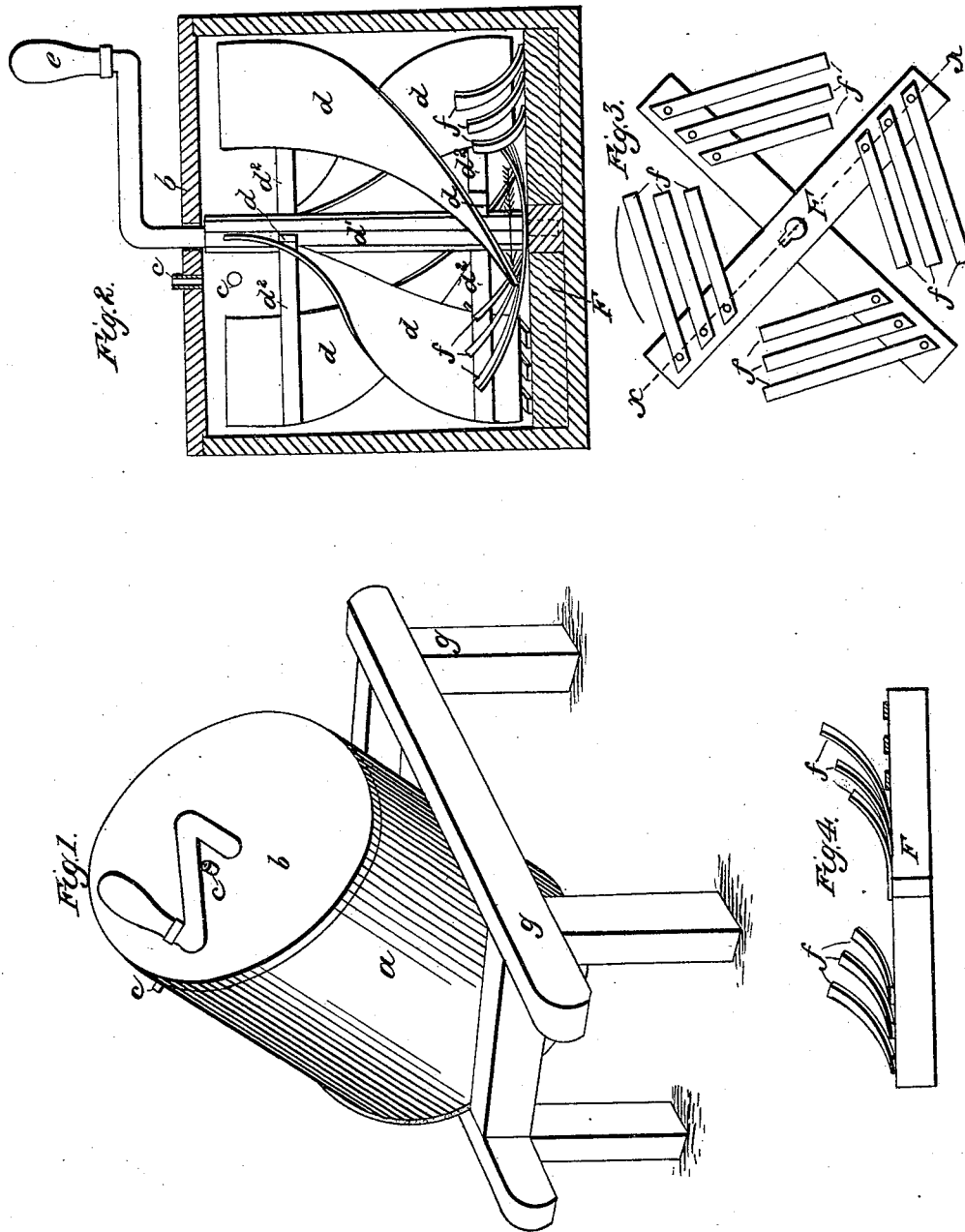


P. H. WATSON.

Churn.

No. 5,573.

Patented May 16, 1848.



# UNITED STATES PATENT OFFICE.

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PAINESVILLE, OHIO.

## CHURN.

Specification of Letters Patent No. 5,573, dated May 16, 1848.

*To all whom it may concern:*

Be it known that I, PETER H. WATSON, of Rockford, in the county of Winnebago and State of Illinois, have invented certain  
5 new and useful Improvements in Churns, of which the following is a full, clear, and exact description, reference being had to the annexed drawings of the same, making part of this specification, in which—

10 Figure 1 is a perspective view. Fig. 2 is a view of the interior of the churn the side of the tub being removed to show the position and connection of the dasher and vibrating agitators. Fig. 3 is a top view of  
15 the vibrating agitators and Fig. 4 is a sectional view of the same taken through the line *x x* of Fig. 3.

The same letters indicate the same parts in all the figures.

20 The nature of my invention and improvement consists in providing a series of elastic vibrating agitators arranged upon a cross and placed in the bottom of the tub to act in conjunction with the rotary spiral dasher  
25 in agitating the cream for the purpose of churning it.

To enable others skilled in the art to make and use my invention, I will proceed to explain its construction and operation.

30 In the accompanying drawings *a*, Figs. 1 and 2, is the body of the churn or vessel to contain the cream. It may be made of any convenient form and dimensions and of any suitable material, having a lid or cover *b*  
35 in the center of which a journal or bearing is formed for the upper end of the shaft of the dasher to turn in.

*c c* are open tubes or apertures communicating with the interior of the churn, the  
40 tube in the lid being to admit atmospheric air into the churn and the tube in the side to allow it to pass out again, a constant circulation being kept up by the centrifugal action of the dasher while it is in motion,  
45 the centrifugal motion given to the air driving it out of the side tube and creating a partial vacuum in the churn to fill which the air rushes in at the tube in the lid.

The shaft *d'* of the dasher has a winch *e*

on its upper end to turn it by, and eight 50 horizontal arms *d''*, Fig. 2, to which the vane or spiral buckets are secured, the lower end of each vane being secured to an arm ninety degrees from which the upper end is secured, thus causing the vanes *d* (which be- 55 fore they are placed upon the arms are flat pieces of wood or metal) to assume the form of a spiral curve, each of these vanes may be formed of one broad piece or of several narrow pieces as may be deemed best. 60

The vibrating elastic agitator *E* is fastened to the bottom of the churn in such a way as to be easily removed, it is composed of two pieces of wood or metal joined together crossing each other at right angles, 65 the center having a hole through it to permit the lower end of the shaft of the dasher to pass through it to the step or box in which it turns. If it is preferred the number of the arms of the cross may be increased. On 70 the upper side of these arms a series of curved elastic pieces of wood or metal are secured by one end, the end projecting from the arm at right angles or nearly so and inclining upward; as the vanes of the dasher 75 revolve in the direction indicated by the arrows Figs. 2 and 3 they depress the springs *f f f* in its passing over them, but the moment the vane has turned far enough to release the spring the latter flies up again to 80 its former position and the operation is repeated as the several vanes pass successively over the springs.

In operating the churn it is placed in an oblique position upon a quadrangular frame 85 *g* which is elevated upon four legs at a convenient height, the churn is placed in this position for convenience in turning the winch. The cream is now put into the churn prepared with the usual precaution relative 90 to its temperature, &c., and the operator lays hold of the winch with one hand and turns it which revolves the dashers causing the cream to ascend upon them run over and fall through dropping down through the at- 95 mosphere to the bottom, to be again alternately raised and exposed to the action of the atmosphere until the process is com-

pleted, the lower stratum of the cream being  
in the meantime kept in brisk motion by the  
action of the agitators, as soon as the but-  
ter is completely separated from the milk  
5 the agitators may be removed and the but-  
ter gathered by the dasher alone, or the agi-  
tator may be dispensed with during any  
other part of the operation at the option of  
the person using it.

What I claim as my invention and desire 10  
to secure by Letters Patent is—

The combination of the elastic vibrating  
agitator with the rotary spiral dasher in the  
manner and for the purpose herein described.

PETER H. WATSON.

Witnesses:

STEPHEN W. WOOD,  
JOHN SMITH.