, F and G. The inlet-pipe E has connected with it two pipes, E' and E'', each provided with a stop-cock of some kind, one of these pipes being for the purpose of supplying steam or hot water, and the other for the purpose of supplying cold water through the inlet-pipe E to the chamber around the churn. In this way I avoid an extra opening into the chamber around the churn, which I should have if both pipes E' and E'' connected

with the jacket. The outlet-pipe F is provided with a stop-cock, and is for the purpose of drawing off from the chamber the water of condensation or the cold water which has been supplied from the pipe E. The outlet-pipe G is an overflow, and, if desired, serves, with the inlet-pipe E, to keep up a constant circulation of steam or cold water about the churn.

H and I are pipes for the purpose of filling the churn and emptying it, respectively.

The operation of my improvement is as follows: It being desired to heat the contents of the churn, the stop-cock connected with the pipe E' is opened, and a continuous supply of steam sufficient for the purpose is allowed to enter the jacket through inlet-pipe E. As this pipe E enters the jacket near the bottom, the steam will circulate around the churn, within the jacket, until finally it either condenses or escapes through the overflow G. If it is desired, then, to cool the mass, the stop-cock in pipe E' being closed, the stop-cock in pipe E'' is opened and the cold water fills the chamber and flows out through the overflow G, keeping up a constant circulation, and cooling the mass in the churn very quickly. If, then, it is desired to heat the mass again, or allow it to acquire the temperature of the room in which the churn stands, the water can be drawn off through the outlet F, and the steam be turned on again or not, as desired. In this way the temperature of the mass can be regulated at pleasure. Moreover, hot and cold water may be mixed together and fed into the chamber, and so any required degree of temperature be attained in the mass, and, once attained, be kept by reason of the means for keeping up a constant circulation, above referred to.

It is obvious that my improvement may be embodied in a variety of ways other than the above—as, for example, by suitable coils of pipes passing around the churn, either inside or outside; but the churn shown in the drawings is simpler than any other. Moreover, in it floats can be used larger and better adapted for thoroughly agitating the mass than where the churn is provided with coils of pipe in its interior.

The churn and its jacket should be made of metal, depending in thickness upon the pressure of steam or water to be used. If thought

best, hot and cold air can be used in this churn instead of steam, or hot and cold water.

What I claim as my invention is—

1. The churn above described, provided with
5 a chamber surrounding the material being churned, said chamber being adapted to hold a fluid, and provided with means, substantially as above described, whereby heated or chilled fluid, or both, can be fed into said chamber at
10 pleasure, all as set forth.

2. The churn above described, provided with a chamber surrounding the material being churned, said chamber being adapted to hold a fluid, and provided with means, substantially

as above described, whereby heated or chilled 15 fluid may be fed into said chamber, circulated through it, and then pass out of it, all substantially as set forth.

3. The churn A, provided with the jacket B, inlet-pipes E E' E², and outlet-pipes F and 20 G, as described.

In testimony whereof I have hereunto subscribed my name.

SAMUEL H. COCHRAN.

Witnesses:

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