

(No Model.)

E. ALPAUGH.
CHURN.

No. 493,006.

Patented Mar. 7. 1893.

Fig. 1.

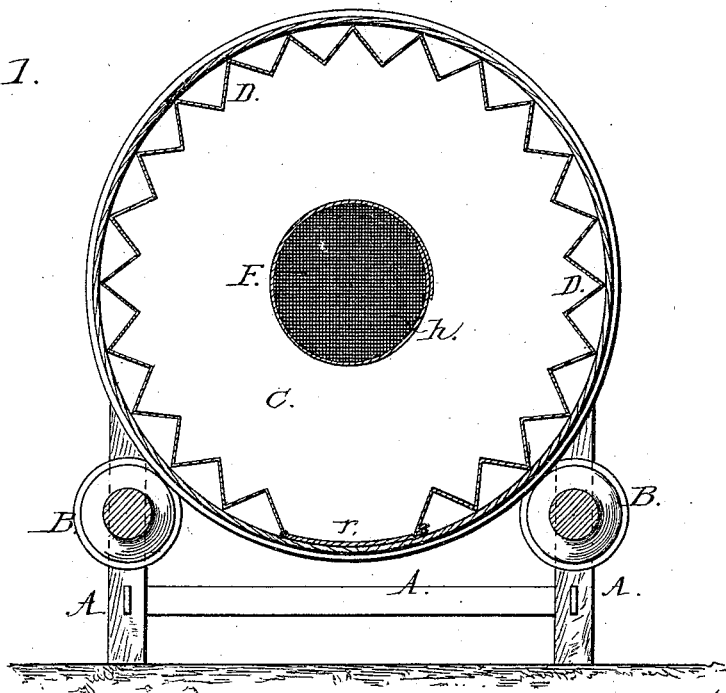


Fig. 2.

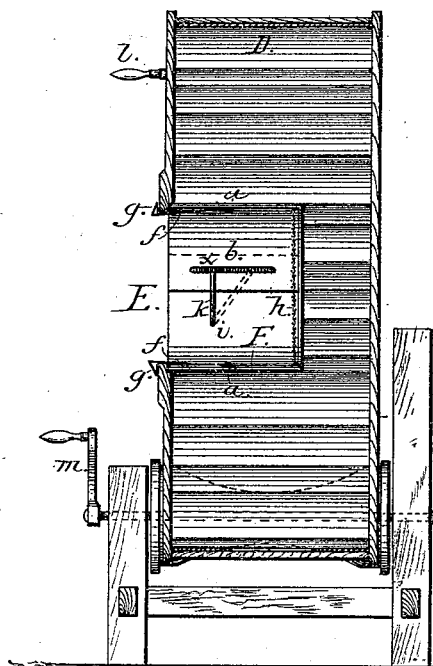
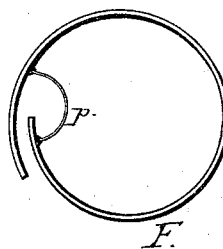


Fig. 3.



Witnesses:

Joel Blackwood
R. F. Heck

Inventor:

Eph. Alpaugh
per E. W. Dunn & Co.

Attorneys.

UNITED STATES PATENT OFFICE.

EPHRAIM ALPAUGH, OF GALT, CANADA.

CHURN.

SPECIFICATION forming part of Letters Patent No. 493,006, dated March 7, 1893.

Application filed August 13, 1891. Serial No. 402,497. (No model.)

To all whom it may concern:

Be it known that I, EPHRAIM ALPAUGH, a subject of the Queen of Great Britain, residing at Galt, in the county of Waterloo, Province of Ontario, Canada, have invented certain new and useful Improvements in Churns; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain improvements in churns.

It consists of a churn having a cream-holding-cylinder of peculiar form and construction, a certain arrangement of expansible plate, a netting and a holding means for said plate all arranged in connection with a means for giving movement to the said cream-holding-cylinder as will be fully described hereinafter.

In the drawings illustrating the invention, Figure 1 is a vertical sectional view of the churn and the supporting rollers of the same. Fig. 2 is a sectional view taken at right angles to the plane of the section of Fig. 1. Fig. 3 is a detail showing a modification of the plate fixed centrally in the cylinder of the churn, showing an alternate expanding device.

Similar reference letters indicate like parts in all of the figures.

Referring to the drawings A is the supporting frame of the churn having four vertical posts, in pairs, on opposite sides, each pair being provided with journal bearings for a roller axle.

B, B, are rollers, preferably of double conical form, serving as bearings for the churn.

C is the cylinder of the churn composed of two heads united together by corrugated bands D, D, the corrugations of which are practically rectangular.

In one or both of the heads of cylinder C, an opening E is provided into which a metallic plate F may be sprung, folding by its edges upon itself, and secured by barbed plates *f-g*, said barbs taking hold against the outer surface of said cylinder.

The inner edge of the head of the cylinder C, at the opening E, is rabbeted to form an annular shoulder to receive the outer edge of the plate F, when said plate is in position in the cylinder of the churn. The plate F has

formed, near one of its transverse edges, a slot *b*, and at a point *i*, in said plate is pivoted a bar *k*, and on the free end of said bar is a stud *x* which takes and holds into the slot *b*. In placing the plate F into the opening E the bar *k* is thrown inward, as seen in dotted lines, to partly collapse its outward part to a diameter less than the diameter of the opening E. When the outer edge of the plate F reaches the rabbet of the cylinder head it takes its place therein and the springs *f f*, keep it from going into the cylinder C farther. The bar *k* being drawn outward, about its pivoted end as an axis, the plate F is expanded and tightened. The cylinder on its outer head is provided with a handle *l* which serves the purpose of a crank by which, in the hands of the operator, the churn is revolved or rocked.

One of the conical rollers B has fitted to its shaft a crank *m* by which said roller, in the hands of the operator, may be revolved to set in motion the churn and through the weight of the churn cylinder move also the opposite roller which serves as a bearing for said cylinder.

To provide for the admission of air the escape of gas, and the exclusion of dust flies &c., a sieve or screen *h*, with a band which fits tightly into the opening E, is provided. For putting in cream, removing the butter, washing the churn, &c., the sieve *h* and expanding plate or disk are removed.

To draw off butter milk the plug is withdrawn.

In the corrugated band of the cylinder C is a plane space *r* forming a portion of the outer circle of the corrugated band D. This space is for the purpose of collecting the butter, which is done by placing this space *r* downward and moving the crank back and forward to produce a rocking motion to the cylinder.

I do not wish to confine myself to the use of the slot and pivoted bar to secure the expansion of the metallic plate F as other simple devices may be used for this purpose, as for instance that shown in Fig. 3, which consists of a spring secured to opposite ends of the inner surface of said plate F. When the spring, in this case, is pressed inward the plate is contracted, and when allowed to spring outward said plate is expanded.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

5 1. A cream-holding-cylinder, supported as described, formed of two disk heads one with a gauze covered opening, as described and a cylindrical band partly corrugated and partly plain, as at *r*, connecting said heads, as and for the purpose specified.

10 2. The combination with the cream holding cylinder, of the expansible plate, a sieve or netting, secured within said plate and to it,

barbed plates secured to said expansible plate and bearing against the outer face of the cream holding cylinder, and the device 15 for holding the expanded plate consisting of bar *k*, stud *x* and having slot *b*, as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

EPHRAIM ALPAUGH.

Witnesses:

W. J. MILLICAN,
J. D. MCEACHREN.