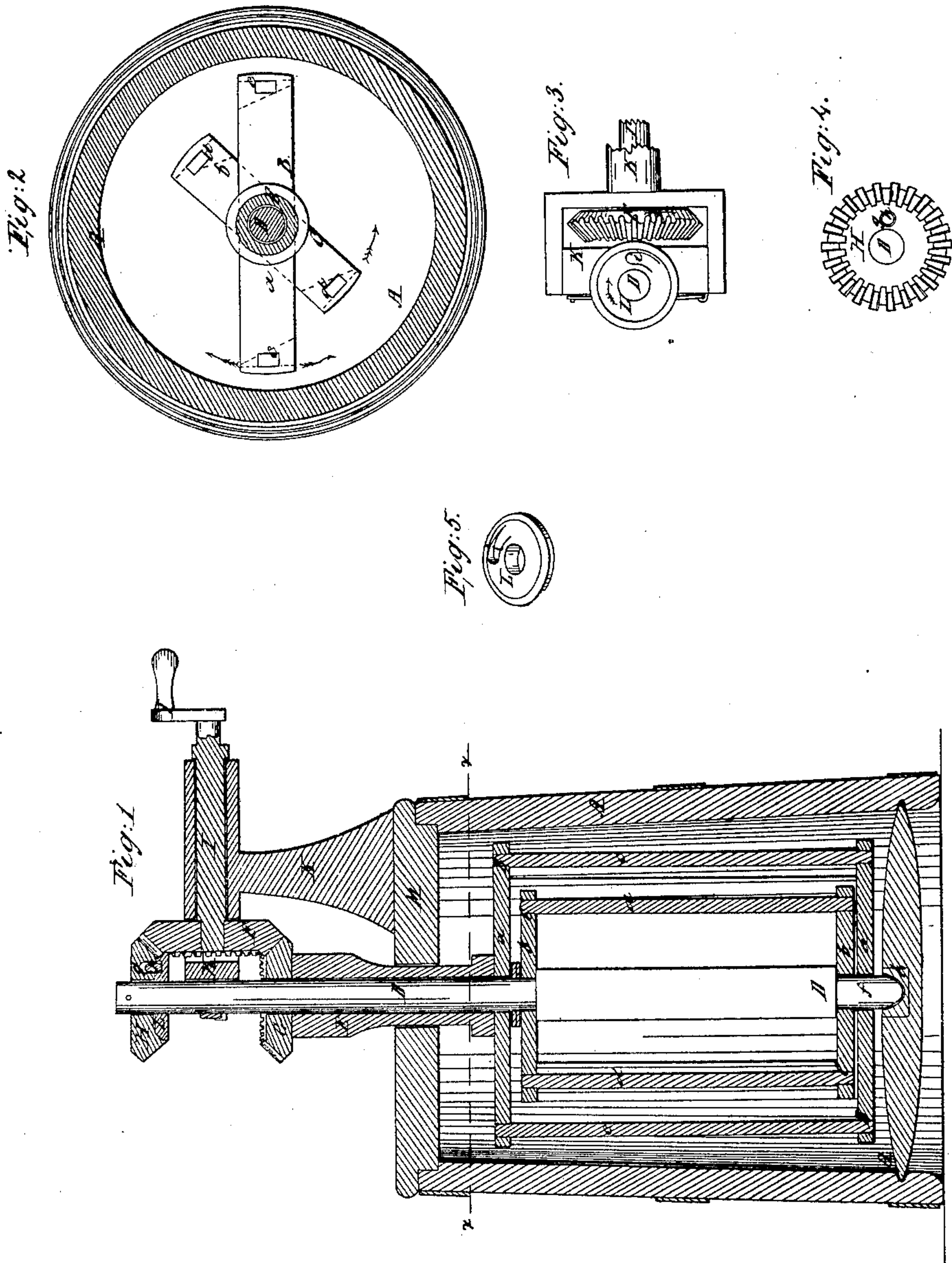


T. B. HARPER.
CHURN.

No. 20,062.

Patented Apr. 27, 1858.



UNITED STATES PATENT OFFICE.

T. B. HARPER, OF XENIA, OHIO.

CHURN.

Specification of Letters Patent No. 20,062, dated April 27, 1858.

To all whom it may concern:

Be it known that I, T. B. HARPER, of Xenia, in the county of Greene and State of Ohio, have invented a new and useful
5 Improvement in Churns; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification, Figure 1 being a vertical
10 section of the churn through the center; Fig. 2, a transverse section thereof in the plane indicated by the line *x x*, Fig. 1; Fig. 3, a top view of a part detached; Fig. 4, a bottom view of a part detached; Fig. 5, a view
15 in perspective of a part detached.

Like letters designate corresponding parts in all the figures.

A suitable vessel A, is provided, in which are situated two dashers B, and C, being arranged so that one will turn within the
20 other, as represented. These dashers are composed of top and bottom pieces *a, a*, and *b, b*, the opposite ends of which are connected by vertical wings *c, c*, and *d, d*, the
25 wings of one dasher being beveled so as to cleave the cream by turning in one direction, while those of the other dasher cleave the cream when turning in the opposite direction, as shown by dotted lines in Fig. 2.
30 The inner dasher is secured to a vertical shaft D, the lower end of which rests in a step *h*, in the bottom of the churn; and the upper portion thereof turns within a hollow journal E, to which the top of the outer
35 dasher is attached. The bottom of said outer dasher turns freely around the lower end of the inner-dasher shaft D, so that the two dashers may turn independently of each other, either both in the same direction,
40 or in opposite directions.

On the top of the journal E, (which projects above the churn cover), is secured a bevel-pinion G, gearing into the driving wheel F, substantially as represented. The
45 driving wheel is actuated by the winch I, which is sustained by the standard K, secured on the churn cover M. The driving wheel also gears into a pinion H, mounted on the upper end of the shaft D, in such a
50 manner that it may be coupled to, or turn freely around, said shaft. This arrangement is as follows: Said pinion rests upon a small circular plate, or disk, L, which is

firmly secured to the shaft D, and has a small inclined notch *i*, (Figs. 3, and 5,) in
55 its upper face, concentric with the disk, and ending abruptly at its deep end. Directly above the notch *i*, and at the same distance from the center of the shaft D, is a hole *g*, in the under side of the pinion H, which
60 receives a small pin *h*, as represented in Figs. 1, and 4. The hole *g*, is made of sufficient depth to allow the pin to enter therein its whole length, when necessary. The pin is fitted so as to slide up and down freely in
65 the hole, in order that, when it is brought over the notch *i*, it may sink to the bottom thereof, by its own weight, or be readily raised again into its hole, by ascending the inclined plane of the said notch. Therefore,
70 if the winch is turned in the direction indicated by the arrow in Fig. 3, the pinion H, will be made to move on the disk L, in the direction shown by the arrow thereon, in the same figure; and the pin *h*, as it sinks
75 into the notch *i*, will slide up the inclined surface of the notch, and thus revolve without moving the disk L, or, by consequence, the dasher C. But if the winch is turned
80 in the opposite direction, thereby reversing the motion of the pinion, the pin will strike and bear against the abrupt end of the notch, and couple the disk to the pinion, so that the disk will be turned with the pinion,
85 and the inner dasher revolved.

When the winch is turned so as to couple the pinion H, to the shaft D, the dashers will be made to turn in opposite directions, as shown by the black arrows in Fig. 2, and
90 cause the beveled wings *c, c*, and *d, d*, to produce an intense agitation of the cream, for the purpose of churning. But in gathering the butter, it is desirable to have but slight agitation, and that applied near the churn body, or as far from the center as
95 possible. To effect this, the winch is then turned in the other direction, as indicated in Fig. 3, so that the inner dasher is stopped, while the outer dasher continues to turn, thus producing the action desired. Thus,
100 I am enabled to produce two different movements of the dashers; one for churning, and the other for gathering the butter, by simply turning the winch in opposite directions.

What I claim as my invention and desire
105 to secure by Letters Patent, is the combina-

tion of the pinion H, disk L, and pin *h*, constructed and arranged as described, and operating in relation to the winch I, and dashers B, C, in the manner and for the purpose
5 herein specified.

In witness that the above is a true specification of my improved churn, I hereunto

set my hand this 6th day of March A D 1858.

T. B. HARPER.

Witnesses:

D. B. GRAHAM,
D. B. LIFFEENY.