A. & W. A. CROWELL.

Churn.

No. 1,648. Patented June 20, 1840.

Fig. 3

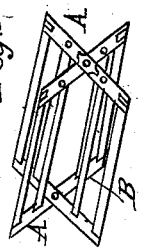


Fig. 4

Fig. 1

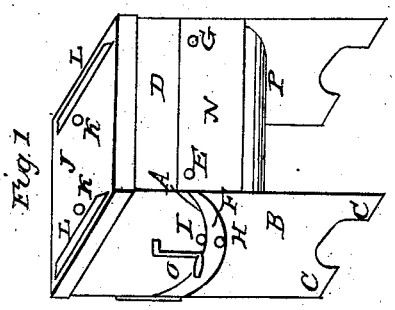
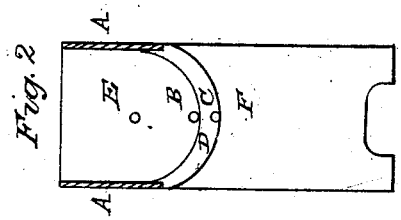


Fig. 2



UNITED STATES PATENT OFFICE.

WM. A. CROWELL AND ALLEN CROWELL, OF SALISBURY, CONNECTICUT.

CONSTRUCTION OF CHURNS.

Specification of Letters Patent No. 1,648, dated June 20, 1840.

To all whom it may concern:

Be it known that we, WM. A. CROWELL and ALLEN CROWELL, of Salisbury, in the county of Litchfield, State of Connecticut, have invented a new and useful Improvement on Churns for Churning Milk or Cream; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same as invented or improved by us.

The nature of our invention consists in the formation of a chamber or space in the lower part or the bottom of the churn or adjoining any part thereof for containing hot or cold water or other liquids for the purpose of tempering the milk or cream in the churn to the proper degree of heat required for churning, so that it can be done easily and rapidly to the will.

To enable others skilled in the art to make and use our invention we will proceed to describe its construction and operation as follows.

Figure 1 is an external view of the churn. It is made in the form of a square or oblong box. A, the end of division plate to fit in groove B in Fig. 2, showing it as it is placed on the churn with one end off. E, the top edge of division plate which forms the side of half cylinder which is bent at the top at right angles with the side piece D, about one-fourth of an inch and driven in a groove formed on the inside of the side piece D to admit it, so as to form a close joint or let it extend to the top of side D and nail it on the top of side piece. F, end of lower bottom or bottom of chamber, which is two inches from division plate at the bottom and fits in groove C in Fig. 2; the top edge fastens on the outside of side piece D. B, outside of end piece, the circles being drawn on the outside of end piece to show the edges of the division and bottom plates as they stand with the end off. C C, legs formed by sawing out a circular piece from the bottom of end pieces. D, the piece which forms the side of the box; it extends from about two inches below the top of division plate to the top of the churn, being a board thirteen inches long, nine inches wide, and one-half inch thick; the end of the pieces fit in grooves A A in Fig. 2. G, a hole or tube in the side of the churn leading in at the top of chamber to admit the water. H, a tube in the end piece leading in at the bottom of the chamber for the purpose of drawing off the water. I, a tube in the end piece leading in at the bottom of the upper space or half cylinder to convey off the buttermilk. J, top or lid fourteen inches long and twelve inches wide, being the size of the top of churn and one-half inch thick. K K, holes in the lids to admit the air. L L, cleats on the lid twelve inches long, one inch wide, and one-half inch thick, placed at each end of lid to prevent it from warping and serve as handles to take it off. M, cleats around the outside on the top of the churn two inches wide and half an inch thick extending above the top of churn, half an inch being the thickness of the lid, or top which forms the projection for the lid to rest in. N, cleat or piece nailed on the outside of side piece D six inches from top of churn and also fastened on the edge of end pieces for the purpose of covering the edge of lower bottom or bottom of chamber where it fastens on the outside of side piece D and also to protect the lower bottom; this piece is fourteen inches long, six inches wide, and one-half inch thick. O, crank made of iron or other metal six inches long, the spindle passing through the end piece B in the center in the top of half cylinder through each end of dash A A, Fig. 3, into a box in the opposite end, the end of the spindle fitting the box which is made of metal and made to receive a central point which is formed on the end of the spindle. The spindle is about fourteen inches long. The crank can be screwed on the spindle or formed on the end. There should be a metal box where it passes through the end B. P, bottom plate or bottom of chamber.

Fig. 2, F, the end piece of the churn, which is a board one inch in thickness, twelve inches wide, two feet and a half long, showing the form of the inside of end piece. A A, spaces halved or grooved in to admit the side pieces D in Fig. 1. The grooves are one-half inch wide and nine inches long. B, a groove cut in one-half inch in depth and sufficient width to admit the edge of division plate A in Fig. 1, which forms the bottom of the part which contains the milk or cream and the top of the chamber or space for containing hot or cold water. The plates are about the thickness of common sheet iron. C, the groove to admit the lower plate cut in the same manner as groove B, which forms the top of the chamber. D, the space which forms the chamber for containing water is two inches wide and the length of the inside

of the churn. E, the end of the space which contains the milk or cream which is made in the form of a half cylinder, and the space E forms the end of half cylinder and the division plate which fits in groove B forms the half cylinder from the top of churn to the bottom of half cylinder thirteen inches, from the top of churn to the top of division plate or half circle seven inches. The inside of the churn on top is twelve inches long, and eleven inches wide, the division plate thirteen inches long being one inch longer than the inside of churn, one-half inch on each end being required to fit in groove B. The division plate can extend to the top of churn on the sides as no given distance being necessary after it has formed the half cylinder nor is it necessary that it should be an exact half cylinder, as other circles varying a little will answer.

Fig. 3 represents the dash or flutter wheel which is constructed of wood. A A, are two pieces one-half inch thick, one inch and one-fourth wide, and eleven inches long, halved together in the center, forming four arms, four pieces forming both ends of dash, making four arms to each end of dash. B, two pieces three-eighths of an inch thick, one inch wide and eleven and a half inches long, framed at the ends into the side of the arms, each arm having two pieces framed into it, one framed into the end of the arm and the other half way from the center of the end pieces to end of arm.

Fig. 4, O, crank, as in Fig. 1. A, spindle or rod which passes through the end B, Fig. 1, and through the center of end pieces of dash where they are halved together. On the spindle where it passes through the first end of dash there is a screw cut on the spindle to fit a nut fastened on the end of dash, when screwed up turns the dash, the spindle fitting the boxes on the inside of the churn.

What we claim as new and as our own invention or discovery and desire to secure by Letters Patent is—

The combination of tin and wood, or other metal and wood, or all metal, in the formation of a chamber or space in the lower part of the churn as herein described or joining any part or parts of the herein described churn or any churn not herein described where a metal division plate is used in the formation of a chamber or space made in any shape or form which constitutes a chamber or space with a metal division plate for the purpose of bringing the milk or cream to the proper degree of heat required easily and rapidly to the will by means of filling the chamber or space with hot water or other liquids when the milk or cream requires to be warmed or cold water when it requires to be cooled so that the temperature of the milk or cream will rapidly become the temperature of the water contained in the chamber or space. The division plate is to be made of tin or other metals which will not become oxidized by the action of the acid contained in the milk or cream so as to become injurious to the butter when churned or otherwise injurious to the churn. The bottom plate can be made of the same metal as division plate or any metal which will not become oxidized by water.

The herein described churn can be varied in size according to the milk or cream to be churned. For using the churn herein described, the dash being placed in the churn, and the spindle screwed in, put in the milk or cream to be churned; if not in the right degree of heat apply the hot or cold water in the chamber or space, under the milk or cream until it becomes the right degree of heat required, being about sixty degrees. The degree of heat can be correctly ascertained by a thermometer made for tempering liquids, by being placed in the milk or cream, or formed in the end of the churn, the card of the thermometer on the outside of the churn, the tube being crooked so that the bulb will pass nearly through the end piece and come in contact with the milk or cream sufficiently to ascertain the temperature, the card on the outside showing the temperature of the milk or cream, in the inside of the churn; turn the crank from thirty to fifty revolutions a minute; it becomes necessary sometimes, to gather the particles of butter to turn the dash half around and back a few times until sufficiently gathered. The churn can be used either or without a thermometer.

In witness whereof we have hereunto set our hands.

WM. A. CROWELL.
ALLEN CROWELL.

In presence of—
THEOD. P. PRENTICE,
WM. M. BURRALL,
WM. HOWLAND,
NATHANIEL SEARS.