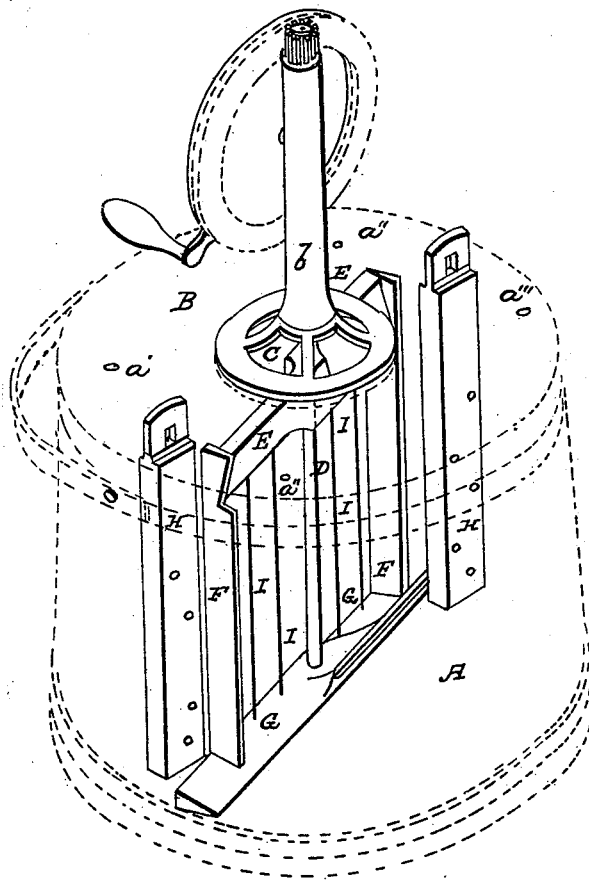


C. WARNER.

Churn.

No. 6,527.

Patented June 12, 1849.



# UNITED STATES PATENT OFFICE.

CHAPMAN WARNER, OF LOUISVILLE, KENTUCKY.

## CHURN.

Specification of Letters Patent No. 6,527, dated June 12, 1849.

*To all whom it may concern:*

Be it known that I, CHAPMAN WARNER, of Louisville, Jefferson county, and State of Kentucky, have invented a new and useful  
5 Improvement in the Churn for Making Butter; and I hereby declare the following to be a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, making part of this specification.

My improvement in churns are for the purpose of cheapening their construction, facilitating the labor of cleaning, of taking apart and putting together the working  
15 parts and box, or reservoir, while I at the same time expedite and perfect the separation of the butter from the milk, by the revolution of the parts attached to the shaft for that purpose, these various advantages  
20 are attained by the peculiar manner in which I form and arrange the several parts of my churn, by which construction I have also the incidental advantage of distributing the air through the liquid. There are many  
25 churns now constructed with horizontal rotary dashers, but they are generally expensive, hard to operate, and liable to derangement and for several other reasons are falling into disuse. First they require a step  
30 in the bottom of the churn for the end of the axis of the dasher to turn in, which makes it very difficult to put them together when the milk is in the churn; and if the axle chances not to be placed in the step, they are  
35 liable to be broken and deranged. Secondly, they are not so easily cleaned as a churn perfectly free from any projections, and lastly, all the working parts are not affixed permanently to the cover, so as to be sure of  
40 always working together, as in my churn; when all working parts are firmly affixed to a single base, forming the cover of the churn, the bearings of the axle being so far apart as to cause it and the parts thereto attached  
45 to work perfectly steady.

It being important to get rapid motion without too much expense of power, I find instead of flat or blunt surfaces like ordinary dashers, great advantage in the use of thin  
50 sharp cutters a part vertical and a part horizontal, the vertical ones attaching to a fan at top and to the horizontal ones at bottom forming a quadrangular frame so constructed that when in motion the air will  
55 descend and be diffused from the vertical

and horizontal cutters thus increasing the agitation of the milk and not found in this form in any other churn, air may be more generally diffused through the liquid by wires between the shaft and the vertical  
80 cutters.

I now proceed to the description referring by letter to the like letters on the drawing.

A represents in red lines the tub part of the churn which may be of any required  
65 size; B, the lid or cover with a hole C in the center for the inlet of air and several small holes  $a'$ ,  $a''$ ,  $a'''$ ,  $a''''$ , near the outer edge of the same for the air to escape on cover B is an upright hollow column  $b$  to serve as a  
70 support for the shaft D, having two bearings one at the top and the other near its connection with the cover B. It also has an arm for a bevel wheel which meshes into a pinion on the top end of shaft D. This shaft  
75 should be of sufficient length to reach very near the bottom of the churn when the cover is in its place. E E are wings through which the shaft passes in the center, the ends of which may vary in width, and extend to  
80 within two inches, more or less of the side, or wall of the churn; F F are vertical cutters one inch more or less in width, sharp on the edge that is foremost when in motion and one fourth of an inch thick on the back  
85 with a groove in the back—these cutters should be perpendicular or nearly so and connect with the outer end of wings E E and rest upon and connect with cutting arms G G which are composed of one piece of  
90 wood or metal nearly as long as the width of the churn and the ends formed like the cutters F F the shaft edges being foremost when in motion and grooved in the back like  
95 cutters F F the shaft D passes through the center of the cutting arms G, G, and the lower ends of the cutters F F being set upon said arms at the foot and attached to the ends of wings E E are secured to their places  
100 by a nut or pin at the bottom end of shaft D.

H H are arms attached to lid B with holes in them; of sufficient width to nearly fill the space between the cutters F F and the sides of the tub and extending to near  
105 the bottom so as to leave room for the ends of the arms G G to circulate under them. It is suitable that the edges of the cutters F F should describe a circle somewhat larger when in motion than the side of the back  
110 nearest the shaft thereby holding the milk

more to the center and also increasing the friction on the inside of the cutters F F the number of vertical cutters may be increased and be made of wire so small as not materially to increase the demand for power to operate the churn still greatly to hasten the results—as it seems needful that every particle should be operated on in order to secure the desired results most perfectly. 10 wires I, I, are so arranged as at every revolution they come in contact with various parts of the body of cream and thereby hasten the process of making butter. The use of the arms H, H is obvious to wit to interrupt the 15 rapid circular motion of the milk when the churn is in motion.

Having thus fully described my improved

churn what I claim as new and desire to secure by Letters Patent is—

Making the moving parts of the churn 20 consisting of a vertical shaft and rotary dasher constructed substantially as above specified, to be suspended and combined with the movable lid B, as above described thereby dispensing with a pivot or step at the 25 lower end of shaft for the purposes set forth so that said moving parts can be readily lifted from the churn and again be replaced; the whole operating in the manner above described.

CHAPMAN WARNER.

Witnesses:

J. J. GREENOUGH,

WM. GREENOUGH.