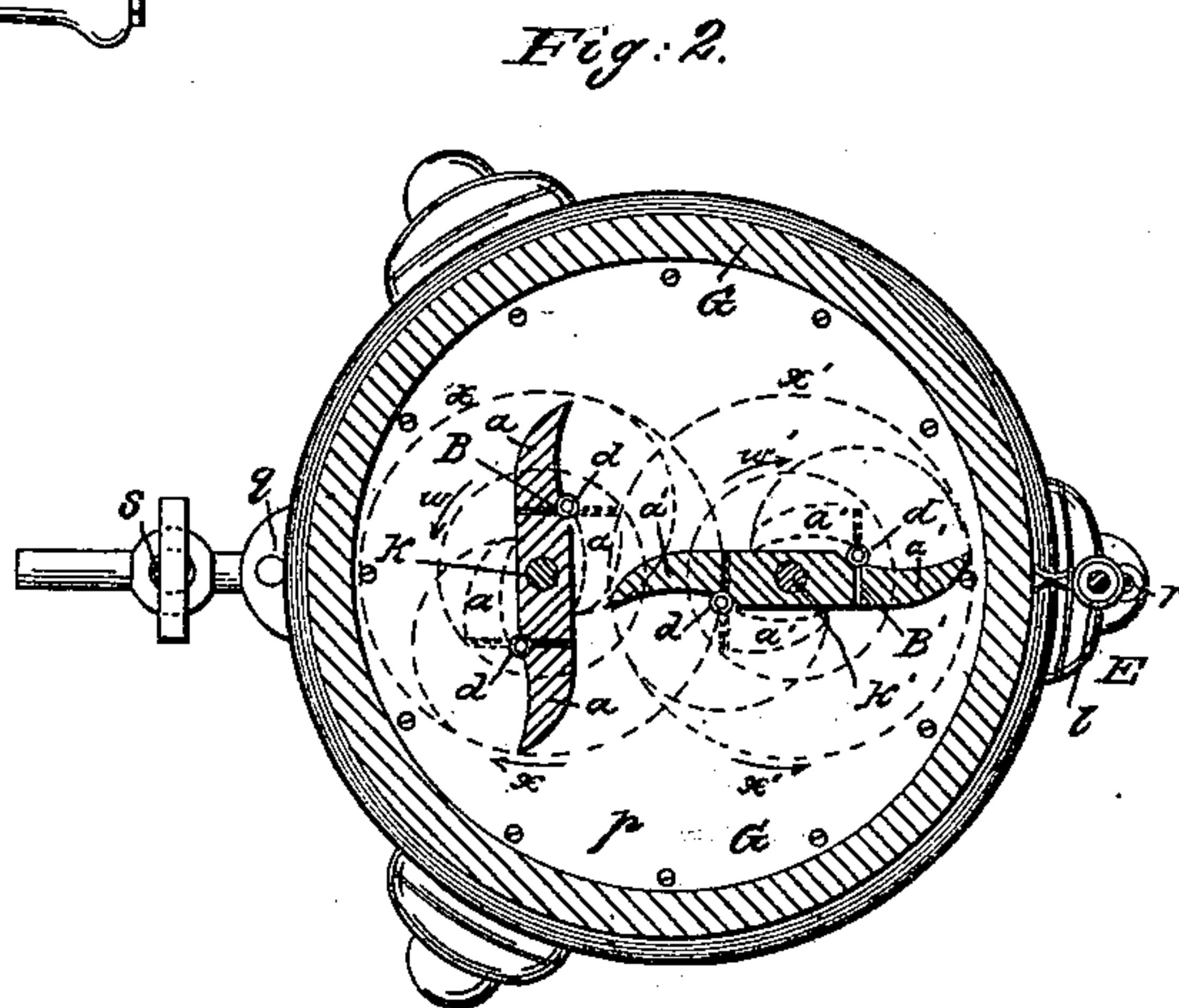
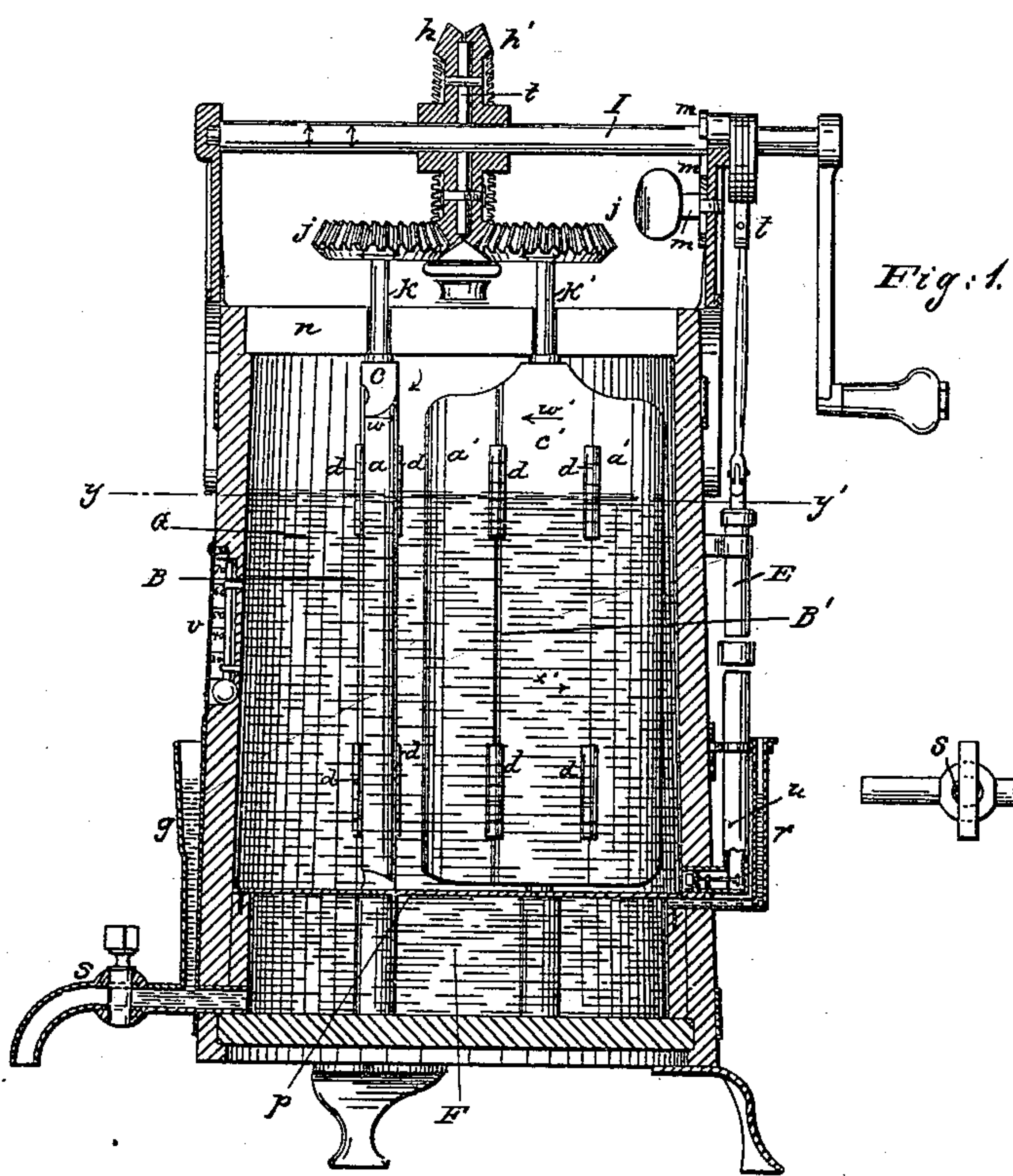


P. L. CLOW.

Churn.

No. 26,092.

Patented Nov. 15, 1859.



Witnesses:
Austin F. Park.
Alphonse Picard.

Inventor:
Philip L. Clow.

UNITED STATES PATENT OFFICE.

PHILIP L. CLOW, OF COHOES, NEW YORK.

CHURN.

Specification of Letters Patent No. 26,092, dated November 15, 1859.

To all whom it may concern:

Be it known that I, PHILIP L. CLOW, of the village of Cohoes, in the county of Albany and State of New York, have invented
5 a new and useful improvement on such churns as have within a tublike cream vessel two upright platelike dashers running in contrary directions with equal speed on vertical axes at their centers, which are so
10 separated that the paths of the dashers in their horizontal revolutions cross each other, as indicated by the dotted circular lines marked $\varepsilon \varepsilon'$ in the annexed drawings, which make a part of this specification, Figure 1
15 thereof being a vertical central section, and Fig. 2 a horizontal section at the line $y y'$, of one of my improved churns; and I do hereby declare that the following contains a full and exact description of my said invention,
20 reference being had to the annexed drawings by letters, the same ones indicating like parts in both figures.

G is the upright cream vessel, within which the two upright plate-like dashers,
25 B, B', are positively revolved in contrary directions with equal speed by means of beveled gear wheels, h, h' , fast on the horizontal driving or hand-crank-shaft, I, and the beveled gear wheels, j, j' , fast on the
30 vertical axes, k, k' , at the centers of the paddles B, B'. The india-rubber packing, l , between the wheels, h, h' , prevents the disagreeable clatter which ordinarily attends the running of two beveled gear wheels together. By disengaging a clamp-hook, m ,
35 or other holding device, the driving shaft, I, with all its attachments, and the cover, n , and dashers, may all be lifted out of the churn.
40 v is a thermometer to indicate the temperature of the cream.

One part of my invention consists in so hanging the outer parts a, a, a', a' , of the two contrarily revolving dashers, B, B', to
45 their central parts, c, c' , by hinges, d , that the said outer parts shall, by reason of the resistance of the cream when the dashers are turned in the direction of the arrows $w w'$, be folded back against or toward the
50 central parts as indicated by dotted lines in Fig. 2; and so that when the dashers are again turned in the direction of the arrows $\varepsilon, \varepsilon'$, their outer parts will then resume their expanded positions shown in full
55 lines in Fig. 2. I thus hinge the outer parts of the dashers to their central parts in or-

der that after the butter has been produced from the milk or cream by turning the dashers in the directions pointed by the arrows $\varepsilon, \varepsilon'$, the person who is churning may
60 then, by simply turning the crank-shaft, I, and dashers, B, B', in the opposite direction, instantly lessen the extent of the space passed over or occupied by the dashers and thus increase the capacity of the churn or
65 give room in the vessel, G, for the gathering of the butter into a mass, which gathering of the butter may then be easily accomplished by continuing to turn the dashers in the courses pointed by the arrows $w w'$, for
70 the dashers when folded do not meet with as much resistance from the butter, and do not keep its particles separated, as they would if left expanded. This improved construction of the dashers B, B', arranged and
75 operated as above described, also enables me to adapt the churn to be operated by either a fast-running or a slow-moving dog-power or other prime mover, or by a prime mover
80 running either to the right or to the left, by simply putting one dasher, B, in the place of the other one B', for this transposition of the dashers causes them to run in either an expanded or a folded condition while the shaft I is turned in one direction
85 either to the right or left all the time.

Another part of my invention consists in combining both a pump, E, for forcing air, and a reservoir, F, for holding hot or cold
90 water, with the cream-vessel, G, and contrarily-revolving dashers, B, B',—the reservoir, F, being located under and in contact with the sheet-metal bottom, p , of the cream-vessel, and provided with a funnel, q , air-vent-pipe, r , and discharge-cock, s , so arranged
95 that the reservoir can be freely filled with, and readily emptied of, water,—and the force-pump, E, being operated by the driving-shaft, I, of the dashers by the intervention of an eccentric, t , or its equivalent, and having its discharge-pipe, u , inserted in the cream-vessel at its bottom.
100 See Fig. 1. I thus arrange the force-pump, E, and reservoir F, with the vessel, G, and dashers, B, B', in order that while the dashers are agitating the cream, the latter shall at the same time not only be kept at the proper temperature for churning, by the hot or cold water in the reservoir F, but shall also
105 at the same time be positively supplied from bottom to top, by the air-pump, E, with a
110 copious current of compressed air to in-

crease, by its chemical as well as its mechanical action, the rate of the separation of the butter from the other constituents of the cream.

5 I am aware that a churn-dasher provided with a hinged or self-adjusting flap, is not new; but I am not aware that two paddles, B, B', having their outer parts hung to the inner ones as herein described, have been
10 hertofore arranged together in a cream vessel and operated as shown in the annexed drawings, so as to secure all the advantages above specified as resulting from such construction and arrangement. I am also
15 aware that it is not new to apply hot water in cold weather and cold water in hot weather to the bottom of a churn; nor to force air through the cream by a bellows, pump, or blower, geared with a device for agitating the cream. But I am not
20 aware that the double dashers B, B', turning in opposite directions, a force-pump, E,

driven by the shaft I that drives the dashers, and the heating and cooling water-reservoir, F, have all been arranged together and upon
25 one cream vessel in the manner herein described.

What I claim as new, and of my invention in churns of the kind first above mentioned, and desire to secure by Letters Patent, is, 30

1. Hanging the outer parts, *a, a, a', a'*, of the two contrarily revolving dashers, B, B', to the central portions, *c, c'*, by hinges, *d*, in the manner and for the purposes herein set forth. 35

2. And I also claim the arrangement of the air-pump, E, and water-reservoir, F, with the revolving dashers, B, B', and cream-vessel, G, as and for the purpose herein described.

PHILIP L. CLOW.

Witnesses:

AUSTIN F. PARK,
ALPHONSE PICARD.